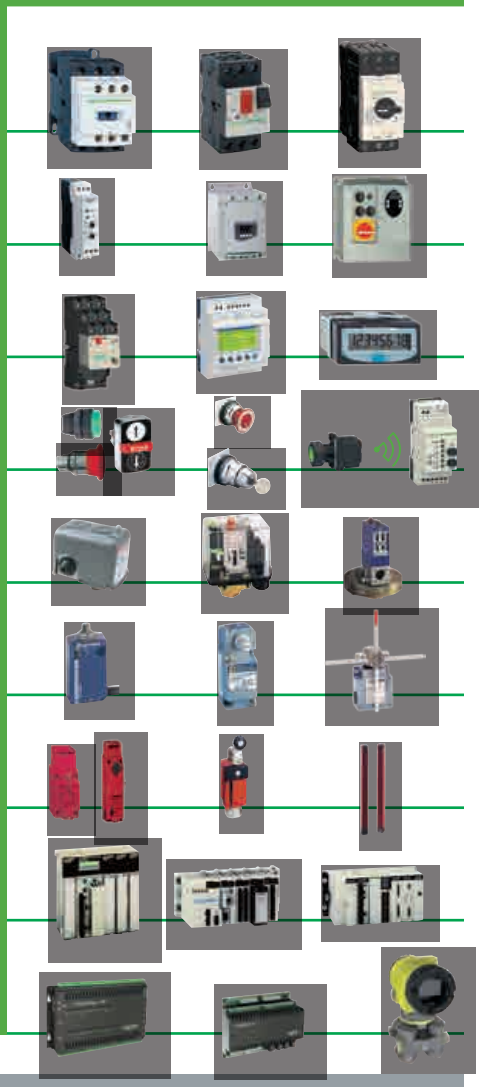
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2. Electrical Distribution Products



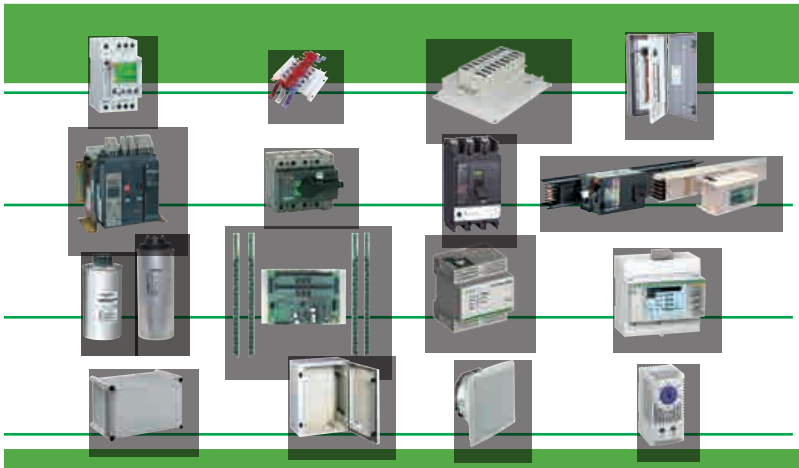
3. Automation & Control Products



4. Technical Information

5. Alphanumeric Listing & Conditions of Sale

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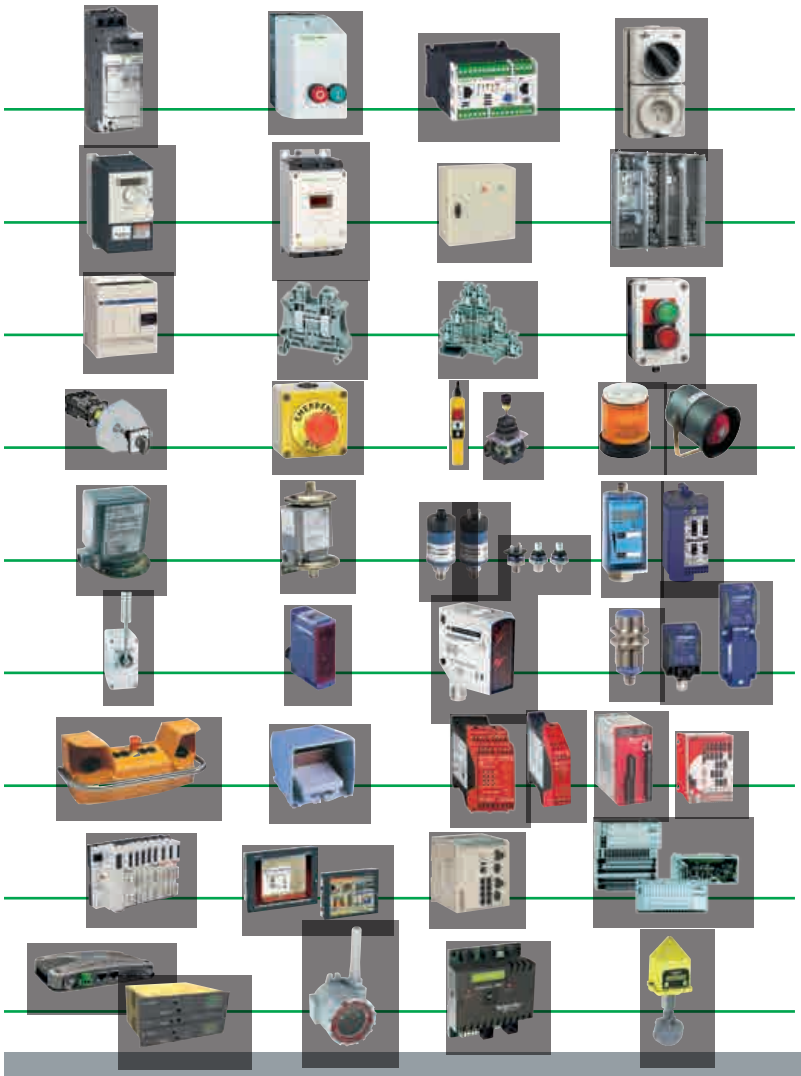
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Low Voltage Power Distribution 2.2

Metering, Protection & Power Factor Correction 2.3

Enclosures 2.4

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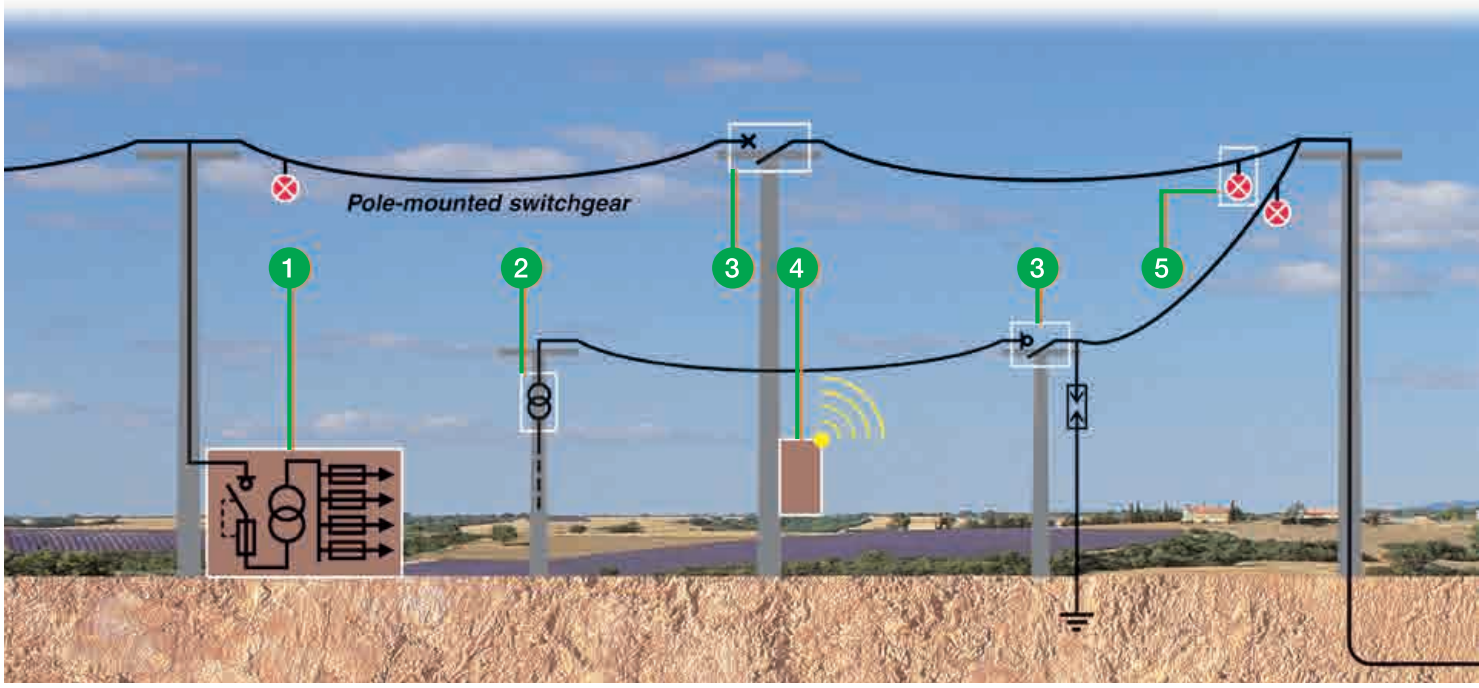
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Alphanumeric Listing & Conditions 5.0

Medium Voltage Panorama

Complete Offer Ranging from 3kV to 40kV



1

Prefabricated MV/LV substation (rectangular)



KPX
Up to 33kV
and 2.5MVA

2

Pole-mounted transformers



PMX
Immersed transformer
Up to 33kV and 500kVA

3

Pole-mounted switchgear



N Series
Up to 38kV/800A
Recloser

RL series
Up to 38kV/630A
Load break switch

U and W series
Up to 27kV/630A
Recloser

4 5

Overhead network control & monitoring



AVDC
Monitoring, control
and protection

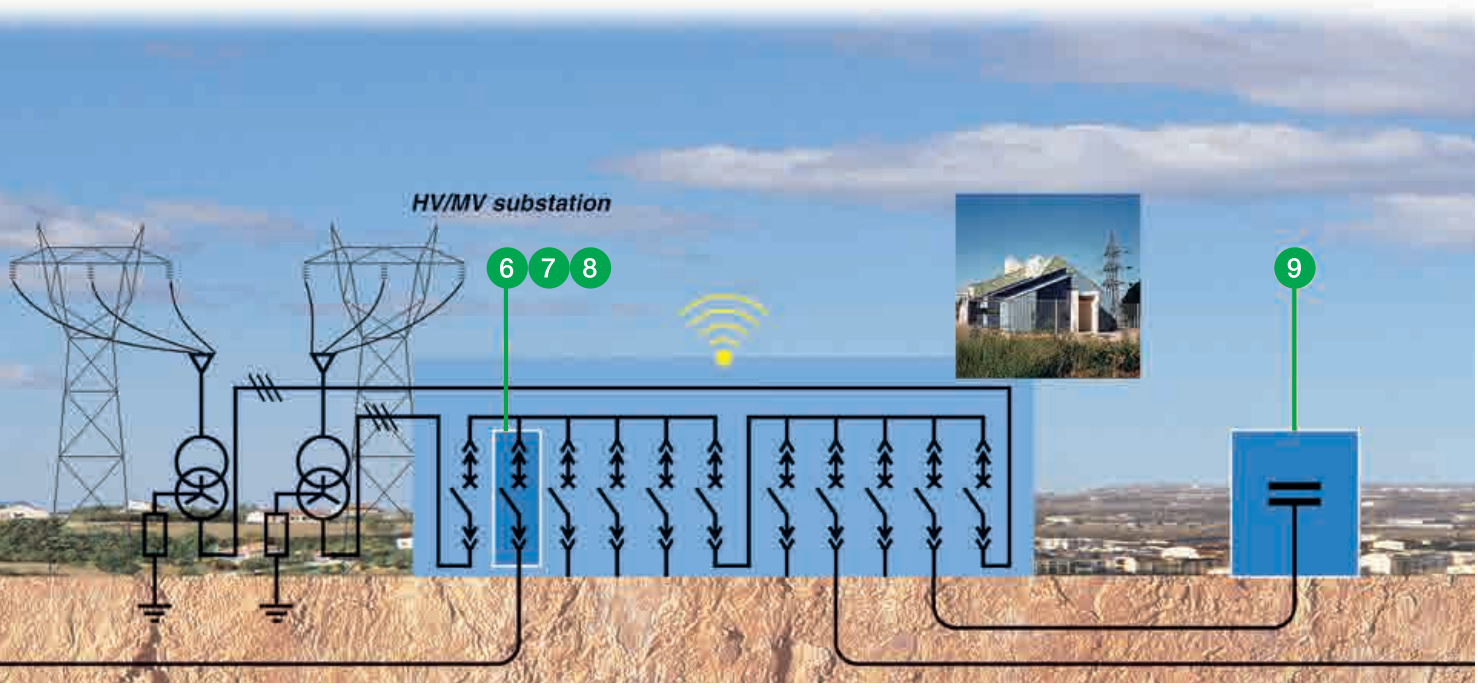


Easergy Flite, G200
Communicating fault passage
indicator for overhead MV lines

For more info:
Catalogue:
AMTED2190810AU



Schneider Electric's Medium Voltage offer represents the world's largest range of medium voltage equipment and encompasses all aspects of switchgear, transformers, packaged substations, protection and controlgear. Schneider Electric has over 100 years experience in delivering world class products and turn-key solutions with expertise in project management, electrical and substation design, automation design and service management.



6

Primary substation switchgear



Air Insulated Switchgear (AIS)
MCset up to 24kV/2500A
PIX up to 24kV/2500A
GenieEvo up to 13.8kV/2500A
F400 up to 36kV/2500A
DNF7-2 up to 36kV/3150A



Gas Insulated Switchgear (GIS)
GMA up to 24kV/2500A
CBGS up to 36kV/2000A
GHA up to 36kV/2500A
WS up to 36kV/2500A
WI up to 52kV/2500A

7 8

Digital protection relays and power metering



Sepam series 10, 20, 40, 60 & 80 protection, metering and control relays



MiCOM series Px10, Px20, Px30 & Px40 protection & control relays.

Powerlogic Digital Meters
Waveform capture and accurate metering

9

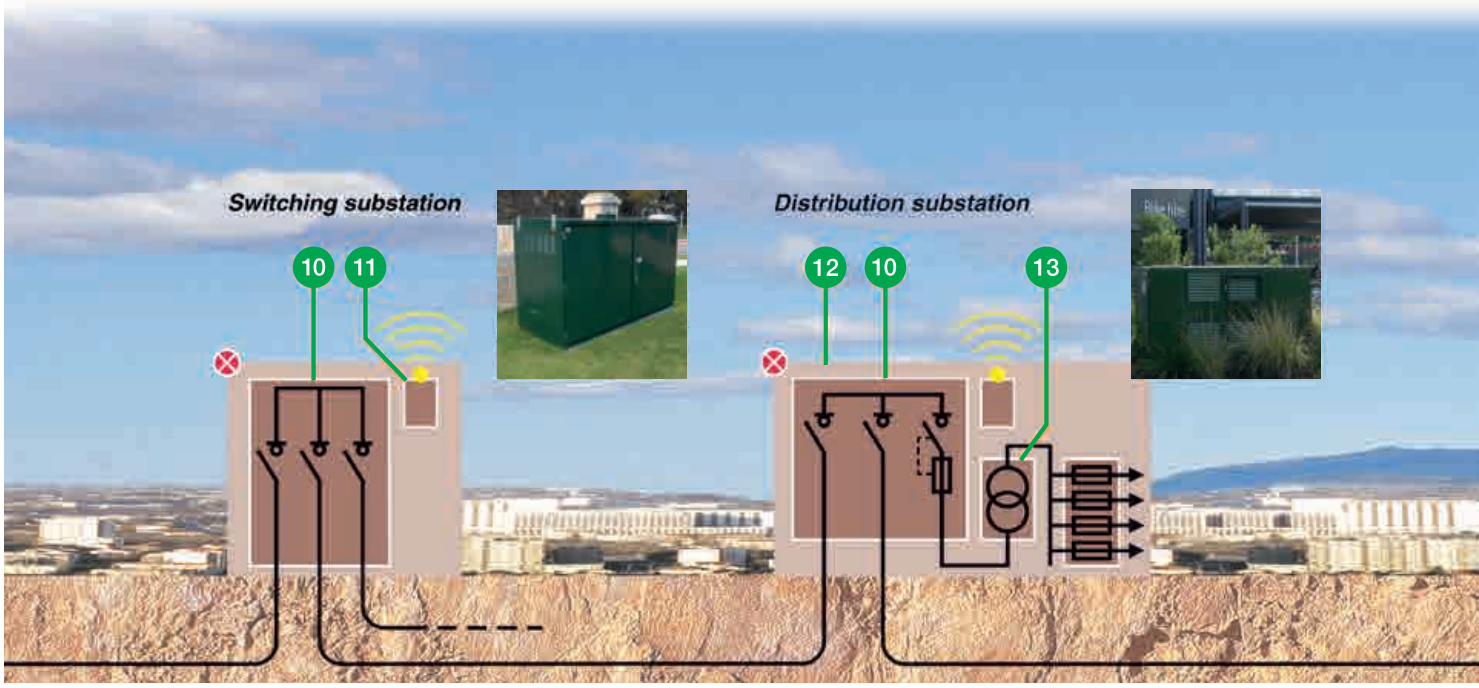
Automatic capacitor bank



CP range up to 36kV compact enclosure including switching & earthing devices

Medium Voltage Panorama

Complete Offer Ranging from 3kV to 40kV



10

Ring main unit



RM6 up to 24kV/630A
FBX up to 24kV/1250A
CAS-36 up to 36kV/630A
Flusarc up to 36kV/1250A
RingmasterC up to 13.8kV/630A

11

Remote control
& fault tracking



Easergy T200I,
T200E, T200H, Flair
Remote control and monitoring through DNP3, Modbus and IEC protocols

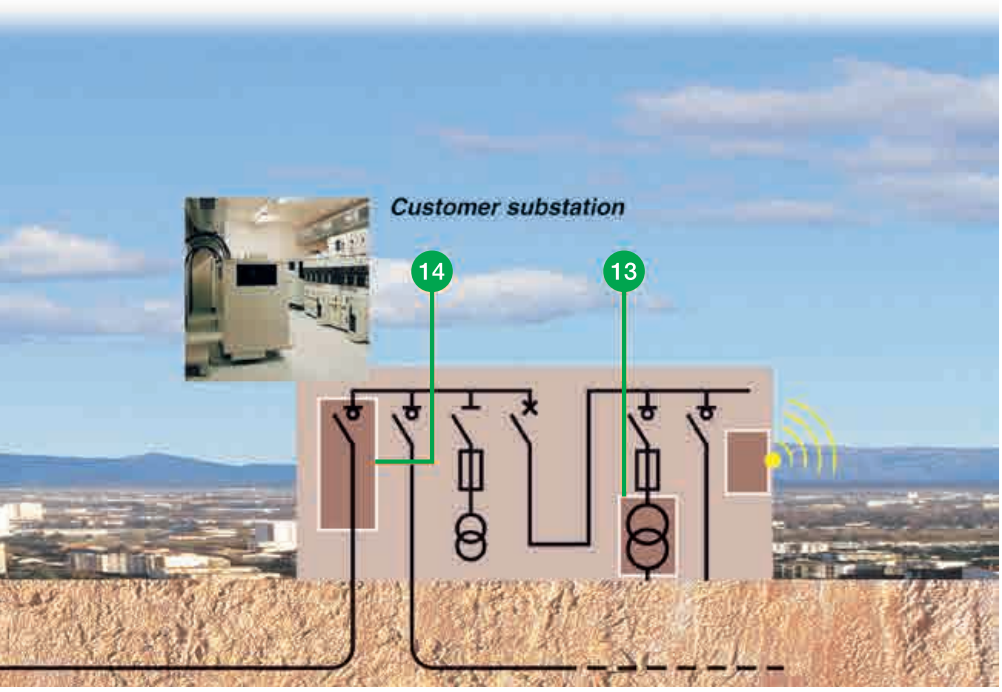
12

Prefabricated MV/LV substation (square)



KPX²
Up to 22kV and 2.5MVA

Internal arc classification:
IAC-AB according to AS62271.202



13

Distribution transformer





GMX, TESA immersed transformers up to 33kV and 5MVA

Trihal dry tape transformers up to 36kV and 3.15MVA

14

Modular switchboard



Premset
Up to 15kV/630A

SM6-24
Up to 24kV/1250A

SM6-36
Up to 36kV/630A

DVCAS
Up to 36kV/630A

Building a smarter grid with reliable, efficient energy

How Schneider Electric smart grid-ready products and solutions help balance your grid equation.

More and more people are learning to depend on energy as being integral to their daily lives.

Meanwhile, the electricity market is changing. Every day, end-users' expectations increase in terms of reliability and quality, and they gain greater awareness of energy's environmental impact.

It's an evolution. But as our reliance on electricity grows globally, the ways in which we produce, distribute, and use energy must also evolve. The solution will not only involve smarter demand, but also smarter supply - and as such, a smarter grid is at the heart of the issue.

As The Global Specialist in Energy Management™, Schneider Electric is smart grid-ready, enabling the products and solutions that support and connect the five key domains of a smarter grid:

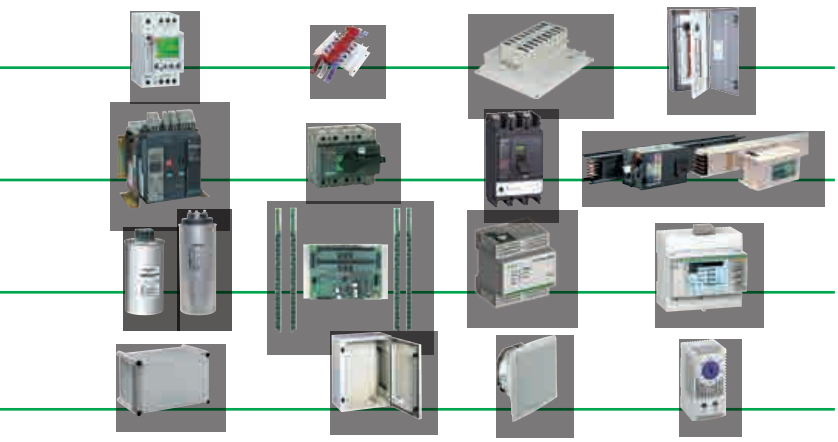
- Flexible distribution
- Smart generation
- Demand-side management
- Efficient homes (including electric vehicles)
- Efficient enterprise (buildings, industrial facilities, and data centres)

Our vision isn't just to connect our customers to the smart grid - but to also connect them with each other, facilitating smarter interactions and leading to increased energy management capabilities.

Our smart grid solutions include:

- Smart Medium Voltage (MV) / Low Voltage (LV) Equipment
- Substation automation
- Feeder automation
- Enhanced distribution management solutions
- Microgrid control
- Volt/VAr management
- Real-time condition monitoring
- Electric vehicle load management

Electrical Distribution Products



Low Voltage Final Distribution	2.1
Low Voltage Power Distribution	2.2
Metering, Protection & Power Factor Correction	2.3
Enclosures	2.4

Electrical Distribution

2.1 Low Voltage Final Distribution

Protection & Isolation



Acti 9 System

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Isolators	Page 2.1.2
MCB's – iC60/C120 (including DC MCB's)	Page 2.1.3
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STI isolatable fuse-carriers	Page 2.1.15
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Control & Signalling



Acti 9 System

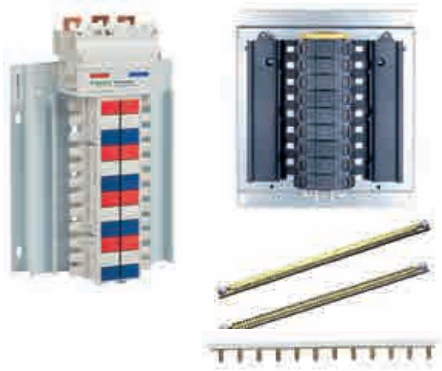
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Metal Distribution Boards



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MD Isobar weatherproof distribution boards – IP56	Page 2.1.26
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Connection Devices & Cabling Accessories



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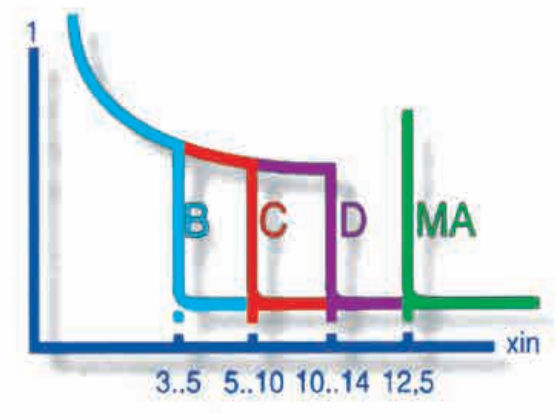
2.1

Acti 9 System, Miniature Circuit Breakers
Tripping Curves
Markings & Limitation Capability

Trip Unit Variations

Circuit Protection

A choice of several curves
Whatever circuit has to be protected, a iC60 or C120 circuit breaker provides the perfect solution with a suitable curve.





Curve B tripping:
3 to 5 times the rated current (In); protection of generators, persons, very long cables.



Curve C tripping:
5 to 10 In; protection of circuits, general applications.

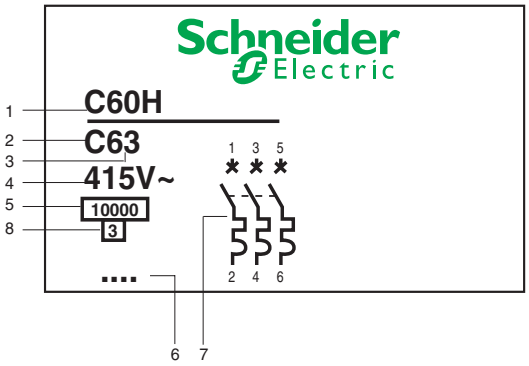


Curve D tripping:
10 to 14 In; protection of high surge circuits, welders, transformers, motors.



Curve MA (magnetic only) tripping: 12 In; protection of motor starters (+ thermal protection when combined with contactor).

Circuit Breaker Marking



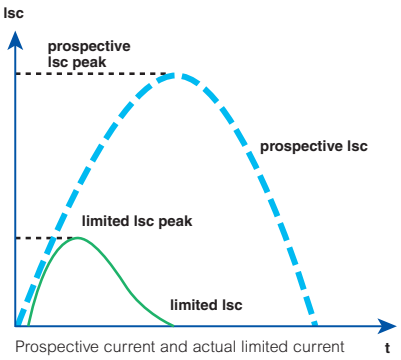
1. Circuit Breaker Model Number
2. Tripping Curve
3. Circuit Breaker Current Rating
4. Operating Voltage
5. Rated Breaking Capacity
6. Circuit Breaker Part Number
7. Electrical Diagram
   - No. of Poles
8. I^2t classification
   (energy limitation)

Circuit Breaker Limitation Capability

The limitation capability of a circuit breaker is that characteristic whereby only a current less than the prospective fault current is allowed to flow under short-circuit conditions.

This is illustrated by limitation curves which give:

- The limited peak current in relation to the RMS value of the prospective short-circuit current (the short-circuit current being that current which would flow continuously in the absence of protection equipment).
- The limited current stress in relation to the RMS value of the prospective short-circuit current.
- Current limiting capability. The advanced design of the Acti 9 range provides current limitation with far better protection than conventional circuit breakers.



Prospective current and actual limited current

Installation of current limiting circuit breakers offers several advantages:

- **Better network protection**
  Current limiting circuit breakers considerably reduce the undesirable effects of short-circuit currents in an installation.
- **Reduced thermal effects**
  Cable heating is reduced, hence longer cable life.
- **Reduced mechanical effects**
  Electrodynamic forces reduced, thus electrical contacts are less likely to be deformed or broken.
- **Reduced electromagnetic effects**
  Measuring equipment situated near an electrical circuit less affected.

Principle of catalogue numbers for iID RCCB, Vigi iC60, iC60 MCB, Switches, Reflex iC60,

A9 R 51 2 63

Range	Family	Code	Internal code	Poles	Code	Rating (A)	Code
Acti 9 (A9)	iID	R		0	0	0	00
	iC60 RCBO	D		1P	1	1	01
	Vigi iC60	V		2P	2	2	02
	iC60 MCB	F		3P	3	4	04
	Auxiliaries and accessories	A		4P	4	6	06
	Switches	S		1N	5	10	10
	Reflex iC60	C		1P+N	6	16	16
				3P+N	7	20	20
						25	25
						32	32
						40	40
						50	50
						63	63
						80	80
						100	91
						125	92



A9S66163

iSW isolators

Model	Current rating	No. of poles	Voltage (VAC)	Width in mod. of 9mm	Reference
I	63A	1	250V	2	A9S66163
		2	415V	4	A9S66263
		3	415V	6	A9S66363
		4	415V	8	A9S66463
	100A	1	250V	2	A9S66191
		2	415V	4	A9S66291
		3	415V	6	A9S66391
		4	415V	8	A9S66491
	125A	1	250V	2	A9S66192
		2	415V	4	A9S66292
		3	415V	6	A9S66392
		4	415V	8	A9S66492
Auxiliary switch to suit I isolator		1 C/O		2	A9A26924

2.1

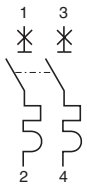
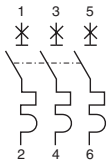
Acti 9 System – Miniature Circuit Breakers
iC60N – 1 to 63A, 6kA at 240/415V, C Curve AS/NZS60898.1
C60H DC - 1 to 63A, 6kA at 220/440V DC, C Curve Standards IEC60947-2

iC60N


A9F44120


A9F44220


A9F44320

	Rating (A)	Width in mod. of 9mm	C Curve
1P 	1A	2	A9F44101
	2A	2	A9F44102
	4A	2	A9F44104
	6A	2	A9F44106
	10A	2	A9F44110
	16A	2	A9F44116
	20A	2	A9F44120
	25A	2	A9F44125
	32A	2	A9F44132
	40A	2	A9F44140
	50A	2	A9F44150
	63A	2	A9F44163
2P 	1A	4	A9F44201
	2A	4	A9F44202
	4A	4	A9F44204
	6A	4	A9F44206
	10A	4	A9F44210
	16A	4	A9F44216
	20A	4	A9F44220
	25A	4	A9F44225
	32A	4	A9F44232
	40A	4	A9F44240
	50A	4	A9F44250
	63A	4	A9F44263
3P 	1A	6	A9F44301
	2A	6	A9F44302
	4A	6	A9F44304
	6A	6	A9F44306
	10A	6	A9F44310
	16A	6	A9F44316
	20A	6	A9F44320
	25A	6	A9F44325
	32A	6	A9F44332
	40A	6	A9F44340
	50A	6	A9F44350
	63A	6	A9F44363

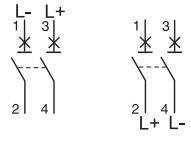
C60H 250V DC


A9N61512

	Rating (A)	Width in mod. of 9mm	1P 250V DC C Curve
1P 	1A	2	A9N61501
	2A	2	A9N61502
	4A	2	A9N61504
	6A	2	A9N61506
	10A	2	A9N61508
	16A	2	A9N61511
	20A	2	A9N61512
	25A	2	A9N61513
	32A	2	A9N61515
	40A	2	A9N61517
	50A	2	A9N61518
	63A	2	A9N61519

C60H 500V DC


A9N61532

	Rating (A)	Width in mod. of 9mm	2P 500V DC C Curve
2P 	1A	4	A9N61521
	2A	4	A9N61522
	4A	4	A9N61524
	6A	4	A9N61526
	10A	4	A9N61528
	16A	4	A9N61531
	20A	4	A9N61532
	25A	4	A9N61533
	32A	4	A9N61535
	40A	4	A9N61537
	50A	4	A9N61538
	63A	4	A9N61539

Acti 9 System – Miniature Circuit Breakers
iC60H – 1 to 63A, 10kA at 240/415V, B, C & D Curves
Standards AS/NZS60898.1 & IEC60947-2



A9F54120



A9F54220

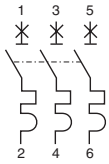
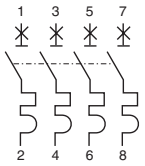


A9F54320

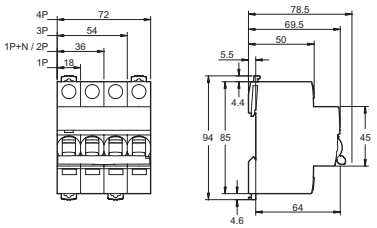


A9F54420

iC60H

	Rating (A)	B Curve	C Curve	D Curve
1P  Width in mod of 9mm - 2	1	A9F53101	A9F54101	A9F55101
	2	A9F53102	A9F54102	A9F55102
	4	A9F53104	A9F54104	A9F55104
	6	A9F53106	A9F54106	A9F55106
	10	A9F53110	A9F54110	A9F55110
	16	A9F53116	A9F54116	A9F55116
	20	A9F53120	A9F54120	A9F55120
	25	A9F53125	A9F54125	A9F55125
	32	A9F53132	A9F54132	A9F55132
	40	A9F53140	A9F54140	A9F55140
	50	A9F53150	A9F54150	A9F55150
	63	A9F53163	A9F54163	A9F55163
2P  Width in mod of 9mm - 4	1	A9F53201	A9F54201	A9F55201
	2	A9F53202	A9F54202	A9F55202
	4	A9F53204	A9F54204	A9F55204
	6	A9F53206	A9F54206	A9F55206
	10	A9F53210	A9F54210	A9F55210
	16	A9F53216	A9F54216	A9F55216
	20	A9F53220	A9F54220	A9F55220
	25	A9F53225	A9F54225	A9F55225
	32	A9F53232	A9F54232	A9F55232
	40	A9F53240	A9F54240	A9F55240
	50	A9F53250	A9F54250	A9F55250
	63	A9F53263	A9F54263	A9F55263
3P  Width in mod of 9mm - 6	1	A9F53301	A9F54301	A9F55301
	2	A9F53302	A9F54302	A9F55302
	4	A9F53304	A9F54304	A9F55304
	6	A9F53306	A9F54306	A9F55306
	10	A9F53310	A9F54310	A9F55310
	16	A9F53316	A9F54316	A9F55316
	20	A9F53320	A9F54320	A9F55320
	25	A9F53325	A9F54325	A9F55325
	32	A9F53332	A9F54332	A9F55332
	40	A9F53340	A9F54340	A9F55340
	50	A9F53350	A9F54350	A9F55350
	63	A9F53363	A9F54363	A9F55363
4P  Width in mod of 9mm - 8	1	A9F53401	A9F54401	A9F55401
	2	A9F53402	A9F54402	A9F55402
	4	A9F53404	A9F54404	A9F55404
	6	A9F53406	A9F54406	A9F55406
	10	A9F53410	A9F54410	A9F55410
	16	A9F53416	A9F54416	A9F55416
	20	A9F53420	A9F54420	A9F55420
	25	A9F53425	A9F54425	A9F55425
	32	A9F53432	A9F54432	A9F55432
	40	A9F53440	A9F54440	A9F55440
	50	A9F53450	A9F54450	A9F55450
	63	A9F53463	A9F54463	A9F55463

iC60 circuit breakers



Connection: Tunnel terminals for the following cables
- up to 25A : 25mm² stranded
- 32 to 63A : 35mm² stranded

2.1

Acti 9 System – Miniature Circuit Breakers
C120N – 63A to 125A, 10kA at 240/415V,
C Curve Standards AS/NZS60898.1



A9N18357



A9N18361

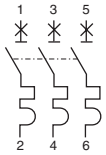
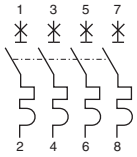


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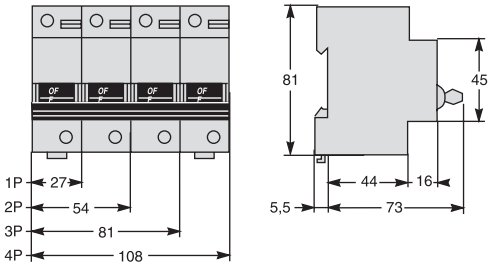


A9N18372

C120N

	Rating (A)	Width in mod. of 9mm	C Curve
1P 	63	3	A9N18356
	80	3	A9N18357
	100	3	A9N18358
	125	3	A9N18359
2P 	63	6	A9N18360
	80	6	A9N18361
	100	6	A9N18362
	125	6	A9N18363
3P 	63	9	A9N18364
	80	9	A9N18365
	100	9	A9N18367
	125	9	A9N18369
4P 	63	12	A9N18371
	80	12	A9N18372
	100	12	A9N18374
	125	12	A9N18376

C120 circuit breakers



Connection: Tunnel terminals for stranded cables up to 50mm²

Acti 9 System – Miniature Circuit Breakers
C120H – 63 to 125A, 15kA at 240/415V, B, C & D Curves
Standards AS/NZS60898.1



A9N18446



A9N18457

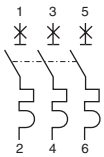
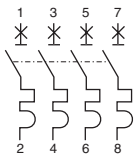


A9N18468



A9N18479

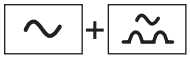
C120H

		Rating (A)	B Curve	C Curve	D Curve
1P		63	A9N18401	A9N18445	A9N18489
		80	A9N18402	A9N18446	A9N18490
		100	A9N18403	A9N18447	A9N18491
		125	A9N18404	A9N18448	A9N18492
Width in mod of 9mm - 3					
2P		63	A9N18412	A9N18456	A9N18500
		80	A9N18413	A9N18457	A9N18501
		100	A9N18414	A9N18458	A9N18502
		125	A9N18415	A9N18459	A9N18503
Width in mod of 9mm - 6					
3P		63	A9N18423	A9N18467	A9N18511
		80	A9N18424	A9N18468	A9N18512
		100	A9N18425	A9N18469	A9N18513
		125	A9N18426	A9N18470	A9N18514
Width in mod of 9mm - 9					
4P		63	A9N18434	A9N18478	A9N18522
		80	A9N18435	A9N18479	A9N18523
		100	A9N18436	A9N18480	A9N18524
		125	A9N18437	A9N18481	A9N18525
Width in mod of 9mm - 12					

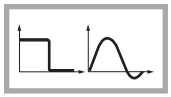
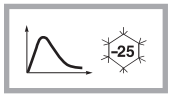
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Earth Leakage Protection

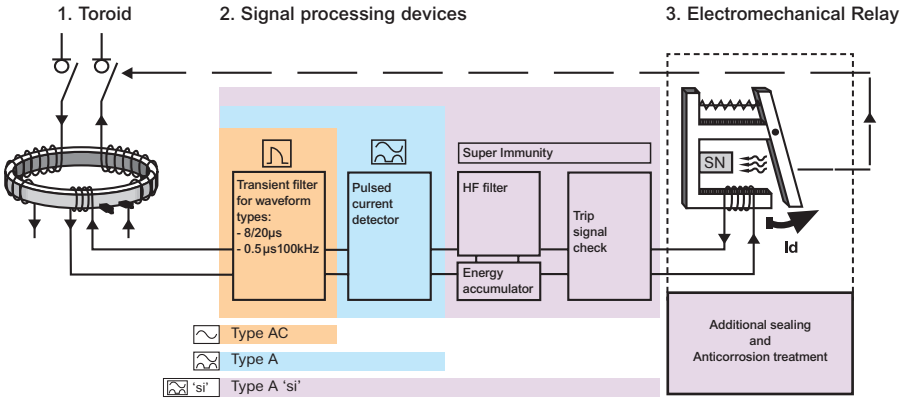
The following earth leakage devices are defined in AS/NZS61008, AS/NZS61009

Type	Description	Applications
AC 	Tripping is ensured for residual sinusoidal alternating currents whether suddenly applied or slowly rising	All general light and power applications ■ GPO's ■ Incandescent lighting ■ Household appliances
A 	The same protection as offered by class AC but tripping is also ensured for residual pulsating direct currents	Loads containing single phase rectification ■ Computers ■ Poker Machines ■ Advanced whitegoods
B 	The same protection as offered by class A but tripping is also ensured for residual pure direct currents	Loads containing three phase rectification ■ 3 Phase Variable Speed Drives ■ UPS

As well as different classes of protection, there are also different levels of immunity:

Immunity type	Description	Applications
Si (Super Immunised) 	The same protection as offered by class A as well as additional electronic filtering on the trip circuit. ■ To reduce nuisance tripping faults due to: ☐ high frequency leakage currents ☐ transient currents of atmospheric origin (lightning) ☐ transient currents caused by overvoltages due to the operation of electrical appliances ☐ permanent leakage currents at 50 Hz (interference filters)	Loads where there is an increased chance of nuisance tripping. ■ 1 Phase Variable Speed Drives ■ Large amounts of fluorescent lighting ■ Several computers on the same circuit
	■ To reduce blinding faults in the residual current devices due to: ☐ high frequency leakage currents ☐ leakage currents with direct component ☐ low temperatures	
	Sealed against environmental factors ■ Amorphous carbon coating to protect trip relay contacts from corrosive substances in atmosphere ■ Hermetically sealed relay case prevents dust particle contamination	Environments with corrosive factors such as humidity, salt spray or chlorinated compounds: ■ Marine Applications ■ Swimming pools ■ Spa and Saunas ■ Chemical Factories ■ Steel Works

- An RCD operates by passing the current flowing to a load and the current returning from a load through a toroid.
- Any difference between these two currents generates a magnetic field in the core of the toroid which induces a current in the secondary winding.
- This current then drives an electromechanical relay which trips the device.
- An Si type RCD has additional filters on the toroid secondary to filter out short time disturbances which could otherwise cause nuisance tripping of the RCD.



Acti 9 System – Residual Current Devices
Add on Vigi Blocks for iC60/C120
(converts MCB to RCBO) Standard AS/NZS61009.1



A9V02663



A9V51263

Add on Vigi blocks for iC60/C120

Model	Current Rating	No. of poles	Sensitivity	Voltage	Width mod. of 9mm	Reference
Vigi iC60 type A	63A	2	30mA	127/240	4 (1)	A9V02663
			30mA	240/415	4	A9V51263
			300mA	127/240	4 (1)	A9V06663
			300mA	240/415	4	A9V54263
		3	30mA	415	7	A9V51363
			300mA	415	7	A9V54363
		4	30mA	415	6 (1)	A9V02763
			300mA	415	6 (1)	A9V06763
Vigi C120 type A	125A	2	30mA	240/415	7	A9N18572
			300mA	240/415	7	A9N18573
		3	30mA	240/415	10	A9N18575
			300mA	240/415	10	A9N18576
		4	30mA	240/415	10	A9N18578
			300mA	240/415	10	A9N18579

Note:
(1) With flexible neutral wire.

Acti 9 System – Residual Current Devices
iID-RCCB (Safety Switches) – 40 to 100A, 30mA Standard AS/NZS61008.1
iDPN N Vigi Standard AS/NZS61009.1



A9R51263

RCCB (Residual current operated circuit breaker without overcurrent protection)

Model	Current Rating	No of poles	Sensitivity	Voltage	Width mod. of 9mm	Reference
iID type A	40A	2	30mA	240	4	A9R51240
		4	30mA	240/415	8	A9R51440
	63A	2	30mA	240	4	A9R51263
			300mA s	230	4	A9R25263
		4	30mA	240/415	8	A9R51463
			300mA s	240/415	8	A9R25463
	80A	4	30mA	240/415	8	A9R21480
			300mA	240/415	8	A9R24480
			300mA s	240/415	8	A9R25480
	100A	2	30mA	240	4	A9R21291
			300mA s	240	4	A9R25291
		4	30mA	240/415	8	A9R21491
			300mA s	240/415	8	A9R25491
iID type B	63A	4	30mA	230/400	8	16756
			300mA s	230/400	8	16758

Note: 's' indicates a selective type with a time delay for discrimination with downstream devices



A9R51463

RCCB Si (Super Immunised)

Model	Current Rating	No of poles	Sensitivity	Voltage	Width mod. of 9mm	Reference
iID type A - Si	63A	2	30mA	240	4	A9R91263
			300mA s	240	4	A9R35263
		4	30mA	240/415	8	A9R91463
			300mA s	240/415	8	A9R35463

Note: 's' indicates a selective type with a time delay for discrimination with downstream devices



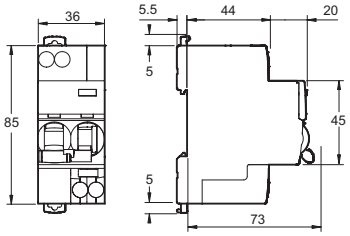
A9D32620

RCBO 6kA (Residual current operated Circuit Breaker with Overcurrent protection) (Neutral Switched)

Model	Current Rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iDPN N Vigi type A	6A	1P/N	30mA	4	A9D32606
	10A	1P/N	30mA	4	A9D32610
	16A	1P/N	30mA	4	A9D32616
	20A	1P/N	30mA	4	A9D32620
	25A	1P/N	30mA	4	A9D32625
	32A	1P/N	30mA	4	A9D32632

RCBO 6kA Si (Super Immunised) (Residual current operated Circuit Breaker with Overcurrent protection) (Neutral Switched)

Model	Current Rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iDPN N Vigi type Si	10A	1P/N	30mA	4	A9D33610
	16A	1P/N	30mA	4	A9D33616
	20A	1P/N	30mA	4	A9D33620
	25A	1P/N	30mA	4	A9D33625
	32A	1P/N	30mA	4	A9D33632
	40A	1P/N	30mA	4	A9D33640



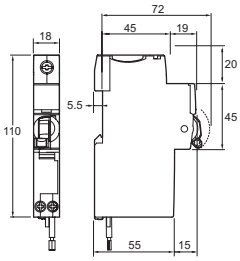
Acti 9 System – Residual Current Devices
iC60 RCBO – 6 to 32A C Curve
Standard AS/NZS61009.1

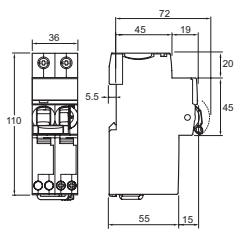


A9D11820



A9D11220





RCBO 6kA 240V

Model	Current Rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iC60N RCBO type A 30mA	6A	1 + N	30mA	2	A9D61806
	10A	1 + N	30mA	2	A9D61810
	16A	1 + N	30mA	2	A9D61816
	20A	1 + N	30mA	2	A9D61820
	25A	1 + N	30mA	2	A9D61825
	32A	1 + N	30mA	2	A9D61832
	40A	1 + N	30mA	2	A9D61840
	45A	1 + N	30mA	2	A9D61845

RCBO 10kA 240V

Model	Current Rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iC60H RCBO type A 30mA	6A	1 + N	30mA	2	A9D11806
	10A	1 + N	30mA	2	A9D11810
	16A	1 + N	30mA	2	A9D11816
	20A	1 + N	30mA	2	A9D11820
	25A	1 + N	30mA	2	A9D11825
	32A	1 + N	30mA	2	A9D11832
	40A	1 + N	30mA	2	A9D11840
	45A	1 + N	30mA	2	A9D11845
iC60H RCBO type A 100mA	6A	1 + N	100mA	2	A9D12806
	10A	1 + N	100mA	2	A9D12810
	16A	1 + N	100mA	2	A9D12816
	20A	1 + N	100mA	2	A9D12820
	25A	1 + N	100mA	2	A9D12825
	32A	1 + N	100mA	2	A9D12832
	40A	1 + N	100mA	2	A9D12840
	45A	1 + N	100mA	2	A9D12845

RCBO 10kA 110V

Model	Current Rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iC60H RCBO type A	10A	1 + N	30mA	2	A9D19810
	16A	1 + N	30mA	2	A9D19816
	20A	1 + N	30mA	2	A9D19820
	25A	1 + N	30mA	2	A9D19825
	32A	1 + N	30mA	2	A9D19832

RCBO 10kA 240V 2P (Neutral Switched) Type A suits Isobar and MSC Chassis

Model	Current Rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iC60H2 RCBO type A	10A	1P/N	30mA	4	A9D11210
	16A	1P/N	30mA	4	A9D11216
	20A	1P/N	30mA	4	A9D11220
	25A	1P/N	30mA	4	A9D11225
	32A	1P/N	30mA	4	A9D11232

RCBO 10kA 110V 2P (Neutral Switched) Type A suits Isobar and MSC Chassis

Model	Current Rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iC60H2 RCBO type A	10A	1P/N	30mA	4	A9D19210
	16A	1P/N	30mA	4	A9D19216
	20A	1P/N	30mA	4	A9D19220
	25A	1P/N	30mA	4	A9D19225
	32A	1P/N	30mA	4	A9D19232

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Acti 9 System
Auxiliaries & Accessories to Suit MCB's, RCCB's & RCBO's



A9A26897



A9A26946

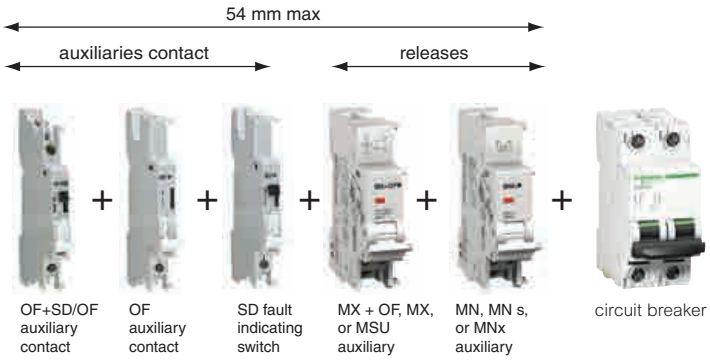
Auxiliaries compatible with iC60, iID, iDPN Vigi (Suits Acti 9 shape)

Description	Rated Voltage VAC	VDC	Width in mod. of 9mm	Reference
iOF+SD24 Comm Ready		24	1	A9A26897
iOF open close auxilary (1 C/O)	240…415	24…130	1	A9A26924
iSD fault indication auxilary (1 C/O)	240…415	24…130	1	A9A26927
iOF/SD+OF auxilary (2 C/O)	240…415	24…130	1	A9A26929
iMX+OF Shunt release	100…415	110…130	2	A9A26946
	48	48	2	A9A26947
	12…24	12…24	2	A9A26948
iMSU Overvoltage release	230		2	A9A26500
iMN Undervoltage release	220…240		2	A9A26960
	48	48	2	A9A26961
iMNs Undervoltage release (0.2sec delay)	220…240		2	A9A26963
iMNx Undervoltage release (emergency stopping with fail-safe principle)	220…240		2	A9A26969
	380…415		2	A9A26971

The mounting order for the various auxiliaries must be complied with. The tripping auxiliaries (iMN, iMX) should be mounted first, as close as possible to the circuit breaker or the residual current circuit breaker. Then, the indicating auxiliaries (iOF, iSD) should be mounted, complying with their position shown in Acti9 catalogue.

Auxiliaries compatible with C120, C60H-DC (Suits Multi 9 shape)

Description	Rated Voltage VAC	VDC	Width in mod. of 9mm	Reference
OF+SD24 Comm Ready		24	1	A9N26899
OF open close auxilary (1 C/O)	240…415	24…130	1	A9N26924
SD fault indication auxilary (1 C/O)	240…415	24…130	1	A9N26927
OF/SD+OF auxilary (2 C/O)	240…415	24…130	1	A9N26929
MX+OF Shunt release	100…415	110…130	2	A9N26946
	48	48	2	A9N26947
	12…24	12…24	2	A9N26948
MSU Overvoltage release	230		2	A9N26500
MN Undervoltage release	220…240		2	A9N26960
	48	48	2	A9N26961
MNs Undervoltage release (0.2sec delay)	220…240		2	A9N26963
iMNx Undervoltage release (emergency stopping with fail-safe principle)	230		2	A9N26969
	400		2	A9N26971



Acti 9 System
Auxiliaries & Accessories to Suit MCB's, RCCB's & RCBO's
Contactors and Auxiliaries/Interface

Accessories compatible with iC60, iID, iDPN Vigi, iSW and Reflex


A9A26970

Description		Qty	Reference
Padlock device	Suits iC60 MCB (eg: A9F54120)	10	A9A26970
	Suits iC60 RCBO (eg: A9D11820)	10	A9A27049
Terminal shield	2x1 pole	1 pair	A9A26975
	2x2 poles	2 pair	A9A26976
	3P = A9A26975+A9A26976, 4P = A9A26976 x2		
Screw shield	12x1 pole Vigi iC60	12	A9A26982
	20x4 poles (splittable)	20	A9A26981
Interpole barrier		10	A9A27001
Spacer	Includes space for cable routing	5	A9A27062
Cable terminal - Aluminium	For aluminium cables 16…50mm	1	27060
Rotary handle (for 2/3/4 pole)	Complete assembly includes black handle	1	A9A27005
	Complete assembly includes red handle	1	A9A27006


A9A26975

Accessories compatible with C120, C60H-DC


26970

Description		Qty	Reference
Padlock device	DPN, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC	2	26970
	C120	4	27145
Terminal shield	C60H-DC (1P)	2	26975
	C60H-DC (2P) ...3P = 26975 + 26976, 4P = 26976 x2	2	26976
	C120 (1P)	2	18526
Screw shield	C60H-DC, SW60-DC, C60PV-DC, C60NA-DC	2	26981
	C120	2	18527
Interpole barrier	C60H-DC, SW60-DC, C60PV-DC, C60NA-DC, C120	10	27001
Rotary handle	Operating assembly (no handle)	1	27046
	Removable extended handle	1	27047

Contactors


A9C20834

Type	Ratings (AC7a)	No. of contacts	Coil Voltage	Width in mods of 9mm	Reference
CT	16A	1NC+1NO	240V	2	A9C22715
		2NO	240V	2	A9C22712
	25A	1NO	240V	2	A9C20731
		2NO	240V	2	A9C20732
		2NC	240V	2	A9C20736
		3NO	240V	4	A9C20833
		4NO	240V	4	A9C20834
		4NC	240V	4	A9C20837
		2NC+2NO	240V	4	A9C20838
		4NO	24V	4	A9C20134
	40A	2NO	240V	4	A9C20842
		3NO	240V	6	A9C20843
		4NO	240V	6	A9C20844
		4NC	240V	6	A9C20847
	63A	2NO	240V	4	A9C20862
		3NO	240V	6	A9C20863
		4NO	240V	6	A9C20864
		4NC	240V	6	A9C20867
		2NC+2NO	240V	6	A9C20868
	100A	2NO	240V	6	A9C20882
		4NO	240V	12	A9C20884

Note: Where group mounting is employed use spacer A9A27062 between every contactor.


A9C15914

Contactor auxiliaries/interface

Type	Description of poles	Voltage	Width in mods of 9mm	Reference
ACT O+F	Auxiliary Contact 2A 1NO + 1NC	240V AC	1	A9C15914
ACTc	Impulse or latched order auxiliaries	240V AC	2	A9C18308
		24/48V AC	2	A9C18309

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NG125H Miniature Circuit Breakers – 10 to 80A
36kA at 240/415V, C Curve, Standards AS60947.2

NG125H-Type C



18712



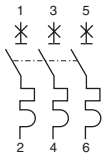
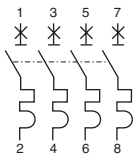
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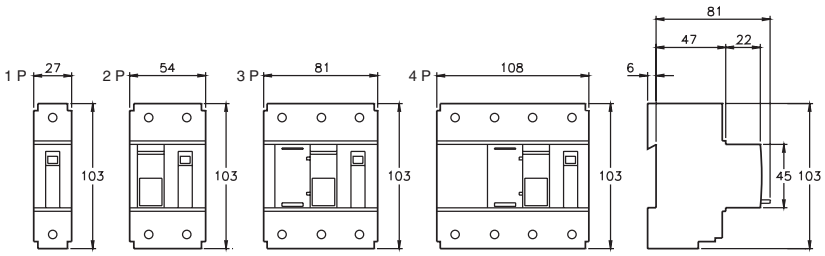
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18739

	Rating (In)	Width in mod. of 9mm	Reference
1P	10A	3	18705
	16A	3	18706
	20A	3	18707
	25A	3	18708
	32A	3	18709
	40A	3	18710
	50A	3	18711
	63A	3	18712
	80A	3	18713
2P	10A	6	18714
	16A	6	18715
	20A	6	18716
	25A	6	18717
	32A	6	18718
	40A	6	18719
	50A	6	18720
	63A	6	18721
	80A	6	18722
3P	10A	9	18723
	16A	9	18724
	20A	9	18725
	25A	9	18726
	32A	9	18727
	40A	9	18728
	50A	9	18729
	63A	9	18730
	80A	9	18731
4P	10A	12	18732
	16A	12	18733
	20A	12	18734
	25A	12	18735
	32A	12	18736
	40A	12	18737
	50A	12	18738
	63A	12	18739
	80A	12	18740

* For industrial use only



Connection: Tunnel terminals for stranded cables as follows:
- up to 63A : 1.5 - 50mm²
- 80A : 16 - 70mm²

NG125LMA Miniature Circuit Breakers – 1.6 to 80A, 50kA at 415V, MA Curve* Auxiliaries for NG125, Standards AS60947.2

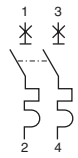
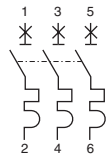


18874



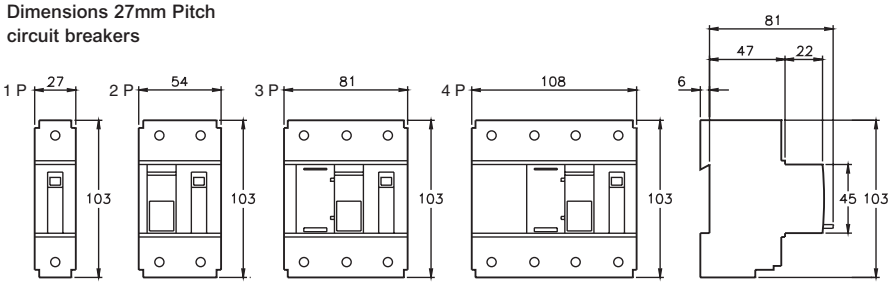
18885

Type MA

	Rating (In)	Width in mod. of 9mm	Reference
2P 	4A	6	18868
	6.3A	6	18869
	10A	6	18870
	12.5A	6	18871
	16A	6	18872
	25A	6	18873
	40A	6	18874
	63A	6	18875
	80A	6	18876
3P 	4A	9	18879
	6.3A	9	18880
	10A	9	18881
	12.5A	9	18882
	16A	9	18883
	25A	9	18884
	40A	9	18885
	63A	9	18886
	80A	9	18887

* For industrial use only

Dimensions 27mm Pitch circuit breakers





19071



19072



19064



19067



19068

Auxiliaries for NG125

Description	Control voltage (VAC)	(VDC)	Width in mod. of 9mm	Reference
OF + OF auxiliary switch	240	-	1	19071
OF + SD ausiliary switch	240	-	1	19072
MX + OF shunt release	240..415	110..130	2	19064
	48..130	48	2	19065
	24	24	2	19066
	12	12	2	19063
MN undervoltage release delayed type	240	-	2	19067
Rotary handle				19088



2 x OF+OF or 2 x OF + SD



MN MX MNS



Circuit breaker NG 125

2.1

Acti 9 System
STI Isolatable Fuse-Carriers



A9N15636



A9N15656

STI isolatable fuse-carriers

Poles	Voltage (V)	Fuse - Link Dimension Ø x L (mm)	Width in mod. of 9mm	Reference
1P 1 2	500	10.3 x 38	2	A9N15636
1P + N N 1 2	500	10.3 x 38	2	A9N15646
2P 1 3 2 4	500	10.3 x 38	4	A9N15651
3P 1 3 5 2 4 6	500	10.3 x 38	6	A9N15656
3P + N N 1 3 5 2 4 6	500	10.3 x 38	6	A9N15658

STI function
The isolatable fuse-carriers provide overload and short-circuit protection.
STI technical data
- positive contact indication
- to be equipped with aM or gG (gL - gI) type fuse-links, with or without fuse blowing indicator
- fuse-carrier is captive with additional housing for a spare fuse
- connection by tunnel terminals for rigid cables up to 10mm² and flexible cables up to 6mm²
- complies with standard AS/NZS 3947.3

STI 1P + N and 3P + N
- disconnection of the phase and neutral in the normal dimensions of the phase (2 mod. of 9mm).
- phase opening causes compulsory opening of the neutral
- the phase opens before the neutral on isolation and closes after the neutral on circuit closing

Acti 9 System
iPRD & iPRF Type 1 & 2 Surge Arresters – 8 to 120kA

Type 2 - iPRD Surge Arresters (Replaceable Cartridge)


A9L40501


A9L40601

Poles	Imax (kA)	Remote Indication	MCB (A) C Curve	Uc (V)	Up (kV)	Width in mod. of 9mm	Reference
1P	65	Yes	50	340	1.5	2	A9L65101
	40	Yes	40	340	1.5	2	A9L40101
	40	No	40	340	1.5	2	A9L40100
	20	No	25	340	1.2	2	A9L20100
	8	No	20	340	1.1	2	A9L08100
1P + N	65	Yes	50	340	1.5	4	A9L65501
	40	Yes	40	340	1.5	4	A9L40501
	40	No	40	340	1.5	4	A9L40500
	20	Yes	25	340	1.2	4	A9L20501
	20	No	25	340	1.2	4	A9L20500
	8	Yes	20	340	1.1	4	A9L08501
	8	No	20	340	1.1	4	A9L08500
3P	65	Yes	50	340	1.5	6	A9L65301
	40	Yes	40	340	1.5	6	A9L40301
	40	No	40	340	1.5	6	A9L40300
	20	No	25	340	1.2	6	A9L20300
	8	No	20	340	1.1	6	A9L08300
3P + N	65	Yes	50	340	1.5	8	A9L65601
	40	Yes	40	340	1.5	8	A9L40601
	40	No	40	340	1.5	8	A9L40600
	20	Yes	25	340	1.2	8	A9L20601
	20	No	25	340	1.2	8	A9L20600
	8	Yes	20	340	1.1	8	A9L08601
	8	No	20	340	1.1	8	A9L08600

Cartridges for iPRD


A9L40102

Type	Imax (8/20µs) (kA)	Uc (V)	Up (kV)	Width in mod. of 9mm	Reference
C65-340	65	340	1.5	2	
C40-340	40	340	1.5	2	A9L40102
C20-340	20	340	1.2	2	A9L20102
C8-340	8	340	1.1	2	A9L08102
C neutral	65	340	-	2	A9L00002

Type 1 - iPRF1 Surge Arresters


A9L16634

Poles	Imax (kA)	Iimp (kA)	Uc (V)	Up (kV)	Width in mod. of 9mm	Reference
1P	-	50	440	1.5	4	A9L16630
1P+N	50	12.5	350	1.5	4	A9L16632
3P+N	50	12.5	350	1.5	8	A9L16634
1P	40	25	350	1.5	4	A9L16329
2P	40	25	350	1.5	8	A9L16330
4P	40	25	350	1.5	16	A9L16332

Note:
1) Use replacement cartridges of same protection voltage Up
2) Type or Class 1: Used at incoming for buildings that have a lightning rod. Contact Schneider Electric.
3) Type or Class 2: MOV technology typically 65kA, 40kA, or 20kA. These are the most common.
4) Type or Class 3: MOV technology typically 8kA. Used for sensitive loads further than 30 cable meters from panel.
5) Imax: Maximum Discharge Current.
6) Uc (V): Maximum Continuous Operating Voltage.
7) Up (kV): Voltage Protection Level.

2.1

Acti 9 System
Impulse & Changeover Relays



A9C30811



A9C30812



A9C32816

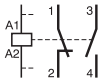
Impulse Relays

The impulse relays are used to control, by means of pushbuttons, lighting circuits consisting of:
- incandescent lamps, low-voltage halogen lamps, etc. (resistive loads)
- fluorescent lamps, discharge lamps, etc. (inductive loads)

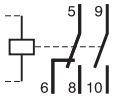
iTL Impulse Relay - 16 A

	Type	Width in mod. of 9mm	Rat. (A)	No. of Contacts	Coil Voltage (V AC)	Coil Voltage (V DC)	Reference
 TL 1P	iTL	2	16	1NO	240	110	A9C30811
					130	48	A9C30311
					48	24	A9C30211
					24	12	A9C30111
					12	6	A9C30011
 TL 2P	iTL	2	16	2NO	240	110	A9C30812
					130	48	A9C30312
					48	24	A9C30212
					24	12	A9C30112
					12	6	A9C30012

iTLI Impulse Changeover Relay - 16 A

	Type	Width in mod. of 9mm	Rat.(A)	No. of Contacts	Coil Voltage (V AC)	Coil Voltage (V DC)	Reference
 iTLI 2P	iTLI	2	16	1NO + 1NC	240	110	A9C30815
					48	24	A9C30215
					24	12	A9C30115

iETL Extensions for iTL and iTLI - 16 A

	Type	Width. in mod. of 9mm	Rat. (A)	No. of Contacts	Coil Voltage (V AC)	Coil Voltage (V DC)	Reference
 iETL 2P	iETL	2	16	1NO/NC + 1NO	240	110	A9C32816
					130	48	A9C32316
					48	24	A9C32216
					24	12	A9C32116
					12	6	A9C32016

iTL - Impulse Relay - 32A

	Type	Width in mod. of 9mm	Rat. (A)	No. of Contacts	Coil Voltage (V AC)	Coil Voltage (V DC)	Reference
 TL 1P	iTL	2	32	1NO	240	110	A9C30831

iETL Extension for TL32A

	Type	Width in mod. of 9mm	Rat. (A)	No. of Contacts	Coil Voltage (V AC)	Coil Voltage (V DC)	Reference
	1P	2	32	1NO	240	110	A9C32836

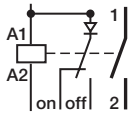
Acti 9 System
Impulse & Changeover Relays
Impulse & Changeover Relay Auxiliaries

iTLc impulse relay with centralised control



A9C33811

Type	Width in mod. of 9mm	Rat. (A)	Coil Voltage (V AC)	Reference
iTLc 1P, 1NO	2	16	240	A9C33811



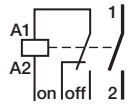
Allows centralised control of a group of iTLc impulse relays, whilst at the same time retaining local impulse-type control.

iTLm impulse relay with latched control



A9C34811

Type	Width in mod. of 9mm	Rat. (A)	Coil Voltage (V AC)	Reference
iTLm 1P; 1NO	2	16	240	A9C34811



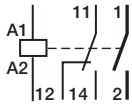
Operated by latched orders from a changeover contact (switch, time switch, thermostat).
Manual control is inoperative.

iTLm impulse relay with remote indication



A9C32811

Type	Width in mod. of 9mm	Rat. (A)	Coil Voltage (V AC)	Coil Voltage (V DC)	Reference
iTLs 1P; 1NO	2	16	240	110	A9C32811



Allows remote indication of its operating state (open/closed).

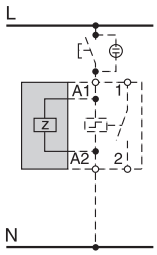
2.1

Acti 9 System
Impulse & Changeover Relay Auxiliaries (cont'd)

iATLz Lighted Pushbutton Control Auxiliary



A9C5413



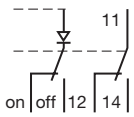
Type	Width in mod. of 9mm	Voltage (V AC)	Reference
iATLz	2	130-240	A9C15413

Used to control impulse relays by illuminated pushbuttons, without operating risks.
Mounted to the left of iTL by yellow clips.
Provide an iATLz for each multiple of 3mA over this value.
e.g. for 7mA, fit 2 iATLz

iATLc+s Centralised Control Auxiliary



A9C15409



iATLc+s

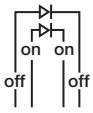
Type	Width in mod. of 9mm	Control (V AC)	Reference
iATLc+s	2	24...240	A9C15409

Used for centralised control (using a pilot line) of a group of impulse relays controlling separate networks, while maintaining local individual control of each impulse relay. Used for remote indication of the mechanical status of each relay.
Mounted to the right of iTL by yellow clips.
Breaking capacity:
*Min.: 10mA at 24V AC/DC
*Max.: acc. to IEC 60947-5-1

iATLc+c Multi-Level Centralised Control Auxiliary



A9C15410



iALTc+c

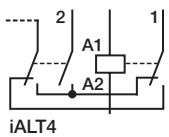
Type	Width in mod of 9mm.	Voltage Control (V AC)	Reference
iATLc+s	2	24...240	A9C15410

Used to control the centralised controls of a number of impulse relay groups, while at the same time maintaining local individual control and centralised control by level.
Mounted without mechanical link impulse relays and auxiliaries.

ATL4 Step Control Auxiliary



A9C15412



iALT4

Type	Width in mod. of 9mm	Coil Voltage (V AC)	Reference
ALT4	4	230-240	A9C15412

Cycle is as follows:
C: closed
O: open

Impulse	TL1	TL2
1st	C	O
2nd	O	C
3rd	C	C
4th	O	O
5th	C	O



A9C18030



A9E18036



A9E18320



A9E18070

Push Buttons 20A, 250V AC

Type	Width in mod. of 9mm	Colour	Circuit	Reference
Single BP	2	Grey	1N/C	A9E18030
		Red	1N/C	A9E18031
		Grey	1N/O	A9E18032
		Grey	1N/O+1N	A9E18033

Type	Width in mod. of 9mm	Rated voltage	Colour light	Colour BP	Circuit	Reference
Single BP + indicator light	2	110...230V AC	Green	Grey	1N/O	A9E18036
			Red	Grey	1N/C	A9E18037
		12...48V AC/DC	Green	Grey	1N/O	A9E18038
			Red	Grey	1N/C	A9E18039
Double BP	2			Green, Red	1N/O+1N/C	A9E18034
				Grey	1N/O+1N/O	A9E18035

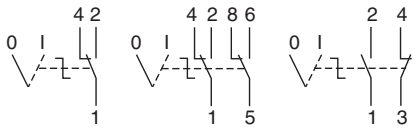
Pilot Lights LED Technology, 100,000 hours service life

Type	Width in mod. of 9mm	Colour	Reference 110...230V AC	Reference 12...48V AC
Single BP	2	Red	A9E18320	A9E18330
		Green	A9E18321	A9E18331
		White	A9E18322	A9E18332
		Blue	A9E18323	A9E18333
		Yellow	A9E18324	A9E18334
Double Indicator Light	2	Green/Red	A9E18325	
Blinker 2Hz	2	Red	A9E18326	
Three Phase Indicator Light 400V AC (3P), 230V AC	2	Red/Red/Red	A9E18327	

Selector Switches 20A, 250V AC

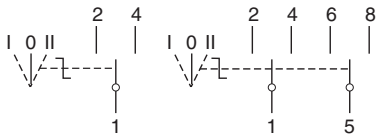
Type	Width in mod. of 9mm	Contact	Reference
2 position CM	2	1 changeover switch	A9E18070
	4	2 changeover switches	A9E18071
	2	1N/O+1N/C	A9E18072
3 position CM	2	1 changeover switch	A9E18073
	4	2 changeover switches	A9E18074

2 position selector switches



1 changeover switch | 2 changeover switches | **1NO + 1NC**

3 position selector switches



1 changeover switch | 2 changeover switches

2.1

Acti 9 System
Time Delay Relays
Time Switches – Analogue & Digital

Time Delay Relays - 0.1s to 100h

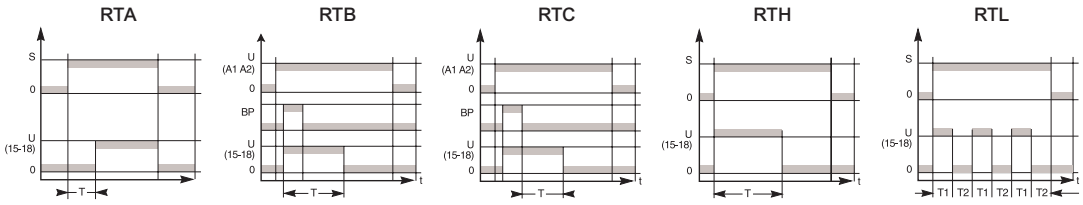
Type	No. of contacts	Rating	Width in mod of 9mm	Coil voltage	Reference
RTA	1 C/O	8A	2	24V DC or 24-240V AC	A9E16065
RTB	1 C/O	8A	2	24V DC or 24-240V AC	A9E16066
RTC	1 C/O	8A	2	24V DC or 24-240V AC	A9E16067
RTH	1 C/O	8A	2	24V DC or 24-240V AC	A9E16068
RTL	1 C/O	8A	2	24V DC or 24-240V AC	A9E16069
RTMF	1 C/O	8A	2	12-240V AC/DC	A9E16070



A9E16065

Note:

- Function and use:
- RTA delay on make: allows a delay in the energisation of a load (coil of a contactor or relay). The time delay cycle begins at the energisation of the RTA and the load is switched on at the end of the time period.
- RTB single shot: energizes a load at the closing of an auxiliary push-button. The time delay starts at the closing of the auxilary push-button.
- RTC delay on break: energizes a load at the closing of an auxiliary push-button. The time delay starts at the opening of the auxiliary push-button. Mini impulse duration 6 200ms. Restart time delay any time with push button.
- RTH interval timer: timing of load from the energisation (coil of a contactor or relay). The time delay cycle begins, on the energisation of the RTH, by switching on the load. At the end of the time delay, the load is de-energized.
- RTL repeat cycle timer: repetitive cycle which alternatively energizes and de-energizes a load. From the energisation of RTL, the load is switched on.
- RTMF multi function timer: one relay providing functions A, B, C and H via a selector switch located in front.



U : supply voltage ; UZ : load voltage ; S : signal from contact/pushbutton



15335

Time Switches: Analogue

Type	Time	No. of channels	Width in mod. of 9mm	Rating	Reserve	Reference
IH	24Hr	1 N/O	2	16A	–	15335
	24Hr	1 N/O	2	16A	100Hr	15336
	7 day	1 N/O	2	16A	100Hr	15331
	24Hr	2 C/O	8	10A	100Hr	15337



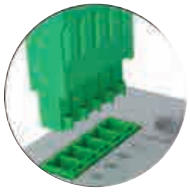
CCT15854

Time Switches: Digital

Type	Time	No. of channels	Width in mod. of 9mm	Rating	Reserve	Reference
IHP	24Hr/7 day	1 C/O	2	16A	3Yr	CCT15854
	24Hr/7 day	1 C/O	5	16A	6Yr	CCT15720
	24Hr/7 day	1 C/O+impulse	5	16A	6Yr	CCT15721
	24Hr/7 day	2 C/O+impulse	5	16A	6Yr	CCT15723
IKEOS	365 days	4 C/O	10	10A	5Yr	CCT15940

Acti9 System
Reflex iC60H IEC60947.1 15kA
Integrated Control Circuit Breaker



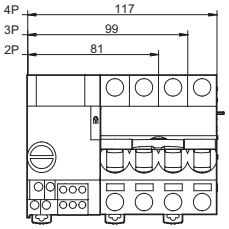


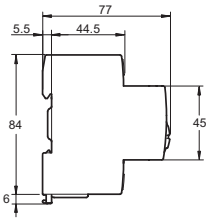


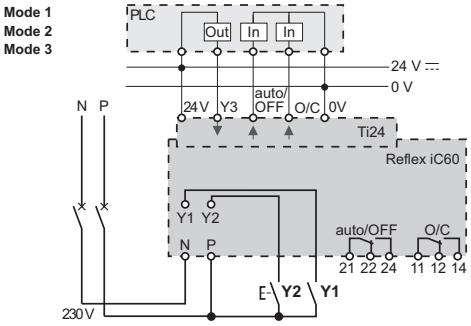
Reflex iC60H with Ti24 interface

Type	Rating (In)	Width on mod. of 9mm	Reference
2P	10	9	A9C65210
	16	9	A9C65216
	25	9	A9C65225
	40	9	A9C65240
3P	10	11	A9C65310
	16	11	A9C65316
	25	11	A9C65325
	40	11	A9C65340
4P	10	13	A9C65410
	16	13	A9C65416
	25	13	A9C65425
	40	13	A9C65440
iDMU	Side auxilary used to allow safety voltages of 24 or 48V AC/DC to be used on 230V control inputs on the Reflex	1	A9C18195

B & D Curve available on request.
For multiple 1P control where commands are the same use 2/3/4P Reflex.
For single 1P control use 1P iC60 MCB with TL impulse relay + iATL24 interface, or CT Contactor + iACT24 interface.







2.1

Acti 9 System
RCA Remote Control Auxiliary for iC60



RCA with Ti24 interface

For circuit breaker	Reference
1P, 2P	A9C70122
3P, 4P	A9C70124

The RCA remote control system allows:

- Remote electrical control (opening and closing) of circuit breakers with or without Vigi add-on RCD, with or without auxiliary.
- Circuit-breaker resetting after tripping, in accordance with safety principles and the regulations in force.
- Local control by operating handle.
- Circuit placing in safety configuration by padlocking.
- 2 choices of operation after tripping:
  - A: Enabling of remote circuit-breaker resetting;
  - B: Inhibition of remote resetting.

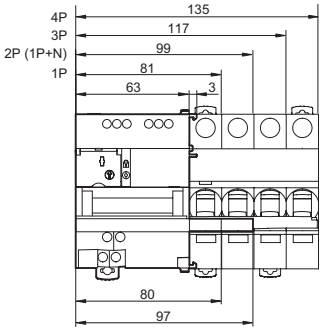
The Ti24 interface allows:

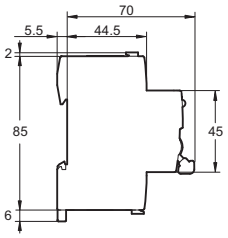
- Direct interfacing of remote control with a programmable logic controller (PLC), a supervision system and any other communication device, having inputs/outputs in24 V DC (control, OF and SD indications).
- Fast, reliable connection of the remote control to the Acti 9 Smartlink thanks to the prefabricated cables.
- Remote indication by “OF” potential-free contact.
- Provision of 2 operating modes, “1 and 3”.

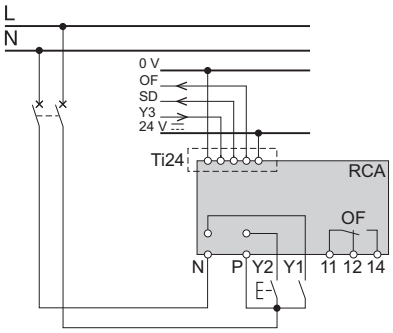
The iMDU auxiliary allows RCA control in 24/48 V AC/DC.











Acti 9 System
Smartlink











The Acti 9 communication system

Description		Set of	Reference
Acti 9 Smartlink Ethernet		1	A9XMEA08
Acti 9 Smartlink Modbus Slave		1	A9XMSB11
Accessories			
Link USB / Modbus for Acti 9 Smartlink test		1	A9XCATM1
Prefabricated cables			
With 2 connectors	Short: 100 mm	6	A9XCAS06
	Medium-sized: 160 mm	6	A9XCAM06
	Long: 870 mm	6	A9XCAL06
With 1 connector	Long: 870 mm	6	A9XCAU06
Connectors	5-pin connectors (Ti24)	12	A9XC2412
Mounting kit	DIN rail (4 feet, 4 straps, 4 adapters)	1	A9XMFA04
	Multiclip 200 A (4 adapters)	1	A9XM2B04
Spare parts	Lock for Multiclip 80 A (2 clips)	1	A9XMLA02

Connectable devices with Ti24 interface

Type	Description	Reference
iACT24	Low-level control and indication auxiliary for iCT contactors	A9C15924
iATL24	Low-level control and indication auxiliary for iTL impulse relays	A9C15424
iOF+SD24	Low-level indication auxiliary for iC60, iID, ARA, RCA, iSW-NA	A9A26897
OF+SD24	Low-level indication auxiliary for C60, C120, DPN, RCCB/ID, C60H-DC	A9N26899
RCA	Remote control with Ti24 interface. Refer to page 2.1.25 for details.	
Reflex iC60	Reflex iC60 with Ti24 interface. Refer to page 2.1.24 for details.	

Smart solutions for final distribution

Today, more than ever businesses need to think about their energy consumption. Pressure is growing to improve; control, protection, safety, reliability and energy efficiency of traditional electrical distribution installations. Much of this demand will affect the low voltage distribution point and businesses need to prepare their premises.

As the global specialist in energy management Schneider Electric can advise you of best practices when it comes to final distribution. Whether you need to update your current installation, or design a new installation, our experienced team can help you to address this challenge.

Protection

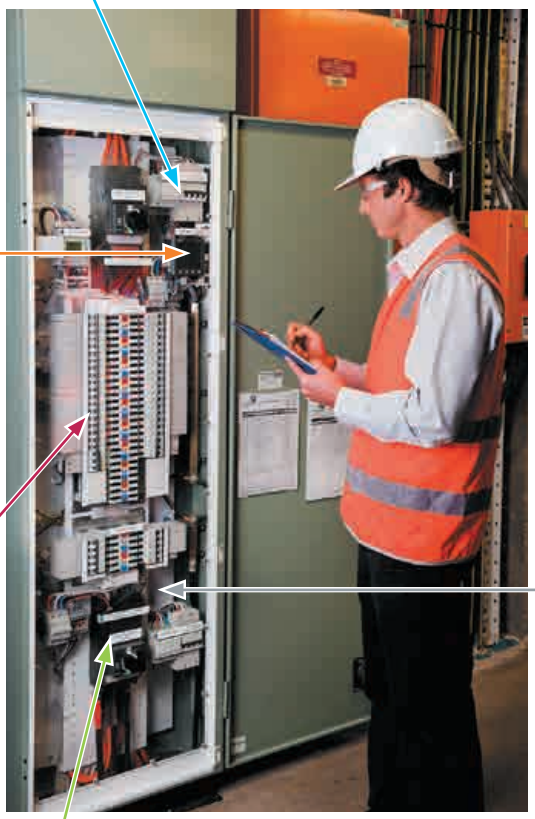
Protect people, equipment and your business with the complete protection package of MCBs, RCDs, and SPDs.

Energy efficiency

The first step towards improving your energy efficiency is measurement. Metering your power and lighting separately allows you to identifying saving opportunities.

Safety

Isobar chassis provides safety by encapsulating the busbar in a rigid plastic housing and by an integrated busbar disconnection system that allows unused outgoing poles to be isolated.



Reliability

Schneider Electric has a range of solutions to cover the varying levels of service uptime requirements for your installation.

Control

A large range of MCCBs, isolators and contactors give you control of energy including load shedding. Some products are smart enough to communicate their status, energy used, and can even be controlled remotely.

MB Standard Distribution Board with Isobar chassis - IP42



MB224CM1



SEA9BN6TNA

Main Switch	MCB Pole capacity 18mm	Enclosure Height (mm)	Reference N42 Grey	Reference X15 Orange
160A	24	750	MB224CM1	MB224CM1X15
	36	1000	MB236DM1	MB236DM1X15
	48	1000	MB248DM1	MB248DM1X15
	54	1200	MB254EM1	MB254EM1X15
	72	1200	MB272EM1	MB272EM1X15
250A	24	750	MB224CM2	MB224CM2X15
	36	1000	MB236DM2	MB236DM2X15
	48	1000	MB248DM2	MB248DM2X15
	54	1200	MB254EM2	MB254EM2X15
	72	1200	MB272EM2	MB272EM2X15

Notes:
All MB Isobar distribution boards are supplied with:
(1) 165A earth and neutral bars with single +/- screw Ø6mm tunnels for outgoing cables up to 16mm² and 2 x M8 hex head screws for incoming cables.
(2) Pole fillers for auxiliary equipment openings and 30% of board MCB pole capacity. Pole filler reference M9PF5.
(3) Circuit schedule card with transparent plastic protector.
(4) Removable gland plates - top and bottom.
(5) 2 keys per lock.
(6) All enclosures are 580mm wide and 235mm deep.
(7) Terminal shields provided with main switch
(8) Isobar type TNA chassis

MD Weatherproof Distribution Board with Isobar chassis - IP56



MD224CM1

Main Switch	MCB Pole capacity 18mm	Enclosure Height (mm)	Reference N42 Grey	Reference X15 Orange
160A	24	750	MD224CM1	MD224CM1X15
	36	1000	MD236DM1	MD236DM1X15
	48	1000	MD248DM1	MD248DM1X15
	54	1200	MD254EM1	MD254EM1X15
	72	1200	MD272EM1	MD272EM1X15
250A	24	750	MD224CM2	MD224CM2X15
	36	1000	MD236DM2	MD236DM2X15
	48	1000	MD248DM2	MD248DM2X15
	54	1200	MD254EM2	MD254EM2X15
	72	1200	MD272EM2	MD272EM2X15

Note:
All MD Isobar distribution boards are supplied with:
(1) 165A earth and neutral bars with single +/- screw ø6mm tunnels for outgoing cables up to 16mm² and 2 x M8 hex head screws for incoming cables.
(2) Pole fillers for auxiliary equipment openings and 30% of board MCB pole capacity. Pole filler reference M9PF5
(3) Circuit schedule card with transparent plastic protector.
(4) Removable gland plates - top and bottom.
(5) 2 keys per lock.
(6) All enclosures are 580mm wide and 225mm deep.
(7) Terminal shields provided with main switch
(8) Isobar type TNA chassis

Acti 9 System
Metal Distribution Boards



MB260E32

MB Standard Distribution Board with Encapsulated chassis - IP42

Main switch	MCB Pole capacity 18mm	MCB Pole capacity 27mm	Enclosure Height (mm)	Reference N42 Grey	Reference X15 Orange
No	18	–	600	MB218B30	MB218B30X15
	24	–	600	MB224B30	MB224B30X15
	36	–	750	MB236C30	MB236C30X15
	48	–	1000	MB248D30	MB248D30X15
	60	–	1200	MB260E30	MB260E30X15
	72	–	1200	MB272E30	MB272E30X15
	84	–	1200	MB284E30	MB284E30X15
160A	24	–	750	MB224C31	MB224C31X15
	36	–	1000	MB236D31	MB236D31X15
	48	–	1000	MB248D31	MB248D31X15
	60	–	1200	MB260E31	MB260E31X15
	72	–	1200	MB272E31	MB272E31X15
250A	24	–	750	MB224C32	MB224C32X15
	36	–	1000	MB236D32	MB236D32X15
	48	–	1000	MB248D32	MB248D32X15
	60	–	1200	MB260E32	MB260E32X15
	72	–	1200	MB272E32	MB272E32X15
	84	–	1500	MB284F32	MB284F32X15
	96	–	1500	MB296F32	MB296F32X15
No	–	24	750	MB224C10	MB224C10X15
	–	36	1000	MB236D10	MB236D10X15
	–	48	1200	MB248E10	MB248E10X15
	–	60	1200	MB260E10	MB260E10X15
	–	72	1500	MB272F10	MB272F10X15
160A	–	24	1000	MB224D11	MB224D11X15
	–	36	1000	MB236D11	MB236D11X15
	–	48	1200	MB248E11	MB248E11X15
	–	60	1500	MB260F11	MB260F11X15
250A	–	24	1000	MB224D12	MB224D12X15
	–	36	1000	MB236D12	MB236D12X15
	–	48	1200	MB248E12	MB248E12X15
	–	60	1500	MB260F12	MB260F12X15
	–	72	1500	MB272F12	MB272F12X15
No	18	6	600	MB224BH0	MB224BH0X15
	30	6	750	MB236CH0	MB236CH0X15
	36	12	1000	MB248DH0	MB248DH0X15
	48	12	1200	MB260EH0	MB260EH0X15
	60	12	1200	MB272EH0	MB272EH0X15
160A	18	6	750	MB224CH1	MB224CH1X15
	30	6	1000	MB236DH1	MB236DH1X15
	36	12	1000	MB248DH1	MB248DH1X15
	48	12	1200	MB260EH1	MB260EH1X15
250A	18	6	750	MB224CH2	MB224CH2X15
	30	6	1000	MB236DH2	MB236DH2X15
	36	12	1000	MB248DH2	MB248DH2X15
	48	12	1200	MB260EH2	MB260EH2X15
	60	12	1500	MB272FH2	MB272FH2X15

MB Standard Distribution Board - IP42 (Control Box)

Main Switch	MCB Pole Capacity 18mm	Enclosure Height (mm)	Reference N42 Grey	Reference X15 Orange
No	24	300	MB200ADIN	MB200ADINX15
No	48	600	MB200BDIN	MB200BDINX15

Note:
All MB distribution boards with encapsulated chassis are supplied with:
(1) 165A earth and neutral bars with single +/- screw Ø6mm tunnels for outgoing cables up to 16mm² and 2 x M8 hex head screws for incoming cables.
(2) Pole fillers for auxiliary equipment openings and 30% of board MCB pole capacity. Pole filler reference M9PF5.
(3) Circuit schedule card with transparent plastic protector.
(4) Removable gland plates - top and bottom.
(5) 2 keys per lock.
(6) All enclosures are 580mm wide and 235mm deep.
(7) Encapsulated chassis
(8) MB200ADIN enclosure with din rail and escutcheon (one row 24P cutout) no E&N bars supplied. These can be purchased separately if required.
(9) MB200BDIN enclosure with din rail and escutcheon (two rows of 24P cutout) no E&N bars supplied. These can be purchased separately if required.



MD260E32

MD Weatherproof Distribution Board with Encapsulated chassis - IP56

Main switch	MCB Pole capacity 18mm	Enclosure Height (mm)	Reference N42 Grey	Reference X15 Orange
No	24	750	MD224C30	MD224C30X15
	36	1000	MD236D30	MD236D30X15
	48	1000	MD248D30	MD248D30X15
	60	1200	MD260E30	MD260E30X15
	72	1200	MD272E30	MD272E30X15
160A	24	750	MD224C31	MD224C31X15
	36	1000	MD236D31	MD236D31X15
	48	1000	MD248D31	MD248D31X15
	60	1200	MD260E31	MD260E31X15
	72	1200	MD272E31	MD272E31X15
250A	24	750	MD224C32	MD224C32X15
	36	1000	MD236D32	MD236D32X15
	48	1000	MD248D32	MD248D32X15
	60	1200	MD260E32	MD260E32X15
	72	1200	MD272E32	MD272E32X15
	84	1500	MD284F32	MD284F32X15

Note:
All MD distribution boards with encapsulated chassis are supplied with:
(1) 165A earth and neutral bars with single +/- screw ø6mm tunnels for outgoing cables up to 16mm^2 and 2 x M8 hex head screws for incoming cables.
(2) Pole fillers for auxiliary equipment openings and 30% of board MCB pole capacity. Pole filler reference M9PF5.
(3) Circuit schedule card with transparent plastic protector.
(4) Removable gland plates - top and bottom.
(5) 2 keys per lock.
(6) All enclosures are 580mm wide and 225mm deep.
(7) Encapsulated chassis.



PBELKIT4PB

Options for MB/MD Distribution Boards

		Reference
Emergency lighting kit	2 N/C with selector switch	PBELKIT2
	4 N/C with selector switch	PBELKIT4
	2 N/C with push button on DIN	PBELKIT2PB
	4 N/C with push button on DIN	PBELKIT4PB
Standalone emergency lighting kit	4 N/C with key selector switch	PBELSAKIT



PBELSAKIT



L12S

L series load centre – IP40

Main switch	No of Poles 18mm	H (mm)	W(mm)	D(mm)	Reference
Surface mounting enclosure	9	231	293	66	L9S
	12	231	346	66	L12S
	18	231	454	66	L18S
	24	231	556	66	L24S
All load centres supplied complete with E + N bars & 100A 1P comb busbar.					
Door kit with key locking	9	226	287	25	MGL9DL
	12	226	340	25	MGL12DL
	18	226	448	25	MGL18DL
	24	226	550	25	MGL24DL
Flush mounting kit	9	276	337	10	MGL9F
	12	276	390	10	MGL12F
	18	276	498	10	MGL18F
	24	276	600	10	MGL24F



MGL12DL



MGL12F

Acti 9 System
Metal Distribution Boards











M9PF5

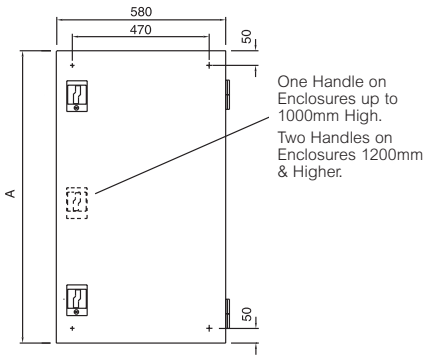
MB & MD Accessories

Description		Enclosure size	Reference
Flush mounting surround for MB and MD		B	FSB2
		C	FSC2
		D	FSD2
		E	FSE2
		F	FSF2
Door sealing kit for MB	N42 Grey	B/C/D/E/F	BDP2
	X15 Orange	B/C/D/E/F	BDP2X15
Wall mounting straps for MB & MD (retains IP rating of MD)		all	MNTKITS2
Rain hood for MD		all	DHOOD2
Floor standing plinth 75mm high for MB or MD	Galvanised & painted	all	BASE2GAL
Locks for NSW Public Works Dept Adapt standard MB and MD distribution board locks to suit PWD E key	Bracket for PWDLOCK for MB - Black	all	PWDKIT (1)
	Lock PWD E key for MB (requires PWDKIT) - Satin chrome	all	PWDLOCK (1)(2)
	L Handle Lock PWD E key for MD - Chrome	all	PWDLOCKD
	Spare PWD E key	all	PWDKEY
Pole Filler	1 strip of 5 x 18mm poles	all	M9PF5

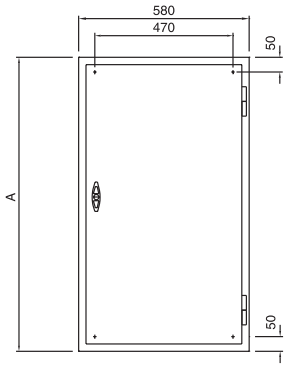
Note:
(1) MB distribution board sizes D, E & F require 2 x PWDKIT and 2 x PWDLOCK.
(2) PWDLOCK supplied with 1 x key.

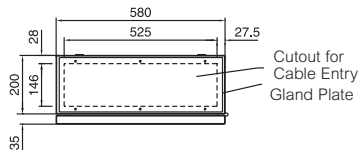
MB & MD distribution board dimensions:

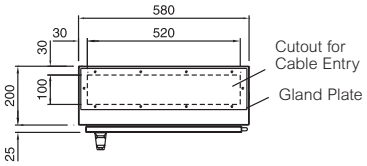
Standard MB



Weatherproof MD







Dimensions (mm)

Box size	Dimension "A"
B	600 mm
C	750 mm
D	1000 mm
E	1200 mm
F	1500 mm



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Schneider Electric™

2.1

Acti9 System
Encapsulated chassis for iC60 & C120 MCB's & RCBO's
3 Pole, 250A, 25kA for 0.1s.



Chassis 250A, 3 Ph, 18 mm for iC60 MCB & RCBOs

3 phase, single feed

18mm	Length (mm)	Top or Bottom Feed	Dual Feed
12 poles	110	SAU25012183	SAU25012183DF
18 poles	164	SAU25018183	SAU25018183DF
24 poles	218	SAU25024183	SAU25024183DF
30 poles	272	SAU25030183	SAU25030183DF
36 poles	326	SAU25036183	SAU25036183DF
42 poles	380	SAU25042183	SAU25042183DF
48 poles	434	SAU25048183	SAU25048183DF
60 poles	542	SAU25060183	SAU25060183DF
72 poles	650	SAU25072183	SAU25072183DF
84 poles	758	SAU25084183	SAU25084183DF
96 poles	866	SAU25096183	SAU25096183DF
108 poles	974	SAU250108183	SAU250108183DF



Chassis 250A, 3 Ph, 27 mm for C120 MCB

3 phase, single feed

18mm	Length (mm)	Top or Bottom Feed	Dual Feed
12 poles	164	SAU25012273	SAU25012273DF
18 poles	245	SAU25018273	SAU25018273DF
24 poles	326	SAU25024273	SAU25024273DF
30 poles	407	SAU25030273	SAU25030273DF
36 poles	488	SAU25036273	SAU25036273DF
42 poles	569	SAU25042273	SAU25042273DF
48 poles	650	SAU25048273	SAU25048273DF
60 poles	812	SAU25060273	SAU25060273DF
72 poles	974	SAU25072273	SAU25072273DF



Chassis 250A, 3 Ph, Hybrid 18 & 27mm for iC60 or C120 MCBs

3 phase, single feed

18mm	27mm	Length (mm)	Top or Bottom Feed	Dual Feed
6 poles	6 poles	137	SAU250H123	SAU250H123DF
12 poles	6 poles	191	SAU250H183	SAU250H183DF
18 poles	6 poles	245	SAU250H243	SAU250H243DF
24 poles	6 poles	299	SAU250H303	SAU250H303DF
30 poles	6 poles	353	SAU250H363	SAU250H363DF
30 poles	12 poles	434	SAU250H423	SAU250H423DF
36 poles	12 poles	488	SAU250H483	SAU250H483DF
48 poles	12 poles	596	SAU250H603	SAU250H603DF
60 poles	12 poles	704	SAU250H723	SAU250H723DF
72 poles	12 poles	812	SAU250H843	SAU250H843DF
84 poles	12 poles	920	SAU250H963	SAU250H963DF

Acti 9 System
Encapsulated chassis for iC60 MCB's



Chassis DC, 18 mm for iC60 MCB

3 phase, single feed

18mm	Length (mm)	Top or Bottom Feed	Dual Feed
12 poles	146	SAU3DC12182	SAU3DC12182DF
16 poles	110	SAU3DC16182	SAU3DC16182DF
20 poles	182	SAU3DC20182	SAU3DC20182DF
24 poles	218	SAU3DC24182	SAU3DC24182DF
32 poles	290	SAU3DC32182	SAU3DC32182DF
36 poles	326	SAU3DC36182	SAU3DC36182DF
40 poles	362	SAU3DC40182	SAU3DC40182DF
48 poles	434	SAU3DC48182	SAU3DC48182DF
60 poles	542	SAU3DC60182	SAU3DC60182DF
72 poles	650	SAU3DC72182	SAU3DC72182DF

Chassis 250 A, 3 Ph + N, 18 mm

3 Ph+N, single feed
(N.R.N.W.N.B)

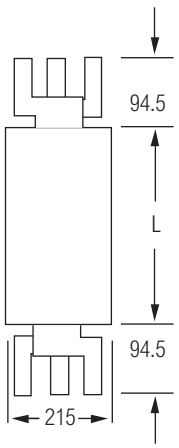
18mm	Length (mm)	Top or Bottom Feed	Dual Feed
8 poles	74	SAU2500841N	SAU2500841NDF
16 poles	146	SAU2501641N	SAU2501641NDF
24 poles	218	SAU2502441N	SAU2502441NDF
32 poles	290	SAU2503241N	SAU2503241NDF
40 poles	362	SAU2504041N	SAU2504041NDF
48 poles	434	SAU2504841N	SAU2504841NDF
56 poles	506	SAU2505641N	SAU2505641NDF
64 poles	578	SAU2506441N	SAU2506441NDF
72 poles	650	SAU2507241N	SAU2507241NDF

Chassis 250 A, 3 Ph + N, 18 mm

3 Ph+N, single feed
(N.R.W.B)

18mm	Length (mm)	Top or Bottom Feed	Dual Feed
8 poles	74	SAU2500843N	SAU2500843NDF
16 poles	146	SAU2501643N	SAU2501643NDF
24 poles	218	SAU2502443N	SAU2502443NDF
32 poles	290	SAU2503243N	SAU2503243NDF
40 poles	362	SAU2504043N	SAU2504043NDF
48 poles	434	SAU2504843N	SAU2504843NDF
56 poles	506	SAU2505643N	SAU2505643NDF
64 poles	578	SAU2506443N	SAU2506443NDF
72 poles	650	SAU2507243N	SAU2507243NDF

Dimensions



Connection Devices & Cabling Accessories

Acti 9 System
MSC Chassis for iC60 & C120 MCB's & RCBO's
3 Pole, 250A, 25kA for 0.1s/400A, 30kA for 0.1 sec.



C325123

MSC 18 – for iC60 MCB

Description	Pole Capacity 18mm	Length (mm) L	Reference 250A	Reference 400A
3 phase	12	110	C325123	C3251234
	18	164	C325183	C3251834
	24	218	C325243	C3252434
	30	272	C325303	C3253034
	36	326	C325363	C3253634
	42	380	C325423	C3254234
	48	434	C325483	C3254834
	60	542	C325603	C3256034
	72	650	C325723	C3257234
	84	758	C325843	C3258434
	96	866	C325963	C3259634
	108	974	C3251083	C32510834



C125123

MSC 27 – C120 MCB

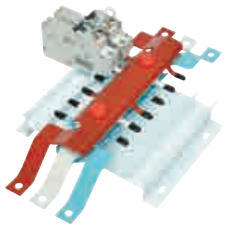
Description	Pole Capacity 27mm	Length (mm) L	Reference 250A	Reference 400A
3 phase	12	164	C125123	C1251234
	18	245	C125183	C1251834
	24	326	C125243	C1252434
	30	407	C125303	C1253034
	36	488	C125363	C1253634
	42	569	C125423	C1254234
	48	650	C125483	C1254834
	60	812	C125603	C1256034
	72	974	C125723	C1257234



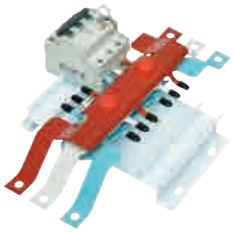
CH25123

MSC 18/27 – for iC60 or C120 MCB

Description	Pole Capacity 27mm	18mm	Total	Length (mm) L	Reference 250A	Reference 400A
3 phase	6	6	12	137	CH25123	CH251234
	6	12	18	191	CH25183	CH251834
	6	18	24	245	CH25243	CH252434
	6	24	30	299	CH25303	CH253034
	6	30	36	353	CH25363	CH253634
	12	30	42	434	CH25423	CH254234
	12	36	48	488	CH25483	CH254834
	12	48	60	596	CH25603	CH256034
	12	60	72	704	CH25723	CH257234
	12	72	84	812	CH25843	CH258434



C325123AUX91



C325123AUX93

MSC AUX9 - for iC60 MCB with 9mm Auxiliary

Description	Pole Capacity	Length (mm) L	Qty of MCB's	Reference 250A
3 phase 1P MCB iC60 + 9mm AUX	12	164	12	C325123AUX91
	18	245	18	C325183AUX91
	24	326	24	C325243AUX91
	30	407	30	C325303AUX91
	36	488	36	C325363AUX91
	42	569	42	C325423AUX91
	48	650	48	C325483AUX91
	60	812	60	C325603AUX91
	72	974	72	C325723AUX91
3 phase 3P MCB iC60 + 9mm AUX	12	128	4	C325123AUX93
	18	191	6	C325183AUX93
	24	254	8	C325243AUX93
	30	317	10	C325303AUX93
	36	380	12	C325363AUX93
	42	443	14	C325423AUX93
	48	506	16	C325483AUX93
	60	632	20	C325603AUX93
	72	758	24	C325723AUX93
	84	884	28	C325843AUX93

Certificate of Conformity No. 6963

Note:
(1) Insulation voltage – 690V.
For custom built chassis (to meet with your specific requirements), please contact Schneider Help Centre on 1300 369 233.

Connection Devices & Cabling Accessories

Acti 9 System
MSC Chassis for iC60 MCB's & iDPNN Vigi RCBO's
2/4 Pole, 250A, 25kA for 0.1sec/400A, 30kA for 0.1sec



C3251641

MSC 18/4B – for iC60

Description	Pole Capacity 18mm	Length (mm) L	Reference 250A	Reference 400A
3 phase & neutral (N.R.N.W.N.B)	16	146	C3251641	C32516414
	24	218	C3252441	C32524414
	32	290	C3253241	C32532414
	40	362	C3254041	C32540414
	48	434	C3254841	C32548414
	56	506	C3255641	C32556414
	64	578	C3256441	C32564414
	72	650	C3257241	C32572414



CD25124N

MSC 36 – for iDPN N Vigi (Ph + N)

Description	Pole Capacity	Qty of iDPN's	Length (mm) L	Reference 250A	Reference 400A
3 phase & neutral (N.R.N.W.N.B)	12	6	110	CD25124N	CD25124N4
	20	10	182	CD25204N	CD25204N4
	24	12	218	CD25244N	CD25244N4
	32	16	290	CD25324N	CD25324N4
	36	18	326	CD25364N	CD25364N4
	48	24	434	CD25484N	CD25484N4
	72	36	650	CD25724N	CD25724N4



C3DC123

MSC DC – for iC60

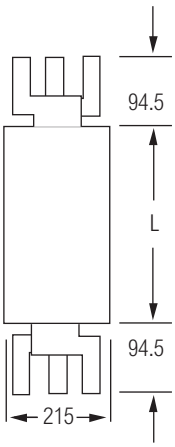
Description	Pole Capacity 18mm	Length (mm) L	Reference 250A	Reference 400A
2-pole (Black/Red)	12	110	C3DC123	C3DC1234
	16	146	C3DC163	C3DC1634
	20	182	C3DC203	C3DC2034
	24	218	C3DC243	C3DC2434
	32	290	C3DC323	C3DC3234
	36	326	C3DC363	C3DC3634
	40	362	C3DC403	C3DC4034
	48	434	C3DC483	C3DC4834
	60	542	C3DC603	C3DC6034
	72	650	C3DC723	C3DC7234

Accessories

Description		Reference
Connection kit	INS400 to MSC chassis	400CK2

Certificate of Conformity No. 6963

Dimensions



Note:
- Busbars extend 94.5mm either end of pan, width is 215mm.
- For custom built chassis (to meet with your specific requirements), please contact Schneider Help Centre on 1300 369 233.

Connection Devices & Cabling Accessories

Acti 9 system, Isobar chassis for iC60 MCB's
3 pole (+ neutral), 250A (180A with neutral kit),
16kA for 0.2sec, 25kA conditional withstand (INS250 incomer)



SEABN6TNA



SEA9BN8PEV

Isobar – for iC60 MCB & RCBOs

Description	Pole Capacity 18mm	Length (mm)	Rating	Reference 250A
3 phase - type TNA NOT suitable for switched neutral (includes steel mounting plate)	12	182	250A	SEA9BN4TNA
	18	236	250A	SEA9BN6TNA
	24	290	250A	SEA9BN8TNA
	36	398	250A	SEA9BN12TNA
	48	506	250A	SEA9BN16TNA
	54	560	250A	SEA9BN18TNA
	72	722	250A	SEA9BN24TNA
3 phase - type PEV suitable for switched neutral (includes steel mounting plate, rail for DIN mounted incomer and earth & neutral bars) Neutral rail is optional extra	12	346	250A	SEA9BN4PEV
	18	421	250A	SEA9BN6PEV
	24	471	250A	SEA9BN8PEV
	36	571	250A	SEA9BN12PEV
	48	671	250A	SEA9BN16PEV
	54	746	250A	SEA9BN18PEV
	72	896	250A	SEA9BN24PEV



SEA9NB6



SEA9NKIT

Accessories

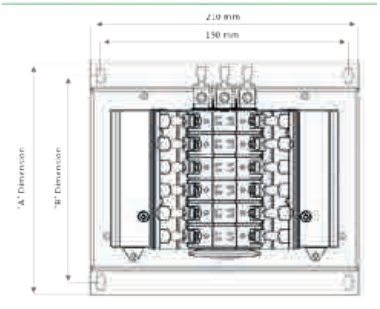
Description		Chassis	Reference
Distributed neutral kit for type PEV Isobar	12 pole	PEV	SEA9NB4
	18 pole	PEV	SEA9NB6
	24 pole	PEV	SEA9NB8
	36 pole	PEV	SEA9NB12
	48 pole	PEV	SEA9NB16
	54 pole	PEV	SEA9NB18
	72 pole	PEV	SEA9NB24
	Phase to neutral conversion kit (pack of 4) Note: One pack is included in a distributed neutral kit	PEV	SEA9NKIT
Incomers	3P 125A I isolator	PEV	A9S66392
	4P 125A I isolator	PEV	A9S66492
	1P 100A terminal block	TNA & PEV	SEA9TB1001
	4P 125A terminal block	PEV	SEA9TB1254
	1P blank terminal block (no electrical connection)	PEV/TNA	SEA9BP
	1P 250A neutral block	PEV	NSNL250
	3P 225A cable connection kit	TNA	SEA9TB2253
	4P 250A cable connection kit	PEV	SEA9NPB250TB
	4P 250A compact NSX and Interpact INS connection kit (SEA9NPB250TB is also required)	PEV	SEA9BINCKIT
	3P 250A Compact NS MCCB and Interpact INS load break switch connection kit	TNA	A9TNA250CK
Pole filler	Covers 90mm, 4 x 18mm & 2 x 9mm		M9PFS
Isobar boots	Pack of 50 insulation boots for tee-offs	TNA & PEV	ISOBOOTS

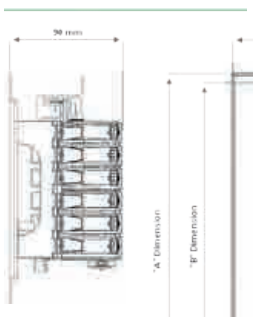


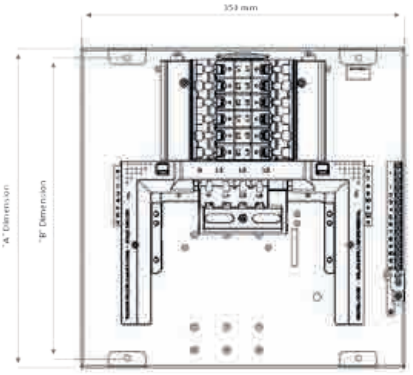
SEA9TB2253

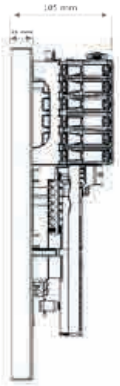


SEA9NPB250TB









Dimensions (mm)

Part No.	A	B
SEA9BN4TNA	182	162
SEA9BN6TNA	236	216
SEA9BN8TNA	290	270
SEA9BN12TNA	398	378
SEA9BN16TNA	506	486
SEA9BN18TNA	560	540
SEA9BN24TNA	722	702

Dimensions (mm)

Part No.	A	B
SEA9BN4PEV	325	346
SEA9BN6PEV	400	421
SEA9BN8PEV	450	471
SEA9BN12PEV	550	571
SEA9BN16PEV	650	671
SEA9BN18PEV	725	746
SEA9BN24PEV	875	896

Connection devices and accessories



Description	Type		Modules of 18mm	Set of	Reference
Standard Comb Busbar 100A (grey)	1P	L1…	12	1	A9XPH112
			24	1	A9XPH124
	2P	L1L2…	12	1	A9XPH212
			24	1	A9XPH224
	3P	L1L2L3…	12	1	A9XPH312
			24	1	A9XPH324
	4P	NL1L2L3…	12	1	A9XPH412
			24	1	A9XPH424
Comb Busbar 100A + Aux (grey)	*Aux+1P	AuxL1	57	1	A9XAH157
	*Aux+2P	AuxL1L2	57	1	A9XAH257
	*Aux+3P	AuxL1L2L3	57	1	A9XAH357
	*Aux+4P	AuxNL1L2L3	57	1	A9XAH457
	*3 (Aux+1P)	AuxL1AuxL2AuxL3	57	1	A9XAH657
*End caps ordered separately					
Accessories					
End caps	1P			10	A9XPE110
	2P			10	A9XPE210
	3P			10	A9XPE310
	4P			10	A9XPE410
Insulated tooth caps				20	A9XPT920
Insulated connector (up to 35mm cable)				4	A9XPCM04





Description	Compatible with	Type	Modules of 18mm	Set of	Reference
Standard Comb busbar 80A (white)	iDPN/iDPN Vigi/iSPN	1P+N…	12	1	21501
			24	1	21503
		3P+N (NL1NL2NL3...)	12	1	21505
			24	1	21507
Accessories					
End caps		1P+N		40	21094
End caps		3P+N		40	21095
Insulated tooth caps (3x18mm modules)				12	21096
Insulated connector (up to 16mm cable)				4	21098



Description	Compatible with	Type	No of 18mm modules	Set of	Reference
Comb busbar 63A + Aux (white)	DPN	1P+N (AuxNL1...)	56	1	A9N21035
		3P+N (AuxNL1AuxNL2AuxNL3...)	56	1	A9N21036
	iDPN Vigi	1P+N (AuxNL1...)	56	1	A9N21037
		3P+N (AuxNL1AuxNL2AuxNL3...)	56	1	A9N21038
*End caps ordered separately					
Accessories					
End caps		1P+N		20	A9N21039
		3P+N		20	A9N21040
Insulated tooth caps (1x18mm modules)				10	A9N21050
Grey insulated connector (up to 16mm cable)				10	A9N21041
Blue insulated connector (up to 16mm cable)				10	A9N21042

Earth & neutral bars - complying with clause 2.9.3.1 AS/NZS 3000:2000



ENB60

Description	No. of circuits	Reference
Double Screw 165A brass earth/neutral bar, +/- screw, Ø6mm tunnels (16mm^2 and 2 x M8 screws for incoming cable	12P E/N BAR 165A Double Screw	ENB12
	18P E/N BAR 165A Double Screw	ENB18
	24P E/N BAR 165A Double Screw	ENB24
	30P E/N BAR 165A Double Screw	ENB30
	36P E/N BAR 165A Double Screw	ENB36
	42P E/N BAR 165A Double Screw	ENB42
	48P E/N BAR 165A Double Screw	ENB48
	60P E/N BAR 165A Double Screw	ENB60
	72P E/N BAR 165A Double Screw	ENB72
	84P E/N BAR 165A Double Screw	ENB84
	96P E/N BAR 165A Double Screw	ENB96
Neutral bar support	-	SAUBP165F

Switchboards - Consumer - Moulded - Economy Models



4CC1

Surface Mounting Moulded Enclosures

To suit DIN Rail Mounted Equipment, available in White Electric (WE) only.

Description	STD PK	CTN QTY	Reference
1 Module	5	80	4CC1
2 Module	5	50	4CC2
3 Module	5	45	4CC3
4 Module	1	32	4CC4
3 Module Meter Isolator Enclosure, pad lockable less MCB insulated panel mounting	1		230MI

No mounting grids supplied.



4CC3

Surface Mounting Full DIN Rail

Supplied with Neutral and Earth Bars or Terminal, no Isolating Switch or Door Lid supplied, available in White Electric (WE).

Description	STD PK	CTN QTY	Reference
6 Module	1	10	4CC6
9 Module	1	10	4CC9



230MI

Surface Mounting Full DIN Rail - Shallow Base

Supplied with Earth Bars or Terminal, no Neutral Bar, Isolating Switch or Door Lid supplied, available in White Electric (WE).

Description	STD PK	CTN QTY	Reference
6 Module shallow base	1	20	4CC6SB



4CC15SB

Jetstream Boards - Surface Mounting Full DIN Rail

Supplied with Neutral and Earth Bars - No Isolating Switch, available in White Electric (WE) only.

Description	STD PK	CTN QTY	Reference
15 Module shallow base Jetstream	1		4CC15SB
30 Module shallow base Jetstream	1		4CC30SB
45 Module shallow base Jetstream	1		4CC45SB
60 Module shallow base Jetstream	1		4CC60SB
Pole Filler - 7.5 modules	1	1	DBF15/23

4CC45SB

Jetstream Boards - Flush Mounting - Full DIN Rail

Supplied with Neutral and Earth Bars - No Isolating Switch, available in White Electric (WE) only.

Description	STD PK	CTN QTY	Reference
10 Module	1		4FCC10
15 Module Jetstream	1		4FCC15
30 Module Jetstream	1		4FCC30
45 Module Jetstream	1		4FCC45
60 Module Jetstream	1		4FCC60
Pole Filler - 7.5 modules	1	1	DBF15/23



4FCC60



4C11FD

Surface Mounting - Full DIN Rail

Supplied with Neutral and Earth Bars, Door Lid and Wall Box, no Isolating Switch. Available in White Electric (WE).

Description	STD PK	CTN QTY	Reference
6 Module - 1 x 6 pole busbar, full DIN rail	1	8	4C6FD
11 Module - 1 x 11 pole busbar, full DIN rail	1	6	4C11FD
17 Module - 1 x 14 pole busbar, full DIN rail	1	4	4C17FD
24 Module - 2 x 12 pole, full DIN rail, latching door	1	3	4C24FD
36 Module - 3 x 12 pole, full DIN rail, latching door	1	2	4C36FD



4C17FD-WE

Flush Mounting - Full DIN Rail

Supplied with Neutral, Earth Bars and Wall Box - No Isolating Switch. Available in White Electric (WE).

Description	STD PK	CTN QTY	Reference
11 Module - 1 x 11 pole busbar, full DIN rail	1	5	4FC11FD
17 Module - 1 x 17 pole busbar, full DIN rail	1	4	4FC17FD
24 Module - 1 X 24 pole busbar, full DIN rail			4FCS24FD



4C24FD

Surface and Flush Switchboard Accessories

Half module wide filler to suit enclosures	4F1
6 Module wide filler strip to suit enclosures	4F6
8 Module wide filler strip to suit plastic enclosures	4F8



4FC17FD

Switchboards - Consumer - Moulded - Premium Weather Proof Models



4CW36FD

Surface Mounting - Full DIN Rail - IP56 Rated

Supplied with Neutral and Earth Bars and Door Lid, no Isolating Switch, available in White Electric (WE).

Description	STD PK	CTN QTY	Reference
24 Module - full DIN rail - 2 x 12 pole busbar	1	3	4CW24FD
36 Module - full DIN rail - 3 x 12 Pole busbar	1	3	4CW36FD



56SB4

Surface Mounting - Full DIN Rail - IP66 Rated (56 Series)

Supplied with Neutral Bar, Earth Terminal. Top hinged transparent door with latch, available in Grey (GY) and Resistant Orange (RO).

Description	STD PK	CTN QTY	Reference
4 Module - full DIN rail	1	18	56SB4



56SB13

Surface Mounting - Full DIN Rail - IP66 Rated (56 Series)

Supplied with Neutral and Earth Bars. Top hinged transparent door with dual latches, available in Grey (GY).

Description	STD PK	CTN QTY	Reference
13 Module - full DIN rail - 12 pole busbar	1		56SB13



4FCW11FD

Flush Mounting - Full DIN Rail - IP34 Rated

Supplied with Neutral and Earth Bars - no Isolating Switch, available in White Electric (WE).

Description	STD PK	CTN QTY	Reference
11 Module with wall box and full DIN rail 11 pole busbar	1	5	4FCW11FD
17 Module with wall box and full DIN rail 14 pole busbar	1	4	4FCW17FD





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2.2

Moulded Case Circuit Breakers up to 630A



NSX 1P



NSX 2P



NSX 3P

Tripping Curves

Protection Settings for MCCBs & ACBs Page 2.2.1

Compact NSX Range

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NSX100/160/250N MCCBs Page 2.2.7
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MCCB Basic Transfer Switches



Compact NSX100 to 630

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Moulded Case Circuit Breakers up to 1600A



NS 3P

Compact NS630b to 1600A

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Moulded Case Circuit Breakers



Compact NS1600b to 3200A

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NS1600b to 3200 N/H MCCBs	
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Air Circuit Breakers 630 to 6300A



Masterpact

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Load Break Switches 40 to 2500A



Compact INS

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Earth Leakage Relays



Vigirex

Vigirex DIN Mounted Earth Leakage Relays	Page 2.2.53
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Busway System



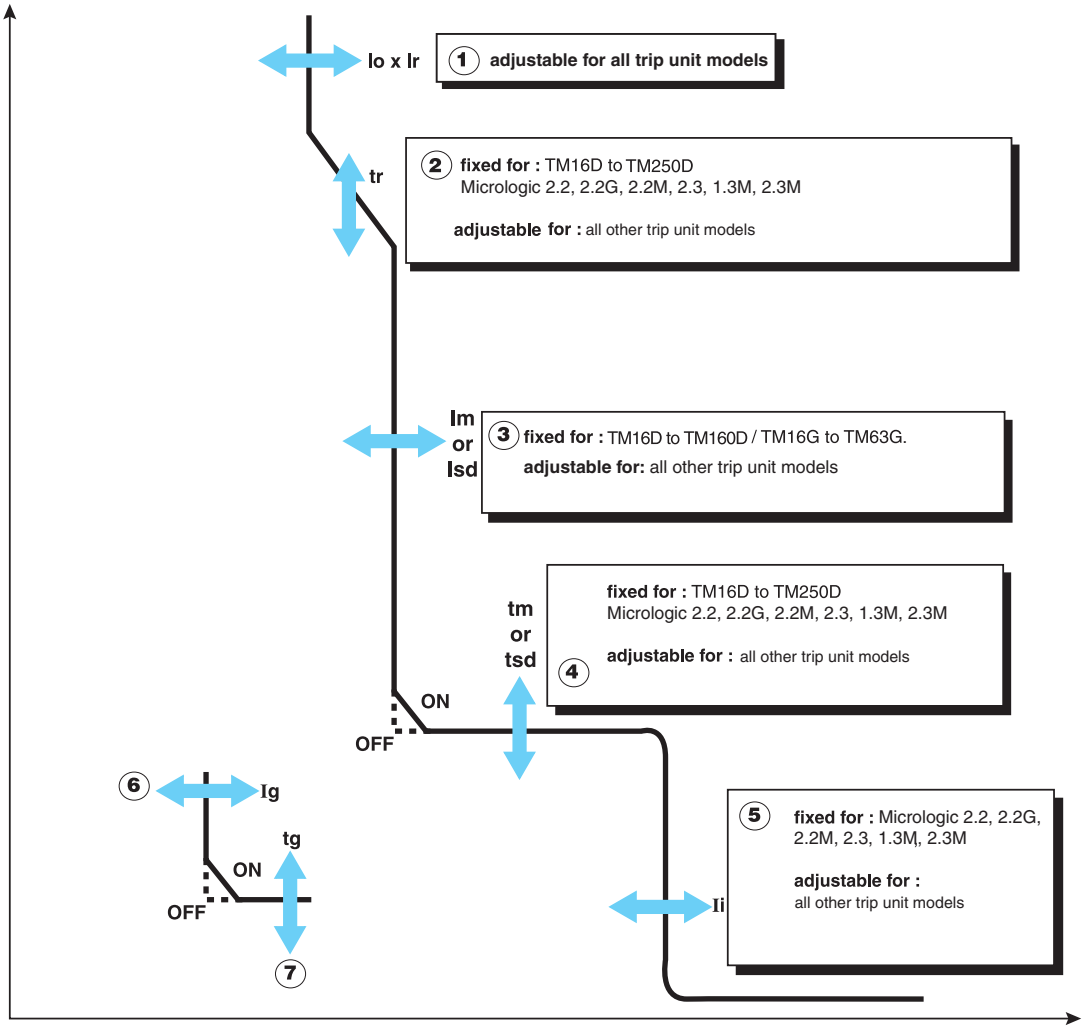
Busway

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Protection Settings for MCCBs & ACBs

2.2

Terminology of the overload and short-circuit protection settings



Long time protection against overloads

(1) Io = coarse adjustment (function of In)
Ir = fine adjustment

(2) tr = long time delay fixed or adjustable depending on the trip unit

Short circuit protection

(3) Im = Isd short circuit threshold, I2t curve in position ON or OFF (depending on the trip unit)

(4) tm = tsd short circuit time delay fixed or adjustable

Instantaneous protection

(5) Ii = instantaneous threshold, fixed or adjustable depending on the trip unit

Earth fault protection

(6) Ig = insulation fault threshold, I2t curve in position ON or OFF

(7) tg = earth fault time delay

Compact NSX Micrologic trip unit coding

Micrologic 2 = LSo protection	L=Long time
	So=Short time (fixed time delay)
Micrologic 5 = LSI protection	L=Long time
	S=Short time
	I=Instantaneous
Micrologic 6 = LSIG protection	L=Long time
	S=Short time
	I=Instantaneous
	G=Ground

Moulded Case Circuit Breakers

Compact NSX...
Next-generation Circuit Breakers



NSX 100 to 250

Next-generation circuit breakers

Today, the next-generation Compact NSX circuit breakers provide an intelligent outlook and set the standards of tomorrow. A power monitoring unit enhances their invariably impeccable protective functions. For the first time, users can monitor both energy and power, offering new performance in a remarkably compact device.

Compactness, discrimination and modularity - all of the features which defined the success of the Compact NS generation of circuit breakers combined with new functions for safe, easy monitoring and management of installations.

The new range of Compact NSX circuit breakers stand out from the crowd, thanks to its electronic intelligence. Through direct access to in-depth information, and networking via open protocols, Compact NSX lets operators optimise the management of their electrical installations.

Far more than a circuit breaker, Compact NSX is a measurement and communication tool ready to meet energy-efficiency needs through optimised energy consumption, increased energy availability, and improved installation management.



NSX 100 to 250

New breaking capacities

New performance levels improve application targeting:

- 25 kA - Standard low short-circuit level applications, eg., for service businesses.
- 36 - 50 kA - Standard applications (industrial plants, buildings and hospitals).
- 70 - 100 kA - High performance at controlled cost.
- 150 kA - Marine ready, with an Ics rating meeting IACS requirements for emergency, essential and MCC loads.
- 200 kA at up to 440 V - Industry-leading breaking capacity for high-density applications in oil and gas extraction and processing, mining operations, metal and minerals production and data centres.
- 100 kA from 500 to 690 V - The world's highest rated breaking capacity for the most demanding electrical environments and ideal for high-efficiency, cost-effective 690 V systems.



NSX 100 to 250

Enhanced protection for motors

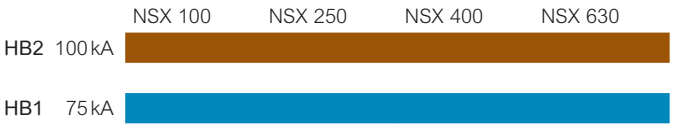
The Compact NSX range meets the requirements of IEC 60947-4-1 standards for protection of motors:

- Well adapted to motor-starting solutions up to 315 kW at 400 V, providing protection against short circuits, overloads, phase unbalance and phase loss.
- Set up additional protection systems for starting and braking with the motor running, reverse braking, jogging or reversing in complete safety.
- Used in conjunction with a Schneider Electric contactor, the Compact NSX provides Type II coordination for motor applications.

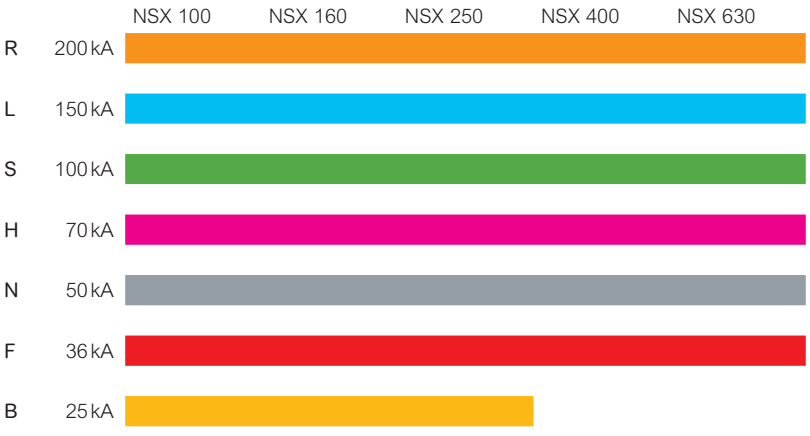


NSX 400 to 630

Breaking performance at 690 V



Breaking performance at 415 V

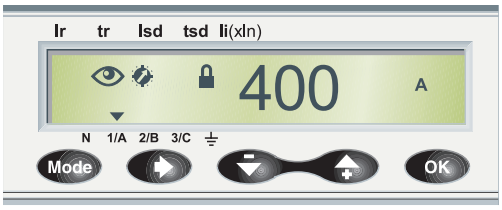




Introduction
Overview of Trip Units for Compact NSX

The capabilities of Micrologic 5 / 6 A and E trip units come into full play with the FDM121 switchboard display unit.
When the two are connected via a simple cord with RJ45 connectors, the combination offers full Power Meter capabilities and all the measurements required to monitor the electrical installation.

DB416930.eps



Ammeter Micrologic (A)

I measurements

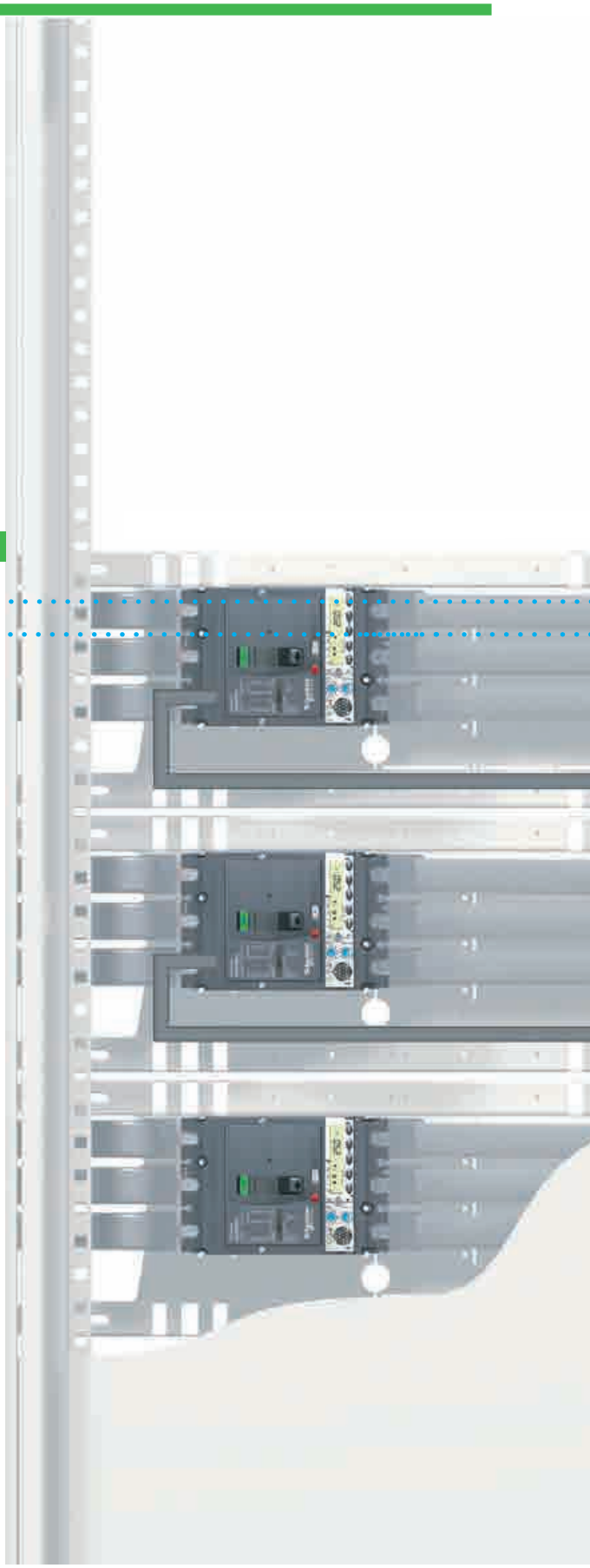
Current measurements
- Phase and neutral currents I1, I2, I3, IN
- Average current of the 3 phases Iavg
- Highest current of the three phases Imax
- Ground-fault current Ig (Micrologic 6.2 / 6.3 A)
- Maximeter/minimeter for I measurements

Operating and maintenance assistance

Indications, alarms and histories
- Indication of fault types
- Alarms for high/low alarm thresholds linked to I measurements
- Trip, alarm and operating histories
- Time-stamped tables for settings and maximeters

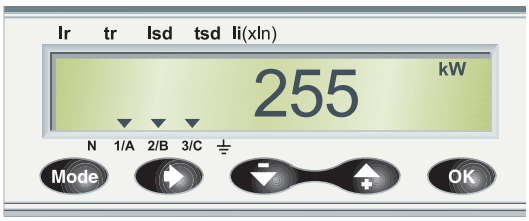
Maintenance indicators
- Operation, trip and alarm counters
- Operating hours counter
- Contact wear
- Load profile and thermal image

Communication
- Modbus with add-on module
- Ethernet with add-on module



Introduction
Overview of Trip Units for Compact NSX





Energy Micrologic (E)

I, U, f, P, E, THD measurements

Current measurements
- Phase and neutral currents I1, I2, I3, IN
- Average current of the 3 phases Iavg
- Highest current of the three phases Imax
- Ground-fault current Ig (Micrologic 6.2 / 6.3 A)
- Maximeter/minimeter for I measurements
- Current unbalance between phases

Voltage measurements Average voltages Uavg, Vavg
- Ph-Ph (U) and Ph-N (V) voltage unbalance

Frequency measurements
- Frequency (f)

Power-quality indicators
- Total harmonic distortion (THD) for current and voltage

Power measurements
- Active, reactive and apparent power, total and per phase
- Power factor and cos

Maximeters/minimeters
- For all I, U, f, P, E measurements

Demand current and power measurements
- Demand values, total and per phase
- Maximum demand

Energy metering
- Active, reactive and apparent energy, total and per phase

Operating and maintenance assistance

Indications, alarms and histories
- Indication of fault types
- Alarms for high/low thresholds linked to I, U, f, P, E measurements
- Trip, alarm and operating histories
- Time-stamped tables for settings and I, U, f, P, E maximeters

Maintenance indicators
- Operation, trip and alarm counters
- Operating hours counter
- Contact wear
- Load profile and thermal image

Communication
- Modbus with add-on module
- Ethernet with add-on module

For more info:

- Catalogue: LVPED208001EN
- → Accessories: Pages 2.2.13-27
- → Cascading and Discrimination tables: Pages 4.0.4-6
- → Power Chassis: Pages 2.2.34-35

Moulded Case Circuit Breakers

Compact NSX System
NSX100/160/250 - NA/B
Standard AS 60947.2 (IEC 60947.2)



LV429550



LV431140

NSX100/160/250 NA: (Non-auto)

3 Pole Front Connected

		Trip Unit	Rating	Reference
NSX100/160/250NA Switch Disconnector	NSX100NA	Non-auto	100A	LV429629
	NSX160NA	Non-auto	160A	LV430629
	NSX250NA	Non-auto	250A	LV431629

NSX100/160/250B: (25kA at 415V)

Complete/3 Pole Front Connected

		Trip Unit	Rating	Reference
NSX100B (25kA) Distribution Protection	Standard thermal-magnetic trip unit TM-D	TM16D	11-16A	LV429557
		TM25D	17-25A	LV429556
		TM32D	22 -32A	LV429555
		TM40D	28-40A	LV429554
		TM50D	35-50A	LV429553
		TM63D	44-63A	LV429552
		TM80D	56-80A	LV429551
		TM100D	70-100A	LV429550
	Electronic trip unit Micrologic 2.2 (LSoI)	40A	16-40A	LV429777
		100A	40-100A	LV429775
NSX160B (25kA) Distribution Protection	Standard thermal-magnetic trip unit TM-D	TM80D	56-80A	LV430313
		TM100D	70-100A	LV430312
		TM125D	87-125A	LV430311
		TM160D	112-160A	LV430310
	Electronic trip unit Micrologic 2.2 (LSoI)	100A	40-100A	LV430746
		160A	64-160A	LV430745
NSX250B (25kA) Distribution Protection	Standard thermal-magnetic trip unit TM-D	TM125D	87-125A	LV431113
		TM160D	112-160A	LV431112
		TM200D	140-200A	LV431111
		TM250D	175-250A	LV431110
	Electronic trip unit Micrologic 2.2 (LSoI)	100A	40-100A	LV431142
		160A	64-160A	LV431141
		250A	100-250A	LV431140

For more info:

- Catalogue: LVPED208001EN
- → Accessories: Pages 2.2.13-27
- → Cascading and Discrimination tables: Pages 4.0.4-6
- → Power Chassis: Pages 2.2.34-35

Moulded Case Circuit Breakers

Compact NSX System
NSX100/160/250F
Standard AS 60947.2 (IEC 60947.2)



LV429880



LV430630



LV431770

NSX100/160/250F: (36kA at 415V)

Complete/3 Pole Front Connected

		Trip Unit	Rating	Reference
NSX100F (36kA) Distribution Protection	Standard thermal-magnetic trip unit TM-D	TM16D	11-16A	LV429637
		TM25D	17-25A	LV429636
		TM32D	22 -32A	LV429635
		TM40D	28-40A	LV429634
		TM50D	35-50A	LV429633
		TM63D	44-63A	LV429632
		TM80D	56-80A	LV429631
		TM100D	70-100A	LV429630
	Electronic trip unit Micrologic 2.2 (LSoI)	40A	18-40A	LV429772
		100A	40-100A	LV429770
	Electronic trip unit Micrologic 5.2A (LSI) (ammeter)	40A	18-40A	LV429882
		100A	40-100A	LV429880
NSX100F (36kA) Motor protection	Magnetic only trip unit MA	MA2.5	2.5A 0.75kW	LV429745
		MA6.3	6.3A 2.2kW	LV429744
		MA12.5	12.5A 5.5kW	LV429743
		MA25	25A 11kW	LV429742
		MA50	50A 22kW	LV429741
		MA100	100A 45kW	LV429740
	Electronic trip unit Micrologic 2.2-M (LSoI)	25A	12-25A 11kW	LV429828
		50A	25-50A 22kW	LV429827
		100A	50-100A 45kW	LV429825
NSX160F (36kA) Distribution Protection	Standard thermal-magnetic trip unit TM-D	TM40D	28-40A	LV430636
		TM50D	35-50A	LV430635
		TM63D	44-63A	LV430634
		TM80D	56-80A	LV430633
		TM100D	70-100A	LV430632
		TM125D	87-125A	LV430631
		TM160D	112-160A	LV430630
	Electronic trip unit Micrologic 2.2 (LSoI)	100A	40-100A	LV430771
		160A	64-160A	LV430770
	Electronic trip unit Micrologic 5.2A (LSI) (ammeter)	100A	40-100A	LV430881
		160A	64-160A	LV430880
NSX160F (36kA) Motor protection	Magnetic only trip unit MA	MA100	100A 45kW	LV430831
		MA150	150A 75kW	LV430830
	Electronic trip unit Micrologic 2.2-M (LSoI)	100A	50-100A 45kW	LV430986
		150A	70-150A 75kW	LV430985
NSX250F (36kA) Distribution Protection	Standard thermal-magnetic trip unit TM-D	TM63D	44-63A	LV431636
		TM80D	56-80A	LV431635
		TM100D	70-100A	LV431634
		TM125D	87-125A	LV431633
		TM160D	112-160A	LV431632
		TM200D	140-200A	LV431631
		TM250D	175-250A	LV431630
	Electronic trip unit Micrologic 2.2 (LSoI)	100A	40-100A	LV431772
		160A	64-160A	LV431771
		250A	100-250A	LV431770
	Electronic trip unit Micrologic 5.2A (LSI) (ammeter)	160A	64-160A	LV431861
		250A	100-250A	LV431860
NSX250F (36kA) Motor protection	Magnetic only trip unit MA	MA150	150A 75kW	LV431749
		MA220	220A 110kW	LV431748
	Electronic trip unit Micrologic 2.2-M (LSoI)	150A	70-150A 75kW	LV431161
		220A	100-220A 110kW	LV431160

Note:

- For breakers with electronic trip units Micrologic 5.2 E (LSI protection, energy meter) To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.9)
- For breakers with electronic trip unit Micrologic 6.2 A or E (LSIG protection, ammeter or energy meter) To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.9)
- For breakers with TM-G or Micrologic 2.2G trip units (Generator protection) To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.10)
- For breakers with electronic trip unit Micrologic 6.2 E-M (LSIG motor protection, energy meter) To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.10)
- 4Pole MCCBs also available.

Moulded Case Circuit Breakers

Compact NSX System
NSX100/160/250N
Standard AS 60947.2 (IEC 60947.2)



LV429890



LV430775



LV431830

NSX100/160/250N: (50kA at 415V)

Complete/3 Pole Front Connected

		Trip Unit	Rating	Reference
NSX100N (50kA) Distribution Protection	Standard thermal-magnetic trip unit TM-D	TM16D	11-16A	LV429847
		TM25D	17-25A	LV429846
		TM32D	22 -32A	LV429845
		TM40D	28-40A	LV429844
		TM50D	35-50A	LV429843
		TM63D	44-63A	LV429842
		TM80D	56-80A	LV429841
		TM100D	70-100A	LV429840
	Electronic trip unit Micrologic 2.2 (LSoI)	40A	16-40A	LV429797
		100A	40-100A	LV429795
	Electronic trip unit Micrologic 5.2A (LSI) (ammeter)	40A	16-40A	LV429892
		100A	40-100A	LV429890
NSX100N (50kA) Motor protection	Magnetic only trip unit MA	MA2.5	2.5A 0.75kW	LV429755
		MA6.3	6.3A 2.2kW	LV429754
		MA12.5	12.5A 5.5kW	LV429753
		MA25	25A 11kW	LV429752
		MA50	50A 22kW	LV429751
		MA100	100A 45kW	LV429750
	Electronic trip unit Micrologic 2.2-M (LSoI)	25A	12-25A 11kW	LV429833
		50A	25-50A 22kW	LV429832
		100A	50-100A 45kW	LV429830
NSX160N (50kA) Distribution Protection	Standard thermal-magnetic trip unit TM-D	TM40D	28-40A	LV430846
		TM50D	35-50A	LV430845
		TM63D	44-63A	LV430844
		TM80D	56-80A	LV430843
		TM100D	70-100A	LV430842
		TM125D	87-125A	LV430841
		TM160D	112-160A	LV430840
	Electronic trip unit Micrologic 2.2 (LSoI)	100A	40-100A	LV430776
		160A	64-160A	LV430775
	Electronic trip unit Micrologic 5.2A (LSI) (Ammeter)	100A	40-100A	LV430891
		160A	64-160A	LV430890
NSX160N (50kA) Motor protection	Magnetic only trip unit MA	MA100	100A 45kW	LV430833
		MA150	150A 75kW	LV430832
	Electronic trip unit Micrologic 2.2-M (LSoI)	100A	50-100A 45kW	LV430989
		150A	70-150A 75kW	LV430988
NSX250N (50kA) Distribution Protection	Standard thermal-magnetic trip unit TM-D	TM63D	44-63A	LV431836
		TM80D	56-80A	LV431835
		TM100D	70-100A	LV431834
		TM125D	87-125A	LV431833
		TM160D	112-160A	LV431832
		TM200D	140-200A	LV431831
		TM250D	175-250A	LV431830
	Electronic trip unit Micrologic 2.2 (LSoI)	100A	40-100A	LV431872
		160A	64-160A	LV431871
		250A	100-250A	LV431870
	Electronic trip unit Micrologic 5.2A (LSI) (ammeter)	160A	64-160A	LV431881
		250A	100-250A	LV431880
NSX250N (50kA) Motor protection	Magnetic only trip unit MA	MA150	150A 75kW	LV431753
		MA220	220A 110kW	LV431752
	Electronic trip unit Micrologic 2.2-M (LSoI)	150A	70-150A 75kW	LV431166
		220A	100-220A 110kW	LV431165

Note:

- For breakers with electronic trip units Micrologic 5.2 E (LSI protection, energy meter)
  To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.9)
- For breakers with electronic trip unit Micrologic 6.2 A or E (LSIG protection, ammeter or energy meter)
  To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.9)
- For breakers with TM-G or Micrologic 2.2G trip units (Generator protection)
  To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.10)
- For breakers with electronic trip unit Micrologic 6.2 E-M (LSIG motor protection, energy meter)
  To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.10)
- 4Pole MCCBs also available.

Moulded Case Circuit Breakers

Compact NSX System
NSX100/160/250H
Standard AS 60947.2 (IEC 60947.2)



LV429670



LV430794



LV431790

NSX100/160/250H: (70kA at 415V)

Complete/3 Pole Front Connected

		Trip Unit	Rating	Reference
NSX100H (70kA) Distribution Protection	Standard thermal-magnetic trip unit TM-D	TM16D	11-16A	LV429677
		TM25D	17-25A	LV429676
		TM32D	22 -32A	LV429675
		TM40D	28-40A	LV429674
		TM50D	35-50A	LV429673
		TM63D	44-63A	LV429672
		TM80D	56-80A	LV429671
		TM100D	70-100A	LV429670
	Electronic trip unit Micrologic 2.2 (LSoI)	40A	16-40A	LV429792
		100A	40-100A	LV429790
	Electronic trip unit Micrologic 5.2A (LSI) (ammeter)	40A	16-40A	LV429794
		100A	40-100A	LV429793
NSX100H (70kA) Motor protection	Magnetic only trip unit MA	MA2.5	2.5A 0.75kW	LV429765
		MA6.3	6.3A 2.2kW	LV429764
		MA12.5	12.5A 5.5kW	LV429763
		MA25	25A 11kW	LV429762
		MA50	50A 22kW	LV429761
		MA100	100A 45kW	LV429760
	Electronic trip unit Micrologic 2.2-M (LSoI)	25A	12-25A 11kW	LV429838
		50A	25-50A 22kW	LV429837
		100A	50-100A 45kW	LV429835
NSX160H (70kA) Distribution Protection	Standard thermal-magnetic trip unit TM-D	TM40D	28-40A	LV430676
		TM50D	35-50A	LV430675
		TM63D	44-63A	LV430674
		TM80D	56-80A	LV430673
		TM100D	70-100A	LV430672
		TM125D	87-125A	LV430671
		TM160D	112-160A	LV430670
	Electronic trip unit Micrologic 2.2 (LSoI)	100A	40-100A	LV430791
		160A	64-160A	LV430790
	Electronic trip unit Micrologic 5.2A (LSI) (ammeter)	100A	40-100A	LV430795
		160A	64-160A	LV430794
NSX160H (70kA) Motor protection	Magnetic only trip unit MA	MA100	100A 45kW	LV430835
		MA150	150A 75kW	LV430834
	Electronic trip unit Micrologic 2.2-M (LSoI)	100A	50-100A 45kW	LV430992
		150A	70-150A 75kW	LV430991
NSX250H (70kA) Distribution Protection	Standard thermal-magnetic trip unit TM-D	TM63D	44-63A	LV431676
		TM80D	56-80A	LV431675
		TM100D	70-100A	LV431674
		TM125D	87-125A	LV431673
		TM160D	112-160A	LV431672
		TM200D	140-200A	LV431671
		TM250D	175-250A	LV431670
	Electronic trip unit Micrologic 2.2 (LSoI)	100A	40-100A	LV431792
		160A	64-160A	LV431791
		250A	100-250A	LV431790
	Electronic trip unit Micrologic 5.2A (LSI) (ammeter)	160A	64-160A	LV431796
		250A	100-250A	LV431795
NSX250H (70kA) Motor protection	Magnetic only trip unit MA	MA150	150A 75kW	LV431757
		MA220	220A 110kW	LV431756
	Electronic trip unit Micrologic 2.2-M (LSoI)	150A	70-150A 75kW	LV431171
		220A	100-220A 110kW	LV431170

Note:

- For breakers with electronic trip units Micrologic 5.2 E (LSI protection, energy meter)
  To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.9)
- For breakers with electronic trip unit Micrologic 6.2 A or E (LSIG protection, ammeter or energy meter)
  To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.9)
- For breakers with TM-G or Micrologic 2.2G trip units (Generator protection)
  To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.10)
- For breakers with electronic trip unit Micrologic 6.2 E-M (LSIG motor protection, energy meter)
  To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.10)
- 4Pole MCCBs also available.
  Other breaking capacities are available (L 150kA and S100kA) (refer to page 2.2.9)

Moulded Case Circuit Breakers

Compact NSX System
NSX100/160/250-B/F/N/H/S/L-
Based on Separate Components
Standard AS 60947.2 (IEC 60947.2)

NSX100/160/250:

Based on separate components 3 Pole Front Connected



LV431403

		Frame	Reference
Basic Frames	Compact NSX100	NSX100B (25 kA 415 V)	LV429014
		NSX100F (36 kA 415 V)	LV429003
		NSX100N (50 kA 415 V)	LV429006
		NSX100H (70 kA 415 V)	LV429004
		NSX100S (100 kA 415 V)	LV429018
		NSX100L (150 kA 415 V)	LV429005
	Compact NSX160	NSX160B (25 kA 415 V)	LV430390
		NSX160F (36 kA 415 V)	LV430403
		NSX160N (50 kA 415 V)	LV430406
		NSX160H (70 kA 415 V)	LV430404
		NSX160S (100 kA 415 V)	LV430391
		NSX160L (150 kA 415 V)	LV430405
	Compact NSX250	NSX250B (25 kA 415 V)	LV431390
		NSX250F (36 kA 415 V)	LV431403
		NSX250N (50 kA 415 V)	LV431406
		NSX250H (70 kA 415 V)	LV431404
		NSX250S (100 kA 415 V)	LV431391
		NSX250L (150 kA 415 V)	LV431405



LV431430



LV431470



LV431491

		Trip Unit	Rating	Reference
Trip Unit Distribution Protection	Thermal-magnetic TM-D	TM16D	11-16A	LV429037
		TM25D	17-25A	LV429036
		TM32D	22 -32A	LV429035
		TM40D	28-40A	LV429034
		TM50D	35-50A	LV429033
		TM63D	44-63A	LV429032
		TM80D	56-80A	LV429031
		TM100D	70-100A	LV429030
		TM125D	87-125A	LV430431
		TM160D	112-160A	LV430430
		TM160D (For NSX250)	112-160A	LV431432
		TM200D	140-200A	LV431431
		TM250D	175-250A	LV431430
	Micrologic 2.2 LSoI protection	Micrologic 2.2 40 A	16-40A	LV429072
		Micrologic 2.2 100 A	40-100A	LV429070
		Micrologic 2.2 160 A	64-160A	LV430470
		Micrologic 2.2 250 A	100-250A	LV431470
	Micrologic 5.2 A LSI protection ammeter	Micrologic 5.2 A 40 A	16-40A	LV429091
		Micrologic 5.2 A 100 A	40-100A	LV429090
		Micrologic 5.2 A 160 A	64-160A	LV430490
		Micrologic 5.2 A 250 A	100-250A	LV431490
	Micrologic 5.2 E LSI protection energy meter	Micrologic 5.2 E 40 A	16-40A	LV429096
		Micrologic 5.2 E 100 A	40-100A	LV429095
		Micrologic 5.2 E 160 A	64-160A	LV430491
		Micrologic 5.2 E 250 A	100-250A	LV431491
	Micrologic 6.2 A LSIG protection ammeter	Micrologic 6.2 A 40 A	16-40A	LV429111
		Micrologic 6.2 A 100 A	40-100A	LV429110
		Micrologic 6.2 A 160 A	64-160A	LV430505
		Micrologic 6.2 A 250 A	100-250A	LV431505
	Micrologic 6.2 E LSIG protection energy meter	Micrologic 6.2 E 40 A	16-40A	LV429116
		Micrologic 6.2 E 100 A	40-100A	LV429115
		Micrologic 6.2 E 160 A	64-160A	LV430506
		Micrologic 6.2 E 250 A	100-250A	LV431506

For more info:

- Catalogue: LVPED208001EN
- → Accessories: Pages 2.2.13-27
- → Cascading and Discrimination tables: Pages 4.0.4-6
- → Power Chassis: Pages 2.2.34-35

Moulded Case Circuit Breakers

Compact NSX System
NSX100/160/250-B/F/N/H/S/L-
Based on Separate Components
Standard AS 60947.2 (IEC 60947.2)



LV429120



LV431521



LV429075

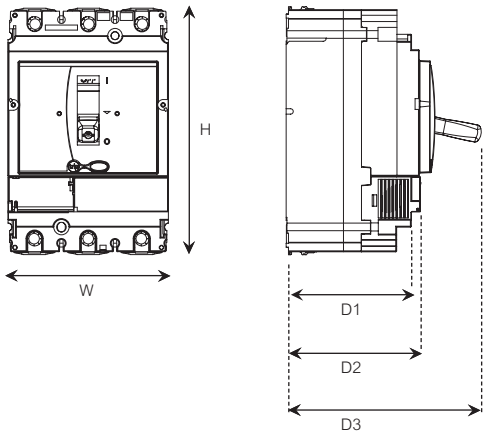
NSX100/160/250:

Based on separate components 3 Pole Front Connected

		Trip Unit	Rating	Reference
Motor Protection	Magnetic MA Im protection	MA2.5	2.5A 0.75kW	LV429125
		MA6.3	6.3A 2.2kW	LV429124
		MA12.5	12.5A 5.5kW	LV429123
		MA25	25A 11kW	LV429122
		MA50	50A 22kW	LV429121
		MA100	100A 45kW	LV429120
		MA150	150A 75kW	LV430500
		MA220	220A 110kW	LV431500
	Micrologic 2.2-M LSoI protection	Micrologic 2.2-M 25 A	12-25A 11kW	LV429174
		Micrologic 2.2-M 50 A	25-50A 22kW	LV429172
		Micrologic 2.2-M 100 A	50-100A 45kW	LV429170
		Micrologic 2.2-M 150 A	70-150A 75kW	LV430520
		Micrologic 2.2-M 220 A	100-220A 110kW	LV431520
	Micrologic 6.2 E-M LSIG protection energy meter	Micrologic 6.2 E-M 25 A	12-25A 11kW	LV429184
		Micrologic 6.2 E-M 50 A	25-50A 22kW	LV429182
		Micrologic 6.2 E-M 80 A	35-80A 37kW	LV429180
		Micrologic 6.2 E-M 150 A	70-150A 75kW	LV430521
		Micrologic 6.2 E-M 220 A	100-220A 110kW	LV431521
Generator Protection	Thermal-magnetic TM-G	TM16G	11-16A	LV429155
		TM25G	17-25A	LV429154
		TM40G	28-40A	LV429153
		TM63G	44-63A	LV429152
	Micrologic 2.2 G LSoI protection	Micrologic 2.2-G 40 A	16-40A	LV429076
		Micrologic 2.2-G 100 A	40-100A	LV429075
		Micrologic 2.2-G 160 A	64-160A	LV430475
		Micrologic 2.2-G 250 A	100-250A	LV431475

Dimensions (mm)

	H	W	D1	D2	D3
NSX 100/160/250	161	105	81	86	126



Moulded Case Circuit Breakers

Compact NSX System
NSX400/630-NA/F/N/H
Standard AS 60947.2 (IEC 60947.2)



LV432956

NSX400/630NA:
Complete/3 Pole Front Connected

		Trip Unit	Rating	Reference
NSX400/630NA: Switch Disconnector	NSX400NA	Non-auto	400A	LV432756
	NSX630NA	Non-auto	630A	LV432956

NSX400/630F: (36kA at 415V)
Complete/3 Pole Front Connected

		Trip Unit	Rating	Reference
NSX400F (36kA) Distribution Protection	Micrologic 2.3 (LSoI)	250A	100-250A	LV432682
		400A	160-400A	LV432676
	Micrologic 5.3A (LSI) (ammeter)	400A	160-400A	LV432678
NSX630F (36kA) Distribution Protection	Micrologic 2.3 (LSoI)	630A	252-630A	LV432876
	Micrologic 5.3A (LSI) (ammeter)	630A	252-630A	LV432878



LV43676

NSX400/630N: (50kA at 415V)
Complete/3 Pole Front Connected

		Trip Unit	Rating	Reference
NSX400N (50kA) Distribution Protection	Micrologic 2.3 (LSoI)	250A	100-250A	LV432707
		400A	160-400A	LV432693
	Micrologic 5.3A (LSI) (ammeter)	400A	160-400A	LV432699
NSX400N (50kA) Motor Protection	Micrologic 1.3-MA (I)	320A	1600-4160A 160kW	LV432749
	Micrologic 2.3-M (LSoI)	320A	160-320A 160kW	LV432776
NSX630N (50kA) Distribution Protection	Micrologic 2.3 (LSoI)	630A	252-630A	LV432893
	Micrologic 5.3A (LSI) (ammeter)	630A	252-630A	LV432899
NSX630N (50kA) Motor Protection	Micrologic 1.3-M A (I)	500A	2500-6500A 250kW	LV432949
	Micrologic 2.3-M (LSoI)	500A	250-500A 250kW	LV432976



LV432901

NSX400/630H: (70kA at 415V)
Complete/3 Pole Front Connected

		Trip Unit	Rating	Reference
NSX400H (70kA) Distribution Protection	Electronic trip unit	250A	100-250A	LV432709
	Micrologic 2.3 (LSoI)	400A	160-400A	LV432695
	Micrologic 5.3A (LSI) (ammeter)	400A	160-400A	LV432701
NSX400H (70kA) Motor Protection	Micrologic 1.3-M (I)	320A	1600-4160A 160kW	LV432750
	Micrologic 2.3-M (LSoI)	320A	160-320A 160kW	LV432777
NSX630H (70kA) Distribution Protection	Micrologic 2.3 (LSoI)	630A	252-630A	LV432895
	Micrologic 5.3A (LSI) (ammeter)	630A	252-630A	LV432901
NSX630H (70kA) Motor Protection	Micrologic 1.3-M (I)	500A	2500-6500A 250kW	LV432950
	Micrologic 2.3-M (LSoI)	500A	250-500A 250kW	LV432977

Note:
- For breakers with electronic trip units Micrologic 5.3 E (LSI protection, energy meter) To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.12)
- For breakers with electronic trip units Micrologic 6.3 A or E (LSIG protection, ammeter oe energy meter) To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.12)
- For breakers with electronic trip unit Micrologic 6.3 E-M (LSIG motor protection, energy meter) To be ordered with 2 catalogue numbers: 1 basic frame + 1 trip unit (refer to page 2.2.12)
- 4Pole MCCBs also available. Other breaking capacities are available (L 150kA and S 100kA) (refer to page 2.2.12)

For more info:

- Catalogue: LVPED208001EN
- → Accessories: Pages 2.2.13-27
- → Cascading and Discrimination tables: Pages 4.0.4-6
- → Power Chassis: Pages 2.2.34-35

Moulded Case Circuit Breakers

Compact NSX System
NSX400/630-F/N/H/S/L - Based on Separate Components
Standard AS 60947.2 (IEC 60947.2)



LV432403



LV432081



LV432096

NSX400/630:

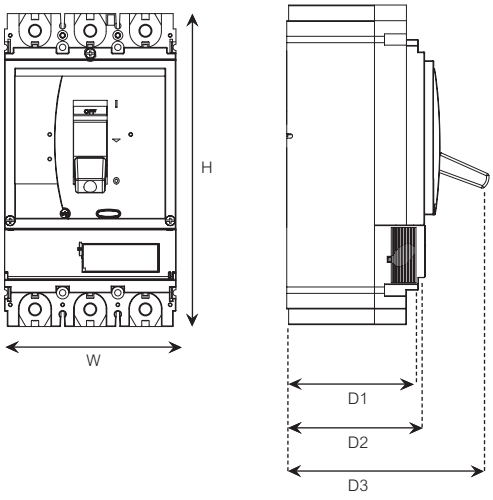
Based on separate components 3 Pole Front Connected

		Frame	Reference
Basic Frames	Compact NSX400	NSX400F (36 kA 415 V)	LV432413
		NSX400N (50 kA 415 V)	LV432403
		NSX400H (70 kA 415 V)	LV432404
		NSX400S (100 kA 415 V)	LV432414
		NSX400L (150 kA 415 V)	LV432405
	Compact NSX630	NSX630F (36 kA 415 V)	LV432813
		NSX630N (50 kA 415 V)	LV432803
		NSX630H (70 kA 415 V)	LV432804
		NSX630S (100 kA 415 V)	LV432814
		NSX630L (150 kA 415 V)	LV432805

		Trip Unit	Rating	Reference
Trip Units Distribution Protection	Micrologic 2.3 LSoI protection	Micrologic 2.3 250 A	100-250A	LV432082
		Micrologic 2.3 400 A	160-400A	LV432081
		Micrologic 2.3 630 A	252-630A	LV432080
	Micrologic 5.3 A LSI (ammeter)	Micrologic 5.3 A 400 A	160-400A	LV432091
		Micrologic 5.3 A 630 A	252-630A	LV432090
	Micrologic 5.3 E LSI (energy meter)	Micrologic 5.3 E 400 A	160-400A	LV432097
		Micrologic 5.3 E 630 A	252-630A	LV432096
	Micrologic 6.3 A LSIG (ammeter)	Micrologic 6.3 A 400 A	160-400A	LV432103
		Micrologic 6.3 A 630 A	252-630A	LV432102
	Micrologic 6.3 E LSIG (energy meter)	Micrologic 6.3 E 400 A	160-400A	LV432109
		Micrologic 6.3 E 630 A	252-630A	LV432108
Trip Units Motor Protection	Micrologic 1.3-M I protection	Micrologic 1.3-M 320 A	1600-4160A 160kW	LV432069
		Micrologic 1.3-M 500 A	2500-6500A 250kW	LV432068
	Micrologic 2.3-M LSoI protection	Micrologic 2.3-M 320 A	160-320A 160kW	LV432072
		Micrologic 2.3-M 500 A	250-500A 250kW	LV432071
	Micrologic 6.3 E-M LSIG (energy meter)	Micrologic 6.3 E-M 320 A	160-320A 160kW	LV432075
		Micrologic 6.3 E-M 500 A	250-500A 250kW	LV432074

Dimensions (mm)

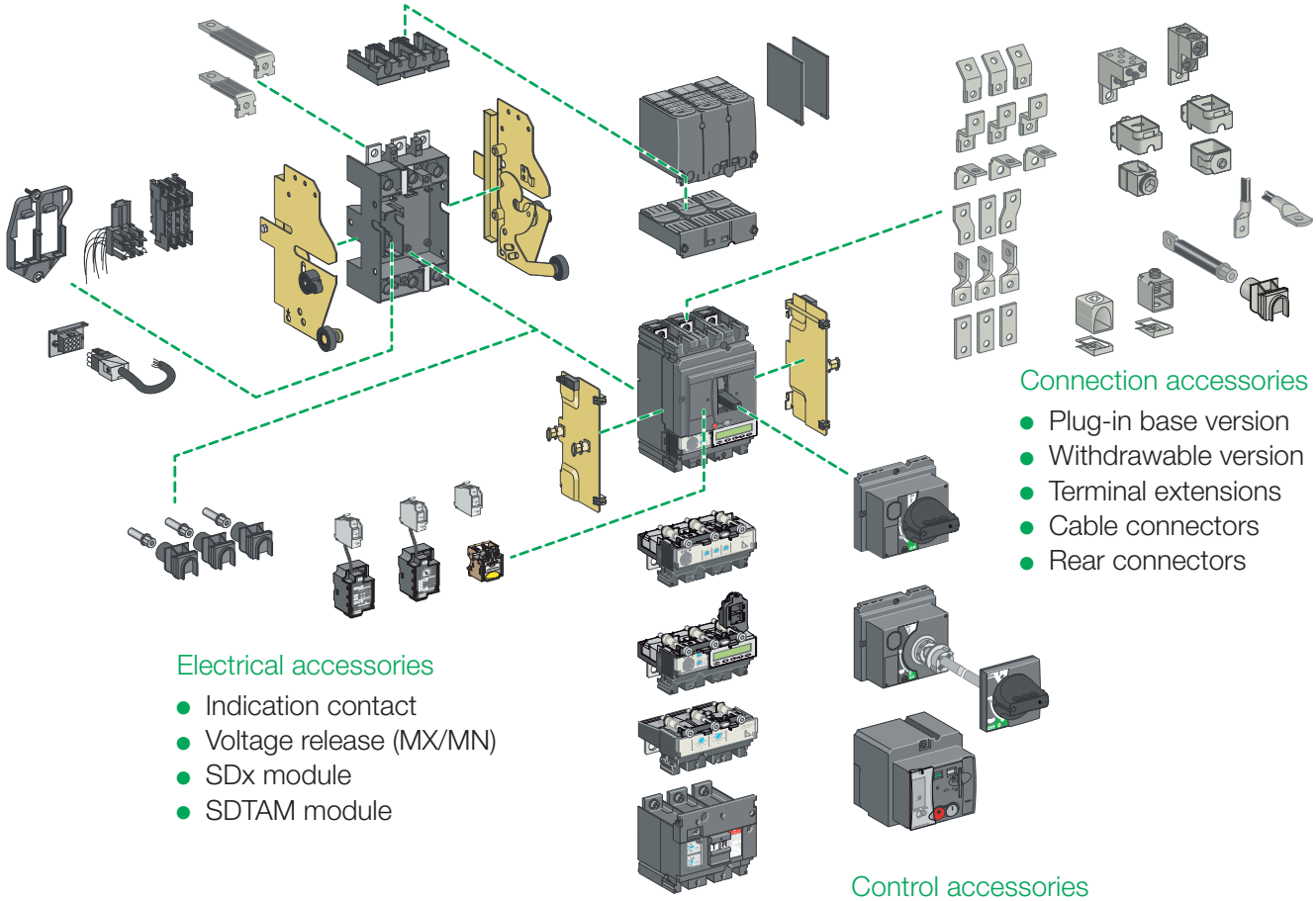
	H	W	D1	D2	D3
NSX400/630	255	140	95.5	110	168



Compact NSX

A Complete Range of Accessories Available
Safe, Easy and Field Installable

Insulation accessories
- Terminal shields
- Interphase barriers



Connection accessories
- Plug-in base version
- Withdrawable version
- Terminal extensions
- Cable connectors
- Rear connectors

Electrical accessories
- Indication contact
- Voltage release (MX/MN)
- SDx module
- SDTAM module

Protection and measurements
- Micrologic 2 trip unit
- Micrologic 5/6 trip unit
- TM-D, TM-G trip units
- Vigi module

Control accessories
- Direct rotary handle
- Extended rotary handle
- Motor mechanism
- Communicating motor mechanism

Accessories

Compact NSX System



LV429515



LV429517

Insulation Accessories

	Description		Circuit Breaker	Reference
Terminal shields Short (for rear connections)	Short (1 pair)	1 Pole	NS100/160	29320
		2 Pole	NS100/160	2 X 29320
	Short (1 piece)	3 Pole	NSX100/160/250	LV429515
		4 Pole	NSX100/160/250	LV429516
	Short, 45mm (1 piece)	3 Pole	NSX400/630	LV432591
		4 Pole	NSX400/630	LV432592
Terminal shields Long (for front connections)	Long (1 peice)	3 Pole	NSX100/160/250	LV429517
		4 Pole	NSX100/160/250	LV429518
	Long, 45mm (1 piece)	3 Pole	NSX400/630	LV432593
		4 Pole	NSX400/630	LV432594
	Long, for spreaders, 52.5mm (1 piece)	3 Pole	NSX400/630	LV432595
		4 Pole	NSX400/630	LV432596
Phase barriers Set of 6	Phase Barriers	3/4 Pole	NSX100/160/250	LV429329
		3/4 Pole	NSX400/630	LV432570



LV429329

Protection, Measurement and Indicator Modules

	Description	Circuit Breaker	Reference
Current transformer module	3 Pole 100A/5A CL3 1.6VA	NSX100	LV429457
	3 Pole 150A/5A CL3 3VA	NSX160	LV430557
	3 Pole 250A/5A CL3 5VA	NSX250	LV431567
	3 Pole 400A/5A CL3 8VA	NSX400	LV432657
	3 Pole 630A/5A CL3 8VA	NSX630	LV432857
Current transformer and voltage output module	3 Pole 125A/5A CL1 1.1VA	NSX100	LV429461
	3 Pole 150A/5A CL1 1.1VA	NSX160	LV430561
	3 Pole 250A/5A CL1 1.1VA	NSX250	LV431569
	3 Pole 400A/5A CL0.5 2VA	NSX400	LV432653
	3 Pole 600A/5A CL0.5 2VA	NSX630	LV432861
Earth leakage module (Vigi) 220 to 440V	3 Pole MH adj. 0.03 to 10A	NSX100/160	LV429210
	4 Pole MH adj. 0.03 to 10A (1)	NSX100/160	LV429211
	3 Pole MH adj. 0.03 to 10A	NSX250	LV431535
	4 Pole MH adj. 0.03 to 10A (1)	NSX250	LV431536
	3 Pole MB adj. 0.3 to 30A	NSX400/630	LV432455
	4 Pole MB adj. 0.3 to 30A	NSX400/630	LV432456
	Special cover to fit 4P Vigi on 3P breaker (1)	NSX100/160/250	LV429214
		NSX400/630	LV432457
Voltage presence indicator	3P/4P 220V to 550V AC	NSX100/160/250	LV429325
	3P/4P 220V to 550V AC	NSX400/630	LV432566



LV429457

LV429210

LV429325

Note:
(1) 4P Vigi units must be used when protecting 3 phase + neutral circuits. Use the special cover if the 4P Vigi is used with a 3P circuit breaker.

Accessories

Compact NSX System


LV429236


LV429242


LV429218


LV429261


LV431563


LV432500


BP3250 BP3400

Connection Accessories (Cu or Al)

	Description		Circuit Breaker	Reference
Rear connections	2 pieces (short)		NSX100/160/250	LV429235
			NSX400/630	LV432475
	2 pieces (long)		NSX100/160/250	LV429236
			NSX400/630	LV432476
Bare cable connectors for multi-stranded cable	Snap-in, for cable			
	1.5 to 95mm² ⩽ 160A	Set of 3	NSX100/160	LV429242
	25 to 95mm² ⩽ 250A	Set of 3	NSX250	LV429227
	120 to 185mm² ⩽ 250A	Set of 3	NSX250	LV429259
	For one cable 35 to 300mm²			
		Set of 3	NSX400/630	LV432479
	Distribution terminals for up to six 35mm² cables with phase barriers			
		Set of 3	NSX100/160/250	LV429248
	For two cables 50 to 120mm²			
		Set of 3	NSX100/160/250	LV429218
	For two cables 35 to 240mm²			
		Set of 3	NSX400/630	LV432481
Terminal extensions	Right-angle terminal extensions			
		Set of 3	NSX100/160/250	LV429261
		Set of 3	NSX400/630	LV432484
	Straight terminal extensions			
		Set of 3	NSX100/160/250	LV429263
	Edgewise terminal extensions			
		Set of 3	NSX400/630	LV432486
	Spreaders			
	45mm	3P	NSX100/160/250	LV431563
	52.5mm	3P	NSX400/630	LV432490
	70mm	3P	NSX400/630	LV432492
Crimp lugs (multi-stranded copper cables only) supplied with 2 (or 3) phase barriers	For cable 120mm²			
		Set of 3	NSX100/160/250	LV429252
	For cable 150mm²			
		Set of 3	NSX100/160/250	LV429253
	For cable 185mm²			
		Set of 3	NSX100/160/250	LV429254
	For cable 240mm²			
		Set of 3	NSX400/630	LV432500
	For cable 300mm²			
		Set of 3	NSX400/630	LV432502
NSX-Busplugs for MCCB connection to 60mm MCC busbar droppers (6.3mm thick) (1)	3 Pole	160A	NSX100/160	BP3160
	3 Pole	250A	NSX250	BP3250
	3 Pole	400A	NSX400	BP3400
	3 Pole	630A	NSX630	BP3630
	4 Pole	160A	NSX100/160	BP4160
	4 Pole	250A	NSX250	BP4250
	4 Pole	400A	NSX400	BP4400
	4 Pole	630A	NSX630	BP4630

Note:
(1) Short terminal shields are mandatory and to be ordered separately.
- NSX-Busplugs type tested with a conditional rating of 63kA:
  - NSX100/250 report No. 100269
  - NSX400 report No. 66222.4.B
  - NSX630 report No. 66222.4.B
- Busplugs for 10mm busbar are also available. Add 'A' to part number. eg: BP3160A, BP3250A.

Accessories

Compact NSX System

Electrical Auxiliaries


29450

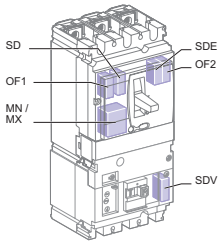

LV429424


LV429532

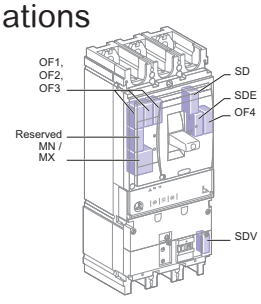

LV429387

	Description	Circuit Breaker	Reference
Auxiliary Contacts (changeover) 6A 240V AC12 (1)	OF or SD or SDE or SDV	NSX100 to 630	29450
	OF or SD or SDE or SDV low level	NSX100 to 630	29452 (2)
	SDE adaptor for trip unit TM or MA	NSX100 to 630	LV429451
SDx output module for Micrologic trip unit	SDx module 24 to 415 V AC/DC	NSX100 to 630	LV429532
SDTAM contactor tripping module (early-break thermal fault signal for Micrologic 2.2-M/6.2E-M)	SDTAM module 24 to 415 V AC/DC overload fault indication	NSX100 to 630	LV429424
Voltage releases 1 maximum per CB	MX-Shunt Trip		
	AC 50/60Hz voltage (V)		
	24	NSX100 to 630	LV429384
	48	NSX100 to 630	LV429385
	110/130	NSX100 to 630	LV429386
	220/240 (50Hz) 208/277 (60Hz)	NSX100 to 630	LV429387
	380/415 (50Hz) 440/480 (60Hz)	NSX100 to 630	LV429388
	525 (50Hz)	NSX100 to 630	LV429389
	DC voltage (V)		
	12	NSX100 to 630	LV429382
	24	NSX100 to 630	LV429390
	30	NSX100 to 630	LV429391
	48	NSX100 to 630	LV429392
	125	NSX100 to/630	LV429393
	250	NSX100 to 630	LV429394
	MN Under Voltage Release		
	AC 50/60Hz voltage (V)		
	24	NSX100 to 630	LV429404
	48	NSX100 to 630	LV429405
	110/130	NSX100 to 630	LV429406
	220/240 (50Hz) 208/277 (60Hz)	NSX100 to 630	LV429407
	380/415 (50Hz) 440/480 (60Hz)	NSX100 to 630	LV429408
	525 (50Hz)	NSX100 to 630	LV429409
	DC voltage (V)		
	12	NSX100 to 630	LV429402
	24	NSX100 to 630	LV429410
	30	NSX100 to 630	LV429411
	48	NSX100 to 630	LV429412
	125	NSX100 to 630	LV429413
	250	NSX100 to 630	LV429414
	MN with time delay 220/240V AC		
	Consists of MN 250V DC	NSX100 to 630	LV429414
	+ time delay unit 220/240V 50/60 Hz		LV429427

Auxiliary Combinations



NSX100/160/250



NSX400/630

Note:

(1) If 29450 is to be used as SDE on circuit breakers with thermal/magnetic (TM) or magnetic only (MA) trip units, the SDE adaptor (29451) is also required.

■ Functions
- OF (open/closed): indicates the position of the circuit breaker contacts.
- SD (trip indication): indicates that the CB has tripped due to an overload, a short circuit, an earth fault, the operation of a voltage release or of the "push to trip" pushbutton.
- SDE (fault indication): indicates that the CB has tripped due to an overload, a short circuit or an earth fault.
- SDV (Vigi fault indication): indicates that the CB has tripped due to an earth fault.
- SDx module: remote indication for fault differentiation, two programmable outputs

■ Auxiliary switches and voltage releases suitable for fitting in the field.

■ Shunt trips have a continuous rating.

(2) 29452 is a low-level contact. Please use 29452 when monitoring status of OF, SD, SDE status via Enerlin'X IO module, Acti 9 Smartlink devices or PLCs and IO devices.

Accessories

Compact NSX System

Motor Mechanism


LV432641


LV429441


LV434205


LV434201

	Description	Circuit Breaker	Reference
Motor mechanism modules supplied with SDE adaptor (order SDE switch, P/N 29450, separate)	AC 50/60Hz voltage (V)	NSX100/160	
	48/60		LV429440
	110/130		LV429433
	220/240 (50Hz) 208/277 (60Hz)		LV429434
	380/415 (50Hz) 440/480 (60Hz)		LV429435
	DC voltage (V)		
	24/30		LV429436
	48/60		LV429437
	110/130		LV429438
	250		LV429439
	AC 50/60Hz voltage (V)	NSX250	
	48/60		LV431548
	110/130		LV431540
	220/240 (50Hz) 208/277 (60Hz)		LV431541
	380/415 (50Hz) 440/480 (60Hz)		LV431542
	DC voltage (V)		
	24/30		LV431543
	48/60		LV431544
	110/130		LV431545
	250		LV431546
	AC 50/60Hz voltage (V)	NSX400/630	
	48/60		LV432639
	110/130		LV432640
	220/240 (50Hz) 208/277 (60Hz)		LV432641
	380/415 (50Hz)		LV432642
	440/480 (60Hz)		LV432647
	DC voltage (V)		
	24/30		LV432643
	48/60		LV432644
	110/130		LV432645
	250		LV432646
Communicating motor mechanism module supplied with SDE adapter (1) (2)	Motor mechanism module	NSX100/160	LV429441
		NSX250	LV431549
	+	NSX400/630	LV432652
	Breaker and Status Communication Module	BSCM	LV434205
	+		
	NSX cord	Wire length L = 0.35 m	LV434200
		Wire length L = 1.3 m	LV434201
		Wire length L = 3 m	LV434202
Motor mechanism Accessories	Motor mech. locking device (Ronis lock included)	NSX100/160/250	LV429449
	Motor mech. locking device (Add ronis lock, eg. 41940)	NSX400/630	LV432649
	Operations counter	NSX400/630	LV432648

Note:
(1) The control voltage for Communicating motor mechanism is 240VAC only.
(2) It is mandatory to use BSCM module and NSX cord with the communicating motor mechanism
All motor mechanism modules must be factory fitted.

Accessories

Compact NSX System


LV429337


LV429338


ESPNNS630


LV429354


LV429369


29372

Rotary Handles

	Description	Circuit Breaker	Reference
Direct Rotary Handles (For 3P/4P MCCBs)	Standard black handle (IP40)	NSX100/160/250	LV429337
		NSX400/630	LV432597
	MCC conversion accessory (IP43)	NSX100/160/250	LV429341
		NSX400/630	LV432606
Extended Rotary Handles (For 3P/4P MCCBs)	Standard extended Rotary handle (IP55)	NSX100/160/250	LV429338
		NSX400/630	LV432598
	1 early break Switch	NSX100/160/250	LV429345
		NSX400/630	LV432605
	2 early make switches	NSX100 to 630	LV429346
Accessories	Locking devices		
	Keylock adapter (Keylocks not included)	NSX100/160/250	LV429344
		NSX400 to 630	LV432604
	Keylocks		
	Ronis 1351.500 (1)	NSX100 to 630	41940
	1 set of 2 Ronis 1351.500 (1)	NSX100 to 630	41950
	1 set of 3 Ronis 1351.500 (1)	NSX100 to 630	RONIS3
	Off position shaft padlocking accessory for extended rotary handle (padlock not incl.)	NSX100 to 630	ESPNNS630

Locks, Interlocking

	Description	Circuit Breaker	Reference
Toggle Locking Device for 3 Padlocks	Removable	NSX100/630	29370
	Fixed (For 2P/3P/4P MCCBs)	NSX100/160/250	LV429371
		NSX400/630	LV432631
Interlocking	Mechanical for circuit breakers with rotary handles	NSX100/160/250	LV429369
		NSX400/630	LV432621
	Mechanical for circuit breakers with toggles	NSX100/160/250	LV429354
		NSX400/630	LV432614

Busbar Adaptors

	Description	Circuit Breaker		Reference
	3 pole	250A	NSX100/160/250	LV429372
	3 pole	570A	NSX400/630	LV432623

Note:
(1) Locking device also required, (ie reference LV429344 or LV432604)
Above accessories all suitable for fitting in the field.

Accessories

Compact NSX System



Plug-in Compact
NSX250



Withdrawable Compact
NSX250



LV429306

Plug-in/Withdrawable Configuration and Accessories

	Description	Circuit Breaker	Reference
Plug-in Kit	3P kit includes plug-in base, safety trip interlock, short terminal shields power connections	NSX100/160/250	LV429289
		NSX400/630	LV432538
NSX/100/160/250 withdrawable kit 3Pole comprising:	Plug-in kit + Chassis side plates for base + Chassis side plates for breakers	NSX/100/160/250	LV429289
		NSX/100/160/250	LV429282
		NSX/100/160/250	LV429283
NSX400/630 withdrawable kit 3Pole comprising:	Plug-in kit + Chassis side plates for base + Chassis side plates for breakers	NSX400/630	LV432538
		NSX400/630	LV432532
		NSX400/630	LV432533
Auxiliary Connections	1 9-wire fixed connector (for base)	NSX100/630	LV429273
	1 9-wire moving connector (for circuit breaker)	NSX100/160/250	LV429274
		NSX400/630	LV432523
	1 support for moving connectors	NSX100/160/250	LV429275
		NSX400/630	LV432525
	9-wire manual auxiliary connector (fixed + moving)	NSX100 to 630	LV429272
Parts of Plug-in Kit	3 Pole Plug-in base FC/RC	NSX100/160/250	LV429266
		NSX400/630	LV432516
	Set of 2 power connections for MCCB	NSX100/160/250	LV429268
		NSX400/630	LV432518
	Set of 2 power connections for MCCB with Vigi	NSX100/160/250	LV429269
		NSX400/630	LV432519
	Safety trip for advanced opening	NSX100/160/250	LV429270
		NSX400/630	LV432520
Connection adapter for Plug-in base	Adapter for phase barriers or terminal shields (3P) (for fixed part)	NSX100/160/250	LV429306
		NSX400/630	LV432584
	6 phase barriers (for fixed part)	NSX100/160/250	LV429329
		NSX400/630	LV432570
	1 pair of terminal shields (3P) (for fixed part)	NSX100/160/250	LV429515
		NSX400/630	LV432586

Ordering Example:

Plug in NSX100N TM100D 3P
fitted with 2 x Auxiliary switches (OF) + 1 x 240V AC Shunt trip (MX) + 1 x Alarm switch (SD).

Minimum Parts required:

Qty	Reference	
1	LV429840	NSX100N TM100D 3P
3	29450	Auxiliary switch
1	LV429387	Shunt trip
2	LV429273	9-wire fixed connector
2	LV429274	9-wire moving connector
1	LV429275	1 support for moving connectors
1	LV429289	NSX100/250 Plug-in kit 3P

Note:
- If above example was to be withdrawable, order ref LV429289 + LV429282 + LV429283.
- The number of 9-wire fixed/moving connectors used, depends on what combination of auxiliaries are fitted to CB.
- Above accessories all suitable for fitting in the field.

Accessories

Compact NSX System


LV430563


LV434210

Trip unit accessories

	Description		Reference
External neutral CT for 3 pole breaker with Micrologic 5/6	25-100 A	NSX100	LV429521
	150-250 A	NSX160/250	LV430563
	400-630A	NSX400/630	LV432575
24 V DC wiring accessory for Micrologic 5/6	24 V DC power supply connector	NSX100 to 630	LV434210
ZSI wiring accessory for NS630b NW with NSX	ZSI module	NSX100 to 630	LV434212
External power supply module (24 V DC - 1 A), class 4 (1)	24-30 V DC	NSX100 to 630	54440
	48-60 V DC	NSX100 to 630	54441
	100-125 V DC	NSX100 to 630	54442
	110-130 V AC	NSX100 to 630	54443
	200-240 V AC	NSX100 to 630	54444
	380-415 V AC	NSX100 to 630	54445
Battery module	24 V DC battery module	NSX100 to 630	54446


54444


LV429525


LV429319


LV429528


LV429513

Installation accessories / Spare parts

	Description		Reference
Front-panel escutcheons	IP30 escutcheon for all control types	NSX100/160/250	LV429525
	IP30 trip unit access escutcheon for toggle	NSX100/160/250	LV429526
	IP30 escutcheon for all control types	NSX400/630	LV432557
	IP30 trip unit access escutcheon for toggle	NSX400/630	LV432559
IP43 rubber toggle cover	1 toggle cover	NSX100/160/250	LV429319
	1 toggle cover	NSX400/630	LV432560
Compact NS retrofit escutcheon	Small cut-out	NSX100/160/250	LV429528
	Small cut-out	NSX400/630	LV432571
Torque limiting screws (Set of 12)	3P/4P	NSX100/160/250	LV429513
	3P/4P	NSX400/630	LV432513
12 snap-in nuts (fixed/FC)	M6	NSX100	LV429234
	M8	NSX100/160/250	LV430554
Lead-sealing accessories	Bag of accessories	NSX100 to 630	LV429375

Note:
(1) Please refer to DOCA0093EN-00 - ULP System User Guide for information on sizing and selection of power supply for circuit breakers and auxiliaries.

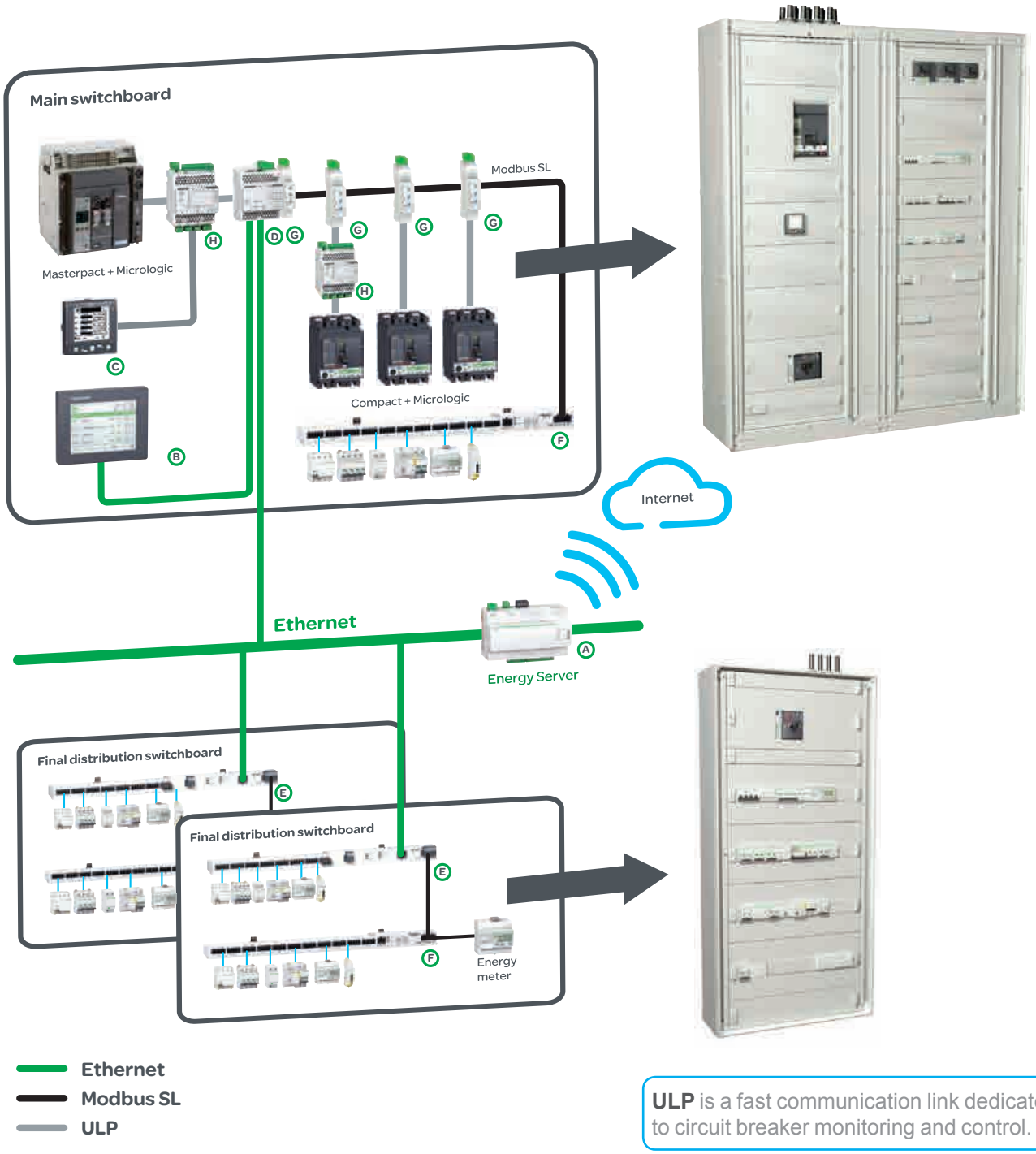
Enerlin'X communication system
Products overview

2.2

Enerlin'X communication system provides access to status, electrical values and devices control using Ethernet and Modbus SL communication protocols.

Ethernet has become the universal link between switchboards, computers and communication devices inside the building. The large amount of information which can be transferred makes the connection of Enerlin'X digital system to hosted web services of Schneider Electric a reality. More advantages are offered to integrators thanks to configuration web pages available remotely or on the local Ethernet network.

Modbus SL is the most widely used communication protocol in industrial networks. It operates in master-slave mode. The devices (slaves) communicate one after the other with a gateway (master).



ULP is a fast communication link dedicated to circuit breaker monitoring and control.

Enerlin'X communication devices and displays

		Name	Function	Port		Bin. Input	Analog. Input	Bin. Output	Cial. Ref.
				(to device)	(to server)				
A		Com'X 200	Energy Server with Ethernet Gateway (1) function	Modbus Master	Ethernet cable + WiFi	6	2	-	EBX200
B		FDM128	Ethernet LCD colour touch screen	-	Ethernet	-	-	-	LV434128
C		FDM121	LCD display for circuit breaker	ULP	-	-	-	-	TRV00121
D		IFE interface + gateway	Ethernet interface (2) & Gateway	Modbus Master & ULP	Ethernet	-	-	-	LV434011
		IFE interface	Ethernet interface for circuit breakers	ULP	Ethernet	-	-	-	LV434010
E		Acti9 Smartlink Ethernet	Ethernet interface with Input/Output functions & Gateway	Modbus Master	Ethernet	14	2	7	A9XMEA08
F		Acti9 Smartlink Modbus	Modbus interface with Input/Output functions	-	Modbus Slave	22	-	11	A9XMSB11
G		IFM	Modbus interface for circuit breaker	ULP	Modbus Slave	-	-	-	TRV00210
H		I/O	Input/Output application module for circuit breaker	ULP	ULP	6	-	3	LV434063

(1) Gateway: transfers data from a network to another (ie.: Modbus to Ethernet).
(2) Interface: transfers data from an equipment to a network.(ie.: ULP to Modbus).



Plug and play commissioning tools give a real peace of mind to panel builders as their panels can be functionally checked before delivery.

Commissioning / maintenance tools

Web pages embedded into Com'X 200 and Acti9 Smartlink Ethernet gateways

Access with a standard PC and common browser:

- commissioning,
- communication diagnosis,
- functional tests…

Electrical Asset Manager

Loaded into a standard PC Error free commissioning. Time saving, easier management and maintenance thanks to the advanced services:

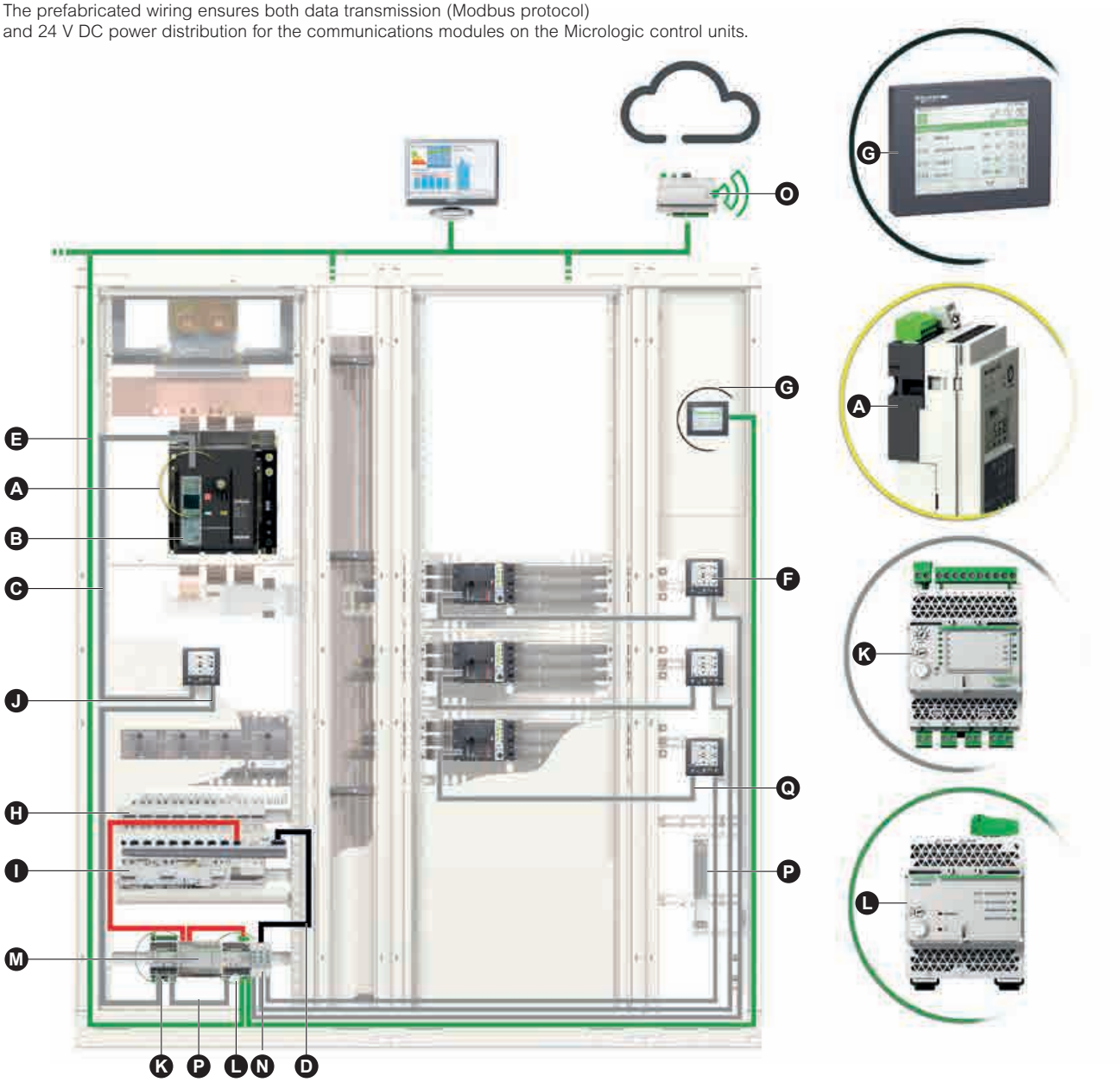
- project management,
- configuration of controllers, gateways, …
- test of communication networks, diagnostic report…

2.2

Wiring system ULP

The wiring system is designed for low-voltage power switchboards. Installation requires no tools or special skills.

The prefabricated wiring ensures both data transmission (Modbus protocol) and 24 V DC power distribution for the communications modules on the Micrologic control units.



A	BCM ULP: Breaker Communication Module with ULP port		
B	Micrologic control unit		
C	Breaker ULP cord	0.35 m	LV434195
		1.3 m	LV434196
		3 m	LV434197
D	Modbus cable		
E	Ethernet cable		
F	FDM121: Front Display Module		TRV00121
G	FDM128: Front Display Module		LV434128
H	Smartlink		A9XMSB11
I	Acti9		
J	ULP line terminators		TRV00880
K	Input/Output interface		LV434063
L	IFE: Ethernet interface		LV434010 or LV434011
M	External 24 V DC power supply module		
N	IFM: Modbus-SL interface		TRV00210
O	Com'X 200		
P	ULP cable	0.3 m	TRV00803
		0.6 m	TRV00806
		1 m	TRV00810
		2 m	TRV00820
		3 m	TRV00830
		5 m	TRV00850
Q	NSX cord	0.35 m	LV434200
		1.3 m	LV434201
		3 m	LV434202

Ethernet
Modbus
ULP
24 V DC

Available information and functions



Micrologic trip units for 3 poles, 4 poles Compact NSX circuit breakers.

Available functions	Micrologic type	
Status indications		
ON/OFF (O/F)	A	E
Fault-trip SDE	A	E
Connected / disconnected / test position CE/CD (I/O application module only)	A	E
Controls		
Open/close MT or MTc	A	E
Measurements		
Instantaneous measurement information	A	E
Averaged measurement information		E
Maximeter / minimeter	A	E
Energy metering		E
Demand for current and power		E
Power quality		E
Operating assistance		
Protection and alarm settings	A	E
Histories	A	E
Time stamped event tables	A	E
Maintenance indicators	A	E



Embedded trip unit and communication module



ıre equipped with a Micrologic trip unit. This adjustable unit is mainly designed for tripping the circuit breaker in case of necessity and monitoring the downstream circuit.

Alarms may be programmed for remote indications.

Electrical measurements, operation data for predictive maintenance, are provided for local display or distant monitoring.



BSCM module.

BSCM module

Functions

The optional BSCM Breaker Status & Control Module is used to acquire device status indications and control the communicating remote-control function.

It includes a memory used to manage the maintenance indicators.

Status indications

Indication of device status: O/F, SD and SDE.

Maintenance indicators

The BSCM module manages the following indicators:

- mechanical operation counter
- electrical operation counter
- history of status indications.

It is possible to assign an alarm to the operation counters.

Controls

The module can be used to carry out communicating remote control operations: (open, close and reset) in different modes (manual, auto).

Mounting

The BSCM module can be installed on all Compact NSX circuit breakers and switch-disconnectors. It simply clips into the auxiliary contact slots. It occupies the slots of one O/F contact and one SDE contact. The BSCM is supplied with 24 V DC power automatically via the NSX cord when the communication system is installed.

Functions and characteristics

All Compact NSX devices can be equipped with the communication function via a prewired connection system and a Modbus or Ethernet network interface.
The interface can be connected directly or via the FDM121 switchboard display unit. Four functional levels can be combined to adapt to all supervision requirements.

Four functional levels

The Compact NSX can be integrated in a Modbus or Ethernet communication environment. Four functional levels can be used separately or combined.

Communication of status indications

This level is compatible with all Compact NSX circuit breakers, whatever the trip unit, and with all switch-disconnectors. Using the BSCM module, the following information is accessible:

- ON/OFF position (O/F)
- trip indication (SD)
- fault-trip indication (SDE).

Communication of commands

Also available on all circuit breakers and switch-disconnectors, this level (communicating remote control) can be used to:

- open
- close
- reset.

Communication of measurements with Micrologic 5 / 6 A or E

This level provides access to all available information:

- instantaneous values A, E
- demand values E
- maximeters/minimeters A, E
- energy metering E
- demand current and power E
- power quality E.

Communication of operating assistance with Micrologic 5 / 6 A or E

- protection and alarm settings A, E
- time-stamped histories A, E
- event tables A, E
- maintenance indicators A, E.

Modbus principle

The Modbus RS 485 (RTU protocol) system is an open bus on which communicating Modbus devices (Compact NS with Modbus COM, Power Meter PM700, PM800, Sepam, Vigilohm, Compact NSX, etc.) are installed. All types of PLCs and microcomputers may be connected to the bus.

Addresses

The Modbus communication parameters (address, baud rate, parity) are entered using the keypad on the Micrologic A, E, P, H. For a switch-disconnector, it is necessary to use the Electrical Asset Manager or RSU (Remote Setting Utility) Micrologic utility.

Number of devices

The maximum number of devices that may be connected to the Modbus bus depends on the type of device (Compact with Modbus COM, PM700, PM800, Sepam, Vigilohm, Compact NSX, etc.), the baud rate (19200 is recommended), the volume of data exchanged and the desired response time. The RS 485 physical layer offers up to 32 connection points on the bus (1 master, 31 slaves).
A fixed device requires only one connection point (communication module on the device). A drawout device uses two connection points (communication modules on the device and on the chassis).
The number must never exceed 31 fixed devices or 15 drawout devices.

Length of bus

The maximum recommended length for the Modbus bus is 1200 meters.

Bus power source

A 24 V DC power supply is required (less than 20 % ripple, insulation class II).

Ethernet principle

Ethernet is a data link and communication protocol defined by IEEE 802 10 and 100 Mbps specifications that connects computer or other Ethernet devices. IFE Ethernet interface can be connected to a PC or a laptop over Ethernet.The maximum length of Ethernet cable is 100 metres. IFE Ethernet interface + gateway provides a Modbus TCP/IP gateway over Ethernet to enable Modbus TCP communication from a Modbus TCP master to any Modbus slave devices connected to it. The maximum active Modbus TCP client connections is 12. IFE Ethernet interface has an embedded web server (web page). The Modbus RS 485 (RTU protocol) system is an open bus on which communicating Modbus devices (Compact NS with Modbus COM, Power Meter PM700, PM800, Sepam, Vigilohm, Compact NSX, etc.) are installed. All types of PLCs and microcomputers may be connected to the bus.

Communication components and connections, IFM

Connections

■ *Compact NSX is connected to the I/O application module or FDM121 display unit via the internal terminal block for the NSX cord equipped with an RJ45 connector:*

□ *cord available in three lengths: 0.35 m, 1.3 m and 3 m.*

□ *insulated 1.3 m version for installations > 480 V AC*

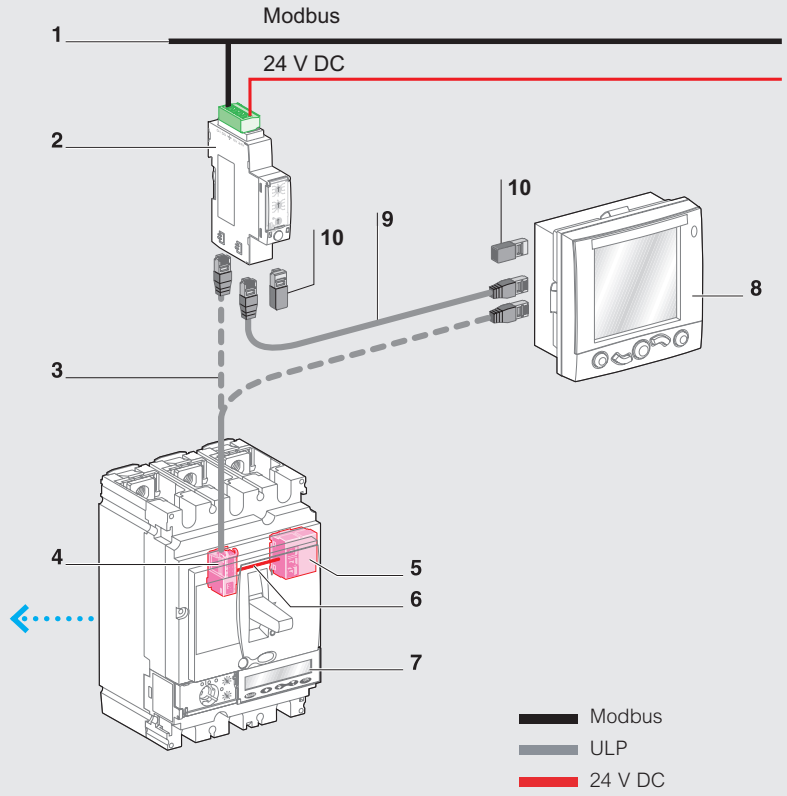
□ *lengths up to 10 m possible using extensions.*

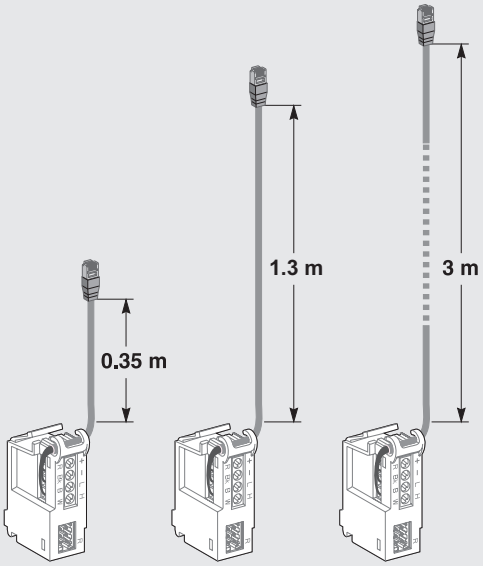
■ *The FDM121 display unit and the I/O application module are connected to:*

□ *the IFM Modbus interface by a communication cable with RJ45 connectors on both ends*

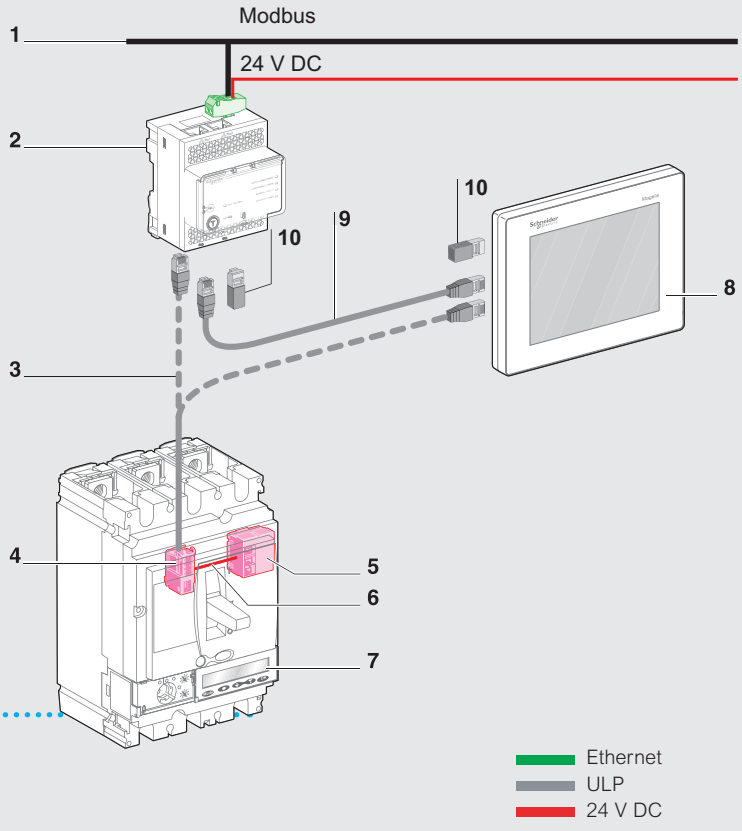
or

□ *the IFE Ethernet interface module by a communication cable with RJ45 connectors on both ends.*





Communication components and connections, IFE



- A *Modbus network*
- B *IFM Modbus interface*
- B' *IFE Ethernet interface module*
- C *NSX cord*
- D *Internal terminal block for communication via NSX cord*
- E *BSCM module*
- F *Prefabricated wiring*
- G *Micrologic trip unit*
- H *FDM121 display*
- I *RJ45 cable*
- J *Line terminator (on unused connector if applicable)*
- K *I/O application module*

Communication Accessories

Compact NSX 100/160/250/400/630



TRV00121



LV434205



LV434201



TRV00210



TRV00217



LV434206



TRV00910

Monitoring and control (remote operation)

	Description	Reference
BSCM module	Breaker Status Control Module (1)	LV434205
Display module	Switchboard front display module FDM121 (2)	TRV00121
	FDM mounting accessory (diameter 22 mm)	TRV00128
	Switchboard front display module FDM128 (3)	LV434128
Communication module	Modbus interface module	TRV00210
	2-Wire RS-485 Insulated Repeater	TRV00211
	Ethernet Interface module (4)	LV434010
	Ethernet Interface & Gateway (5)	LV434011
ULP wiring accessories	NSX cord L = 0.35 m	LV434200
	NSX cord L = 1.3 m	LV434201
	NSX cord L = 3 m	LV434202
	NSX cord for U > 480 V AC L = 1.3 m	LV434204
	10 x Stacking connectors for communication interface modules	TRV00217
	2 x Modbus line terminators	VW3A8306DRC
	5 x RJ45 connectors female/female	TRV00870
	RS 485 roll cable (4 wires, length 60 m)	50965
	10 x ULP line terminators	TRV00880
	10 x RJ45/RJ45 male cord L = 0.3 m	TRV00803
	10 x RJ45/RJ45 male cord L = 0.6 m	TRV00806
	5 x RJ45/RJ45 male cord L = 1 m	TRV00810
	5 x RJ45/RJ45 male cord L = 2 m	TRV00820
	5 x RJ45/RJ45 male cord L = 3 m	TRV00830
	1 x RJ45/RJ45 male cord L = 5 m	TRV00850

Test tools and software

	Description		Reference
Test tool	Pocket battery for Micrologic NSX100-630		LV434206
	Maintenance case	Comprising: - USB maintenance interface - Power supply - Micrologic cord - USB cord - RJ45/RJ45 male cord	TRV00910
	Spare USB maintenance interface		TRV00911
	Spare power supply 110-240 V AC		TRV00915
	Spare Micrologic cord for USB maintenance interface		TRV00917
	Bluetooth/Modbus option for USB maintenance interface		VW3A8114
Software (3)	Configuration and setting software RSU		
	Test software LTU		
	Monitoring software RCU		

Note:
(1) When using BSCM,SDE adaptor mandatory for trip unit TM, MA or Micrologic 2 (LV429451).
(2) For measurement display with Micrologic A and E or status display with BSCM.
(3) Pre-programmed, touch screen, colour display monitoring, measurement and control of up to 8 LV circuit breakers.
(4) Interface - transfers data from an equipment to a network (i.e. ULP to Modbus serial or Ethernet).
(5) Gateway - transfers data from a network to another (i.e. Modbus to Ethernet).

Quotation Request and Order Form
Compact NSX100 to NSX630

Circuit Breakers and Switch-disconnectors

Name of customer:
Address for delivery:

Requested delivery date:
Customer order no.:

To indicate your choices, check the applicable square boxes or note the quantity and enter the appropriate information in the rectangles

Circuit breaker or switch-disconnector

Compact type	**NSX100/160/250 - 160A not available with R, HB1 or HB2** **NSX400/630**	
Rating	**A**	
Circuit breaker	**B, F, N, H, S, L, R, HB1, HB2**	
Switch-disconnector	**NA**	
Number of poles	**1, 2, 3 or 4**	
Number of poles protected	**2d, 3d or 4d**	
Fixed device	Front connections	
Plug-in/withdr.	Plug-in ☐ Withdrawable	
Earth-leakage protection	**ME, MH, MB - (not available with R, HB1or HB2)**	
Vigi module	Voltage < 550 V V 4P option on 3P NSX	

Trip unit

Thermal-mag.

TMD rating (16 ... 250 A) (40 ….250 A) with R, HB1 and (63...250 A) with HB2
TMG rating (16 ... 250 A) - not available with R, HB1or HB2
MA rating (2.5 ... 220 A) (12.5 ….220 A) with R, HB1 and HB2

Electronic
* Not available with R, HB1 or HB2

Micrologic 2.2	☐	**Micrologic 2.3**	☐
Micrologic 2.2 G*	☐	**Micrologic 2.3 AB***	☐
Micrologic 2.2 AB*	☐	**Micrologic 5.3 A***	☐
Micrologic 5.2 A*	☐	**Micrologic 5.3 E**	☐
Micrologic 5.2 E	☐	**Micrologic 5.3 A-Z***	☐
Micrologic 5.2 A-Z*	☐	**Micrologic 6.3 A***	☐
Micrologic 6.2 A*	☐	**Micrologic 6.3 E**	☐
Micrologic 6.2 E	☐	**Micrologic 1.3 M**	☐
Micrologic 2.2 M	☐	**Micrologic 2.3 M**	☐
Micrologic 6.2 E-M	☐	**Micrologic 6.3 E-M**	☐
SDTAM Module	☐		

External neutral CT ☐
24 V DC power supply connector ☐
ZSI connector accessory for plug-in and withdrawable ☐
ZSI wiring accessory for NS630b NW/NT ☐
External power supply module 24 V DC ☐

24-30 V DC	☐	48-60 V DC	☐
100-125 V AC	☐	110-130 V AC	☐
200-240 V AC	☐	380-415 V AC	☐

Battery module ☐

Connection

Rear-connection kit	Short	☐	Long	☐
	Mixed	☐		
NSX100/250 connectors	Snap-on 1.5° to 95° (< 160 A)			☐
	Snap-on 25° to 95° (< 250 A)			☐
	Snap-on 120° to 185° (< 250 A)			☐
	Distribution 6 x 1.5° to 35°			☐
	Aluminium 2 cables 50° to 120°			☐
NSX400/630 connectors	1 cable 35° to 300°			☐
	2 cables 35° to 240°			☐
Right-angle terminal extensions				☐
Straight extensions	NSX100/250			☐
Edgewise extensions	45° terminal extension	☐	Double-L terminal extensions	☐
Spreader	NSX100/250 (one piece)	☐	(45 mm)	☐
	NSX400/630 (52.5 mm)	☐	(70 mm)	☐
Cu cable lugs	NSX100/250	120° ☐	150° ☐	185° ☐
	NSX400/630		240° ☐	300° ☐
Al cable lugs	NSX100/250		150° ☐	185° ☐
	NSX400/630		240° ☐	300° ☐
Voltage measurement	For lugs NSX100/250 ≤ 185°			☐
Input for connector	For lugs NSX400/630			☐
Terminal shields	NSX100/250	Short ☐	Long	☐
	NSX400/630	Short ☐	Long	☐
	Long for 52.5 mm spreaders			☐
Interphase barriers			Set of 6	☐
2 insulating screens:	NSX100/250			
	NSX400/630		70 pitch	☐

Test tool

Pocket battery for Micrologic ☐
Maintenance case ☐
USB maintenance interface ☐
Power supply 110-240 V AC ☐
Spare Micrologic cord ☐

Indication and measurement

Ammeter module	standard	3P ☐	4P ☐
	I max	3P ☐	
Current-transformer module		3P ☐	4P ☐
Current-transformer module + TCU		3P ☐	4P ☐
Insulation-monitoring module - not available with HB1 or HB2		3P ☐	4P ☐
Voltage-presence indicator - not available with HB1 or HB2			
Auxiliary contact	OF, SD, SDE or SDV	Standard ☐	Low level ☐
SDE adapter (TM, MA or Micrologic 2 trip units)			☐
SDX module			☐

Remote operation

Electrical operation	Motor mechanism		AC ☐	DC ☐	V ☐
Voltage releases	Instantaneous	MX	AC ☐	DC ☐	V ☐
		MN	AC ☐	DC ☐	V ☐
	Fixed time delay	MN	AC ☐	DC ☐	V ☐
	Adjust. time delay	MN	AC ☐	DC ☐	V ☐

Rotary handles

Direct	Black	☐	Red and yellow front ☐
	MCC conversion access.	☐	CNOMO conversion access. ☐
Extended	Black	☐	Red and yellow front ☐
	Telescopic handle for withdrawable device		☐
Indication auxiliary	1 early-break switch	☐	2 early-make switches ☐

Locking

Toggle (1 to 3 padlocks)	Removable	☐	Fixed ☐
Rotary handle	Keylock adapter (keylock not included)		
	Keylocks Ronis 1351B.500	☐	Profalux KS5 B24 D4Z ☐
Motor mechanism	Keylock adapter + keylock Ronis (special)		NSX100/250 ☐
	Keylock adapter (keylock not included)		NSX400/630 ☐
	Keylocks Ronis 1351B.500	☐	Profalux KS5 B24 D4Z ☐

Interlocking

Mechanical	Toggle operated	☐	Rotary Handle ☐
By key (2 keylocks, 1 key)	Locking kit without locks		
for rotary handle	Keylocks Ronis 1351B.500	☐	Profalux KS5 B24 D4Z ☐

Installation accessories

IP30 escutcheon for all types (toggle/rotary handle/motor mechanism) ☐
IP30 escutcheon (with access to toggle + trip unit) ☐
IP30 escutcheon for Vigi module ☐
IP40 escutcheon for all types (toggle/rotary handle/motor mechanism) ☐
IP40 escutcheon for Vigi module ☐
IP40 escutcheon for Vigi or ammeter module ☐
Toggle cover ☐
Sealing accessories ☐
DIN rail adapter NSX100/250 ☐
3P 60 mm busbar adapter ☐

Plug-in / withdrawable configuration accessories

Auxiliary connections	1 automatic connector fixed part with 9 wires (for base)			☐
	1 automatic connector moving part with 9 wires (for circuit breaker)			☐
	1 support for 3 automatic connector moving parts	☐	1 support for 2 automatic connector	☐
	9-wire manual auxiliary connector (fixed + moving)			☐
Plug-in base accessories	Long insulated terminals		Set of 2	☐
	2 IP4 shutters for base			☐
Chassis accessories	Escutcheon collar	Toggle ☐	Vigi	☐
	Locking kit (keylock not included)			☐
	2 carriage switches (conn./disconnected position indication)			☐
Parts or plug-in Withdrawable kits	Plug-in base FC/RC	2P ☐ 3P ☐	4P	☐
	Set of two power connections	Standard ☐	Vigi	☐
	Safety trip for advanced opening			☐
	For 3P/4P chassis		Moving part	☐
			Fixed part	☐
Adapter for plug-in base (for terminal shield or interphase barriers)				☐

Communication

	NSX Cord L = 0.35 m	☐	NSX Cord L = 1.3 m ☐
	NSX Cord U > 480 V AC L = 0.35 m	☐	NSX Cord L = 3 m ☐
BSCM			☐
Communicating motor mechanism 220-240 V			☐
Switchboard front display module FDM121			☐
FDM mounting accessory			☐
Ethernet Interface + Gateway			☐
Ethernet Interface			☐
Modbus interface			☐
I/O Application Module			Qty 1 ☐
			Qty 2 ☐
Stacking accessory			☐
ULP line termination			☐

RJ45 connectors female/female ☐

Wire length RJ45 L = 0.3 m ☐		Wire length RJ45 L = 0.6 m ☐
Wire length RJ45 L = 1 m ☐		Wire length RJ45 L = 2 m ☐
Wire length RJ45 L = 3 m ☐		Wire length RJ45 L = 5 m ☐

Moulded Case Circuit Breakers

Compact NSX System
NSX100/160/250 AC/DC Applications
Standard AS 60947.2

1 Pole Front Connected AC/DC Breaking Capacity



LV438564

	Trip Unit	Rating (Fixed)	Reference
NSX100F DC 36kA @ 250V / AC 18kA @ 240V Standard thermal-magnetic trip unit 1 pole	TM16D	16A	LV438562
	TM20D	20A	LV438563
	TM25D	25A	LV438564
	TM30D	30A	LV438565
	TM40D	40A	LV438566
	TM50D	50A	LV438567
	TM63D	63A	LV438568
	TM80D	80A	LV438569
	TM100D	100A	LV438570
NSX100N DC 50kA @250V / AC 25kA @ 240V Standard thermal-magnetic trip unit 1 pole	TM16D	16A	LV438572
	TM20D	20A	LV438573
	TM25D	25A	LV438574
	TM30D	30A	LV438575
	TM40D	40A	LV438576
	TM50D	50A	LV438577
	TM63D	63A	LV438578
	TM80D	80A	LV438579
	TM100D	100A	LV438580
NSX100M DC 85kA @ 250V / AC 40kA @ 240V Standard thermal-magnetic trip unit 1 pole	TM16D	16A	LV438582
	TM20D	20A	LV438583
	TM25D	25A	LV438584
	TM30D	30A	LV438585
	TM40D	40A	LV438586
	TM50D	50A	LV438587
	TM63D	63A	LV438588
	TM80D	80A	LV438589
	TM100D	100A	LV438590
NSX160F DC 36kA @ 250V / AC 18kA @ 240V Standard thermal-magnetic trip unit 1 pole	TM125D	125A	LV438669
	TM160D	160A	LV438670
NSX160N DC 50kA @ 250V / AC 25kA @ 240V Standard thermal-magnetic trip unit 1 pole	TM125D	125A	LV438679
	TM160D	160A	LV438680
NSX160M DC 85kA @ 250V / AC 40kA @ 240V Standard thermal-magnetic trip unit 1 pole	TM125D	125A	LV438689
	TM160D	160A	LV438690
NSX 250B 25KA AC @ 240V Standard thermal-magnetic trip unit 1 pole	TM160D	160A	LV438693
	TM200D	200A	LV438694
	TM250D	250A	LV438695

2 Pole Front Connected AC/DC Breaking Capacity



LV438600

NSX100F DC 36KA @ 500V / AC 36KA @ 240V Standard thermal-magnetic trip unit 2 pole	TM16D	16A	LV438592
	TM20D	20A	LV438593
	TM25D	25A	LV438594
	TM30D	30A	LV438595
	TM40D	40A	LV438596
	TM50D	50A	LV438597
	TM63D	63A	LV438598
	TM80D	80A	LV438599
	TM100D	100A	LV438600
NSX100M DC 85KA @ 500V / AC 85KA @ 240V Standard thermal-magnetic trip unit 2 pole	TM16D	16A	LV438602
	TM20D	20A	LV438603
	TM25D	25A	LV438604
	TM30D	30A	LV438605
	TM40D	40A	LV438606
	TM50D	50A	LV438607
	TM63D	63A	LV438608
	TM80D	80A	LV438609
	TM100D	100A	LV438610
NSX100S DC 100KA @ 500V / AC 100KA @ 240V Standard thermal-magnetic trip unit 2 pole	TM16D	16A	LV438612
	TM20D	20A	LV438613
	TM25D	25A	LV438614
	TM30D	30A	LV438615
	TM40D	40A	LV438616
	TM50D	50A	LV438617
	TM63D	63A	LV438618
	TM80D	80A	LV438619
	TM100D	100A	LV438620
NSX160F DC 36KA @ 500V / AC 36KA @ 240V Standard thermal-magnetic trip unit 2 pole	TM125D	125A	LV438699
	TM160D	160A	LV438700
NSX160M DC 85KA @ 500V / AC 85KA @ 240V Standard thermal-magnetic trip unit 2 pole	TM125D	125A	LV438709
	TM160D	160A	LV438710
NSX160S DC 100KA @ 500V / AC 100KA @ 240V Standard thermal-magnetic trip unit 2 pole	TM125D	125A	LV438719
	TM160D	160A	LV438720

For more info:

- Catalogues: LVPED208006EN (DC)
- → Accessories: Pages 2.2.13-27
- → Cascading and Discrimination tables: Pages 4.0.4-6
- → Power Chassis: Pages 2.2.34-35

Moulded Case Circuit Breakers

Compact NSX System
NSX100/160/250/400/630 DC Applications
Standard AS 60947.2

Compact NSX100/160/250 DC 3P



LV438008

	Description	Breaking capacity (kA)	Reference
Basic frames without trip units 3 poles (Icu = 36 kA 250 V DC/1P - 500 V DC/2P - 750 V DC/3P)	NSX100F DC 3P	36kA	LV438003
	NSX160F DC 3P	36kA	LV438103
	NSX250F DC 3P	36kA	LV438203
Basic frames without trip units 3 poles (Icu = 100 kA 250 V DC/1P - 500 V DC/2P - 750 V DC/3P)	NSX100S DC 3P	100kA	LV438018
	NSX160S DC 3P	100kA	LV438118
	NSX250S DC 3P	100kA	LV438218

	Description	Reference 3P3d
Trip unit thermal-magnetic 3 poles Standard protection: trip unit TM-D/DC	TM16D	LV429037
	TM25D	LV429036
	TM32D	LV429035
	TM40D	LV429034
	TM50D	LV429033
	TM63D	LV429032
	TM80DC	LV438029
	TM100DC	LV438028
	TM125DC	LV438136
	TM160DC	LV438135
	TM200DC	LV438246
	TM250DC	LV438245

Compact NSX100/160/250 DC 4P



LV438029

	Description	Breaking capacity (kA)	Reference
Basic frames without trip units 4 poles (Icu = 36 kA 250 V DC/1P - 500 V DC/2P - 750 V DC/3P)	NSX100F DC 4P	36kA	LV438008
	NSX160F DC 4P	36kA	LV438108
	NSX250F DC 4P	36kA	LV438208
Basic frames without trip units 4 poles (Icu = 100 kA 250 V DC/1P - 500 V DC/2P - 750 V DC/3P)	NSX100S DC 4P	100kA	LV438019
	NSX160S DC 4P	100kA	LV438119
	NSX250S DC 4P	100kA	LV438219

	Description	Reference 4P4d
Trip unit thermal-magnetic 4 poles Standard protection: trip unit TM-D/DC	TM16D	LV429057
	TM25D	LV429056
	TM32D	LV429055
	TM40D	LV429054
	TM50D	LV429053
	TM63D	LV439052
	TM80DC	LV438049
	TM100DC	LV438048
	TM125DC	LV438146
	TM160DC	LV438145
	TM200DC	LV438256
	TM250DC	LV438255



LV438403

Compact NSX400/630 DC 3P with TM-DC trip units

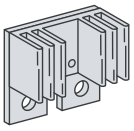
	Description	Breaking capacity (kA)	Reference
Complete 3P frames with TM-DC trip units	NSX400F TM-DC 3P	36kA	LV438267
	NSX600F TM-DC 3P	36kA	LV438269
	NSX400S TM-DC 3P	100kA	LV438277
	NSX600S TM-DC 3P	100kA	LV438279

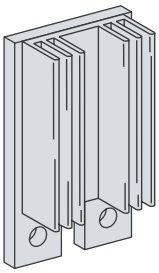
Compact NSX400/630 DC 4P with TM-DC trip units

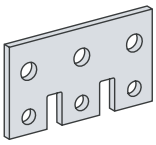
	Description	Breaking capacity (kA)	Reference
Complete 4P frames with TM-DC trip units	NSX400F TM-DC 4P	36kA	LV438262
	NSX600F TM-DC 4P	36kA	LV438264
	NSX400S TM-DC 4P	100kA	LV438272
	NSX600S TM-DC 4P	100kA	LV438274

Moulded Case Circuit Breakers

Compact NSX System
NSX100/160/250/400/630 DC Applications
Standard AS 60947.2







Special connection accessories for parallel or series connection

	NSX100-250DC	NSX400-630 DC
Connection accessories for parallel or series connection of 2 poles (1)(2)	LV438328	LV438338
Connection plates for parallel connection of 3 poles	LV438329	(3)
Connection plates for parallel connection of 4 poles	(3)	(3)
1P short terminal shields	LV438320	
2P short terminal shields	2 x LV438320	
3P terminal shields for series connection of poles	LV438325	LV438291 (5) LV438292 (5)
4P terminal shields for series connection of poles	LV438326	LV438294 (5) LV438295 (5)
4P terminal shields for parallel connection of poles (2P/4P)	LV438327	LV438293 (5)

Note:

(1) Series connection: 2 poles = 1 connection plate.
3 poles = 2 connection plates.
4 poles = 3 connection plates.

Parallel connection: 2 poles = 2 connection plates.
3 poles = 1 set of 2 connection plates (29499).
2 x 2 poles = 4 connection plates.

(2) These connection accessories are equipped with heat sink and come with an interphase barrier.

(3) To be made by the customer.

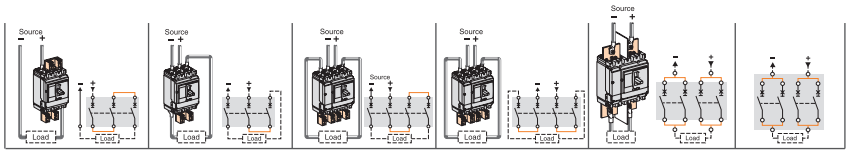
(4) General accessories are common with Compact NSX

(5) Refer to Terminal shield configuration table below.

Terminal shield configuration

NSX400/630/120, NSX400/630 NA

	NSX400/630					NSX1200
Circuit breaker construction	3P	3P	4P	4P	4P	2P (4P platform)
Pole connection	3P in series	2P in series	3P in series	4P in series	2P parallel	-
Terminal shield construction	3P	3P	4P	4P	4P	4P
upstream	LV438291	LV432593	LV438294	LV432594	LV438293	LV438293
upstream with rear connection	LV438291	LV432593 or LV432591 (short)	LV438294	LV432594 or LV432592 (short)	-	-
downstream	LV438291	LV438292	LV438295	LV438293	LV438293	LV438293



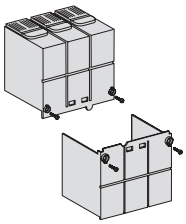
Note:

- The above accessories can be fitted to 2P version only
  - 1 x Alarm switch (SD) and 1 x AUX switch (OF).
  - 1 x Shunt trip (MX) or 1 x undervoltage release (MN).
  - Rear connections or bare cable connectors (also available for 1P version).
  - Terminal shields (also available for 1P version).

Moulded Case Circuit Breakers

Compact NS System
NS 80H MA Range – 70kA
(Magnetic Only: Motor Protection Type)
Standard AS 60947.2 (IEC 60947.2)


28100


28034


29450


28072


28050


28056


ESPNNS80

3 Pole Front Connected
Breaking Capacity at 415V H:70kA

	Type		Rating	Reference
Motor protection Circuit breaker up to 37kW	NS80H	MA1.5	1.5A (<0.37kW)	28106
		MA2.5	2.5A (0.75kW)	28105
		MA6.3	6.3A (2.2kW)	28104
		MA12.5	12.5A (5.5kW)	28103
		MA25	25A (11kW)	28102
		MA50	50A (22kW)	28101
		MA80	80A (37kW)	28100

Connection Accessories

			Reference
Long terminal shields (1 pair)	3 Pole		28034
NS-Busplug for MCCB connection to 60mm MCC busbar droppers 6.3mm thick (Short terminal shields are supplied with BP3080)	3 Pole	80A	BP3080

Auxiliaries

				Reference
Auxiliary switch (changeover) 1 OF and/or 1 SD switch per breaker	OF or SD			29450
Voltage releases 1 maximum per CB	AC 50/60 Hz voltage (V)			
	MX	Shunt Trip	220/240V	28072
	MN	U/V Release	220/240V	28082
	DC voltage			
	MX	Shunt Trip	24V	28075
	MN	U/V Release	24V	28085
	Other voltages available			
	Shunt trips have a continuous rating			

Rotary Handles

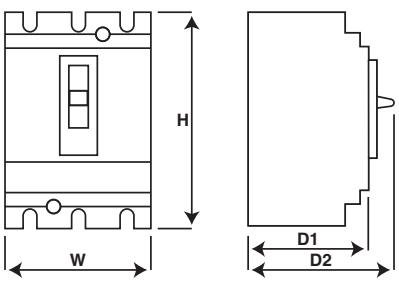
		Reference
Direct rotary handle	Standard black handle (IP40)	28050
	MCC conversion accessory (IP43)	28054
Extended rotary handle	Standard extended rotary handle (IP55)	28052
	Off position shaft padlocking accessory (padlock not included)	ESPNNS80
Indication auxiliary	1 early-break switch	28056

Miscellaneous

		Reference
Removable toggle locking device	For three padlocks	29370

Dimensions (mm)

	H	W	D1	D2
NS80H-MA	120	90	70	100



MCCB Basic Transfer Switches & Accessories

Compact NSX System
63 - 630A



Compact NSX source-changeover system



LV429358

3 Pole / 3 Pole BTSs (1) (3)

Type	Breaking capacity (kA)	Trip Unit	Rating	Reference
NSX100F (36 kA)	36kA	TM63D	63A	BLV429632/29632
	36kA	TM80D	80A	BLV429631/29631
	36kA	TM100D	100A	BLV429630/29630
NSX160F (36 kA)	36kA	TM125D	125A	BLV430631/30631
	36kA	TM160D	160A	BLV430630/30630
NSX250F (36 kA)	36kA	TM200D	200A	BLV431631/31631
	36kA	TM250D	250A	BLV431630/31630
NSX100N (50 kA)	50kA	TM63D	63A	BLV429842/29842
	50kA	TM80D	80A	BLV429841/29841
	50kA	TM100D	100A	BLV429840/29840
NSX160N (50 kA)	50kA	TM125D	125A	BLV430841/30841
	50kA	TM160D	160A	BLV430840/30840
NSX250N (50 kA)	50kA	TM200D	200A	BLV431831/31831
	50kA	TM250D	250A	BLV431830/31830
NSX400N (50 kA)	50kA	ML 2.3	400A	BLV432693/32693
NSX630N (50 kA)	50kA	ML 2.3	630A	BLV432893/32893
NSX100H (70 kA)	70kA	TM63D	63A	BLV429672/29672
	70kA	TM80D	80A	BLV429671/29671
	70kA	TM100D	100A	BLV429670/29670
NSX160H (70 kA)	70kA	TM125D	125A	BLV430671/30671
	70kA	TM160D	160A	BLV430670/30670
NSX250H (70 kA)	70kA	TM200D	200A	BLV431671/31671
	70kA	TM250D	250A	BLV431670/31670
NSX400H (70 kA)	70kA	ML 2.3	400A	BLV432695/32695
NSX630H (70 kA)	70kA	ML 2.3	630A	BLV432895/32895

Common Load Bars

	Circuit Breaker	Reference
3P 250A	NS100/160/250NHL	LV429358
3P 630A	NS400/630NHL	LV432619



UA Control Unit

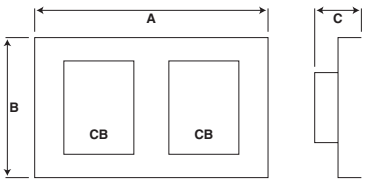
Logic Panels (For automatic operation) (2)

	Reference
ACP + control unit UA - 240V AC	29472
ACP + control unit UA - 415V AC	29473
NS630b to NS1600 & Masterpact UA wiring kit (for connection to IVE)	54655

Basic Transfer Switch

Dimensions (mm)

	A	B	C
NSX100/160/250 Small Plate	354	300	203
NSX400/630 Small Plate	466	378	275



Note:
(1) If rear connections required, use LONG TYPE ONLY.
(2) Generator start/stop signal available on control unit UA.
(3) For plug-in Compact NSX BTS's 9 wire auxiliary connector (ref LV429272) required per CB. The standard 9 wire fixed and moving connectors NOT required.

- 4 pole, mixed 3 pole & 4 pole, 150kA breaking capacity and automatic transfer switches are available on request
- NS630b/NS1600 & Masterpact transfer switches up to 6300A also available
- NS630b/NS1600 & Masterpact circuit breakers can be mechanically interlocked using rods or cables
- Units include
- circuit breakers, motor operators, mech/elect interlocks
- auxiliary change over contact
- Control voltage of UA controllers, motor mechanisms and IVE must be the same (240V UA controllers require external phase fail relay).
- To retrofit a circuit breaker used in a BTS/ATS, you need the “Safety Trip for advanced opening” accessory. See page 2.2.20 for part number and price

MCCB Chassis

Compact NSX System



CNS63018



CNS63018SSRHTF -
SINGLE SIDED CHASSIS

CNS-Powerpact Chassis:

630A (40kA/1sec & 50kA/0.1sec) suitable for NSX100, NSX160 & NSX250

Description	Poles	Height (mm)	Reference
Top feed connections 630A	12	245	CNS63012
	18	350	CNS63018
	24	455	CNS63024
	30	560	CNS63030
	36	665	CNS63036
	42	770	CNS63042
	48	875	CNS63048
	60	1085	CNS63060
	72	1295	CNS63072
Bottom feed connections 630A	12	245	CNS63012BF
	18	350	CNS63018BF
	24	455	CNS63024BF
	30	560	CNS63030BF
	36	665	CNS63036BF
	42	770	CNS63042BF
	48	875	CNS63048BF
	60	1085	CNS63060BF
	72	1295	CNS63072BF
Dual feed connections 630A (1)	12	245	CNS63012DFC
	18	350	CNS63018DFC
	24	455	CNS63024DFC
	30	560	CNS63030DFC
	36	665	CNS63036DFC
	42	770	CNS63042DFC
	48	875	CNS63048DFC
	60	1085	CNS63060DFC
	72	1295	CNS63072DFC
Top feed connections 800A (1)	12	245	NS80012
	18	350	NS80018
	24	455	NS80024
	30	560	NS80030
	36	665	NS80036
	42	770	NS80042
	48	875	NS80048
	60	1085	NS80060
	72	1295	NS80072

Accessories

	Reference
Main switch interconnection kit (including bolts) for 400 and 630A Compact NS circuit breakers and interpact INS load break switches	CNS63CK
Retrofit kit for installing NSX100/160/250 MCCBs onto C125/C161/C225NF range of Powerpact chassis	NS250KIT

Note:

- 800A and single sided versions also available
- Busbars extend 115mm at top of chassis
- All chassis' are 446mm wide
- Type tests

Withstand capacity:

- 40kA/1 sec cert. no. 64167
- 50kA/0.1 sec cert. no. 64297

Interruption tests:

- NS250H at 63kA – test report No. 67049.1.B

For the interruption test, the Powerpact chassis was fitted inside an enclosure with escutcheon fitted. Test CB was mounted between two adjacent CBs, and three CBs were mounted opposite. ALL CBs were line side fed. NO terminal shields, phase barriers or rear insulating screens were fitted.

The test was in accordance with clause 8.2.3 of Australian Standard AS/NZS3439.1.

MCCB Chassis

Compact NSX System



Double Sided

MCCB Chassis NMC (1)

Circuit breaker tee-offs	Space required in modules (35mm)	Number of breakers per tee-off	Reference
NS100X/NSX160/NSX250	3m	2	NM250
	3m	1	NM250SS
NSX400/NSX630	4m	2	NM630
	4m	1	NM630SS
NS630b/NS800/NS1000/NS1250	6m	1	NM1250SS (2)
IP2X Chassis brackets	250A (1 piece)		NMC006
	630A single sided chassis (1 piece)		NMC043
	630A double sided chassis (1 piece)		NMC008

Chassis Rating	Chassis size in modules (35mm)	Height (mm)	Reference Double Sided Chassis	Reference Single Sided Chassis
1250A (63kA/1 sec)	14m	595	NMC1214	NMC1214SS
	18m	735	NMC1218	NMC1218SS
	22m	875	NMC1222	NMC1222SS
	28m	1085	NMC1228	NMC1228SS
	33m	1260	NMC1233	NMC1233SS
	44m	1645	NMC1244	NMC1244SS
1600A (63kA/1 sec)	14m	595	NMC1614	NMC1614SS
	18m	735	NMC1618	NMC1618SS
	22m	875	NMC1622	NMC1622SS
	28m	1085	NMC1628	NMC1628SS
	33m	1260	NMC1633	NMC1633SS
	44m	1645	NMC1644	NMC1644SS
2000A (63kA/1 sec)	14m	595	NMC2014	NMC2014SS
	18m	735	NMC2018	NMC2018SS
	22m	875	NMC2022	NMC2022SS
	28m	1085	NMC2028	NMC2028SS
	33m	1260	NMC2033	NMC2033SS
	44m	1645	NMC2044	NMC2044SS



NMC Connection Links

Chassis Rating	Incomer	Qty required	Reference
1250A	NS630b/NS1600 INS1250/INS1600	2	NMC12/16LINKS
1600A	NS630b/NS1600 INS1250/INS1600	3	NMC12/16LINKS
2000A	INS2500	1	NMC25INSLINKS

Note:

(1) To determine the total cost of the NMC chassis, add the cost of all the tee-offs required to the cost of the chassis. Add the optional connection links if required.

(2) With a NS630b/NS1250 breaker, use CBs fitted with special rear terminal shield (ie: 33131NMC)

- For bottom feed add suffix BF after part number
- For dual feed add $171.60 and suffix DFC after part number
- For centre fed, add $851.60 (2000A incoming)
- Add price of chassis to price of tee-offs
- Width of chassis is 483mm. With NSX400/630 circuit breakers, the total width is 571mm
- Only circuit breakers with the same number of modular units can be mounted opposite each other
- When a NS630b/NS800/NS1000/NS1250 is mounted on the top or bottom of the chassis, an extra 1m module width is required for mounting of the busbar
- Add a spare module between 2 NS630b/NS1250 circuit breakers
- Test Certificates:
  - TCA100267 - Withstand current: 63kA rms for 1s
  - Peak Withstand current: 139kA peak
  - TCA100639 - 11.2kV impulse test
  - TCA100382 - Degree of protection: IP2X

  Interruption tests:
  - NS250H at 63kA – test report No. 7015.B
  - NS630H at 63kA – test report No. 7015.B

  For the interruption test, the NMC chassis was fitted inside an enclosure with escutcheon fitted. Test CB was mounted between two adjacent CBs, and three CBs were mounted opposite. ALL CBs were line side fed. NO terminal shields were fitted. When IP2X chassis brackets used, we recommend you use a terminal shield and rear insulating screen on LOAD side of CB. The tests were in accordance with clause 8.2.3 of Australian Standard AS 3439.1
- For 1000V applications, consult us.

Compact NS

Setting the standard, once again

2 sizes: from 630b to 3200 A

The launch of Schneider Electric Compact NS in 1994 revolutionised the world of moulded-case circuit breakers. Innovative, flexible and attractive, Compact NS rapidly set the standard in its field.

Today, Schneider Electric continues to innovate, extending the Compact NS range to high power ratings to offer a comprehensive and consistent range from 630b to 3200 A.

Equipped with the new generation of Micrologic control units, Compact NS630b to 3200 circuit breakers now offer built-in power and energy metering in addition to electrical measurement and analysis functions.

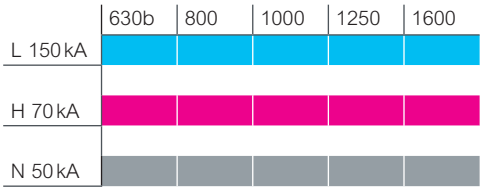
The communications option makes it possible to control power consumption, simplify maintenance and improve operating comfort. A wide range of optimised auxiliaries and accessories is also available to meet the needs of even more applications.



Compact NS630b to 1600

Breaking Capacities

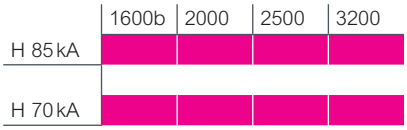
Compact NS 630b to 1600 Performance Icu (kA) 415V





Compact NS1600b to 3200

Compact NS 1600b to 3200 Performance Icu (kA) 415V



Protection and Control Units

All Compact circuit breakers are equipped with a Micrologic control unit that can be changed on site. Control units are designed to protect Power circuits and loads. Alarms may be programmed for remote indications. Measurements of current, voltage, frequency, power and power quality optimise continuity of service and energy management.





Ammeter



Energy



Power

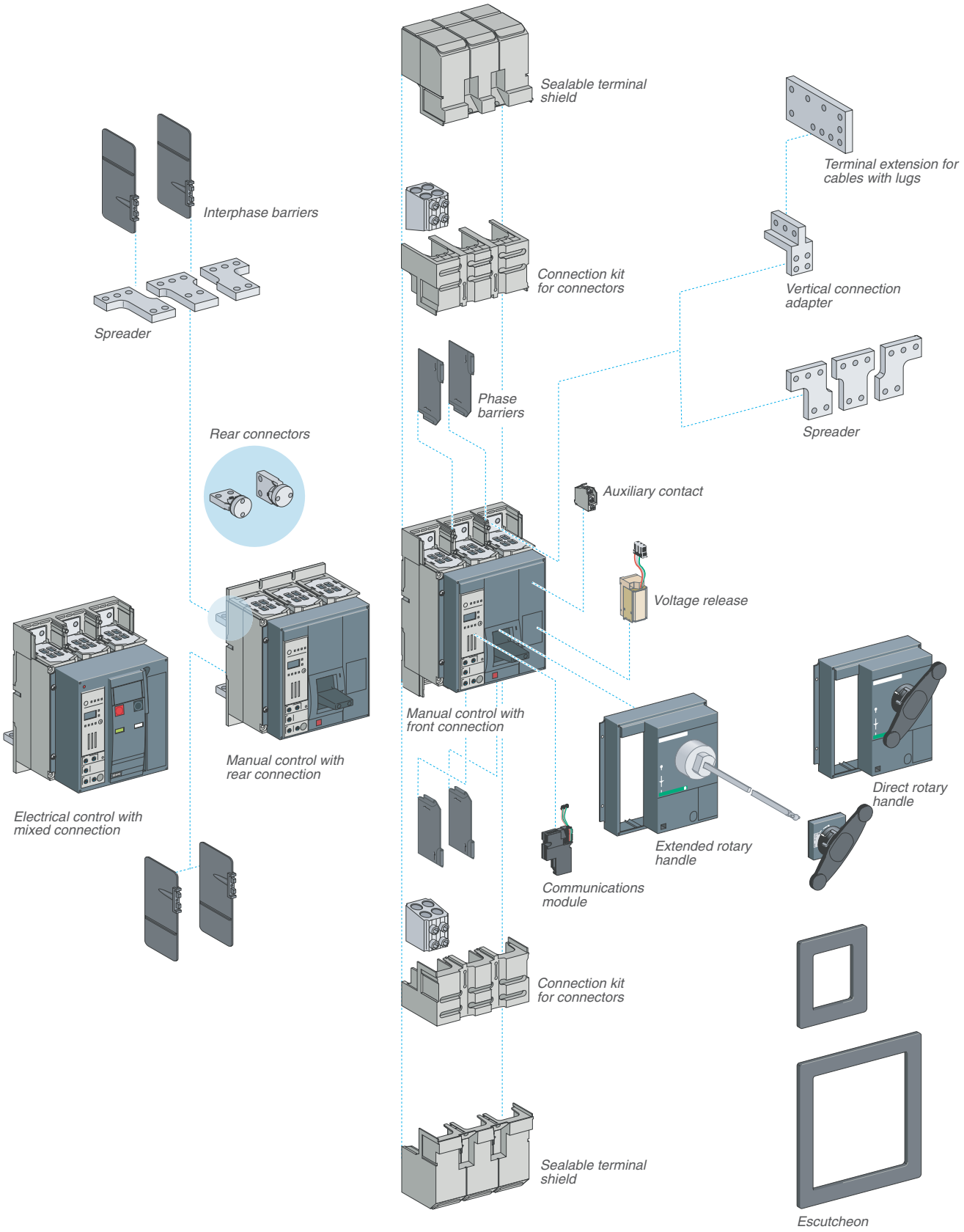


Harmonics



Moulded Case Circuit Breakers

NS630b to 1600 N/H/L Compact NS System Installation, Connection & Accessories



For more info:

- Catalogue: LVPED211021EN
- → Accessories: Pages 2.2.35-36
- → Cascading and Discrimination tables: Pages 4.0.4-6

Moulded Case Circuit Breakers

Compact NS System
NS630b/1600 N/H/L/LB
Standard AS 60947.2 (IEC 60947.2)







Micrologic E Trip Unit
2.0E, 5.0E and 6.0E

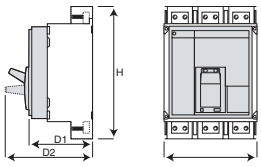
3 Pole - Front Connected

Breaking Capacity at 415V N:50kA – H:70kA – L:150kA

Trip unit	Icu at 415V	Type	Rating (6)	Reference
Micrologic 2.0	50kA	NS630bN	252-630A	33460(4)(5)
		NS800N	320-800A	33466(4)(5)
		NS1000N	400-1000A	33472(4)(5)
		NS1250N	500-1250A	33478(4)(5)
		NS1600N	640-1600A	33482
	70kA	NS630bH	252-630A	33461
		NS800H	320-800A	33467
		NS1000H	400-1000A	33473
		NS1250H	500-1250A	33479
		NS1600H	640-1600A	33483
	150kA	NS630bL	252-630A	33462
		NS800L	320-800A	33468
		NS1000L	400-1000A	33474
	200kA	NS630bLB	252-630A	
		NS800LB	320-800A	
Micrologic 5.0	50kA	NS630bN	252-630A	33546
		NS800N	320-800A	33552
		NS1000N	400-1000A	33558
		NS1250N	500-1250A	33564
		NS1600N	640-1600A	33568
	70kA	NS630bH	252-630A	33547
		NS800H	320-800A	33553
		NS1000H	400-1000A	33559
		NS1250H	500-1250A	33565
		NS1600H	640-1600A	33569
	150kA	NS630bL	252-630A	33548
		NS800L	320-800A	33554
		NS1000L	400-1000A	33560
Other Micrologic trip units (6) and options				
	Ammeter (3)			
	Micrologic 2.0E (1)			
	Micrologic 5.0E (2)			
	Micrologic 5.0P (2)			
	Micrologic 6.0P earth fault protection (includes Ammeter) (2)(3)			
	Micrologic 6.0A earth fault protection (includes Ammeter) (2)(3)			
	Micrologic 6.0E earth fault protection (includes Ammeter) (2)(3)			
	External earth fault & neutral sensor (3)			33576
	Micrologic 7.0P earth leakage protection (includes Ammeter) (2)(4)			
	Micrologic 7.0A earth leakage protection (includes Ammeter) (2)(4)			
	External earth leakage sensor			33573
	Modbus/FDM121 communications (includes Ammeter option)			
	Spare battery			PIL1BAT
Non-auto (25kA rms/0.5sec)		NS630bNA		33486
		NS800NA		33487
		NS100NA		33488
		NS1250NA		33489
		NS1600NA		33490

Dimensions (mm)

	H	W	D1	D2
NS630b/1600N	327	210	146.5	205
NS630b/1600H	327	210	146.5	205
NS630b/1000L	327	210	146.5	205



Note:

(1) Add to price of Micrologic 2.0.

(2) Add to price of Micrologic 5.0. Earth fault (Micrologic 6.0A & 6.0P) & earth leakage (Micrologic 7.0A & 7.0P) protection are not options on the Micrologic 5.0 control unit, but are provided by a different control unit.

(3) External earth fault & neutral sensor required if 3P circuit breaker is used on a distributed neutral network.

(4) External earth leakage sensor also required.

(5) Add suffix NMC to reference when CB used on an NMC chassis (see page 2.2.37). Eg: 33466NMC.

(6) See Compact NS catalogue for details and part numbers.

(7) Micrologic trip units are supplied with standard rating plugs (adj 0.4 to 1xIr). Other rating plugs are available.

		Reference
- Low setting	(adj 0.4 to 0.8xIr)	33543
- High setting	(adj 0.8 to 1xIr)	33544
- Off setting	(no thermal protection)	33545

Other protection settings include:
Micrologic 2.0 – adjustable long time delay and instantaneous
Micrologic 5.0 – adjustable long time delay, short time, short time delay and instantaneous.

Accessories

Compact NS System



NS630b-NS1600
Motorised device

Motorised device

(motor mechanism cannot be added to toggle operated device)

Add to price of toggle operated device (1)	



NS630b-NS1600
Direct rotary handle

NS630b-NS1600
with OFF position shaft padlocking

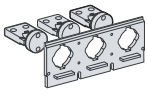
Rotary handle for toggle operated devices

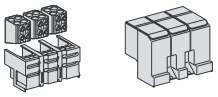
Devices with direct rotary handles

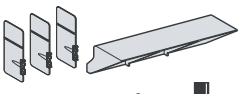
Type		Reference
Handle	Black	(1)
Locking by keylocks	OFF position (1 lock, 1 key)	33870
Ronis	OFF and ON positions (1 lock, 1 key)	33872
Devices with extended rotary handles		
Handle	Black	(1)
Off position shaft padlocking accessory for extended rotary handle		ESPNNS1600
Mechanical interlocking		
For 2 devices with extended rotary handles		33890

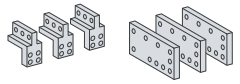


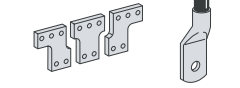












Locking for toggle operated devices

Type	Reference
Removable toggle locking systems, 3 padlocks	44936
Fixed toggle locking systems, 3 padlocks	32631

Locking and accessories for motorised devices

Type		Reference
Transparent cover + padlock	(not supplied)	33897
OFF position	Ronis keylock	33903
	Fortress lock adaptor (no keylock)	47518
Operation counter		33895

Connection accessories

Type				
Rear connections(1) (horizontal or vertical)	630/1000A		Top	add
			Bottom	add
	1250A		Top	subtract
	630/1000A type L		Bottom	subtract
	1600A		Top	subtract
			Bottom	subtract
Bare cable connectors + 1 connector shield for 4 cables (240mm²)			3P (3 parts)	33640
1 long terminal shield			3P	33628
Vertical connection adaptors			3P	33642
Cable lug adaptors			3P	33644
Cable lug adaptor spacers			3P/4P	
Interphase barriers	Front connections		3P/4P top (3 parts)	33646
			3P/4P bottom (3 parts)	33646
	Rear connections		3P/4P top (3 parts)	33648
			3P/4P bottom (3 parts)	33648
Arc chute screen			3P	33596
Spreader	Front or rear connections		3P	33622
Cable lug kits	240mm²		3P (6 lug kit)	33013
	300mm²		3P (6 lug kit)	33015
NS-Busplugs for MCCB connection to 60mm MCC busbar droppers (6.3mm thick) (2) (3)	3 Pole	800A	NS800NHL	BP3NS800
	3 Pole	1000A	NS1000NHL	BP3NS1000
	3 Pole	1250A	NS1250NHL	BP3NS1250

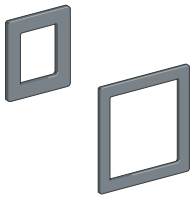


NS1200 fitted with
BP3N1250 Busplug

Note:
(1) Accessories must be factory adapted. Complete order form on page 2.2.46
(2) Busplugs for 10mm busbar are also available. Add 'A' to part number. eg:BP3NS1000A
(3) Long terminal shield to be ordered separately
(4) Rated up to 63kA

Accessories

Compact NS System



Installation Accessories

	Reference
Escutcheon (small cutout) for manually operated device with toggle	33717
Escutcheon for: - device with toggle (large cutout) - device with rotary handle - electrically operated device	33718



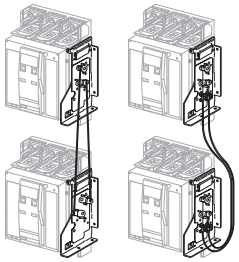


Electrical Auxiliaries

Indication auxiliaries			Reference
	OF,SD,SDE (1)	6A-240V	29450
		Low level	29452

Up to 3 OF, 1 SD and 1 SDE can be connected (the SDE contact is standard for electrically operated devices)

Instantaneous voltage releases (1)	MX shunt trip	MN under-voltage release
12 V DC	33658	
24-30 V AC/DC	33659	33668
48-60 V AC/DC	33660	33669
100-130 V AC/DC	33661	33670
200-250 V AC/DC	33662	33671
240-277 V AC	33663	
380-480 V AC	33664	33673



Mechanical interlocking for source changeover (suitable for motorised devices only, cannot be used on toggle or rotary handle operated devices)	Reference
Using rods (complete assembly with 2 adaptation fixtures & rods)	33910
Using cables (complete assembly with 2 adaptation fixtures & cables)	33911



IVE

Source changeover options	Reference
IVE (electrical interlock) - 48 to 415VAC 50/60Hz	29352
IVE (electrical interlock) - 24 to 250Vdc	29356
Wiring kit for connection of 2 devices to IVE	54655
ACP+UA logic controller 240V AC	29472



ACP



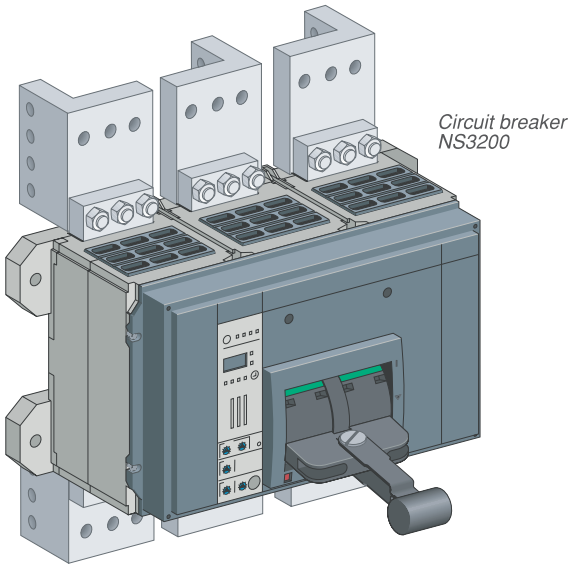
UA controller

Note:
(1) Function of auxiliaries
- OF: Open/closed changeover contact indicates the position of the circuit breaker contacts.
- SD: Trip indication: indicates that the breaker has tripped (overload, short circuit, earth fault, earth leakage, shunt trip, undervoltage or push to trip button).
- SDE: Fault indication: indicates that the circuit breaker has tripped due to an electrical fault.

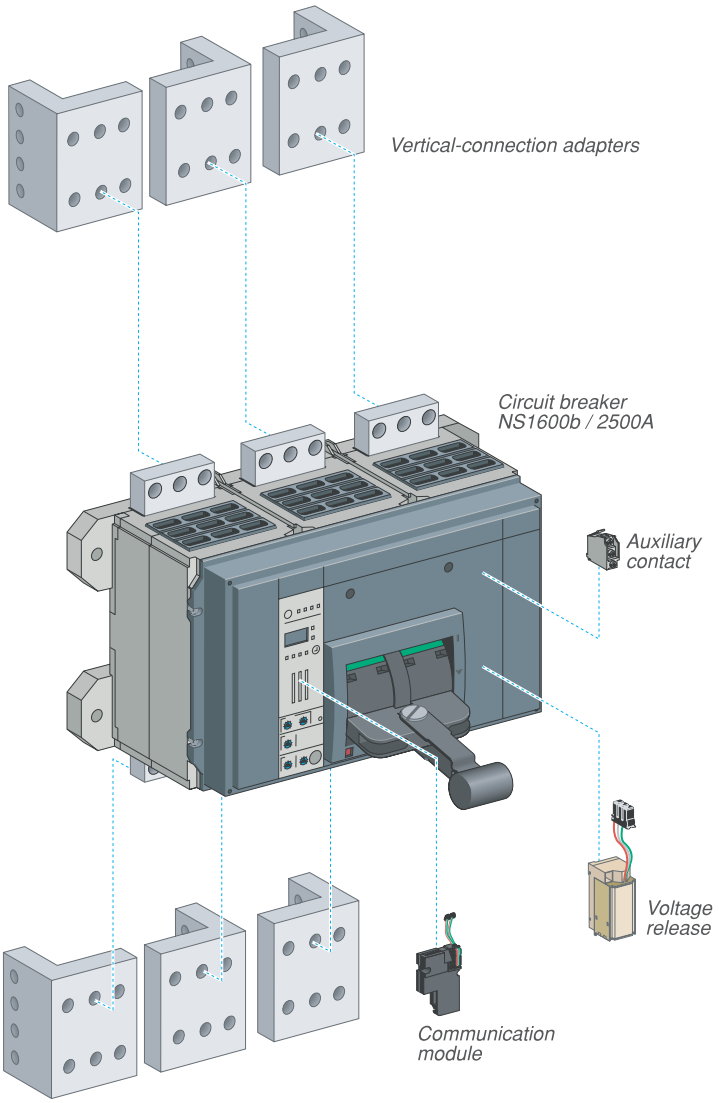
Auxiliaries & voltage releases may be field fitted.
Voltage releases have a continuous rating.

Moulded Case Circuit Breakers

Compact NS Systems
NS1600b/3200 N/H
Installation, Connection & Accessories



Circuit breaker NS3200



Moulded Case Circuit Breakers

Compact NS System
NS1600b/3200 N/H
Standard AS 60947.2 (IEC 60947.2)



1600 - 3200 Amps

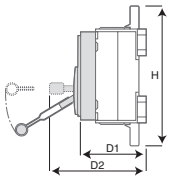
3 Pole - Front Connected

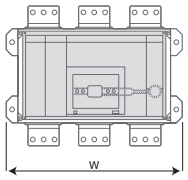
Breaking Capacity at 415V N:70kA – H:85kA

Trip unit	Icu at 415V	Type	Rating (5)	Reference
Micrologic 2.0	70kA	NS1600bN	640...1600A	–
		NS2000N	800...2000A	–
		NS2500N	1000...2500A	–
		NS3200N	1280...3200A	–
	85kA	NS1600bH	640...1600A	–
		NS2000H	800...2000A	–
		NS2500H	1000...2500A	–
		NS3200H	1280...3200A	–
Micrologic 5.0	70kA	NS1600bN	640...1600A	–
		NS2000N	800...2000A	–
		NS2500N	1000...2500A	–
		NS3200N	1280...3200A	–
	85kA	NS1600bH	640...1600A	–
		NS2000H	800...2000A	–
		NS2500H	1000...2500A	–
		NS3200H	1280...3200A	–
Options for Micrologic trip unit				
	Ammeter (3)			–
	Micrologic 6.0A earth fault protection (includes Ammeter) (1)			
	External earth fault & neutral sensor			33576
	Micrologic 7.0A earth leakage protection (includes Ammeter) (1)			
	External earth leakage sensor			33573
	Modbus/FDM121 communications (3) (includes Ammeter option)			
	Spare battery			PIL1BAT
Non-auto (40kA rms/0.5sec)		NS1600bNA		–
		NS2000NA		–
		NS2500NA		–
		NS3200NA		–
Electrical Auxiliaries				
	Indication contact (OF/SD/SDE) (4) (Up to 3 OF, 1 SD & 1 SDE can be connected)			29450
	Instantaneous voltage release (see page 4/23)			

Dimensions (mm)

	H	W	D1	D2
NS1600b/3200N	330	420	168.5	222.5
NS1600b/3200H	330	420	168.5	222.5





Note:

(1) Add to price of Micrologic 5.0. Earth fault & earth leakage protection are not options on the Micrologic 5.0 control unit, but are provided by a different control unit.

(2) Complete order form on page 2.2.46

(3) Can be added to Micrologic 2.0 or 5.0.

(4) Function of auxiliaries
- OF: Open/closed changeover contact indicates the position of the circuit breaker contacts.
- SD: Trip indication: indicates that the breaker has tripped (overload, short circuit, earth fault, earth leakage, shunt trip, undervoltage or push to trip button).
- SDE: Fault indication: indicates that the circuit breaker has tripped due to an electrical fault.
- Auxiliaries & voltage releases may be field fitted.
- Voltage releases have a continuous rating.

(5) Micrologic trip units are supplied with standard rating plugs (adj 0.4 to 1xIr). other rating plugs are available:

		Reference
- Low setting	(adj 0.4 to 0.8xIr)	33543
- High setting	(adj 0.8 to 1xIr)	33544
- Off setting	(no thermal protection)	33545

Circuit Breakers and Switch-disconnectors Order Form

Name of customer: _____

Address for delivery: _____

Requested delivery date: _____

Customer order no.: _____

To indicate your choice, tick the applicable square boxes ☐
and enter the appropriate information in the rectangles ▭

Circuit breaker or switch disconnector

Compact type		**NS630b to NS1600**	▭
		NS1600b to NS3200	▭
Rating		**A**	▭
Circuit breaker		**N, H, L, LB**	▭
Switch-disconnector		**NA**	▭
Number of poles		**3 or 4**	▭
Device	NS630b/3200	Fixed	☐
	NS630b/1600	Withdr. with chassis	☐
		Withdr. without chassis (moving part only)	☐
Chassis alone without connections			☐

Micrologic control unit

Basic protection	2.0 ☐	5.0 ☐	6.0 ☐		
A - ammeter	2.0 ☐	5.0 ☐	6.0 ☐	7.0 ☐	
E - energy meter	2.0 ☐	5.0 ☐	6.0 ☐		
P - power meter only for NS630b/1600		5.0 ☐	6.0 ☐	7.0 ☐	
AD - external power supply module				V ▭	
ENVT - External Neutral Voltage Temp. (3P + N and Micrologic P)					☐
TCE - external sensor (CT) for neutral protection					☐
Rectangular sensor for earth leakage protection	NS630b/1600 280 x 115mm				☐
	NS1600b/3200 470 x 160mm				☐
TCW - external sensor for SGR protection					☐
LR - long time rating plug	Standard 0.4 to 1 Ir				☐
	Low setting 0.4 to 0.8 Ir				☐
	High setting 0.8 to 1 Ir				☐
	LT OFF				☐

Communication

COM module

Device (BCM-ULP) ☐ with Ethernet interface ☐ — Cradle management with I/O application module (Chassis) ☐

with Ethernet interface + gateway

with Modubs interface ☐

Eco COM module

Device (BCM-ULP) ☐ with Ethernet interface ☐

with Ethernet interface + gateway ☐

with Modubs interface ☐

Front Display Module (FDM121) ☐ — Mounting accessories

Breaker ULP Cord: L = 0.35 m ☐ / L = 1.3 m ☐ / L = 3 m ☐

NS630b/1600 connection

Horizontal rear connections	Top ☐	Bottom ☐	
Vertical rear connections	Top ☐	Bottom ☐	
Front connections	Top ☐	Bottom ☐	
4x240mm² bare cable connectors+shields	NS - FC fixed		☐
Long connection shields	NS - FC fixed		☐
Vertical-connection adapters	NS - FC fixed, withdr.		☐
Cable-lug adapters	NS - FC fixed, withdr.		☐
Arc chute screen	NS - FC fixed		☐
Interphase barriers	NS - FC fixed, withdrawable		☐
Spreaders	NS - FC fixed, withdrawable		☐

NS1600b/3200 connection

Front connections	NS - FC fixed	☐
Vertical connection adapter	optional for NS1600b/2500	☐
	(standard for NS3200)	☐

Indication contacts

NS630b/3200	**SD** trip indication (maximum1) (only for manually operated devices)	
	6 A - 240 V AC qty ▭	Low level qty ▭
	SDE fault-trip indication (maximum1) (SDE integrated in electrically operated devices)	
	6 A - 240 V AC qty ▭	Low level qty ▭
	OF ON/OFF indication contacts (maximum 3)	
	6 A - 240 V AC qty ▭	Low level qty ▭
NS630b/1600	**Carriage switches** (possible combincations: 3 CE, 2 CD, 1CT	
CE - "connected" position	6 A - 240 V AC qty ▭	Low level qty ▭
CD - "disconnected" position	6 A - 240 V AC qty ▭	Low level qty ▭
CT - "test" position	6 A - 240 V AC qty ▭	Low level qty ▭
	Programmable contacts (630b - 1600)	
	M6C kit for manually Compact	▭
Auxillary terminals for chassis alone	Jumpers (set of 10)	☐
	3 wire terminal (30 ports)	☐
	6 wire terminal (10 ports)	☐

Remote operation

Electrical operation (NS630b/1600)	Standard ☐		Communicating ☐	
	Power supply AC ☐	DC ☐	V	▭
Voltage releases	MX AC ☐	DC ☐	V	▭
	MN AC ☐	DC ☐	V	▭
	MN delay unit	Adjustable ☐	Non adjustable ☐	

Rotary handles for NS630b/1600 fixed and withdrawable device

Direct	Black ☐	Red on yellow front	☐
		CNOMO conversion access.	☐
Extended	Black ☐	Red on yellow front	☐
	Telescopic handle for withdrawable device		
Indication auxiliary	6 A - 240 V AC	2 early-make switches	☐
		2 early-break switches	☐

Locking

Toggle (1 to 3 padlocks)	Removable system ☐	Fixed system	☐
Rotary handle using a keylock (NS630b/1600)	OFF position ☐	ON & OFF positions	☐
	Ronis 1351B.500 ☐	Profalux KS5 B24 D4Z	☐
	Keylock kit (without keylock)		☐
For electrically operated devices (NS630b/1600)	**VBP** - ON/OFF pushbutton locking (by transparent cover + padlocks)		☐
	OFF position locking:		☐
	VCPO - by padlocks		☐
	VSPO - by keylocks		
	Keylock kit (w/o keylock) Profalux ☐	Ronis	☐
	1 keylock Profalux ☐	Ronis	☐
	2 identical keylocks, 1 key Profalux ☐	Ronis	☐
Chassis locking in "disconnected" position			
VSPD - by keylocks	Keylock kit (w/o keylock) Profalux ☐	Ronis	☐
	Kirk ☐	Castell	☐
	1 keylock Profalux ☐	Ronis	☐
	2 identical keylocks, 1 key Profalux ☐	Ronis	☐
	2 keylocks, different keys Profalux ☐	Ronis	☐
	Optional connected/disconnected/test position locking		
VPEC - door interlock	On right-hand side of chassis		☐
	On left-hand side of chassis		☐
VPOC - racking interlock			☐
VDC - mismatch protection			☐

Accessories

VO - safety shutters on chassis	NS - withdrawable as standard	☐
CDM - mechanical operation counter		☐
CDP - escutcheon		☐
CP - transparent cover for escutcheon		☐
OP - blanking plate for escutcheon		☐
Mounting brackets for fixed NS	for mounting on horizontal plane	☐
Test kits Mini test kit ☐	Portable test kit	☐

Micrologic control unit functions:
2.0: basic protection (long time + inst.)
5.0: selective protection (long time + short time + inst.)
6.0: selective + earth-fault protection (long time + short time + inst. + earth-fault)
7.0: selective + earth-leakage protection (long time + short time + inst. + earth-leakage)

Masterpact NT and NW

The standard for power circuit breakers around the world

3 sizes: from 630 to 6300 A

Over the years, other major manufacturers have tried to keep up by developing products incorporating Masterpact's most innovative features, including the breaking principle, modular design and the use of composite materials.

In addition to the traditional features of power circuit breakers (withdrawability, discrimination and low maintenance), Masterpact NT and NW ranges offer built-in communications and metering functions, all in optimised frame sizes.

Masterpact NT and NW incorporate the latest technology to enhance both performance and safety. Easy to install, with user-friendly, intuitive operation and environment-friendly design, Masterpact NT and NW are, quite simply, circuit breakers of their time.



Masterpact NT
630 to 1600 A



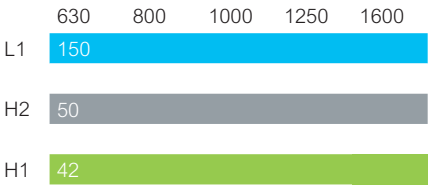
Masterpact NW
800 to 4000 A



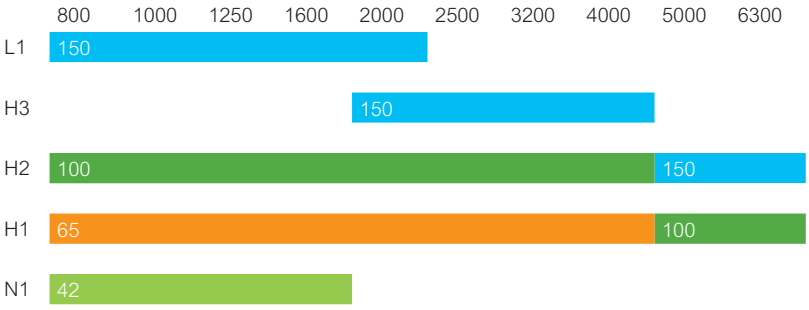
Masterpact NW
4000 b to 6300 A

Breaking Capacities

Masterpact NT 630 to 1600 Performance Icu (kA) 415V



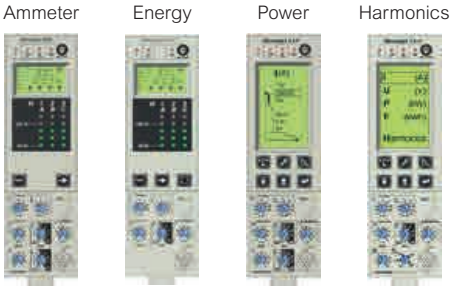
Masterpact NW 800 to 6300 Performance Icu (kA) 415V



Protection and Control Units

All Masterpact circuit breakers are equipped with a Micrologic control unit that can be changed on site. Control units are designed to protect Power circuits and loads. Alarms may be programmed for remote indications. Measurements of current, voltage, frequency, power and power quality optimise continuity of service and energy management.





Power Air Circuit Breakers

Masterpact NT
NT06/16
Standard AS 60947.2 (IEC 60947.2)

A quotation for a Masterpact circuit breaker is made up of three parts:
- the basic circuit breaker;
- a Micrologic control unit;
- any additional options and accessories.



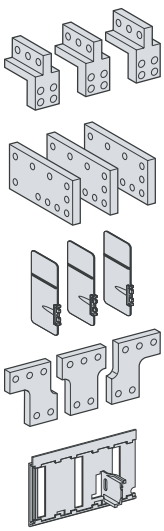
Fixed device



Drawout device with chassis



Micrologic E Trip Unit 2.0E, 5.0E and 6.0E



Basic Circuit Breaker (1)

Type	In (5) (A at 50°C)	Icu (6) (kA at 380/415V) H1	H2
NT06	630	42	50
NT08	800	42	50
NT10	1000	42	50
NT12	1250	42	50
NT16	1600	42	50

Micrologic control units (2)

A - ammeter	
Micrologic 2.0A	basic protection
Micrologic 5.0A	selective protection
Micrologic 6.0A	selective + earth-fault protection (4)
Micrologic 7.0A	selective + earth-leakage protection (4)
E - energy meter	
Micrologic 2.0E	basic protection
Micrologic 5.0E	selective protection (4)
Micrologic 6.0E	selective + earth-leakage protection (4)
P - power meter	
Micrologic 5.0P	selective protection
Micrologic 6.0P	selective + earth-fault protection (4)
Micrologic 7.0P	selective + earth-leakage protection (4)
H - harmonic meter	
Micrologic 5.0H	selective protection
Micrologic 6.0H	selective + earth-fault protection (4)
Micrologic 7.0H	selective + earth-leakage protection (4)

External sensors

External sensor (CT) for neutral + earth-fault protection	TCE
Rectangular sensor for earth-leakage protection	280 x 115mm
External sensor for source ground return protection + MDGF module	TCW

Accessories

Long time rating plug	LR
External voltage measurement input only for Micrologic P (replaces the internal voltage measurement input)	PTE
External power supply module (240V AC)	AD
Battery module	BAT

Connection Accessories

Front connection
Vertical connection adaptors 630/1600A (for front connected ACB's)
Cable lug adaptors 630/1600A + spacers
Interphase barriers
Rear connection - interphase barriers 64 64
Front or rear connection - spreaders 630/1600A
Chassis - safety shutters (VO)

Note:

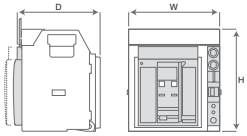
(1) Basic circuit breaker price includes:
- stored energy operating mechanism;
- four change over auxiliary indication contacts (OF);
- terminal blocks for the electrical auxiliaries;
- "disconnected" position padlock system;
- safety shutters (drawout only);
- front or rear connections (vertical or horizontal);
- one fault trip indication contact (SDE);
- arc-chute cover for drawout devices;
- automatic blocking in "connected", "disconnected" and "test" positions with pushbutton release;
- C2 tropicalisation for all climates.

other rating plugs are available:

(2) Micrologic control unit price includes 0.4 to 1 x Ir long time rating plug.
(3) 4 pole versions available.
(4) Add price of external sensor (for 3 pole circuit breakers).
(5) 50°C for rear vertical connection.
(6) Icu = 150kA versions also available.
(7) Micrologic trip units are supplied with standard rating plugs (adj 0.4 to 1xIr).

Dimensions (mm)

	H	W	D
NT Fixed	301	274	211
NT Drawout	322	288	280



		Reference
- Low setting	(adj 0.4 to 0.8xIr)	33543
- High setting	(adj 0.8 to 1xIr)	33544
- Off setting	(no thermal protection)	33545

Power Air Circuit Breakers

Masterpact NT

COM communications option

COM	for FDM121, ModBus etc	for fixed & moving device
		for chassis
Eco COM for ModBus		

Locking



ON/OFF pushbutton locking		
by padlocks		VBP
OFF position locking		
by padlocks		VCPO
by keylocks	VSPO (Ronis)	1 lock (with locking kit)
		1 lock + 1 lock with same key profile (with locking kit)
	VSPO (Fortress)	locking kit (without lock)
		1 lock only (eg. SK31LOCKA)
		1 key only (eg. H31KEYA)
	VSPO (Castell)	locking kit (without lock)
		1 lock only (eg. CASTLOCKA)
		1 key only (eg. CASTKEYA)
Chassis locking		
"disconnected" position locking	VSPD (Ronis)	1 lock (with locking kit)
		1 lock + 1 lock with same key profile (with locking kit)
		2 locks (different key profiles) (with locking kit)
	VSPD (Fortress)	locking kit (without lock)
		1 lock only (eg. SK31LOCKA)
		1 key only (eg. H31KEYA)
	VSPD (Castell)	locking kit (without lock)
		1 lock only (eg. CASTLOCKA)
		1 key only (eg. CASTKEYA)
door interlock		VPEC
racking interlock		VPOC
mismatch protection		VDC



Indication contacts

auxiliary contacts (OF) alarm contact (SDE)	6A-240V AC	4 OF + 1 SDE (standard)	
		1 additional SDE	
	low level	1 OF or 1 SDE (replaces standard OF contact)	
programmable contacts for Micrologic P	2 contacts	M2C	
	6 changeover contacts	M6C	
carriage switches (connected/disconnected/test position)		1CE or 1CD or 1CT	6A-240V AC low level



Remote operation

Remote ON/OFF		
remote ON/OFF system (motor + close/shunt coils)	MCH + XF+ MX (orMN)	
electrical reset	Res	
automatic reset	RAR	
"ready to close" contacts	PF	6A-240V AC low level
electrical closing pushbutton	BPFE	
Remote Tripping		
undervoltage releases	instantaneous	MN
	delay unit	R for MN
	adjustable delay unit	Rr for MN
shunt release		MX



Accessories

operation counter	CDM	
auxiliary terminal shield	CB	3 pole
		4 pole
escutcheon (IP40 door frame)	CDP	
transparent cover (IP54 cover for door frame)	CP	
blanking plate for spare space (use with door frame)	OP	

3 pole chassis alone (1) with connections

630/800A
1000/1250A
1600A

Note:
(1) Already included in drawout basic circuit breaker price. Ordered here separately for spare space in switchboard.

Power Air Circuit Breakers

Masterpact NW
NW08/63
Standard AS 60947.2 (IEC 60947.2)

A quotation for a Masterpact circuit breaker is made up of three parts:
- the basic circuit breaker;
- a Micrologic control unit;
- any additional options and accessories.



Drawout device 7 4000A



Drawout device 6300A



Micrologic E Trip Unit
2.0E, 5.0E and 6.0E

Basic Circuit Breaker (1)

Type N1	In (5) (A at 50°C)	Icu (6) (kA at 380/415V)
NW08	800	42
NW10	1000	42
NW12	1250	42
NW16	1600	42
Type H1		
NW08	800	65
NW10	1000	65
NW12	1250	65
NW16	1600	65
NW20	2000	65
NW25	2500	65
NW32	3200	65
NW40	4000	65
NW50	5000	100
NW63	6300	100

Micrologic control units (2)

A - ammeter	
Micrologic 2.0 A	basic protection
Micrologic 5.0 A	selective protection
Micrologic 6.0 A	selective + earth-fault protection (4)
Micrologic 7.0 A	selective + earth-leakage protection (4)
E - energy meter	
Micrologic 2.0E	basic protection
Micrologic 5.0E	selective protection (4)
Micrologic 6.0E	selective + earth-leakage protection (4)
P - power meter	
Micrologic 5.0 P	selective protection
Micrologic 6.0 P	selective + earth-fault protection (4)
Micrologic 7.0 P	selective + earth-leakage protection (4)
H - harmonic meter	
Micrologic 5.0 H	selective protection
Micrologic 6.0 H	selective + earth-fault protection (4)
Micrologic 7.0 H	selective + earth-leakage protection (4)

External sensors

External sensor (CT) for neutral + earth-fault protection	TCE - 400/2000A
External sensor (CT) for neutral + earth-fault protection	TCE - 1000/4000A
External sensor for earth-leakage protection up to 3200A	470 x 160mm
External sensor for source ground return protection + MDGF module	TCW

Accessories

Long time rating plug	LR
External voltage measurement input Only for Micrologic P (replaces the internal voltage measurement input)	PTE
External power supply module (240VAC)	AD
Battery module	BAT

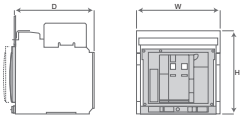
Note:
(1) Basic circuit breaker price includes:
- stored energy operating mechanism
- four change over auxiliary indication contacts (OF)
- terminal blocks for the electrical auxiliaries
- “disconnected” position padlock system
- safety shutters (drawout only)

(2) Micrologic control unit price includes 0.4 to 1 x Ir long time rating plug.
(3) 4 pole & non-auto versions also available.
(4) Add price of external sensor (for 3 pole circuit breakers).
(5) 50°C for rear vertical connection.
(6) 150kA version available.
(7) Micrologic trip units are supplied with standard rating plugs (adj 0.4 to 1xIr).

other rating plugs are available:
- front or rear connections (vertical or horizontal)
- one fault trip indication contact (SDE)
- arc-chute cover for drawout devices
- automatic blocking in “connected”, “disconnected” and “test”positions with pushbutton release
- C2 tropicalisation for all climates.

Dimensions (mm)

	H	W	D
NW Fixed	352	422	297
NW Drawout	439	441	395



		Reference
- Low setting	(adj 0.4 to 0.8xIr)	33543
- High setting	(adj 0.8 to 1xIr)	33544
- Off setting	(no thermal protection)	33545

Power Air Circuit Breakers

Masterpact NW











COM communications option

COM	for FDM121, ModBus etc	for fixed & moving device
		for chassis

Connection Accessories

Disconnectable front connection	800/1600A
adaptor for fixed device - 3 pole	2000/3200A
Interphase barriers for fixed device	3P/4P
Interphase barriers for drawout device	3P/4P
Safety shutters for chassis	800/4000A
	5000/6300A
Shutter position indication and locking	800/4000A-3P/4P

Locking

ON/OFF pushbutton locking by padlocks		VBP
OFF position locking		
by padlocks		VCPO
by keylocks (Ronis)	VSPO	1 lock (with locking kit)
		1 lock + 1 lock with same key profile (with locking kit)
Chassis locking		
"disconnected" position locking (Ronis)	VSPD	1 lock (with locking kit)
		1 lock + 1 lock with same key profile (with locking kit)
		2 locks (different key profiles) (with locking kit)
door interlock		VPEC
racking interlock		VPOC
racking interlock between crank and OFF pushbutton		IBPO
automatic spring discharge before breaker removal		DAE
mismatch protection		VDC

Indication contacts

auxiliary contacts (OF) alarm contact (SDE)	6A-240V AC low level	4 OF + 1 SDE (standard)	
		1 SDE (replaces standard SDE)	
	1 additional block of 4 6A-240V AC or low level	OF contacts	
combined contacts	EF	1 contact 6A-240V AC	
		1 low level contact	
programmable contacts for Micrologic P or H	2 contacts	M2C	
	6 changeover contacts	M6C	
carriage switches (connected/disconnected/test position)		1CE or 1CD or 1CT	6A-240V AC
			low level

Remote operation

remote ON/OFF		
remote ON/OFF system	MCH + XF+ MX (orMN)	
electrical reset	Res	
automatic reset	RAR	
"ready to close" contacts	PF	6A-240V AC
		low level
electrical closing pushbutton	BPFE	
remote tripping		
undervoltage releases	instantaneous	MN
	delay unit	R for MN
	adjustable delay unit	Rr for MN
shunt release		MX

Accessories

operation counter	CDM	
auxiliary terminal shield	800/4000A	3 pole
		4 pole
	4000b/6300A	3 pole
		4 pole
escutcheon (IP40 door frame)	CDP	
transparent cover (IP54 cover for door frame)	CP	
blanking plate for spare space (use with door frame)	OP	

Note:
(1) Already included in drawout basic circuit breaker price. Ordered here separately for spare space in switchboard.

Masterpact NT and NW

Order Form

2.2

Quotation request ☐ Date: _____

Order ☐ Purchase O/N: _____

Customer name: _____

Contact: _____

Signature: _____

To indicate your choice, tick the applicable square boxes and enter the appropriate information in the rectangles ☐

Circuit Breaker or switch-disconnector — Qty

Masterpact type	**NT** ☐	**NW** ☐	
Rating	**A**		☐
Sensor rating	**A**		☐
Circuit breaker	**N1, H1, H2, H3, L1**		☐
Special circuit breaker	**H2 anticorrosion, H10 (NW)**		☐
Special circuit breaker	**NW25/32 H1T, NT16 H2T**		☐
Switch-disconnector	**NA, HA, HF, ES, HA10 (NW)**		☐
Number of poles	**3 or 4**		☐
Brand	**Schneider Electric**		☒
Option: neutral on right side (NW)			☐
Type of equipment	Fixed		☐
	Drawout with chassis		☐
	Drawout without chassis (moving part only)		☐
	Chassis alone		☐
Earthing switch kit for chassis			☐

Micrologic control or unit

A - ammeter	2.0 ☐	5.0 ☐	6.0 ☐	7.0 ☐
E - energy	2.0 ☐	5.0 ☐	6.0 ☐	
P - power meter		5.0 ☐	6.0 ☐	7.0 ☐
H - harmonic meter		5.0 ☐	6.0 ☐	7.0 ☐

LR - long-time rating plug	Standard 0.4 to 1 Ir	☐
	Low setting 0.4 to 0.8 Ir	☐
	High setting 0.8 to 1 Ir	☐
	LR OFF	☐
AD - external power-supply module	V	☐
BAT - battery module		☐
TCE - external sensor (CT) for neutral and residual earth-fault protection		☐
TCE - external sensor (CT) for oversized neutral (3 P - Micrologic P / H) and residual earth-fault protection		☐
TCW - external sensor for SGR protection		☐
Rectangular sensor for earth-leakage protection	NT (280 x 115 mm)	☐
	NW (470 x 160 mm)	☐
PTE - external voltage connector		☐

Communication

COM module

Device (BCM-ULP) ☐ with Ethernet interface ☐ Cradle ☐

with Ethernet interface + gateway ☐ management with I/O application module (Chassis)

with Modubs interface ☐

Eco COM module

Device (BCM-ULP) ☐ with Ethernet interface ☐

with Ethernet interface + gateway ☐

with Modubs interface ☐

Front Display Module (FDM121) ☐ Mounting accessories ☐

Breaker ULP Cord	L = 0.35 m	☐
	L = 1.3 m	☐
	L = 3 m	☐

Connection

Horizontal	Top ☐	Bottom ☐	
Vertical	Top ☐	Bottom ☐	
Front	Top ☐	Bottom ☐	
Vertical-connection adapters	NT - FC fixed, draw.		☐
Cable-lug adapters	NT - FC fixed, draw.		☐
Arc chute screen	NT - FC fixed		☐
Interphase barriers	NT, NW fixed, drawout		☐
Spreaders	NT fixed, drawout		☐
Disconnectable front connection adapter	NW fixed		☐
Lugs for 240mm² or 300mm² cables	NT fixed, drawout		☐

Indication contacts

OF - ON/OFF indication contacts

Standard	4 OF 6 A-240 V AC (10 A-240 V AC and low-level for NW)		
Alternate	1 OF low-level for NT	Max. 4	qty ☐
Additional	1 block of 4 OF for NW	Max. 2	qty ☐

EF - combined "connected/closed" contacts

1 EF 6 A-240 V AC for NW	Max. 8	qty ☐
1 EF low-level for NW	Max. 8	qty ☐

SDE - "fault-trip" indication contact

Standard	1 SDE 6 A-240 V AC		
Additional	1 SDE 6 A-240 V AC ☐	1 SDE Low level	☐
Programmable contacts	2 M2C contacts ☐	6 M6C contacts	☐
Carriage switches	Low level ☐	6 A-240 V AC	☐
CE - "connected" position	Max. 3 for NW	qty	☐
CD - "disconnected" position	Max. 3 for NW - 2 for NT	qty	☐
CT - "test" position	Max. 3 for NW - 1 for NT	qty	☐
AC - NW actuator for 6 CE - 3 CD - 0 CT additional carriage switches		qty	☐

Remote operation

Remote ON/OFF	**MCH** - gear motor	V	☐
	XF - closing voltage release	V	☐
	MX - opening voltage release	V	☐
	PF - "ready to close" contact Low level		☐
	6 A-240 V AC		☐
	BPFE - electrical closing pushbutton	V	☐
	RES - electrical reset option	V	☐
	RAR - automatic reset option		☐
Remote tripping	**MN** - undervoltage release	V	☐
	R - delay unit (non-adjustable)		☐
	Rr - adjustable delay unit		☐
	2nd MX - shunt release	V	☐

Locking

VBP - ON/OFF pushbutton locking (by transparent cover + padlocks) ☐

OFF position locking:

VCPO - by padlocks ☐

VSPO - by keylocks

Keylock kit (w/o keylock)	Profalux ☐	Ronis ☐
1 keylock	Profalux ☐	Ronis ☐
2 identical keylocks, 1 key	Profalux ☐	Ronis ☐
2 keylocks, different keys (NW)	Profalux ☐	Ronis ☐

Chassis locking in "disconnected" position:

VSPD - by keylocks

Keylock kit (w/o keylock)	Profalux ☐	Ronis ☐
	Kirk ☐	Castell ☐
1 keylock	Profalux ☐	Ronis ☐
2 identical keylocks, 1 key	Profalux ☐	Ronis ☐
2 keylocks, different keys	Profalux ☐	Ronis ☐
Optional connected/disconnected/test position lock		☐

VPEC - door interlock	On right-hand side of chassis	☐
	On left-hand side of chassis	☐
VPOC - racking interlock		☐
IPA - cable-type door interlock		☐
VDC - mismatch protection		☐
VIVC - shutter position indication and locking for NW		☐
IBPO - racking interlock between crank and OFF pushbutton for NW		☐
DAE - automatic spring discharge before breaker removal for NW		☐

Accessories

VO - safety shutters on chassis for NT and NW			☐
CDM - mechanical operation counter NT, NW			☒
CB - auxiliary terminal shield for chassis NT, NW			☐
CC - arc chute cover for fixed NT			☐
CDP - escutcheon NT, NW			☐
CP - transparent cover for escutcheon NT, NW			☐
OP - blanking plate for escutcheon NT, NW			☐
KMT - grounding kit NW			☐
Brackets for mounting	NW fixed ☐	On backplates	☐
Test kits	Mini test kit ☐	Portable test kit	☐

Micrologic control unit functions:
2.0: basic protection (long time + inst.)
5.0: selective protection (long time + short time + inst.)
6.0: selective + earth-fault protection (long ti me + short time + inst. + earth-fault)
7.0: selective + earth-leakage protection (long time + short time + inst. + earth-leakage)

Load Break Switches

Compact
INS40 to INS2500
Standard AS 60947.3 (IEC 60947.3)



28904

3 Pole - Front Connected

Type	Making capacity kA peak	Withstand current kA r.m.s/1 sec	415V kW rating (for motor switching)	Rating	Reference
INS40	15	3	22	40A	28900
INS63	15	3	33	63A	28902
INS80	15	3	45	80A	28904
INS100	20	5.5	55	100A	28908
INS125	20	5.5	63	125A	28910
INS160	20	5.5	80	160A	28912
INS250-100A	30	8.5	55	100A	31100 (2)
INS250-160A	30	8.5	90	160A	31104 (2)
INS250-200A	30	8.5	110	200A	31102 (2)
INS250-250A	30	8.5	140	250A	31106 (2)
INS320	50	20	180	320A	31108
INS400	50	20	220	400A	31110
INS500	50	20	295	500A	31112
INS630	50	20	375	630A	31114
INS630b	75	35 (1)	315	630A	31342
INS800	75	35 (1)	400	800A	31330
INS1000	75	35 (1)	560	1000A	31332
INS1250	75	35 (1)	710	1250A	31334
INS1600	75	35 (1)	710	1600A	31336
INS2000	105	50	-	2000A	31338
INS2500	105	50	-	2500A	31340

Note: Consult us for 3 Pole - Front Connected - with Visible Break



31106

31110

4 Pole - Front Connected

Type	Making capacity kA peak	Withstand current kA r.m.s/1 sec	415V kW rating (for motor switching)	Rating	Reference
INS40	15	3	22	40A	28901
INS63	15	3	33	63A	28903
INS80	15	3	45	80A	28905
INS100	20	5.5	55	100A	28909
INS125	20	5.5	63	125A	28911
INS160	20	5.5	80	160A	28913
INS250-100A	30	8.5	55	100A	31101
INS250-160A	30	8.5	90	160A	31105
INS250-200A	30	8.5	110	200A	31103
INS250-250A	30	8.5	140	250A	31107
INS320	50	20	180	320A	31109
INS400	50	20	220	400A	31111
INS500	50	20	295	500A	31113
INS630	50	20	375	630A	31115
INS630b	75	35 (1)	315	630A	31343
INS800	75	35 (1)	400	800A	31331
INS1000	75	35 (1)	560	1000A	31333
INS1250	75	35 (1)	710	1250A	31335
INS1600	75	35 (1)	710	1600A	31337
INS2000	105	50	-	2000A	31339
INS2500	105	50	-	2500A	31341

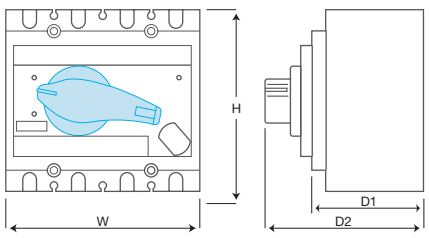
Note: Consult us for 4 Pole - Front Connected - with Visible Break



31336

Dimensions

Compact load break switches	Poles	H (mm)	W (mm)	D1 (mm)	D2 (mm)
INS40/63/80	3P/4P	85	90	47	79
INS100/125/160	3P/4P	100	135	47	79
INS250	3P/4P	136	140	96	131
INS320/400/500/630	3P/4P	205	185	120	160
INS630b/1600	3P	300	340	141	198
INS630b/1600	4P	300	410	141	198
INS2000/2500	3P	440	415	221.5	320
INS2000/2500	4P	440	531	221.5	320



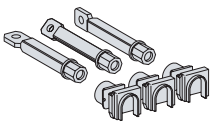


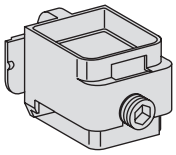
INV load break switch with visible break

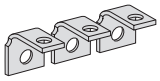
Note:
(1) Withstand current 50kA rms/0.5 sec.
(2) Switches that can be used in the MB and MD distribution boards. (See section 2.1 Metal Distribution Boards)

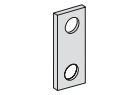
Accessories

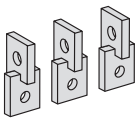
Compact INS & INV

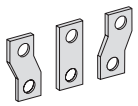


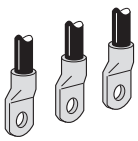


















Connection Accessories

	Description		Load Break Switch	Reference
Rear connections	Short (1 pair)		INS250	LV429235
			INS320 to INS630	LV432475
	Long (1 pair)		INS250	LV429236
			INS320 to INS630	LV432476
Bare cable connectors for multi-stranded cable	Snap-in, for cable			
	1.5 to 95mm² 7 160A	Set of 3	INS100 to INS160	28947
		Set of 4	INS100 to INS160	28948
	1.5 to 95mm² 7 160A	Set of 3	INS250	LV429242
		Set of 4	INS250	LV429243
	25 to 95mm² 7 250A	Set of 3	INS250	LV429227
		Set of 4	INS250	LV429228
	120 to 185mm² 7 250A	Set of 3	INS250	LV429259
		Set of 4	INS250	LV429260
	For one cable 35 to 300mm²			
		Set of 3	INS320 to INS630	LV432479
		Set of 4	INS320 to INS630	LV432480
Terminal extensions	Right-angle terminal extensions			
		Set of 3	INS250	LV429261
		Set of 4	INS250	LV429262
		Set of 3	INS320 to INS630	LV432484
		Set of 4	INS320 to INS630	LV432485
	Straight terminal extensions			
		Set of 3	INS250	LV429263
		Set of 4	INS250	LV429264
	Edgewise terminal extensions			
		Set of 3	INS320 to INS630	LV432486
		Set of 4	INS320 to INS630	LV432487
	Vertical connection adaptors			
		Set of 3	INS630b to INS2500	31301
		Set of 4	INS630b to INS2500	31302
	Spreaders			
	45mm	3P	INS250	LV431563
		4P	INS250	LV431564
	52.5mm	3P	INS320 to INS630	LV432490
		4P	INS320 to INS630	LV432491
	70mm	3P	INS320 to INS630	LV432492
		4P	INS320 to INS630	LV432493
	95mm	3P	INS630b to INS2500	31305
		4P	INS630b to INS2500	31306
Crimp lugs (multi stranded copper cables) supplied with 2 phase barriers	95mm²	Set of 3	INS100/160	28951
	120mm²	Set of 3	INS250	LV429252
	150mm²	Set of 3	INS250	LV429253
	185mm²	Set of 3	INS250	LV429254

Auxiliaries

			Reference
Auxiliary switches (changeover)	1 OF or CAM (early break or early make)	INS40 to INS2500	29450

Rotary Handle

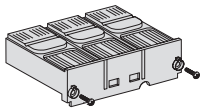
			Reference
Extended front rotary handle for door mounting (IP55)	Standard black handle	INS40 to INS160	LV428941
		INS250	LV431050
		INS320 to INS630	31052
		INS630b to INS2500	31288
Extended side mounted rotary handle for door mounting (IP55)	Standard black handle	INS40 to INS160	28943
		INS250	31057
Direct side mounted rotary handle		INS40 to INS160	–
		INS250	31054

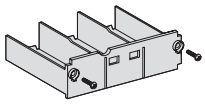
Note: Ref. 31054 MUST be used in conjunction with extended side mounted rotary handle Ref. 31057

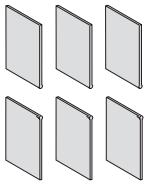
Accessories

Compact INS & INV

Terminal Shields







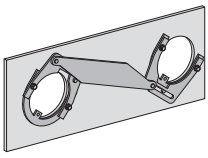
			Load Break Switch	Reference
Terminal shield Short (for rear connections)	Short 3P/4P - 1 piece		INS250	LV429516
			INS320 to INS630	LV432592
Long (for front connections)	Long 3P/4P - 1 piece		INS40 to INS80	28957
			INS100 to INS160	28958
			INS250	LV429518
			INS320 to INS630	LV432594
	Long for 52.5mm spreaders 3P/4P - 2 pieces		INS320 to INS630	LV432596
	Long 1 piece (base required)	3P	INS630b to INS2500	LV433638
		4P	INS630b to INS2500	LV433639
	Base for terminal Shield 1 piece	3P	INS630b to INS2500	31307
		4P	INS630b to INS2500	31308
Phase barriers	3P/4P - 6 pieces		INS100 to INS160	28959
			INS250	LV429329
			INS320 to INS630	LV432570
			INS630b to INS1600	31315
			INS2000/2500	31319

Single Handle Transfer Switch



			Reference
(complete assembly)	3P/3P	INS250-100A	31140
	4P/4P	INS250-100A	31141
	3P/3P	INS250-160A	31144
	4P/4P	INS250-160A	31145
	3P/3P	INS250-200A	31142
	4P/4P	INS250-200A	31143
	3P/3P	INS250-250A	31146
	4P/4P	INS250-250A	31147
	3P/3P	INS320	31148
	4P/4P	INS320	31149
	3P/3P	INS400	31150
	4P/4P	INS400	31151
	3P/3P	INS500	31152
	4P/4P	INS500	31153
	3P/3P	INS630	31154
	4P/4P	INS630	31155
Extended rotary handle		INS250/630	31055

Locking





			Reference
Padlock attachments		INS40 to IN2500	-
Key locking of handle	ronis (1 lock, 1 key) (*)	INS250 to INS2500	41940
	ronis (2 locks, 1 key) (*)	INS250 to INS2500	41950
	ronis (3 locks, 1 key) (*)	INS250 to INS2500	RONIS3
*Note: Locking devices (ref. 31087 and 31088) are required with the locks	locking device for ronis locks	INS250	31087
		INS320 to INS630	31088
		INS630b to INS2500	31291
Fortress/Castell interlock kit		INS630b to INS2500 (Cam + lever)	INS1600CAM INFLEVER
Note: Fortress/Castell interlock kits require an extended rotary handle and do not include lock.			
Mechanical interlock		INS40 to INS160	28953 (1)
		INS250	31073
		INS320 to INS630	31074
Common load bars (for transfer switch)	3P downstream coupling	INS250	29358
	4P downstream coupling	INS250	29359
	3P downstream coupling	INS320 to INS630	32619
	4P downstream coupling	INS320 to INS630	32620

Note:
(1) For extended rotary handles only.

Earth Leakage Protection Relays

Vigirex



RH21M



RH99M



RH21P



RH99P

Vigirex Earth Leakage Protection Relays (DIN rail mount)

Type	Power supply	Settings	Reference
RH21M	12 to 24V AC - 12 to 48V DC	30mA-Inst, 300mA-Inst or 300mA-60ms	56160
	48V AC	30mA-Inst, 300mA-Inst or 300mA-60ms	56161
	110 to 130V AC	30mA-Inst, 300mA-Inst or 300mA-60ms	56162
	220 to 240V AC	30mA-Inst, 300mA-Inst or 300mA-60ms	56163
	380 to 415V AC	30mA-Inst, 300mA-Inst or 300mA-60ms	56164
	440 to 525V AC	30mA-Inst, 300mA-Inst or 300mA-60ms	56165
RH99M	12 to 24V AC - 12 to 48V DC	30mA to 30A - Inst to 4.5s	56170
	48V AC	30mA to 30A - Inst to 4.5s	56171
	110 to 130V AC	30mA to 30A - Inst to 4.5s	56172
	220 to 240V AC	30mA to 30A - Inst to 4.5s	56173
	380 to 415V AC	30mA to 30A - Inst to 4.5s	56174
	440 to 525V AC	30mA to 30A - Inst to 4.5s	56175

Vigirex Earth Leakage Protection Relays (Front-panel mount)

Type	Power supply	Settings	Reference
RH21P	12 to 24V AC - 12 to 48V DC	30mA-Inst, 300mA-Inst or 300mA-60ms	56260
	110 to 130V AC	30mA-Inst, 300mA-Inst or 300mA-60ms	56262
	220 to 240V AC	30mA-Inst, 300mA-Inst or 300mA-60ms	56263
	380 to 415V AC	30mA-Inst, 300mA-Inst or 300mA-60ms	56264
	440 to 525V AC	30mA-Inst, 300mA-Inst or 300mA-60ms	56265
RH99P	12 to 24V AC - 12 to 48V DC	30mA to 30A - Inst to 4.5s	56270
	110 to 130V AC	30mA to 30A - Inst to 4.5s	56272
	220 to 240V AC	30mA to 30A - Inst to 4.5s	56273
	380 to 415V AC	30mA to 30A - Inst to 4.5s	56274
	440 to 525V AC	30mA to 30A - Inst to 4.5s	56275
RHU	220 to 240V AC	15mA to 30A - Inst to 5s	LV481003

RHU

Vigirex Earth Leakage Monitor

Type	Power supply	Description	Reference
RMH	220 to 240V AC	15mA to 30A - Inst to 5s	LV481004 (1)
RM12T	220 to 240V AC	Multiplexer for 12 toroid input	28566 (1)



RM12T

Vigirex Sensors (Toroidal and Rectangular)

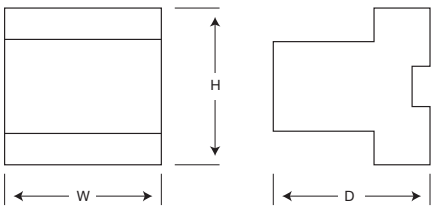
Type	Description	Dimension Ø	Rated Operational Current	Reference
Closed Toroid, A-type	TA30	30mm	65A	50437 (2)
	PA50	50mm	85A	50438 (2)
	IA80	80mm	160A	50439
	MA120	120mm	250A	50440
	SA200	200mm	400A	50441
	GA300	300mm	630A	50442
Split Toroids, TOA-type	TOA80	80mm	160A	50420
	TOA120	120mm	250A	50421
Rectangular Sensors	Small rectangular sensor	280 x 115mm	1600A	56053 (3)
	Large rectangular sensor	470 x 160 mm	3200A	56054 (3)



504••

Dimensions (mm)

	H	W	D
DIN-rail mount	81	54	74
Front panel mount	72	72	78



Note:
(1) These items support communications.
(2) These toroids can be adapted directly on the RH21 and RH99 DIN mounted relays.
(3) To be used only when IDn is ⩾ 500mA.

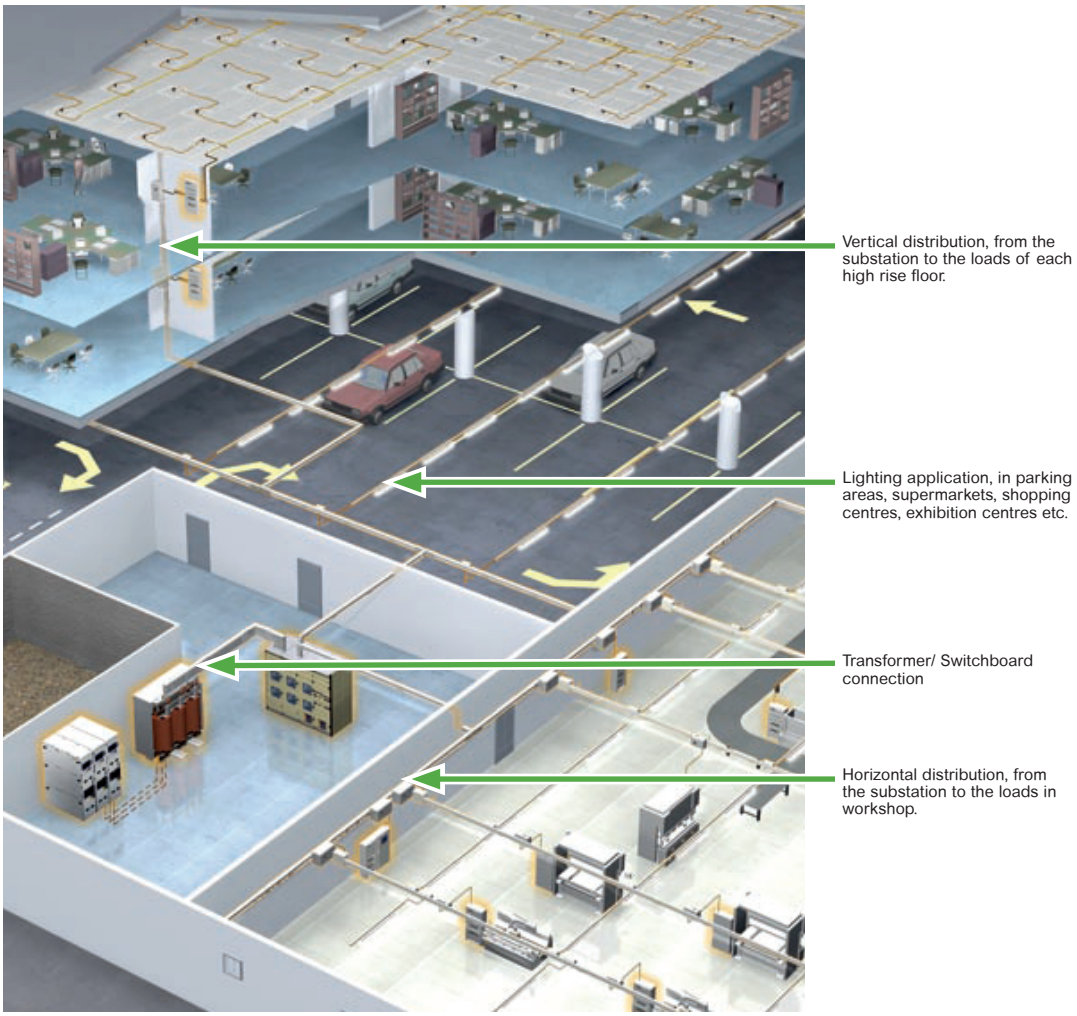
Busway Overview

In total coordination with the Schneider Electric system

Busway is a part of a comprehensive offering of Schneider Electric products designed to operate together. This concept covers all low and medium voltage electrical distribution components. The result is an optimised electrical installation with even higher performance through full electrical, mechanical and communication compatibility.

With the new range, you get a complete, tested distribution solution that complies with standards. It is perfectly suited to traditional applications (factories, warehouses, etc.) and to the distribution of electrical power from the incoming transformer on through to all types of loads in offices, commercial premises, laboratories, etc.

Application





Canalis KS:

Power distribution from 100 A to 800 A IP52/54, IK08 halogen-free, prelacquered white (RAL 9001).



I-Line II:

Power distribution and transmission from 800 A to 6000 A IP40-66, halogen-free, prelacquered grey (ANSI 49).

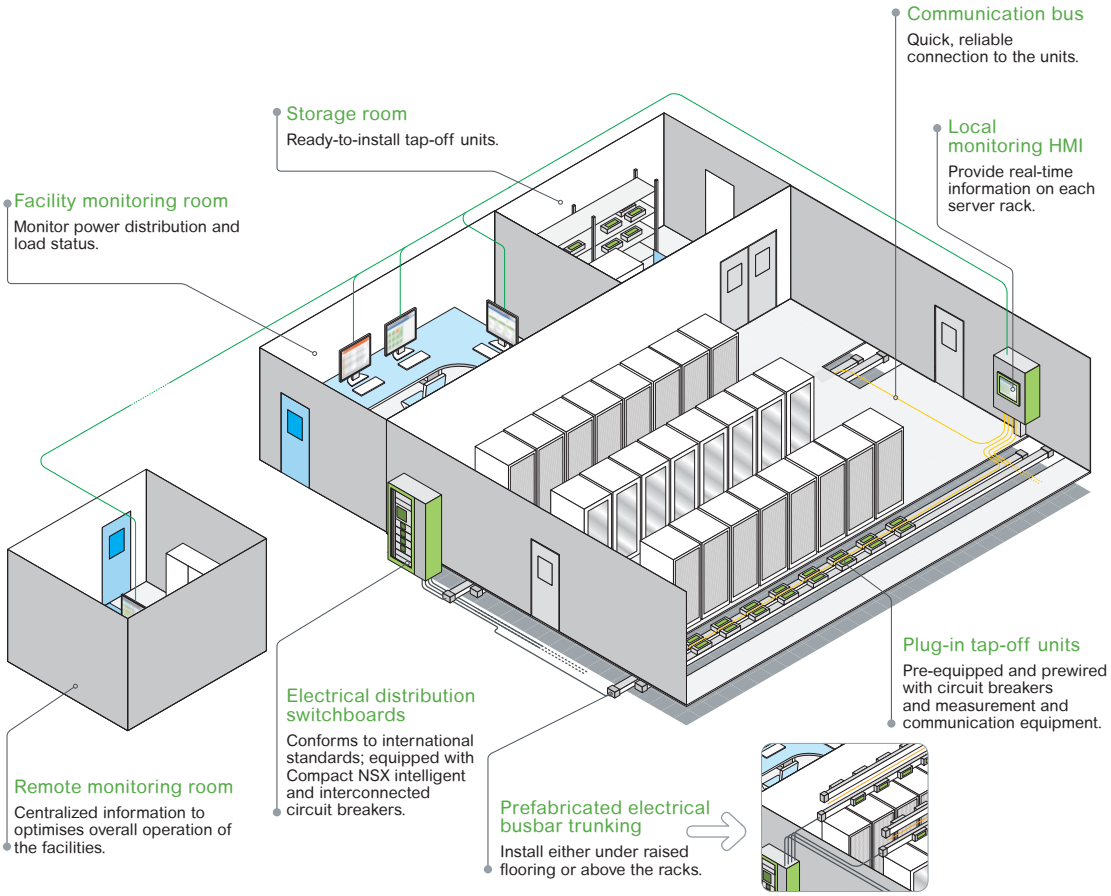
Please contact your local Schneider Electric representative for more information.

iBusway for Data Centres

2.2

A simple, secure solution

The Schneider Electric iBusway for Data Centres is the key component for high availability power distribution to all server racks in your data centre. Based on the Canalis KS prefabricated busbar trunking system, with plug-in tap-off units, monitoring and a specific control and monitoring system, iBusway for Data Centres is a "plug-&-play" solution for quickly installing or upgrading an IT facility.



iBusway for Data Centres, a solution that is...

Flexible

Its modular format easily adapts to all types of data centres offering easy facility upgrading and equipment replacement while also providing energy consumption measurements.

Interconnected

The local monitoring system gives you a clear view of your server room in real time: measurement of load factors, circuit-breaker status and power consumption for each individual rack. The system's compatibility allows connection to the data centre's overall monitoring system.

Easy to install

iBusway is a plug and play solution, with all components pre-wired and tested for fast, secure setup and software tools simplify architecture design. Dedicated services for installation and start-up are also available.

Zero foot print

The iBusway solution takes up no floor space and offers more efficient use of dedicated rack areas.

Canalis KDP
20 A, IP55, Ue = 230 V to 400 V

Run Components

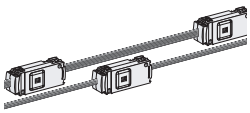
L + N + PE



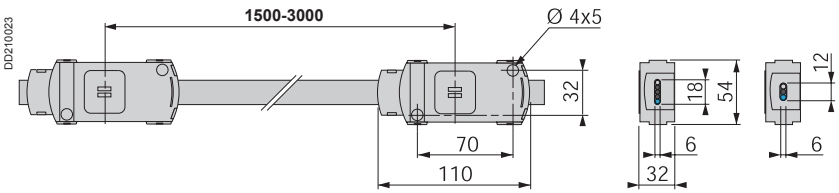
3L + N + PE



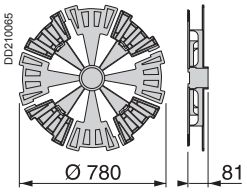
Polarity	Distance between Tap-off units (mm)	Spool length (m)	Reference
L + N + E	1500	24	KDP20ED224150
		192	KDP20ED2192150
	3000	24	KDP20ED224300
		192	KDP20ED2192300
3L + N + E	1500	24	KDP20ED424150
		192	KDP20ED4192150
	3000	24	KDP20ED424300
		192	KDP20ED4192300



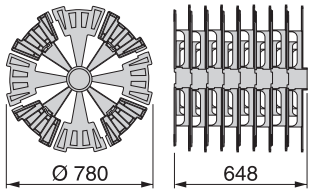
KDP 20E●●●●●



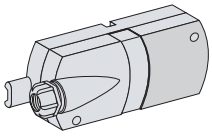
KDP20E●●024●



KDP20E●●192●



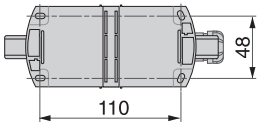
Feed units (supplied with end cover)



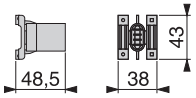
KDP20ABG4

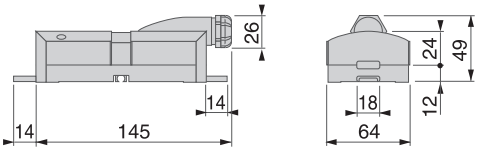
Mounting	Cable connection		Reference
	Terminals (mm^2)	Cable gland Ømax (mm)	
Left or right	4	PG 16, Ø 15	KDP20ABG4

KDP 20ABG4

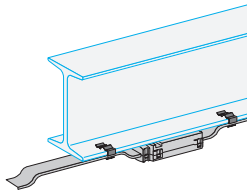


End cover





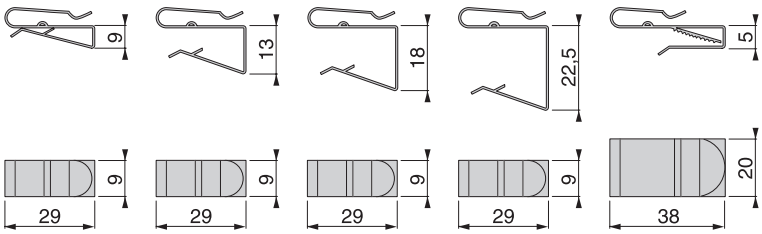
Fixing Systems



KDP on a metal structure

Fixing on	Thickness (mm)	Pack Qty	Reference
Pre-slotted sheet-metal cable trays	-	100	KDPZF10
Mesh trays	Ø 4...Ø 6	100	KDPZF14
Metal structure	1...8	100	KDPZF10
	8...13	100	KDPZF11
	13...17	50	KDPZF12
	17...22	50	KDPZF13
Wood or concrete	Fixing with cable tie	100	KDPZF20
	Concrete fixing plug for Ø 8 mm hole	100	KDPZF21

KDP ZF10 **KDP ZF11** **KDP ZF12** **KDP ZF13** **KDP ZF14**



Canalis KBA
25 A and 40 A, IP55, Ue = 230 V to 400 V

2.2

Straight Length Standard, Polarity: Ph + N + PE

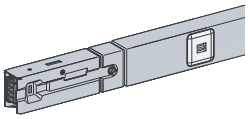


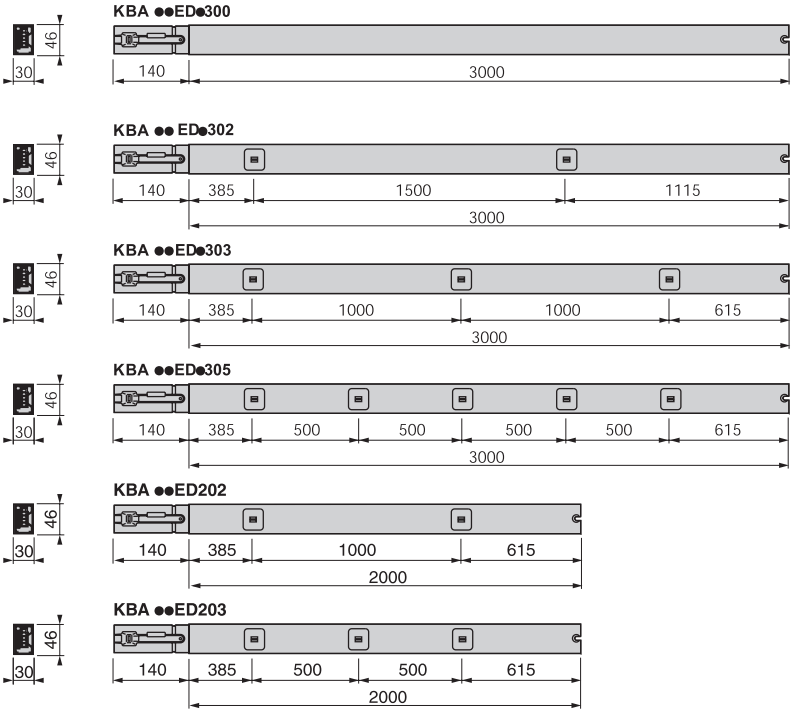
Length (m)	No. of tap-offs	Rating (A)	Reference
3	2	25	KBA25ED2302
	3	25	KBA25ED2303
		40	KBA40ED2303
	5	25	KBA25ED2305
		40	KBA40ED2305
2	2	25	KBA25ED2202
	3	40	KBA40ED2203

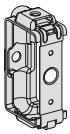
Straight Length Standard, Polarity: 3Ph + N + PE



Length (m)	No. of tap-offs	Rating (A)	Reference
3	2	25	KBA25ED4302
	3	25	KBA25ED4303
		40	KBA40ED4303
	5	25	KBA25ED4305
		40	KBA40ED4305
2	2	25	KBA25ED4202
	3	40	KBA40ED4203





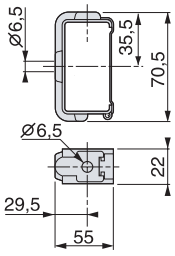


KBA40ZFU

Fixing Systems

Description	Mounting	Reference
Universal fixing bracket (1)	Suspended on threaded rod or lateral (except wall)	KBA40ZFU

KBA 40ZFU



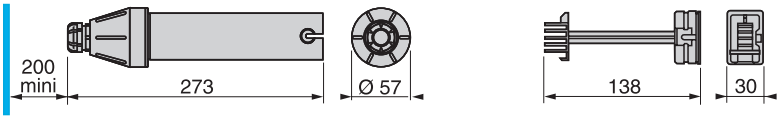
(1) Maximum recommended distance between fixings: 3 meters.

Canalis KBA
25 A and 40 A, IP55, Ue = 230 V to 400 V

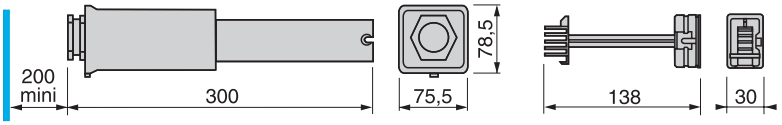
Feed units (supplied with end cover)

Rating (A)/ Mounting	Cable connection Terminals (mm^2)	Cable gland max Ø (mm)	Reference
25/ Left	4	PG 16, Ø 15	KBA25ABG4
40/ Left	10	PG 21, Ø 19	KBA40ABG4
25 or 40/ Right	10	PG 21, Ø 19	KBA40ABD4

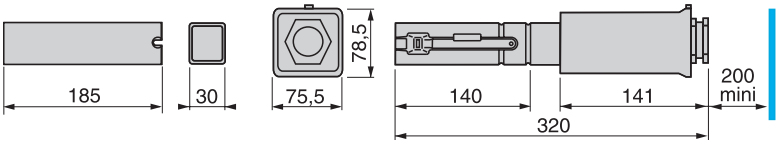
KBA 25ABG4 with end cover

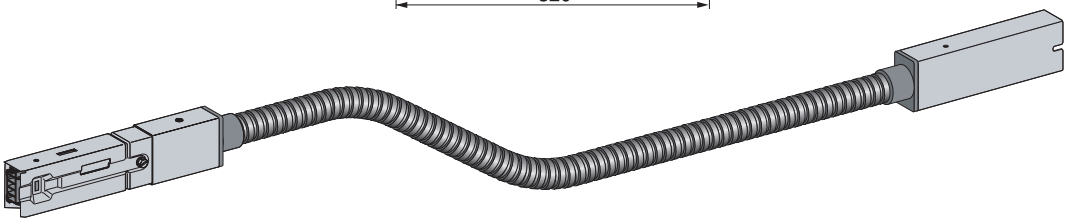


KBA 40ABG4 with end cover



KBA 40ABD4 with end cover



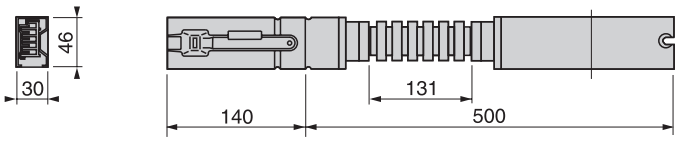


KBA 40DF4●●

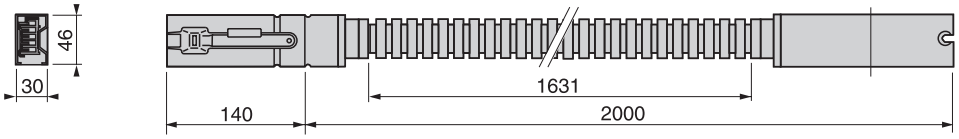
Flexible lengths

Mounting	Length (m)	Reference
For elbows, changing levels, detours around obstacles, etc.	0.5	KBA40DF405
	2	KBA40DF420

KBA 40DF405



KBA 40DF420

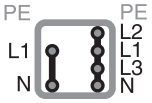


Canalis KBB, 2 circuits
25 A and 40 A, IP55, Ue = 230 V to 400 V



Straight Lengths, Two Circuits: 2 x (1P + N) + E

Length (m)	No. of tap-offs	Rating (A)	Reference
3	3 + 2	25	KBB25ED22305
		40	KBB40ED22305
2	2 + 1	40	KBB40ED22203



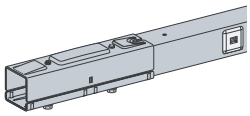
Straight Lengths, Two Circuits: (1P + N) + (3P +N) + E

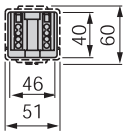
Length (m)	No. of tap-offs	Rating (A)	Reference
3	3 + 2	25	KBB25ED42305
		40	KBB40ED42305
2	2 + 1	40	KBB40ED42203



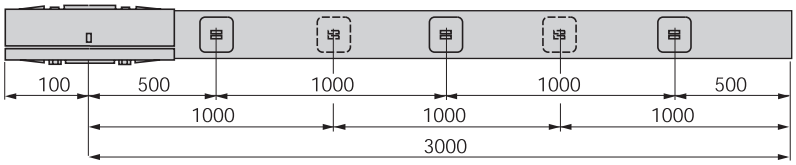
Straight Lengths, Two Circuits: 2 x (3P +N) + E

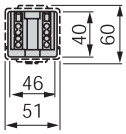
Length (m)	No. of tap-offs	Rating (A)	Reference
3	3 + 2	25	KBB25ED44305
		40	KBB40ED44305
2	2 + 1	40	KBB40ED44203



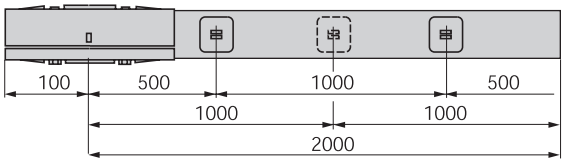


KBB ●●ED●●305



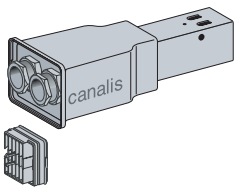


KBB 40ED●●203



Flexible Lengths

Mounting	Length (m)	Reference
For elbows, changing levels, detours around obstacles, etc.	0.5	KBB40DF4405
changing levels, detours around obstacles, etc.	2	KBB40DF4420



KBB40ABG44

Feed Units (supplied with end cover)

Mounting	Cable connection		Reference
	Terminal (mm^2)	Cable gland Ø maxi (mm)	
Left/ Right	6 to 10	PG 21, Ø 19	KBB40ABG44

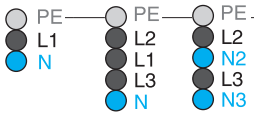
Fixing Systems

Description	Mounting	Reference
Universal fixing bracket (1)	Suspended on threaded rod or lateral (except wall)	KBB40ZFU

(1) Maximum recommended distance between fixings: 5 meters.

Canalis KDP, KBA and KBB
IP55, Ue = 230 V to 400 V

Type of busbar trunking



10 A tap-off unit, L + L + PE or L + N + PE, with phase selection

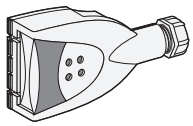
Polarity	Pack Qty	Reference
L1 + N or L2 + N or L3 + N L1 + L2 or L1 + L3 or L2 + L3 L2 + N2 or L3 + N3	10	KBC10DCB20

Type of busbar trunking

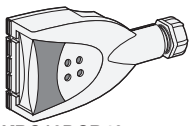


10 A tap-off unit, 3L + N + PE

Polarity	Pack Qty	Reference
To be defined for each application (dimmer, emergency lighting, etc.)	10	KBC10DCB40

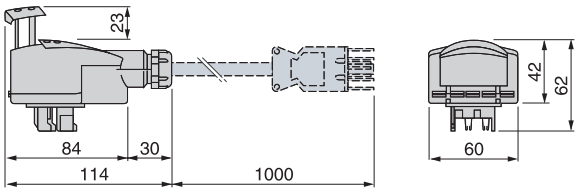


KBC10DCB20



KBC10DCB40

KBC 10DCB20, KBC 10DCB40





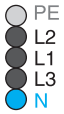
Single-circuit switching

Balancing on 3 phases or 3-circuit switching

16 A tap-off unit, L + N + PE, with phase selection

Polarity	Protection	Pack Qty	Reference
L1 + N or L2 + N or L3 + N	None	10	KBC16DCB21
	Cylindrical fuse NF 8.5 x 31.5 16 A gG maximum (not supplied)	10	KBC16DCF21

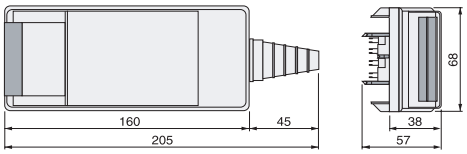
Type of busbar trunking



All types possible

16 A tap-off unit, 3L + N + PE

Polarity	Protection	Pack Qty	Reference
3L + N	None	10	KBC16DCB40
	Cylindrical fuse NF 8.5 x 31.5 16 A gG maximum (not supplied	10	KBC16DCF40



KBC 16DC●40

Electrical Distribution

Metering, Power Factor Correction & Harmonic Mitigation

Metering Solutions

2.3







Watt Hour Meters – Single & Three Phase	Page 2.3.1
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Product Selection	Page 2.3.6
	Page 2.3.7
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	Page 2.3.9
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PowerLogic Power Meters	
PowerLogic Advanced Power Meters	Page 2.3.11
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Power Factor Correction



Components for Power Factor Correction Systems	Page 2.3.15
VarPlus Can Capacitors	Page 2.3.16
VarPlus Logic Power Factor Correction Controller	Page 2.3.17
Detuned Reactor, Capacitor Duty Contactor	Page 2.3.18
VARPACT Range	Page 2.3.19
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VarSet Range	Page 2.3.21
Accusine Range	Page 2.3.22

Watt Hour Meters - Single & Three Phase



iEM2010

iEM2000 series - Watt Hour Meters - Single Phase

Model	Voltage	Current rating	Mechanical display	Remote signalling Pulse / kWh	Operating frequency	Width in mod. of 9mm	Reference
iEM2000T	230 V	40 A	no	100 pulses / kWh (120 ms long)	50/60 Hz	2	A9MEM2000T
iEM2000	230 V	40 A	yes	100 pulses / kWh (120 ms long)	50/60 Hz	2	A9MEM2000
iEM2010	230 V	40 A	yes	100 pulses / kWh (120 ms long)	50/60 Hz	2	A9MEM2010

Features:
- Accuracy Class 1 (IEC 62053-21)



iEM2150

iEM2100 series - Watt Hour Meters - Single Phase - LCD Digital

Model	Voltage	Current rating	Remote signalling Pulse/kWh	Communication	Multi-Tariff	Width in mod. of 9mm	Reference
iEM2105	230 V	63 A	1 pulse /kWh (200 ms long)	-	-	4	A9MEM2105
iEM2110	230 V	63 A	1 to 1000 pulses /kWh or kvarh (30 to 100 ms long)	-	2 Tariffs	4	A9MEM2110
iEM2150	230 V	63 A	1	Modbus	-	4	A9MEM2150

Features:
- Accuracy Class 1 (IEC 62053-21)



iEM3350

iEM3000 series - Kilowatt Hour Meters - 1P/3P/3P+N - LCD Digital

Model	Description	Reference
iEM3100	DIN-rail kWh meter - 63A direct connect	A9MEM3100
iEM3110	DIN-rail kWh meter - 63A direct connect, pulse output	A9MEM3110
iEM3115	DIN-rail kWh meter - 63A direct connect, multi-tariff	A9MEM3115
iEM3150	DIN-rail kWh meter - 63A direct connect, Modbus RS485	A9MEM3150
iEM3155	DIN-rail kWh meter - 63A direct connect, Modbus RS485, DI / DO	A9MEM3155
iEM3165	DIN-rail kWh meter - 63A direct connect, BACnet MS/TP, DI / DO	A9MEM3165
iEM3200	DIN-rail kWh meter - 5A or 1A external CTs	A9MEM3200
iEM3210	DIN-rail kWh meter - 5A or 1A external CTs, pulse output	A9MEM3210
iEM3215	DIN-rail kWh meter - 5A or 1A external CTs, multi-tariff	A9MEM3215
iEM3250	DIN-rail kWh meter - 5A or 1A external CTs, Modbus RS485	A9MEM3250
iEM3255	DIN-rail kWh meter - 5A or 1A external CTs, Modbus RS485, DI / DO	A9MEM3255
iEM3265	DIN-rail kWh meter - 5A or 1A external CTs, BACnet MS/TP, DI / DO	A9MEM3265
iEM3300	DIN-rail kWh meter - 125A direct connect	A9MEM3300
iEM3310	DIN-rail kWh meter - 125A direct connect, pulse output	A9MEM3310
IEM3350	DIN-rail kWh meter - 125A direct connect, Modbus RS485	A9MEM3350
iEM3355	DIN-rail kWh meter - 125A direct connect, Modbus RS485, DI / DO	A9MEM3355
iEM3365	DIN-rail kWh meter - 125A direct connect, BACnet MS/TP, DI / DO	A9MEM3365



EM1350

National Measurement Institute NMI M6-1 Pattern Approved- Kilowatt Hour Meters-1P/3P/3P+N - LCD Digital

Model		Reference
IEM3255	DIN-rail kWh meter - 5A or 1A external CTs, Modbus RS485, DI / DO	A9MEM3255-NMI
IEM3350	DIN-rail kWh meter - 125A direct connect, Modbus RS485	A9MEM3350-NMI
EM1350	Flush Mount Watt Hour Revenue Meter with RS485 Modbus Comms	METSEEM1350

Features:
- Meter verification report available upon request.
- Meters verified in accordance to National Measurement Institute NITP-14

Watt Hour Meters - Single & Three Phase

Selection table

Features	iEM 3100	iEM 3110	iEM 3115	iEM 3150	iEM 3155	iEM 3165	iEM 3200	iEM 3210	iEM 3215	iEM 3250	iEM 3255	iEM 3265	iEM 3300	iEM 3310	iEM 3350	iEM 3355	iEM 3365
Self powered		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Direct measurement (up to 63A)	✓	✓	✓	✓	✓	✓											
Direct measurement (up to 125A)													✓	✓	✓	✓	✓
Measurement through CTs (1A, 5A)							✓	✓	✓	✓	✓	✓					
Energy Accuracy (Total & Partial kWh)	1%	1%	1%	1%	1%	1%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	1%	1%	1%	1%	1%
Consumed / Generated kWh					✓	✓					✓	✓				✓	✓
Electrical measurements (I, V, F,…)				✓	✓	✓				✓	✓	✓			✓	✓	✓
Multi-tariff (on-peak/off-peak)			✓		✓	✓			✓		✓	✓				✓	✓
Digital inputs			2		1	1			2		1	1				1	1
Digital output					1	1					1	1				1	1
Alarm (kW overload)					✓	✓					✓	✓				✓	✓
Pulse output		1						1						1			
Modbus communication				✓	✓	✓				✓	✓	✓			✓	✓	✓
BACnet communication	✓					✓						✓					✓



EM3500

EM3500 series - Watt Hour Meters – 3P/3P+N - LCD Digital

Model	Description	Reference
EM3502	DIN-rail kWh meter - LVCT, 2 pulse outputs	METSEEM3502
EM3550	DIN-rail kWh meter - LVCT, Modbus RS485, 1 pulse output	METSEEM3550
EM3555	DIN-rail kWh meter - LVCT, Modbus RS485, 1 pulse output, data logging	METSEEM3555
EM3560	DIN-rail kWh meter - LVCT, BACnet, 2 DI, data logging	METSEEM3560

iEM3400 and iEM3500 series - Watt Hour Meters – 3P/3P+N - LCD Digital

Model	Description	Reference
iEM3455	DIN-rail kWh meter (LVCT external CTs, Modbus RTU, DI/ DO)	A9MEM3455
iEM3465	DIN-rail kWh meter (LVCT external CTs, BACnet, DI/ DO)	A9MEM3465
iEM3555	DIN-rail kWh meter (Rogowski Coil, Modbus RTU, DI/ DO)	A9MEM3555
iEM3565	DIN-rail kWh meter (Rogowski Coil, BACnet, DI/ DO)	A9MEM3565



EM4305

iEM4300 series - Wireless Energy Meters

Model	Description	Reference
EM4302	200A using Rogowski coil with 55mm aperture	METSEEM4302
EM4305	500A using Rogowski coil with 55mm aperture	METSEEM4305
EM4310	1000A using Rogowsi coil with 125mm aperture	METSEEM4310
EM4320	2000A using Rogowsi coil with 125mm aperture	METSEEM4320

Features:

- Accuracy Class 1
- Zigbee Pro HA protocol
- 2.4 GHz radio frequency

Current Transformers







Current Transformers, Tropicalised, Rated 720 Volts 50/60Hz

Range	Ratio (P/S)	Insulated Cable Maximum Diameter (mm)	Busbar Opening Dimensions (mm)	Burden (VA) Accuracy Class 0.5	1	3	Weight (g)	Reference
T1	40/5A	21	-	-	-	1	200	METSECT5CC004
	50/5A	21	-	-	1.25	1.5	200	METSECT5CC005
	75/5A	21	-	-	1.5	2.5	200	METSECT5CC008
	100/5A	21	-	2	2.5	3.5	200	METSECT5CC010
	125/5A	21	-	2.5	3.5	4	200	METSECT5CC013
	150/5A	21	-	3	4	5	200	METSECT5CC015
		22	30x10	1.5	5.5	6.5	270	METSECT5CC020
	200/5A	21	-	4	5.5	6	200	METSECT5ME015
		22	30x10	4	7	8.5	270	METSECT5ME020
		-	65x32	-	2	5	600	METSECT5DA020
	250/5A	22	30x10	6	9	11	270	METSECT5ME025
		35	40x10	2.5	5	8	430	METSECT5MF025
		-	65x32	1	4	6	600	METSECT5DA025
	300/5A	22	30x10	7.5	11	13.5	270	METSECT5ME030
		35	40x10	4	8	12	430	METSECT5MF030
		-	65x32	1.5	6	7	600	METSECT5DA030
	400/5A	22	30x10	10.5	15	18	270	METSECT5ME040
		35	40x10	8	12	15	430	METSECT5MF040
		-	65x32	4	8	10	600	METSECT5DA040
	500/5A	22	30x10	12	18	22	270	METSECT5ME050
		35	40x10	10	12	15	430	METSECT5MF050
		-	64x11 or 51x31	2	4	6	500	METSECT5VF050
			65x32	8	10	12	600	METSECT5DA050
	600/5A	22	30x10	14.5	21.5	26	270	METSECT5ME060
		-	64x11 or 51x31	4	6	8	500	METSECT5VF060
			65x32	8	12	15	600	METSECT5DA060
	800/5A	-	65x32	12	15	20	600	METSECT5DA080
	1000/5A	-	65x32	15	20	25	600	METSECT5DA100
	1250/5A	-	65x32	15	20	25	600	METSECT5DA125
			84x34	12	15	20	700	METSECT5DD125
			127x38	8	12	-	1500	METSECT5DB125
	1500/A	-	65x32	20	25	30	600	METSECT5DA150
			84x34	15	20	25	700	METSECT5DD150
			127x38	10	15	-	1000	METSECT5DB150
	2000/5A	-	127x38	15	20	-	1000	METSECT5DB200
	2500/5A	-	127x38	20	25	-	1000	METSECT5DB250
			127x52	30	50	60	1300	METSECT5DC250
	3000/5A	-	127x38	25	30	-	1000	METSECT5DB300
			127x52	40	60	60	1300	METSECT5DC300
	4000/5A	-	127x52	50	60	60	1300	METSECT5DC400
	5000/5A	-	165x55	60	120	-	5000	METSECT5VV500
	6000/5A	-	165x55	70	120	-	5000	METSECT5VV600



Split Core Current Transformers for use ONLY with iEM3400 and EM3500 series, BCPM and EM4800 (p/n: METSEEM483325)

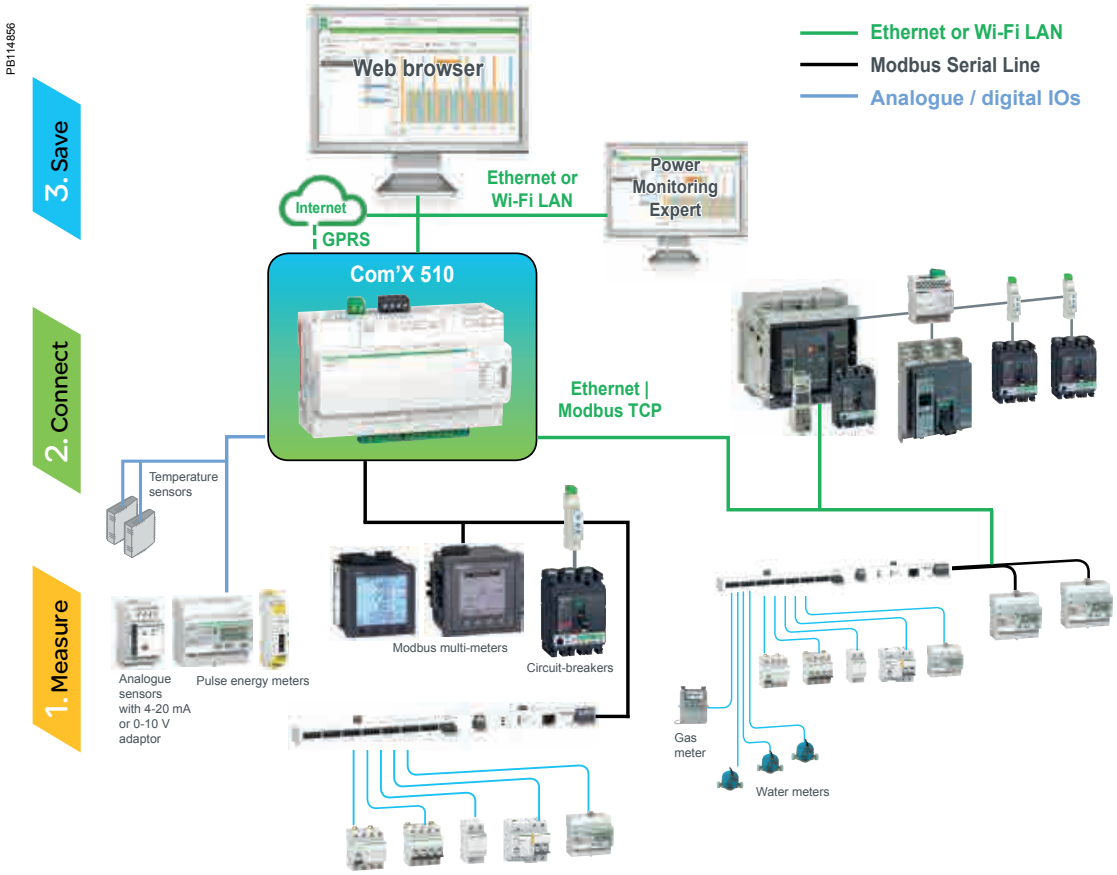
Primary Input	Secondary Output	Accuracy	Outside Dimensions (mm)	Inside Dimensions (mm)	Reference
0-100A	0 - 0.33V AC	1%	121 x 100	31 x 30	LVCT00102S
0-200A	0 - 0.33V AC	1%	121 x 100	31 x 30	LVCT00202S
0-300A	0 - 0.33V AC	1%	121 x 100	31 x 30	LVCT00302S
0-400A	0 - 0.33V AC	1%	151 x 132	62 x 73	LVCT00403S
0-800A	0 - 0.33V AC	1%	151 x 132	62 x 73	LVCT00803S
0-800A	0 - 0.33V AC	1%	151 x 201	62 x 139	LVCT00804S
0-1000A	0 - 0.33V AC	1%	151 x 201	62 x 139	LVCT01004S
0-1200A	0 - 0.33V AC	1%	151 x 201	62 x 139	LVCT01204S
0-1600A	0 - 0.33V AC	1%	151 x 201	62 x 139	LVCT01604S
0-2000A	0 - 0.33V AC	1%	151 x 201	62 x 139	LVCT02004S
0-2400A	0 - 0.33V AC	1%	151 x 201	62 x 139	LVCT02404S

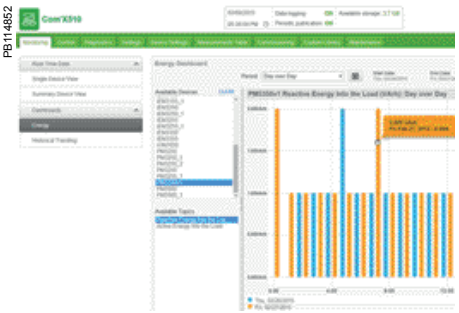
Rogowski Coils for iEM3500 series

AC Current Measurement	Accuracy	CT Core Length	Inside Diameter (mm) with Closed Connector	Reference
Up to 5000A	±1% from 50A to 5000A	305mm	98mm	U018-0001
Up to 5000A	±1% from 50A to 5000A	458mm	147mm	U018-0002
Up to 5000A	±1% from 50A to 5000A	610mm	195mm	U018-0003
Up to 5000A	±1% from 50A to 5000A	915mm	293mm	U018-0004

Communications
Com'X510 Energy server

Main functions





Energy dashboard comparing accumulated over time energy values (partial screen)

Data collector
Collects and stores energy data from up to 64 field devices, connected to either:
- Ethernet TCP/IP field network.
- Modbus Serial line network (up to 32 devices).
- Embedded digital and analogue inputs.

"Field devices" consist of :
- PowerLogic meters for power and energy monitoring.
- Masterpact, Powerpact, or Compact circuit-breakers for protection and monitoring.
- Acti 9 protection devices, meters, remote controlled switches, etc.
- Water, Air, Gas, Electricity, and Steam consumption meters, from specialized manufacturers, delivering pulses as per standard (see table at end of this document).
- Environmental sensors such as temperatures, humidity, and CO2 levels in a building, providing analogue information.

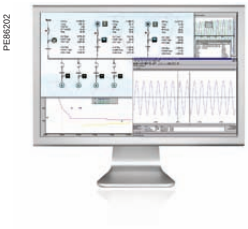
Data logging and storage capabilities include:
- Data logging period: configurable from every minute to once a week.
- Data storage duration: up to 2 years, depending on quanitity of collected data.
- Able to set time and send reset instructions to field devices.

Embedded energy management software
The Com'X provides the end-user with immediate visibility into energy consumption throughout the site. As soon as the Com'X is connected to the Local Area Network (LAN), several web pages are accessible via any standard web browser, (without plug-in or additional components).

These web pages display real-time data as it is collected, in easy to understand tabular and summary formats. In addition, users can get simple analysis of historical data in bar graph or trending formats.

Monitoring software

Software introduction and comparison



StruxureWare Power Monitoring Expert software



StruxureWare PowerSCADA Expert software

A choice of powerful, effective solutions

PowerLogic software offerings give you desktop access to your entire electrical network. They convert energy-related data into timely, actionable information and give you the control to act on your decisions. The depth of different offerings makes it easy to match a product to your goals, your business and your budget.

□ **StruxureWare Power Monitoring Expert** software is a complete power management solution that helps you maximise energy efficiency, cut energy-related costs and avoid power-quality related equipment failures and downtime.

□ **StruxureWare PowerSCADA Expert** software is a power monitoring and control solution with high reliability and performance for helping reduce the risk of power outages and increase network-wide efficiency.

Extensive reach and flexibility

PowerLogic software forms an important part of your overall energy efficiency and reliability solutions from Schneider Electric. A PowerLogic system can grow with your business, giving you the level of energy intelligence and control you need to reduce energy consumption and costs, minimise environmental impacts, and assure power availability, uptime and safety.

Each product collects energy-related data from a variety of sources, including PowerLogic or third-party meters and sensors. Some products offer integration with other Schneider Electric or third-party automation systems, and other energy-relevant information feeds.

Choosing your solution

This section provides a brief overview of the types of environments and applications each software offer is best suited for. See the following product sections for more detail on specific product features and compatibilities. Your Schneider Electric representative can help you design the best solution by choosing the best product and associated services for your needs.

Software	Environment					Application category		
	Industry	Buildings	Data centres	Infra-structure	Electric utilities	Energy efficiency & cost	Power availability & reliability	Network protection & control
StruxureWare Power Monitoring Expert	■	■	■	■	■	■■■	■■■■	■
StruxureWare PowerSCADA Expert	■		■	■	■		■■	■■■■

The number of square bullets *indicates the relative strength of feature set for the noted application category.*

Product Selection







		PM3200	PM3210	PM3250 PM3255	PM1000 PM1200	PM5350	ION6200 EP#2	PM5110 PM5310 PM5320 PM5330 PM5340	PM5560 PM5563
General Selection Criteria									
Installation		DIN rail	DIN rail	DIN rail	Flush	Flush	Flush or DIN rail mount	Flush	Flush
Use on LV distribution systems		■	■	■	■	■	■	■	■
Use on MV and HV distribution systems		■	■	■	■	■	■	■	■
Current/voltage accuracy		0.3%	0.3%	0.3%	1 %	0.3%	0.3%	0.25%	0.1%
Power/active energy accuracy		0.5%	0.5%	0.5%	1 %	0.5%	0.5%	0.5%	0.2%
Instantaneous rms values									
Current	Phases	■	■	■	■	■	■	■	■
	Neutral	■	■	■	■	■	■	■	■
3 - Phase Voltage		■	■	■	■	■	■	■	■
Voltage per phase		■	■	■	■	■	■	■	■
Frequency		■	■	■	■	■	■	■	■
Total power	Active	■	■	■	■	■	■	■	■
	Reactive	■	■	■	■	■	■	■	■
	Apparent	■	■	■	■	■	■	■	■
Power per phase	Active	■	■	■	■	■	■	■	■
	Reactive	■	■	■	■	■	■	■	■
	Apparent	■	■	■	■	■	■	■	■
Power factor	Total	■	■	■	■	■	■	■	■
	Per phase	■	■	■	■	■	■	■	■
Energy values									
Active energy		Rec/Del	Rec/Del	Rec/Del	■	Rec/Del	Rec/Del	Rec/Del	Rec/Del
Reactive energy		Rec/Del	Rec/Del	Rec/Del	Rec/Del	Rec/Del	Rec/Del	Rec/Del	Rec/Del
Apparent energy		Rec/Del	Rec/Del	Rec/Del	■	■	■	Rec/Del	Rec/Del
Demand values									
Current - Present and maximum values		Pres. only	■	■	■	■	■	■	■
Total active power - Present and maximum values		Pres. only	■	■	■	■	■	■	■
Total reactive power - Present and maximum values		Pres. only	Pres. only	Pres. only	■	■	■	■	■
Total apparent power - Present and maximum values		Pres. only	Pres. only	Pres. only	■	■	■	■	■
Total predicted demand - kW, kVAR, kVA		-	-	-	-	■	■	■	■
Synchronisation of calculation window		-	-	-	-	-	-	■	■
Other measurements									
Hour counter		■	■	■	■	■	-	■	■

Product Selection







	PM3200	PM3210	PM3250 PM3255	PM1000 PM1200	PM5350	ION6200 EP#2	PM5110	PM5310 PM5320	PM5330 PM5340	PM5560 PM5563
Power quality measurement										
Interharmonics	-	-	-	-	-	-	-	-	-	-
Total harmonic distortion Voltage	■	■	■	■	■	■	■	■	■	■
Current	■	■	■	■	■	■	■	■	■	■
Individual harmonic content (current and voltage)	-	-	-	-	-	-	15	15	15	63
Waveform capture	-	-	-	-	-	-	-	-	-	-
Detection of voltage sags and swells	-	-	-	-	-	-	-	-	-	-
Programmable (logic and mathematical functions)	-	-	-	-	-	-	-	-	-	-
Detection and capture of transients	-	-	-	-	-	-	-	-	-	-
Flicker	-	-	-	-	-	-	-	-	-	-
EN 50160 compliance checking	-	-	-	-	-	-	15	15	15	63
True rms measurement Maximum harmonic number				15	15	15	15	15	15	63
Sampling rate, Points per cycle				20	32	64	64	64	64	128
Data recording										
Min/Max of instantaneous values	■	■	■	-	■	-	■	■	■	■
Data logging	-	-	-	-	-	-	■	■	■	■
Event logging	-	■	■	-	■	-	■	■	■	■
Trend curves	-	-	-	-	-	-	-	-	-	-
Alarms	-	■	■	-	■	-	■	■	■	■
Alarm notification via email	-	-	-	-	-	-	-	-	-	-
Sequence of Events Recording	-	-	-	-	-	-	-	-	-	■
Date and time stamping	-	■	■	-	■	-	■	■	■	■
GPS time synchronisation	-	-	-	-	-	-	■	■	■	■
Storage capacity	-	-	-	-	-	-	256kB	256kB	256kB	750kB
Display, sensors, inputs/outputs										
Front-panel display	■	■	■	■	■	■	■	■	■	■ (PM 5560)
Digital Input (Std/Max)	-	-	2 (PM 3255)	-	4	-	-	2	2	4
Analogue Input (Std/Max)	-	1	-	-	-	-	-	-	-	-
Digital Output (Std/Max)	-	-	2 (PM 3255)	-	2	0/2	1	2	4	2
Analogue Output (Std/Max)	-	-	-	-	-	-	-	-	-	-
Direct voltage connections without external VT	330 V L-N 570 V L-L	330 V L-N 570 V L-L	330 V L-N 570 V L-L	80-415 VAC L-L	400V L-N 690V L-L	400 V L-N 690 V L-L	690 V L-L	690 V L-L	690 V L-L	690 V L-L
Power supply										
AC/DC version AC	100 - 480V	100 - 480V	100 - 480V	44 to 277 V	85 - 265 V	100 - 480V	110 - 415V	110 - 415V	110 - 415V	110 - 480V
DC	100 - 300V	100 - 300V	100 - 300V	44 to 277 V	-	110 - 300V	110 - 275V	110 - 275V	110 - 275V	110 - 275V
DC version	-	-	-			20 - 60V				
Communication										
RS 485 port	-	-	■	■ (PM 1200)	■	■	■	■	■	■
Infra-red port	-	-	-	-	-	-	-	-	-	-
RS 232 port	-	-	-	-	-	-	-	-	-	-
Modbus (M), Profibus (P) protocol	-	-	M	M	M	M	M	M	M	M
Ethernet port (Modbus/TCP/IP protocol)	-	-	-	-	-	-	■	■ (PM 5320)	■ (PM 5340)	■
HTML Web-page server	-	-	-	-	-	-	-	-	-	-
Ethernet gateway for other products on an RS 485 link	-	-	-	-	-	-	-	-	-	-

Product Selection





		PM8000	ION7550	ION7650	ION8800		
					A	B	C
General Selection Criteria							
Installation		Flush or DIN rail mount	DIN 192 standard cutout (186 x 186 mm)		DIN 43862 rack		
Use on LV distribution systems		■	■	■	■	■	■
Use on MV and HV distribution systems		■	■	■	■	■	■
Current / voltage accuracy		0.1% reading	0.1 % reading	0.1 % reading	0.1 % reading	0.1 % reading	0.1 % reading
Power / active energy accuracy		0.2%	0.2 %	0.2 %	0.2 %	0.2 %	0.2 %
Instantaneous rms values							
Current	Phases	■	■	■	■	■	■
	Neutral	■	■	■	■	■	■
3 - Phase Voltage		■	■	■	■	■	■
Voltage per phase		■	■	■	■	■	■
Frequency		■	■	■	■	■	■
Total power	Active	■	■	■	■	■	■
	Reactive	■	■	■	■	■	■
	Apparent	■	■	■	■	■	■
Power per phase	Active	■	■	■	■	■	■
	Reactive	■	■	■	■	■	■
	Apparent	■	■	■	■	■	■
Power factor	Total	■	■	■	■	■	■
	Per phase	■	■	■	■	■	■
Energy values							
Active energy		■	■	■	■	■	■
Reactive energy		■	■	■	■	■	■
Apparent energy		■	■	■	■	■	■
Demand values							
Current - Present and maximum values		■	■	■	■	■	■
Total active power - Present and maximum values		■	■	■	■	■	■
Total reactive power - Present and maximum values		■	■	■	■	■	■
Total apparent power - Present and maximum values		■	■	■	■	■	■
Total predicted demand - kW, kVAR, kVA		■	■	■	■	■	■
Synchronisation of calculation window		■	■	■	■	■	■
Other measurements							
Hour counter		-	-	-	-	-	-

Product Selection





	PM8000	ION7550	ION7650	ION8800		
				A	B	C
Power quality measurement						
Interharmonics	-	-	■	■	■	-
Total harmonic distortion Voltage	■	■	■	■	■	■
Current	■	■	■	■	■	■
Individual harmonic content (current and voltage)	63	■	■	■	■	■
Waveform capture	■	-	■	■	-	-
Detection of voltage sags & swelles	■	■	■	■	■	■
Programmable (logic and mathematical functions)	■	■	■	■	■	■
Detection and capture of transients	-	-	20 µs	20 µs	-	-
Flicker	-	-	■	■	■	-
EN 50160 compliance checking	■	-	■	■	■	-
True rms measurement Maximum harmonic number	127	63	63	63	63	63
Sampling rate Points per cycle	256	256	256	1024	1024	1024
Data recording						
Min/Max of instantaneous values	■	■	■	■	■	■
Data logging	■	■	■	■	■	■
Event logging	■	■	■	■	■	■
Trend curves	■	■	■	- (1)	- (1)	- (1)
Alarms	■	■	■	■	■	■
Alarm notification via email	■	■	■	■	■	■
Sequence of Events Recording	■	■	■	■	■	■
Date and time stamping	■	■	■	■	■	■
GPS time synchronisation	■	■	■	■	■	■
Storage capacity	512 Mb	10Mb			Up to 10Mb	
Display, sensors, inputs/outputs						
Front-panel display	■	■	■	■	■	■
Digital Input (Std/Max)	3/24	8/16	8/16	-/3	-/3	-/3
Analogue Input (Std/Max)	-/16 max	0/4	0/4	-	-	-
Digital Output (Std/Max)	-/8	8	8	5/13	5/13	5/13
Analogue Output (Std/Max)	-/8	0/4	0/4	-	-	-
Direct voltage connections without external VT	690 V L-N	347 V L-N 600 V L-L			288 V L-N 500 V L-L	
Power supply						
AC/DC version	95 - 240V 120 - 310V	85 - 240V 110 - 300V			85 - 240V 110 - 270V	
DC version	20 - 60V	-	-	-	-	-
Communication						
RS 485 port	■	■	■	Option	Option	Option
Infra-red port	-	■	■	■	■	■
RS 232 port	-	■	■	Option	Option	Option
Modbus (M), Profibus (P) protocol	M	M	M	M	M	M
Ethernet port (Modbus/TCP/IP protocol)	■	Option	Option	Option	Option	Option
HTML Web-page server	■	Option	Option	Option	Option	Option
Ethernet gateway for other products on an RS 485 link	■	Option	Option	Option	Option	Option

(1) The ION8800 does trending with software but not from the meter's front panel.

PowerLogic Modbus/Ethernet Gateways
PowerLogic Power Meters



Gateways and Energy Servers

Product Range	Description	Reference
Link 150	Modbus/Ethernet Gateway with RS485/RS232 port and 2 Ethernet ports	EGX150
Com'X 200	Modbus/Ethernet Gateway – data logger, 6 digital inputs, 2 analogue inputs	EBX200
Com'X 210	Modbus/Ethernet Gateway – data logger, 6 DI, 2 AI, 24 Vdc power, ext Module	EBX210
Com'X 510	Modbus/Ethernet Gateway – energy sever, 6 DI, 2 AI, 24 Vdc power, ext Module	EBX510
Option Modules	Com'X GPRS Modem without SIM	EBXA-GPRS
	Com'X WiFi USB Key	EBXA-USB-WIFI
	Com'X External 5M Antenna	EBXA-ANT-5M
	Com'X Zigbee USB Key	EBXA-USB-Zigbee

PM3200 Series - Power Meters Class 0.5

Product Range	Description	Reference
PM3200	Power Meter	METSEPM3200
PM3210	Power Meter with pulse output	METSEPM3210
PM3250	Power Meter with RS485 Modbus	METSEPM3250
PM3255	Power Meter with RS485 Modbus, 2 DI, 2 DO	METSEPM3255

PM1000 Series - Power Meters Class 1

Product Range	Description	Reference
PM1000	Power Meter - basic (without comms) - LED display	METSEPM1000A
PM1200	Power Meter - basic with Modbus comms - LED display	METSEPM1200A

PM5100 - Power Meter Class 0.5

Product Range	Description	Reference
PM5110	Power Meter with Modbus RS485 and 1 pulse output	METSEPM5110

PM5300 Series - Power Meters Class 0.5

Model	Description	Reference
PM5310	Power Meter with Modbus RS485, 2 DI, 2 DO	METSEPM5310
PM5330	Power Meter with Modbus RS485, 2 DI, 2 DO, 2 relays	METSEPM5330
PM5320	Power Meter with Modbus TCP, 2 DI, 2 DO	METSEPM5320
PM5340	Power Meter with Modbus TCP, 2 DI, 2 DO, 2 relays	METSEPM5340

PM5350 - Power Meter Class 0.5

Product Range	Description	Reference
PM5350	Power Meter with Modbus RS485, 4 digital inputs, 2 relay outputs	METSEPM5350

PM5500 Series - Power Meters Class 0.2

Model	Description	Reference
PM5560	Power Meter with Modbus TCP, 4 DI, 2 DO, logging	METSEPM5560
PM5563	Power Meter without display, with Modbus TCP, 4 DI, 2 DO, logging	METSEPM5563
PM5563RD	PM5563 Power Meter DIN meter with remote display	METSEPM5563RD
PM5RD	PM5563 Remote Display Only	METSEPM5RD

PM8000 Series - Power Meters and option modules Class 0.2

Model	Description	Reference
PM8240	PM8000 Panel mount integrated display meter 4 I/O	METSEPM8240
PM8243	PM8000 DIN rail mount transducer meter without remote display 4 I/O	METSEPM8243
PM8244	PM8000 DIN rail mount meter with remote display	METSEPM8244
Option Modules	PM89RD96 colour remote display	METSEPM89RD96
	PM8000 IO module 2 relay 6 DI	METSEPM89M2600
	PM8000 IO module 2 AO 4 AI	METSEPM89M0024

■ PM8000 Series are integrated with ION™ framework

PowerLogic Advanced Power Meters

1	2	3	4	5	6	7	8	9	10
6200	A0	A	0	B	0	A0	A	0	N

Example product part number.



ION6200

1 Model
2 Form Factor
3 Current Inputs
4 Voltage Inputs
5 Power Supply
6 System Frequency
7 Communications
8 Onboard Inputs/Outputs
9 Security
10 Measurements Package

ION6200 Metering Class 0.5

Reference

Item	Code	Description
1. Model	6200	ION6200 Meter Kit: ION6200 Meter base, Options Card and Power Supply
2. Form Factor	A0	Integrated display model
	R1	Transducer model with DIN rail mount, Remote Display and 4.2m cable (RJ11)
	T1	Transducer model with DIN rail mount, No Display (requires Comms or pulse outputs)
3. Current Inputs	A	12A max
4. Voltage Inputs	0	Autoranging (57-400 VAC L-N / 99-690 VAC L-L)
5. Power Supply	B	Standard Plug-in Power Supply: 100-240VAC, 110-300 VDC
	C	P24 plug-in power supply (20-60VDC)
	D	480 V plug-in power supply
6. System Frequency	0	Calibrated for use with 50 Hz or 60 Hz systems
7. Communications	Z0	No communications
	A0	Single RS-485 port (supports Modbus RTU protocol)
8. Inputs/Outputs	A	No I/O
	B	2 Form A digital outputs for kWh, kvarh energy pulsing
9. Security	0	Password protected, no hardware lock
10. Measurement Package	N	Standard Measurements (Volts/Amps per phase and avg)
	P	Enhanced Package #1
	R	Enhanced Package #2*

*Please see Product Selection matrix on pages 2.3.6 and 2.3.7

PowerLogic Advanced Power Quality Meters

1	2	3	4	5	6	7	8	9	10
7650	A0	C	0	B	6	A0	A	0	A

Example ION7650 product part number.



ION7550 / ION7650

1 Model
2 Form Factor
3 Current Inputs
4 Voltage Inputs
5 Power Supply
6 System Frequency
7 Communications
8 Inputs/Outputs
9 Security
10 Special Order

ION7550 / ION7650 Advanced Power Quality, Revenue Metering Class 0.2

Item	Code	Description
1. Model	7650	ION7650 - Advanced power quality meter with wide-range voltage inputs (57-347V line-neutral or 100-600V line-line), sag/swell/transient detection, transient detection, data and waveform recording. Supports ION, Modbus-RTU, DNP 3.0 and IEC61850 protocols
	7550	ION7550 - Advanced power quality meter with wide-range voltage inputs (57-347V line-neutral or 100-600V line-line), sag/swell/transient detection, data and waveform recording. Supports ION, Modbus-RTU, DNP 3.0 and IEC61850 protocols
2. Form Factor	A0	Integrated display with front optical port, 5 MB logging memory, and 512 samples/cycle resolution. (256 samples/cycle for ION7550)
	A1	ION7650 only. Integrated display with front optical port, 5 MB logging memory, and 1024 samples/cycle resolution.
	B0	Integrated display with front optical port, 10 MB logging memory, and 512 samples/cycle resolution. (256 samples/cycle for ION7550)
	B1	ION7650 only. Integrated display with front optical port, 10 MB logging memory, and 1024 samples/cycle resolution.
	T0	Transducer (no display) version, with 5 MB logging memory, and 512 samples/cycle resolution. (256 samples/cycle for ION7550)
	T1	ION7650 only. Transducer (no display) version, with 5 MB logging memory, and 1024 samples/cycle resolution.
	U0	Transducer (no display) version, with 10 MB logging memory, and 512 samples/cycle resolution. (256 samples/cycle for ION7550)
	U1	ION7650 only. Transducer (no display) version, with 10 MB logging memory, and 1024 samples/cycle resolution.
3. Current Inputs	C	5A nominal, 20 Amp full scale current input
	E	1A nominal, 10 Amp full scale current input
4. Voltage Inputs	0	57 to 347 VAC line-to-neutral / 100 to 600 VAC line-to-line
5. Power Supply	B	Standard power supply (85-240 VAC/47-63 Hz / 110-300 VDC)
	C	Low voltage DC power supply (20-60 VDC)
6. System Frequency	5	Calibrated for 50 Hz systems
	6	Calibrated for 60 Hz systems
7. Communications	A0	Standard communications (1 RS-232/RS-485 port, 1 RS-485 port). Integrated display models include 1 ANSI Type 2 optical port.
	E0	Standard communications + 10Base-T/100Base-TX (RJ45). Ethernet gateway function uses a serial communications port.
	F1	Standard communications + 10Base-T/100Base-TX Ethernet (RJ45) and 100Base-FX (SC male Fiber Optic connection). Ethernet gateway function uses a serial port.
	M1	Standard communications + 56k universal internal modem (RJ11). Modem gateway function uses a serial port.
8. Inputs/Outputs	A	Standard I/O (8 digital inputs, 3 Form C relays, 4 Form A solid-state outputs)
	E	Standard I/O + Expansion I/O card (8 additional digital inputs and four 0 to 20 mA analogue inputs)
	K	Standard I/O + Expansion I/O card (8 additional digital inputs and four 0 to 20 mA analogue outputs)
	N	Standard I/O + Expansion I/O card (8 additional digital inputs, four 0 to 20 mA analogue inputs and four 0 to 20 mA analogue outputs)
	P	Standard I/O + Expansion I/O card (8 additional digital inputs, four 0 to 1mA analogue inputs and four -1 to 1 mA analogue outputs)
9. Security	0	Password protected, no hardware lock
	1	Password protected, hardware lockable (enabled/disabled via jumper on comm card)
10. Special order	A	None
	C	Tropicalisation treatment applied
	E	ION7650 only. EN50160 compliance monitoring, IEC61000-4-30 Class A measurements
	F	ION7650 only. EN50160 compliance monitoring, with tropicalisation treatment, IEC61000-4-30 Class A measurements

PowerLogic Advanced Power Quality Meters



ION8800

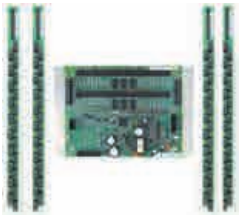
Advanced Revenue Metering Class 0.2, with Power Quality Functionality Sag/Swell, Waveform Capture, EN50160, IEC61000-4-30 Class A

Product Range	Display	Sample per cycle	Memory	Communications	Protocol Support	Reference
ION8800A	LCD	1024	5Mb	RS485, RS232/RS485	Modbus, Modbus Master, DNP3, MV90	8800A2••••A0•••
				RS485, RS232/RS485 & 10BaseT	Modbus, Modbus Master, DNP3, MV90	8800A2••••E0•••
			10Mb	RS485, RS232/RS485	Modbus, Modbus Master, DNP3, MV90	8800A1••••A0•••
				RS485, RS232/RS485 & 10BaseT	Modbus, Modbus Master, DNP3, MV90	8800A1••••E0•••
ION8800B	LCD	1024	5Mb	RS485, RS232/RS485	Modbus, Modbus Master, DNP3, MV90	8800B2••••A0•••
				RS485, RS232/RS485 & 10BaseT	Modbus, Modbus Master, DNP3, MV90	8800B2••••E0•••
			10Mb	RS485, RS232/RS485	Modbus, Modbus Master, DNP3, MV90	8800B1••••A0•••
				RS485, RS232/RS485 & 10BaseT	Modbus, Modbus Master, DNP3, MV90	8800B1••••E0•••
ION8800C	LCD	1024	5Mb	RS485, RS232/RS485	Modbus, Modbus Master, DNP3, MV90	8800C2••••A0•••
				RS485, RS232/RS485 & 10BaseT	Modbus, Modbus Master, DNP3, MV90	8800C2••••E0•••
			10Mb	RS485, RS232/RS485	Modbus, Modbus Master, DNP3, MV90	8800C1••••A0•••
				RS485, RS232/RS485 & 10BaseT	Modbus, Modbus Master, DNP3, MV90	8800C1••••E0•••

Branch Circuit Power Monitoring

Branch Circuit Power Meter (BCPM)

*Solid Core CT's 100A for Single Phase Circuits with 19mm Spacing
Standard ribbon cable length 1.2 metres (other lengths available)



BCPM
(Solid-Core CT version)

Model	*Number Single Phase Circuits	Communication Port	*Measurements (Single Phase Circuits)	†Number Three Phase Circuits	†Measurements (Three Phase Circuits)	Reference
BCPMC	42	Modbus RS485	Amps	1	Amps	BCPMC042S
	84	Modbus RS485	Amps	2	Amps	BCPMC084S
BCPMB	42	Modbus RS485	Amps	1	Amps + Power + Energy + PF + Frequency	BCPMB042S
	84	Modbus RS485	Amps	2	Amps + Power + Energy + PF + Frequency	BCPMB084S
BCPMA	42	Modbus RS485	Amps + Power + Energy + PF	1	Amps + Power + Energy + PF + Frequency	BCPMA042S
	84	Modbus RS485	Amps + Power + Energy + PF	2	Amps + Power + Energy + PF + Frequency	BCPMA084S
BCPME	42	Ethernet	Amps + Power Energy + PF	1	Amps + Power + Energy + PF + Frequency	BCPME042S
	84	Ethernet	Amps + Power Energy + PF	2	Amps + Power + Energy + PF + Frequency	BCPME084S

†Note: For CT's suited for 3 Phase Circuits, use Split Core CT's LVCT (see page 2.3.13)



BCPME
(Solid-Core CT version)

*Split-Core CT's 50A for Single Phase Circuits



BCPM
(Split-Core CT version)

Model	*Number Single Phase Circuits	Communication Port	*Measurements (Single Phase Circuits)	†Number Three Phase Circuits	†Measurements (Three Phase Circuits)	Reference
BCPMSCC	30	Modbus RS485	Amps	1	Amps	BCPMSCC30S
	42	Modbus RS485	Amps	1	Amps	BCPMSCC42S
	60	Modbus RS485	Amps	2	Amps	BCPMSCC60S
	84	Modbus RS485	Amps	2	Amps	BCPMSCC84S
BCPMSCB	30	Modbus RS485	Amps	1	Amps + Power + Energy + PF	BCPMSCB30S
	42	Modbus RS485	Amps	1	Amps + Power + Energy + PF	BCPMSCB42S
	60	Modbus RS485	Amps	2	Amps + Power + Energy + PF	BCPMSCB60S
	84	Modbus RS485	Amps	2	Amps + Power + Energy + PF	BCPMSCB84S
BCPMSCA	30	Modbus RS485	Amps + Power + Energy + PF	1	Amps + Power + Energy + PF	BCPMSCA30S
	42	Modbus RS485	Amps + Power + Energy + PF	1	Amps + Power + Energy + PF	BCPMSCA42S
	60	Modbus RS485	Amps + Power + Energy + PF	2	Amps + Power + Energy + PF	BCPMSCA60S
	84	Modbus RS485	Amps + Power + Energy + PF	2	Amps + Power + Energy + PF	BCPMSCA84S
BCPMSCE	30	Ethernet	Amps + Power Energy + PF	1	Amps + Power + Energy + PF	BCPMSCE30S
	42	Ethernet	Amps + Power Energy + PF	1	Amps + Power + Energy + PF	BCPMSCE42S
	60	Ethernet	Amps + Power Energy + PF	2	Amps + Power + Energy + PF	BCPMSCE60S
	84	Ethernet	Amps + Power Energy + PF	2	Amps + Power + Energy + PF	BCPMSCE84S

†Note: For CT's suited for 3 Phase Circuits, use Split Core CT's LVCT (refer to page 2.3.13)

EM4800 Series Multi-Circuit Energy Meter Class 0.5

Ideal for multi-tenant or departmental metering applications within commercial buildings, shopping centres, data centres and other multi-user environments, the EM4800 series meters monitor up to 24 single-phase circuits or 8 three-phase circuits with a single device.



EM4800

Main features:
- Accuracy: IEC62053-22 Class 0.5S for the EM4833 and Class 0.2S for the EM4805
- Onboard data storage in non-volatile memory
- Web server
- Modbus TCP communications
- Ethernet and Modem ports
- 2 digital inputs

Model	Description	Reference
EM4805	24 x 5 A inputs, 240 V control power, 50 Hz	METSEEM480525
EM4833	24 x 333 mV inputs, 240 V control power, 50 Hz	METSEEM483325
Remote display	EM4800 remote display	METSEEM48RD

CT's not included

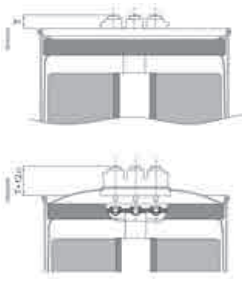
Components for Power Factor Correction Systems



VarPlus Can capacitors

VarPlus Can capacitors

- Complies with IEC 60831-1 & 2
  - Withstand capability of 10% over-voltage for 8 hours in every 24 hours, as per IEC 60831 table III.
  - Can withstand over-current of up to 1.8 x I_N.
- Available in 480V and 525V
- Total losses < 0.5 W/kVAr (discharge resistor included).
- Capacitance tolerance: -5%, +10%
- Normal switching frequency of up to 7000/year
- Mean life expectancy of up to 130,000 hours
- Working conditions:
  Ambient temperature: -25°C, +55°C
  Humidity: 95%
  Altitude: up to 2,000m above sea level
- Dry technology allows for upright & horizontal mounting
  - Protection: IP20 indoor
- Optimised geometric design for improved thermal performance through heavy edge, slope metallization and wave-cut profiling features.
- Each capacitor element is manufactured with metallized polypropylene film as the dielectric.
- RoHS (Restriction of Hazardous Substances) compliant. VarPlus Can capacitors don't contain any substances with concentrations exceeding the limits fixed by the RoHS Organisation.
- Environmentally friendly with non-PCB, sticky biodegradable resin impregnation
- Safety:
  Pressure-sensitive disconnector on all three phases
  Self-healing and discharge resistors fitted (50V in 1min)



Pressure Sensitive Disconnector (PSD)

Poor power factor costs money!

Financial

- Penalties applied by most utilities for low power factor and higher maximum kVA demand
- Higher CO_2 emissions
- Increased energy consumption within the installations
- Energy is wasted through additional losses.

Plant & Reliability

- Need for oversized transmission and distribution networks by utilities
- Additional I^2R losses in cables
- Need for oversized equipment (e.g. transformer, cables)

VarPlus Can Capacitors

Built in an extruded aluminium can casing, the VarplusCan HDuty capacitor is a safe, reliable and high-performing solution for power factor correction in heavy-duty operating conditions.



VarPlus Can 25kVAr 525V
BLRCH400A480B52



VarPlus Can 12.5kVAr 525V
BLRCH200A240B52

VarPlus Can Capacitors

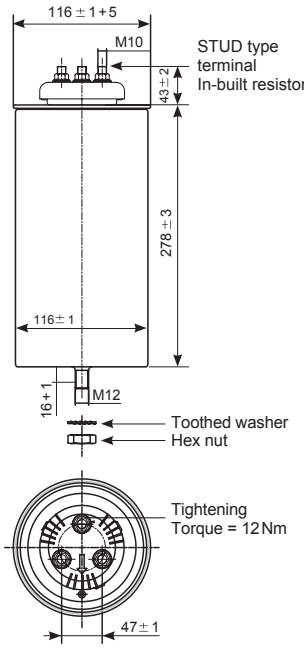
480V, 50Hz, 3ph Capacitors	Equiv. kVAr 415V	Rated kVAr 480V	Reference
	12.5	17	BLRCH170A204B48
	25	33.9	BLRCH339A407B48
Proposed Assembly			
	50	2 x BLRCH339A407B48	

525V, 50Hz, 3ph Capacitors	Equiv. kVAr 415V	Rated kVAr 525V	Reference
Equiv. kvar 415V	6.6	10.6	BLRCH106A127B52
	12.5	20	BLRCH200A240B52
	25	40	BLRCH400A480B52
Proposed Assembly			
	50	2 x BLRCH400A480B52	

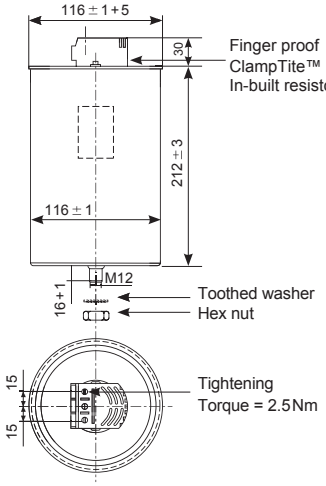
Note:

- Harmonic pollution on the distribution network can reduce capacitor life. Contact Schneider Electric for advice on limiting the effect of harmonic pollution.
- Capacitors can absorb audio-frequency signals; rejection coils may be necessary if the power utility uses an audio-frequency signalling system.
- Refer to Chapter 3 for type LC1D•K capacitor-switching contactors.
- For further information refer to the Reactive Energy Management Low Voltage Components - PFCED310003EN

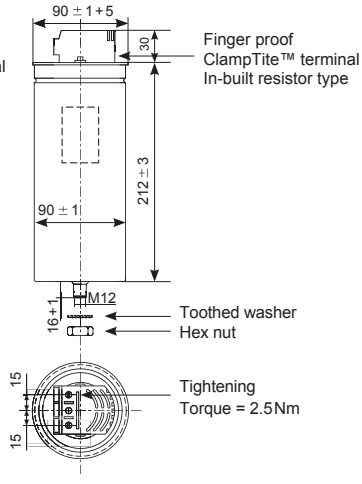
VarplusCan HDuty capacitors



Case code: XC
BLRCH400A480B52
BLRCH339A407B48



Case code: TC
BLRCH200A240B52



Case code: RC
BLRCH170A204B48

VarPlus Logic Series Intelligent Power Factor Controllers

General characteristics

Voltage and current Input

Direct supply voltage	90 – 550 V, 1ph, 50/60 Hz
	VA Burden: 6 VA
	300 V LN / 519 V LL CAT III or 550 V CAT II
Type of input connection	Phase to phase or phase to neutral
Protection against voltage dips	Automatic disconnection of steps for dips > 15 ms (protection of capacitor)
CT secondary	1A or 5A compatible
CT primary range	Up to 9600 A
Current	15 mA – 6 A, 1PH,
	VA Burden : < 1 VA
Connection terminals	Screw type, pluggable. Section: 0.2 – 2.5 mm2 (0.2 – 1 mm 2 for Modbus and digital inputs)

Power factor settings & algorithm selection

Regulation setting - Programmable	From Cos Phi 0.7c to 0.7i
Reconnection time - Programmable	From 1 to 6500 s
Response time - Programmable	From 1 to 6500 s
Possibility of dual cos Phi target	Yes, through digital input or if export power detected
Program algorithm	AUTOMATIC (best fit) - Default
	LIFO
	PROGRESSIVE
Import export application compatibility	4- Quadrant operation for generator application

Program intelligence

Automatic Initialization and Automatic bank detection	Yes
Detection and display of power, number of switching & derating of all connected steps	Yes
Capacitor bank step sequence	Any sequence. No restriction/limitation on sequence

Alarm and control

Control outputs (step output)	VL6: 6 relays VL12: 12 relays (NO contact)
	250 V LN or LL (CAT III)
	DC Rating : 48 V DC / 1 A
	AC Rating : 250 V AC / 5 A
	Common root: 10 A max.
Dedicated fan control relay	Yes. Normal open contact (NO)
	48 V DC / 1 A, 250 V AC / 5 A
Alarm contact	The relay contact is open when the controller is energized with no alarm and will close in the event of an alarm.The relay is a NC (Normally Close) when the controller is not energized.
	Rating : 48 V DC / 1 A, 250 V AC / 5 A
Digital input for Cos phi2 target	Dry contact (internal supply 5 V, 10 mA)
Modbus RS-485 serial port (RTU)	Line polarization / termination, not included
Communication protocol	Modbus
Interface TTL	Service port. Only for internal use
Internal temperature probe	Yes. Temperature offset is programmable.



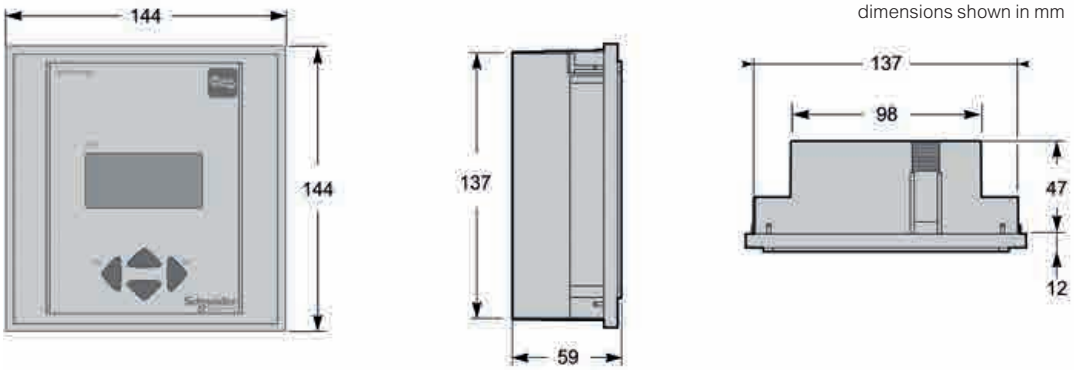
VarPlus Logic VL12

VarPlus Logic N Power Factor Correction Controller

		Reference
VL6	6-step Relay	VPL06N
VL12	12-step Relay	VPL12N

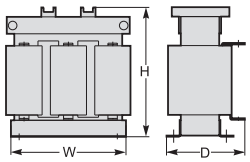
Dimensions

dimensions shown in mm

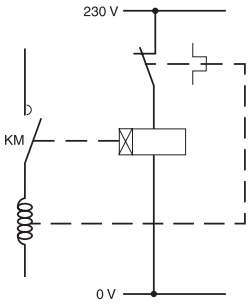


Detuned Reactor, Capacitor Duty Contactor

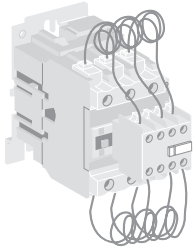




Detuned Reactor



Normally closed
dry contact



Detuned Reactors

The detuned reactors (DR) are designed to protect the capacitors and prevent amplification of the harmonics present on the network.

- three-phase, dry, magnetic circuit, impregnated
- cooling: natural
- degree of protection: IP00, indoor
- standards: IEC 60289, EN 60289 rated voltage: 400/415 V three-phase 50 Hz
- tuning order (relative impedance): 3.8 (6.9 %)
- inductance tolerance per phase: ± 5%
- insulation level: 1.1kV, class H
- thermal withstand Isc: 25 x Ie, 2 x 0.5 second
- dynamic withstand: 2.2 Isc (peak value)
- dielectric test 50 Hz between windings and windings/earth: 3.3 kV, 1 min
- equipped with a normally closed dry contact (see fig.)

Tuning order: 3.8 (190Hz)

Power restored by the assembly reactor-capacitor	L (mH)	I_{MP} (A)	Power losses (W)	Reference
6.5kVAr/400V - 50Hz	5.8	11	100	LVR07065A40T
12.5 kVAr/400 V - 50Hz	3	22	150	LVR07125A40T
25 kVAr/400 V - 50Hz	1.5	43	200	LVR07250A40T
50 kVAr/400 V - 50Hz	0.75	86	300	LVR07500A40T

Dimensions

Power restored by the assembly reactor-capacitor	Fixing centre distance (mm)	Maximum Dimensions (mm)			Weight (kg)
		H	W	D	
12.5 kVAr/400 V - 50Hz	205 x 110	230	245	140	10
25 kVAr/400 V - 50Hz	205 x 110	230	240	140	18
50 kVAr/400 V - 50Hz	205 x 120 or 205 x 130	270	260	160	27

Capacitor Duty Contactors

Capacitor control is accompanied by transient operating conditions resulting from the capacitor load which, amongst other things, generates a very high overcurrent equivalent to a short-circuit of short duration. The use of standard contactors may compromise the safety of persons and installations. Comply with IEC 60947-4-1, according to AC-6b..

The LC1-D•K contactors are specially designed for capacitor control. They are fitted with a contact block allowing the current to pass on closing and with damping resistors limiting the current on energisation.This technology, which is unique, has been patented.

For further information on Capacitor Duty Contactors, please turn to page 3.1.22

VARPACT Range

What is VARPACT?

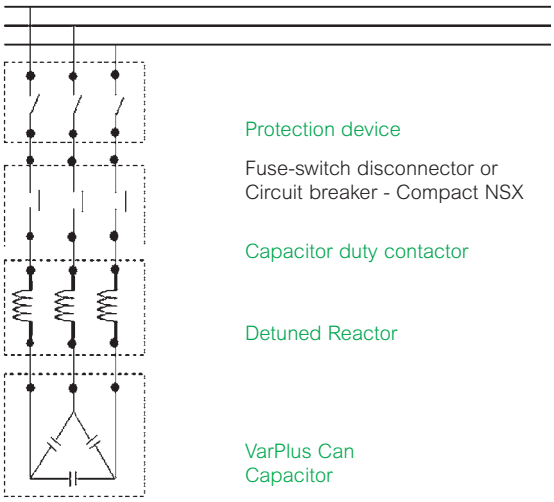
VARPACT is your modular functional tray, assembled and ready to be used in a capacitor bank as a compensation module. It is a hassle-free module, complete with the right switchgear and control gear. It can be used as an expansion module in a switched Power Factor Correction cubicle or as a fix capacitor bank.



525V with NSX Circuit Breaker Protection and Detuned Reactor

BUILT IN AUSTRALIA

Circuit diagram:



Protection device

Fuse-switch disconnector or Circuit breaker - Compact NSX

Capacitor duty contactor

Detuned Reactor

VarPlus Can Capacitor

VARPACT in 525V

Power Factor Correction
Functional Plates

VARPACT Range



525V version with Fuse Protection and Detuned Reactor

Technical data

- capacitor rated voltage: 525V & three-phase 50 Hz
- tuning order: 3.8 (190 Hz)
- capacitance value tolerance: -5, +10 %
- insulation level: 0.69 kV withstand 50 Hz, 1 min : 3 kV
- maximum permissible overloads:
  overcurrent (max): 19 % at 400 V
  overvoltage: 10 % (8 hours over 24 hours as per IEC 60831)
- standard: IEC 60831-1, 2.
- ambient temperature around the capacitor bank (electrical room):
  - maximum temperature: 40 °C
  - average temperature over 24 hours: 35 °C
  - average annual temperature: 25 °C
  - minimum temperature: -5 °C
- losses: < 9 W/kVAr (with detuned reactor);
  < 2W/kVAr (without detuned reactor)
  [based on a 50kVAr functional plate]
- protection device : Compact NSX circuit breaker with thermo magnetic trip unit Fupact
  Fuse-switch disconnector with DIN fuses

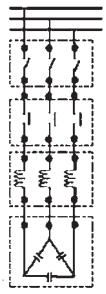
Product references - eg. V50C52FR

V	50		C		52		F		R	
VARPACT	kVAr@415V		Capacitor type		Capacitor rated voltage		Protection		Reactors	
series	12	12.5kVAr capacitor	C	Can capacitor	52	525V AC	C	Circuit breaker protection	R	with reactors on plate - 190Hz
	25	25kVAr capacitor					F	Fuse protection with disconnector		
	50	50kVAr capacitors								

Note:

* Using a different voltage rating for the capacitors will change the kVAr rating of the plate. Please check with Schneider Electric before ordering.

BUILT IN AUSTRALIA



VARPACT 525V functional plates

Description (input detuned reactors)	Reference
VARPACT 12.5kVAr, 525V, Circuit Breaker protection	V12C52CR
VARPACT 25kVAr, 525V, Circuit Breaker protection	V25C52CR
VARPACT 50kVAr, 525V, Circuit Breaker protection	V50C52CR
VARPACT 12.5kVAr, 525V, Fuse Switch protection	V12C52FR
VARPACT 25kVAr, 525V, Fuse Switch protection	V25C52FR
VARPACT 50kVAr, 525V, Fuse Switch protection	V50C52FR

Accessories / spares

Description	Reference
VARPACT fishplate for interconnection of functional plates (set of 3 fishplates)	FISHPLATES_VARP
Spare shroud for functional plate	SHROUD_VARP

VarSet Range

What is VarSet?



Wall-mount VarSet

VarSet capacitor banks are the low voltage power factor correction solution to help you boost your power factor. The VarSet floor standing range offers you an engineered solution that is tested, design verified and fully certified to IEC 61439-1 & 2.

Features

- Equipped with 525V VarPlus Can capacitors for heavy-duty and harsh applications
- VarSet fits with all possible networks configurations.
- VarSet are fitted with 190Hz detuned reactors and forced ventilation as standard.
- Automatic setup provides fast and easy commissioning.
- Modular design for easy expansion.
- The wall-mount cubicles are IP54 rated and the floor-standing cubicles are IP31 (IP54 as an option).
- Fan forced ventilation units
- Protected against harmonic amplification

Technical data:

- enclosure: wall-mounted version or floor-standing
- kvar rating offer: - 25 to 100kvar in wall mounted enclosure - 100 to 250kvar in single-tier floor standing cubicle - 275 to 500kvar in double-tier floor standing cubicle
- up to 1 mega-var (MVAr) available for specific applications. Please contact Schneider Electric for more information.
- allowable voltage overload of 10% (8 out of 24 hours as defined in IEC 60831-1/2)
- insulation voltage: 690 V - 50 Hz, 1 min withstand: 2.5 kV
- maximum dissipated power: 9W/kvar
- load shedding option: normal-standby link.



Floor-standing VarSet

Pre-configured VarSet - wall mounted

kVAr @ 415 V	No. of physical steps	Electrical steps	Enclosure size (H x W x D)	Reference
25	2 (12.5, 12.5)	12.5, 25	800 x 600 x 400	VS025WA00B00C02TCC
37.5	2 (12.5, 25)	12.5, 25, 37.5	1000 x 600 x 400	VS037WA00B01C01TCC
50	3 (12.5, 12.5, 25)		1200 x 800 x 400	VS050WA00B01C02TCC
75	2 (25, 50)	25, 50, 75	1200 x 800 x 400	VS075WA01B01C00TCC
87.5	3 (12.5, 25, 50)	12.5, 25, 37.5, 50, 62.5, 75. 87.5	1200 x 800 x 400	VS087WA01B01C01TCC
100	3 (25, 25, 50)	25, 50, 75, 100	1200 x 800 x 400	VS100WA01B02C00TCC

For larger sites, industrials and utilities with diverse PFC needs, VarSet equipment can be ordered with a wide range of optional capabilities and features tailored to your specific requirements.

Use the Product Reference table above to configure your Custom VarSet. Possible configurations are:

- 100 up to 500kvar
- top or bottom cable entry
- configuration of 25 and 50 kVAr steps
- allow for future expansion
- circuit breaker step protection
- switch disconnector, circuit breaker or no main protection
- stand-alone or integrated with EMS, BMS or SCADA using Modbus communication protocol (serial or TCP/IP)
- automatic disconnection upon generator supply

Note:
Dimensions provided are for enclosure only. Height of top ventilation hood and plinth and not included. Depth does not included extended rotary handle of main protective device.

Please contact Schneider Electric for further information and pricing of variants.

The Schneider Electric solution for active harmonic filtering in buildings and industrial installations

Accusine active filtering devices are designed to measure the load current, calculate the errors from objectives set by the user and inject the precise amount of current to make the supply current meet the objective levels for harmonics, displacement power factor or load balancing.



AccuSine PCS+
PCSP120D5IP00 +
PCSPWMKIT120A



AccuSine PCS+
PCSP200D5IP54

Solutions by AccuSine Model

AccuSine Model	Neutral Harmonics	Harmonic Mitigation	DPF Correction	Load Balancing	VAR Support
AccuSine SWP	■	■	■		
AccuSine PCS+		■	■	■	■

AccuSine PCS+:

Available in: - 380V to 480V: 60A, 120A, 200A, 300A - 600V to 690V: 40A, 80A, 133A, 200A 3-phase compensation, with or without neutral Ingress protection: - wall mounted: IP00 and IP20 - floor standing: IP31 and IP54 IGBT, 3 level inverter technology Digital harmonic FFT topology Closed loop control (default) and open-loop THDi and THDv setpoint features Up to 10 units in parallel Control response time: 25us Harmonic correction time: 2 cycles RCM, CE and EMC compliant IEC/EN 60439-1, EN61000-6-4 Class A, EN 61000-6-2

Harmonic and PF Correction — 380 – 480 V models, 50/60 Hz

Rated Current	Frequency (Hz)	Reference Number	Rating	Style	Cable Entry	Frame[1]	Weight (kg)
60	50/60	PCSP060D5IP00	IP00	Wall Mount	Bottom	1	88
		PCSP060D5IP31	IP31	Floor Standing	Top or Bottom	2	277
		PCSP060D5IP54	IP54				280
120	50/60	PCSP120D5IP00	IP00	Wall Mount	Bottom	3	113
		PCSP120D5IP31	IP31	Floor Standing	Top or Bottom	4	287
		PCSP120D5IP54	IP54				293
200	50/60	PCSP200D5IP00	IP00	Wall Mount	Bottom	5	171
		PCSP200D5IP31	IP31	Floor Standing	Top or Bottom	6	397
		PCSP200D5IP54	IP54				402
300	50/60	PCSP300D5IP00	IP00	Wall Mount	Bottom	7	210
		PCSP300D5IP31	IP31	Floor Standing	Top or Bottom	8	422
		PCSP300D5IP54	IP54				436

	Assembled Dimensions — IP20				IP2 0 Assembly	Cable Entry Enclosure
Wall-mount Kit Reference	Unit Rating (A)	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Weight (kg)
PCSPWMKIT60A	60	1530	421	349	97.3	8.7
PCSPWMKIT120A	120	1730	421	384	122	9.3
PCSPWMKIT300A	200	1642	575	435	180	8.6
PCSPWMKIT300A	300	1882	575	435	218.6	8.6

AccuSine SWP:

- Three or four wire connections (3 phase or 3-phase + Neutral).
- 400 V supply; other possible with transformers.
- Units from 20 A to 120 A, parallel to 480 A.
- Cancellation to the 50th order.
- Neutral harmonic correction at 3 times unit rating.
- Displacement PF correction to set point.
- Modbus & J-bus communications.

Automation & Control

Enclosures

Metal Enclosures



Wall Mounting Metal Enclosures

Spacial 3D - Metal IP66 Page 2.4.1
Spacial S3X - Stainless Steel Page 2.4.2
Accessories and Spare Parts Page 2.4.4

2.4

Fans, Heaters & Thermostats



Fans and Control Devices

Fans, Filters, Heater and Thermostats Page 2.4.5

Industrial Boxes





Industrial Boxes

Thalassa ABS IP66 Page 2.4.6
Thalassa PC IP66 Page 2.4.7
Accessories and Spare Parts Page 2.4.8
IP65 Insulating Modular Boxes Page 2.4.10

Polyester Enclosures



Polyester Wall Mounting Enclosures

Thalassa – Glass Fibre Reinforced Polyester IP66 Page 2.4.11

For more info:

Catalogue:
S99805EN

Wall Mounted Metal Enclosure

Spacial 3D Enclosures, Metal - IP66
Complete with Mounting Plate
Structured Finish, Epoxy-Polyester Powder,
RAL7035 Grey Colour

Offering many features and benefits:

- Single-piece body, gutter-shaped front profile with double fold. Flat rear.
- Doors can be hinged left or right, opening 120°
- Polyurethane door seal
- Several locks can be fitted
- Concealed hinges with aluminium hinge pins
- Perforated mounting rails in door and body
- Plain galvanized mounting plate
- Steel cable-gland plate with marking for easy drilling. Flush with the body of the enclosure.



S3D ENCLOSURE WITH PLAIN GALVANIZED CHASSIS



DOUBLE BAR LOCK



PLAIN CHASSIS

Spacial 3D - wall mounted metal enclosure

External dimension in mm			Enclosure with plain mounting plate (1)(2)	Plain mounting plate (3)
Height	Width	Depth		
300	200	150	NSYS3D3215P	NSYMM32
300	250	150	NSYS3D32515P	NSYMM3025
300	300	150	NSYS3D3315P	NSYMM33
300	300	200	NSYS3D3320P	NSYMM33
300	400	150	NSYS3D3415P	NSYMM43
300	400	200	NSYS3D3420P	NSYMM43
400	300	150	NSYS3D4315P	NSYMM43
400	300	200	NSYS3D4320P	NSYMM43
400	400	200	NSYS3D4420P	NSYMM44
400	600	200	NSYS3D4620P	NSYMM64
400	600	250	NSYS3D4625P	NSYMM64
500	300	200	NSYS3D5320P	NSYMM53
500	400	200	NSYS3D5420P	NSYMM54
500	400	250	NSYS3D5425P	NSYMM54
500	500	200	NSYS3D5520P	NSYMM55
500	500	250	NSYS3D5525P	NSYMM55
600	400	200	NSYS3D6420P	NSYMM64
600	400	250	NSYS3D6425P	NSYMM64
600	500	250	NSYS3D6525P	NSYMM65
600	600	200	NSYS3D6620P	NSYMM66
600	600	250	NSYS3D6625P	NSYMM66
600	600	300	NSYS3D6630P	NSYMM66
600	600	400	NSYS3D6640P	NSYMM66
600	800	300	NSYS3D6830P	NSYMM86
700	500	250	NSYS3D7525P	NSYMM75
800	600	250	NSYS3D8625P	NSYMM86
800	600	300	NSYS3D8630P	NSYMM86
800	600	400	NSYS3D8640P	NSYMM86
800	800	250	NSYS3D8825P	NSYMM88
800	800	300	NSYS3D8830P	NSYMM88
800	1000	300	NSYS3D81030P	NSYMM108
1000	600	300	NSYS3D10630P	NSYMM106
1000	600	400	NSYS3D10640P	NSYMM106
1000	800	300	NSYS3D10830P	NSYMM108
1000	800	400	NSYS3D10840P	NSYMM108
1000	1000	300	NSYS3D101030P	NSYMM1010
1000	1200	300	NSYS3D101230DP	NSYMM1210
1200	800	400	NSYS3D12840P	NSYMM128
1200	1000	300	NSYS3D121030P	NSYMM1210
1200	1200	300	NSYS3D121230DP	NSYMM1212
1200	1200	400	NSYS3D121240DP	NSYMM1212
1400	1000	300	NSYS3D141030DP	NSYMM1410

Note:
(1) Enclosures with 1200mm width have 2 doors, with IP55 rating.
(2) Enclosures with height 600 mm and above come with three locking points with linkage, with a single control point.
(3) Please consult us for other type of mounting plates (Micro-perforated, Perforated, Bakelite, DIN rail chassis).

For more info:

Catalogue:
S99805EN

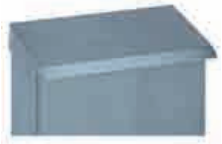
Wall Mounted Metal Enclosure

Spacial S3X, IP66 for single door and IP55 for 2-door enclosures, Scotch Brite brushed finish

Features:

- Thickness: 1.5 mm.
- Stainless-steel hinges screwed to the body of the enclosure. They make it easier to remove and invert the door. Opening angle: 120°.
- Polyurethane door seal.
- Several locks can be fitted.
- Single-piece body (cross-shaped structure). Gutter-shaped front profile.
- Resistance to external mechanical impacts: IK 10 for the solid-door enclosures.
- Standard lock with 3-mm double-bar lock (chrome-plated zamak).
- Stainless-steel accessories: canopy, wall-fixing lugs. Accessories of the standard offer: mounting plate, inner door and step slides.

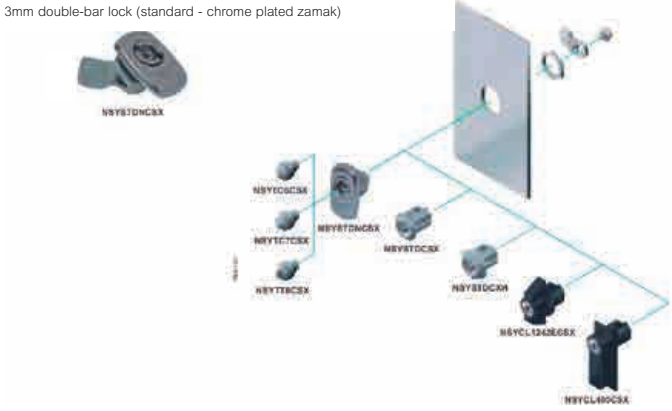




Spacial S3X - Wall mounted stainless steel enclosure

External Dimensions (mm)			Reference (1) (2) 304L stainless steel	Reference (1) (2) 316L stainless steel
Height	Width	Depth		
300	200	150	NSYS3X3215	NSYS3X3215H
300	250	150	NSYS3X302515	NSYS3X302515H
300	300	150	NSYS3X3315	NSYS3X3315H
400	300	150	NSYS3X4315	NSYS3X4315H
400	300	200	NSYS3X4320	NSYS3X4320H
400	400	200	NSYS3X4420	NSYS3X4420H
400	600	200	NSYS3X4620	NSYS3X4620H
500	400	200	NSYS3X5420	NSYS3X5420H
600	400	200	NSYS3X6420	NSYS3X6420H
600	600	250	NSYS3X6625	NSYS3X6625H
700	500	250	NSYS3X7525	NSYS3X7525H
800	600	250	NSYS3X8625	NSYS3X8625H
800	800	300	NSYS3X8830	NSYS3X8830H
1000	800	300	NSYS3X10830	NSYS3X10830H
1000	1000	300	NSYS3X101030*	NSYS3X101030H*
1200	800	300	NSYS3X12830	NSYS3X12830H
1200	1000	300	NSYS3X121030*	NSYS3X121030H*

Standard escutcheon
3mm double-bar lock (standard - chrome plated zamak)



Enclosure External Dimensions (mm)			Canopy 304L stainless steel
Height	Width	Depth	
300	200	150	NSYTX2015
300	250	150	NSYTX2515
300	300	150	NSYTX3015
400	300	150	NSYTX3015
400	300	200	NSYTX3020
400	400	200	NSYTX4020
400	600	200	NSYTX6020
500	400	200	NSYTX4020
600	400	200	NSYTX4020
600	600	250	NSYTX6025
700	500	250	NSYTX5025
800	600	250	NSYTX6025
800	800	300	NSYTX8030
1000	800	300	NSYTX8030
1000	1000	300	NSYTX10030
1200	800	300	NSYTX8030
1200	1000	300	NSYTX10030

Handles and Locks for Spacial S3X

Description	Material	Reference
Standard 3-mm double-bar lock	chrome-plated zamak	NSYSTDNCSX
Round 3-mm double-bar lock	(spare) chrome-plated zamak	NSYSTDCSX
Round 3-mm double-bar lock	100 % stainless steel	NSYSTDCXH
8-mm triangular insert	100 % stainless steel	NSYTT8CSX
7-mm square insert	100 % stainless steel	NSYTC7CSX
6-mm square insert	100 % stainless steel	NSYTC6CSX
1242E handle lock	Chrome-plated	NSYCL1242ECSX
405 handle lock	Polyamide	NSYCL405CSX

Note:
(1) All enclosures have single plain door, except enclosures of width 1000mm have two plain doors.
(2) Enclosures of height ≤ 400mm have 1 lock. Enclosures of height ≥ 400mm have 2 locks
* Three-point closure system.

Wall Mounted Metal Enclosure

Accessories & Spare Parts







Spacial 3D - wall mounted metal enclosure

External dimension in mm			Internal Door	Step Slides	Canopy
Height	Width	Depth	(3)	(1) (2)	
300	200	150	-	-	NSYTJ2015
300	250	150	-	-	NSYTJ2515
300	300	150	-	-	NSYTJ3015
300	300	200	-	NSYSDCR200	NSYTJ3020
300	400	150	-	-	NSYTJ4015
300	400	200	-	NSYSDCR200	NSYTJ4020
400	300	150	NSYPIN43	-	NSYTJ3015
400	300	200	NSYPIN43	NSYSDCR200	NSYTJ3020
400	400	200	-	NSYSDCR200	NSYTJ4020
400	600	200	-	NSYSDCR200	NSYTJ6020
400	600	250	-	NSYSDCR250	NSYTJ6025
500	300	200	-	NSYSDCR200	NSYTJ3020
500	400	200	NSYPIN54	NSYSDCR200	NSYTJ4020
500	400	250	NSYPIN54	NSYSDCR250	NSYTJ4025
500	500	200	-	NSYSDCR200	NSYTJ5020
500	500	250	-	NSYSDCR250	NSYTJ5025
600	400	200	NSYPIN64	NSYSDCR200	NSYTJ4020
600	400	250	NSYPIN64	NSYSDCR250	NSYTJ4025
600	500	250	-	NSYSDCR250	NSYTJ5025
600	600	200	-	NSYSDCR200	NSYTJ6020
600	600	250	-	NSYSDCR250	NSYTJ6025
600	600	300	-	NSYSDCR300	NSYTJ6030
600	600	400	-	NSYSDCR400	NSYTJ6040
600	800	300	-	NSYSDCR300	NSYTJ8030
700	500	250	NSYPIN75	NSYSDCR250	NSYTJ5025
800	600	250	NSYPIN86	NSYSDCR250	NSYTJ6025
800	600	300	NSYPIN86	NSYSDCR300	NSYTJ6030
800	600	400	NSYPIN86	NSYSDCR400	NSYTJ6040
800	800	250	-	NSYSDCR250	NSYTJ8025
800	800	300	-	NSYSDCR300	NSYTJ8030
800	1000	300	-	NSYSDCR300	NSYTJ10030
1000	600	300	NSYPIN106	NSYSDCR300	NSYTJ6030
1000	600	400	NSYPIN106	NSYSDCR400	NSYTJ6040
1000	800	300	NSYPIN108	NSYSDCR300	NSYTJ8030
1000	800	400	NSYPIN108	NSYSDCR400	NSYTJ8040
1000	1000	300	-	NSYSDCR300	NSYTJ10030
1000	1200	300	-	NSYSDCR300	NSYTJ12030
1200	800	400	NSYPIN128	NSYSDCR400	NSYTJ8040
1200	1000	300	-	NSYSDCR300	NSYTJ10030
1200	1200	300	-	NSYSDCR300	NSYTJ12030
1200	1200	400	-	NSYSDCR400	NSYTJ12040
1400	1000	300	-	NSYSDCR300	NSYTJ10030

Note:
(1) Order 2 sets of step slides and 2 brackets to install mounting plates with 1000mm and 1200mm width.
(2) Set of 4 treated steel slides used to adjust depth of the mounting plate on 12.5mm pitch. Supplied with fixings and assembly instructions.
(3) Order the corresponding step slides to install an internal door and to the adjust the depth.

Wall Mounted Metal Enclosure

Accessories & Spare Parts



STEP SLIDES

Step Slides/Depth Adjustable Rails

Description (1)	Reference
To suit 200mm deep enclosures (set of 4)	NSYSDCR200
To suit 250mm deep enclosures (set of 4)	NSYSDCR250
To suit 300mm deep enclosures (set of 4)	NSYSDCR300
To suit 400mm deep enclosures (set of 4)	NSYSDCR400



DOCUMENT HOLDER

Document Holder

Description	Reference
22mm depth, A4 plastic document holder	NSYDPA4
40mm depth, A4 plastic document holder	NSYDPA44
35mm depth, A3 plastic document holder	NSYDPA3

Miscellaneous

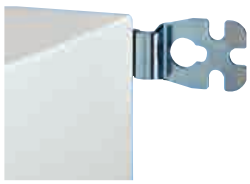
Description	Reference
Wall fixing bracket steel (10mm spacing from wall)	NSYAEFPFSC
Wall fixing bracket stainless steel (10mm spacing from wall)	NSYAEFPFXSC
Additional door opening up to 180°	NSYAEDH180S3D
Replacement standard hinge, with opening up to 120°	NSYAEDH120S3D
Door retainer / door catch (holds the door during intervention) (2)	NSYAEDRS3DPA6
Fast drying spray paint, RAL7035, grey colour	NSYBPA7035
Air drying touch-up pen paint, RAL7035, grey colour	NSYTUP7035
Half cylinder DIN closure system (to replace the standard lock) (3)	NSYAEDLDINS3D
Padlockable closure system (to replace the standard lock)	NSYAEDLPADS3D



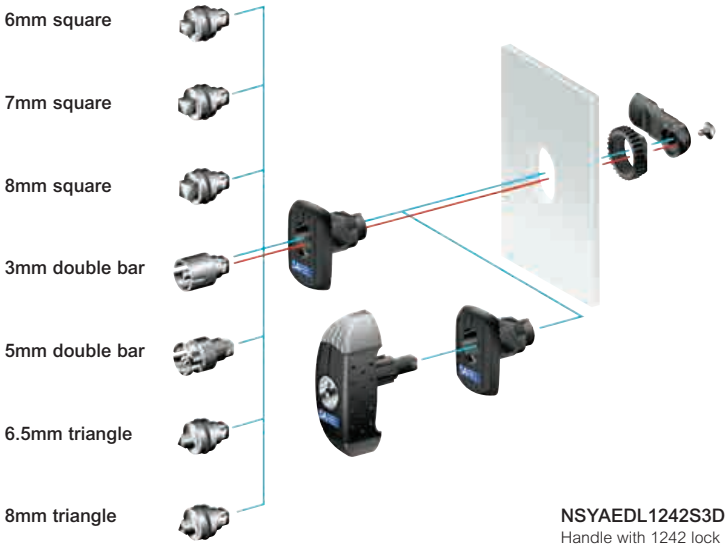
TOUCH-UP PEN PAINT

Handles and Locks for Spacial 3D (includes key)

Description	Reference
Handle with 1242 lock (delivered with two keys)	NSYAEDL1242S3D
Complete spare standard lock (escutcheon + cam + washer)	NSYAEDLS3DRL
6mm square lock	NSYAEDLS6S3D
7mm square lock	NSYAEDLS7S3D
8mm square lock	NSYAEDLS8S3D
3mm double bar lock	NSYAEDLB3S3D
5mm double bar lock	NSYAEDLB5S3D
6.5mm triangle lock	NSYAEDLT6S3D
8mm triangle lock	NSYAEDLT8S3D



WALL FIXING LUGS



NSYAEDL1242S3D
Handle with 1242 lock

Note:
(1) Step slide kit with brackets, allows depth adjustment of the chassis or internal door at 12.5mm pitch
(2) Cannot be mounted on enclosure with a height of less than 400mm
(3) Supplied without barrel.

Ventilation

Fans, Filters, Heaters & Thermostats



Filterfans

Filterfans - IP54, RAL7035

Cut-out Dimension (in mm) H x W	External Outlet Grill Dimension (in mm)	Flowrate with filter (in m^3/hr)	Voltage	Reference
125 x 125	170 x 150	85	230 VAC	NSYCVF85M230PF
223 x 223	268 x 248	165	230 VAC	NSYCVF165M230PF
223 x 223	268 x 248	300	230 VAC	NSYCVF300M230PF
291 x 291	336 x 316	560	230 VAC	NSYCVF560M230PF
291 x 291	336 x 316	850	230 VAC	NSYCVF850M230PF



Outlet Grills

Outlet Grills - IP54, RAL7035

Cut-out Dimension (in mm) H x W	External Outlet Grill Dimension (in mm)	Reference
125 x 125	170 x 150	NSYCAG125LPF
223 x 223	268 x 248	NSYCAG223LPF
291 x 291	336 x 316	NSYCAG291LPF

Replacement Standard Filter (1)

For use on fan and grill with dimensions (mm)	Reference
170 x 150	NSYCAF125
268 x 248	NSYCAF223
336 x 316	NSYCAF291

Metal Ventilation Louvres

Dimension (in mm) H x W	Inlet width (in mm)	Number of Inlets	Reference
120 x 120	70	5	NSYCAG104X95LM
160 x 160	100	5	NSYCAG130X110LM
220 x 220	180	5	NSYCAG170X190LM







Thermostats

Maintain the temperature inside the enclosure within the minimum value (heating action) and the maximum value (cooling action) required.

Description	Type	Contact Type	Setting Range	Reference
To control a heater	Adjustable	N/C (red)	0° to 60°C	NSYCCOTHC
To control a fan or alarm	Adjustable	N/O (blue)	0° to 60°C	NSYCCOTHO
To control two equipment	Adjustable	N/O + N/C (red + blue)	0° to 60°C	NSYCCOTHD



Insulated Heater

Resistance heater avoid condensation problem inside the enclosure and guarantee that the "ideal" temperature for the electronic components to work properly is maintained.

Description	Power	Voltage	Reference
Insulated resistance heater	55W	110-250 VAC	NSYCR50WU2C
	100W	110-250 VAC	NSYCR100WU2C
	147W	110-250 VAC	NSYCR150WU2C

Note:
(1) Sold in lots of 5.

Industrial Boxes

Thalassa TBS
ABS - IP66
Colour - RAL 7035 (Light Grey)

Offering many features and benefits:

- Double insulated enclosure.
- Glow wire resistance: 650°C according to IEC 60695-2-11.
- Sealing gasket.
- Wide dimensional range.
- Cover closing of 4 fast coarse pitch screws assures IP66 protection.
- Wide operating temperature range: -25°C to +60°C
- Wall mounting either directly through enclosure rear or externally using fixing lugs.
- Can be mounted on hinges.
- Possibility of fixing rails, mounting plates, stand-offs, spacers, or other type of equipment support.



NSYTBS24198T

Thalassa ABS with Shallow Cover, IP66

Internal dimensions (mm)			Body	Cover	Enclosure (Opaque lid)	Enclosure (Transparent lid)
Height	Width	Depth				
65	65	45	35	10	NSYTBS775	
80	80	45	35	10	NSYTBS885	
105	65	55	45	10	NSYTBS1176	
105	105	55	45	10	NSYTBS11116	
125	80	65	45	20	NSYTBS1397	NSYTBS1397T
150	105	80	60	20	NSYTBS16128	NSYTBS16128T
175	105	80	60	20	NSYTBS19128	NSYTBS19128T
175	150	80	60	20	NSYTBS19168	NSYTBS19168T
225	175	80	60	20	NSYTBS24198	NSYTBS24198T
275	225	80	60	20	NSYTBS29248	NSYTBS29248T
275	225	120	100	20	NSYTBS292412	NSYTBS292412T
325	275	120	100	20	NSYTBS342912	NSYTBS342912T

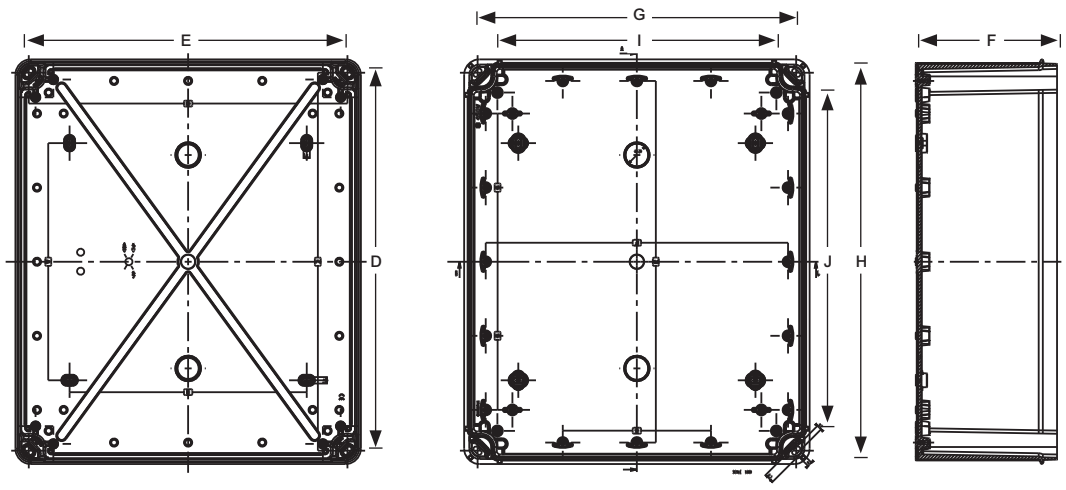


NSYTBS241910H

Thalassa ABS with Deep Cover, IP66

Internal dimensions (mm)			Body	Cover	Enclosure (Opaque lid)	Enclosure (Transparent lid)
Height	Width	Depth				
175	105	100	60	40	NSYTBS191210H	NSYTBS191210HT
175	150	100	60	40	NSYTBS191610H	NSYTBS191610HT
225	175	100	60	40	NSYTBS241910H	NSYTBS241910HT
225	175	120	80	40	NSYTBS241912H	NSYTBS241912HT
275	225	120	60	60	NSYTBS292412H	NSYTBS292412HT
275	225	160	100	60	NSYTBS292416H	NSYTBS292416HT
325	275	160	100	60	NSYTBS342916H	NSYTBS342916HT

Enclosure Dimensions (1)



Note:
(1) Please refer to page 3.9.6 for each references' detailed dimension.

For more info:

- Catalogue: S99805EN
- Brochure: DIAED1070901AU

Industrial Boxes

Thalassa TBP
PC (Polycarbonate) - IP66
Colour - RAL 7035 (Light Grey)

Offering many features and benefits:

- Operating temperature: -25°C to +80°C
- Excellent flame resistance: up to 960°C
- Smart cover with fixing studs and support feet to facilitate utilisation
- Various box fixing possibilities: outside usable space, through rear face or using external fixing lugs
- Environmentally friendly: made of halogen-free plastic material.
- UV resistant



NSYTBP16128

Thalassa PC (Polycarbonate) with Shallow Cover, IP66

Internal dimensions (mm)			Body	Cover	Enclosure (Opaque lid)	Enclosure (Transparent lid)
Height	Width	Depth				
65	65	45	35	10	NSYTBP775	
80	80	45	35	10	NSYTBP885	
105	65	55	45	10	NSYTBP1176	
105	105	55	45	10	NSYTBP11116	
125	80	65	45	20	NSYTBP1397	NSYTBP1397T
150	105	80	60	20	NSYTBP16128	NSYTBP16128T
175	105	80	60	20	NSYTBP19128	NSYTBP19128T
175	150	80	60	20	NSYTBP19168	NSYTBP19168T
225	175	80	60	20	NSYTBP24198	NSYTBP24198T
275	225	80	60	20	NSYTBP29248	NSYTBP29248T
275	225	120	100	20	NSYTBP292412	NSYTBP292412T
325	275	120	100	20	NSYTBP342912	NSYTBP342912T



NSYTBP241912H

Thalassa PC (Polycarbonate) with Deep Cover, IP66

Internal dimensions (mm)			Body	Cover	Enclosure (Opaque lid)	Enclosure (Transparent lid)
Height	Width	Depth				
175	105	100	60	40	NSYTBP191210H	NSYTBP191210HT
175	150	100	60	40	NSYTBP191610H	NSYTBP191610HT
225	175	100	60	40	NSYTBP241910H	NSYTBP241910HT
225	175	120	80	40	NSYTBP241912H	NSYTBP241912HT
275	225	120	80	60	NSYTBP292412H	NSYTBP292412HT
275	225	160	100	60	NSYTBP292416H	NSYTBP292416HT
325	275	160	100	60	NSYTBP342916H	NSYTBP342916HT

Enclosure Dimensions (1)

ABS		PC		External Dimensions (mm)			Accessory Fixing			
Opaque	Transparent	Opaque	Transparent	D	E	F	G	H	I	J
NSYTBS775	-	NSYTBP775	-	74	74	54				
NSYTBS885	-	NSYTBP885	-	89	89	54				
NSYTBS1176	-	NSYTBP1176	-	116	74	62				
NSYTBS11116	-	NSYTBP11116	-	116	116	62	87	87	84	84
NSYTBS1397	NSYTBS1397T	NSYTBP1397	NSYTBP1397T	138	93	72				
NSYTBS16128	NSYTBS16128T	NSYTBP16128	NSYTBP16128T	164	116	87	87	130	65	110
NSYTBS19128	NSYTBS19128T	NSYTBP19128	NSYTBP19128T	192	116	87	87	158	65	136
NSYTBS191210H	NSYTBS191210HT	NSYTBP191210H	NSYTBP191210HT	192	121	105	87	158	65	136
NSYTBS19168	NSYTBS19168T	NSYTBP19168	NSYTBP19168T	193	164	87	130	158	113	136
NSYTBS191610H	NSYTBS191610HT	NSYTBP191610H	NSYTBP191610HT	193	164	105	130	158	113	136
NSYTBS24198	NSYTBS24198T	NSYTBP24198	NSYTBP24198T	241	194	87	159	207	138	185
NSYTBS241910H	NSYTBS241910HT	NSYTBP241910H	NSYTBP241910HT	241	194	105	159	207	138	185
NSYTBS241912H	NSYTBS241912HT	NSYTBP241912H	NSYTBP241912HT	241	194	127	159	207	138	185
NSYTBS29248	NSYTBS29248T	NSYTBP29248	NSYTBP29248T	291	241	88	222	255	185	235
NSYTBS292412	NSYTBS292412T	NSYTBP292412	NSYTBP292412T	291	241	128	222	255	185	235
NSYTBS292412H	NSYTBS292412HT	NSYTBP292412H	NSYTBP292412HT	291	241	128	222	255	185	235
NSYTBS292416H	NSYTBS292416HT	NSYTBP292416H	NSYTBP292416HT	291	241	168	222	255	185	235
NSYTBS342912	NSYTBS342912T	NSYTBP342912	NSYTBP342912T	341	291	128	255	305	235	285
NSYTBS342916H	NSYTBS342916HT	NSYTBP342916H	NSYTBP342916HT	341	291	168	255	305	235	285

Note:
(1) Please refer to page 3.9.5 drawing details.

Industrial Boxes

Thalassa Industrial Plastic Boxes
Accessories & Spare Parts


NSYAMPM1916TB

NSYAMPA1916TB


NSYAMRD11155TB


NSYAMRD24357TB


NSYAEDH20TB


NSYAEDH40TB


NSYAEFTB

Mounting Plates

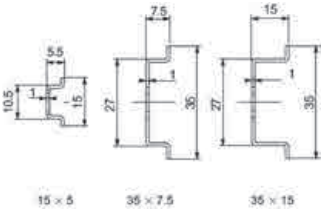
Internal dimensions (mm)		Mounting Plate Galvanised Steel	Mounting Plate Insulating
Height	Width		
175	150	NSYAMPM1916TB	NSYAMPA1916TB
225	175	NSYAMPM2419TB	NSYAMPA2419TB
275	225	NSYAMPM2924TB	NSYAMPA2924TB
325	275	NSYAMPM3429TB	NSYAMPA3429TB

DIN Rails

For Box with Height	15 x 5mm DIN rail	35 x 7.5mm DIN rail
105	NSYAMRD11155TB	NSYAMRD11357TB
150	NSYAMRD16155TB	NSYAMRD16357TB
175	NSYAMRD19155TB	NSYAMRD19357TB
225	NSYAMRD24155TB	NSYAMRD24357TB
275	NSYAMRD29155TB	NSYAMRD29357TB
325	NSYAMRD34155TB	NSYAMRD34357TB

DIN Rails

For Box with Height	35 x 15mm DIN rail
225	NSYAMRD243515TB
275	NSYAMRD293515TB
325	NSYAMRD343515TB



Hinges

Description	Reference
Hinges for enclosure with cover depth of 20mm (set of 2)	NSYAEDH20TB
Hinges for enclosure with cover depth of 40mm (set of 2)	NSYAEDH40TB

Other Accessories

Description	Reference
Plastic fixing lugs for mounting on boxes from size >105 x 105mm (Set of 4)	NSYAEFTB
Self-tapping cross/slot head screw (100pcs)	NSYAMFSTB


Box with Hinges


Box with Self-Tapping Screw


Mounting Of Fixing Lugs

Industrial Boxes

Thalassa Industrial Plastic Boxes
Accessories & Spare Parts



Stand-offs and Spacers

Height (mm)	Stand-offs M4 (Lots of 4)	Spacers M4 (Lots of 4)
15	NSYAMFET154TB	NSYAMFEP154TB
20	NSYAMFET204TB	NSYAMFEP204TB
30	NSYAMFET304TB	NSYAMFEP304TB

Description	Reference
M4 spacer / stand-off screw	NSYAMFESTB

Ventilation Entries

Description	Flow (m^3/h)	Diameter	Reference
Standard Flow	0.016	M12	NSYCAG12LPH1
High Flow	0.120	M12	NSYCAG12LPH2



Cable Entries

Description	Diameter	Cable Diameter (mm)	Reference
IP67 ISO Cable Entries	M12	3 - 5	IMT36179
	M16	5 - 7	IMT36180
	M20	7 - 10	IMT36181
	M25	10 - 14	IMT36182
	M32	14 - 20	IMT36183
IP55 ISO Cable Entries	RAL7035 (Grey)	4 - 20	ISM71071
		4 - 25	ISM71072
		4 - 32	ISM71073
		4 - 40	ISM71074
	RAL9010 (White)	4 - 20	IMT36172
		4 - 25	IMT36173



Cable Gland

Cable Gland and Cable Gland Seal

Diameter	Diameter (min / max)	Cable Gland (1 Cable) Reference	Cable Gland Seal Reference
M12	3 / 6.5mm	ISM71501	IMT36151
M16	4 / 8mm	ISM71502	IMT36152
M20	6 / 12mm	ISM71503	IMT36153
M25	11 / 17mm	ISM71504	IMT36154



Association Kit

Multi-cable Disc and Transport Plug

Diameter	Multi-cable Disc number/dia	Multi-cable Disc Reference	Transport Plug Reference
M16	2 x 4	IMT36157	IMT36167
M20	3 x 4	IMT36158	IMT36168
M25	4 x 5	IMT36159	IMT36169



Door Mini-Handle

Other Accessories

Description	Reference
Association kit (for side-by-side mounting)	13934AB
Door mini-handle or knob	NSYAEDKTB

Insulating Modular Boxes

Thalassa PLS - IP65
Glass Fibre Reinforced Polyester
Colour – RAL 7032 (Grey)



Offering many features and benefits:

- Excellent resistance to UV rays, saline atmosphere and most chemical agents
- Glass fibre reinforced polyester box
- Two types of covers: transparent and opaque (polycarbonate)
- Self-extinguishing material
- Neoprene sealing gasket
- Closure by slotted screws
- Wall mounting using 4 external stainless steel fixing lugs
- Optional locking with safety cylinder lock.
- Resistance to mechanical impacts: IK 09
- Operating temperature: -30°C to +120°C



Polyester Box (1)

External dimensions (mm)			Transparent cover
Height	Width	Depth	
180	270	180	NSYPLS1827
270	270	180	NSYPLS2727
270	360	180	NSYPLS2736
270	540	180	NSYPLS2754
360	540	180	NSYPLS3654
360	540	230	NSYPLS3654A
360	720	230	NSYPLS3672A
540	540	180	NSYPLS5454
540	540	230	NSYPLS5454A
540	720	230	NSYPLS5472A



Polyester Box (1)

External dimensions (mm)			Opaque cover
Height	Width	Depth	
180	270	180	NSYPLSC1827
270	270	180	NSYPLSC2727
270	360	180	NSYPLSC2736
270	540	180	NSYPLSC2754
360	540	180	NSYPLSC3654
360	540	230	NSYPLSC3654A
360	720	230	NSYPLSC3672A
540	540	180	NSYPLSC5454
540	540	230	NSYPLSC5454A
540	720	230	NSYPLSC5472A

Polyester Box

External dimensions (mm)			Bakelite Mounting Plate
Height	Width	Depth	
180	270	180	NSYPMB1827
270	270	180	NSYPMB2727
270	360	180	NSYPMB2736
270	540	180	NSYPMB2754
360	540	180	NSYPMB3654
360	540	230	NSYPMB3654
360	720	230	NSYPMB3672
540	540	180	NSYPMB5454
540	540	230	NSYPMB5454
540	720	230	NSYPMB5472

Note:
(1) Enclosures supplied without mounting plate.

Accessories

Description	Reference
Push button release handle with safety lock and key lock 1242 E	NSYCL27L1242E
Set of 4 slotted head screws	NSYTCD274
Set of 4 winged screws	NSYTCM274
Set of 4 triangular headed screws	NSYTCT274
Triangular key	NSYLT27
200mm gland plate for 270mm sides	NSYTL27270
290mm gland plate for 360mm sides	NSYTL27360
Coupling frame for 200mm opening	NSYUM27270
Transport handle for enclosure	NSYATM27
Set of 4 stainless steel wall mounting lugs	NSYPF27X
Set of 2 hinges for opening to 180°	NSYBE27

Polyester Enclosure

Thalassa PLM - IP66
Glass Fibre Reinforced Polyester
Colour - RAL 7032 (Grey)

Offering many features and benefits:

- Resistant to corrosion and attacks by most chemical agents
- Resistant to UV rays
- Self-extinguishing enclosure
- Integral top and bottom moulded protective canopy for improved protection against splashing water
- Reversible door opening by inverting enclosure
- Wide range of accessories common with spacial 3D steel enclosure range
- Temperature resistance of -50...+150°C.
- Door opening angle: 180°.

Applications:

- Petrochemical industry
- Textile and paper
- Basic Metals
- Wood industry
- Mining
- Shipyards, port installations.



Enclosure and Main Accessories (1)

External Dimensions (in mm)			Enclosure with plain door	Plain mounting plate
Height	Width	Depth		
310	215	160	NSYPLM32 (2)	NSYMM32
430	330	200	NSYPLM43	NSYMM43
530	430	200	NSYPLM54	NSYMM54
647	436	250	NSYPLM64	NSYMM64
747	536	300	NSYPLM75	NSYMM75
847	636	300	NSYPLM86	NSYMM86
1056	852	350	NSYPLM108 (3)	NSYMM108



Main Accessories

External Dimensions (in mm)			Perforated mounting plate	Internal door
Height	Width	Depth		
310	215	160	NSYMR32	-
430	330	200	NSYMR43	NSYPAP43
530	430	200	NSYMR54	NSYPAP54
647	436	250	NSYMR64	NSYPAP64
747	536	300	NSYMR75	NSYPAP75
847	636	300	NSYMR86	NSYPAP86
1056	852	350	NSYMR108	NSYPAP108

Main Accessories

External Dimensions (in mm)			Wall mounting fixing brackets (4)	Step slides (5)
Height	Width	Depth		
310	215	160	NSYPFPLM32	
430	330	200	NSYPFPLM	NSYDPLM200
530	430	200	NSYPFPLM	NSYDPLM200
647	436	250	NSYPFPLM	NSYDPLM250
747	536	300	NSYPFPLM	NSYDPLM300
847	636	300	NSYPFPLM	NSYDPLM300
1056	852	350	NSYPFPLM	NSYDPLM350

Note:
(1) Enclosures supplied without mounting plate.
(2) Enclosure NSYPLM32 is made of ABS/ PC material. Temperature resistance of -35°C...+90°C.
(3) Enclosure with 5mm double bar lock and 4 point locking system.
(4) Set of 4 brackets. Direct attachment to back of enclosure either horizontally or vertically positioned. Glass fibre impregnated polyester. Stainless steel available on request.
(5) Set of 4 treated steel step slides used for depth adjustment of the mounting plate on 12.5mm pitch. Supplied with fixings and assembly instructions.

Your challenges drive our innovation!

Polyester, a strong, lightweight, highly resistant material made from fiberglass reinforced polyester. This insulating material offers complete protection from corrosion, making it ideal for use in the most extreme environments.

Thalassa PLA
Polyester floor-standing enclosures

Thalassa PLM
Polyester wall-mounting enclosures

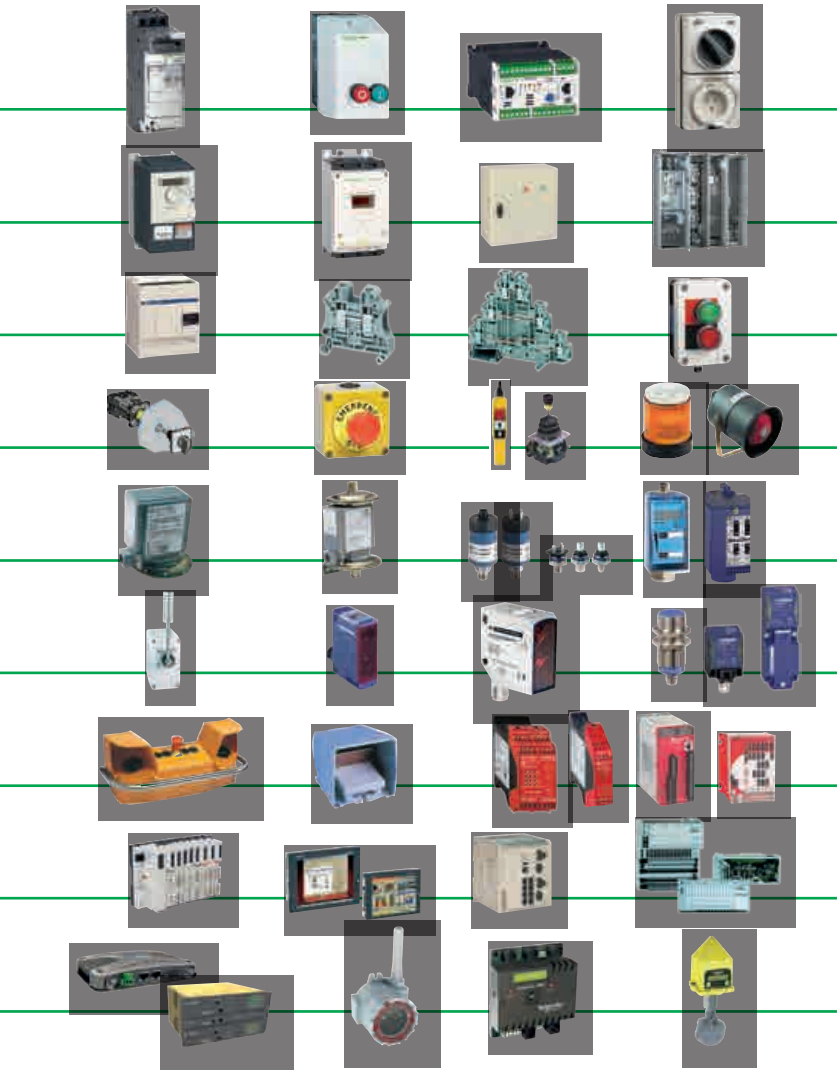


Thalassa PLS
Insulating modular boxes

- > Safety thanks to full electrical insulation
- > Oxidation resistance
- > Weather resistance (UV, atmospheric agents)
- > Temperature resistance
- > Excellent impact resistance
- > Protection against vandalism
- > Fire resistance
- > Long life (20 – 30 years)
- > Lightness (1.5 times lighter than steel)
- > Protection against most chemical agents

Schneider Electric™

Automation & Control Products



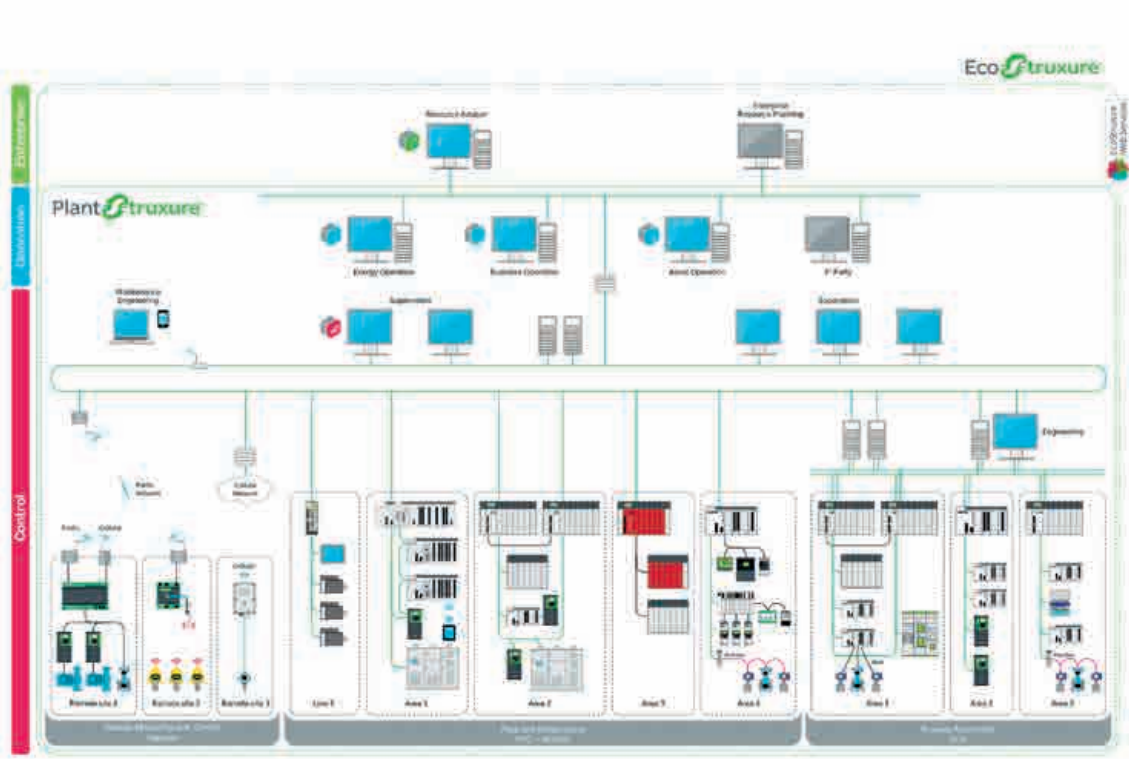
PlantStruxure Solutions	3.0
Power, Control & Protection Products	3.1
Variable Speed Drives & Soft Starters	3.2
Control & Connection Components	3.3
Control & Signalling Components	3.4
Pressure & Vacuum Switches	3.5
Position Sensors	3.6
Components for Machine Safety	3.7
Automation, HMI, SCADA & Training	3.8
Telemetry & Remote SCADA	3.9

PlantStruxure™ Solution Overview

A Collaborative Control System

PlantStruxure™ allows industrial and infrastructure companies to optimise performance and as a result manage energy usage more effectively. This is done through integrating both Schneider Electric's hardware and software components throughout the plant to deliver a complete process management solution. It allows companies to optimise energy usage and drive maximum efficiency within their operations while improving productivity.

Using PlantStruxure, customers can significantly reduce engineering time while minimising project risk. The approach allows continuous improvements in process control, return on assets and energy efficiency.



The PlantStruxure™ solution delivers:

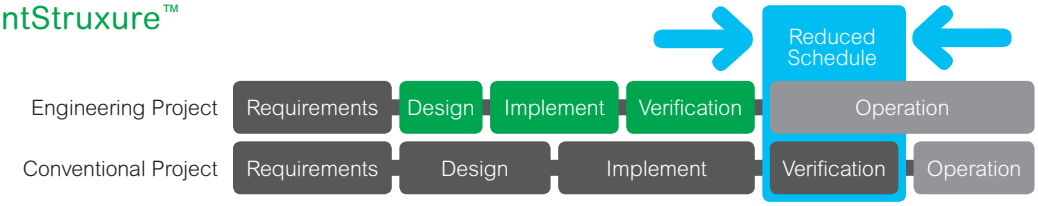
- Performance tested architectures
- Seamless integration of components to reduce risk and increase efficiency
- Open connectivity with business software
- Scalable to meet your changing needs
- Flexible because your process is unique

PlantStruxure™ Solution Overview

Accelerating Your Engineering Workflow

We offer flexible system engineering tools in order to support your efforts to be more efficient. These tools are focused on helping you accelerate your control system configuration, significantly reducing your engineering time and minimising your project risk.

PlantStruxure™



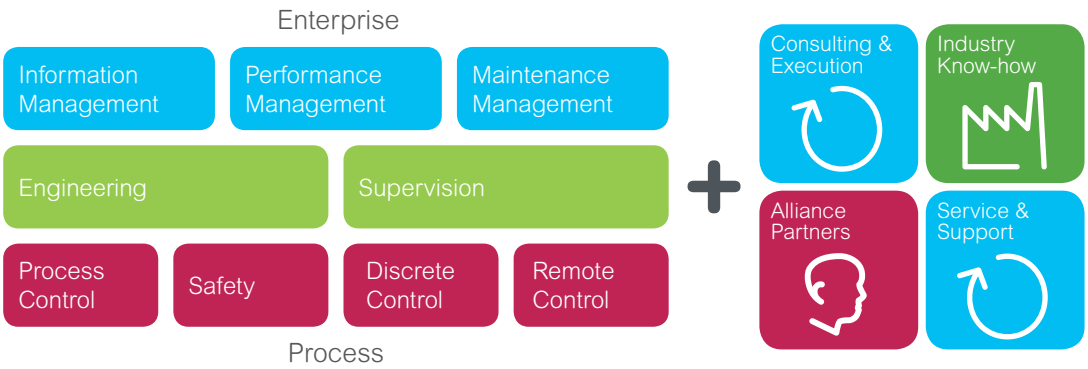
PlantStruxure™ helps you to:

- Reduce project schedules
- Standardise, reuse and extend
- Integrate with process design software
- Simulate control off-line

You have everything you need to configure your system:

Visualisation	Extensible object Libraries
Control	Single data entry
Communication	Integration to 3rd Party
System Design	Documentation

With Collaborative Automation we deliver to you the system, know-how, partner network and service and support to ensure that you are making the right decisions for your business.



When you engage Schneider Electric, you are tapping into a vast network belonging to the world's leading specialist in energy management and automation solutions. With dedicated professional services teams in each of our local offices, an extensive network of partnerships, and world-class support services, Schneider Electric delivers you outstanding results. Leveraging our premier position in this region, we are able to provide vertical expertise across a wide range of industries with solutions that deliver outcomes aligned to your business objectives.

Automation & Control

Power Control & Protection Products

Contactors & Overloads



TeSys Contactors & Overloads

Contactors and Starters for Safety Applications	Page 3.1.1
Motor Starting Coordination	Page 3.1.2
Selection Guide - Contactors (to 16A)	Page 3.1.3
Model SK and K Mini Contactors (to 16A)	Page 3.1.4
Model K Mini Contactors & Overloads (to 16A)	Page 3.1.5
Selection Guide - Contactors (to 150A)	Page 3.1.7
Model D Contactors & Overloads (to 150A)	Page 3.1.9
Safety-chain Marking for TeSys D Contactors & TeSys U	Page 3.1.15, 53
LR9D Electronic Overload Relays	Page 3.1.18
Selection Guide - Contactors (to 800A)	Page 3.1.17
Model F Contactors (to 800A)	Page 3.1.19
Model B Bar Contactors (to 1800A)	Page 3.1.23
Model V Vacuum Contactors (to 610A) and Capacitor Contactors	Page 3.1.24
Dimensions	Page 3.1.72

Motor Circuit Breakers



TeSys Motor Circuit Breakers

Selection Guide - Motor Circuit Breakers (to 220A)	Page 3.1.25
GV2ME Thermal Magnetic P/B Rocker Levers (to 32A)	Page 3.1.27
GV2P Thermal Magnetic Rotary Switch (to 32A)	Page 3.1.27
GV2RT Thermal Magnetic Toggle (to 23A)	Page 3.1.27
GV2LE Magnetic Only Toggle Switch (to 32A)	Page 3.1.28
GV2L Magnetic Only Rotary Switch (to 32A)	Page 3.1.28
GB2 Single Pole Thermal Magnetic (to 20A)	Page 3.1.28
GV2 Accessories	Page 3.1.30
GV2 Enclosures	Page 3.1.33
GV3 Thermal Magnetic Motor Circuit Breakers	Page 3.1.34
GV7R Thermal Magnetic Toggle Switch (to 220A)	Page 3.1.37
TeSys Solink Integration System for Motor Starters up to 30kW	Page 3.1.39
Dimensions	Page 3.1.79

Enclosed & Open Motor Starters



TeSys Motor Starters

Model K DOL Starters (to 7.5kW)	Page 3.1.42
Model D DOL Starters (to 15kW)	Page 3.1.42
Model D DOL Reversing Starters (to 15kW)	Page 3.1.42
Model D Star Delta Starters (to 90kW)	Page 3.1.44
Dimensions	Page 3.1.83
TeSys H Ultra Compact Motor Starters	Page 3.1.43

Integrated Motor Starter Protectors



TeSys Model U Integrated Motor Starters

Selection Guide - Starters (to 32A)	Page 3.1.48
Power Bases (to 32A)	Page 3.1.50
Control Units (Advanced and Multifunction)	Page 3.1.51
Contact Blocks & Function Modules	Page 3.1.54
Communication Modules	Page 3.1.55
Dimensions	Page 3.1.84

Electronic Motor Protection Relays



Multifunctional Motor Protection Relays

TeSys T Intelligent Motor Protection Relays	Page 3.1.59
Dimensions	Page 3.1.86

Electronic Motor Protection Relays

Electronic Over Current Relays	Page 3.1.58
LT3 Thermistor Protection Relays	Page 3.1.58

Control Relays



TeSys Control Relays

Model SK Mini 2-Pole Relays	Page 3.1.62
Model K Mini 4-Pole Relays	Page 3.1.62
Model D 5-Pole Relays	Page 3.1.63
Dimensions	Page 3.1.87

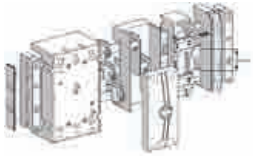
Load Break Switches



Vario Load Break Switches

Switches - 3-Pole complete units (to 175A)	Page 3.1.64
Operator Handles	Page 3.1.66
Switch Bodies & Add-on Modules	Page 3.1.67
Accessories & Enclosed Load Break Switches	Page 3.1.68
Dimensions	Page 3.1.88

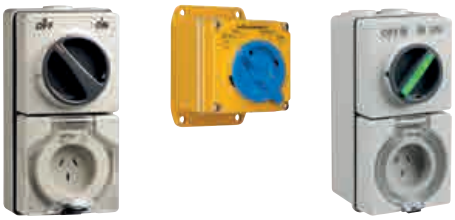
Busbar Systems



TeSys Busbar Systems

AK5 Panel Busbar System	Page 3.1.69
LA9Z Modular Busbar System	Page 3.1.70

Clipsal by Schneider Electric



Industrial Plugs, Switches & Sockets

56 Series	Page 3.1.91
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WilcoROWCO and Wilco	Page 3.1.109
Rotary Cam and Isolating Switches	Page 3.1.113

TeSys Model U Integrated Motor Starter Protector TeSys Model D Contactors for Safety



TeSys D

A standard switching solution for safety applications

Typically, safety control systems designed in compliance with certain control system categories of the Safeguarding of Machinery standard AS4024.1 are required to monitor the status of the contactor. A reliable signal indicating whether a contactor is energised or de-energised once the control system initiates a command is required.

Mirror contact (also known as a positively guided contact) is a normally closed auxiliary contact mechanically linked to the power poles of the contactor. It is designed in such a way that when a contactor is de-energised, if one of the main poles is prevented from opening because of jamming or welding, then the mirror N/C stays open.

As can be seen in the illustration below, this is achieved by the mechanical link between the power poles of the contactor and the N/C auxiliary contact, i.e. both the main power poles and the mirror N/C auxiliary contact cannot be closed at the same time. This functionality defined by AS60947.4.1.

Thus, a signal from the N/C mechanically linked contact reliably reveals the state of the main poles and as the mirror N/C auxiliary contact of the contactor is used in the feedback circuit of the safety relay, a restart of the machine is prohibited.

The mirror N/C contact suitable for safety applications is an integral feature of the TeSys model D and U ranges, which can be found on pages 3.1.7 and 3.1.48 respectively.



TeSys U

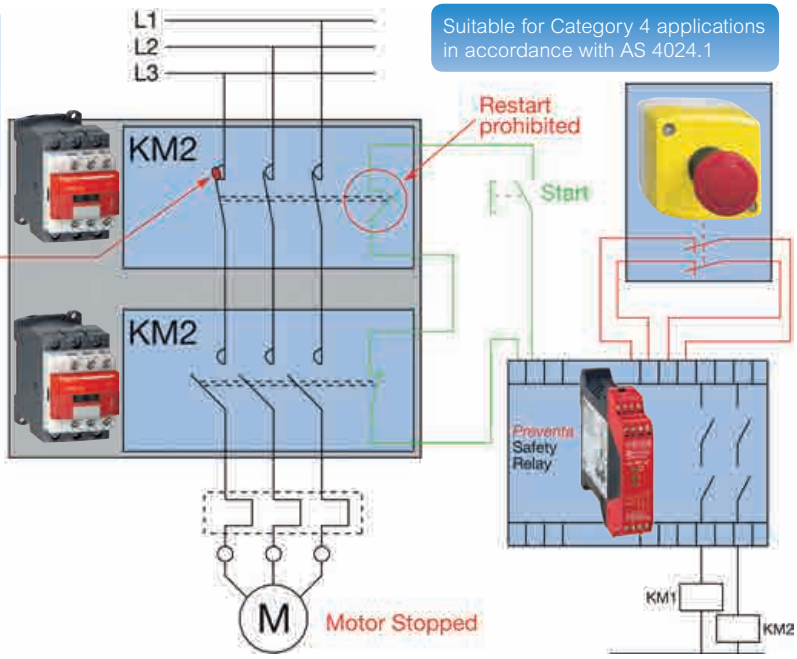
Electrical auxiliary N/C contacts

Mechanically linked to the power poles

In accordance with AS 60947.4.1

FAULT: welded pole

If a power pole welds, the mechanical link prevents the N/C auxiliary contact from closing when the coil is de-energised



Suitable for Category 4 applications in accordance with AS 4024.1

Motor Starting Coordination

Component Starter Solution
Type 1 or Type 2 Co-ordination



Thermal Magnetic Motor Circuit Breaker and Contactor

The principle of coordination requires that the main short-circuit protection components (fuses or circuit breaker) be correctly associated with a suitable power switching device (contactor) and its associated thermal overload protection relay. The principle is that for an overload or short circuit situation, the starter combination should be able to clear the fault quickly, without any damage to the installation or personnel.

No Coordination - No safety for people or the installation. On installations where the short circuit protection device (SCPD) is not a tested combination with the contactor and thermal overload under AS 60947.4.1, then coordination is deemed not to exist.

Type 1 Coordination - As defined in AS 60947.4.1, provides safety for personnel and plant, however, under fault conditions the contactor and the overload will need to be replaced. Suitable for non-essential applications.

Type 2 Coordination - As defined in AS 60947.4.1, provides safety for personnel and plant but allows for light welding of the contactor. The weld of the contactor must be capable of being broken by a qualified electrician with a screwdriver. Suitable for essential services with maintenance programs.

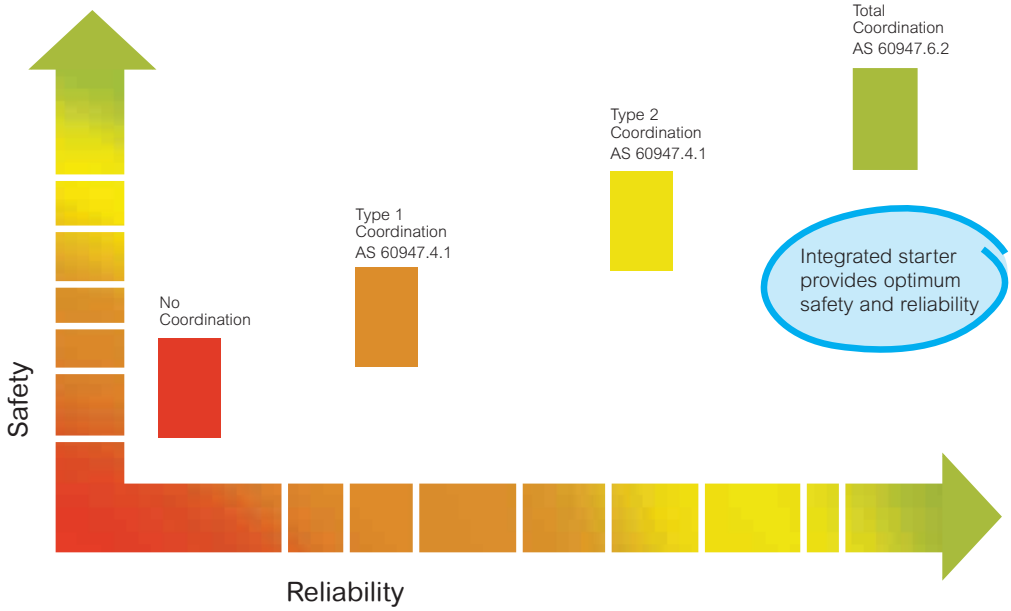
Continuity of Service (Total Coordination) - As defined in AS 60947.6.2, provides maximum safety for personnel and plant with minimum downtime. Under short circuit fault conditions, there is no flashing or arcing between poles, no welding of the main poles and no damage or distortion to the tripping mechanism. The unit can be reset immediately once the fault has been cleared and return to service. The TeSys U Integrated Motor Starters provide Continuity of Service (Total Coordination).

Total Co-ordination
(Continuity of Service)



Integrated Starter
TeSys U

Short Circuit Conditions



TeSys Model SK and K Contactors
2 and 3-Pole Mini Contactors
Selection Guide

Applications — Simple automation systems






Rated operational current Ie max AC-3 (Ue ≤ 440V)		6A	6A	9A	12A	16A
Ie AC-1 (θ ≤ 60°C)		12A	–	20A	–	–
Rated operational voltage		690V				
Number of poles		2	3			
Rated operational power in category AC-3	220/240V	1.1kW	1.5kW	2.2kW	3kW	3kW
	380/ 415V	2.2kW	2.2kW	4kW	5.5kW	7.5kW
Add on auxiliary contact blocks	Front	Up to 2 N/C or N/O	Up to 4 N/C or N/O			
	Side	–	–			
	Front time delay	–	1 N/C			
Associated manual-auto thermal overload relays	Class 10A	–	0.11...16A			
	Class 20	–	–			
Suppressor modules		Varistor or diode	Varistor, diode + Zener diode or RC circuit			
Contactor type references	~	**LC1SK**	**LC1K06**	**LC1K09**	**LC1K12**	**LC1K16**
	⎓	**LP1SK**	**LP1K06**	**LP1K09**	**LP1K12**	**–**
Reversing contactor with mechanical interlock type references	~	**–**	**LC2K06**	**LC2K09**	**LC2K12**	**LC2K16**
	⎓	**–**	**LP2K06**	**LP2K09**	**LP2K12**	**–**
Page	Contactors	3.1.4	3.1.4 and 3.1.5			
	Reversing contactors		3.1.4 and 3.1.5			

Contactors

TeSys
Model SK 2-Pole Mini Contactors
Model K 3-Pole Contactors


LC1SK0600••

Contactors 2-Pole

Coil voltage	AC1 A	AC3 A	AC3 (240 Volt) Number of operation, millions 0.5	1.0	1.8	Reference (1)
AC	12A	6	1.5kW	1.1kW	0.75kW	LC1SK0600••
DC	12A	6	1.5kW	1.1kW	0.75kW	LP1SK0600••

AC supply, 50/60Hz, Volts		24	48	110	240	
LC1SK coil code		B7	E7	F7	U7	
DC supply, Volts	12	24	48			
LP1SK coil code	JD	BD	ED			


LA1SK11

Add-on Auxiliary Contacts (clip-on front mounting, 1 block per mini contactor)

For use on contactor	Auxiliary power pole	Instantaneous auxiliary contacts N/O	N/C	Reference
LC1SK only	–	2	–	LA1SK20
		–	2	LA1SK02
		1	1	LA1SK11
LC1SK only	1	1	–	LA1SK10

Coil Suppressor Module (clip-on right hand side mounting)

Type	For use on contactors	Voltages	Reference
Varistor	LC1SK & LP1SK	24-48V AC/DC	LA4SKE1E
		110-250V AC/DC	LA4SKE1U
Diode	LC1SK & LP1SK	24-250V DC	LA4SKC1U


LC1K0910••

3-Pole Contactors AC Control

AC1 A	AC3, 415V A	AC3, 415V kW	Auxiliary fitted N/O	N/C	Reference (1)
20	6	2.2	1	-	LC1K0610••
			-	1	LC1K0601••
	9	4	1	-	LC1K0910••
			-	1	LC1K0901••
	12	5.5	1	-	LC1K1210••
			-	1	LC1K1201••
	16	7.5	1	-	LC1K1610••
			-	1	LC1K1601••

3-Pole Contactors DC Control

AC1 A	AC3, 415V A	AC3, 415V kW	Auxiliary fitted N/O	N/C	Reference (1)
20	6	2.2	1	-	LP1K0610••
			-	1	LP1K0601••
	9	4	1	-	LP1K0910••
			-	1	LP1K0901••
	12	5.5	1	-	LP1K1210••
			-	1	LP1K1201••

AC supply, 50/60Hz, Volts	24	36	48	110	220	240	415
LC1K coil code	B7	C7	E7	F7	M7	U7	N7

DC supply, Volts	12	24	48	110	220		
LP1K coil code	JD	BD	ED	FD	MD		

Note:
(1) "••"Complete reference with coil voltage code. Eg: LC1SK0600B7 for 24V 50/60Hz.
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the Catalogue.
Contact Schneider Electric on 1300 369 233 for non standard coil voltages.

Contactors

TeSys
Model K Reversing Contactors


LC2K0910••

Reversing Contactors AC Control (It is essential to electrically interlock LC2K reversing contactors)

AC3, 415V kW	AC3, 415V A	Auxiliary fitted N/O	N/C	Reference (1)
2.2	6	2		LC2K0610••
			2	LC2K0601••
4	9	2		LC2K0910••
			2	LC2K0901••
5.5	12	2		LC2K1210••
			2	LC2K1201••
7.5	16	2		LC2K1610••
			2	LC2K1601••

Reversing Contactors DC Control (It is essential to electrically interlock LC2K reversing contactors)

AC3, 415V kW	AC3, 415V A	Auxiliary fitted N/O	N/C	Reference (1)
2.2	6	2		LP2K0610••
			2	LP2K0601••
4	9	2		LP2K0910••
			2	LP2K0901••
5.5	12	2		LP2K1210••
			2	LP2K1201••


LA1KN22

AC supply, 50/60Hz, Volts	24	36	48	110	220	240	415
LC2K coil code	B7	C7	E7	F7	M7	U7	N7

DC supply, Volts	24	48	110	220
LP2K coil code	BD	ED	F7	MD

Auxiliaries and Suppressor Modules

Clip-on front mounting, 1 block per mini-contactor, for use on LC1K, LC2K, LP1K and LP2K


LA2KT2E

Type	Range	Composition N/O	N/C	C/O	Reference
Instantaneous		2	-	-	LA1KN20
		-	2	-	LA1KN02
		1	1	-	LA1KN11
		4	-		LA1KN40
		3	1	-	LA1KN31
		2	2	-	LA1KN22
Delay-on	24-48V AC/DC	-	-	1	LA2KT2E
(1 to 30 sec)	110-240V AC	-	-	1	LA2KT2UAA
Varistor	12-24V AC/DC				LA4KE1B
Varistor	130-250V AC/DC				LA4KE1UG
Diode + Zener diode	12-24V DC				LA4KC1B
RC	220-250V AC				LA4KA1U


LR2K0308

Differential Bi-metallic Thermal Overload Relays (Class 10A) (2) (3)

Direct mounting on LC1K / LP1K contactors

Current setting Range A	Reference
0.11 - 0.16	LR2K0301
0.16 - 0.23	LR2K0302
0.23 - 0.36	LR2K0303
0.36 - 0.54	LR2K0304
0.54 - 0.8	LR2K0305
0.8 - 1.2	LR2K0306
1.2 - 1.8	LR2K0307
1.8 - 2.6	LR2K0308
2.6 - 3.7	LR2K0310
3.7 - 5.5	LR2K0312
5.5 - 8.0	LR2K0314
8.0 - 11.5	LR2K0316
10 - 14	LR2K0321
12 - 16	LR2K0322
Remote mounting base	LA7K0064


LA7K0064 FITTED

Note:

(1) "••"Complete reference with coil voltage code. Eg: LC1K0910U7 for 240V 50/60Hz.
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the Catalogue.
Contact Schneider Electric on 1300 369 233 for non standard coil voltages.

(2) Unbalanced loads, two phase operation and single phase motors use LR7.
To order, replace the prefix LR2 by LR7 (only applicable to overload relays LR2K0305 to LR2K0322).
Eg: LR7K0308.

(3) Three phase differential protection.

EverLink® Connection Technology

EverLink®
Long lasting connection quality

A strong, safe and long lasting power connection

EverLink®, the new patented terminal technology, assures a permanent quality tightening of the cable conductors. Even in the event of conductor creep, the connection force on the cables is assured due to the spring effect of the power connectors.

Advantages include:

- reduced maintenance time, due to terminal re-tightening being no longer required
- safety of the connections, provided by the BTR screw and the 4mm Allen key, which enables a high tightening torque
- operator safety due to IP20 protection against direct contact



GV3P65 Motor Circuit Breaker and LC1D65A Contactor electrically connected via S-shape busbar (*).

Another Schneider Electric Innovation



Possible to connect 2 cables of difference cross sectional areas.



Maintaining of cables assured by pressure of spring and crimping of conductor on the contact plate.



The spring compensates for cable conductor creep. Tightening force is assured.

* - the S-busbar is hidden inside the Everlink terminals, see page 3.1.13

Contactors

TeSys Model D
3 and 4-Pole Contactors
Selection Guide

Applications	All types of control system					
						

AC and DC coils

Rated operational current Ie max AC-3 (Ue ≤ 440V) Ie AC-1 (θ ≤ 60°C)		9A 25A (*20A)		12A 25A		18A 32A		25A 40A		32A 50A		38A
Rated operational voltage		690V										
Number of poles		3	4	3	4	3	4	3	4	3		
Rated operational power in AC-3	380/400V	4 kW		5.5 kW		7.5 kW		11 kW		15 kW		18.5 kW
	415/440V	4 kW		5.5 kW		9 kW		11 kW		15 kW		18.5 kW
	690V	5.5 kW		7.5 kW		10 kW		15 kW		18.5 kW		18.5 kW
	1000V	–		–		–		–		–		–
Auxiliary contacts		1N/C and 1N/O fitted as standard. Instantaneous and time delay add-on auxiliary contacts common to the TeSys D range up to 150A.										
Compatible manual-auto thermal overload relays	Class 10 A	0.10...10 A		0.10...13 A		0.10...18 A		0.10...32 A		0.10...38 A		0.10...38 A
	Class 20	2.5...10 A		2.5...13 A		2.5...18 A		2.5...32 A		2.5...32 A		–
Suppressor Modules (d.c. and low consumption contactors have built in suppression as standard)	Varistor	●		●	●	●		●	●	●		●
	Diode	–		–	●	–		–	●	–		–
	RC circuit	●		●	●	●		●	●	●		●
	Bidirectional peak limiting diode	●		●	●	●		●	●	●		●
Interfaces	Relay	●		●	●	●		●	●	●		●
	Relay + overide function	●		●	●	●		●	●	●		●
	Solid state	●		●	●	●		●	●	●		●
Contactor type references	3-pole	**LC1-D09**		**LC1-D12**		**LC1-D18**		**LC1-D25**		**LC1-D32**		**LC1-D38**
	4-pole, 2NO+2NC main poles	**LC1-D098***		**LC1-D128**		**LC1-D188**		**LC1-D258**		**–**		**–**
	4-pole, 4NO main poles	**LC1-DT20***		**LC1-DT25**		**LC1-DT32**		**LC1-DT40**				

DC low consumption coils

Applications	Automation systems					
Coil consumption	**2.4W (100mA at 24V DC)**					
Operating ranges	**0.7...1.25 Uc**					
Contactor, 24V DC coil	**LC1-D09BL**	**LC1-D12BL**	**LC1-D18BL**	**LC1-D25BL**	**LC1-D32BL**	**LC1-D38BL**
Page	3.1.9 - 3.1.11					

TeSys Model D
3 and 4-Pole Contactors
Selection Guide







EverLink®
Long lasting connection quality

40A		50A		65A		80A		95A	115A		150A		
60A		80A				125A			200A				
690V						1000V with AC coil; 690V with DC coil							
3	4	3		3	4	3	4	3	3	4	3		
18.5kW		22kW		30kW		37kW		45kW	55kW		75kW		
22kW		25/30kW		37kW		45kW		45kW	59kW		80kW		
30kW		33kW		37kW		45kW		45kW	80kW		100kW		
–		–		–		45kW		45kW	75kW		90kW		
1N/C and 1N/O fitted as standard. Instantaneous and time delay add-on auxiliary contacts common to the TeSys D range up to 150A.													
9...40A		9...50A		9...65A		17...104A			60...150A				
9...40A		9...50A		9...65A		17...80A			60...150A				
●	●	●		●	●	●	●	●	●	●	–		
●	●	●		●	●	●	●	●	–	–	–		
●	●	●		●	●	●	●	●	●	●	●		
●	●	●		●	●	●	●	●	–	–	–		
●	●	●		●	●	●	●	●	●	●	●		
●	●	●		●	●	●	●	●	●	●	●		
●	●	●		●	●	●	●	●	●	●	–		
LC1-D40A		**LC1-D50A**		**LC1-D65A**		**LC1-D80**		**LC1-D95**	**LC1-D115**		**LC1-D150**		
LC1-D4008		**–**		**LC1-D65008**		**LC1-D80008**		**–**	**–**		**–**		
LC1-DT60A		**–**		**LC1-DT80A**		**LC1-D80004**		**–**	**LC1-D115004**		**–**		

3.1.9 - 3.1.11

Contactors

TeSys Model D, 3-Pole Contactors
Integrated 1 N/O and 1 N/C Auxiliary Contacts (1)


LC1D12


LC1D40A


LC1D150

3-Pole Contactors – AC Control Screw Clamp Terminals (2)

AC3 415V kW	AC3 415V A	AC1 415V A	AC3 690V kW	AC3 1000V kW (3)	Reference (4)
4	9	25	5.5	–	LC1D09••
5.5	12	25	7.5	–	LC1D12••
9	18	32	10	–	LC1D18••
11	25	40	15	–	LC1D25••
15	32	50	18.5	–	LC1D32••
18.5	38	50	18.5	–	LC1D38••
22	40	60	30	–	LC1D40A••(2)(3)
25	50	80	33	–	LC1D50A••(2)(3)
37	65	80	37	–	LC1D65A••(2)(3)
45	80	125	45	45	LC1D80••
51	95	125	45	45	LC1D95••
59	115	200	80	75	LC1D1156••(5)
80	150	200	100	90	LC1D1506••(5)

AC coil voltages 50/60 Hz, Volts (4)	24	32	48	110	220	240	415
LC1-D09…D-150 coil code	B7	C7	E7	F7	M7	U7	N7

LC1-D115 and D150 coils with built-in suppressor as standard

3-Pole Contactors – DC Control Screw Clamp Terminals (2)

AC3 415V kW	AC3 415V A	AC1 415V A	AC3 690V kW	AC3 1000V kW (3)	Reference (4)
4	9	25	5.5	–	LC1D09••
5.5	12	25	7.5	–	LC1D12••
9	18	32	10	–	LC1D18••
11	25	40	15	–	LC1D25••
15	32	50	18.5	–	LC1D32••
18.5	38	50	18.5	–	LC1D38••
22	40	60	30	–	LC1D40A••(2)(3)
25	50	80	33	–	LC1D50A••(2)(3)
37	65	80	37	–	LC1D65A••(2)(3)
45	80	125	45	45	LC1D80••
51	95	125	45	45	LC1D95••
59	115	200	80	75	LC1D1156••(5)
80	150	200	100	90	LC1D1506••(5)

DC Low Consumption coil voltages, Volts (4)	12	24	48	72	110	220
LC1D09...D38 coil code	Coils with built in suppression device					
Tolerance 0.7 to 1.25 Uc	JL	BL	EL	SL	FL	ML
Consumption 2.4W (100mA at 24V DC)						

DC coil voltages, Volts (4)	12	24	48	72	110	220
LC1D09...D65A coil code	Coils with built in suppression device					
Tolerance 0.75 to 1.25 Uc	JD	BD	ED	–	FD	MD
LC1D80 and D95 coil code	Coils with built in suppression device					
Tolerance 0.75...1.2 Uc	JW	BW	EW	–	FW	MW
LC1D115 and D150 coil code	Coils with built in suppression device					
Tolerance 0.75 to 1.25 Uc	–	BD	ED	–	FD	MD

Note:
(1) NC is a safety contact complying to AS.60947.4.1(e.g. mirror contact). TeSys D contactors are suitable for safety applications, refer to page 3.1.1.
(2) LC1D40A ••, LC1D50A•• and LC1D65A•• have EverLink terminals, Allen key 4 required, please refer to page 3.1.6. Only thermal overloads with EverLink terminals can be mounted directly underneath contactors LC1D40A...D65A, check compatible combinations on page 3.1.15
(3) For 690V and 1000V current ratings (Ith) contact Schneider Electric on 1300 369 233. Note LC1D09...D65A rated 690V.
(4) "••" Complete reference with coil voltage code. Eg: LC1D09U7 for 240V 50/60 Hz.
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the Catalogue.
Contact Schneider Electric on 1300 369 233 for non standard coil voltages.
(5) 6 denotes lug bar terminals, use LC1D115•• or LC1D150•• for cable connection.

Contactors

TeSys Model D, 4-Pole Contactors


LC1DT40


LC1DT80A


LC1D258

4-Pole Contactors, Screw Terminals (2)

AC1 415V A	AC3 415V A	Number of main poles N/O	N/C	Auxiliary contacts fitted N/O	N/C	Reference AC Control (1)
20	9	4	-	1	1	LC1DT20••
		2	2	1	1	LC1D098••
25	12	4	-	1	1	LC1DT25••
		2	2	1	1	LC1D128••
32	18	4	-	1	1	LC1DT32••
		2	2	1	1	LC1D188••
40	25	4	-	1	1	LC1DT40••
		2	2	1	1	LC1D258••
60	40	4	-	1	1	LC1DT60A••(2)
		2	2	-	-	LC1D40008••
80	65	4	-	1	1	LC1DT80A••(2)
		2	2	-	-	LC1D65008••
125	80	4	-	-	-	LC1D80004••
		2	2	-	-	LC1D80008••
200	115	4	-	-	-	LC1D1150046••(3)

AC coil voltages 50/60 Hz, Volts (1)	24	32	48	110	220	240	415
LC1D09....LC1D115, LC1DT20...DT80A	B7	C7 (4)	E7	F7	M7	U7	N7

4-Pole Contactors, Screw Terminals (2)

AC1 415V A	AC3 415V A	Number of main poles N/O	N/C	Auxiliary contacts fitted N/O	N/C	Reference Control (1) DC & DC LC
20	9	4	-	1	1	LC1DT20••
		2	2	1	1	LC1D098••
25	12	4	-	1	1	LC1DT25••
		2	2	1	1	LC1D128••
32	18	4	-	1	1	LC1DT32••
		2	2	1	1	LC1D188••
40	25	4	-	1	1	LC1DT40••
		2	2	1	1	LC1D258••
60	40	4	-	1	1	LC1DT60A••(2)
		2	2	-	-	LP1D40008••
80	65	4	-	1	1	LC1DT80A••(2)
		2	2	-	-	LP1D65008••
125	80	4	-	-	-	LP1D80004••
		2	2	-	-	LP1D80008••
200	115	4	-	-	-	LC1D1150046•• (3)

DC coil voltages, Volts (1)	12	24	48	110	220
LC1D09.. D65 and LC1DT20..DT80A	Coils with built in suppression device				
Tolerance 0.7... 1.25 Uc	JD	BD	ED	FD	MD
LP1D40...D80					
Tolerance 0.75.. 1.2 Uc	JW	BW	EW	FW	MW
LC1D115	Coils with built in suppression device				
Tolerance 0.75.. 1.2 Uc	–	BD	ED	FD	MD
DC coils, low consumption, Volts (1)	12	24	48	110	220
LC1D09..D32, LC1DT20...DT40	Coils with built in suppression device				
Tolerance 0.7...1.25 Uc	JL	BL	EL	FL	ML

Note:
(1) "••" Complete reference with coil voltage code eg: LC1DT20U7 for 240V AC 50/60 Hz.
For stocking policy of coil voltages, please refer to Alphanumeric price listing at the back of the Catalogue.
Other voltages available, contact Schneider Electric on 1300 369 233
(2) LC1DT60A•• and LC1DT80A•• have EverLink terminals, Allen key 4 required, please refer to page 3.1.6
(3) "6" in the part number denotes lug bar terminals.
(4) C5 (32V AC 50Hz) for LC1D4000, LC1D6500 & LC1D8000

Contactors Accessories

TeSys Model D, 3 and 4-Pole Contactors
Interlocks and Wiring Accessories



LAD9R1V kit

Reversing Kits for 3-Pole Reversing Contactors

With two identical frame sizes			Reference
LC1D09…D38	Set of power links, mechanical interlock, links for electrical interlocking	(1)	LAD9R1V
LC1D09…D38	Mechanical interlock, set of power links		LAD9R1
LC1D40A…D65A	Mechanical interlock, set of power links		LAD9R3

Interlocks and Power Links for 3-Pole Contactors

LC1D09...D38	Links for electrical interlocking (1)		LAD9V1
LC1D09…D38	Mechanical interlock		LAD9V2
LC1D40A…D65A	Mechanical interlock		LAD4CM
LC1D80…D95	Mechanical interlock	AC coil	LA9D50978
LC1D80…D95	Mechanical interlock	DC coil	LA9D80978
LC1D80…D95	Mechanical interlock with 2 fitted NC contacts for electrical interlocking	AC coil	LA9D4002
LC1D80…D95	Mechanical interlock with 2 fitted NC contacts for electrical interlocking	DC coil	LA9D8002
LC1D115…D150	Mechanical interlock with 2 fitted NC contacts for electrical interlocking		LA9D11502
LC1D40A…D65A	Power links (reversing starter wiring set)		LA9D65A69
LC1D80…D95	Power links (reversing starter wiring set)		LA9D8069
LC1D115…D150	Power links (reversing starter wiring set)		LA9D11569



2 x LC1D25
+ LAD9R1 kit

Star Delta Kits for 3-Pole Contractors (2)

Each kit compromising: star-delta timer LADS2, set of power links, interlock (LAD8017 doesn't incl. interlock)

Contactors		Reference
LC1D09 and D12	Star-delta kit	LAD91217
LC1D18...D32	Star-delta kit	LAD93217
LC1D40A...D65A	Star-delta kit	LAD9SD3
LC1D80	Star-delta kit (incl. accessories for mounting on a plate)	LA9D8017
LC1D80	Mounting plate	LA9D80973

Interlocks and Wiring Kits for 4-Pole Changeover Contactors

LC1DT20...DT40	Mechanical interlock LAD9V2, electrical links LAD9V1, changeover power links LAD9V7	LADT9R1V
LC1DT20...DT40	Mechanical interlock LAD9V2, changeover power links LAD9V7	LADT9R1
LC1DT20...DT40	Mechanical interlock	LAD9V2
LC1DT60A...DT80A	Mechanical interlock	LAD4CM
LC1D80004	Mechanical interlock	LA9D50978
LP1D80004	Mechanical interlock	LA9D80978
LC1D80004	Power links	LA9D8070(3)
LP1D80004	Power links	LA9D8070(3)
LC1D115004	Power links	LA9D11570

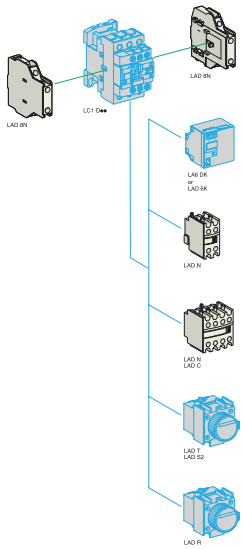


2 x LC1D50A
+ LAD9R3 kit

Note:
(1) Electrical interlocking links utilise NC auxiliaries fitted in the contactors
(2) Refer to page 3.1.39
(3) Two LADN•1 auxiliary contact blocks required to provide electrical interlocking

Contactors Accessories

TeSys Model D, Instantaneous and Time Delay Auxiliary Contact Blocks



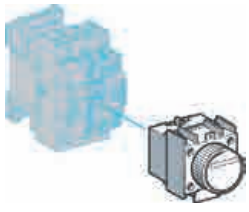
Instantaneous Auxiliary Contact Blocks

For use in normal operating environments.

Clip-on mounting	To suit contactor	Number of contacts per block	Composition N/O	N/C	Reference
Front	3P LC1D80 & D95 4P LC1D40008 & LP1D40008 4P LC1D65008 & LP1D65008 4P LC1D80 & LP1D80 4P LC1D115 (AC coil) 3P LC1D40...LC1D65 (old)	1	1	–	LADN10
			–	1	LADN01
	3P LC1D09...D150 4P LC1D09...D115 & LC1DT20...D65A (new EverLink) 4P LP1D40...D80	2	1	1	LADN11
			2	–	LADN20
			–	2	LADN02
		4	2	2	LADN22
			1	3	LADN13
			4	–	LADN40
			–	4	LADN04
			3	1	LADN31
		4 (3)	2	2	LADC22
Side	3P AC coil LC1D09...D38 3P AC coil LC1D40A...D65A 3p lc1d40...lc1d65 (OLD) 3P AC coil LC1D80 & D95 (2) 3P LC1D115 & D150 4P AC coil LC1DT20...DT80A 4P LC1D115	2	1	1	LAD8N11
			2	–	LAD8N20
			–	2	LAD8N02

Maximum number of Auxiliary Contacts that can be fitted

Contactors			Instantaneous auxiliary contact blocks					Time delay
			Side mounted		Front mounted			Front mounted
Type	Number of poles and size				1 contact	2 contacts	4 contacts	
~ AC	3P	LC1D09...D38	1 on LH side	and	–	1	or 1	or 1
		LC1D40A…D65A (new EverLink)	1 on LH or 1 on RH side	and	–	**1**	**or 1**	**or 1**
		LC1D40...LC1D65 (old)	1 on each side	or	2	and 1	or 1	or 1
		LC1D80 and D95 (50/60Hz coil)	1 on each side	or	2	and 1	or 1	or 1
		LC1D80 and D95 (50 or 60Hz coil)	1 on each side	and	2	and 1	or 1	or 1
		LC1D115 and D150	1 on LH side	and	–	1	or 1	or 1
	4P	LC1DT20...DT40	1 on LH side	and	–	1	or 1	or 1
		LC1DT60A…DT80A	1 on LH or 1 on RH side	and	–	1	or 1	or 1
		LC1D40...D80	1 on each side	or	1	or 1	or 1	or 1
		LC1D115	1 on each side	and	1	or 1	or 1	or 1
⎓ DC	3P	LC1D09...D38	–		–	1	or 1	or 1
		LC1D40A…D65A (new EverLink)	–	and	–	1	or 1	or 1
		LC1D40...LC1D65 (old)	–		1	or 1	or 1	or 1
		LC1D80 and D95	–		1	or 1	or 1	or 1
		LC1D115 and D150	1 on LH side	and	–	1	or 1	or 1
	4P	LC1DT20...DT40	–		–	1	or 1	or 1
		LC1DT60A…DT80A	–	and	–	1	or 1	or 1
		LP1D40...D80	–		2	and 1	or 1	or 1
		LC1D115	1 on each side		–	and 1	or 1	or 1
LC (1)	3P	LC1D09...D38	–		–	1	–	–
	4P	LC1DT20...DT40	–		–	1		



LAD••

Time Delay Auxiliary Contact Blocks

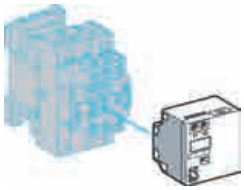
Clip-on mounting	Number of contacts	Time delay Type	Setting sec	Reference
Front	1N/O + 1 N/C	On-delay	0.1…3	LADT0
			0.1…30	LADT2
			10…180	LADT4
		Star-Delta	1…30	LADS2
		Off-delay	0.1…3	LADR0
			0.1…30	LADR2
			10…180	LADR4

LADS2: with switching time of 40 ms ± 15 ms between opening of the N/C contact and closing of the N/O contact (break before make) suitable for star-delta starters.

Note:
(1) DC low consumption coil.
(2) To mount a LAD8N on a LC1D80 to D95, a set of shims, LA9D511 must be ordered separately, refer to page 3.1.13.
(3) 4 incl. 1 N/O & 1 N/C make before break

Contactors Accessories

TeSys Model D, Timing and Interface Modules
Cabling and Mounting Accessories


LAD6K10

Mechanical Latch Blocks (2)

Clip-on mounting	Unlatching control	For use on contactor	Reference (1)
Front	Manual or electric	LC1-D09...D38 LC1-DT20...DT40 LC1-D40A...D65A LC1-DT60A...80A LC1-D40...D65 (3P & 4P) LP1-D40...D65 (4P)	LAD6K10•
		LC1-D80...D115 (3P & 4P) LP1-D80 (4P)	LA6DK20•

AC 50/60 Hz, DC Volts	24	42/48	110/127	220/240	380/415
Coil voltage code	B	E	F	M	Q


LA4DF

Electronic Serial Timer Modules (3)

On-delay type

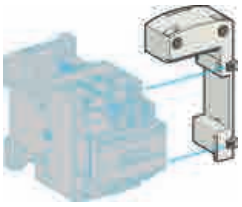
Operating voltage AC 50/60Hz, Volt		Time	Reference
24…250 V	100…250 V		
LC1- D09...D65A (3P) DT20...DT80A (4P)	LC1- D80...D150 (3P)	0.1…2 s	LA4DT0U(4)
		1.5…30 s	LA4DT2U(4)
		25...500 s	LA4DT4U


LAD4BB3

Interface Modules

Relay interface

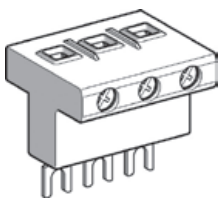
Operating voltage AC 50/60Hz, Volt		Supply voltage E1-E2, DC	Reference
24...250V			
LC1D09…D150 (3P) and DT20...D80A (4P)		24 V	LA4DFB(4)
Solid state interface with manual override switch (output forced “ON”)			
24…250 V	100…250 V	E1-E2 (DC)	
LC1D09…D65A (3P) LC1DT20…DT80A (4P)	LC1D80...D150 (3P)	24 V	LA4DWB(4)


LC1D09...38 + LAD4BB

Cabling and Mounting Accessories

Description			Reference
For adapting existing wiring to a new product	LC1D09...D38 LC1DT20...DT25	Fits contactors without suppressor	LAD4BB
	LC1D40A...65A	Fits contactors without suppressor	LAD4BB3
S-shape busbar (5)	Contactor and circuit breaker mounted side by side (GV3P/GV3L + LC1D40A...65A)		GV3S
Allen key, size 4 insulated 1000V	LC1D40A...D65A LC1DT60A & LC1D80A, GV3P/GV3L		LADALLEN4
Set of 115 A busbars for paralleling of contactors (6)	2 contactors LC1D40A…D65A, pitch 64mm		GV3G264
	3 contactors LC1D40A…D65A, pitch 64mm		GV3G364
Set of 63 A busbars for paralleling of contactors	2 contactors LC1D09…D18 or D25...D38, pitch 54mm		GV2G254
	4 contactors LC1D09…D18 or D25...D38, pitch 54mm		GV2G454
Terminal block for supply to:	One or more GV2G busbar sets		GV1G09
Set of 6 shrouds	LC1D1156 (3P) & LC1D1506 (3P)		LA9D115703
Set of 2 terminals	LC1D115 & D150		LA9D115503
Set of shims	For fitting side mounting blocks LAD8N on LC1D80 and D95		LA9D511

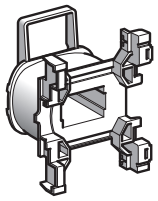

GV3S


GV1G09

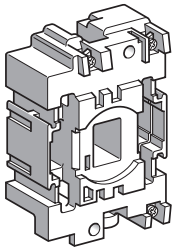
Note:
(1) “•” Complete reference with coil voltage code. Eg: LAD6K10M for 220/240V 50/60Hz.
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the Catalogue.
(2) The mechanical latching block must not be powered up at the same time as the contactor.
The duration of the control signal for the mechanical latching block and the contactor should be:
≥ 100 ms for a contactor operating on an a.c supply,
≥ 250 ms for a contactor operating on a d.c supply.
Maximum impulse duration for the LAD6K10• mechanical latch block: 10 seconds.
(3) For 24 V operation, the contactor must be fitted with a 21 V coil (LXD1Z7).
(4) Requires LAD4BB for connection to 3-pole contactors LC1-D09...D38 or 4-pole contactors LC1-DT20...DT40.
Requires LAD4BB3 for connectrion to 3-pole contactors LC1-D40A...D65A or 4-pole contactors LC1-DT60A...DT80A.
Mounted directly across A1-A2 terminals on 3-pole contactors LC1-D80...D150 or 4-pole contactors LC1D-40....D115
(5) Refer to page 3.1.6
(6) Terminal block for GV3G busbars is not required

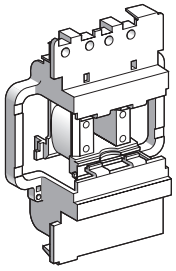
Contactors Accessories and Coils

TeSys Model D 3-Pole & 4-Pole Contactors
Spare Coils AC 50/60Hz
Spare Coils DC


LXD1 coil


LXD3 coil


LX1D6 coil


LX1D8 coil

RC Circuits (resistor capacitor) (1)

• Effective protection for circuits highly sensitive to "high frequency" interference. For use only in cases where the voltage is virtually sinusoidal, i.e. less than 5% total harmonic distortion. • Slight increase in drop-out time (1.2 to 2 times the normal time). • Voltage limited to 3 Uc maximum and oscillating frequency limited to 400 Hz maximum.

Mounting	For use with contactor	Suppressor Type		Reference
		AC	DC	
Clip-on (2)	D09…D38 (3P) and DT20…DT40 (4P)	24…48	-	LAD4RCE
		110…240	-	LAD4RCU
Clip-on front mounting (2)	D40A…D65A (3P) and DT60A…DT80A (4P)	24…48	-	LAD4RC3E
		110…240	-	LAD4RC3U
		380…415	-	LAD4RC3N
Screw fixing (3)	D80...D150 (3P) and D40...D115 (4P)	24...48	-	LA4DA2E
		110...240	-	LA4DA2U
		380...415	-	LA4DA2N

Varistors (1)

• Protection provided by limiting the transient voltage to 2 Uc max. • Slight increase in drop-out time (1.1 to 1.5 times the normal time).
• Maximum reduction of transient voltage peaks.

Mounting	For use with contactor	Suppressor Type		Reference
		AC	DC	
Clip-on (2)	D09…D38 (3P) DT20…DT40 (4P)	24…48	–	LAD4VE
		110…250	–	LAD4VU
Clip-on front mounting (2)	D40A…D65A (3P)	24…48	–	LAD4V3E
	DT60A…DT80A (4P)	110…240	–	LAD4V3U
Screw mounting (3)	D80...D95 (3P) and D80 (4P)	24...48	–	LA4DE2E
		110...250	–	LA4DE2U
		–	24...48	LA4DE3E
		–	110...250	LA4DE3U

Bidirectional Peak Limiting Diode (1)

• Protection provided by limiting the transient voltage to 2 Uc max. • Maximum reduction of transient voltage peaks.

Mounting	For use with contactor	Suppressor Type		Reference
		AC	DC	
Clip-on (2)	D09…D38 (3P) DT20…DT40 (4P)	24	–	LAD4TB
Clip-on front mounting (2)	D40A…D65A (3P) DT60A…DT80A (4P)	24	24	LAD4T3B
Screw mounting (3) (4)	D80...D95 (3P)	24		LA4DB2B
	D40...D80 (4P)		24	LA4DB3B

Spare Coils AC 50/60Hz, Model D 3-Pole & 4-Pole Contactors

To fit contactor	24V	32V	48V	110V	220V	240V	415V	Coil reference (5)
LC1-D09…D38 LC1-DT20…DT40	B7	C7	E7	F7	M7	U7	N7	LXD1••
LC1-D40A…65A LC1-DT60A...80A	B7	C7	E7	F7	M7	U7	N7	LXD3••
Coils fit new LC1D40A...65A EverLink contactors: LC1D40AU7, LC1D50AN7 etc. Average consumption: inrush 10VA, sealed 7.5VA. Operating range: 0.8…1.1Uc								
LC1-D40…D65 LC1-D80…D95	B7	C7	E7	F7	M7	U7	N7	LX1D6••
Coils fit old LC1D40...D65 contactors: LC1D40U7, LC1D50N7 etc. Average consumption: inrush 200VA, sealed 20VA. Operating range: 0.85…1.1Uc								
LC1-D115…D150	B7	C7	E7	F7	M7	U7	N7	LX1D8••
Average consumption: inrush 280…350VA, sealed 2…18VA. Operating range: 0.8…1.15Uc								

Spare Coils DC, Model D 3-Pole & 4-Pole Contactors

To fit contactor	12V	24V	36V	48V	110V	220V	440V	Coil reference (5)
LC1-D80 (3P) LP1-D80 (4P)	JW	BW	CW	EW	FW	MW	RD	LX4D7••
Average consumption: 23W. Operating range: 0.75…1.1Uc								
LC1-D115…D150	-	BD	-	ED	FD	MD	RD	LX4D8••
Consumption: inrush 270…365W, sealed 2.4…5.1W. Operating range: 0.7…1.2Uc								

Note:
(1) From LC1D09 to D65A and from LC1DT20 to DT80A, DC and LC (low consumption) 3-pole contactors are fitted with built-in suppressor (bidirectional peak limiting diode) as standard.
(2) Clipping-on makes the electrical connection. The overall size of the contactor remains unchanged.
(3) Mounting at the top of the contactor on coil terminals A1 and A2.
(4) For uni-directional diode, with no overvoltage or oscillations, 6 to 10 times normal drop out time, polarised, 24...250VDC, use LA4DC3U.
(5) "••" Complete reference with coil voltage code. Eg: LXD1U7 for 240V 50/60Hz coil.
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the Catalogue.

Safety-chain Marking for TeSys D Contactors



LAD9ET1S



LC1D + LAD9ET1S



LC1D + LAD9ET4S

Safety-chain Marking (Red identification cover)

- Easily customise or adapt the safety chain, at any time.
- Quickly locate the safety chain at a glance inside the panel, saving maintenance time.

Description	Reference
Red safety cover for TeSys D contactor (9 A to 65 A)	LAD9ET1S
Red safety cover for TeSys D contactor (80 A to 95 A)	LAD9ET3S
Red safety cover for TeSys D contactor (110A to 150A)	LAD9ET4S
Auxiliary contact block (2NO + 2NC)	LADN22S

Overloads

TeSys Model D, 3-Pole Thermal Overload Relays Adjustable from 0.10 to 140A


LRD02


LRD21


LRD365

Differential Bi Metallic Thermal Overload Relays rated to 690V (1)

• Compensated relays with manual or automatic reset, with relay trip indicator, for AC or DC loads

Class 10A with connection by Screw Clamp Terminals (2)

Relay setting range A	DOL 415V kW (3)	Star Delta 415V kW (3)	For use with contactor LC1	Reference
0.10…0.16	–	–	D09…D38	LRD01
0.16…0.25	–	–	D09…D38	LRD02
0.25…0.40	–	–	D09…D38	LRD03
0.40…0.63	–	–	D09…D38	LRD04
0.63…1	–	–	D09…D38	LRD05
1…1.7	–	–	D09…D38	LRD06
1.6…2.5	0.75	–	D09…D38	LRD07
2.5…4	1.1...1.5	1.5	D09…D38	LRD08
4…6	2.2	2.2...3	D09…D38	LRD10
5.5…8	3	–	D09…D38	LRD12
7…10	4	–	D09…D38	LRD14
9…13	5.5	4...5.5	D12…D38	LRD16
12…18	7.5	7.5	D18…D38	LRD21
16…24	9...11	9...11	D25…D38	LRD22
23…32	15	15	D25…D38	LRD32
30…38	18.5	18.5	D32...D38	LRD35

Class 10A with connection by EverLink®, BTR Screw Terminals (2)

• Direct mounting beneath contactors is possible with LC1D40A••, LC1D50A•• and LC1D65A•• only

9…13	5.5	11	D40A…D65A	LRD313
12…18	7.5	15	D40A…D65A	LRD318
16…25	9...11	18.5	D40A…D65A	LRD325
23…32	15	22	D40A…D65A	LRD332
30…40	18.5	30	D40A…D65A	LRD340
37…50	22	30	D40A…D65A	LRD350
48…65	30	37	D40A…D65A	LRD365

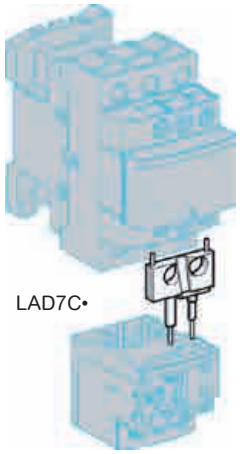
Class 10A with connection by Screw Clamp Terminals (2)

55…70	37	55	D80 and D95	LRD3361
63…80	45	75	D80 and D95	LRD3363
80…104	55	80-90	D80 and D95	LRD3365
80...104	55	90	D115 and D150	LRD4365
95...120	63	80-110	D115 and D150	LRD4367
110...140	80	132	D150	LRD4369

Note:
(1) 1000V ratings available contact Schneider Electric on 1300 369 233.
(2) Standard AS 60947.4.1 specifies a tripping time for 7.2 times the setting current: class 10A: between 2 and 10 seconds. Class 20 (tripping time 6...20s at 7.2 of setting current) for motors with long starting time available on request.
(3) ratings given for Type 2 co-ordination

Overloads

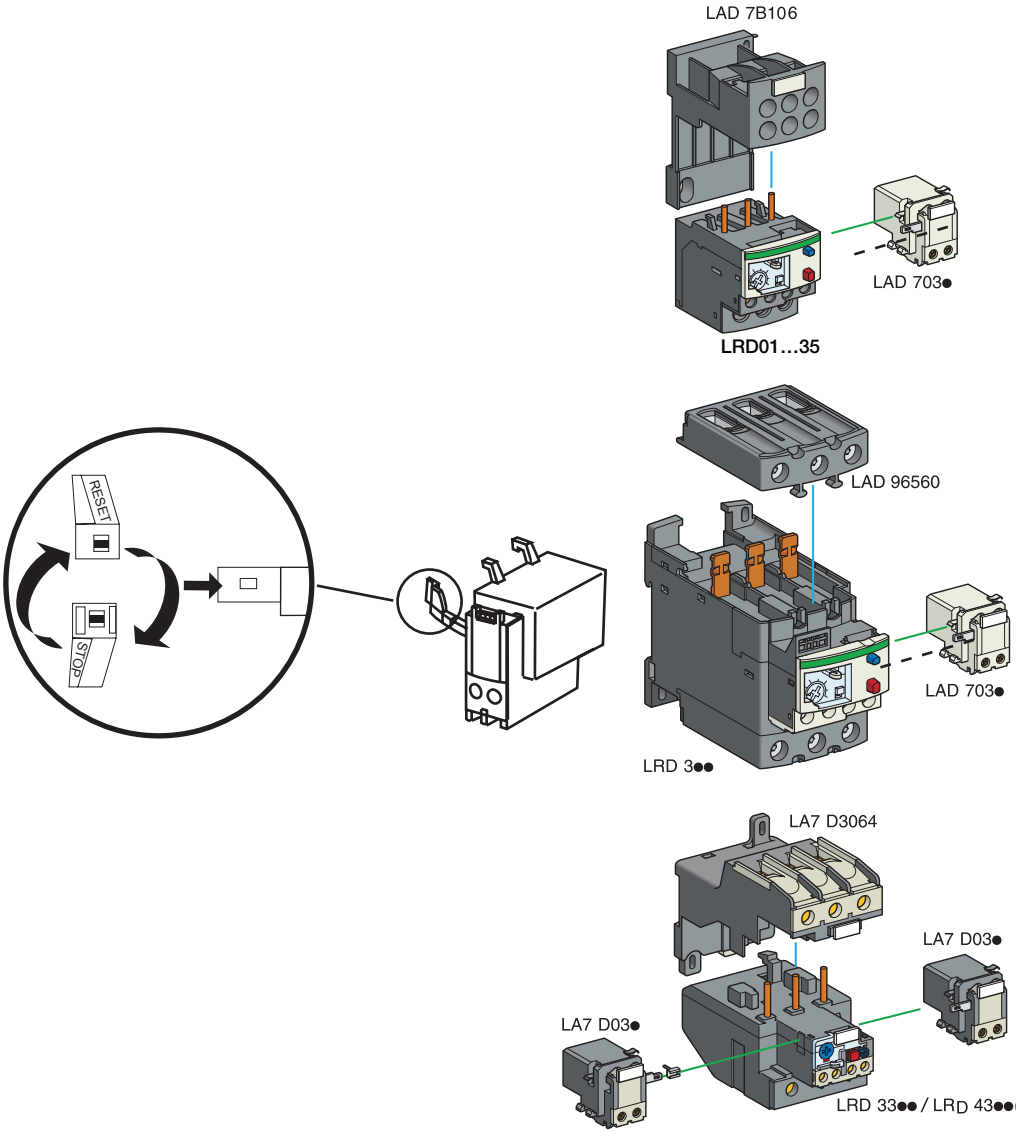
TeSys
Model D, 3-Pole Thermal Overload Relays
Adjustable from 0.10 to 140A



Accessories

Description	For use on	Reference
Pre-wiring kit allowing direct connection of the N/C contactor relay	LC1D09…D18	LAD7C1
LRD01…35 or LR3D01…D35 to the contactor	LC1D25…D38	LAD7C2
Remote stop or electrical reset (1) (2)	LRD01…35 & LRD313...365 EverLink	LAD703•
Remote stop or electrical reset (1) (2)	LRD33•• & LRD43•• & LR9D••	LA7D03•
Separate mount	LRD01…35	LAD7B106
terminal block	LRD33•• & LRD43•• (3)	LA7D3064
Separate mount	LRD313...365	LAD96560
terminal block, EverLink		
Allen key, size 4	LRD313...365	LADALLEN4
insulated 1000V		

Volts, AC and DC	24	48	110	220/240	415/440
Voltage coil	B	E	F	M	N



Note:

(1) The time for which the coil of remote tripping or electrical resetting device LAD703 can remain energised depends on its rest time: 1s pulse duration with 9s rest time; 5s pulse duration with 30s rest time; 10s pulse duration with 90s rest time; maximum pulse duration of 20s with a rest time of 300s. Minimum pulse time: 200 ms.

(2) "•" Complete reference with coil voltage code. Eg: LAD703F for 110V 50/60Hz.
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the Catalogue.

(3) To mount LRD43** on the LA7D3064 remove the plastic adaptor from the thermal overload

Overloads

TeSys
LR9D, Electronic Thermal Overload Relays


LR9D02


LR9D110S


LR9D01 + LAD7B205


LC1D+LR9D


LR9D5369 + shrouds LA9F103


LR9D69 + shrouds LA9F103

Electronic Thermal Overload Relays

- Compensated relays with relay trip indicator, suitable for AC loads.
- For direct mounting on contactor or separate mounting.
- Selectable trip classes 5, 10, 20 and 30 (1).
- 5:1 adjustment range and self-powered.

Relay setting range (A)	Mounting	Reference
0.1...0.5	For use with contactor LC1D09...D38	LR9D01
0.4...2	For use with contactor LC1D09...D38	LR9D02
1.6...8	For use with contactor LC1D09...D38	LR9D08
6.4...32	For use with contactor LC1D09...D38	LR9D32
22...110	Separate mounting only	LR9D110S

Accessories

Description	For use with	Reference
Terminal block (2), for clips on mounting on 35mm rails (AM1DP200) or screw fixing	LR9D01, LR9D02, LR9D08, LR9D32	LAD7B205

Class 10/10A with connection by Lug Terminals (1)

- Compensated relays for use with AC loads

60...100	D115 and D150	LR9D5367
90...150	D115 and D150	LR9D5369

Class 20 with connection by Lug Terminals (1)(4)

- Compensated relays for use with AC loads

60...100	D115 and D150	LR9D5567
90...150	D115 and D150	LR9D5569

Class 10A/20 Selectable Electronic Thermal Overload Relays rated to 690V (3)(4)

- Compensated relays for use with balanced or unbalanced loads with separate outputs for alarm tripping

60…100	D115 & D150	LR9D67
90…160	D115 & D150	LR9D69

Note:
(1) Standard IEC 60947-1 specifies a tripping time for 7.2 times the current setting : Class 5 : between 0.5 and 5 seconds, class 10 : between 4 and 10 seconds, class 10A: between 2 and 10 seconds, class 20 : between 6 and 20 seconds, class 30 : between 9 and 30 seconds.
(2) Terminal blocks are supplied with terminals protected against direct finger contact and screws in the open “ready to tighten” position.
(3) Electronic thermal overload relays for direct mounting beneath contactor LC1 with connectors using bars.
(4) Use shrouds LA9D shown on page 3.1.13 to protect connection thermal overload with contactor.

TeSys
Model F, 3 and 4-Pole Contactors
Selection Guide

Applications

Control of all types of motor for standard or severe duty applications.
Control of resistive, inductive and capacitive circuits: heating, lighting, power factor correction, transformers, normal standby.







Rated operational current Ie max AC-3 (Ue ≤ 440V)	185A	225A	265A	330A	400A	500A	630A	800A
Ie AC-1 (θ ≤ 40°C)	275A	315A	350A	400A	500A	700A	1000A	1000A
Rated operational voltage	1000V							
Number of poles	3 or 4				2, 3 or 4			3
Rated operational power in category AC-3 220/240V	55kW	63kW	75kW	100kW	110kW	147kW	200kW	250kW
380/ 400V	90kW	110kW	132kW	160kW	200kW	250kW	335kW	450kW
415V	100kW	110kW	140kW	180kW	220kW	280kW	375kW	450kW
440V	100kW	110kW	140kW	200kW	250kW	295kW	400kW	450kW
500V	110kW	129kW	160kW	200kW	257kW	355kW	400kW	450kW
660/690V	110kW	129kW	160kW	220kW	280kW	335kW	450kW	475kW
1000V	100kW	100kW	147kW	160kW	185kW	335kW	450kW	450kW
Add-on auxiliary contact blocks	Front mounting, identical to those used on LC1D contactors							
Associated thermal overload relays Manual-automatic	LR9F							
Contactor type references	**LC1F185**	**LC1F225**	**LC1F265**	**LC1F330**	**LC1F400**	**LC1F500**	**LC1F630**	**LC1F800**
Page	3.1.18							

Note:
For applications over 800A AC-3 use Bar contactors LC1B (page 3.1.21).
For applications 1000A AC-3 category use special design LC1F2100 contactor. Please contact Schneider Electric on 1300369233.

Contactors

TeSys
Model F, 3 and 4-Pole Contactors
Magnetically Latched Contactors


LC1F225

3-Pole Contactors rated to 1000V (1) (2) Fitted with coils (3)

AC1 415V A	AC3 415V A	AC3 415V kW	AC3 1000V kW	Auxiliaries N/O	Auxiliaries N/C	Contactor Reference (4)
200	115	59	65	1	-	LC1F115••
250	150	80	65	1	-	LC1F150••
275	185	100	100	1	-	LC1F185••
315	225	110	100	1	-	LC1F225••
350	265	140	147	1	-	LC1F265••
400	330	180	160	1	-	LC1F330••
500	400	220	185	1	-	LC1F400••
700	500	280	335	1	-	LC1F500••
1000	630	375	450	1	-	LC1F630••
1600	780	425	450	-	-	LC1F780••
1000	800	450	450	-	-	LC1F800••


LC1F400

4-Pole Contactors rated to 1000V (1) (2) Fitted with coils (3)

AC1 415V A	AC3 415V A	Main Poles Arrangement N/O	Auxiliaries N/O	Auxiliaries N/C	Contactor Reference (4)
275	185	4	1	-	LC1F1854••
315	225	4	1	-	LC1F2254••
350	265	4	1	-	LC1F2654••
400	330	4	1	-	LC1F3304••
500	400	4	1	-	LC1F4004••
700	500	4	1	-	LC1F5004••
1000	630	4	1	-	LC1F6304••
1600	780	4	-	-	LC1F7804••


LC1F3304

LC1F Coil Voltages (4)

AC supply, Volts	24	48	110	220	240	415
LC1F115…F330; 40…400Hz	B7	E7	F7	M7	U7	N7
LC1F400...780; 40…400Hz		E7 (7)	F7	M7	U7	N7
LC1F800; 40…400Hz			FW (6)	MW (6)	MW (6)	QW (6)

DC supply, volts	24	48	110	220	440
LC1F115…F330	BD	ED	FD	MD	RD
LC1F400…780		ED (7)	FD	MD	RD
LC1F800			FW	MW	

3-Pole Magnetically Latched Contactors (1)(5) Fitted with coils

AC1 A	AC3 415V A	AC3 415V kW	AC3 1000V kW	Contactor Reference (4)
250	150	80	65	CR1F150••
275	185	100	100	CR1F185••
350	265	140	147	CR1F265••
500	400	220	185	CR1F400••
700	500	257	355	CR1F500••
1000	630	375	450	CR1F630••

CR1F Coil Voltages (4)

Volts	48	110	220 / 230	240	415
AC supply, 50/60 Hz	E7	F7	M7	U7	N7
AC supply, 50...400Hz	E7	F7	M7	-	-
DC supply	E7	F7	M7	-	-

Note:
(1) F Model add-on auxiliary contact blocks common to D-range, page 3.1.19. Protective shrouds LA9F70• shown on page 3.1.20 available for F model contactors except LC1F780.
(2) Ratings shown are for -5°C to +55°C operation in AC-3 (-5°C to 40°C in AC-1).
(3) Contactors without coils also available. Use generic part number to order a contactor without coil: LC1F115, LC1F1854 etc. Spare coils shown on page 3.1.21.
(4) "••" Complete reference with coil voltage code. Eg: LC1F330U7 for 240V AC.
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the Catalogue.
Contact Schneider Electric on 1300 369 233 for non standard coil voltages.
(5) Latching Pulse 240VAC, Unlatching Pulse 240VAC.
(6) Rectifier is required for LC1F800 fitted with AC coils: DR5TE4U (110VAC-240VAC), DR5TE4S (415VAC)
(7) E7 & ED is not available for LC1F780

Contactors Accessories and Coils

TeSys Model F
Mechanical Interlocks & Spare Coils
Auxiliary Contact Blocks



LADN

Auxiliary Contact Blocks for 3-Pole & 4-Pole Contactors LC1-F and CR1-F

Description	N/O	N/C	Reference
Standard contacts front mount	1	-	LADN10(4)
	-	1	LADN01(4)
	1	1	LADN11
	2	-	LADN20
	1	3	LADN13
	2	2	LADN22
	3	1	LADN31
	4	-	LADN40
	-	4	LADN04
	2	2	LADC22(1)



LA9F•970
Horizontal Interlock

Supressor Blocks for 3-Pole & 4-Pole Contactors LC1-F and CR1-F

Type	Coil Voltage	Reference
RC	127…240V AC	LA4FRCP
Varistor	127…240V AC/DC	LA4FVP
Diod	24…48V DC	LA4FDE
Bidirectional peak limiting diod	127…240V AC/DC	LA4FTP

Other voltages available for each type of suppressor, contact Schneider Electric



LA9FF4F
Vertical Interlock

Mechanical Interlocks for 3-Pole & 4-Pole Contactors LC1-F and CR1-F

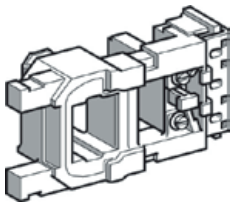
To fit contactor	Poles	Mounting	Reference
LC1F115/150	3 or 4	Horizontal	LA9FF970
CR1F150		Vertical	LA9FF4F
LC1F185/F225	3 or 4	Horizontal	LA9FG970
CR1F185		Vertical	LA9FG4G
LC1F265/F330	3 or 4	Horizontal	LA9FJ970
CR1F265		Vertical	LA9FH4H
LC1F400	3 or 4	Horizontal	LA9FJ970
CR1F400		Vertical	LA9FJ4J
LC1F500	3 or 4	Horizontal	LA9FJ970
CR1F500		Vertical	LA9FK4K
LC1F630/F800	3 or 4	Horizontal	LA9FL970
CR1F630		Vertical	LA9FL4L
LC1F780	3	Vertical	LA9FX970(2)
	4	Vertical	LA9FX971(3)

Spare Coils AC for 3-Pole & 4-Pole Contactors LC1-F

To fit contactors	24V	48V	110V	220V	240V	415V	Reference (5)
LC1F115/150	-	F048	F110	F220	F240	F415	LX9F••••
LC1F185/225	-	G048	G110	G220	G240	G415	LX9F••••
LC1F265/330	H0242	H0482	H1102	H2202	H2402	H3802	LX1F••••
LC1F400		J048	J110	J220	J240	J415	LX1F••••
LC1F500		K048	K110	K220	K240	K415	LX1F••••
LC1F630		L048	L110	L220	L220	L415	LX1F••••
LC1F780			X110	X220	X220	X415	LX1F••••
LC1F800			8FWA	8MWA	8MWA	8QWA	LX4F••••(6)

Spare Coils DC for 3-Pole & 4-Pole Contactors LC1-F

To fit contactors	24V	48V	110V	220V	440V	Reference (5)
LC1F115/150	F024	F048	F110	F220	F415	LX4F••••
LC1F185/225	G024	G048	G110	G220	G440	LX4F••••
LC1F265/330	H024	H048	H110	H220	H440	LX4F••••
LC1F400		J048	J110	J220	J440	LX4F••••
LC1F500		K048	K110	K220	K440	LX4F••••
LC1F630		L048	L110	L220	L440	LX4F••••
LC1F780			X110	X220	X440	LX4F••••
LC1F800			8FW	8MW	8QW	LX4F••••



LX1FF•••

Note:
(1) Make before break (1 set).
(2) Double mechanical interlock mechanism and 3 power connecting links.
(3) Double mechanical interlock mechanism and 4 power connecting links.
(4) Left hand side front mount.
(5) "••••" Complete reference with coil voltage code. Eg: LX1FG240 for 240V AC coil.
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the Catalogue.
(6) The LX4F8*WA coil includes a rectifier DR5

Overloads

TeSys Model F
Class 10 Overloads


LR9F7379

Class 10 Electronic Thermal Overload Relays for AC loads (1)
Direct Connection to Contactors or Independent Mounting

Current Setting Range	DOL kW (415V)	Star Delta kW (415V)	For direct (2) connect to LC1F	Reference
30 - 50	22	33 - 45	F115 to F185	LR9F5357
48 - 80	45	51 - 75	F115 to F185	LR9F5363
60 - 100	55	59 - 90	F115 to F185	LR9F5367
90 - 150	75	90 - 140	F115 to F185	LR9F5369
132 - 220	110	129 - 200	F225 to F400	LR9F5371
200 - 330	185	220 - 335	F225 to F500	LR9F7375
300 - 500	295	315 - 500	F330 to F500	LR9F7379
380 - 630	375	425 - 670	F400 to F800	LR9F7381

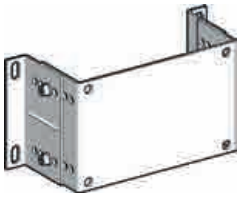

LR9F5369

Reset Accessories

Description						Reference (3)
Electrical reset/trip						LA7D03•
Volts DC	24	48	110	220	230	
Volts AC 50Hz	24	48	110	240		415
Code	B	E	F	M	M	N

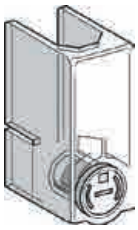
Mounting Accessories

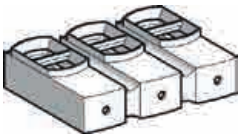
	To fit overload	Reference
LR9-Range supporting bracket	LR9F53	LA7F901
	LR9F73	LA7F902


LA7F90•

Terminal Protection Shroud and Terminal Blocks

To fit thermal overload	To fit contactor	Number of shrouds per set	Reference
LR9F5357	LC1F115	6	LA9F701
LR9F5363, LR9F5367, LR9F5369	LC1F150 & F185	6	LA9F702
LR9F7375, LR9F7379, LR9F7381	LC1F225….F500	6	LA9F703
LR9F7381	LC1F630 & F800	6	LA9F704
LR9F5371			LA9F705
	LC1F1154	8	LA9F706
	LC1F1504 & F1854	8	LA9F707
	LC1F2254…F5004	8	LA9F708
	LC1F6304	8	LA9F709
LR9F5357, LR9F5363, LR9F5367, LR9F5369	LC1F115...F185	Set of 2 terminal blocks	LA9F103


LA9F70•


LA9F103

Connection Accessories (for mounting overload relays beneath reversing and star-delta contactors)

Thermal overload	For contactor	Reference set of 3 blocks
LR9F5357, F5363, F5367, F5369	LC1F115	LA7F401
LR9F5357, F5363, F5367, F5369	LC1F150 to F185	LA7F402
LR9F5371	LC1F225 to F265	LA7F403
LR9F7375, F7379	LC1F330 to F400	LA7F404
LR9F7381	LC1F400	LA7F404
LR9F7375, F7379, F7381	LC1F500	LA7F405
LR9F7381	LC1F630	LA7F406

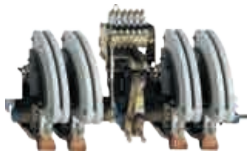
Note:
(1) These overload relays operate via internal transformers for 1000VAC max. WARNING: not suitable for DC operation.
(2) Connection links sold separately LA7F•40. Refer to accessories.
(3) "•" Complete reference with coil voltage code. Eg: LA7D03M for 240V 50Hz.
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the Catalogue.

Contactors

TeSys
Bar Contactors 1, 2, 3 and 4-Pole
Spare Parts and Accessories


LC1BM31


LC1BM32


LC1BL34

Bar Contactors rated to 1000V Fitted with coils

Main poles	Rated Operational current Ie		Standard power ratings 50/60Hz in category AC3			Reference (1)
	AC-1	AC-3 at 415V	415V	690V	1000V	
	A	A	kW	kW	kW	
1	800	-	-	-	-	LC1BL31•••(2)
2	800	-	-	-	-	LC1BL32•••(2)
3	800	750	425	560	530	LC1BL33•••(2)
4	800	-	-	-	-	LC1BL34•••(2)
1	1250	-	-	-	-	LC1BM31•••(2)
2	1250	-	-	-	-	LC1BM32•••(2)
3	1250	1000	530	670	530	LC1BM33•••(2)
4	1250	-	-	-	-	LC1BM34•••(2)
1	2000	-	-	-	-	LC1BP31•••(2)
2	2000	-	-	-	-	LC1BP32•••(2)
3	2000	1500	800	750	670	LC1BP33•••(2)
4	2000	-	-	-	-	LC1BP34•••(2)
1	2750	-	-	-	-	LC1BR31•••(2)
2	2750	-	-	-	-	LC1BR32•••(2)
3	2750	1800	900	900	750	LC1BR33•••(2)
4	2750	-	-	-	-	LC1BR34•••(2)

Accessories for Bar Contactors LC1-B

Description	Reference
Mechanical interlock between two vertically mounted contactors	EZ2LB0601
Mounting accessories with bar support, 36mm (fixing centres 120 or 150mm)	LA9B103

Spare parts for Bar Contactors LC1-B

Description	Reference
Instantaneous N/O auxilary contact	ZC4GM1
Instantaneous N/C auxilary contact	ZC4GM2
Contact set (moving contact + fixed contact) (3)	PA1LB80
Moving contact	PA1LB75
Fixed contact	PA1LB75
Spare coils (4)	

Note:
(1) Complete reference with coil code and instantaneous auxilary contacts configuration prefix (add to the end):
Example: LC1BM33U31 - contactor with 3 main poles, fitted with 240V AC coil, 3N/O and 1N/C auxiliaries

AC supply, 50/60Hz, Volts (5)	110	240	415
Coil code	F	U	N

(2) Auxiliaries configuration (last 2 characters of the Reference code)	N/O	N/C
22	2	2
31	3	1
13	1	3
40	4	-

(3) 1 set per pole for LC1-BL and LC1-BM; 2 sets per pole for LC1-BP; 3 sets per pole for LC1-BR
(4) Contact Schneider Electric
(5) Other voltages available, contact Schneider Electric on 1300 369 233.

Contactors

TeSys
3-Pole Vacuum Contactors
AC Supply and Control Circuits
Capacitor Switching Contactors

Vacuum Contactors rated to 1500V Fitted with Coils

Standard power ratings 50/60Hz in category AC3				Rated operational current Ie		Instantaneous auxiliary contacts		Reference (1)
240V kW	415V kW	690V kW	1000V kW	AC3 A	AC1 A			
45	75	150	200	160	160	2	1	LC1V160••
90	160	280	400	320	320	1	1	LC1V320••
160	300	560	800	610	630	1	1	LC1V610••

Coil voltage, 50/60 Hz	110…120	220…240	380…415	440…480	550…600
Code	FE7	P7	V7	R7	X7

Spare Coils

To fit contactors	110…120V	220…240V	380…415V	440…480V	550…600V	Coil reference (1)
LC1V160	FE7	P7	V7	R7	X7	LX1V160**
LC1V320	FE7	P7	V7	R7	X7	LX1V320**
LC1V610	FE7	P7	V7	R7	X7	LX1V610**

Instantaneous Auxiliary Contact Blocks (2)

Number of contacts	Maximum number of blocks	Auxiliary contacts per contactor		Reference
2	4	1	1	LA1VN11
		–	2	LA1VN02
		2	–	LA1VN20
		1	1	LA1VN11X(3)

Accessories For assembling reversing contactors

Description	For use on	Reference
Kit comprising:	LC1V160	LA9V974
- 1 mechanical interlock.	LC1V320	LA9V975
- 1 set of power connections.	LC1V610	LA9V976



LC1DPK

Capacitor Switching Contactors

Operational power at Θ ≤ 55 °C kVAR			Instantaneous auxiliary contacts		Reference (1)
240V	415V	690V	N/O	N/C	
10	20	30	1	2	LC1DLK••
15	25	36	1	2	LC1DMK••
20	33.3	48	1	2	LC1DPK••
25	40	58	1	2	LC1DTK••
40	60	92	1	2	LC1DWK12••

Volts	220	240	415
50/60 Hz	M7	U7	N7

Note:
(1) "••" Complete reference with coil voltage code. Eg: LC1V160V7 for 380/415V 50/60 Hz.
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the Catalogue.
(2) LC1V160 : auxiliary contact blocks mounted at the top of the contactor, with no change to the overall dimensions.
LC1V320 or LC1V610 : 2 auxiliary contact blocks mounted on the RH and LH side of the contactor, with no change to the overall dimensions.
(3) For LC1V160: 1 N/C contact for the coil + 1 N/O contact.

Motor Circuit Breakers

TeSys
Thermal Magnetic Circuit Breakers
Selection Guide

Applications — Motor Protection



Tripping threshold on short circuit		13 In on average					20 In on average
Standard motor power (ratings in)	AC3, 415V	Up to 15kW	Up to 15kW	Up to 30kW	7.5... 110kW		Up to 11kW
	AC3, 690V	Up to 22kW	Up to 22kW	Up to 55kW	11... 200kW		Up to 18.5kW
Operational current at 415V		0.1... 32A		9...65A	12... 220A		0.25... 23A
Breaking capacity at 415V (Icu) to IEC 60947-2		10...100kA	35...100kA		35kA	70kA	15... 100kA
Door interlock mechanism		Without	With				
Device type references		**GV2ME**	**GV2P**	**GV3P***	**GV7RE**	**GV7RS**	GV2RT
Page		3.1.25	3.1.25	3.1.32	3.1.35	3.1.35	3.1.25

* GV3ME80 local control with push buttons for 37KW in AC-3, 415V. Please refer to page 3.1.34

Motor Circuit Breakers

TeSys
Magnetic Motor Circuit Breakers
Selection Guide

Applications — Motor Protection







EverLink®
Long lasting connection quality

Tripping threshold on short circuit		13 In on average		
Standard motor power (ratings in)	AC3, 415V	Up to 15kW		Up to 30kW
	AC3, 690V	Up to 22kW		Up to 55kW
Operational current at 415V		0.4... 32A		25... 65A
Breaking capacity at 415V (Icu) to IEC 60947-2		10...100kA	35...100kA	50...100kA
Door interlock mechanism		With		
Device type references		**GV2LE**	**GV2L**	**GV3L**
Page		3.1.26	3.1.26	3.1.32

Motor Circuit Breakers

TeSys
GV2ME, GV2P, GV2RT
Thermal Magnetic Motor Circuit Breakers

GV2ME Thermal Magnetic Current Breaker rated to 690V (1)



GV2ME

- Local control with stop start rocker levers
- Short circuit and thermal overload protection

KW 415V	Current Setting range - A	Breaking capacity Icu	Reference
–	0.1-0.16	100kA	GV2ME01
–	0.16-0.25	100kA	GV2ME02
–	0.25-0.4	100kA	GV2ME03
–	0.40-.63	100kA	GV2ME04
0.37	0.63-1.0	100kA	GV2ME05
0.55	1.0-1.6	100kA	GV2ME06
0.75	1.6-2.5	100kA	GV2ME07
1.1	2.5-4.0	100kA	GV2ME08
2.2	4.0-6.3	100kA	GV2ME10
4	6-10	100kA	GV2ME14
5.5	9-14	15kA	GV2ME16
7.5	13-18	15kA	GV2ME20
9	17-23	15kA	GV2ME21
11	20-25	15kA	GV2ME22
15	24-32	10kA	GV2ME32

GV2P Thermal Magnetic Current Breaker rated to 690V (1)



GV2P

- Local control with rotary switch
- Short circuit and thermal overload protection
- Visible fault indication and differentiation of thermal or short circuit trip
- Suitable for using with extendable handle

KW 415V	Current Setting range - A	Breaking capacity Icu	Reference
–	0.1-0.16	100kA	GV2P01
–	0.16-0.25	100kA	GV2P02
–	0.25-0.4	100kA	GV2P03
–	0.4-0.63	100kA	GV2P04
0.37	0.63-1.0	100kA	GV2P05
0.55	1.0-1.6	100kA	GV2P06
0.75	1.6-2.5	100kA	GV2P07
1.1	2.5-4.0	100kA	GV2P08
2.2	4.0-6.3	100kA	GV2P10
4	6-10	100kA	GV2P14
5.5	9-14	100kA	GV2P16
7.5	13-18	50kA	GV2P20
9	17-23	50kA	GV2P21
11	20-25	50kA	GV2P22
15	24-32	35kA	GV2P32

GV2RT Thermal Magnetic Current Breaker rated to 690V (1)



GV2RT

- For motors with high current peak on starting
- For primaries of 3-phase transformers
- Local control by toggle switch
- Short circuit and thermal overload protection

KW 415V	kVA 415V	Current setting range - A	Breaking capacity Icu	Reference
–	–	0.25-0.4	100kA	GV2RT03
–	–	0.4-0.63	100kA	GV2RT04
0.37	–	0.63-1	100kA	GV2RT05
0.55	0.63	1-1.6	100kA	GV2RT06
0.75	1	1.6-2.5	100kA	GV2RT07
1.5	2	2.5-4	100kA	GV2RT08
2.2	2.5	4-6.3	100kA	GV2RT10
4	5	6-10	100kA	GV2RT14
5.5	6.3	9-14	15kA	GV2RT16
7.5	10	13-19	15kA	GV2RT20
11	–	17-23	15kA	GV2RT21

For more info:
Catalogue: MKTED210011EN
→ Accessories: Pages 3.1.29-32
→ Wiring: Page 3.1.80
Dimensions: Pages 3.1.79-80

Motor Circuit Breakers

TeSys
GV2LE, GV2L
Magnetic Motor Circuit Breakers


GV2LE

GV2LE Magnetic Current Breaker rated to 690V (1)

- Local control with toggle switch
- Short circuit protection

KW 415V	Current setting of associated thermal overload relay (A)	Tripping Current A id +/- 20%	Breaking capacity Icu	Reference
–	0.4	5	100kA	GV2LE03
–	0.63	8	100kA	GV2LE04
0.37	1	13	100kA	GV2LE05
0.55	1.6	22.5	100kA	GV2LE06
0.75	2.5	33.5	100kA	GV2LE07
1.1	4	51	100kA	GV2LE08
2.2	6.3	78	100kA	GV2LE10
4	10	138	100kA	GV2LE14
5.5	14	170	15kA	GV2LE16
7.5	18	223	15kA	GV2LE20
11	25	327	15kA	GV2LE22
15	32	461	10kA	GV2LE32


GV2L

GV2L Magnetic Current Breaker rated to 690V (1)

- Local control with rotary switch
- Short circuit protection
- Visible indication of short circuit trip

KW 415V	Current setting of associated thermal overload relay (A)	Tripping Current A id +/- 20%	Breaking capacity Icu	Reference
–	0.4	5	100kA	GV2L03
–	0.63	8	100kA	GV2L04
0.37	1	13	100kA	GV2L05
0.55	1.6	22.5	100kA	GV2L06
0.75	2.5	33.5	100kA	GV2L07
1.1	4	51	100kA	GV2L08
2.2	6.3	78	100kA	GV2L10
4	10	138	100kA	GV2L14
5.5	14	170	50kA	GV2L16
7.5	18	223	50kA	GV2L20
11	25	327	50kA	GV2L22
15	32	461	35kA	GV2L32



GB2CD

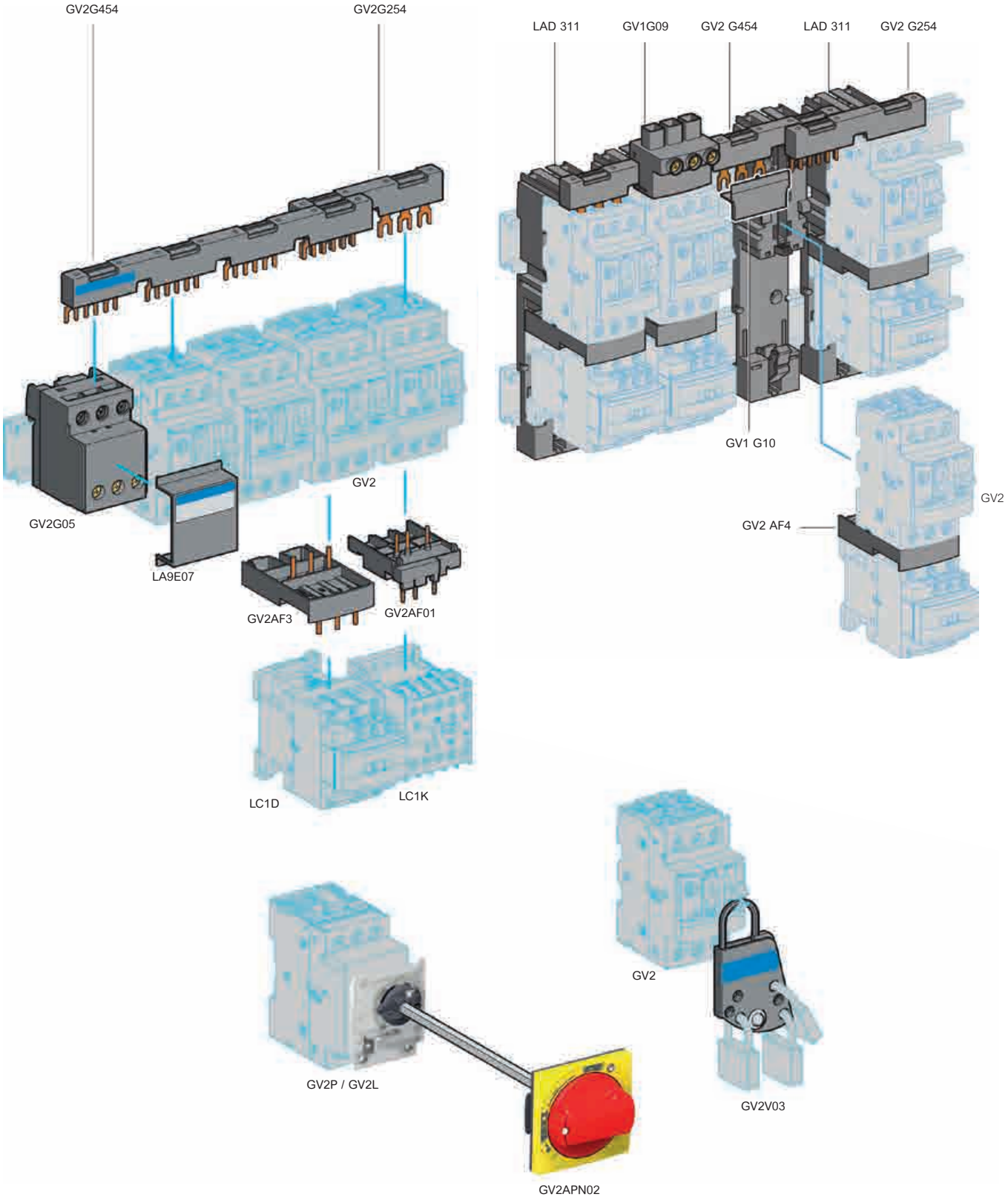
GB2 Thermal Magnetic Current Breaker - single pole + neutral

- Protection and isolation of industrial control circuits (contactor coils, transformers, solenoids etc)
- 35mm din-rail mounting

Conventional rated thermal current (Ith)	Magnetic tripping current (Id +/- 20%)	Breaking capacity (Icu@240V AC)	Reference
0.5	6.6	50kA	GB2CD05
1	14	50kA	GB2CD06
2	26	15kA	GB2CD07
3	40	3kA	GB2CD08
4	52	3kA	GB2CD09
5	66	2kA	GB2CD10
6	83	1.5kA	GB2CD12
8	108	1.5kA	GB2CD14
10	138	1.5kA	GB2CD16
12	165	1.5kA	GB2CD20
16	220	1.5kA	GB2CD21
20	270	1.5kA	GB2CD22

Note:
(1) For 690V ratings contact Schneider Electric on 1300 369 233

TeSys
GV2
Connector Systems



TeSys
GV2
Accessories

Accessories



Using GV2AF3
+ DC contactor

Description	Application	Reference
Adaptor plate	For mounting a GV2ME and contactor LC1D09 to D38	LAD311
Height compensation plate (1)	7.5mm	GV1F03
Combination block for electrical & mechanical connection	Between GV2 and contactor LC1K or LP1K	GV2AF01
	Between GV2 and contactor LC1D09...D38	GV2AF3
	Between GV2 mounted on LAD311 and contactor LC1D09...D38	GV2AF4
Sets of 3-pole 63A busbars	2 tap-offs 45mm pitch	GV2G245
	2 tap-offs 54mm pitch	GV2G254
	4 tap-offs 45mm pitch	GV2G445
	4 tap-offs 54mm pitch	GV2G454
Clip-in marker holders (Spare clip-in marker holders (pack of 100))	For GV2 circuit breakers (8 x 22 mm)	LA9D92
Cover for terminal block	For mounting in modular panels	LA9E07
Flexible 3-pole connection for connecting a GV2 to an LC1D09...D25 contactor	Centre distance between mounting rails: 100...120 mm	GV1G02
Protective end cover	For unused busbar outlets	GV1G10
Terminal blocks for supply to one or more GV2G busbar sets	Connection from the top	GV1G09
	Can be fitted with current limited GV1L3 (GV2ME and GV2P)	GV2G05

3.1

Padlockable External Operators for GV2P and GV2L



GV2G25363

Description		Reference
Kit comprising of handle + mounting system + shaft	Black handle, front plate, with trip status, IP54	GV2APN01
	Red handle, front plate, with trip status, IP54	GV2APN02
Padlocking device	For up to 4 padlocks, dia 6mm max	GV2V03
Spare handle	Black, IP54	GVAPB54
Spare handle	Red, IP54	GVAPR54
Spare handle	Red, IP65	GVAPR65
Spare shaft	L=315mm	GVAPA1
Spare bracket		GVAPH02
Shaft support	for deep enclosure	GVAPK11
Retrofit accessory		GVAPP1

Chassis for GV2ME/LE (3 Phase – 25kA 0.1 sec) (2)

No of circuit breakers	Length (3) (mm)	Rating	Reference
4	110	250A	GV2G25123
6	164	250A	GV2G25183
8	218	250A	GV2G25243
10	272	250A	GV2G25303
12	326	250A	GV2G25363
16	434	250A	GV2G25483
20	542	250A	GV2G25603



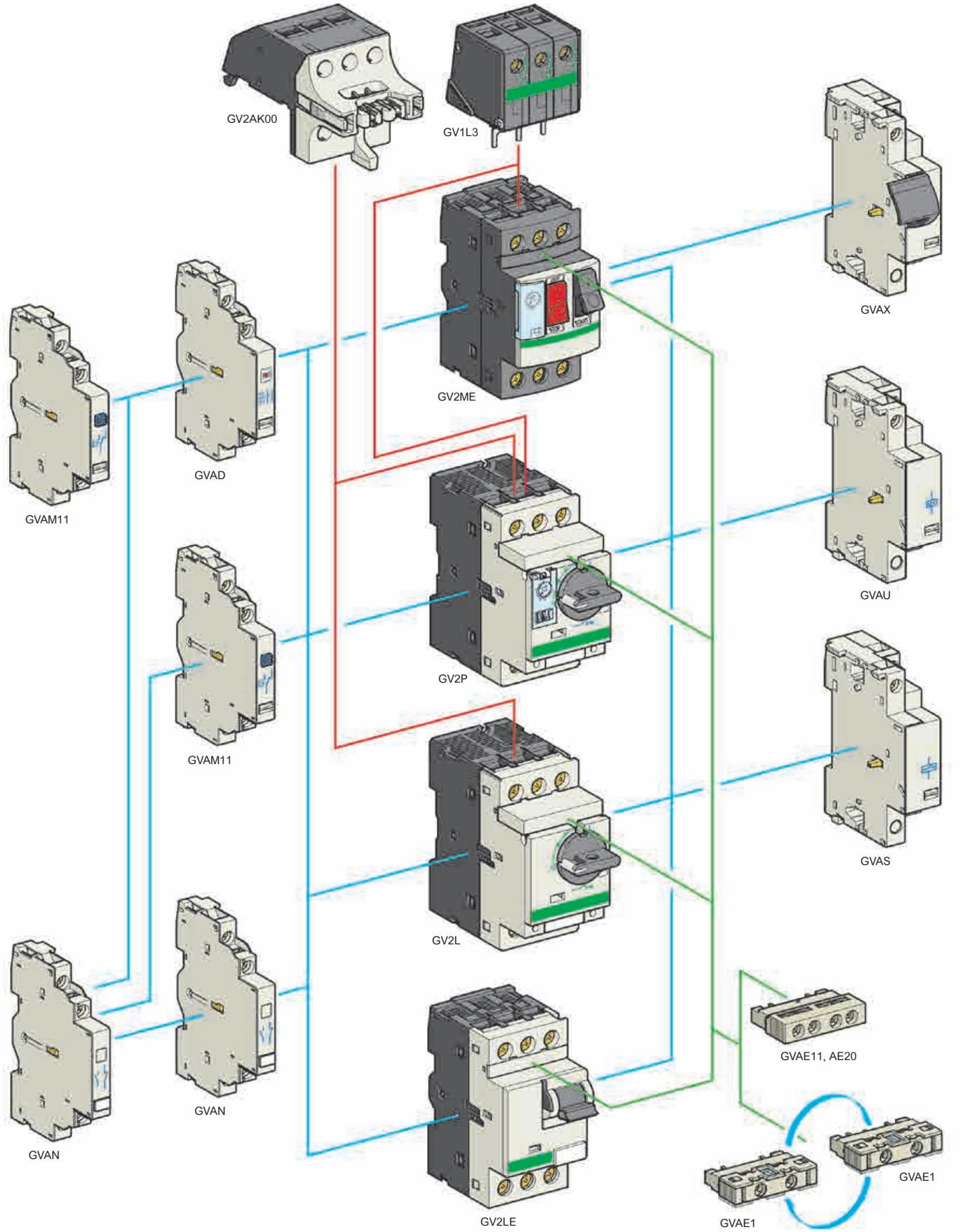
INT_CHGV2/14

Chassis for GV2P/L (3 Phase – 50kA 0.1 sec)

No of circuit breakers	Length (3) (mm)	Rating	Reference
14	542	630A	INT_CHGV2/14
26	998	630A	INT_CHGV2/26

Note:
(1) When using - GV2P + GV2AF3 + LC1D..BD/BL, a GV1F03 height compensation plate is required.
(2) Suitable for direct connection to:
NSX250 circuit breaker
INS 250 Interpact Isolator (Load-break)
INS 250/160 Amp Interpact Isolator (Load-break).
(3) Busbar connections extend top and bottom by 108mm. Width = 214mm.

TeSys
GV2
Accessories



TeSys
GV2
Accessories



GVAD0110

Contact Blocks

Description	Mounting	Maximum number	Type of contacts	Reference
Instantaneous auxiliary contacts	Front (1)	1	N/O or N/C (2)	GVAE1
			N/O + N/C	GVAE11
			N/O + N/O	GVAE20
	Side (LH)	2	N/O + N/C	GVAN11
			N/O + N/O	GVAN20
Fault signalling contact + instantaneous auxiliary contact	Side (3) (LH)	1	N/O (fault) + N/O	GVAD1010
			N/C (fault) + N/O	GVAD0110
Short-circuit signalling contact	Side (LH)	1	C/O common point	GVAM11

Electric Trips

Mounting Undervoltage or shunt trips (4)	Voltage		Reference
Side (1 block on RH side of circuit-breaker)	24V	50Hz	GVA•025
	48V	50Hz	GVA•055
	110…115V	50Hz	GVA•115
	220V…240V	50Hz	GVA•225
	415V…440V	50Hz	GVA•415

Add on Blocks

Description	Mounting	Maximum number per circuit breaker	Reference
Visible isolation block (5)	Top / Front (1) GV2P•• and GV2L••	1	GV2AK00
Current limiter	Top GV2ME•• and GV2P••	1	GV1L3

Note:
(1) Mounting of a GVAE contact block or a GV2AK00 visible isolation block on GV2P and GV2L.
(2) Choice of N/C or N/O contact operation, depending on which way round the reversible block is mounted.
(3) The GVAD is always mounted next to the circuit breaker.
(4) To order an undervoltage trip: replace the dot (•) in the reference with a U, example: GVAU025. To order a shunt trip: replace the dot (•) in the reference with an S, example: GVAS025.
(5) Visible isolation of the 3 poles upstream of circuit breaker GV2P and GV2L.

Motor Circuit Breakers

TeSys
GV2ME
Enclosures & Accessories

Enclosures for Thermal Magnetic Motor Circuit Breakers GV2ME

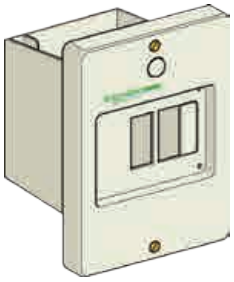
Description	Degree of protection	Possible attachments on side of GV2ME		Reference
		Left	Right	
Surface mounting Double insulated with protective sealable cover	IP 55	1	1	GV2MC02
Surface mounting Double insulated with protective sealable cover fitted with GV2K04 as standard	IP55	1	1	GV2MCK04
Flush mounting with protective cover	IP 55	1	1	GV2MP02



GV2MC02



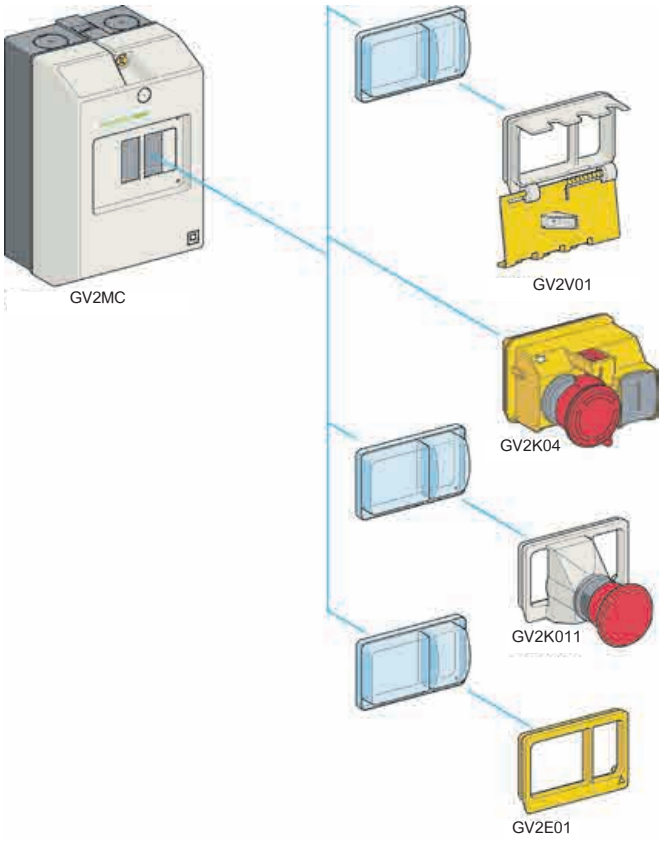
GV2MCK04



GV2MP02

Accessories

Description	Application	Reference
Padlocking device (1) for GV2ME operator (padlocking is only possible in "O" position)	1 to 3 padlocks Ø 4 to 8 mm	GV2V01
Mushroom head "Stop" pushbutton Ø 40 mm, red	Spring return (1)	GV2K011
	Turn to release	GV2K031
	Turn to release	GV2K04(2)
Sealing kit For enclosures and front plate	IP 55	GV2E01



Note:
(1) Supplied with IP 55 sealing kit. For use with GV2M•01.
(2) Padlockable in "Off" position using Ø 4 to 8 mm shank padlocks.

Motor Circuit Breakers

TeSys
GV3 with Everlink® Terminals
Motor Circuit Breakers



GV3P65

GV3 Thermal Magnetic Current Breaker Rated to 690V

- Everlink terminals for long lasting connections (hexagon socket head requires the use an Allen key)
- Local control with rotary switch
- Short circuit and thermal overload protection

kW 415V	Thermal current setting range A	Magnetic tripping current id +/-20%	Breaking capacity Icu kA	Reference
5.5	9-13	182	100	GV3P13
7.5	12-18	252	100	GV3P18
11	17-25	350	100	GV3P25
15	23-32	448	100	GV3P32
18.5	30-40	560	50	GV3P40
22	37-50	700	50	GV3P50
30	48-65	910	50	GV3P65
37	56-80	-	15	GV3ME80(1)

GV3 Magnetic Current Breaker Rated to 690V

- Everlink terminals for long lasting connections (hexagon socket head requires the use an Allen key)
- Local control with rotary switch
- Short circuit protection

kW 415	Magnetic protection rating A	Magnetic tripping current id +/-20% A	Breaking capacity Icu kA	Reference
11	25	350	100	GV3L25
15	32	448	100	GV3L32
18.5	40	560	50	GV3L40
22	50	700	50	GV3L50
30	65	910	50	GV3L65

Note:
(1) Local control with pushbuttons, screw clamp terminals

EverLink®
Long lasting connection quality

A strong, safe and long lasting power connection

EverLink®, the new patented terminal technology, assures a permanent quality tightening of the cable conductors. Even in the event of conductor creep, the connection force on the cables is assuered due to the spring effect of the power connectors.

Advantages include:

- reduced maintenance time, due to terminal re-tightening being no longer required
- safety of the connections, provided by the BTR screw and the 4mm Allen key, which enables a high tightening torque
- operator safety due to IP20 protection against direct contact

Another Schneider Electric Innovation



Possible to connect 2 cables of difference cross sectional areas.



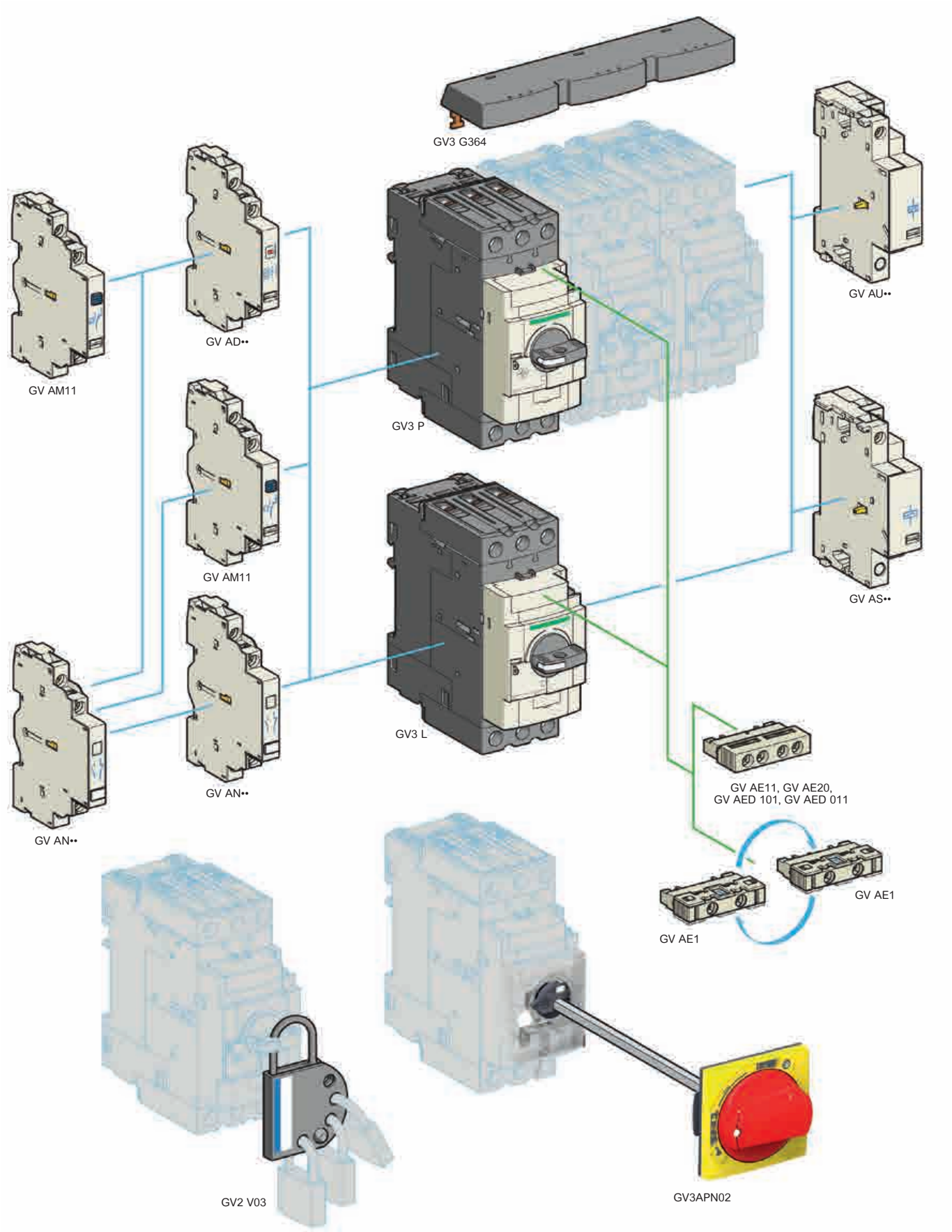
Maintaining of cables assured by pressure of spring and crimping of conductor on the contact plate.



The spring compensates for cable conductor creep. Tightening force is assured.

Motor Circuit Breakers

TeSys
GV3 with Everlink® Terminals
Motor Circuit Breakers



Motor Circuit Breakers

TeSys
GV3 with Everlink® Terminals
Motor Circuit Breakers



GVAD0110

Contact Blocks

Description	Mounting	Maximum number	Type of contacts	Reference
Instantaneous auxiliary contacts	Front	1	N/O or N/C (1)	GVAE1
			N/O + N/C	GVAE11
			N/O + N/O	GVAE20
	Side (LH)	2	N/O + N/C	GVAN11
			N/O + N/O	GVAN20
Fault signalling contact + instantaneous auxiliary contact	Front	1	N/O (fault) + N/O	GVAED101
			N/C (fault) + N/C	GVAED011
	Side (LH) (2)	1	N/O (fault) + N/O	GVAD1010
			N/O (fault) + N/C	GVAD1001
			N/C (fault) + N/O	GVAD0110
			N/C (fault) + N/C	GVAD0101
Short-circuit signalling contact	Side (LH)	1	C/O common point	GVAM11

Contact Blocks for GV3ME80

Description	Type of contacts	Reference
Instantaneous auxiliary contacts	N/C + N/O	GV3A01

Electric Trips

Mounting	Voltage		Reference (3)
Undervoltage or shunt trips (3) Side (1 block on RH side of circuit-breaker)	24V	50Hz	GVA•025
	48V	50Hz	GVA•055
	110 - 115V	50Hz	GVA•115
	220V - 240V	50Hz	GVA•225
	415V - 440V	50Hz	GVA•415

Padlockable External Operators for GV3P and GV3L

Description		Reference
Kit comprising of handle + mounting system + shaft	Black handle, front plate, with trip status, IP54	GV3APN01
	Red handle, front plate, with trip status, IP54	GV3APN02
Spare handle	Black, IP54	GVAPB54
Spare handle	Red, IP54	GVAPR54
Spare handle	Red, IP65	GVAPR65
Spare shaft	L=315mm	GVAPA1
Spare bracket		GVAPH03
Shaft support	For deep enclosure	GVAPK12
Retrofit accessory		GVAPP1

Accessories

Description	For circuit-breaker type	Reference
Set of 3-pole 115A busbars 2 tap-offs. Pitch: 64mm	GV3P• and GV3L•	GV3G264
Set of 3-pole 115A busbars 3 tap-offs. Pitch: 64mm	GV3P• and GV3L•	GV3G364
Cover for "large spacing" UL508 type E (one cover required on the line side)	GV3P•	GV3G66
Padlocking device for use with up to 4 padlocks Ø 6mm shank max.	GV3P• and GV3L•	GV2V03
Allen Key, size 4 insulated 1000V	LC1D40A...D65A LC1DT60A, LC1DT80A GV3P• and GV3L•	LADALLEN4

Note:
(1) Choice of N/C or N/O contact operation, depending on which way round the reversible block is mounted.
(2) The GVAD is always mounted next to the circuit breaker.
(3) To order an undervoltage trip: replace the dot (•) in the reference with a U, example GVAU025
To order a shunt trip: replace the dot (•) in the reference with an S, example GVAS025

Motor Circuit Breakers

TeSys
GV7R
Thermal Magnetic Motor Circuit Breakers



GV7RE



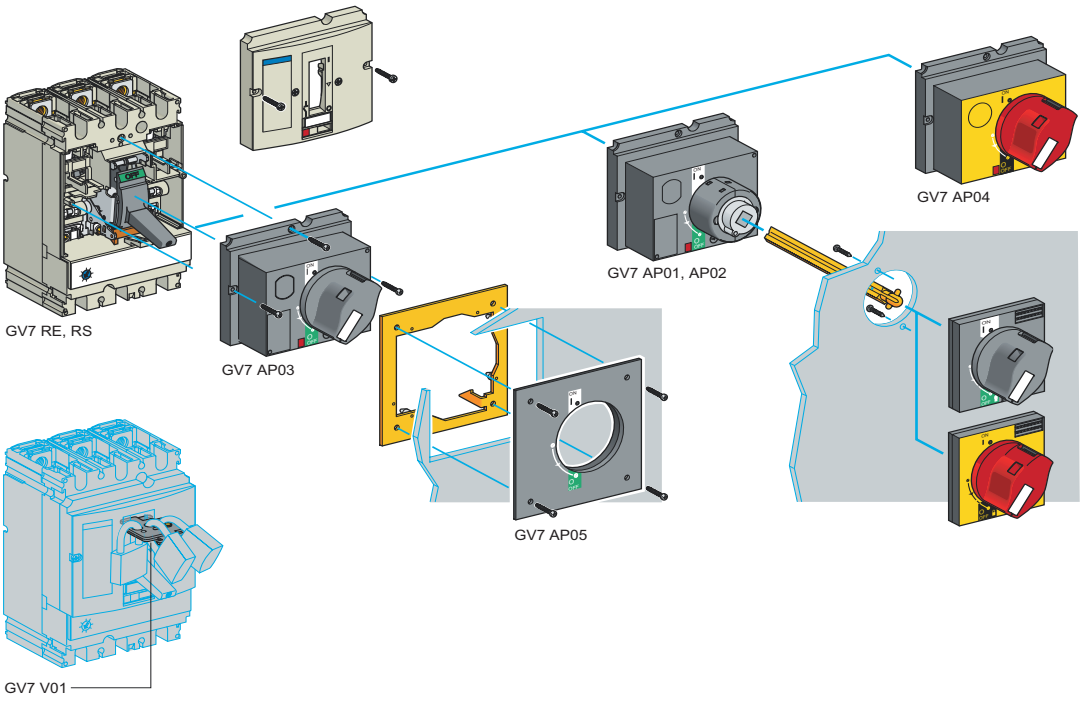
GV7RS

Thermal Magnetic Circuit Breakers GV7R

Control by toggle switch Standard power ratings of 3-phase motors 50/60Hz in category AC3 400/415V		Setting range of thermal trips	Reference
P kW	Icu kA	A	
7.5 9	36 36	12…20	GV7RE20
7.5 9	70 70	12…20	GV7RS20
9 11	36 36	15…25	GV7RE25
9 11	70 70	15…25	GV7RS25
18.5	36	25…40	GV7RE40
18.5	70	25…40	GV7RS40
22	36	30…50	GV7RE50
22	70	30…50	GV7RS50
37	36	48…80	GV7RE80
37	70	48…80	GV7RS80
45	36	60…100	GV7RE100
45	70	60…100	GV7RS100
55 75	36 36	90…150	GV7RE150
55 75	70 70	90…150	GV7RS150
90 110	36 36	132…220	GV7RE220
90 110	70 70	132…220	GV7RS220

Padlockable External Operators

Description	Application	Type	Protection	Reference
Direct mounted rotary handle		Black handle, black plate	IP40	GV7AP03
		Red handle, yellow plate	IP40	GV7AP04
Door padlocking adaptor	Rotary handle mounted on enclosure door		IP43	GV7AP05
Extended rotary handle		Black handle, black plate	IP55	GV7AP01
		Red handle, yellow plate	IP55	GV7AP02
Locking device	GV7 without rotary handle			GV7V01



Motor Circuit Breakers

TeSys
GV7
Accessories

Add-on Blocks



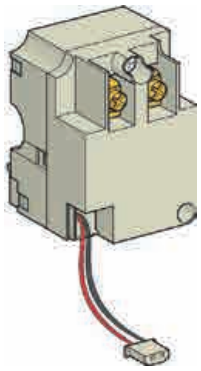
GV7AE11, AB11

- They allow remote indication of the circuit breaker contact states. They can be used for signalling, electrical locking, relaying, etc.
- Two versions are available: standard and low level. They include a terminal block and the auxiliary circuits leave the circuit-breaker through a hole provided for this purpose.
- They perform the following functions, depending on where they are located in the circuit breaker:

Function	Application
C/O contact	Indicates the position of the circuit breaker poles.
Trip indication	Indicates that the circuit-breaker has tripped due to an overload, a short-circuit, a differential fault or the operation of a voltage trip (undervoltage or shunt trip or of the "push to trip" test button. It resets when the circuit breaker is reset.
Electrical fault indication	Indicates that the circuit breaker has tripped due to an overload, a short-circuit or a differential fault. It resets when the circuit breaker is reset.

Auxiliary Contacts

Type	Reference
Standard	GV7AE11
Low level	GV7AB11



GV7AD••

Fault Discrimination Devices

They make it possible to:
- either differentiate a thermal fault from a magnetic fault,
- or open the contactor only in the event of a thermal fault.

Voltage	Reference
AC 24...48 and DC 24…72V	GV7AD111
AC/DC 110…240V	GV7AD112

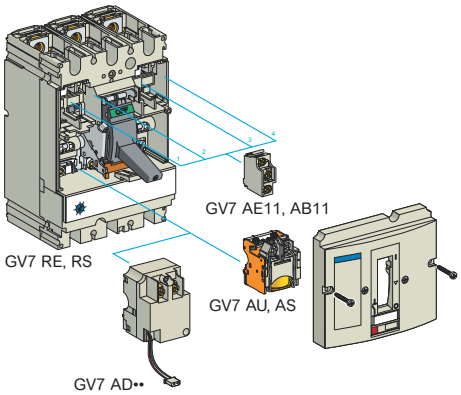
Electric trips



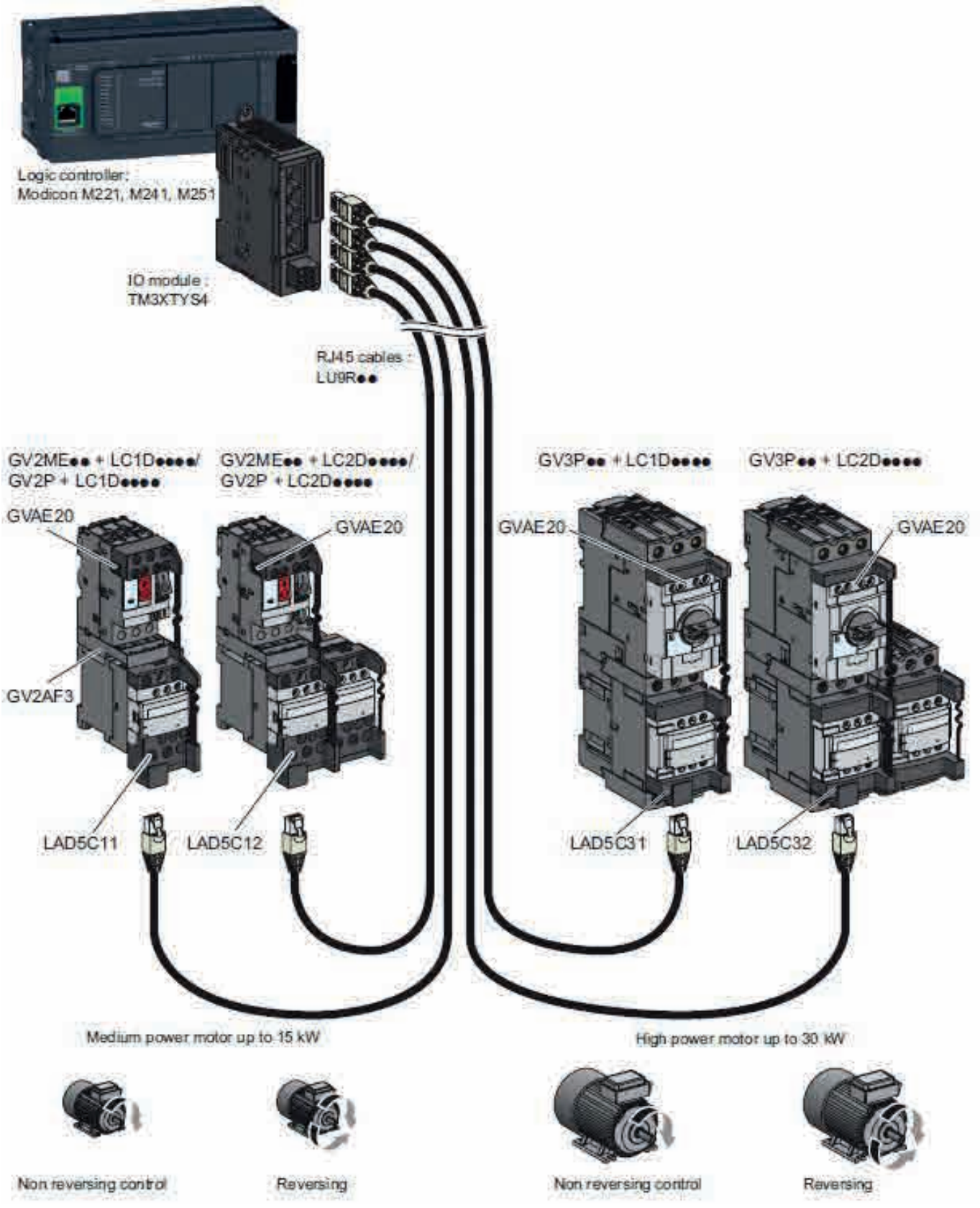
GV7AU, AS

These allow the circuit breaker to be tripped via an electrical control signal.
- Undervoltage trip GV7AU
  - Trips the circuit breaker when the control voltage drops below the tripping threshold, which is between 0.35 and 0.7 times the rated voltage.
  - Circuit breaker closing is only possible if the voltage exceeds 0.85 times the rated voltage.
  - Circuit breaker tripping by a GV7AU trip meets the requirements of IEC 947-2.
- Shunt trip GV7AS
  - Trips the circuit-breaker when the control voltage rises above 0.7 times the rated voltage.
- Operation (GV7AU or GV7AS)
  - When the circuit breaker has been tripped by a GV7AU or AS, it must be reset either locally or by remote control. (For remote control, please consult your Regional Sales Office)
  - Tripping has priority over manual closing: if a tripping instruction is present, manual action does not result in closing, even temporarily, of the contacts.
  - Durability: 50% of the mechanical life of the circuit breaker.

Type	Voltage	Reference
Undervoltage trip	48V, 50/60Hz	GV7AU055
	110…130V, 50/60Hz	GV7AU107
	200…240V, 50/60Hz	GV7AU207
	380…440V, 50/60Hz	GV7AU387
Shunt trip	48V, 50/60Hz	GV7AS055
	110…130V, 50/60Hz	GV7AS107
	200…240V , 50/60Hz	GV7AS207
	380…440V, 50/60Hz	GV7AS387



TeSys SoLink



TeSys SoLink



LAD5C11



GV2ME+LC1D+ LAD5C11



GV2ME + 2 X LC1D + LAD5C12

TeSys Solink Integration System for Motor Starters up to 30kW

- Complete solution that connects TeSys motor starters (Motor circuit breaker + contactor) to logic controller.
- Monitoring and control functions.
- Simplified wiring.

Description	Reference
Connection Module to be used with LC1D09 to D32 contactors (Non reversing)	LAD5C11
Connection Module to be used with LC1D40A to D65A contactors (Non reversing)	LAD5C31
Connection Module to be used with LC1D09 to D32 contactors (Reversing)	LAD5C12
Connection Modue to be used with LC1D40A to D65A contactors (Reversing)	LAD5C32

Motor Starters Components with TeSys SoLink

Description	Non-reversing Up to 15kW/415V	Non-reversing From 18.5 to 30kW/415V	Reversing Up to 15kW/415V	Reversing From 18.5 to 30kW/415V
Motor circuit breaker	GV2ME•• or GV2P••	GV3P••	GV2ME•• or GV2P••	GV3P••
Contactor 24V DC	LC1D09BD to LC1D32BD	LC1D40ABD to LC1D65ABD	LC2D09BD to LC2D32BD	LC2D40ABD to LC2D65ABD
Combination block	GV2AF3	-	GV2AF3	-
Circuit breaker Auxiliary contact	GVAE20	GVAE20	GVAE20	GVAE20
TeSys SoLink Connection module	LAD5C11	LAD5C31	LAD5C12	LAD5C32

Connection Cable

Length of 0.3m	LU9R03
Length of 1m	LU9R10
Length of 3m	LU9R30
I/O Module	TM3XTYS4

TeSys H Ultra Compact Motor Starters up to 3KW



Ultra Compact 22.5mm starter

Multifunctional (Forward running, Reverse running and integrated Overload protection)
Safe Torque off embedded (SIL3 as per IEC 61508-1) on Safety version
High electrical life (1) suitable for high demanding applications

Description	AC53A (415V) KW	Current range	Reference
Standard DOL (Non-reversing) starter, 24VDC control supply	0.75	0.18...2.4A	LZ1H2X4BD
Standard DOL (Non-reversing) starter, 110-230VAC control supply	0.75	0.18...2.4A	LZ1H2X4FU
Standard DOL (Non-reversing) starter, 24VDC control supply	3	1.5...6.5A	LZ1H6X5BD
Standard DOL (Non-reversing) starter, 110-230VAC control supply	3	1.5...6.5A	LZ1H6X5FU
Standard DOL (Reversing) starter, 24VDC control supply	0.75	0.18...2.4A	LZ2H2X4BD
Standard DOL (Reversing) starter, 110-230VAC control supply	0.75	0.18...2.4A	LZ2H2X4FU
Standard DOL (Reversing) starter, 24VDC control supply	3	1.5...6.5A	LZ2H6X5BD
Standard DOL (Reversing) starter, 110-230VAC control supply	3	1.5...6.5A	LZ2H6X5FU
Safety DOL (Non-reversing) starter, 24VDC control supply	0.75	0.18...2.4A	LZ7H2X4BD
Safety DOL (Non-reversing) starter, 110-230VAC control supply	0.75	0.18...2.4A	LZ7H2X4FU
Safety DOL (Non-reversing) starter, 24VDC control supply	3	1.5...6.5A	LZ7H6X5BD
Safety DOL (Non-reversing) starter, 110-230VAC control supply	3	1.5...6.5A	LZ7H6X5FU
Safety DOL (Reversing) starter, 24VDC control supply	0.75	0.18...2.4A	LZ8H2X4BD
Safety DOL (Reversing) starter, 110-230VAC control supply	0.75	0.18...2.4A	LZ8H2X4FU
Safety DOL (Reversing) starter, 24VDC control supply	3	1.5...6.5A	LZ8H6X5BD
Safety DOL (Reversing) starter, 110-230VAC control supply	3	1.5...6.5A	LZ8H6X5FU

Note:
(1) 30 Million operation at AC53A category with ON/OFF control through control inputs (I1,I2 terminals).

Enclosed Starters

TeSys
Model K and D
3-Pole Reversing and Non Reversing DOL Starters 0.25 to 15kW



LE1M35•••

Model K DOL Non-Reversing Starters with Overload Fitted IP65 Polycarbonate Enclosure (2) (4)

3-phase 415V AC3 kW	1 Phase 240V kW	Overload Range A	Starter & Overload Reference (1)
0.25	0.06	0.54 - 0.8	LE1M35••05
0.37	0.12	0.8 - 1.2	LE1M35••06
0.55	0.18	1.2 - 1.8	LE1M35••07
0.75	0.25	1.8 - 2.6	LE1M35••08
1.5	0.37	2.6 - 3.7	LE1M35••10
2.2	0.75	3.7 - 5.5	LE1M35••12
3	1.1	5.5 - 8	LE1M35••14
4	1.5	8 - 11.5	LE1M35••16
5.5	1.8	10 - 14	LE1M35••21
7.5	2.2	12 - 16	LE1M35••22



LE1D12••S48



LE1D12••S48

Model D DOL Non-Reversing Starters with Overload Purchased Separately IP65 Polycarbonate Enclosure (4)

3-phase 415V AC3 kW	Overload Range A	Overload Reference	Starter & Reference (1)
0.37	0.63 to 1.0	LRD05	LE1D12••S48
0.55	1 to 1.6	LRD06	LE1D12••S48
1.1	1.6 to 2.5	LRD07	LE1D12••S48
1.5	2.5 to 4	LRD08	LE1D12••S48
2.2	4 to 6	LRD10	LE1D12••S48
3.7	5.5 to 8	LRD12	LE1D12••S48
4	7 to 10	LRD14	LE1D12••S48
5.5	9 to 13	LRD16	LE1D12••S48
7.5	12 to 18	LRD21	LE1D18••
11	17 to 25	LRD22	LE1D25••
15	23 to 32	LRD32	LE1D35••



LE2D12••



LE2D12••

Model D Reversing Starters Overload Purchased Separately IP65 Polycarbonate Enclosure (6)

3-phase 415V AC3 kW	Overload Range A	Enclosure Type	Reference Overload Relay (5)	Reference Starter (5)
0.55	1 to 1.6	IP65 Polycarbonate	LRD06	LE2D12••
0.75	1.6 to 2.5	IP65 Polycarbonate	LRD07	LE2D12••
1.1	1.6 to 2.5	IP65 Polycarbonate	LRD07	LE2D12••
1.5	2.5 to 4	IP65 Polycarbonate	LRD08	LE2D12••
2.2	4 to 6	IP65 Polycarbonate	LRD10	LE2D12••
3	5.5 to 8	IP65 Polycarbonate	LRD12	LE2D12••
3.7	5.5 to 8	IP65 Polycarbonate	LRD12	LE2D12••
4	7 to 10	IP65 Polycarbonate	LRD14	LE2D12••
5.5	9 to 13	IP65 Polycarbonate	LRD16	LE2D12••
7.5	12 to 18	IP65 Polycarbonate	LRD21	LE2D18••
9	12 to 18	IP65 Polycarbonate	LRD21	LE2D18••
11	16 to 24	IP65 Polycarbonate	LRD22	LE2D25••
15	27 to 32	IP65 Polycarbonate	LRD32	LE2D35••

Coil voltages, AC 50/60Hz, Volts	24	110	240	415
LE1M35 and LE1D	B7	-	U7	N7
LE2D Starters	B7	F7	U7	N7

Note:
(1) "••" Complete reference with control voltage code. Eg: LE1D12U7S48 for 240V 50/60Hz.
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the Catalogue.
(2) With neon lamp indicator
(4) LE1M/LE1D starters come complete with a green start button "I" and red stop/reset button "O".
(5) "••" Complete reference with control voltage code. Eg: LE2D12U7 for 240V 50/60Hz.
(6) LE2D12-D35 starter comes complete with forward/reverse spring return selector switch "I"-"II" and a red stop/reset button "O".
There are alternative Clipsal 56 series DOL and ROL starter options available - refer 56 series section.

Enclosed Starters

TeSys
Model K
3-Pole Reversing DOL Starters Model D, Star Delta Starters 5.5 to 30kW



LE2K064••

Model K Reversing Starters with Overload Purchased Separately
IP42 Polycarbonate Enclosure (3)

3-phase 415V AC3 kW	Overload Range A	Reference Overload Relay	Reference Starter (1)
1.1	1.8 to 2.6	LR2K0308	LE2K065••
1.5	2.6 to 3.7	LR2K0310	LE2K065••
2.2	3.7 to 5.5	LR2K0312	LE2K065••

Coil voltages, AC 50/60Hz, Volts	240	415
Coil code	U7	N7



LE3D12••

Enclosed Star Delta Starters with Overload Purchased Separately
IP65 Polycarbonate Enclosure (2)

3-phase 415V to AC3 kW	In x 0.58 A	Overload Range A	Reference Overload	Reference Starter (1)
5.5	6.2	5.5 to 8	LRD12	LE3D12••
7.5	8.3	7 to 10	LRD14	LE3D12••
11	12.2	9 to 13	LRD16	LE3D12••
15	16.2	12 to 18	LRD21	LE3D18••
22	23.2	16 to 24	LRD22	LE3D18••
25	27.3	23 to 32	LRD32	LE3D35••
30	31.9	30 to 38	LRD35	LE3D35••



LE3D12••

Open Type Star Delta Starters with Overload Purchased Separately
Plate Mounted

3-phase 415V to AC3 kW	In x 0.58 A	Overload Range A	Reference Overload	Reference Starter (1)
7.5	8.3	7 to 10	LRD14	LC3D12A••
9	9.8	9 to 13	LRD16	LC3D12A••
11	12.2	9 to 13	LRD16	LC3D12A••
15	16.2	12 to 18	LRD21	LC3D18A••
22	23.2	16 to 24	LRD22	LC3D18A••
25	27.3	23 to 32	LRD32	LC3D32A••
30	31.9	30 to 38	LRD35	LC3D32A••

Coil voltages 50/60Hz, Volts	24	110	240	415
Coil code	B7	F7	U7	N7



LC3D12A••

Note:
(1) "••" Complete reference with control voltage code. Eg: LE3D12U7 for 240 V 50/60 Hz
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the catalogue.
(2) The LE3D12••- LE3D35•• comes complete with green start button "I", red stop/reset button "O".
(3) LE2K starter comes complete with white forward button "↑", black reverse button "↓" and red stop/reset button.

Enclosed Starters

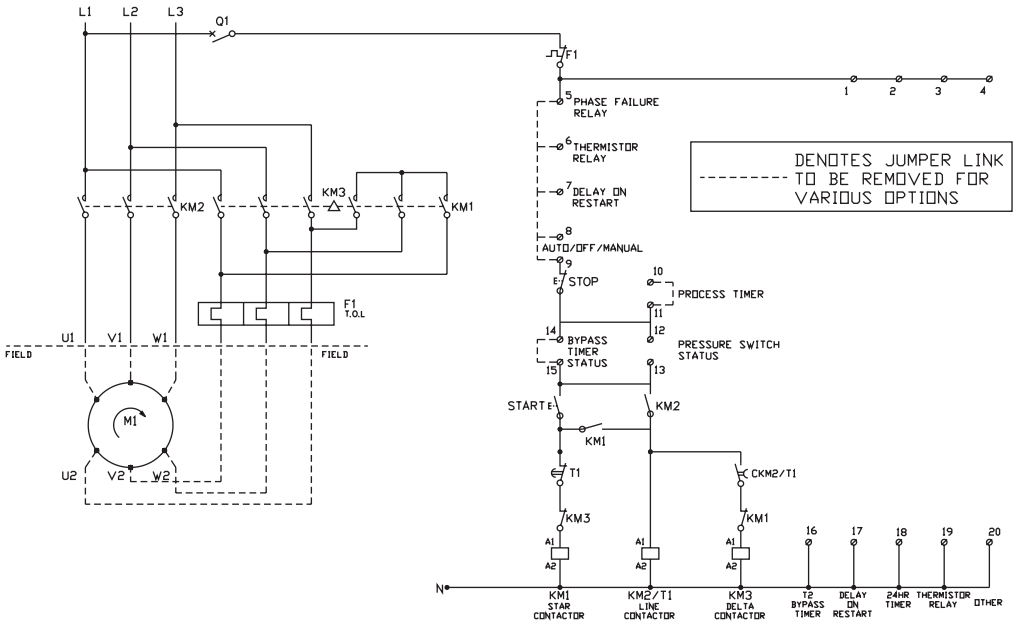
TeSys
Model D, Star Delta Starters
7.5 to 90kW



kW	Enclosure Size (mm)
7.5 - 22	400 x 400 x 200
30 - 75	500 x 400 x 200
90	600 x 600 x 250

Star Delta Starters including Overload
IP65 Metal Enclosure

3-phase 415V AC3 kW	In x 0.58 A	Overload Range A	Control Voltage (AC) (1)	Reference
7.5	8.3	7…10	240	LE3AC007U7
			415	LE3AC007N7
11	12.2	9…13	240	LE3AC011U7
			415	LE3AC011N7
15	16.2	12…18	240	LE3AC015U7
			415	LE3AC015N7
18.5	20.3	16…24	240	LE3AC018U7
			415	LE3AC018N7
22	23.2	16…24	240	LE3AC022U7
			415	LE3AC022N7
30	31.9	30…40	240	LE3AC030U7
			415	LE3AC030N7
37	38.3	30…40	240	LE3AC037U7
			415	LE3AC037N7
45	46.4	37…50	240	LE3AC045U7
			415	LE3AC045N7
55	58	48…65	240	LE3AC055U7
			415	LE3AC055N7
59	60.9	55…70	240	LE3AC059U7
			415	LE3AC059N7
75	78.5	63…80	240	LE3AC075U7
			415	LE3AC075N7
90	95.7	80…104	240	LE3AC090U7
			415	LE3AC090N7



Options for Customisation in Field (2)

Option	Item Description	Reference
Phase failure detection	415V Phase failure + under or over voltage	RM4TR34
Thermistor monitoring	Manual reset thermistor relay	LT3SM00M
Delay on re-start	On delay relay (1C/O)	RE7TL11BU
Auto-off-manual switch	3 position stay-put switch	ZB4BD3
	2N/O contacts + collar	ZB4BZ103
	"AUTO-OFF-MAN" legend + holder	ZBY2385M
By-pass timer with	Multi-function timer (use function "H")	RE7ML11BU
pressure switch	70-1000kPa diaphragm pressure switch	XMLB010A2S12

Note:
(1) 415V version comes with 415V / 240V transformer
(2) Schematic for electrical connection is included with all LE3AC starters

Intelligent motor control





Ensuring industrial efficiency

The TeSys U integrated motor starter provides control and protection for single phase or three phase motors up to 15kW.

TeSys U starters have electronic short circuit and thermal protection with a much wider setting range as compared to traditional bi-metallic thermal overloads.

TeSys U is an integrated starter with a single breaking point for its three main poles. This ensures that the main poles do not weld under short circuit conditions, within TeSys U's 50kA breaking capacity. In the event of a short circuit, the TeSys U can be put back into service immediately after the fault is cleared

95%
of motor starter wiring and installation can be performed, even though the project design has not yet been completed.

Up to **75%**
reduction in heat dissipation and power consumed to regulate the temperature inside the enclosure.

Up to **45%**
reduction in wiring time.
Productivity benefits are immediate and visible, right from the first application.

Need more information?

Please visit www.schneider-electric.com.au
Telephone: 1300 369 233

TeSys
Model U, Integrated Motor Starter Protector
Total Coordination AS 60947.6.2



Overview

TeSys model U is an integrated DOL Motor Starter Protector, which exceeds the most stringent standards in motor control. Designed to the continuity of service standard AS 60947.6.2 the “Total Coordination” feature of TeSys Model U provides maximum safety to plant and personnel in the event of a short-circuit. The patented design provides ‘no welding’ of the starter contacts as permitted under type 2 short circuit conditions. This allows the production assets of your plant to be utilised to their maximum efficiency.

TeSys U with its 45mm compact design, simplified purchasing and installation process, flexible modular construction and customisation, performs the following functions:

- protection and control of 1-phase or 3-phase motors:
  - isolation/breaking
  - short-circuit protection
  - electronic thermal overload protection
  - power switching
- control of the application:
  - protection function alarms
  - application monitoring (running time, number of faults, motor current values)
  - logs (last 5 faults saved, together with motor parameter values).

These functions can be added by selecting control units and function modules which clip into the power base. The product can therefore be customised at the last moment and using accessories simplify or completely eliminate wiring between components.

Integrated Motor Starter Protector

Consists of a power base (reversing or non-reversing) and a control unit.

Power Base

It incorporates the breaking and switching function with a breaking capacity of 50kA at 415V, continuity of service AS 60947.6.2. Two ratings are available: 0…12A (LUB12/120) and 0…32A (LUB32/320).

Reversing Power Base

Standard power base converted to reversing operation. 45 mm wide. Single part number, pre-assembled, no extra connectors required. Two ratings are available: 0…12A (LU2B12••) and 0…32A (LU2B32••).

Control Units

These must be selected according to the control voltage, the power of the motor to be protected and the type of protection required. The control units are interchangeable without rewiring and using tools.

- Advanced Control Unit (LUCB, LUCC or LUCD): provides thermal overload and short-circuit protection; allows additional advanced functions such as alarm, fault differentiation.
- Magnetic Only Control Unit (LUCL): short circuit protection without thermal protection, for using in conjunction with variable speed drives and soft starters.
- Multifunction Control Unit (LUCM): suitable for the most sophisticated control and protection requirements.

Function Modules

Function modules can be used to increase the features of the starter. Must be used with advanced control units, 4 types are available: thermal overload alarm (LUFW10); thermal fault indication (LUFDH); thermal fault indication and automatic or remote reset (LUFDA10); indication of motor load (LUFV), can also be used with the multifunction control unit.

Communication Modules

The information processed is exchanged via: parallel wiring module (LUFC00); AS-i module (ASILUFC51), Modbus module (LULC033), DeviceNet module (LULC09), ProfibusDP module (LULC07), CANopen module (LULC08), Advantys STB module (LULC15)

Auxiliary Contact Modules

3 possible configurations 2 N/O (LUFN20), 1NO+1NC (LUFN11) or 2 N/C (LUFN02).

Add-on Contact Blocks (not pictured)

Indicate the status of the power base; ready, fault and pole status.

Accessories

Parallel prewired coil connections for the power base (LU9BN11C) or for the reversing power base (LU9MRC). Coil connectors can be used to connect the starters' coil to a Communication Module for remote control via Network. Alternatively up to 8 TeSys U starters can be controlled and communicate their status via the splitter box (LU9G02) to the PLC inputs and outputs.

Integrated Motor Starters

TeSys
Model U, Integrated Motor Starter Protector
Total Coordination AS 60947.6.2

Control Units

		Advanced			Magnetic	Multifunction
		LUCB	LUCC	LUCD	LUCL	LUCM
Thermal overload protection						
Overcurrent protection		14.2 x the setting current				3 to 17 x the setting current
Short circuit protection		14.2 x the max. current				
Protection against phase loss						
Protection against phase imbalance						
Earth fault detection (equipment protection only)						
Tripping class		10	10	20		5…30 selectable
Motor type		3 phase	Single-phase	3 phase	3 phase	Single phase and 3-phase
Thermal overload test function						
Overtorque						
No-load running						
Long starting times						
Reset mode	Manual					Parameters can be set
	Automatic or remote	With function module or parameters can be set via the bus with a communication module, see chart below.				Parameters can be set Parameters can be set via the bus with a communication module (see below).
Alarm		Thermal overload alarm only with function module or communication module, see below.				Possible for each type of fault. Indication on front panel of the control unit, via remote terminal, via PC or via PDA (1). With communication modules to make use of these alarms via a bus, see below.
"Log" function						Log of the last 5 trips. Number to make use of these alarms of starts, number of trips, number of operating hours.
"Monitoring" function						Indication on front panel of the control unit, via remote terminal, via PC or via PDA (1).

With Function Module (2)

Thermal overload alarm	With module LUFW	
Fault differentiation & manual reset	With module LUFDH20	
Fault differentiation & automatic reset	With module LUFDA10	
Indication of motor load (analogue)	With module LUFV	

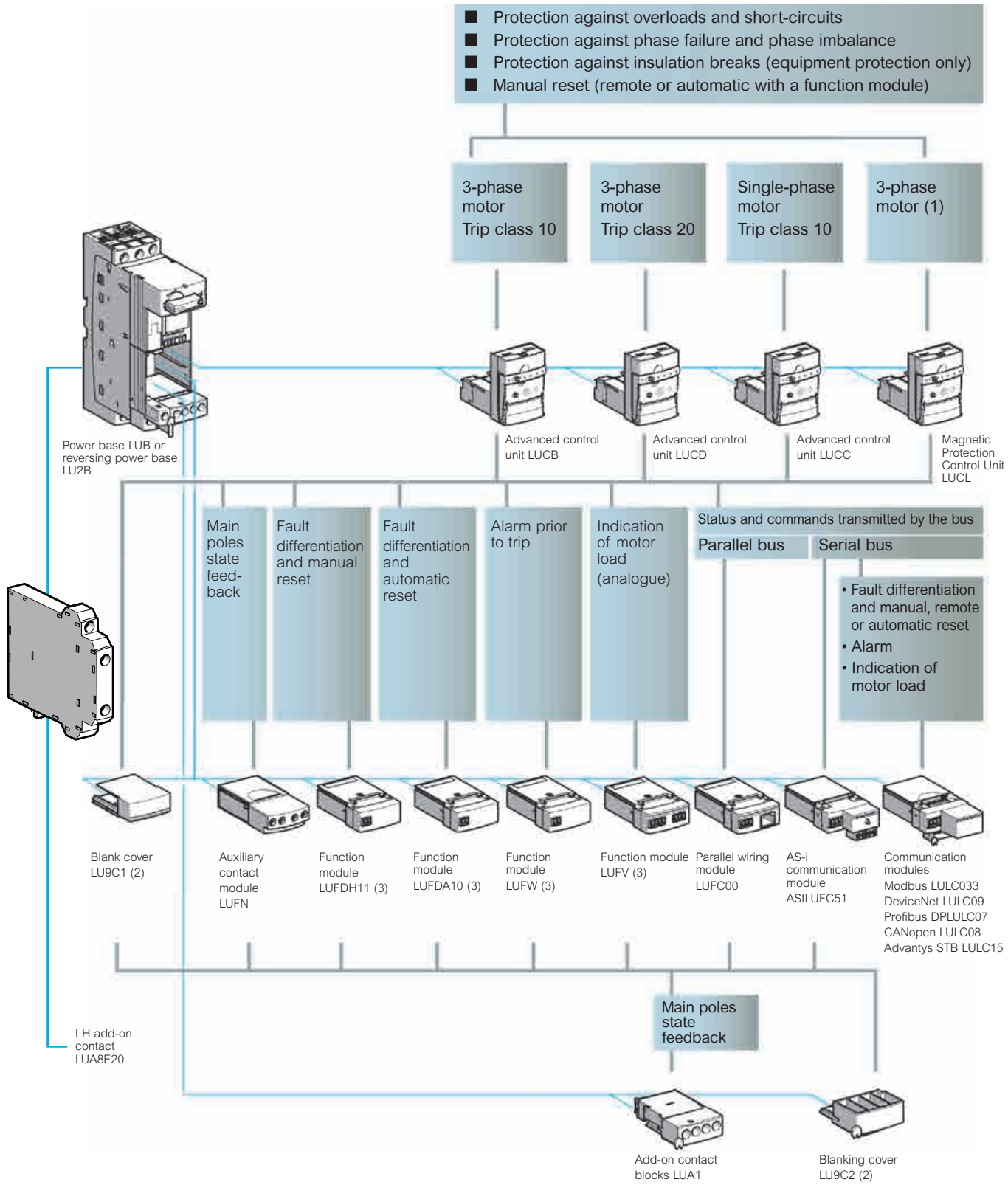
With communication module or via Modbus port on control unit LUCM (2)

Starter status (ready, running, fault)	With any communication module		
Reset mode	Parameters can be set via the bus		
Alarm	With comms modules LULC031, LULC033, LULC15, LULC07, LULC08 and LULC09 (alarm available for thermal overload only).		With Modbus port on LUCM or with comms modules LULC031, LULC033, LULC15, LULC07, LULC08 and LULC09 (alarm available for all types of faults).
Remote reset via the bus			
Indication of motor load			
Fault differentiation			
Remote programming and monitoring of all functions			With Modbus port on LUCM or with comms modules LULC031, LULC033, LULC15, LULC07, LULC08 and LULC09.
"Log" function			
"Monitoring" function			

Built-in function Function provided with accessory

(1) PDA: Personal Digital Assistant
(2) Mounting possibilities: 1 function module or 1 communication module.

TeSys
Model U, Integrated Motor Starter Protector
Advanced Control Unit Total Coordination AS 60947.6.2

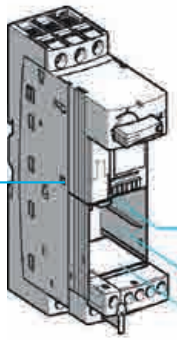


Note:
(1) Magnetic only Control Units LUCL provide over-current and short circuit protection only. Use LUCL control units with speed drives and soft starters, page 3.1.46
(2) Supplied with LUB bases and LU2B reversing bases
(3) Not compatible with Magnetic Only Control Units LUCL

TeSys
Model U, Integrated Motor Starter Protector
Multifunction Control Unit Total Coordination AS 60947.6.2

- Protection against overloads and short-circuits
- Protection against phase failure and phase imbalance
- Protection against insulation breaks (equipment protection only)
- Reset parameters can be set to manual or automatic
- Protection function alarm
- Indication on front panel or on remote terminal via Modbus RS 485 port
- "Log" function (last 5 faults, running time)
- "Monitoring" function, indication of main motor parameters on front panel of the control unit or via a remote terminal
- Fault differentiation
- Overtorque, no-load running

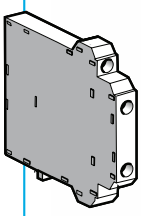
Single-phase and 3-phase motors
Trip class 5, 10, 15, 20, 25, 30 (selectable)



Power base LUB or reversing power base LU2B



Multifunction control unit LUCM



Main poles state feedback

Indication of motor load (analogue)

Status and commands transmitted by the bus

Parallel bus

Serial bus

Remote programming and monitoring of all functions



Blanking cover LU9C1 (2)



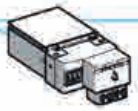
Auxiliary contact module LUFN



Function module LUFV



Parallel wiring module LUFC00



AS-i communication module ASILUFC5



Communication modules
Modbus LULC033
DeviceNet LULC09
ProfibusDP LULC07
CANopen LULC08
Advantys STB LULC15

Main poles state feedback

LH add-on contact LUA8E20



Add-on contact blocks LUA1



Blanking cover LU9C 2 (2)

Integrated Motor Starters

TeSys
Model U, Integrated Motor Starter Protector
Power Bases 12A and 32A Total Coordination AS 60947.6.2



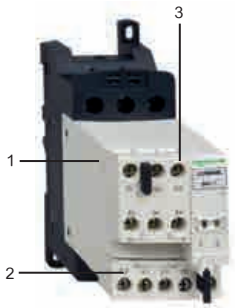
LUB12 + LUCB



LUB120



LU2B32FU + LUCB



LU6MB0BL
+ LU9M1
+LU9MR1

Power Bases (Control units are not included) (1)

Description	AC3 415V A	Breaking capacity Iq (2)	Wide voltage range coil	Reference
non- reversing power base (in-built auxiliaries are fitted with fixed terminal block)	12A	50kA	24...220V DC or 24...240V AC	LUB12
	32A	50kA	24...220V DC or 24...240V AC	LUB32
non-reversing power base (in-built auxiliaries are without terminal block allowing the use of various prewiring options)	12A	50KA	24…220V DC or 24…240V AC	LUB120
	32A	50KA	24…220V DC or 24…240V AC	LUB320

Reversing Power Bases (Control units are not included) (2) (3)

Description	AC-3 415V	Breaking capacity Iq (2)	Coil Voltage	Reference
Reversing Power Base pre-assembled and pre-wired	12A	50kA	24V DC	LU2B12BL
			24V AC	LU2B12B
			48…72V DC; 48V AC	LU2B12ES
			110…220V DC; 110…240V AC	LU2B12FU
Reversing Power Base pre-assembled and pre-wired	32A	50kA	24V DC	LU2B32BL
			24V AC	LU2B32B
			48…72V DC; 48V AC	LU2B32ES
			110…220V DC; 110…240V AC	LU2B32FU

LU2B12•• and LU2B32•• have identical dimensions.

Reversing Blocks (optional - used in addition to a non-reversing power base) (4)

Description	Mounting	Item	Coil Voltage	Reference
32A separate mounting reversing block	Reverser block (panel or DIN rail mounting)	1	24V DC	LU6MB0BL
			24V AC	LU6MB0B
			48-72V DC, 48V AC	LU6MB0ES
			110-220V DC 110-240V AC	LU6MB0FU
	Control Terminal Connector	2	-	LU9M1
	Hard Wiring Connector	3	-	LU9MR1

Note:

(1) 2 auxiliary contacts (1N/O+1N/C) are integrated into the power base and are mechanically linked to the power poles of the starter, NC is a mirror contact suitable for safety applications, p.3.1.1

(2) Rated breaking capacity for operation on short-circuit (Iq), see table below, can be increased with limiter blocks (refer to page 3.1.46).

Volts	230	415	500	690
Breaking capacity, kA	50	50	10	4

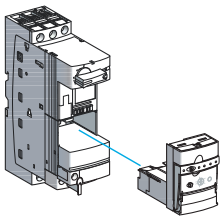
(3) The integrated N/O (13-14) and N/C (21-22) are used for electrical interlocking between the reverser block and the base and are therefore no longer available for use as output starter. The reverser block has 2 N/O common point contacts (81-82-84) that indicate forward and reverse status.

(4) Mounted separately from the power base LUB when the height available is limited and pre-wired reversing power base LU2B can not be used.

TeSys
Model U, Integrated Motor Starter Protector Multifunction Control Unit and Operator Terminal Total Coordination AS 60947.6.2



LUCB••••



LUB•2 + LUC••••

Advanced Control Units (Base and Control Unit are required to build a motor starter)

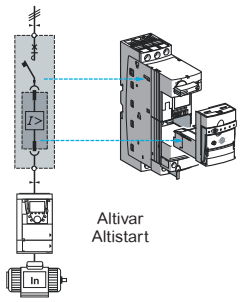
Setting range	Power ratings of standard motors 50/60Hz 3-phase 415V	1-phase 240V	Compatible with power base rating	Reference (1)
A	kW	kW	A	
Class 10 for 3-phase motors				
0.15…0.6	0.09	–	12 and 32	LUCBX6••
0.35…1.4	0.25	–	12 and 32	LUCB1X••
1.25…5	1.5	–	12 and 32	LUCB05••
3…12	5.5	–	12 and 32	LUCB12••
4.5…18	7.5	–	32	LUCB18••
8…32	15	–	32	LUCB32••
Class 10 for single phase motors				
0.15…0.6	–	–	12 and 32	LUCCX6••
0.35…1.4	–	0.09	12 and 32	LUCC1X••
1.25…5	–	0.55	12 and 32	LUCC05••
3…12	–	1.5	12 and 32	LUCC12••
4.5…18	–	2.2	32	LUCC18••
8…32	–	4.0	32	LUCC32••
Class 20 for 3-phase motors				
0.15…0.6	0.09	–	12 and 32	LUCDX6••
0.35…1.4	0.25	–	12 and 32	LUCD1X••
1.25…5	1.5	–	12 and 32	LUCD05••
3…12	5.5	–	12 and 32	LUCD12••
4.5…18	7.5	–	32	LUCD18••
8…32	15	–	32	LUCD32••



LUCM

Multifunction Control Units (Base and Control Unit are required to build a motor starter)

Setting range	Power ratings of standard motors 50/60Hz 3-phase 415V		Compatible with power base rating	Reference (1)
A	kW		A	
0.15…0.6	0.09	-	12 and 32	LUCMX6BL
0.35…1.4	0.25	-	12 and 32	LUCM1XBL
1.25…5	1.5	-	12 and 32	LUCM05BL
3…12	5.5	-	12 and 32	LUCM12BL
4.5…18	7.5	-	32	LUCM18BL
8…32	15	-	32	LUCM32BL



Magnetic Control Units (Base and Control Unit are required to build a motor starter) used with variable speed drives and soft starters

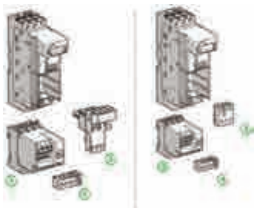
Setting range (5)	Power ratings of standard motors 50/60Hz 3-phase 415V	1-phase 240V	Compatible with power base rating	Reference (1)
A	kW	kW	A	
3-phase motors, magnetic trip 14.2 x I				
0.15…0.6	0.09	–	12 and 32	LUCLX6••
0.35…1.4	0.25	–	12 and 32	LUCL1X••
1.25…5	1.5	–	12 and 32	LUCL05••
3…12	5.5	–	12 and 32	LUCL12••
4.5…18	7.5	–	32	LUCL18••
8…32	15	–	32	LUCL32••

Coil voltages, Volts	24	48…72	110…240
AC	B	–	–
DC	BL (2)	–	–
AC & DC	–	ES (3)	FU (4)

Note:
(1) Complete reference with coil voltage code Eg: LUCBX6FU for 110-240V AC.
For stocking policy, please refer to alphanumeric price listing at the back of the Catalogue.
(2) Voltage to be used for a starter with communication module.
(3) 48V AC, 48...72V DC.
(4) 110…240V AC, 110...220V DC.
(5) When using with variable speed drives, please match the drive input current with current rating

Integrated Motor Starters

TeSys
Model U, Integrated Motor Starter Protector
Mounting Solutions & Accessories Total Coordination AS 60947.6.2

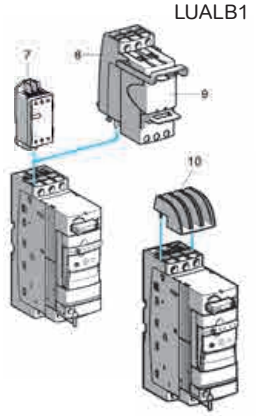


LUB120/320 LUB12/32

Reversing Power Bases LU2B12•• & LU2B32•• Components (spare parts)

Description	Coil Voltage	Item	Reference
Reversing block (direct mounting on LUB power bases)	24V DC	3	LU2MB0BL
	24V AC		LU2MB0B
	48-72V DC, 48V AC		LU2MB0ES
	110-220V DC 110-240V AC		LU2MB0FU
Control Terminal Connector	-	4	LU9M1
Pre-wired connector (3) (between reverser block & power base)	-	2	LU9MR1C
Hard wiring connector		5	LU9MR1

LUALB1



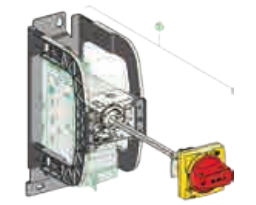
LU9SP0

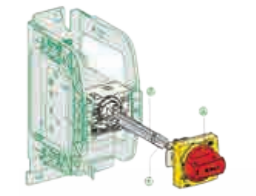
Limiter Blocks (Optional - used in addition to a power base)

Application	Breaking capacity Iq 440V kA	690V kA	Mounting	Item	Reference
Limiter-disconnector/ cartridge (2)	130	70	Direct on power base	8 + 9	LUALB1
Limiter cartridge	130	70	Limiter disconnector	9	LUALF1
Limiter (2)	100	35	Separate	7	LA9LB920

Phase Barriers (Optional - used in addition to a power base)
For type E (UL508) certified starter

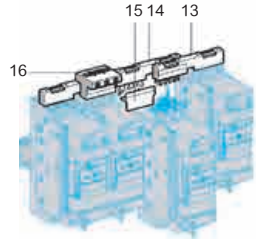
Description	Application	Item	Reference
Phase barriers	LUB12 or LUB32	10	LU9SP0





Padlockable external controls

Description	Item	Reference
Black handle, with error status, IP54 (handle+ mounting kit)	1	LU9APN21
Red handle, with error status, IP54 (handle+ mounting kit)	1	LU9APN22
Black handle, IP54	2	GVAPB54
Red handle, IP54	2	GVAPR54
Red handle, IP65	2	GVAPR65
Shaft (L=315mm)	3	GVAPA1
Shaft support plate for deep enclosure	4	GVAPK12
Retrofit accessory		GVAPP1



Power Connections up to 63A (1)

Description	Application	Pitch mm	Item	Reference
Sets of 3-pole 63A busbars	2 tap-offs	45	13	GV2G245
		54	–	GV2G254
	4 tap-offs	45	14	GV2G445
		54	–	GV2G454
Protective end cover	For unused busbar outlets	–	15	GV1G10
Terminal block for supply to one or more busbar sets	Connection from the top	–	16	GV1G09



TUC_CH/16

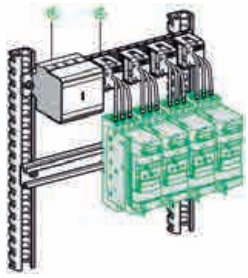
Model U 3-phase Chassis: 50kA 630A 415V

Rating A	No of starters	Main bus rating, A	Reference
32	16	630	TUC_CH/16
32	30	630	TUC_CH/30

Note:
(1) Panel busbar system up to 160A, refer to AK5 pg 3.1.64
(2) These devices make it possible to increase the breaking capacity of the power base.
(3) LUB12/32 + LU9MR1C is not compatible, use LUB12/32 +LU9MR1 or LUB120/320 + LU9MR1C

Integrated Motor Starters

TeSys
Model U, Integrated Motor Starter Protector
Mouting Solutions & AccessoriesTotal Coordination AS 60947.6.2



Software and Programming Cables (optional)

Description	Reference
SoMove Lite set-up software (1)	
Connection cable from PC USB port TeSys U with Multifunctional Control Unit	TCSMCNAM3M002P

Pre-wired system for power connection up to 160A (2)

Description	Number of tap-off units at 18mm pitch	Item	Length mm	Reference
Set of 4-pole busbars: 3 phase + neutral or 3 phase + common	18	5	452	AK5JB144



Tap-offs (3)

Number of points used on the busbar system	Thermal current	Item	Cable length	Reference
2	16A	6	200mm	AK5PC13
	32A	6	250mm	AK5PC33

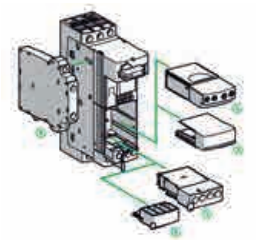
Safey-chain Marking for TeSys U (Red identification cover)

Description	Reference
Red safety cover for TeSys U	LU9ET1S

Note:
(1) SoMove Lite software is available to download for free from Schneider-electric.com.
(2) Panel busbar system up to 160A, refer to page 3.1.64.
(3) The rated peak current for the power sockets AK5PC•• is 6KA.
When used in association with power base LUB••, the prospective short circuit current must not exceed 7KA.

Integrated Motor Starters

TeSys Model U, Integrated Motor Starter Protector
Contact Modules, Function Modules & Contact Blocks
Total Coordination AS 60947.6.2



Covers 3 and 4 for empty cavities are supplied with the basic module

Contact & Function Modules (optional - 1 module per power base)

Description	Item	Contacts N/O	Contacts N/C	Reference
Auxiliary contact module	2	2	-	LUFN20
		1	1	LUFN11
		-	2	LUFN02
Thermal overload indication module (1) This module indicates thermal overload faults through change of contact state.		1	1	LUFDH11
Remote/Auto overload reset module (1) In the event of tripping on thermal overload, the base can be reset remotely or automatically. In the event of tripping on short circuit, the base must be reset manually.		1	-	LUFDA10
		-	1	LUFDA01
Thermal overload alarm module (1) Imminent thermal overload tripping is indicated as soon as the thermal state exceeds the threshold of 105% (hysteresis = 5%) of the Ir setting.		1	-	LUFW10
Motor load indication module (2) This module provides a signal which is representative of the motor load status (Iav/Ir). The value of the signal (4-20mA) corresponds to a load status of 0 to 200% (0 to 300% for single phase load).		4-20mA output		LUFV2



LUFN11



LUFW10



LUFV2

Fault Signalling Contact Blocks (optional - 1 block per power base)

Description	Item	Contacts N/O	Contacts N/C	Reference
1N/C fault signalling contact and 1N/O contact indicating control handle in “ready”.	1	1	1	LUA1C11
1N/O fault signalling contact and 1N/O contact indicating control handle in “ready”.	1	2	-	LUA1C20
2N/O contacts indicating control handle in “ready”	5	2	-	LUA8E20

Contact States depending on the product status

		Position of rotary knob	Mechanical flag indication	N/O contact, main poles feedback	N/C contact, main poles feedback	N/O contact any fault	N/C contact any fault	Handle in ready ("on") position
References of add-on contact blocks and auxiliary contact modules		-	-	LUF N20 33-34 43-44	LUF N11 31-32	LUA1C20 97-98	LUA1 C11 95-96	LUA1 C20 17-18
		-	-	LUF N11 43-44	LUF N02 31-32 41-42			LUA1 C11 17-18
Off		OFF	0					
Ready to operate			0					
Start			1					
Tripped on short-circuit		TRIP	I>>					
tripped on thermal overload	Manual reset mode	TRIP	0					
	Automatic reset on thermal overload fault mode		0					
	Remote reset mode		0					

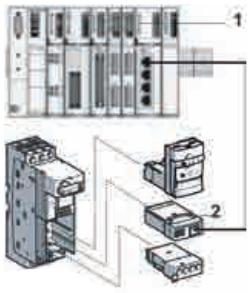
N/O contact in closed position.
N/C contact in open position.

Note:
(1) For use only with an advanced control unit.
(2) Requires 24V DC supply and must be used with 24V DC control unit (i.e. LUC***BL).

Integrated Motor Starters

TeSys Model U, Integrated Motor Starter Protector
Total Coordination AS 60947.6.2
Wiring Solutions

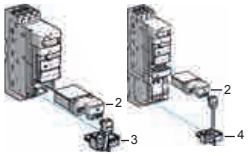
Parallel Wiring Module & Advantys STB Distributed I/O

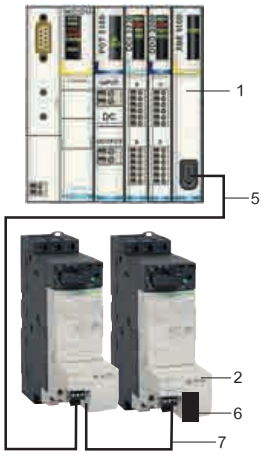


- control start/stop forward
- control start/stop reverse
- monitor the position of the handle
- fault indication
- status of the main poles

Connection to Advantys Distributed I/O

Description	Item		Reference
Advantys STB dedicated parallel interface module For integration into Advantys distributed I/O island. Can connect up to 4 TeSys U Starters on each interface.	1		STBEPI2145K
TeSys U parallel wiring module (1)	2		LUFC00
Prewired coil connection to power base (3). Connects LUFC00 output to A1-A2 coil terminals (2)	3		LU9BN11C
Prewired coil connection to reversing power base. Connects LUFC00 output to A1-A2-A3 coil terminals (2)	4		LU9MRC
RJ45 connection cables		length = 1m	LU9R10
For connection of the TeSys U parallel wiring module to the Advantys STB parallel interface.		length = 3m	LU9R30





STB Communications Module (optional - 1 module per power base)

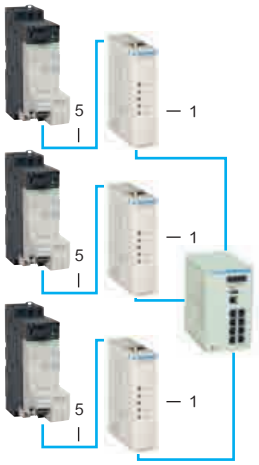
Communication to Advantys distributed I/O

Description	Item		Reference
Advantys EOS (End of Segment) module Passes data and addressing information along the island bus	1		STBXBE1100K
TeSys U STB communication module (1) Enables control and monitoring of the motor starter through the daisy chain communication module	2		LULC15
Pre-wired coil connection to power base (3)	3		LU9BN11L
Pre-wired coil connection to reversing power base	4		LU9MRL
Connection cables	5	length = 0.3m	LU9RCD03
For connection of STB EOS module to TeSys U		length = 1m	LU9RCD10
		length = 3m	LU9RCD30
Line terminator	6		LU9RFL15
Connection cables	7	length = 0.3m	LU9RDD03
For connection between TeSys U and teSys U		length = 1m	LU9RDD10
		length = 3m	LU9RDD30

Note:
(1) Must be used with 24V DC control unit (i.e. LUC•••BL)
(2) Not suitable when e-stop required.
(3) LUB12/32 + LU9BN11C/ L is not compatible, use LUB120/320 + LU9BN11C/ L

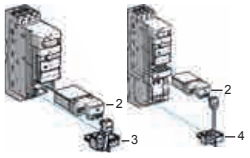
Integrated Motor Starters

Model U, Integrated Motor Starter Protector
Total Coordination AS 60947.6.2
Communication Solutions



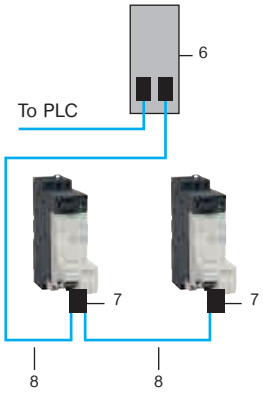
Information available via communication module

Control Unit	Advanced	Multifunction
Starter status (ready, running, fault)	Yes	Yes
Start and Stop commands	Yes	Yes
Thermal overload alarm	Yes	Yes
Remote reset via the bus	Yes	Yes
Indication of motor load	Yes	Yes
Fault signalling and differentiation	Yes	Yes
Remote programming and monitoring of all functions	-	Yes
"Log" function	-	Yes
"Monitoring" function	-	Yes
Alarms (overcurrent, ...)	-	Yes



Ethernet TCP/IP Communications

Description	Item		Reference
TeSys Port Modbus serial to Modbus TCP/IP bridge 1-to-1 connection	1		TCSEQM113M13M
Modbus serial communication module (1) For communication to the TeSys Port	2		LULC033
Pre-wired coil connection (2)	3		LU9BN11C
Pre-wired coil connection to reversing power base	4		LU9MRC
RJ45 Connection cables For connection between the Modbus communication module and the TeSys port	5	length = 0.3m	LU9R03
		length = 1m	LU9R10
		length = 3m	LU9R30



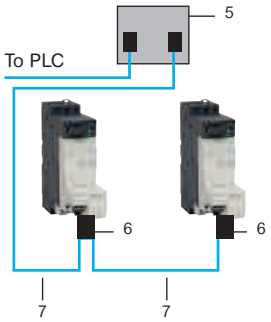
Profibus Communications

Description	Item		Reference
Profibus communications module (1) For direct connection of the TeSys U onto a Profibus communications network			LULC07
Profibus power supply device For adding 24VDC power over the cable	6		LU9GC7
Pre-wired coil connection to power base (2)			LU9BN11L
Pre-wired coil connection to reversing power base			LU9MRL
Profibus connector For connection of Profibus cable to TeSys U module	7		LU9AD7
Profibus DP 4-wire cable	8	length = 100m	LU9RPB100

Note:
(1) Must be used with 24VDC control unit (i.e. LUC•••BL)
(2) LUB12/32 + LU9BN11C/ L is not compatible, use LUB120/320 + LU9BN11C/ L

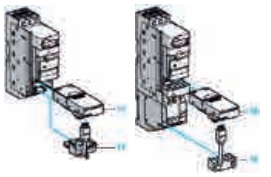
Integrated Motor Starters

Model U, Integrated Motor Starter Protector
CANopen Communications, DeviceNet Communications
Total Coordination AS 60947.6.2



Information available via communication module

Control Unit	Advanced	Multifunction
Starter status (ready, running, fault)	Yes	Yes
Start and Stop commands	Yes	Yes
Thermal overload alarm	Yes	Yes
Remote reset via the bus	Yes	Yes
Indication of motor load	Yes	Yes
Fault signalling and differentiation	Yes	Yes
Remote programming and monitoring of all functions	-	Yes
"Log" function	-	Yes
"Monitoring" function	-	Yes
Alarms (overcurrent, ...)	-	Yes



CANopen Communications

Description	Item		Reference
CANopen communications module (1) For direct connection of the TeSys U onto a CANopen communications network	16		LULC08
CANopen junction box 4 SUB D connectors and 24VDC power supply	5		TSXCANTDM4
Prewired coil connection to power base (2)	17		LU9BN11L
Prewired coil connection to reversing power base	18		LU9MRL
CANopen connector For connection of CANopen cable to TeSys U	6		TSXCANKCDF180T
CANopen cable	7	length = 50m	TSXCANCA50
CANopen standard cable		length = 100m	TSXCANCA100



DeviceNet Communications

Description	Reference
DeviceNet communications module (1) For direct connection of the TeSys U onto a DeviceNet communications network	LULC09
Pre-wired coil connection to power base (2)	LU9BN11L
Pre-wired coil connection to reversing power base	LU9MRL

Modbus Communications

Description	Reference
Modbus communication module (1) For direct connection of the TeSys U onto a Modbus communications network	LULC033
Pre-wired coil connection to power base (2)	LU9BN11C
Pre-wired coil connection to reversing power base LU2B	LU9MRC
T-junction, 0.3m (bus topology connection)	VW3A8306TF03
T-junction, 1.0m (bus topology connection)	VW3A8306TF10
Line termination (bus topology connection)	VW3A8306R
Modbus hub, up to 8 slaves (star topology connection)	LU9GC3

Note:
(1) Must be used with 24VDC control unit (i.e. LUC•••BL)
(2) LUB12/32 + LU9BN11C/ L is not compatible, use LUB120/320 + LU9BN11C/ L

Electronic Motor Protection Relays

Electronic Over Current Relays
Thermistor Protection Relays


LR97D07M7

Electronic Over Current Relays Features

- Overcurrent electronic protection
- Adjustable tripping time from 0.3s to 30s
- Jammed/stalled rotor protection
- Adjustable motor starting time 0.5...30s
- Phase loss protection
- Manual or auto reset

Description	Output contact	Setting range A	For use with contactor LC1	Reference
Direct mounting on contactor	1 C/O	0.3…1.5	D09…D38	LR97D015••
		1.2…7	D09…D38	LR97D07••
		5…25	D09…D38	LR97D25••
		20…38	D25…D38	LR97D38••
Separate mounting with manual/ electric reset (1)	1N/O + 1N/C	0.5…6	-	LT4706••
		3…30	-	LT4730••
		5…60	-	LT4760••


LT4760M7S

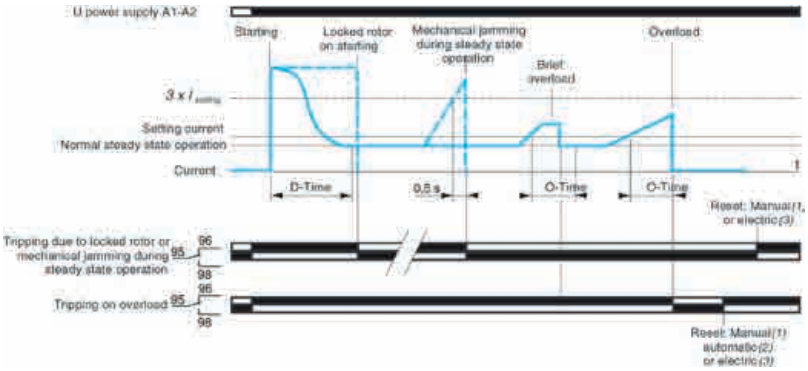
Complete Reference with Voltage Code:

AC supply, Volts	24	48	100…120	200…240
LR97D	B	E	F7	M7
LT47 manual/remote reset	BS	ES	F7S	M7S
LT47 auto reset	BA	EA	F7A	M7A

DC supply, Volts	24	48
LR97D	B	E
LT47 manual/remote reset	BS	ES
LT47 auto reset	BA	EA

Electronic Over Current Relays


LR97D + LC1D



Thermistor Protection Relays – LT3 (2)

Description	Control Volts	Auxiliaries	Reference
Units with manual reset, short circuit detection and fault memory (Fault LED, Reset P/B, Test P/B)	115/240V AC	N/O + N/C	LT3SM00M
	415V AC	N/O + N/C	LT3SM00V
	24 - 240V AC/DC	2 x C/O	LT3SM00MW
Units with automatic reset, short circuit detection and without fault memory (Fault LED)	115/240V AC	N/O + N/C	LT3SA00M
	24 - 240V AC/DC	2 x C/O	LT3SA00MW
Units with automatic reset, without short circuit detection, without fault memory (Fault LED)	240V AC/DC	N/C	LT3SE00M


LT3SM00M

Note:
(1) For automatic reset version, replace "S" with "A". E.g. LT4730BS becomes LT4730BA
(2) PTC thermistor probes (positive temperature co-efficient).
LT3SM remote reset - max. cable length 5 metres.
Shielded cable is recommended for the thermistor probes.

Electronic Motor Protection Relays

TeSys T
Intelligent Motor Protection Relays

TeSys T - Motor Management System

TeSys T is an advanced motor management and protection system able to guard against motor malfunctions. Equip your motor starter with a 6th sense.





TeSys T covers motor monitoring and protection needs in industrial installations in which a high degree of availability of production equipment is an essential requirement. It is the ideal protection solution for industrial applications such as iron and steel, cement works, paper mills, raw material extraction and water treatment and distribution.

The TeSys T motor management and protection system consists of:

- an efficient multi-function protection device, independent to the automation system
- an operator control unit, for reading and modification of parameters
- a PC configuration software, extremely simple and user-friendly to configure TeSys T to suit the requirements of your application.

The optional expansion module enables voltage and power measurement and provides additional logic inputs.

TeSys T can be integrated into your Ethernet, ModBus, CANopen, DeviceNet or Profibus network. The base unit is equiped with an integrated communications interface enabling you to remotely monitor and control the motor.

Information required to optimise and monitor your process is available both locally (HMI) and remotely (through network communications), allowing:

- parameter setting and selection of protection functions
- configuration and management of motor controls
- motor status monitoring (alarms, trips, statistics, etc)
- data exchange (fault history, fault counters, etc).

Basic protection and monitoring functions

- Thermal overload
- Motor temperature (thermistor probe)
- Earth fault
- Phase imbalance and phase loss
- Long start (stall)
- Jam (locked rotor)
- Load variation (over/under current)
- Phase rotation

Histories

- Operating time
- Motor starts per hour
- Last start time
- Last start max current
- History of last 5 faults and data

Advanced protection and monitoring functions
(using expansion module)

- Voltage measurement
- Power measurement
- Power factor
- Load shedding

Statistics

- Fault counter
- Warning counter
- Auto reset counter
- Protection counter
- Diagnostic counter

Pre-defined control functions

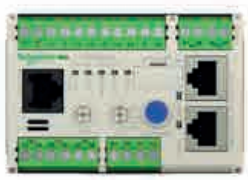
- Overload mode
- Independent mode
- Reverser mode
- 2-step mode (star-delta)
- 2-speed mode

Fault Management

- Manual reset
- Automatic reset (define 3 groups)
- Remote reset
- Communications loss
- Internal watchdog

Electronic Motor Protection Relays

TeSys T
Intelligent Motor Protection Relays



LTMR08EBD
(Ethernet Modbus TCP and Ethernet IP)



LTMR08PBD
(Profibus DP)

TeSys T Motor Management Base Unit

Description	Communication Protocol	FLA Range (A)	Reference (1)
Base unit provides: - 6 inputs - 4 relay outputs - thermistor input - external ground fault input - current monitoring and protection functions - fieldbus communication	Modbus	0.4…8	LTMR08M••
		1.35…27	LTMR27M••
		5…100	LTMR100M••
	Ethernet Modbus TCP and Ethernet IP	0.4…8	LTMR08E••
		1.35…27	LTMR27E••
		5…100	LTMR100E••
	CANopen	0.4…8	LTMR08C••
		1.35…27	LTMR27C••
		5…100	LTMR100C••
	Profibus DP	0.4…8	LTMR08P••
		1.35…27	LTMR27P••
		5…100	LTMR100P••
	DeviceNet	0.4…8	LTMR08D••
		1.35…27	LTMR27D••
		5…100	LTMR100D••

TeSys T Motor Management Expansion Module

Description	Control Voltage (V)	Length (m)	Reference
Expansion unit provides: - voltage monitoring and protection functions - power monitoring and protection functions - 4 additional inputs	24V DC	-	LTMEV40BD
	100-240V AC	-	LTMEV40FM
Connection cable between base unit and expansion module	Connector	0.04	LTMCC004
	Cable	0.3	LTM9CEXP03
		1.0	LTM9CEXP10
Elbowed Ethernet connector			LTM9CE180T

Note:
(1) "••" Complete reference with coil voltage code FM for 100...240V AC or BD for 24V DC eg: LTMR08EBD for 24V DC.
For stocking policy of coil voltages, please refer to Alphanumeric price listing at the back of the Catalogue.

Electronic Motor Protection Relays

TeSys T
Intelligent Motor Protection Relays



LTMEV40BD

Monitoring and Configuration (1)

Description	Item	Connection	Reference
Display unit providing: - configuration - monitoring - fault and alarm notification	Pre-configured display unit for 1-to-1 connection	to Base Unit HMI port or Expansion Module HMI port	LTMCU
Connection cables	RJ45 - RJ45 1m cable	From LTMCU to HMI port of Base Unit / Expansion Module	LTM9CU10
	RJ45 - RJ45 3m cable		LTM9CU30
Connection cable		From PC USB port to RJ45 port of LTMR / LTME / LTMCU	TCSMCNAM3M002P



LTMCU

External Current Transformers

Description	Current Ratio	Reference
Individual CTs (1 per phase)	100:1	LUTC1001
	200:1	LUTC2001
	400:1	LUTC4001
	800:1	LUTC8001



504••

Earth Fault Toroids

Description	Type	Diameter (mm)	Reference
Closed Toroid, A-type	TA30	30	50437
	PA50	50	50438
	IA80	80	50439
	MA120	120	50440
	SA200	200	50441

Note:
(1) SoMove Lite software is available to download for free from Schneider-electric.com

Control Relays

TeSys
Model SK Mini Control Relays 2-Pole
Model K Control Relays
Control Circuit: AC, DC or LC (Low Consumption)


CA2SK20••

Model SK Mini Relay 2-Pole (10 Amp)

	Composition N/O	N/C	Reference (1)
AC Control	2	–	CA2SK20••
	1	1	CA2SK11••
DC Control	2	–	CA3SK20••
	1	1	CA3SK11••

Coil voltages, AC 50/60Hz			
Volts	24	110	240
Code	B7	F7	U7

Coil voltages, DC			
Volts	12	24	48
Code	JD	BD	ED

Model SK Auxiliaries


LA1SK11

Type	Range	Composition N/O	N/C	Reference
Instantaneous (CA2SK20 only)	Auxiliary	2	–	LA1SK20
		–	2	LA1SK02
		1	1	LA1SK11
Instantaneous (CA2SK20 only) (includes 1 N/O power pole)	Auxiliary	1	–	LA1SK10
Varistors	24-48V AC/DC			LA4SKE1E
	110-250V AC/DC			LA4SKE1U
Diode	24-250V DC			LA4SKC1U


CA2KN40•••

Model K Mini Relay 4-Pole (6 Amp) (2)

	Composition N/O	N/C	Reference (1)
AC Control	2	2	CA2KN22••
	3	1	CA2KN31••
	4	0	CA2KN40••
DC Control	2	2	CA3KN22••
	3	1	CA3KN31••
	4	0	CA3KN40••

Standard coil voltages

AC 50/60Hz				
Volts	24	110	240	415
Code	B7	F7	U7	N7

DC		
Volts	24	110
Code	BD	FD

Model K Auxiliaries and Suppressor Modules

Clip-on front mounting, 1 block per relay


LA1KN22

Type	Range	Composition N/O	N/C	C/O	Reference
Instantaneous		2	-	-	LA1KN20
		-	2	-	LA1KN02
		1	1	-	LA1KN11
		4	-		LA1KN40
		3	1	-	LA1KN31
		2	2	-	LA1KN22
Delay-on (1 to 30 sec)	24-48V AC/DC	-	-	1	LA2KT2E
	110-240V AC	-	-	1	LA2KT2UAA
Diode & Zener diode	12-24V DC				LA4KC1B
RC	220-250V AC				LA4KA1U

Note:
(1) "••" Complete reference with coil voltage code. Eg: CA2KN22B7 for 24V AC 50/60Hz.
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the Catalogue.
(2) Model K low consumption available on request.

Control Relays

TeSys
Model D Control Relays
Control Circuit: AC, DC or LC (Low Consumption)



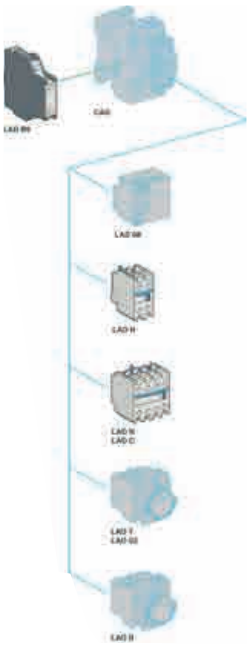
CAD32••

Model D Relay 5-Pole (10 Amp)

Type	Number of contacts	Composition N/O	N/C	Reference (1)
Instantaneous	5	5	–	CAD50••
		3	2	CAD32••

Type	Number of contacts	Composition N/O	N/C	Reference (1)
Instantaneous	5	5	–	CAD50••
		3	2	CAD32••

Type	Number of contacts	Composition N/O	N/C	Reference (1)
Instantaneous	5	5	–	CAD50••
		3	2	CAD32••



Coil voltages (1)							
AC supply							
Volts AC	24	32	48	110	220	240	415
50/60Hz	B7	C7	E7	F7	M7	U7	N7

DC supply (coils with integral suppression device fitted as standard)					
Volts DC	12	24	48	110	220
U 0.7 to 1.25 Uc	JD	BD	ED	FD	MD

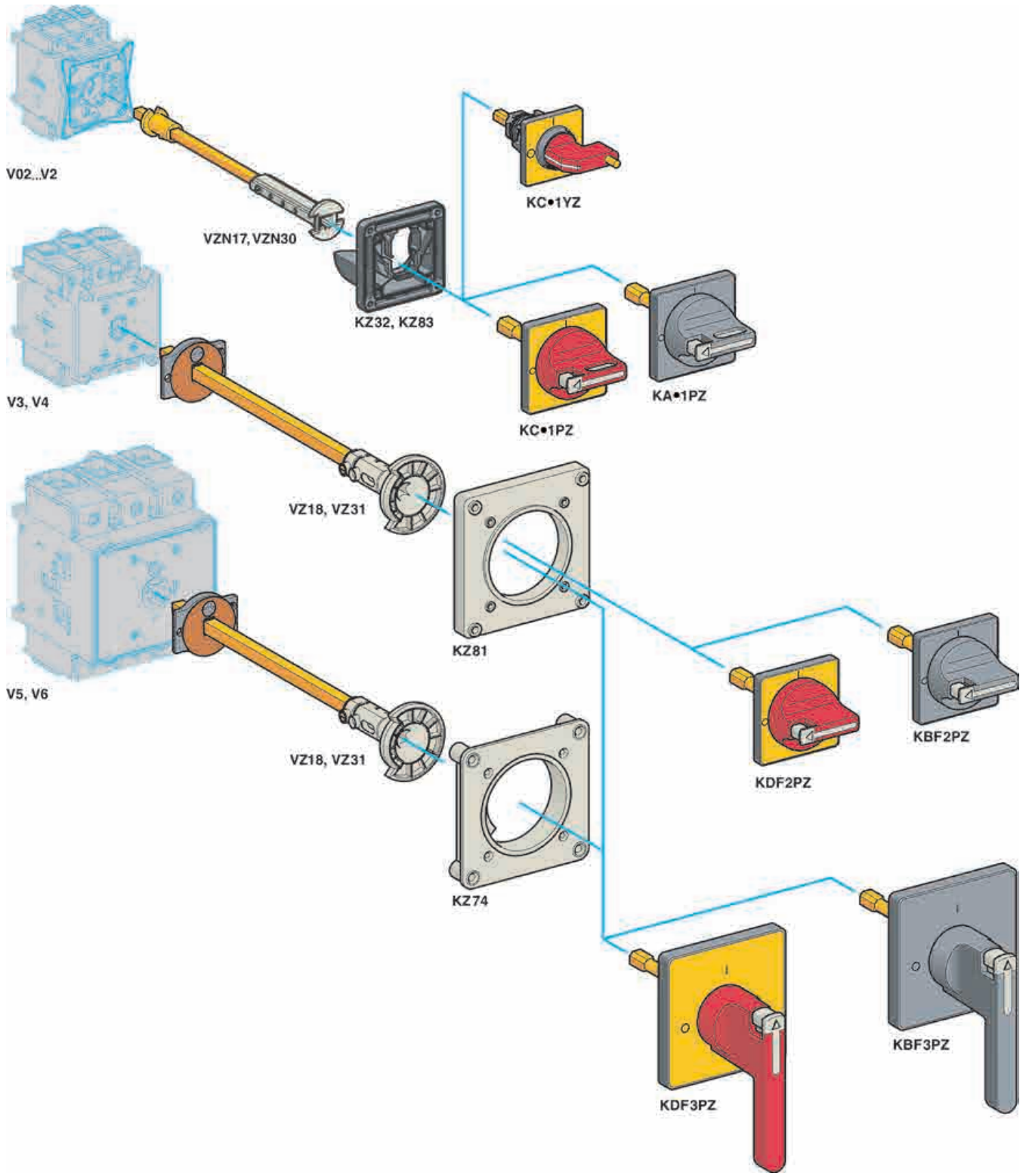
Low consumption (coils with integral suppression device fitted as standard)				
Volts DC 2.4 watts	12	24	48	110
Code	JL	BL	EL	FL

Model D Auxiliaries (2)

Number of contacts	Maximum number per relay Clip-on mounting front	side	Composition N/O	N/C	Reference
2	1	–	1	1	LADN11
	–	1 on LH side	1	1	LAD8N11(3)
	1	–	2	–	LADN20
	–	1 on LH side	2	–	LAD8N20(3)
	1	–	–	2	LADN02
	–	1 on LH side	–	2	LAD8N02(3)
4	1	–	2	2	LADN22
			1	3	LADN13
			4	–	LADN40
			–	4	LADN04
			3	1	LADN31
4 including 1 N/O and 1 N/C make before break.	1	–	2	2	LADC22

Note:
(1) "••" Complete reference with coil voltage code. Eg: CAD50B7 for 24V AC 50/60Hz.
For stocking policy of coil voltages, please refer to alphanumeric price listing at the back of the Catalogue.
Other voltages available, contact Schneider Electric
(2) For additional accessories refer to page 3.1.12
(3) These contact blocks cannot be used on relays with DC coil.

VARIO Switch Disconnectors



Load Break Switches 12 to 175A

VARIO Switch Disconnectors for High Performance Applications Complete Units – 3-Pole IP65



VCD01



VCF5



VBD0

Main and Emergency Stop Switch Disconnectors for door mounting

Handle	Front plate mm	Fixing	Rating Ith (1) A	Motor Rating AC-23 (415V) (2) A/kW	Reference
Red, padlockable with up to 3 padlocks	Yellow 60 x 60	Ø 22.5	12	8/4	VCD02
			20	11/5.5	VCD01
			25	14/7.5	VCD0
			32	21/11	VCD1
			40	28/15	VCD2
		4 screws	12	8/4	VCF02
			20	11/5.5	VCF01
			25	14/7.5	VCF0
			32	21/11	VCF1
			40	28/15	VCF2
			63	40/22	VCF3
			80	55/30	VCF4
Red, padlockable with up to 3 padlocks	Yellow 90 x 90	4 screws	125	66/37	VCF5
			175	80/45	VCF6

Main Switch Disconnectors for door mounting

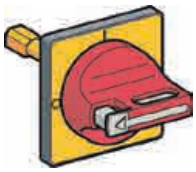
Handle	Front plate mm	Fixing	Rating Ith (1) A	Motor Rating AC-23 (415V) (2) A/kW	Reference
Black, padlockable with up to 3 padlocks	Black 60 x 60	Ø 22.5	12	8/4	VBD02
			20	11/5.5	VBD01
			25	14/7.5	VBD0
			32	21/11	VBD1
			40	28/15	VBD2
		4 screws	12	8/4	VBF02
			20	11/5.5	VBF01
			25	14/7.5	VBF0
			32	21/11	VBF1
			40	28/15	VBF2
			63	40/22	VBF3
			80	55/30	VBF4
Black, long, padlockable with up to 3 padlocks	Black 90 x 90	4 screws	125	66/37	VBF5
			175	80/45	VBF6

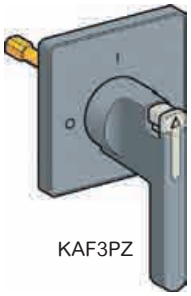
Note:
(1) Ith refers to the current a closed switch can sustain without its temperature rise exceeding the limits given in AS/NZS 3947.3 Ratings are given for stand alone products. Ratings should be derated for switches installed in small plastic enclosures without ventilation.
(2) AC23 refers to the switching of motor loads or other highly inductive loads

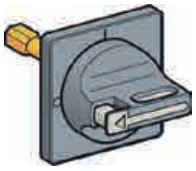
Load Break Switches
12 to 175A

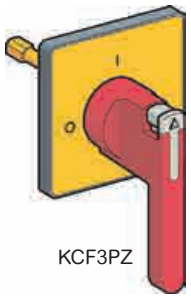
VARIO Switch Disconnectors
Padlockable Operator Handles and Front Plates
(for customer assembly) - IP65 Protection


KCC1YZ


KCD1PZ


KAF3PZ


KAD1PZ


KCF3PZ

Handles & Front Plates for Main & Emergency Stop Switch Disconnectors (2)

For switch body	Operator Handle	Front plate Dimensions mm	Fixing	Reference
V02...V2	Red, padlockable with 1 padlock	Yellow 45 x 45	Ø 22.5	KCC1YZ
			4 screws	KCE1YZ
	Red, padlockable with up to 3 padlocks	Yellow 60 x 60	Ø 22.5	KCD1PZ
			4 screws	KCF1PZ
V3 and V4	Red, padlockable with up to 3 padlocks	Yellow 60 x 60	4 screws	KCF2PZ
V5 and V6	Red, long, padlockable with up to 3 padlocks	Yellow 90 x 90	4 screws	KCF3PZ (1)

Handles & Front Plates for Main Switch Disconnectors (2)

For switch body	Operator Handle	Front plate Dimensions mm	Fixing	Reference
V02...V2	Black, padlockable with up to 3 padlocks	Black 60 x 60	Ø 22.5	KAD1PZ
			4 screws	KAF1PZ
V3 and V4	Black, padlockable with up to 3 padlocks	Black 60 x 60	4 screws	KAF2PZ
V5 and V6	Black, long, padlockable with up to 3 padlocks	Black 90 x 90	4 screws	KAF3PZ (1)

Note:
(1) For door mounting of 63 and 80A switch disconnectors, adaptor plate KZ106 must be ordered separately. Refer to accessories.
(2) Padlockable operating handle (padlocks not supplied).

Load Break Switches
12 to 175A

VARIO Switch Disconnectors
Switch Bodies, Add-on Modules, Auxiliary Contacts
(for customer assembly)



V0

Switch Bodies

Description	Rating Ith A	Motor Rating AC-23 (415V) A/kW	Reference
3-pole switch disconnectors (1)	12	8/4	V02
	20	11/5.5	V01
	25	14/7.5	V0
	32	21/11	V1
	40	28/15	V2
	63	40/22	V3
	80	55/30	V4
	125	66/37	V5
	175	80/45	V6



VZ0 VZ11

Add-on Modules (single pole only)

	Rating Ith A	Motor Rating AC-23 (415V) A/kW	Reference
Main pole module (1)	12	8/4	VZ02
	20	11/5.5	VZ01
	25	14/7.5	VZ0
	32	21/11	VZ1
	40	28/15	VZ2
	63	40/22	VZ3
	80	55/30	VZ4
Neutral pole module with early make and late break contacts (1)	12 to 40		VZ11
	63 and 80		VZ12
	125 and 175		VZ13
Earthing module (1)	12 to 40		VZ14
	63 and 80		VZ15
	125 and 175		VZ16
Auxiliary contact block module with 2 auxiliary contacts	N/O + N/C (2)		VZ7
	N/O + N/O		VZ20



VZ15 VZ20

Maximum number of add-on modules which can be fitted on switch body

1 add-on module on each side of the switch body.

VZ7 or VZ20	+	**V0•**	+	VZ7 or VZ20		VZ7	+		+	VZ7
or				or		or				or
VZ11 or VZ12	+	**V0**	+	VZ11 or VZ12		VZ20	+	**V5**	+	VZ20
or				or		or		**or**		or
VZ14 or VZ15	+	**to**	+	VZ14 or VZ15		VZ13	+	**V6**	+	VZ13
or				or		or				or
VZ0•/VZ0 to VZ4	+	**V4**	+	VZ0•/VZ0 to VZ4		VZ16	+		+	VZ16

2 add-on modules on each side of the switch body.

VZ0•	+	VZ0•	+	**V0•**	+	VZ0•	+	VZ7	or	VZ20	or	VZ11	or	VZ14
VZ0	+	VZ0	+	**V0**	+	VZ0	+	VZ7	or	VZ20	or	VZ11	or	VZ14
VZ1	+	VZ1	+	**V1**	+	VZ1	+	VZ7	or	VZ20	or	VZ11	or	VZ14
VZ2	+	VZ2	+	**V2**	+	VZ2	+	VZ7	or	VZ20	or	VZ11	or	VZ14
VZ3	+	VZ3	+	**V3**	+	VZ3	+	VZ7	or	VZ20	or	VZ12	or	VZ15
VZ4	+	VZ4	+	**V4**	+	VZ4	+	VZ7	or	VZ20	or	VZ12	or	VZ15

Note:
(1) Protection shrouds are available on request.
(2) Late make N/O, early break N/C contacts.

Load Break Switches 12 to 175A

VARIO Switch Disconnectors Accessories


VZ18


KZ32


KZ15


KZ67


Z01


VCF0GE


VCF3GE

Components for Door Interlocking

For rear fixing switch disconnectors mounted at the back of an enclosure, in addition to a direct operator

Description	For use with	Distance enc. back/door mm	Reference
Shaft extensions	V02...V2	300...330	VZ17
		400...430	VZ30
	V3 and V4	300...320	VZ18
		400...420	VZ31
	V5 and V6	330...350	VZ18
		430...450	VZ31
Door interlock plates	V02...V2	–	KZ32
	V3...V6	–	KZ74

Accessories for Operators

Description	For use on	Front plate dimensions mm	Reference
Legend bearer with silver coloured blank legend plate	Front plate	45 x 45	KZ13
		60 x 60	KZ15
		90 x 90	KZ103
Legend bearer without legend plate	Front plate	45 x 45	KZ14
		60 x 60	KZ16
		90 x 90	KZ101
Silver coloured blank legend plates for engraving by customer	KZ14	–	KZ76
	KZ16	–	KZ77
	KZ101	–	KZ100
Sealing kit gasket	VN12, VN20	45 x 45	KZ65
	V02...V2	60 x 60	KZ66
	V3 and V4	60 x 60	KZ62
	V3...V6	90 x 90	KZ67
Adaptor plate for switch disconnectors	V3 and V4	90 x 90	KZ106
Tightening tool	For operators with Ø 22.5 fixing	–	Z01

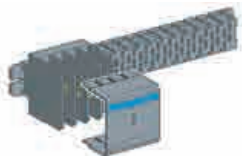
Enclosed 3-Pole Main & Emergency Stop Switch Disconnectors (1) (2)

Operator Handle	Front plate Dimensions mm	Ith (Enclosed) A	Power in AC-23 at 415V A/kW	No. add-on modules possible	Reference
Red, padlockable with up to 3 padlocks	Yellow 60 x 60	10	8/4	2	VCF02GE
		16	11/5.5	2	VCF01GE
		20	14/7.5	2	VCF0GE
		25	21/11	2	VCF1GE
		32	28/15	2	VCF2GE
		50	40/22	3	VCF3GE
		63	55/30	3	VCF4GE
Red, long, padlockable with up to 3 padlocks	Yellow 90 x 90	100	66/37	1	VCF5GEN
		140	80/45	1	VCF6GEN

Note:
(1) Empty enclosure available on request.
(2) Padlockable operating handle (padlocks not supplied).

Busbar System

AK5
Components for Panel Busbar System
Accessories



AK5JB143

Busbar System

The busbar system may be screw mounted on to any type of support. If it is intended to be used in conjunction with component mounting plates incorporating a tap-off it is essential that the busbar system be fixed, together with the mounting rail AM1DL201.
When mounting tap-offs take into account the rated operating current of the busbar system: 160 A at 35°C.

Number of bars	Tap-off outlets Polarity and pitch	Max. No.	Length mm	Reference
4	2-pole 18 mm pitch	12	344	AK5JB143
		24	560	AK5JB145
		54	1100	AK5JB1410
	3-pole or 4-pole (5) 36 mm pitch	6	344	AK5JB143
		12	560	AK5JB145
		27	1100	AK5JB1410



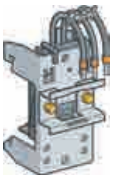
AK5PC12



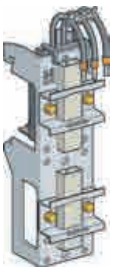
AK5PC34

Tap-offs

Polarity	Pitch mm	Rated thermal current A	Length of output conductors mm	Reference
1-phase + Neutral	18	16	200 (4)	AK5PC12
		32	1000 (4)	AK5PC32L
3-phase	36	32	250	AK5PC33
3-phase Neutral		32	250	AK5PC34



AK5PA231



AK5PA232

Component Mounting Plates Incorporating Tap-off

Single plate (height 105 mm)

Polarity	Pitch mm	Rated thermal current A	Max. number of plates on busbar system AK5- JB143	JB145	Reference
3-phase	54	25	4	8	AK5PA231
3-phase + Neutral	54	25	4	8	AK5PA241

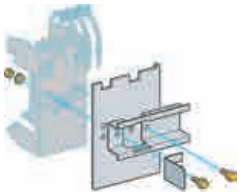
Double plate (height 190 mm)

Polarity	Pitch mm	Rated thermal current A	Max. number of plates on busbar system AK5- JB143	JB145	Reference
3-phase	54	25	4	8	AK5PA232
3-phase + common	54	25 Common: 10A	4	8	AK5PA2312

Width Extension Plates

Designed for mounting larger sized components, these extended width plates bolt onto the front face of the above mounting plates before installation.

Application		Pitch mm	Reference
For mounting plates incorporating tap-off	Single	71	AK5PE17 (1)
	Double	71	AK5PE27 (2)



AK5PE17

Mounting Rail for Busbar System

Designed to fix and house the busbar system when used in conjunction with mounting plates incorporating tap-off.
As the mounting plate clips onto the rail, the tap-off connects to the busbar system.

Description	Material and surface treatment	Depth mm	Length mm	Unit reference
Omega rail, width 75 mm	2 mm sheet steel 10 microns zinc chromate	15	2000 (3)	AM1DL201



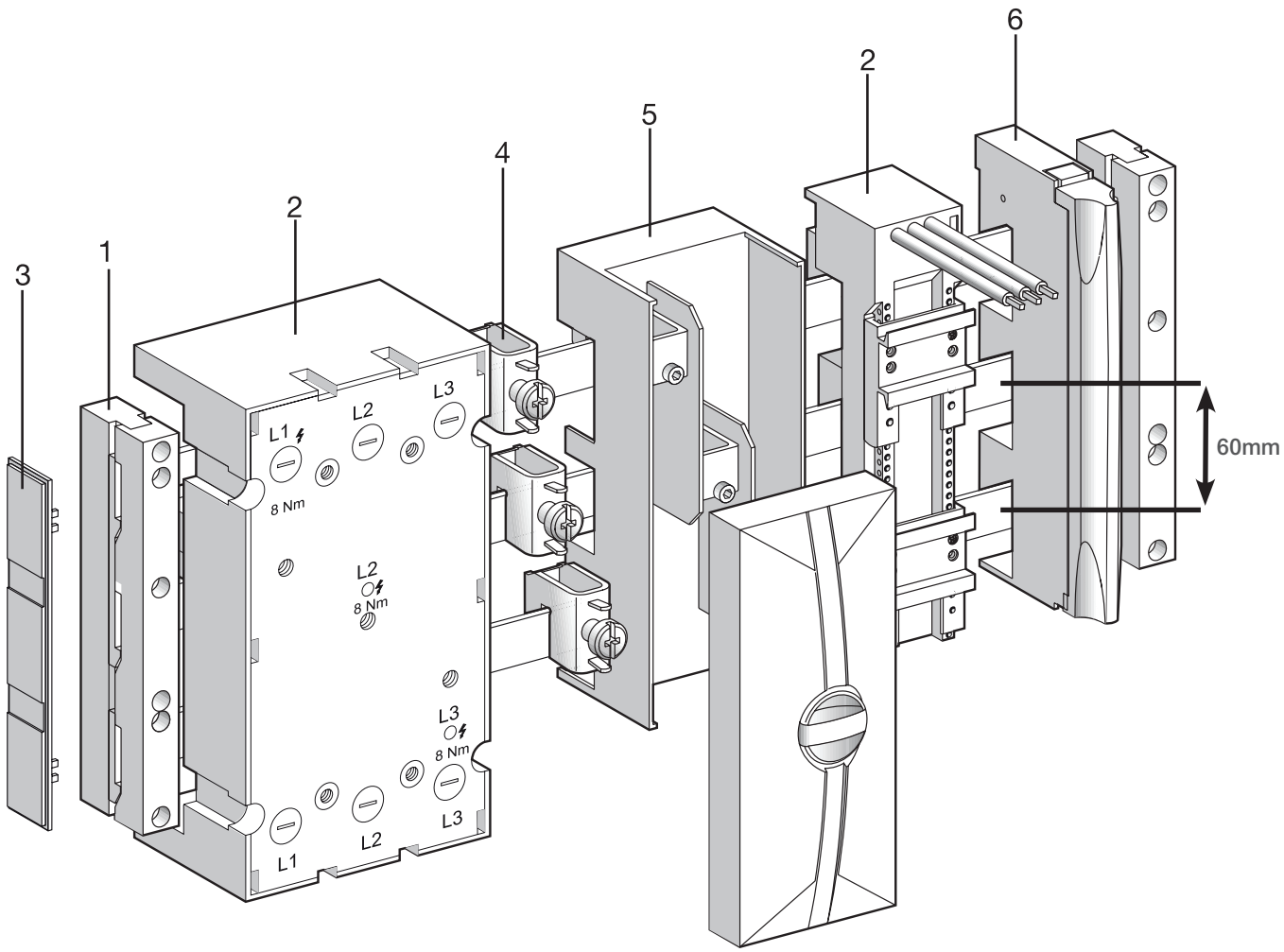
AM1DL201

Note:
(1) Mounting plate pre-drilled with 2 sets of mounting rail fixing centres each comprising an additional pair of holes vertically offset by 10 mm. One 35mm width rail supplied.
(2) Mounting plate pre-drilled with 4 sets of mounting rail fixing centres each comprising an additional pair of holes vertically offset by 10 mm. Two 35 mm wide rails supplied.
(3) Cut to length and drill fixing centres to suit.
(4) Tap-offs supplied as (N-+-L1), (N-+-L2) or (N-+-L3).
(5) 4-pole: 3-phase + neutral or 3-phase + Common

LA9Z
Components for Modular Busbar System
60mm Pitch

Busbar Mounting System

Power distribution is achieved by a 3-pole busbar system. The mounting plates (busbar pitch: 60mm) clip directly on to the copper busbars, providing instantaneous electrical connection. The fault level depends on both the cross section of the copper bars and the distance between the mounting supports.



(1) Support for 3 pole and 4 pole busbar

(2) Mounting plates

(3) End covers

(4) 1-pole connectors

(5) 3-pole connectors on mounting plate

(6) Spring terminal 3-pole connection module

Modular Busbar System

LA9Z
Components for Modular Busbar System
60mm Pitch

Disconnectable Mounting Plates Incorporating Tap-offs: 60mm

Width x height (mm)	Operational current (A) AC-3, 440V	For use with	Reference
45 x 200	25	GV2ME/P/LE + LC1K/D	LA9ZA32621
45 x 200	32	TeSys U LUB12/32	LA9ZA32427
45 x 200	32	GV2ME/P/LE + LC1D	LA9ZA32434
54 x 200	32	GV2ME/P/LE + LC1D	LA9ZA32442
63 x 200	32	GV2ME/P/LE + LC1D	LA9ZA32443
90 x 200	32	GV2ME/P/LE + LC1D	LA9ZA32623
54 x 200	63	GV3P	LA9ZA32624 (2)
54 x 260	63	GV3P + LC1D40A...65A	LA9ZA32625 (2)
108 x 260	63	Integral 63	LA9ZA32627
104 x 190	250	GV7/ NSX100-250 (3P)	LV429372
Busbar support (3-pole)			LA9ZX01495
Insulated cover for busbars		(thickness – 5mm, L = 1m)	LA9ZX01244
		(thickness – 10mm, L = 1m)	LA9ZX01245
End cover (3-pole)			LA9ZX01573

Busbars

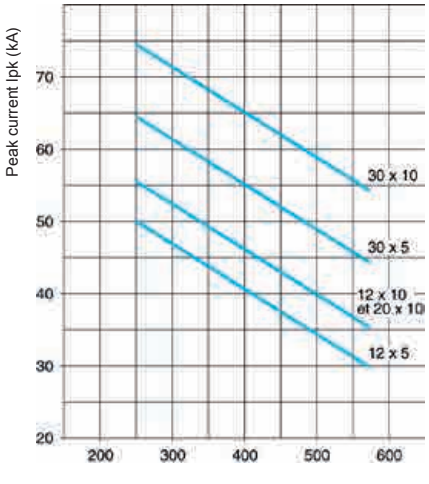
Copper Bars (1)	Permissible current (1)	Reference
25 x 5mm x 2m long	400A	AK6COBAR25x5x2
30 x 10mm x 2m long	630A	AK6COBAR30x10x2

Accessories

Description		Reference
Terminals	One pole for flat bars, 5mm², Imax = 270A Capacity 4-35mm²	LA9ZX01285
	One pole for flat bars,5mm², Imax = 400A capacity 16-70mm²	LA9ZX01287
	3P, on mounting plate + cover for 12x5 to 30x10 busbars, Imax=440A, capacity 35-120mm²	LA9ZX01243

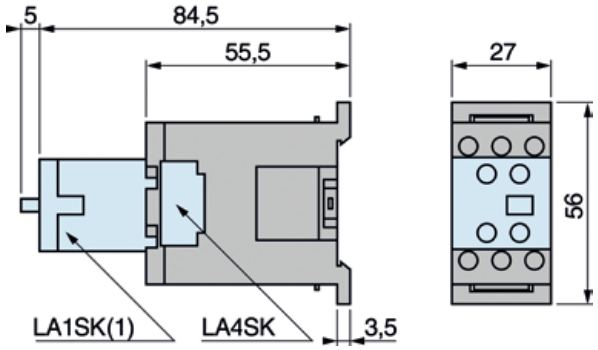
Note:
(1) Permissible current for an ambient of 35°C and a rail temperature of 65°C.
(2) Contactor-circuit breaker combination without additional part.

Busbar System 60mm pitch
Determining the spacing between busbar supports.
(Depending on the prospective short-circuit current.)



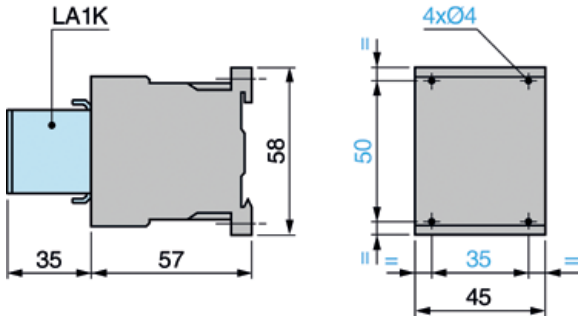
TeSys
Model SK and K Contactors
Overloads & Dimensions

Dimensions
Mini-contactors LC1/LP1SK06

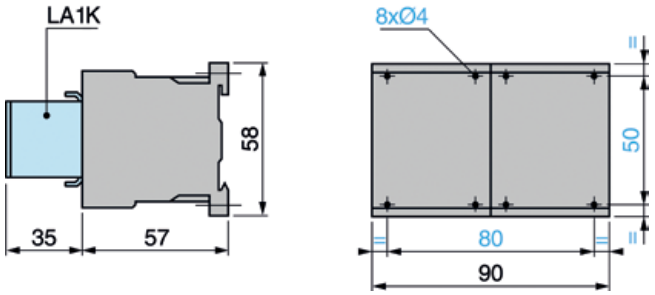


(1) only on LC1SK06

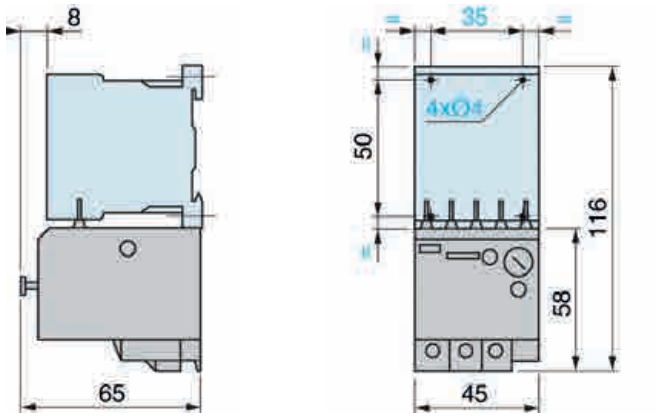
Dimensions
Contactors & Relays
LC1-K, LC7-K, LP1-K, LP4-K
On panel



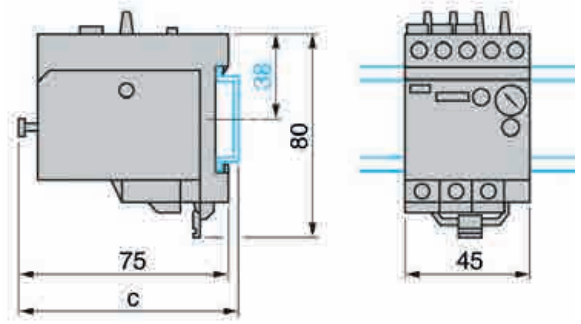
Dimensions
Reversing contactors
LC2K, LC8K, LP2K, LP5K
On panel



Dimensions
LR2K
Direct mounting beneath the contactor



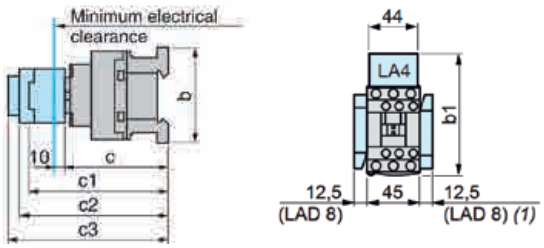
Separate mounting with terminal block LA7K0064 on 35 mm ⊓ rail (AM1DP200 or AM1DE200).



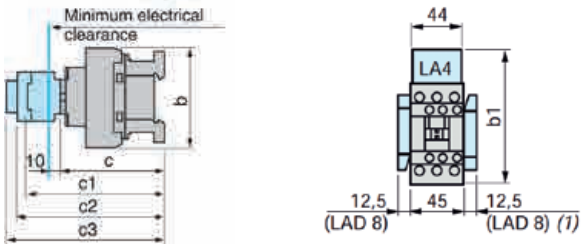
AM1	c
DP200	78.5
DE200	86

TeSys
Model D, Contactors
Control Circuit: AC
Dimensions

LC1-D09...D18 (3-pole)

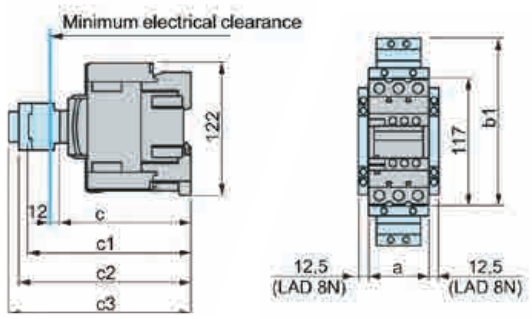


LC1-D25...D38 (3-pole), LC1-DT20...DT40 (4-pole)

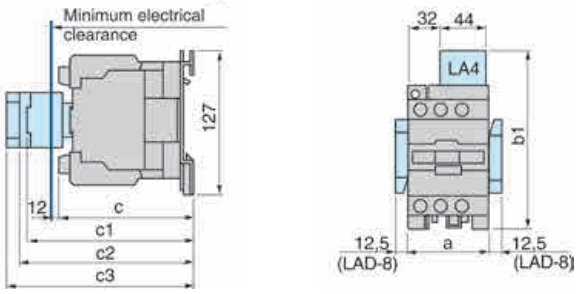


LC1-		D09... D18	D093... D123	D099... D129	D25... D38	D183 D323	DT20 & DT25	DT203 & DT253	DT32... & DT40	DT323 & DT403
b	without add-on blocks	77	99	80	85	99	85	99	91	105
b1	with LAD4BB	94	107	95.5	98	107	98	-	-	-
	with LA4D•2	110 (1)	123 (1)	111.5 (1)	114 (1)	123 (1)	114	-	-	-
	with LA4DF, DT	119 (1)	132 (1)	120.5 (1)	123 (1)	132 (1)	129	-	-	-
	with LA4DW, DL	126 (1)	139 (1)	127.5 (1)	130 (1)	139 (1)	190	-	-	-
c	without cover or add-on blocks	84	84	84	90	90	90	90	97	97
	with cover, without add-on blocks	86	86	86	92	92	92	92	99	99
c1	with LADN or C (2 or 4 contacts)	117	117	117	123	123	123	123	131	131
c2	with LA6DK10, LAD6K10	129	129	129	135	135	135	135	143	143
c3	with LADT, R, S	137	137	137	143	143	143	143	151	151
	with LADT, R, S and sealing cover	141	141	141	147	147	147	147	155	155
(1)	including LAD4BB									

LC1-D40A...D65A (3-pole), LC1-DT60A...DT80A (4-pole)



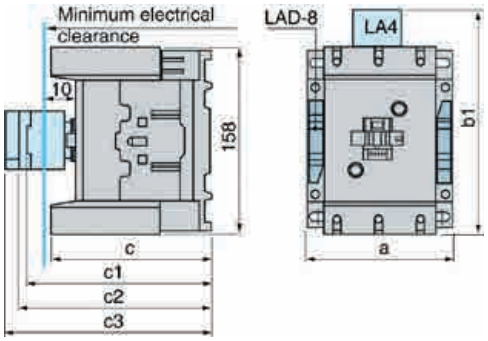
LC1-D80 and D95 (3-pole), LC1-D80004 and D80008 (4-pole), LC1-D40008 and D65008 (4-pole)



LC1-		D40A…D65A	DT60A…DT80A	D40008	D80	D95, D65008	D80004	D80008
a		55	70	85	85	85	96	96
b1	with LA4D•2	-	-	135	135	135	135	135
	with LA4DB3 or LA4DBB3	136	-	-	134	-	-	-
	with LA4DF, DT143	157	-	142	142	142	142	142
	with LA4DM, DR, DW, DL	166	-	150	150	150	150	150
c	without cover or add-on blocks	118	118	125	125	125	140	140
	with cover, without add-on blocks	120	120	-	130	130	-	-
c1	with LA4N (1 contact)	-	-	139	150	150	150	150
	with LADN or C (2 or 4 contacts)	150	150	147	158	158	158	158
c2	with LAD6K10 or LA6DK	163	163	159	170	170	170	170
c3	with LADT, R, S	171	171	167	178	178	178	178
	with LADT, R, S and sealing cover	175	175	171	182	182	182	182

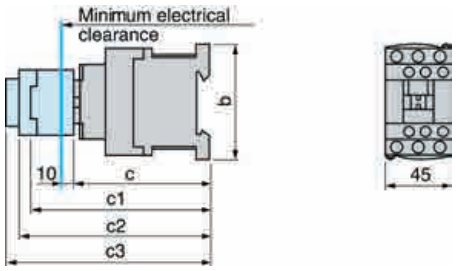
LC1-D115 and D150 (3-pole), LC1-D115004 (4-pole)

LC1-		D115 D150	D115004	D150006	D115006	D1150046
a		120	150	120	120	155
b1	with LA4DA2	174	174	174	174	174
	with LA4DF, DT	185	185	185	185	185
	with LA4DM, DR, DL	188	188	188	188	188
	with LA4DW	188	188	188	-	188
c	without cover or add-on blocks	132	132	115	115	115
	with cover, without add-on blocks	136	-	-	-	-
c1	with LADN or C (2 or 4 contacts)	150	150	150	150	150
c2	with LA6DK20	155	155	155	155	155
c3	with LADT, R, S	168	168	168	168	168
	with LADT, R, S and sealing cover	172	172	172	172	172

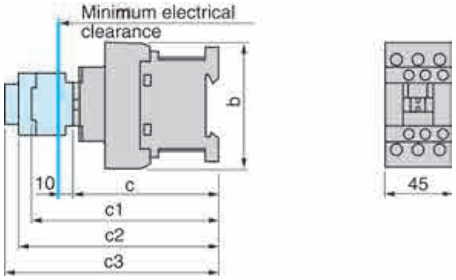


TeSys
Model D, Contactors
Control Circuit: DC or Low Consumption
Dimensions

LC1D09...D18 (3-pole)

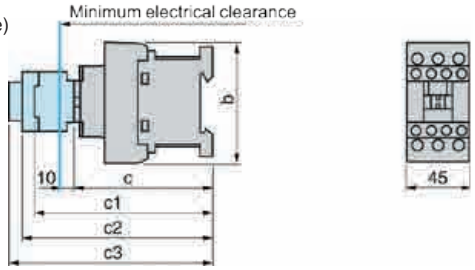


LC1D25...D38 (3-pole)



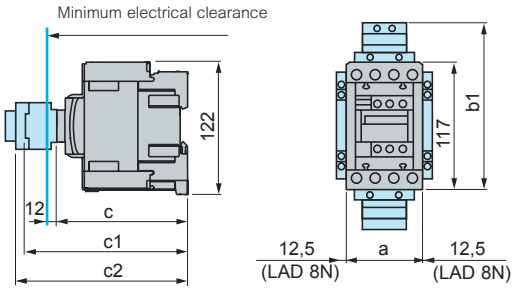
LC1-		D09...D18	D093...D123	D099...D129	D25...D38	D183...D323
b		77	99	80	85	99
c	without cover or add-on blocks	93	93	93	99	99
	with cover, without add-on blocks	95	95	95	101	101
c1	with LADN or C (2 or 4 contacts)	126	126	126	132	132
c2	with LA6DK10	138	138	138	144	144
c3	with LADT, R, S	146	146	146	152	152
	with LADT, R, S & sealing cover	150	150	150	156	156

LC1DT20...DT40 (4 pole)

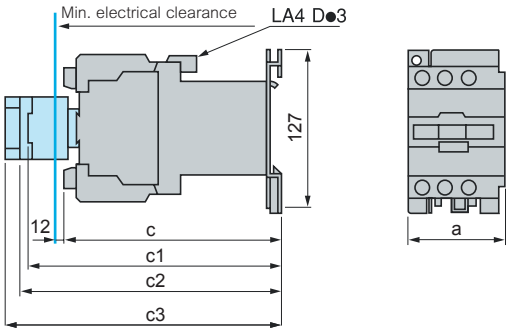


LC1		DT20 and DT25 D098 and D128	DT203 and DT253 D0983 and D1283	DT32 and DT40D188…D258	DT323 and DT403 D1883 and D2583
b		85	99	91	105
c	with cover	99	99	107	107
c1	with LAD N or C (2 or 4 contacts)	123	123	131	131
c2	with LA6 DK10	135	135	143	143
c3	with LAD T, R, S	143	143	151	151
	with LAD T, R, S and sealing cover	147	147	155	155

LC1 DT60A, LC1 DT80 A (4-pole)



LC1 D80 and D95 (3-pole), LP1 D80004, LP1 D80008 (4-pole), LP1 D40008 and D65008 (4-pole)

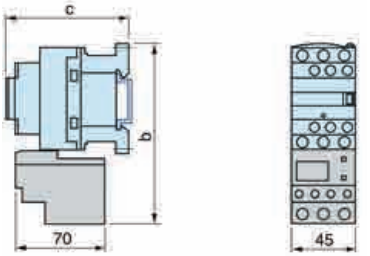


		LC1 DT60A and DT80A	LP1 D40008 and D65008	LC1 D80 and D95	LP1 D80004	LP1 D80008
a		70	85	96	96	96
b1	with LAD 4BB3	136	-	-	-	-
	with LA4 DF, DT	157	-	-	-	-
c	without cover or add-on blocks	118	182	181	181	196
	with cover, without add-on blocks	120	-	186	-	-
c1	with LAD N (1 contact)	-	196	204	204	204
	with LAD N or C (2 or 4 contacts)	150	202	210	210	210
c2	with LA6 DK10	163	213	221	221	221
c3	with LAD T, R, S	171	221	229	229	229
	with LAD T, R, S and sealing cover	175	225	233	233	233

LC1 D115• • • and LC1 D150• • • with dc coil: see page 3.1.68

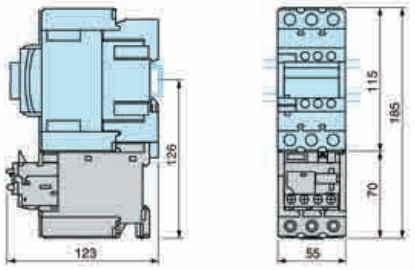
TeSys
Model D, Thermal Overload Relays
Dimensions

LRD-01...35
Direct mounting beneath contactors
with screw clamp connections

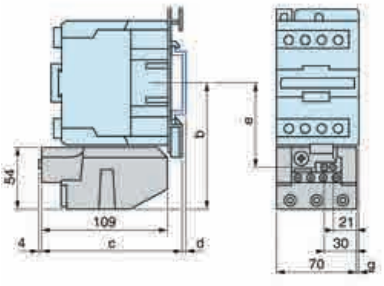


LC1-	D09...D18	D25...D83
b	123	137
c	95	101

LRD 313...365
Direct mounting beneath contactors LC1 D40A...D65A
with screw clamp connections or Everlink® connections

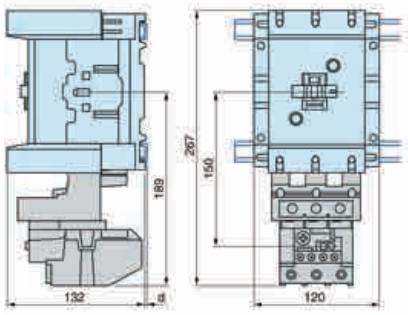


LRD-3•••
Direct mounting beneath contactors
LC1-D40 to D95 and LP1-D40 to D80



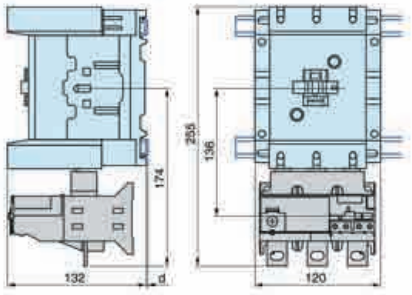
AM1-	DL201	DL200			
d	7	17			
	b	c	e	g (3P)	g (4P)
Control circuit: a.c.					
LC1-D40	111	119	72.4	4.5	13
LC1-D50	111	119	72.4	4.5	-
LC1-D65	111	119	72.4	4.5	13
LC1-D80	115.5	124	76.9	9.5	22
LC1-D95	115.5	124	76.9	9.5	-
Control circuit: d.c.					
LC1-D40, LP1-D40	111	176	72.4	4.5	13
LC1-D50	111	176	72.4	4.5	-
LC1-D65,LP1-D65	111	176	72.4	4.5	13
LC1-D80, D95, LP1-D80	115.5	179.4	76.9	9.5	22

LRD-4•••
Direct mounting beneath contactors
LC1-D115 and D150



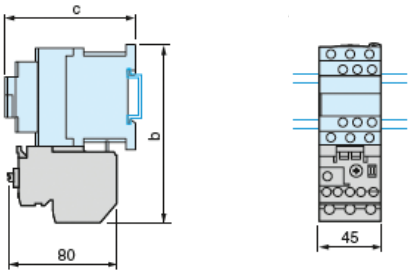
AM1-DL200 and DR200 AM1-DE200 and ED•••
d 2.5 10.5

LR9-D
Direct mounting beneath contactors
LC1-D115 and D150



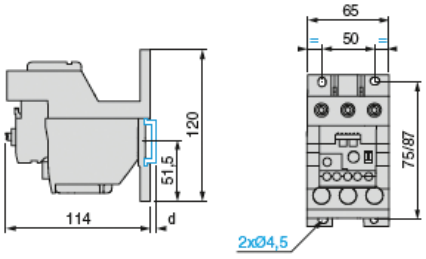
AM1-DP200 and DR200 AM1-DE200 and ED•••
d 2.5 10.5

LR9-D01, 02, 08, 32

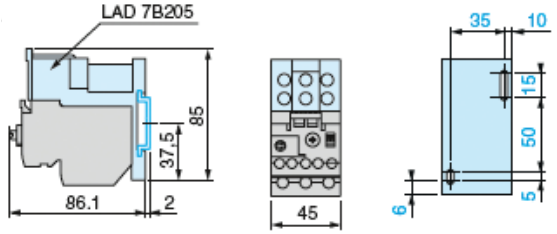


LC1-	D09...D18	D25...D38
b	130	140
c	See pages B8/65 and B8/66	

LR9D110S

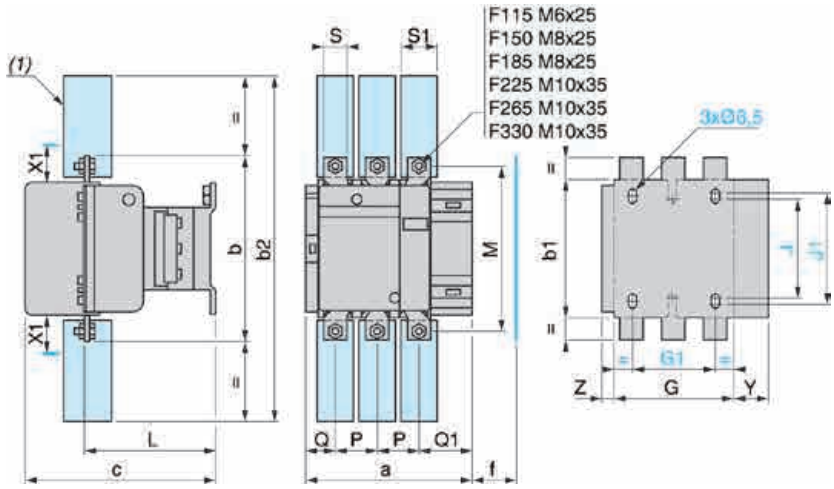


LR9D01...32



TeSys
Model F, Contactors
Dimensions

LC1-F115 to F330



LC1-	200... 500V	600... 1000V
F115, F150	10	15
F185	10	15
F225, F265	10	15
F330	10	15

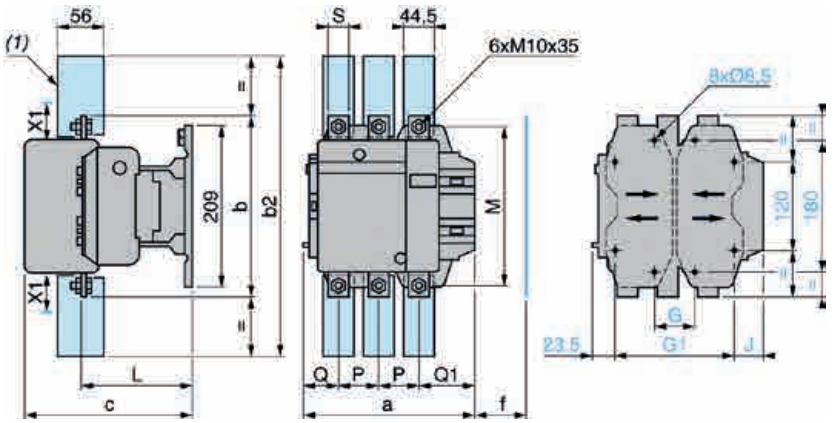
X1 (mm) = Minimum electrical clearance according to voltage and breaking capacity

(1) Power terminal protection shroud (see page 3.1.20)

LC1-		a	b	b1	b2	c	f	G	G1	J	J1	L	M	P	Q	Q1	S	S1	Y	Z
F115	3P	163.5	162	137	265	171	131	106	80	106	120	107	147	37	29.5	60	20	26	44	13.5
	4P	200.5	162	137	265	171	131	143	80	106	120	107	147	37	29.5	60	20	26	44	13.5
F150	3P	163.5	170	137	301	171	131	106	80	106	120	107	150	40	26	57.5	20	34	44	13.5
	4P	200.5	170	137	301	171	131	143	80	106	120	107	150	40	26	55.5	20	34	44	13.5
F185	3P	168.5	174	137	305	181	130	111	80	106	120	113.5	154	40	29	59.5	20	34	44	13.5
	4P	208.5	174	137	305	181	130	151	80	106	120	113.5	154	40	29	59.5	20	34	44	13.5
F225	3P	168.5	197	137	364	181	130	111	80	106	120	113.5	172	48	21	51.5	25	44.5	44	13.5
	4P	208.5	197	137	364	181	130	151	80	106	120	113.5	172	48	17	47.5	25	44.5	44	13.5
F265	3P	201.5	203	145	375	213	147	142	96	106	120	141	178	48	39	66.5	25	44.5	38	21.5
	4P	244.5	203	145	375	213	147	190	96	106	120	141	178	48	34	66.5	25	44.5	38	21.5
F330	3P	213	206	145	375	219	147	154.5	96	106	120	145	181	48	43	74	25	44.5	38	20.5
	4P	261	206	145	375	219	147	202.5	96	106	120	145	181	48	43	74	25	44.5	38	20.5

f = minimum distance required for coil removal.

LC1-F400 and F500



X1 (mm) = Minimum electrical clearance according to operating voltage and breaking capacity

LC1	200... 500V	600... 1000V
F400	15	20
F500	15	20

(1) Power terminal protection shroud (see page 3.1.20)

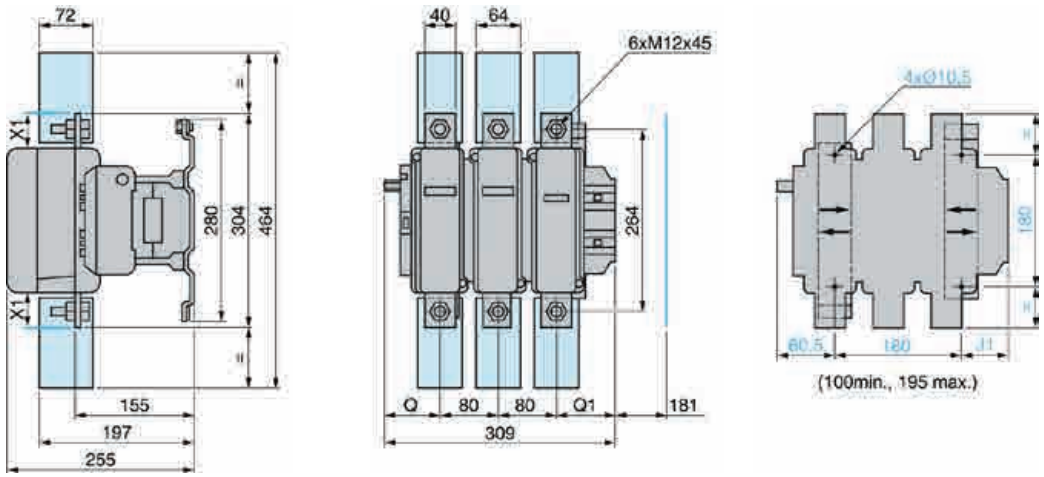
LC1-		a	b	b2	c	f	G*	Gmin	Gmax	G1*	G1min	G1max	J	L	M	P	Q	Q1	S
F400	2P	213	206	375	219	119	80	66	102	170	156	192	19.5	145	181	48	69	96	25
	3P	213	206	375	219	119	80	66	102	170	156	192	19.5	145	181	48	43	74	25
	4P	261	206	375	219	119	80	66	150	170	156	240	67.5	145	181	48	43	74	25
F500	2P	233	238	400	232	150	80	66	120	170	156	210	39.5	146	208	55	76	102	30
	3P	233	238	400	232	150	80	66	120	170	156	210	39.5	146	208	55	46	77	30
	4P	288	238	400	232	150	140	66	175	230	156	265	34.5	146	208	55	46	77	30

* supplied

f = minimum distance required for coil removal.

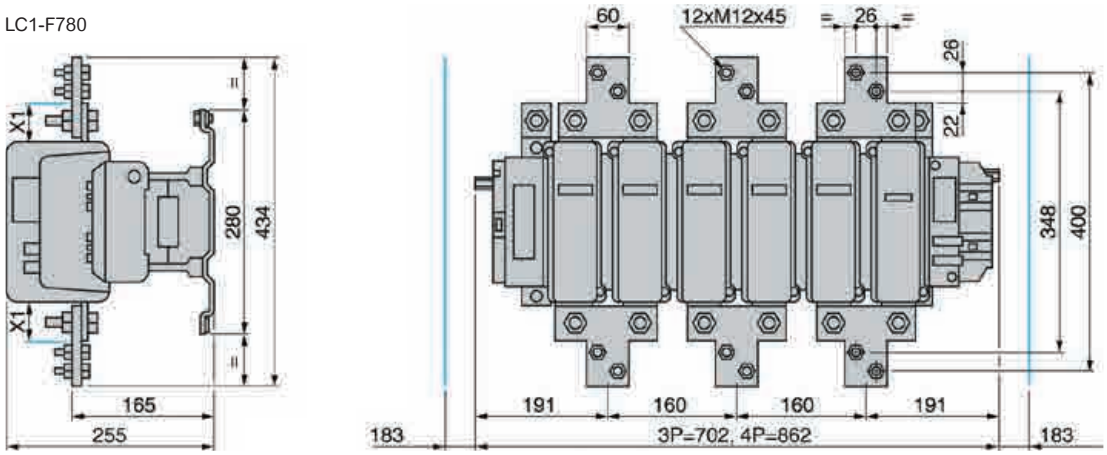
TeSys
Model F, Contactors
Dimensions

LC1-F630 and LC1-F800



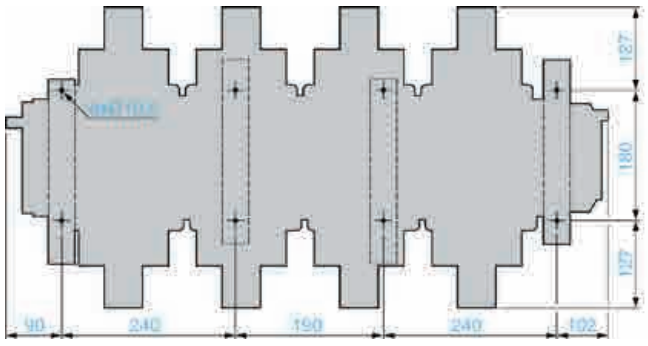
X1 (mm) = Minimum electrical clearance according to operating voltage and breaking capacity				
Voltage	200...500 V	690...1000 V	200...690 V	1000 V
LC1 F630	20	30	–	–
LC1 F800	–	–	10	20

LC1-F780

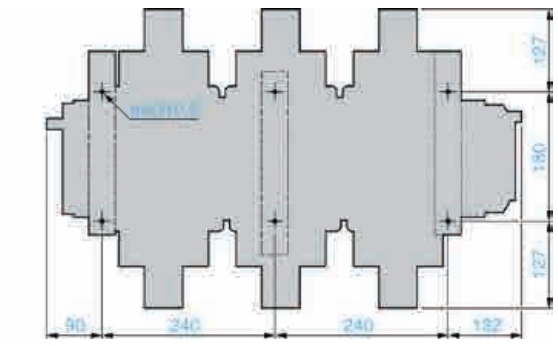


X1 (mm) = Minimum electrical clearance according to operating voltage and breaking capacity		
Voltage	200...500 V	690...1000 V
X1 (mm)	30	35

Fixing centres of LC1-F7804

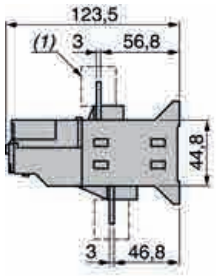


Fixing centres of LC1-F780

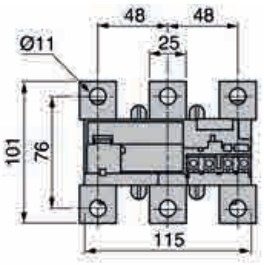


TeSys
Model F, Overload Relays to 630A
Dimensions

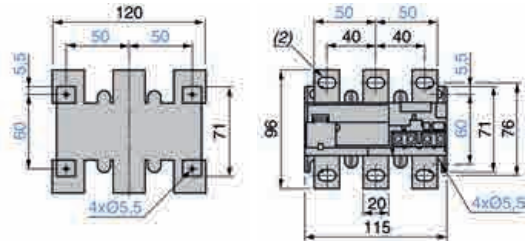
Common side view



LR9 F5371
LR9 F71

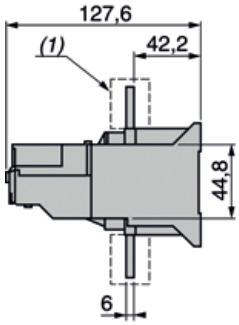


LR9 F5357, F5363, F5367, F5369
LR9 F57, F63, F67, F69

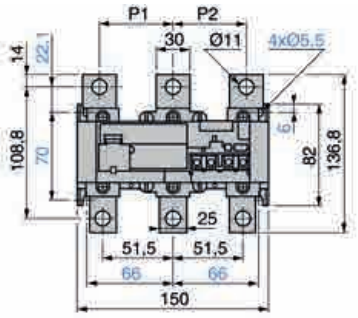


(1) Power terminal protection shrouds LA9 F70●
(2) 6.5 x 13.5 for LR9 F5357 and 8.5 x 13.5 for LR9 F5363, F5367, F5369

Common side view



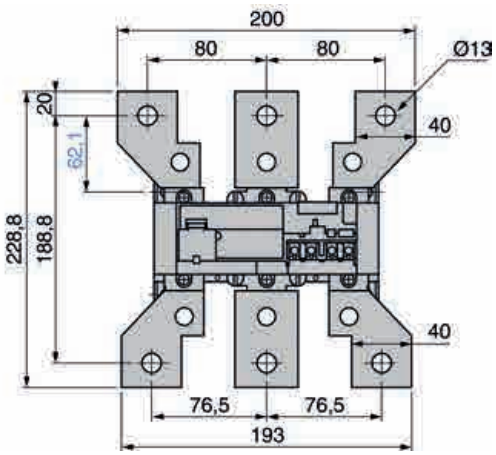
LR9 F7375, F7379, F7381
LR9 F75, F79, F81



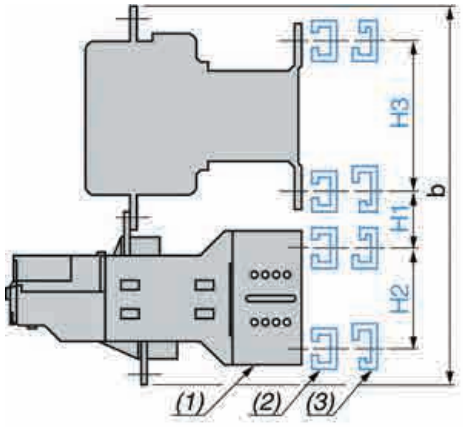
	P1	P2
LR9F7375	48	48
LR9F7379, F7381	55	55

(1) Power terminal protection shrouds LA9F70i

LR9 F7381 (For mounting beneath contactor LC1 F630 LR9 F81)



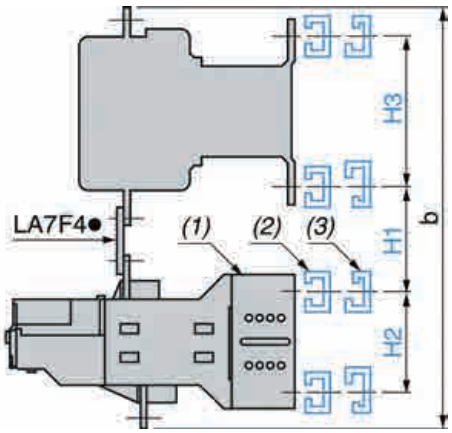
Mounting beneath contactor LC1F



Contactor LC1	With relay LR9	b	H1	H2	H3
F115	F5357, F5363, F5367, F5369	240	30	76	120
F150	F5357, F5363, F5367, F5369	246	30	76	120
F185	F5357, F5363, F5367, F5369	250	30	76	120
F225	F5371	273	40	76	120
	F7375, F7379	308	50	108,8	120
F265	F5371	279	40	76	120
	F7375, F7379	314	60	108,8	120
F330	F7375, F7379	317	60	108,8	120
F400	F7375, F7379, F7381	317	60	108,8	180
F500	F7375, F7379, F7381	346	70	108,8	180
F630	F7381	510	110	108,8	180

(1) Relay mounting plate LA7F90•
(2) AM1EC or AM1DF for LC1F115 to F630 and F800

Mounting beneath reversing contactor LC2F or star-delta starter LC3F

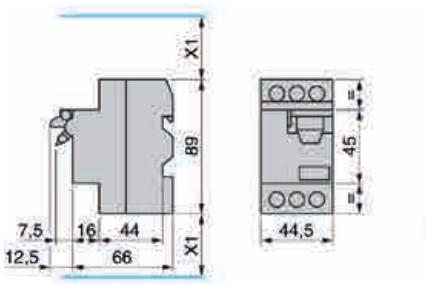


Contactor LC1	With relay LR9	b	H1	H2	H3
F115	F5357, F5363, F5367, F5369	279	60	76	120
F150	F5357, F5363, F5367, F5369	283	60	76	120
F185	F5357, F5363, F5367, F5369	285	60	76	120
F225	F5371	319	80	76	120
	F7375, F7379	360	100	108,8	120
F265	F5371	332	90	76	120
	F7375, F7379	363	100	108,8	120
F330	F7375, F7379	364	100	108,8	120
F400	F7375, F7379, F7381	364	100	108,8	180
F500	F7375, F7379, F7381	390	110	108,8	180
F630	F7381	509	120	108,8	180

(3) DZ5MB for LC1F115 to F400

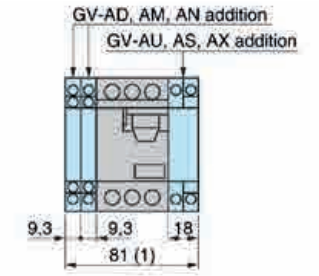
TeSys
GV2 Thermal Magnetic Motor Circuit Breaker
GV2 Magnetic Only Motor Circuit Breaker
Dimensions, Mounting

GV2-LE



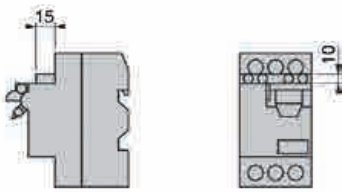
X1 Electrical clearance = 40mm for Ue ≤ 690V

GV-AD, AM, AN, AU, AS

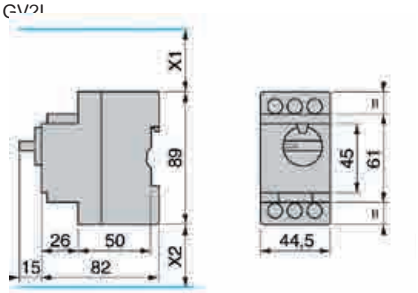


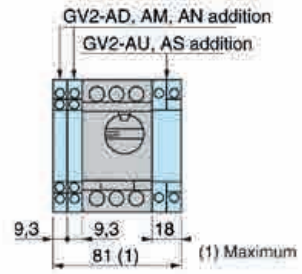
(1) Maximum.

GV-AE

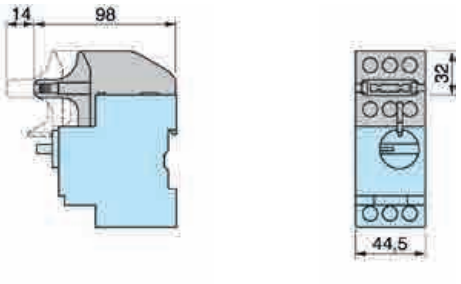


GV2L



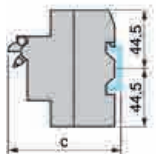


GV2AK00

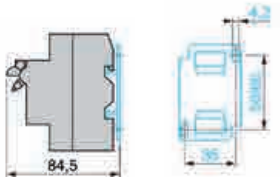


X1 Electrical clearance = 40mm for Ue ≤ 415V, or 80mm for Ue = 440V, or 120mm for Ue = 500 & 690V
X2 = 40mm

Mounting of GV2-LE
On 35mm ⊐ rail
c = 80 on AM1-DP200 (35 x 7.5)
c = 88 on AM1-DE200, ED200 (35 x 15)



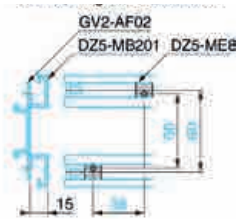
On panel with adaptor plate
GV2-AF02



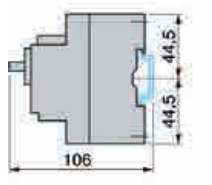
On pre-slotted mounting plate AM1-PA



On mounting rails
DZ5-MB201



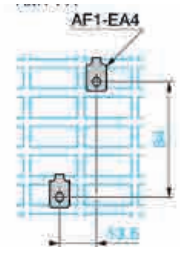
Mounting of GV2-L
On mounting rail
AM1-DE200,
AM1-ED200 (35 x 15)



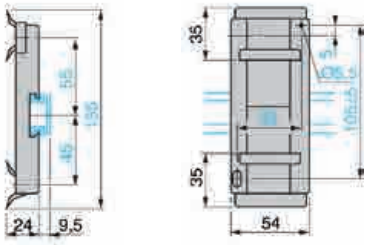
On panel



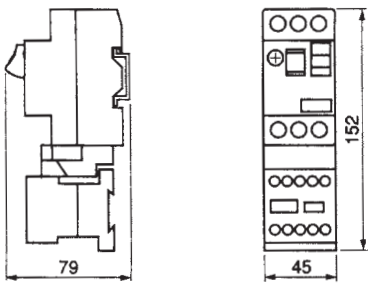
On pre-slotted mounting plate AM1-PA



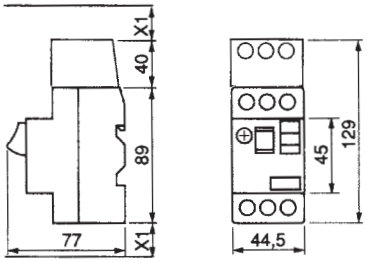
Adaptor plate GK2-AF01



GV2-AF01
GV2-ME + K range contactor combination



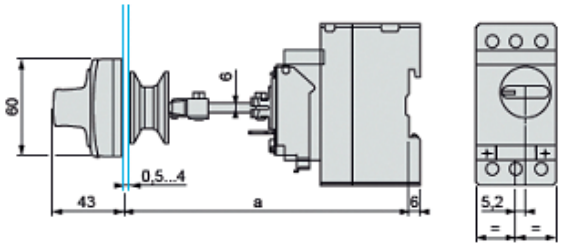
GV2ME + GV1-L3 (current limiter addition)

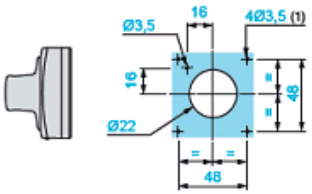


X1=10 mm for Ue=230V
or 30mm for 230V<Ue<690V

TeSys
GV2 Thermal Magnetic Motor Circuit Breaker
GV2 Magnetic Only Motor Circuit Breaker
Dimensions, Mounting, Wiring Diagrams

Mounting of the door-mounted operator GV2APN01

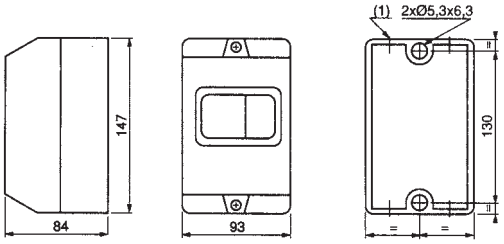




	a	
	Min	Max
GV2APN••	140	250
GV2APN•• + GVAPK11	250	434

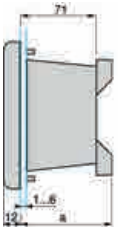
Flush mounting enclosure (support cut-out)

Surface mounting enclosure GV2MC0•

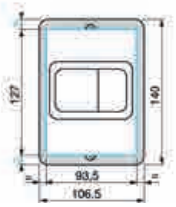


(1) 4 knock-outs for 16 P cable glands or N° 16 conduit.

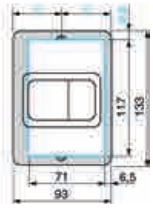
GV2MP0•



GV2MP01,MP02

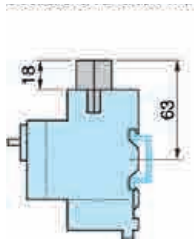


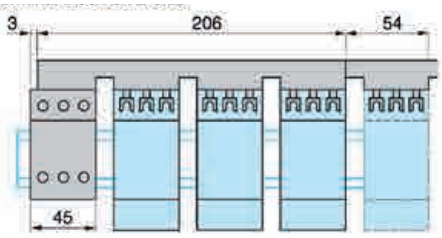
GV2MP03,MP04



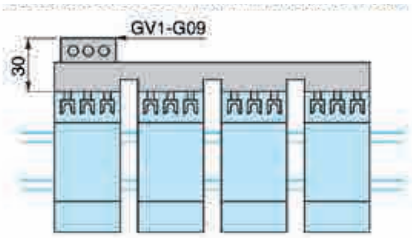
GV2	a
MP01, MP02	–
MP03, MP04	86

GV2G454 busbars with GV2G05 terminal block

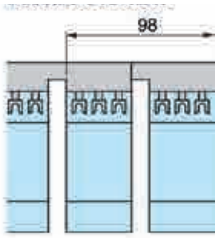




GV2-G454 busbars with GV1-G09 terminal block



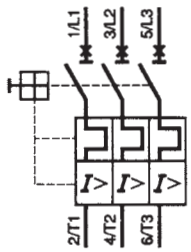
GV2-G254 busbars



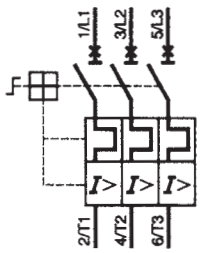
Number of GV2	3	4	5	6	7	8	9	10	11	12	13	Add 54mm for each additional GV2
a	206	260	314	368	422	476	530	584	638	692	746	

Wiring diagrams

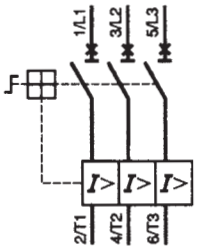
GV2-M●●



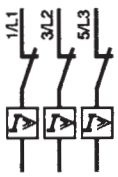
GV2-P●●



GV2-L●●

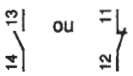


Current limiter
GV1-L3



Auxiliary contact blocks

GV2-AE1



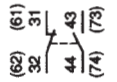
GV2-AE11



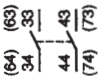
GV2-AE20



GV2-AN11



GV2-AN20



Magnetic fault signalling contact
GV2-AM11



Fault signalling contact + instantaneous contact

GV2-AD0110



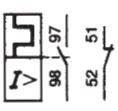
GV2-AD0101



GV2-AD1010



Voltage trips
GV2-AD1001



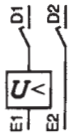
GV2-AU●●●



GV2-AS●●●



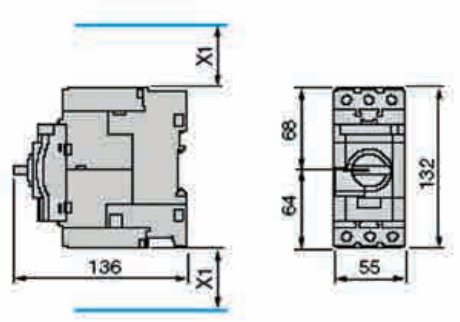
GV2-AX●●●

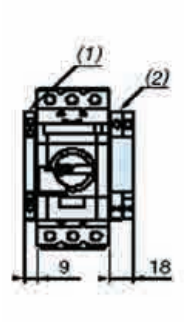


TeSys
GV3 Thermal Magnetic Motor Circuit Breakers
GV3 Magnetic Motor Circuit Breakers
Dimensions, Mounting

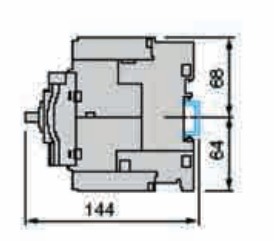
GV3P Thermal Magnetic Motor Circuit Breakers

Dimensions



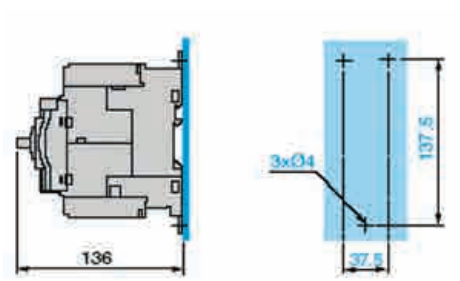


Mounting on rail AM1
DE200 or AM1 ED201

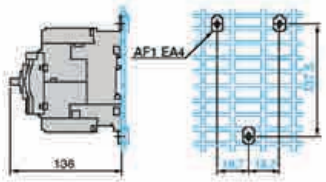


X1 = Electrical clearance (ISC max)
40mm for Ue < 500V, 50mm for UE < 690V

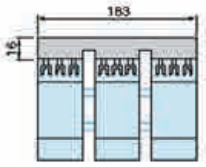
(1) Blocks GV AN•• GV AD•• GVAM11
(2) Block GV3 AU•• and GV3 AS••



Mounting on pre-slotted mounting



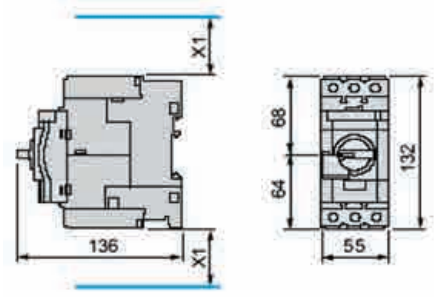
Set of busbars GV3G364

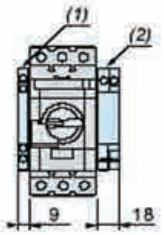


Note:
Leave a space of 9mm between circuit-breakers: either an empty space or side-mounting add-on contact blocks.
Side by side mounting is possible up to 40°C.

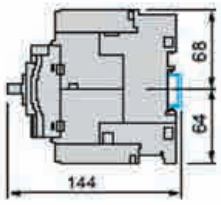
GV3L Magnetic Breakers

Dimensions





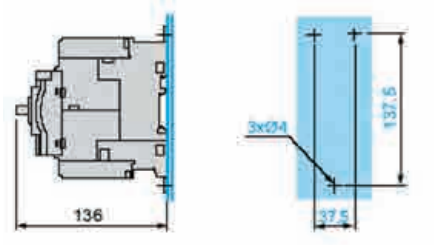
Mounting on rail AM1 DE200
or AM1 ED201



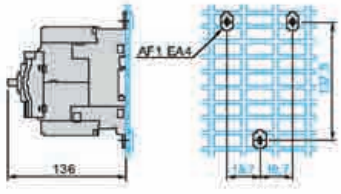
X1 = Electrical clearance (ISC max)
40mm for Ue < 500V, 50mm for UE < 690V

(1) Blocks GV AN•• GV AD•• GVAM11
(2) Block GV3 AU•• and GV3 AS••

Mounting on panel, using M4 screws



Mounting on pre-slotted mounting plate AM1 PA



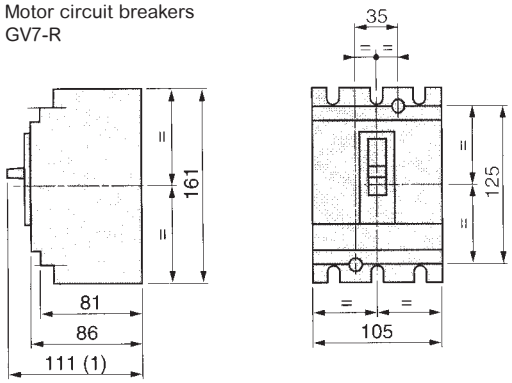
Set of busbars GV3G364



Note:
Leave a space of 9mm between circuit-breakers: either an empty space or side-mounting add-on contact blocks.
Side by side mounting is possible up to 40°C.

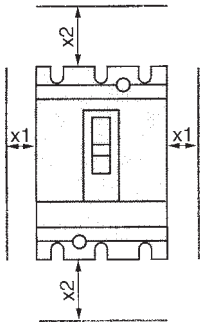
TeSys
GV7 Thermal Magnetic Motor Circuit Breakers
Dimensions, Mounting

Motor circuit breakers
GV7-R



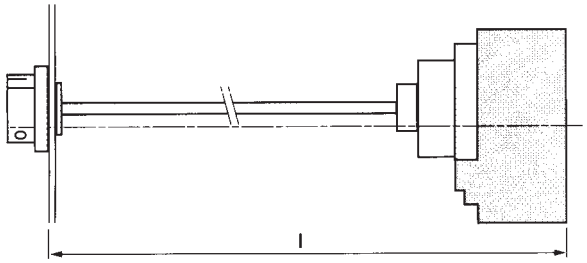
(1) 126 for GV7-R•220

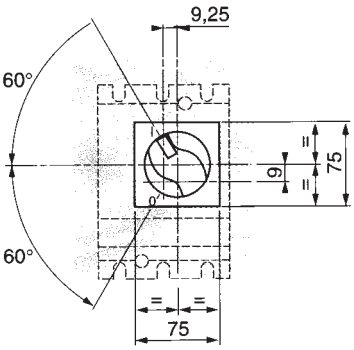
Safety clearance



		x1	x2
Painted or insulated metal plate, insulation or insulated bar		0	30
Bare metal plate	U ⎓ 440 V	5	35
	440 V ⎍ U ⎍ 600 V	10	35
	U ⎓ 600 V	20	35

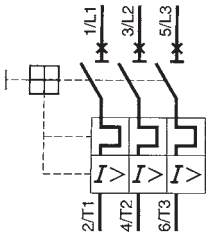
Extended rotary handle
GV7-AP01, GV7-AP02



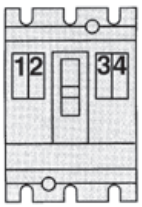


l : 185 min, 600 max
The shaft of the extended rotary handle GV7AP01 or GV7AP02 must be cut to length: l-126 mm.

Motor circuit breakers
GV7-R



Safety clearance

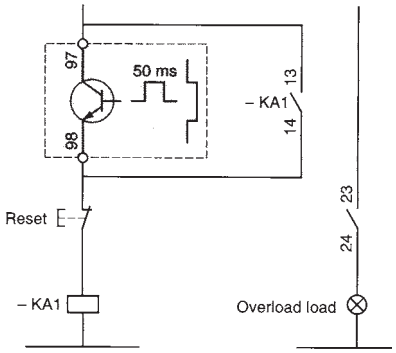


Add-on auxiliary contacts according to their location

Location 1	Location 2	Location 3	Location 4
C/O contact	Trip indication	Electrical fault indication	C/O contact
OF	SD	SDE	OF

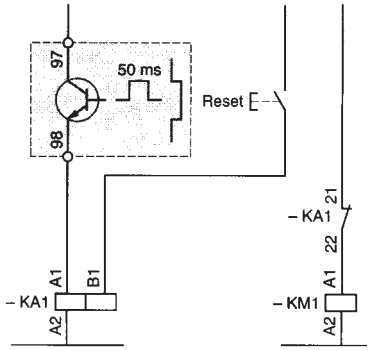
A self-adhesive label, supplied with the contact, can be affixed to the front face of the circuit breaker to allow personalised marking according to the function of the contact or contacts.

Recommended application schemes
GV7-AD111, AD112
Fault signalling



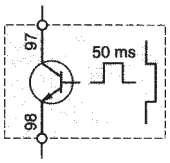
Associated components
KA1 : CA2--KN or CA2-DN

Contactor stop on overload



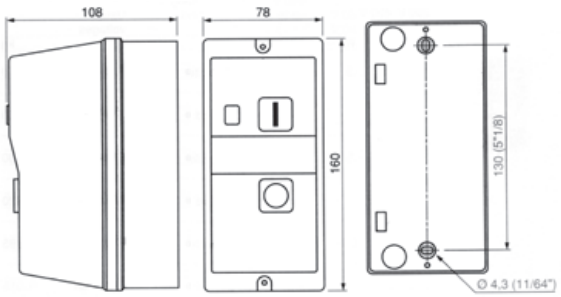
Associated components
KA1 : CA2-DK or CA2-DN + LA6-DK1 or RHK
KM1 : LC1-D or LC1-F

GV7-AD111, AD112



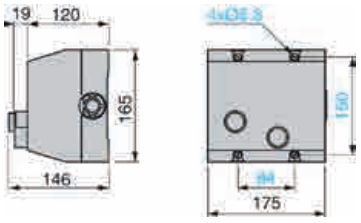
TeSys
Model K, Model D
DOL Reversers and Star Delta Starters, Dimensions, Mounting

LE1-M35 (1)

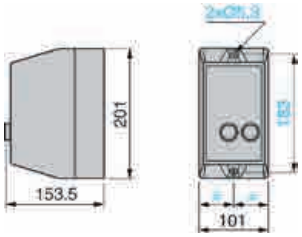


(1) Suitable for mounting on wall or machine framework.

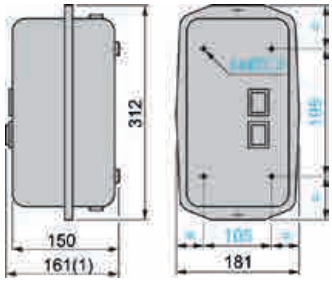
LE2-K064



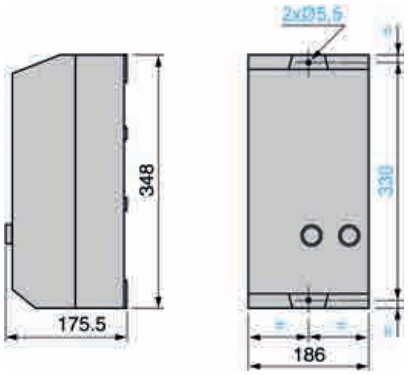
LE1-D09 to D35
LE2-D09 to D35



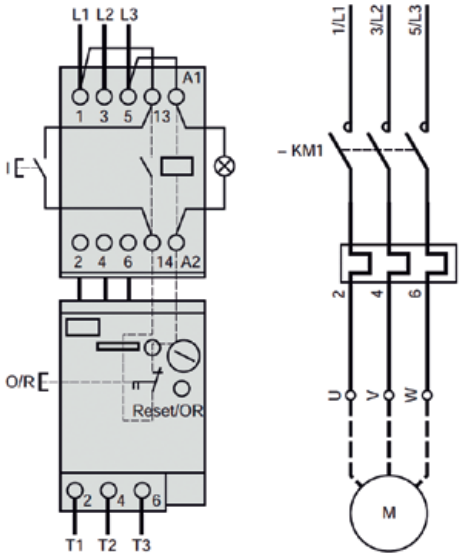
LE1-D405, D505, D655



(1) 150 for LE1-D●●●●●A04 (without pushbuttons)

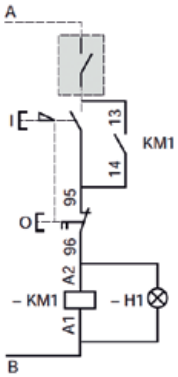


LE1 M35

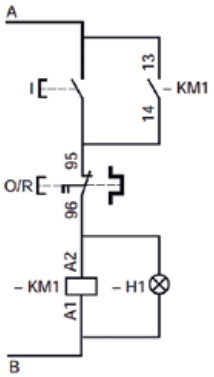


Choice of type of control built into the product

Control by latching pushbuttons



Control by spring return pushbuttons

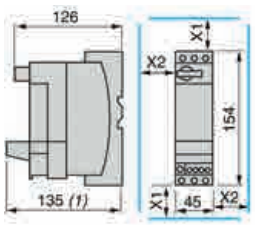


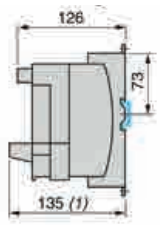
Connection	A	B
220 V, 230 V, 240 V	L3	Neutral
380 V, 400 V, 415 V, 440 V	L3	L1
Other voltages	Terminal 1	Terminal 2

Starter Controllers

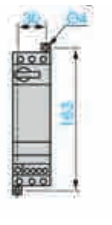
Non reversing (LUB)

Rail mounting





Screw fixing

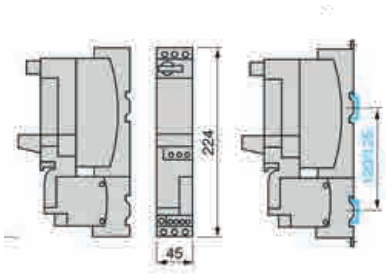


Minimum electrical clearance:
X1 = 50 mm for Ue = 440 V and 70 mm for Ue = 500 and 690 V
X2 = 0

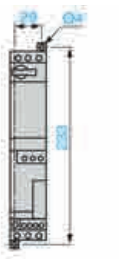
(1) Maximum depth (with Modbus communication module)

Reversing (LU2B12•• and LU2B32••)

Rail mounting

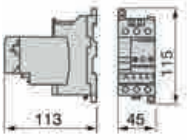


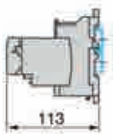
Screw fixing



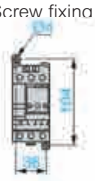
Reverser block for mounting separately from power bases

Rail mounting





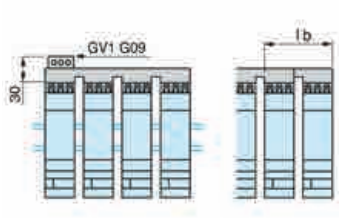
Screw fixing



Sets of busbars and plug-in power sockets
GV2 G445 and GV2 G454



GV2 G with terminal block
GV1 G09 GV2 G245 and G254

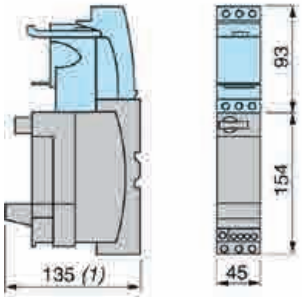


	la	P
GV2 G445 (2 x 45)	179	45
GV2 G454 (2 x 54)	206	54

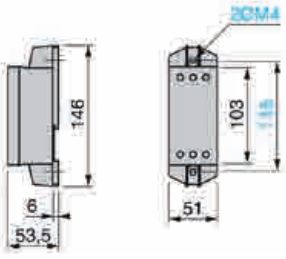
	a			
Number of tap-offs	5	6	7	8
GV2 G445 (2 x 45)	224	269	314	359
GV2 G454 (2 x 54)	260	314	368	422

	lb
GV2 G245 (2 x 45)	89
GV2 G254 (2 x 54)	98

Limiter-disconnector LUA LB1
Disconnector LUA LB10



Current limiter LA9 LB920

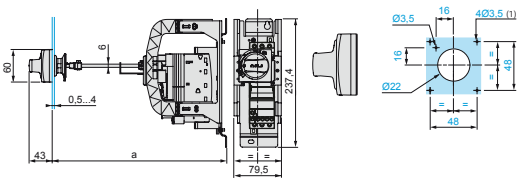


(1) Maximum depth (with Modbus communication module)

	a	
	Mini	Maxi
LU9APN●●	191	300
LU9APN●●	300	483
+GVAPK12		

Door interlock mechanisms LU9APN21

Door cut-out



(1) For IP 65 only

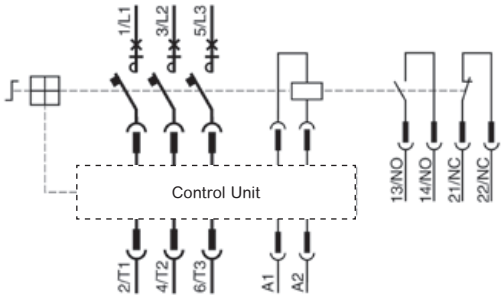
Modbus splitter box LU9 GC3
Splitter box LU9 G02



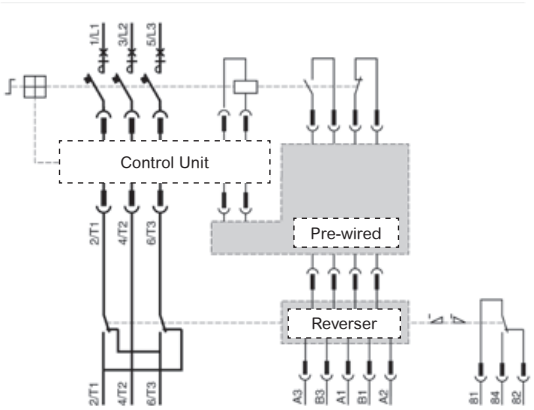
Model U, Integrated Starter Protector Wiring Diagrams

With Standard, Advance or Multifunction Control Unit

Non- reversing

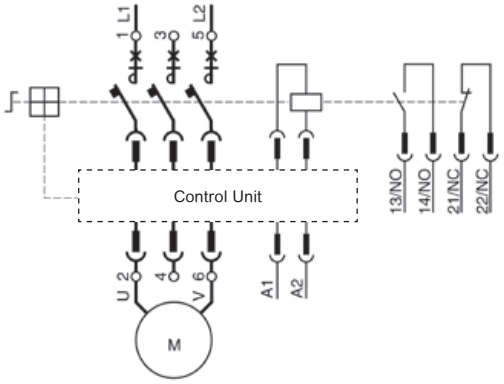


Reversing

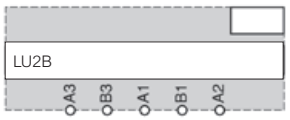


With Control Unit LUCC or LUCM

Connection of a single-phase motor

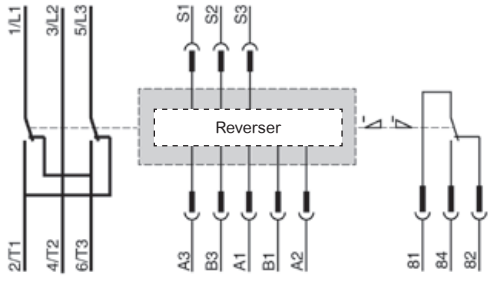


Control terminal block

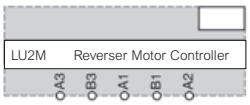


Reverser blocks

LU2M

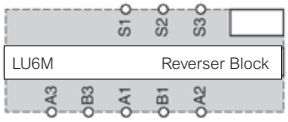


Control terminal block

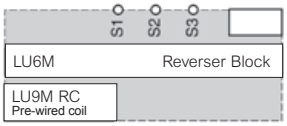


LU6M

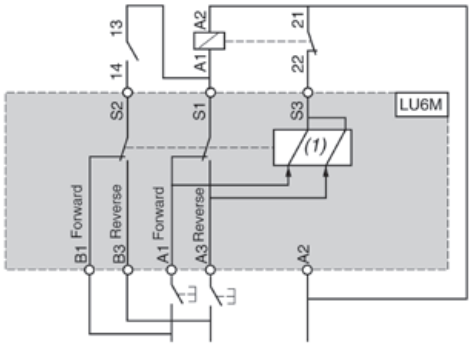
Control terminal blocks



With pre-wired connector LU9M RC



Basic scheme

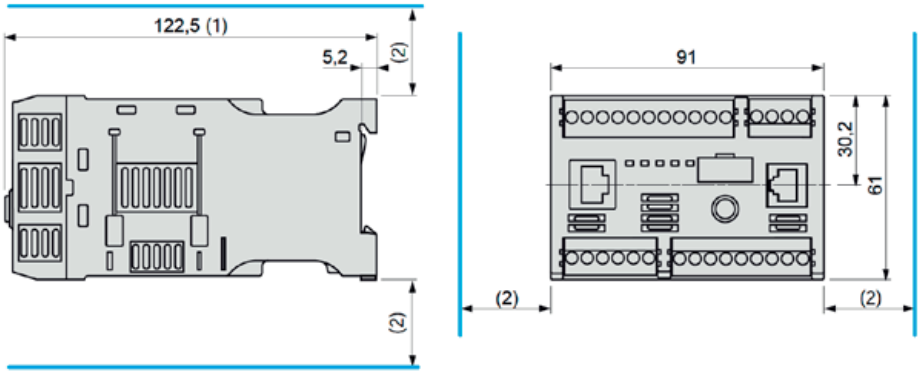


S1 Start next stage
S2 Electrical interlocking
S3 Maintaining contact
B1 Maintain forward running
B3 Maintain reverse running
A1 Pulse forward running
A2 Common
A3 Pulse reverse running
(1) Electronically operated bistable electromagnet.

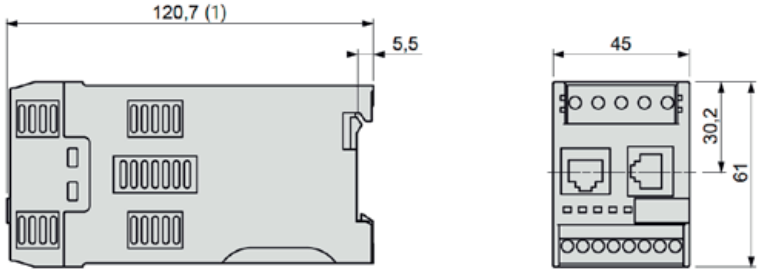
Electronic Motor Protection Relays

TeSys T Motor Management Base and Expansion Module
Electronic Over Current Relays, Dimensions

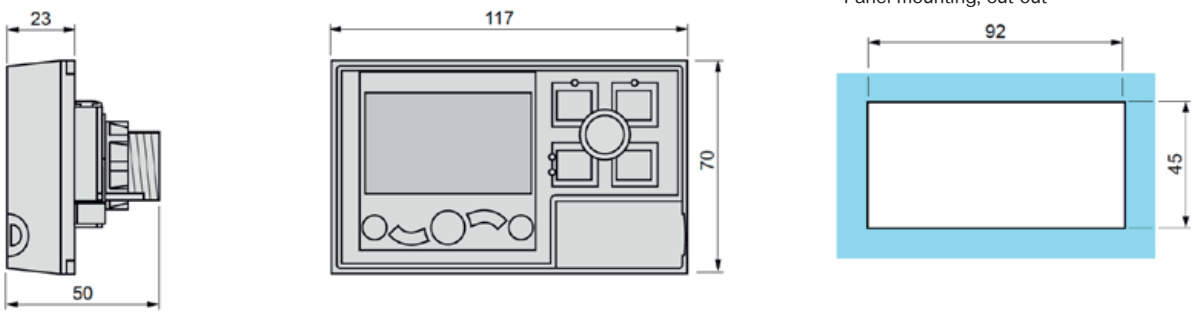
LTM R●● Controllers



LTM EV40●● Extension Modules

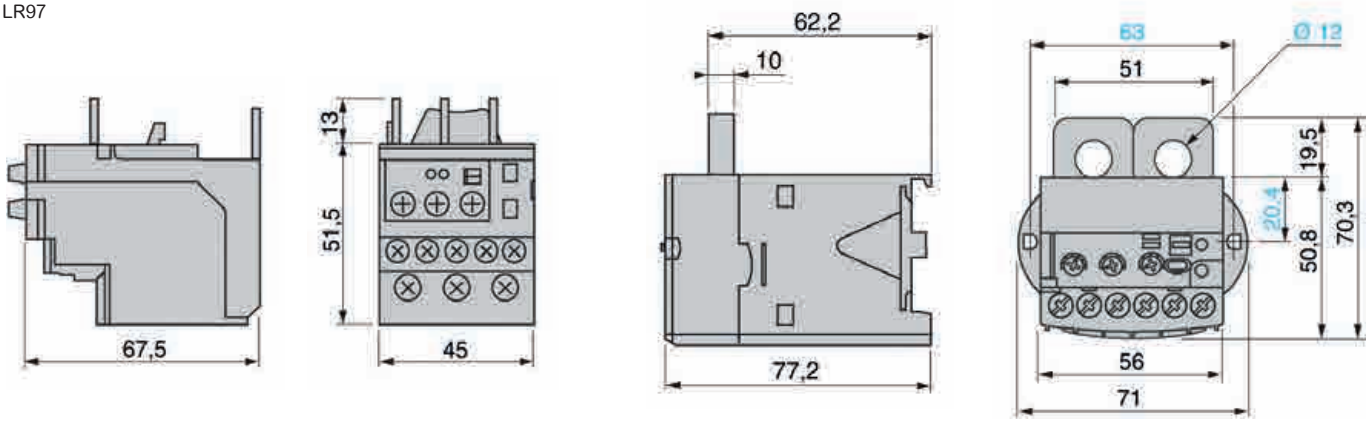


LTM CU Operator Control Unit



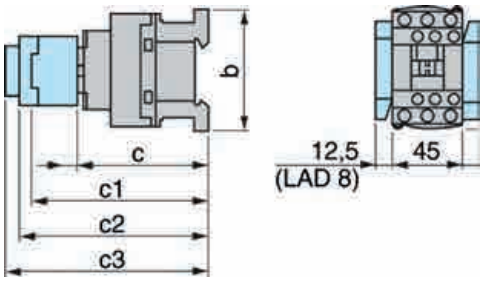
(1) 140mm with RJ45 connector for connection to extension module and to network, 166mm with Profibus DP/CANopen connector.
(2) Leave a gap around the device of 9mm at 45°C, 9 to 40mm from 45 to 50°C, 40mm at 60°C.

Electronic Over Current Relays
LR97



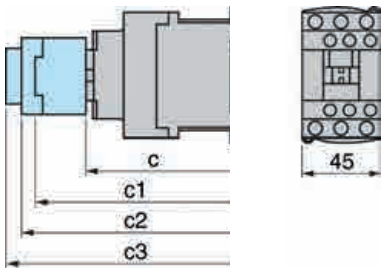
TeSys
Model D, Dimensions

CAD ∿



CAD-		32 50	323 503
b	without add-on blocks	77	99
c	without cover or add-on blocks	84	84
	with cover, without add-on blocks	86	86
c1	with LAD N or C (2 or 4 contacts)	117	117
c2	with LA6 DK10	129	129
c3	with LAD T, R, S	137	137
	with LAD T, R, S and sealing cover	141	141

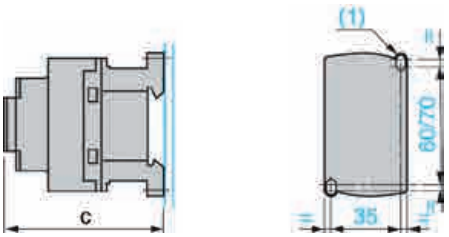
CAD ⎓ or LC (low consumption)



CAD-		32 50	323 503
b	without add-on blocks	77	99
c	without cover or add-on blocks	93	93
	with cover, without add-on blocks	95	95
c1	with LAD N or C (2 or 4 contacts)	126	126
c2	with LA6 DK10	138	138
c3	with LAD T, R, S	146	146
	with LAD T, R, S and sealing cover	150	150

CAD

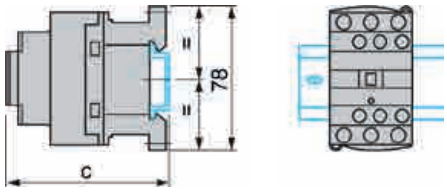
Panel Mounted



		CADAC	CADDC or LC
c	with cover	86	95

(1) 2 elongated holes 4.5 x 9

Mounted on rail AM1-DP200 or DE200

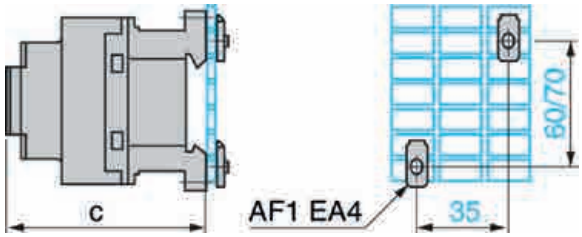


		CADAC	CADDC or LC
c	(AM1-DP200) (1)	88	97
	(AM1-DE200) (1)	96	105

(1) with cover

CAD

Mounted on plate AM1-P



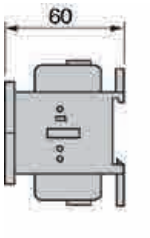
		CAD	CADDC or LC
c	with cover	86	95

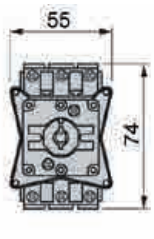
VARIO Switch Disconnectors
Dimensions

Switch Disconnectors

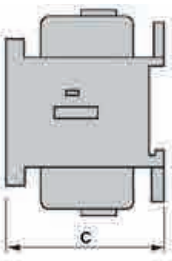
Switch bodies

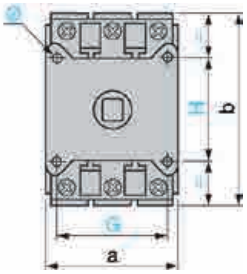
V0•, V0 to V2





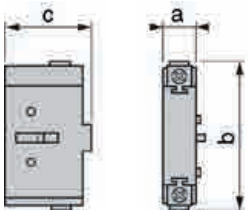
V3 to V6



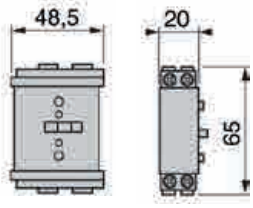


	a	b	c	G	H	Ø
V3, V4	60	83	65	48	48	5.5
V5, V6	60	125	90	68	68	5.5

Add-on modules
VZ-02 to VZ-4
VZ-11 to VZ-16



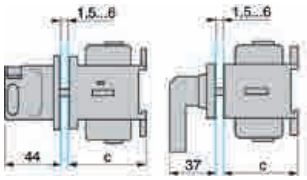
VZ-7, VZ-20



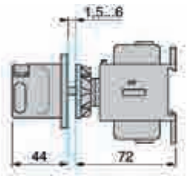
	a	b	c
VZ-02 and VZ-01, VZ-0 to VZ-2, VZ-11, VZ-14	16	74	35
VZ-3, VZ-4, VZ-12, VZ-15	20	83	46
VZ-13, VZ-16	30	125	63

Switch Disconnector Mounted on Enclosure Door

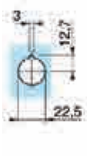
V0•, V0 to V2
Single hole fixing



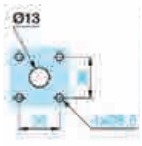
V3 to V6
4 screw fixing



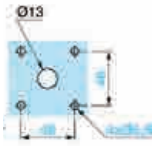
Single hole fixing
V0•, V0 to V2



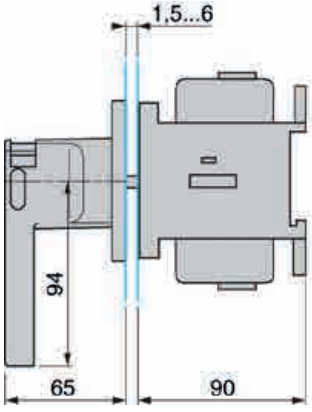
4 screw fixing
45 x 45 front plate
V0•, V0 to V2



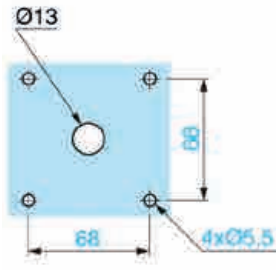
4 screw fixing
60 x 60 front plate
V0•, V0 to V4



V5 and V6



4 screw fixing
90 x 90 front plate

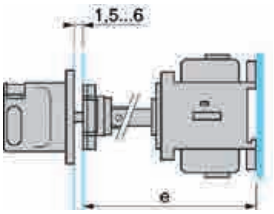


	c
V0•, V0 to V2	60
V3, V4	65

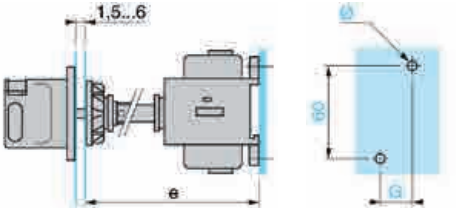
VARIO Switch Disconnectors
Dimensions, Schemes

Switch Disconnector Mounted at back of Enclosure

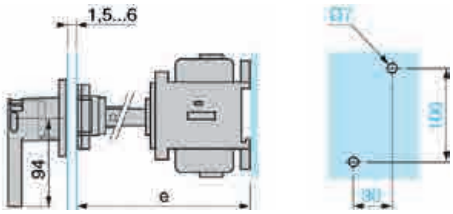
V0•, V0 to V2
with shaft extension
VZ-17 or VZ-30
(clip-on mounting on ⊥ rail possible for V0• to V2)



V3 to V4
with shaft extensions
VZ-18 or VZ-31



V5 and V6
with shaft extension
VZ-18 or VZ-31



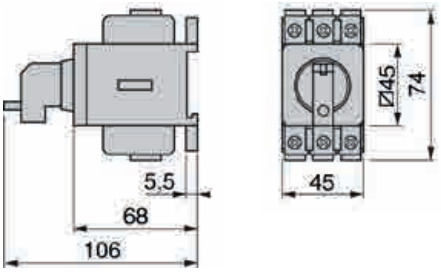
	Shaft extension	Distance (e) enc. back/door mm	Ø	G
V02 and V01	VZ-17	300...330	2 x 4.2	15
V0 to V2	VZ-30	400...430	2 x 4.2	15
V3 and V4	VZ-18	300...320	2 x 5	20
	VZ-31	400...420	2 x 5	20

	Shaft extension	Distance (e) enc. back/door mm
V5 and V6	VZ-18	330...350
	VZ-31	430...450

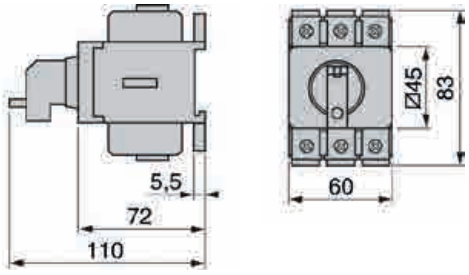
3.1

Switch Disconnector for Modular Distribution Boards

VV•0 to VV•-2

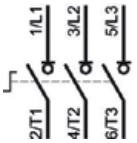


VV•3 and VV•-4



Schemes

Switch body
V02 and V01
V0 to V6



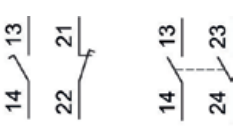
Main pole module
VZ-02 and VZ-01
VZ-0 to VZ-4



Neutral pole module
VZ-11 to VZ-13



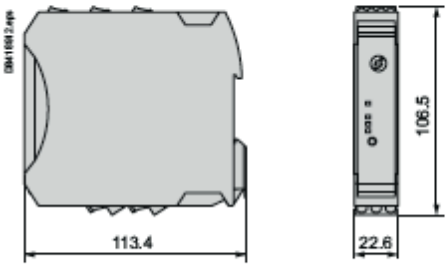
Auxiliary contact blocks
VZ-7 VZ-20



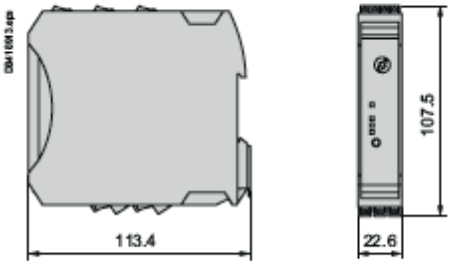
TeSys H
Motor Starters Dimensions

Dimensions mm

LZ•H•••••

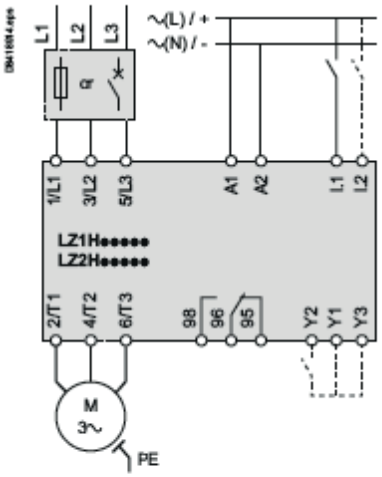


LZ•H•••3••

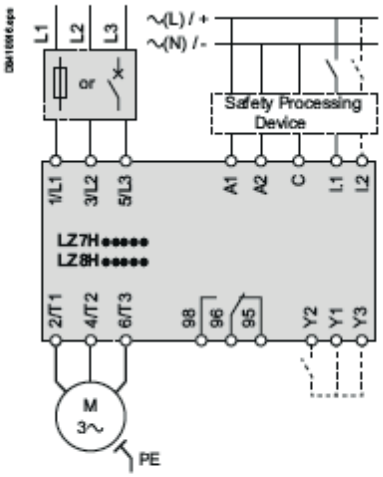


Wiring Diagrams

Motor control by standard starter



Motor control by safety starter



Power terminals

T1, T2, T3	Motor connection
L1, L2, L3	Power inputs

Control terminals

A1, A2	Auxillary power unit
L1	Control input, direction 1
L2	Control input, direction 2 (LZ2H and LZ8H only)
C	Control inputs connection point (LZ7H and LZ8H only)
Y1	Reset mode, common point
Y2	Reset mode, remote, manual
Y3	Reset mode, automatic
98, 96, 95	Trip or error signalling contact

Industrial Switchgear


56AI310


56AI450


56SO310RP


56SO310


56SO310L


56SO320


56SO520


56SO710

56 Series Industrial Switchgear to AS/NZS 3123

The Grey 56 series product is the most popular when it comes to suitability for industrial applications. However for environments where strong chemicals are used Clipsal also offers a varied range of products with Chemical Resistant properties. The range of available products can be ordered by nominating the selected colours in the catalogue number code.

For Chemical Resistant Orange please nominate “RO”, for Chemical Resistant White “RW” and for Chemical Resistant Grey “CG”. For more product / range information please contact your Clipsal Representative or refer to the 56 & 66 Series Technical Catalogue.

Appliance Inlets 40001 - FN0TK3H1

IP66

Description	STD PK	CTN QTY	Reference
250V 10A - 3 Flat pins - One Gang (one gang - H107xW101xD82mm)	1	24	56AI310
250V 15A - 3 Flat pins - One Gang (one gang - H107xW101xD82mm)	1	24	56AI315
250V 20A - 3 Round pins (two gang - H204xW101xD138mm)	1	18	56AI320
250V 32A - 3 Round pins (two gang - H204xW101xD165mm)	1	18	56AI332

NOTE: For Less Enclosure versions - add “LE” to cat. no. Deduction for “LE” model is $10.45

Appliance Inlets

IP66

Description	STD PK	CTN QTY	Reference
500V 10A - 4 Round pins	1	18	56AI410
500V 20A - 4 Round pins	1	18	56AI420
500V 32A - 4 Round pins	1	18	56AI432
500V 40A - 4 Round pins	1	18	56AI440
500V 50A - 4 Round pins	1	18	56AI450
500V 10A - 5 Round pins	1	18	56AI510
500V 20A - 5 Round pins	1	18	56AI520
500V 32A - 5 Round pins	1	18	56AI532
500V 40A - 5 Round pins	1	18	56AI540
500V 50A - 5 Round pins	1	18	56AI550

NOTE: For Less Enclosure versions - add “LE” to cat. no. Deduction for “LE” model is $18.38.
If IP66 protection rating required for 500V appliance inlets, when not in use utilise Cat. No. 56PC series Plug Caps.
10A & 20A 500V versions measure H204xW101xD138mm, 32A, 40A & 50A versions measure H204xW101xD165mm

Socket Outlets 40002 - FN0TK3H2

Surface Sockets - IP66

Description	STD PK	CTN QTY	Reference
250V 10A - 2 Parallel flat pins	1	24	56SO210
32V 15A - Extra low voltage 2 pin polarised	1	24	56SO215/32
110V 10A - 2 Round live pins and flat earth	1	24	56SO3/110
250V 10A - 3 Round pins	1	24	56SO310RP
250V 10A - 3 Flat pins	1	24	56SO310
250V 15A - 3 Round pins			56SO315RP
250V 15A - 3 Flat pins	1	24	56SO315
250V 10A - 3 Flat pins, auto switched double pole	1	24	56SO310A
250V 15A - 3 Flat pins auto switched double pole	1	24	56SO315A
250V 10A - 2 Flat pins and round earth	1	24	56SO310L
250V 20A - 3 Round pins	1	24	56SO320
250V 20A - 3 Flat pins	1	24	56SO320F
250V 32A - 3 Round pins	1	24	56SO332
500V 10A - 4 Round pins	1	24	56SO410
500V 16A - Unique key configuration	1	24	56SO416K
500V 20A - 4 Round pins	1	24	56SO420
500V 32A - 4 Round pins	1	24	56SO432
500V 40A - 4 Round pins	1	24	56SO440
500V 50A - 4 Round pins	1	24	56SO450
500V 10A - 5 Round pins	1	24	56SO510
500V 20A - 5 Round pins	1	24	56SO520
500V 32A - 5 Round pins	1	24	56SO532
500V 40A - 5 Round pins	1	24	56SO540
500V 50A - 5 Round pins	1	24	56SO550
500V 10A - 6 Round pins	1	24	56SO610
500V 10A - 7 Round pins	1	24	56SO710
500V 20A - 7 Round pins	1	24	56SO720

NOTE: All sockets available Less Enclosure - add “LE” to cat. no. Deduction for “LE” model is $10.45

Industrial Switchgear


56SO532/6LE


56SO332/6LE


56/32


56/01X


56SO332G

IEC309 Socket Outlets - Less Enclosure

Description	STD PK	CTN QTY	Reference
16A 6h 220/250V IP66 Round Pin Socket Outlet with blue flap - Less Enclosure			56SO316/6LE
32A 6h 220/250V IP66 Round Pin Socket Outlet with blue flap - Less Enclosure			56SO332/6LE
16A 6h 380/415V IP66 Round Pin Socket Outlet with red flap - Less Enclosure			56SO516/6LE
32A 6h 380/415V IP66 Round Pin Socket Outlet with red flap - Less Enclosure			56SO532/6LE

Grey (GY) product supplied as standard.
NOTE: All sockets supplied Less Enclosure

Computer Surface Modules - IP66

Description	STD PK	CTN QTY	Reference
Enclosure and cover with two apertures to suit two 30 series mechanisms. IP66	1	24	56/32
Computer accessory to suit DB25 connector	1	24	56/01/1
Computer accessory with blank plate	1	24	56/01X

NOTE: All modules available Less Enclosure - add "LE" to cat. no. Deduction for "LE" model is $10.45

Internal Socket Housings

Description	STD PK	CTN QTY	Reference
250V 20A - 3 Round pins	1	30	56SO320G
250V 32A - 3 Round pins	1	30	56SO332G
500V 10A - 4 Round pins	1	30	56SO410G
16A - Unique key configuration	1	30	56SO416KG
500V 20A - 4 Round pins	1	30	56SO420G
500V 32A - 4 Round pins	1	30	56SO432G
500V 40A - 4 Round pins	1	30	56SO440G
500V 50A - 4 Round pins	1	30	56SO450G
500V 10A - 5 Round pins	1	30	56SO510G
500V 20A - 5 Round pins	1	30	56SO520G
500V 32A - 5 Round pins	1	30	56SO532G
500V 40A - 5 Round pins	1	30	56SO540G
500V 50A - 5 Round pins	1	30	56SO550G
500V 10A - 6 Round pins	1	30	56SO610G
500V 10A - 7 Round pins	1	30	56SO710G
500V 20A - 7 Round pins	1	30	56SO720G

Industrial Switchgear


56C310


56C315


56C420


56C532


56C720


56CV315


56CV420

Switched Socket Outlets 40003 - FN0TK3H8

Surface Mounting Combinations - IP66

Description	STD PK	CTN QTY	Reference
TWO MODULE MODELS			
250V 10A - 2 Parallel Flat pins	1	12	56C210
32V 15A - Extra low voltage 2 pin polarised	1	12	56C215/32
110V 10A - 2 Round live pins and flat earth	1	12	56C3/110
250V 10A - 3 Round pins	1	12	56C310RP
250V 10A - 3 Flat pins	1	12	56C310
250V 10A - 3 Flat pins with heavy duty switch	1	12	56C310HD
250V 10A - 2 Flat pins and round earth	1	12	56C310L
250V 15A - 3 Flat pins	1	12	56C315
250V 15A - 3 Flat pins with heavy duty switch	1	12	56C315HD
250V 20A - 3 Round pins	1	12	56C320
250V 20A - 3 Flat pins	1	12	56C320F
250V 32A - 3 Round pins	1	12	56C332
250V 10A - 3 Flat pins double pole	1	12	56C310D
250V 15A - 3 Flat pins double pole	1	12	56C315D
500V 10A - 4 Round pins	1	12	56C410
500V 16A - Unique key configuration	1	12	56C416K
500V 20A - 4 Round pins	1	12	56C420
500V 32A - 4 Round pins	1	12	56C432
500V 40A - 4 Round pins	1	12	56C440
500V 50A - 4 Round pins	1	12	56C450
500V 10A - 5 Round pins	1	12	56C510
500V 20A - 5 Round pins	1	12	56C520
500V 32A - 5 Round pins	1	12	56C532
500V 40A - 5 Round pins	1	12	56C540
500V 50A - 5 Round pins	1	12	56C550
500V 10A - 6 Round pins	1	12	56C610
500V 10A - 7 Round pins	1	12	56C710
500V 20A - 7 Round pins	1	12	56C720
ONE PIECE COVER MODELS			
250V 10A - 3 Flat pins	1	12	56CV310
250V 10A - 3 Flat pins with heavy duty switch	1	12	56CV310HD
250V 10A - 3 Flat pins with key switch			56K1CV310
250V 15A - 3 Flat pins	1	12	56CV315
250V 15A - 3 Flat pins with heavy duty switch	1	12	56CV315HD
250V 15A - 3 Flat pins with key switch			56K1CV315
250V 20A - 3 Round pins	1		56CV320
250V 32A - 3 Round pins	1		56CV332
500V 10A - 4 Round pins	1	12	56CV410
16A - Unique key configuration	1	12	56CV416K
500V 20A - 4 Round pins	1	12	56CV420
500V 32A - 4 Round pins	1	12	56CV432
500V 40A - 4 Round pins	1	12	56CV440
500V 50A - 4 Round pins	1	12	56CV450
500V 10A - 5 Round pins	1	12	56CV510
500V 20A - 5 Round pins	1	12	56CV520
500V 32A - 5 Round pins	1	12	56CV532
500V 40A - 5 Round pins	1	12	56CV540
500V 50A - 5 Round pins	1	12	56CV550
500V 10A - 6 Round pins	1	12	56CV610
500V 10A - 7 Round pins	1	12	56CV710
500V 20A - 7 Round pins	1	12	56CV720

NOTE: All combinations are available Less Enclosure - add "LE" to cat. no. Deduction for "LE" model is $19.11.
All Three Phase Combinations are available with Interlock facility - add "I" to cat. no. E.g. 56CV410 becomes 56CVI410 . For Less Enclosure Interlock Combinations - add "LE" to cat. no.
If combinations are required with LED indication, order separate 56LEDK1 for single phase or 56LEDK3 for three phase products. For supply systems with alternative voltages and / or frequencies, contact your Clipsal by Schneider Electric Representative.
NOTE: 50A and 63A products are available in the 66 Series Industrial Switchgear section.

Industrial Switchgear


56PEK25


56RC


56C432RC


56C520RC


56SC510RC


56C310EL2P


56SO4ELP15

Suspension Accessories for Switched Socket Outlets

Description	STD PK	CTN QTY	Reference
Pendant enclosure, moulded, 25mm entry suspends 56C Series two-piece switched sockets	1		56PEK25
Pendant enclosure, moulded, 32mm entry suspends 56C Series two-piece switched sockets	1		56PEK32
Pendant outlet kit, stainless steel suspends two 56C or 56CV Series switched sockets	5		56SPOK

NOTE: 50A and 63A products are available in the 66 Series Industrial Switchgear section.

RCD Protected Outlets

RCD Protected Combinations - IP66

Description	STD PK	CTN QTY	Reference
250V 20A - 2 Pole 30mA one phase RCD, 107 x 101 x 101mm	1	24	56RC
250V 10A - 3 Flat pins surface mount - 30mA RCD protection, 204x101x100mm	1	12	56C310RC
250V 15A - 3 Flat pins surface mount - 30mA RCD protection, 204x101x100mm	1	12	56C315RC
250V 10A - 3 Flat pins surface mount - 30mA RCD protection, 300x101x135mm	1	8	56C310/4EL
250V 15A - 3 Flat pins surface mount - 30mA RCD protection, 300x101x135mm	1	8	56C315/4EL
500V 10A - 4 Round pins surface mount - 30mA RCD protection, 300x101x110mm	1	8	56C410RC
500V 20A - 4 Round pins surface mount - 30mA RCD protection, 300x101x110mm	1	8	56C420RC
500V 32A - 4 Round pins surface mount - 30mA RCD protection, 300x101x110mm	1	8	56C432RC
500V 40A - 4 Round pins surface mount - 30mA RCD protection, 300x101x110mm	1	8	56C440RC
500V 10A - 5 Round pins surface mount - 30mA RCD protection, 300x101x110mm	1	8	56C510RC
500V 20A - 5 Round pins surface mount - 30mA RCD protection, 300x101x110mm	1	8	56C520RC
500V 32A - 5 Round pins surface mount - 30mA RCD protection, 300x101x110mm	1	8	56C532RC
500V 40A - 5 Round pins surface mount - 30mA RCD protection, 300x101x110mm	1	8	56C540RC

Switched RCD Protected Combinations - IP66

Description	STD PK	CTN QTY	Reference
250V 10A - 3 Flat pins surface mount - 30mA RCD with 56SW switch	1	8	56SC310RC
250V 15A - 3 Flat pins surface mount - 30mA RCD with 56SW switch	1	8	56SC315RC
500V 10A - 4 Round pins surface mount - 30mA RCD with switch	1	6	56SC410RC
500V 20A - 4 Round pins surface mount - 30mA RCD with switch	1	6	56SC420RC
500V 32A - 4 Round pins surface mount - 30mA RCD with switch	1	6	56SC432RC
500V 40A - 4 Round pins surface mount - 30mA RCD with switch	1	6	56SC440RC
500V 10A - 5 Round pins surface mount - 30mA RCD with switch	1	6	56SC510RC
500V 20A - 5 Round pins surface mount - 30mA RCD with switch	1	6	56SC520RC
500V 32A - 5 Round pins surface mount - 30mA RCD with switch	1	6	56SC532RC
500V 40A - 5 Round pins surface mount - 30mA RCD with switch	1	6	56SC540RC

All 56SC products are mounted on a square 56E4 enclosure with the exception of the 56SC310RC and 56SC315RC which are mounted on a rectangular 56E3 enclosure.

Portable RCD/MCB Protected Combinations - IP56

Description	STD PK	CTN QTY	Reference
250V 10A - Twin 3 Flat pins - 30mA RCBO protection	1	5	56C310EL2P
250V 15A - Single 3 Flat pins - 30mA RCBO protection	1	5	56C315ELP

Portable RCD/MCB Protected Outlets - IP56

Description	STD PK	CTN QTY	Reference
250V 10A - 4 Auto switching 30mA RCBO protected sockets. Lead supplied with 10A plug (RO only)			56SO4ELP10
250V 15A - 4 Auto switching 30mA RCBO protected sockets. Lead supplied with 15A plug (GY and RO)	1	5	56SO4ELP15

Industrial Switchgear


56CSC310


56SC2


56CSC410


56SPO310


56P310


56P520


56AM25


56SHM

Plugs and Extension Sockets 40004 - FN0TK3HE

Extension Sockets / Appliance Connectors - IP66

Description	STD PK	CTN QTY	Reference
250V 10A - 3 Flat pins	5	60	56CSC310
250V 15A - 3 Flat pins	5	60	56CSC315
250V 20A - 3 Round pins	1	20	56CSC320
250V 32A - 3 Round pins	1	20	56CSC332
Socket cap to protect Single Phase Extension Sockets - small size 250V	5	100	56SC2
500V 10A - 4 Round pins	1	20	56CSC410
500V 20A - 4 Round pins	1	20	56CSC420
500V 32A - 4 Round pins	1	20	56CSC432
500V 40A - 4 Round pins	1	20	56CSC440
500V 50A - 4 Round pins	1	20	56CSC450
500V 10A - 5 Round pins	1	20	56CSC510
500V 20A - 5 Round pins	1	20	56CSC520
500V 32A - 5 Round pins	1	20	56CSC532
500V 40A - 5 Round pins	1	20	56CSC540
500V 50A - 5 Round pins	1	20	56CSC550

For supply systems with alternative voltages and / or frequencies, contact your Clipsal Representative.

Switched Pendant Outlets - IP66

Description	STD PK	CTN QTY	Reference
250V 10A - 3 Flat pins Double Pole (Resistant White)	1		56SPO310
250V 15A - 3 Flat pins Double Pole (Resistant White)	1		56SPO315

For supply systems with alternative voltages and / or frequencies, contact your Clipsal by Schneider Electric Representative.

Straight Plugs - IP66

Description	STD PK	CTN QTY	Reference
STRAIGHT PLUGS - IP66			
250V 10A - 2 Parallel flat pins	5	60	56P210
32V 15A - Extra low voltage 2 pin polarised	5	60	56P215/32
110V 10A - 2 Round live pins and flat earth	5	60	56P3/110
250V 10A - 3 Round pins	5	60	56P310RP
250V 10A - 3 Flat pins	1	60	56P310
250V 10A - 2 Flat pins and round earth	5	60	56P310SL
250V 15A - 3 Round pins (Grey only)			56P315RP
250V 15A - 3 Flat pins	5	60	56P315
250V 20A - 3 Round pins	1	30	56P320
250V 20A - 3 Flat pins	5	60	56P320F
250V 32A - 3 Round pins	1	20	56P332
Plug Cap to suit Single Phase Plugs	5	60	56PC2
500V 10A - 4 Round pins	1	30	56P410
500V 16A - Unique key configuration	1	30	56P416K
500V 20A - 4 Round pins	1	30	56P420
500V 32A - 4 Round pins	1	20	56P432
500V 40A - 4 Round pins	1	20	56P440
500V 50A - 4 Round pins	1	20	56P450
500V 10A - 5 Round pins	1	30	56P510
500V 20A - 5 Round pins	1	30	56P520
500V 32A - 5 Round pins	1	20	56P532
500V 40A - 5 Round pins	1	20	56P540
500V 50A - 5 Round pins	1	20	56P550
500V 10A - 6 Round pins	1	30	56P610
500V 10A - 7 Round pins	1	30	56P710
500V 20A - 7 Round pins	1	30	56P720
250V 20A - 3 Round pins (quick connect terminals)	1	30	56P320QC
500V 10A - 4 Round pins (quick connect terminals)	1	30	56P410QC
500V 20A - 4 Round pins (quick connect terminals)	1	30	56P420QC
500V 10A - 5 Round pins (quick connect terminals)	1	30	56P510QC
500V 20A - 5 Round pins (quick connect terminals)	1	30	56P520QC
56 Series Size 1 Plugs 25mm entry cap (To suit 3 phase 10-20A) 20A single-phase round pin - 56P320)	1	10	56AM25
56 Series Size 2 Plugs 40mm entry cap (To suit 3 phase 32-50A) and 32A single-phase round pin - 56P332	1	5	56AM40
Pendant outlet large suspension hook suit size 2, 3 phase 32-50A (suit 56P & 56CSC products released from 2012)	1	10	56SHL
Suspension Hook to suspend 10A to 20A Size 1 plugs and plug connectors			56SHM
Plug Sleeve replacement kit suits pre 2012 56P 32A, 40A & 50A plugs in 4+ pin arrangement			56P32/500

NOTE: 50A and 63A products are available in the 66 Series Industrial Switchgear section.

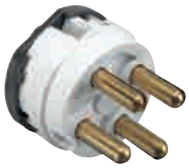
Industrial Switchgear



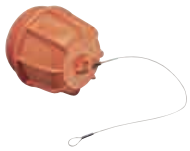
56PA332



56PA420



56PA432G



56PC2



56PCI

Angle Plugs - IP66

Description	STD PK	CTN QTY	Reference
250V 20A - 3 Round pins	1	30	56PA320
250V 32A - 3 Round pins	1	20	56PA332
500V 10A - 4 Round pins	1	30	56PA410
500V 16A - Unique key configuration	1	30	56PA416K
500V 20A - 4 Round pins	1	30	56PA420
500V 32A - 4 Round pins	1	20	56PA432
500V 40A - 4 Round pins	1	20	56PA440
500V 50A - 4 Round pins	1	20	56PA450
500V 10A - 5 Round pins	1	30	56PA510
500V 20A - 5 Round pins	1	30	56PA520
500V 32A - 5 Round pins	1	20	56PA532
500V 40A - 5 Round pins	1	20	56PA540
500V 50A - 5 Round pins	1	20	56PA550
500V 10A - 6 Round pins	1	30	56PA610
500V 10A - 7 Round pins	1	30	56PA710
500V 20A - 7 Round pins	1	30	56PA720

For supply systems with alternative voltages and/or frequencies, contact your Clipsal by Schneider Electric Representative.

Straight Plug Internal Pin Housings - up to 20A

Description	STD PK	CTN QTY	Reference
500V 10A - 4 Round pins post 2009 suits straght and angled	1	30	56P410G1
500V 20A - 4 Round pins post 2009 suits straight and angled	1	30	56P420G1
500V 10A - 5 Round pins post 2009 suits straght and angled	1	30	56P510G1
500V 20A - 5 Round pins post 2009 suits straight and angled	1	30	56P520G1

For supply systems with alternative voltages and/or frequencies, contact your Clipsal by Schneider Electric Representative.

Plug Internal Pin Housings

Description	STD PK	CTN QTY	Reference
500V 32A - 4 Round pins	1	30	56PA432G
500V 40A - 4 Round pins	1	30	56PA440G
500V 50A - 4 Round pins	1	30	56PA450G
500V 10A - 5 Round pins	1	30	56PA510G
500V 20A - 5 Round pins	1	30	56PA520G
500V 32A - 5 Round pins	1	30	56PA532G
500V 40A - 5 Round pins	1	30	56PA540G
500V 50A - 5 Round pins	1	30	56PA550G
500V 10A - 6 Round pins	1	30	56PA610G
500V 10A - 7 Round pins	1	30	56PA710G
500V 20A - 7 Round pins	1	30	56PA720G

Protective Caps for Plug pins & Extension Sockets

Description	STD PK	CTN QTY	Reference
Plug Cap to suit Single Phase Plugs	5	60	56PC2
Socket cap to protect Single Phase Extension Sockets - small size 250V	5	100	56SC2
Protective pin cap to suit size 1, 3 phase plugs 10-20A and 20A single-phase round pin (320)	5	100	56PC
Protective pin cap to suit size 2, 3 phase plugs 32-50A and 32A single - phase round pin (332)	5	100	56PCI

Industrial Switchgear



56PO510



56AM25



56PEK25



56SPOK



56SPO310



56SSR/2-GY

Pendant Outlets - IP66

Description	STD PK	CTN QTY	Reference
500V 10A - 4 Round pins	1	20	56PO410
500V 20A - 4 Round pins	1	20	56PO420
500V 32A - 4 Round pins	1	20	56PO432
500V 10A - 5 Round pins	1	20	56PO510
500V 20A - 5 Round pins	1	20	56PO520
500V 32A - 5 Round pins	1	20	56PO532
500V 40A - 5 Round pins	1	20	56PO540
500V 50A - 5 Round pins	1	20	56PO550

Accessories for Pendant Outlets

Description	STD PK	CTN QTY	Reference
56 Series Size 1 Plugs 25mm entry cap (To suit 3 phase 10-20A) 20A single-phase round pin - 56P320)	1	10	56AM25
56 Series Size 2 Plugs 40mm entry cap (To suit 3 phase 32-50A) and 32A single-phase round pin - 56P332	1	5	56AM40
Pendant outlet adaption kit - suit 3 phase 10A-20A Size 1 plugs released post 2008	1		56SHM
Pendant outlet large suspension hook suit size 2, 3 phase 32-50A (suit 56P & 56CSC products released from 2012)	1	10	56SHL
Pendant outlet adaption kit - to suspend old design 3 phase plugs 10-20A	20		56POK
Pendant outlet adaption kit - to suspend pre-2012 design 3 phase plugs 32-50A	10		56POKI
Pendant enclosure, moulded, 25mm entry suspends 56C Series two-piece switched sockets	1		56PEK25
Pendant enclosure, moulded, 32mm entry suspends 56C Series two-piece switched sockets	1		56PEK32
Pendant outlet kit, stainless steel suspends two 56C or 56CV Series switched sockets. 56C or 56CV products must be purchased separately.	5		56SPOK

Switched Pendant Outlets - IP66

Description	STD PK	CTN QTY	Reference
250V 10A - 3 Flat pins Double Pole (Resistant White)	1		56SPO310
250V 15A - 3 Flat pins Double Pole (Resistant White)	1		56SPO315

For supply systems with alternative voltages and / or frequencies, contact your Clipsal by Schneider Electric Representative.

Sunset Switches 40005 - FN0TK3G6

Sunset Switches - 56 Series

Description	STD PK	CTN QTY	Reference
Sunset switch 240V 10A - 2-wire, IP66, dusk to dawn default setting, timer and light level setup option			56SSR/2-GY
Sunset switch 240V 10A - 3-wire, IP66, dusk to dawn default setting, timer and light level setup option			56SSR/3-GY

Industrial Switchgear



56K1SW220



56K1SW310



56K1SW115MS



56K1SW310MS



56K2SW115MS



56K2SW132MS


56SSW10


56SSW2/10

Key Operated Surface Switches - IP66

Switches are also available with 'Common Keys', please nominate when ordering.
e.g. 56K1SW115 becomes 56K1SW115CK

Description	STD PK	CTN QTY	Reference
FOR LOCKING IN ONLY THE 'OFF' POSITION			
250V 15A - Single pole	1	24	56K1SW115
250V 20A - Single pole	1	24	56K1SW120
250V 32A - Single pole	1	24	56K1SW132
250V 50A - Single pole	1	24	56K1SW150
500V 20A - Double pole	1	24	56K1SW220
500V 32A - Double pole	1	24	56K1SW232
500V 50A - Double pole	1	24	56K1SW250
500V 10A - Triple pole	1	24	56K1SW310
500V 20A - Triple pole	1	24	56K1SW320
500V 32A - Triple pole	1	24	56K1SW332
500V 50A - Triple pole	1	24	56K1SW350
MEDIUM SECURITY KSW FOR LOCKING IN ONLY THE 'OFF' POSITION			
250V 15A - Single pole	1	24	56K1SW115MS
250V 32A - Single pole	1	24	56K1SW132MS
500V 10A - Triple pole	1	24	56K1SW310MS
FOR LOCKING IN 'ON' OR 'OFF' POSITIONS			
250V 15A - Single pole	1	24	56K2SW115
250V 20A - Single pole	1	24	56K2SW120
250V 32A - Single pole	1	24	56K2SW132
250V 50A - Single pole	1	24	56K2SW150
500V 20A - Double pole	1	24	56K2SW220
500V 32A - Double pole	1	24	56K2SW232
500V 50A - Double pole	1	24	56K2SW250
500V 10A - Triple pole	1	24	56K2SW310
500V 20A - Triple pole	1	24	56K2SW320
500V 32A - Triple pole	1	24	56K2SW332
500V 50A - Triple pole	1	24	56K2SW350
MEDIUM SECURITY KSW FOR LOCKING IN 'ON' OR 'OFF' POSITIONS			
250V 15A - Single pole	1	24	56K2SW115MS
250V 32A - Single pole	1	24	56K2SW132MS
500V 10A - Triple pole	1	24	56K2SW310MS

NOTE: All switches available with Neon - add "N" to cat. no. Addition for Neon model is $20.69.
All switches available Less Enclosure - add "LE" to cat. No. Deduction for "LE" model is $10.45.

Single and Twin 2 Way Surface Switches - IP56

Description	STD PK	CTN QTY	Reference
250V 10A - Single sliding switch	1	24	56SSW10
250V 15A - Single sliding switch	1	24	56SSW15
250V 10A - Intermediate single sliding switch	1	24	56SSW10/I
250V 10A - Twin sliding switches	1	24	56SSW2/10
250V 15A - Twin sliding switches	1	24	56SSW2/15
250V 10A - Twin sliding switches marked 'Auto / Man On / Off'	1		56SSW2AM

NOTE: All switches available Less Enclosure - add "LE" to cat. no. Deduction for "LE" model is $10.45.

Industrial Switchgear



56SW320


56SWHS363-RO


56SWH440-GY


56SWH332-RO


56SWHS363-CG


56SWHS363A-RW


56SWHS363LE-GY

Surface Switches - IP66

Description	STD PK	CTN QTY	Reference
STANDARD RANGE IN STANDARD ENCLOSURES			
250V 10A - Single pole 1 way 2 terminal 30 Series mechanism	1	24	56SW110
250V 10A - Single pole heavy duty switch	1	24	56SW110HD
250V 10A - 2 way 4 terminal	1	24	56SW110/2
250V 10A - Intermediate	1	24	56SW110/I
250V 15A - 1 way 2 terminal	1	24	56SW115
250V 15A - Single pole heavy duty switch	1	24	56SW115HD
250V 15A - 2 way 4 terminal	1	24	56SW115/2
250V 20A - Single pole mains switch series mechanism	1	24	56SW120
250V 32A - Single pole mains switch series mechanism	1	24	56SW132
250V 50A - Single pole mains switch series mechanism	1	24	56SW150
250V 63A - Single pole mains switch series mechanism	1	24	56SW163
250V 10A - Double pole 2 way 6 terminal	1	24	56SW210/2
500V 20A - Double pole	1	24	56SW220
500V 32A - Double pole	1	24	56SW232
500V 50A - Double pole	1	24	56SW250
500V 63A - Double pole	1	24	56SW263
500V 10A - Triple pole	1	24	56SW310
500V 20A - Triple pole	1	24	56SW320
500V 32A - Triple pole	1	24	56SW332
500V 50A - Triple pole	1	24	56SW350
500V 63A - Triple pole	1	24	56SW363
500V 63A - Triple pole 2 gang enclosure	1	18	56SW363/2
500V 20A - Triple pole with 2A control circuit auxilary switch mechanism	1		56SW320CX
500V 32A - Triple pole with 2A control circuit auxilary switch mechanism	1		56SW332CX
440V 20A - Four pole (with 7 Series switch mechanism)	1	24	56SW420
440V 32A - Four pole (with 7 Series switch mechanism)	1	24	56SW432
NOTE: 56SW363 can have separate auxiliary switches fitted by adapting 56SWAUX15. This item is sold separately.			
EMERGENCY SURFACE SWITCHES (RESISTANT YELLOW) - IP56			
NOTE: Range consists of the following catalogue numbers at standard switch prices, nominate colour "RY".			
250V 20A - Single pole mains switch	1	24	56SW120-RY
250V 32A - Single pole mains switch	1	24	56SW132-RY
500V 20A - Triple pole	1	24	56SW320-RY
500V 32A - Triple pole	1	24	56SW332-RY
500V 50A - Triple pole	1	24	56SW350-RY
500V 63A - Triple pole	1	24	56SW363-RY
NOTE: If power available LEDs are required, they can be ordered separately using Cat. No 56LEDK1 (for single phase) or 56LEDK3 (for three phase)			

56 Series Heavy Duty Base Mounted Switchgear

MOTOR RATED IN 56E2 TWO GANG ENCLOSURE

56SWHS Shallow Profile Surface Switch Range

K&N Switch#	Current rating AC-21A (Amp)	Motor rating AC-23A at 3 x 380V to 440V (kW)	No. Poles	Proposed motor rating	Nominal voltage	Conductor size mm^2 (Max.)	Reference
KG20A	25	7.5	3	M110	690	6	56SWHS325
KG32A	32	11	3	M168	690	6	56SWHS332
KG41B	40	15	3	M220	690	16	56SWHS340
KG64B	63	18.5	3	M320	690	16	56SWHS363^
KG20A	25	7.5	4	M110	690	6	56SWHS425
KG32A	32	11	4	M168	690	6	56SWHS432
CA40	40	15	4	M220	690	16	56SWHS440
CA63	63	22	4	M320	690	16	56SWHS463*

56SWH Deep Profile Surface Switch Range

MOTOR RATED IN 56E2 ENCLOSURE WITH DEEP LID							
KG20B	25	7.5	3	M110	690	6	56SWH325
KG32B	32	11	3	M168	690	6	56SWH332
KG41B	40	15	3	M220	690	16	56SWH340
KG64B	63	18.5	3	M320	690	16	56SWH363^
KG80	80	22	3		690	50	56SWH380
KG20B	25	7.5	4	M110	690	6	56SWH425
KG32B	32	11	4	M168	690	6	56SWH432
CA40	40	15	4	M220	690	16	56SWH440
CA63	63	22	4	M320	690	16	56SWH463

* Less Enclosure option available, add 'LE' to end of Cat. No.
* Note: LE Version: Less enclosure versions include cover, DIN rail and switch assembly, along with parts pack with 2 x 563/10 connectors.
^ Available with auxiliary contact, add 'A' to end of Cat. No.
# K&N Switch requires an extension rod & adaptor to fit into rear of Clipsal switch, this can only be ordered from Clipsal by Schneider Electric.
If power available LEDs are required, they can be ordered separately using Cat. No 56LEDK3. These LED kits will only fit into 56SWHS series.

Industrial Switchgear



56SW220CO


56SW320R


56PB



56PBS


56DB2


56XDB4


56XDB1L

Reversing and Changeover Surface Switches - IP66

Description	STD PK	CTN QTY	Reference
500V 20A - Double pole changeover switch	1	12	56SW220CO
500V 20A - 4 Pole 3 phase changeover switch	1	12	56SW420CO
500V 20A - Triple pole reversing switch	1	12	56SW320R

Push-button Control Stations - IP66

Description	STD PK	CTN QTY	Reference
250V 10A - Start control station	1	24	56PB
250V 10A - Stop control station	1	24	56PBS
250V 10A - Emergency stop control station	1	24	56PBS1
250V 10A - Mushroom button latching control station	1	24	56PBS2
250V 10A - Stop / Start control station	1	24	56/2PB
250V 10A - Emergency Stop control and start station	1	24	56/2PBS1

NOTE: All Stations available Less Enclosure - add "LE" to cat. no. Deduction for "LE" model is $10.45

Enclosures and Boxes 40006 - FN0TK3GW

Bridges and Dividers

Description	STD PK	CTN QTY	Reference
Bridge suits 56E Series mounting enclosures	50		56B
Divider for segregated services in 56E enclosures	25		56DV

Adaptable Enclosures - IP66

Description	STD PK	CTN QTY	Reference
1 gang (101 x 101 x 165mm high)	1		56XDB1
2 gang with gear tray (198 x 101 x 140mm high)	1	18	56DB2
3 gang with gear tray (294 x 101 x 140mm high)	1	10	56DB3
4 gang with gear tray (198 x 198 x 140mm high)	1	10	56DB4
4 gang with gear tray(198 x 198 x 182mm high)	1	6	56XDB4
6 gang with gear tray (294 x 198 x 140mm high)	1	6	56DB6
6 gang gear tray with gasket and screws to suit 56DB6			56DB6BASE
6 gang with gear tray (294 x 198 x 184mm high)	1	4	56XDB6
9 gang with gear tray (294 x 294 x 180mm high)	1	2	56DB9

Adaptable Enclosures Covers

Description	STD PK	CTN QTY	Reference
1 gang cover only	1		56XDB1L
2 gang cover only	1	12	56DB2L
3 gang cover only	1	12	56DB3L
4 gang cover only	1	6	56DB4L
4 gang 'DEEP' cover only	1	5	56XDB4L
6 gang cover only	1	4	56DB6L
6 gang 'DEEP' cover only	1	6	56XDB6L
9 gang cover only	1	2	56DB9L

Industrial Switchgear


56E1


56EV2


56E4


56E6


56/32


56PMK


56D


56MF


56HPG1

3.1

Mounting Enclosures (Back Boxes)

Description	STD PK	CTN QTY	Reference
1 gang (101 x 101 x 63mm high) 2 x 25 and 1 x 32mm entries	1	40	56E1
1 gang - shallow model (101 x 101 x 38mm high) 1 x 25 and 1 x 20mm entries	2	48	56ES1
2 gang (198 x 101 x 63mm high) 2 x 25 and 1 x 32mm entries	1	20	56E2
2 gang - deep model (198 x 101 x 100mm high) 2 x 40mm entries	1	12	56ED2
2 gang - shallow model (198 x 101 x 38mm high) 1 x 25 and 2 x 20mm entries	2	24	56ES2
2 gang safety enclosure - suits hortizontal or vertical mounting of combination switched sockets (H112 x W104 x D170mm). (Includes 1 x 25mm entry).	1		56EV2
2 gang safety enclosure - suits hortizontal or vertical mounting of combination switched sockets (H112 x W104 x D170mm). (Includes 2 x 25mm entries)	1		56EV2/225
2 gang safety enclosure - suits hortizontal or vertical mounting of combination switched sockets (H112 x W104 x D170mm). (Includes 1 x 32mm entry).	1		56EV2/32
3 gang (294 x 101 x 63mm high) 2 x 25 and 1 x 32mm entries	1	18	56E3
4 gang (198 x 198 x 63mm high) 2 x 25 and 2 x 32mm entries	1	10	56E4
4 gang - in line (391 x 101 x 63mm high) 2 x 25 and 1 x 32mm entries	1	12	56E4VH
6 gang (294 x 198 x 63mm high) 2 x 25 and 2 x 32mm entries	1	7	56E6
8 gang (391 x 198 x 63mm high) 2 x 25 and 2 x 32mm entries	1	5	56E8
8 gang (391 x 198 x 63mm high) with 2 pillars removed. Has 2 x 25 and 2 x 32mm entries	1	5	56E8SB
9 gang (294 x 294 x 63mm high) 3 x 25mm and 3 x 32mm entries	1	6	56E9
9 gang (294 x 294 x 63mm high) with 2 pillars removed. Has 3 x 25mm and 3 x 32mm entries	1	6	56E9SB
16 gang (391 x 391 x 63mm high). 3 x 25mm and 3 x 32mm entries (Pillars are removable)	1	5	56E16
Pendant enclosure, moulded, 25mm entry suspends 56C Series two-piece switched sockets	1		56PEK25
Pendant enclosure, moulded, 32mm entry suspends 56C Series two-piece switched sockets	1		56PEK32
Enclosure and cover with two apertures to suit two 30 series mechanisms. IP66	1	24	56/32

Industrial Switchgear Accessories

Description	STD PK	CTN QTY	Reference
Pole mounting bracket kit	1	20	56PMK
Condensation breather - IP54 rated	10	10	56D
Stainless steel mounting foot	20		56MF
56 Series Auxillary Switch for 415V sockets			56SOAUX15
56 Series Auxillary Switch for 63A switches	10	300	56SWAUX15
56 Series Socket Lock - suits all 56 series products equipped with flaps	20	500	56SOLOCK
56 Series Cover Sub Assembly	1	45	56SOCOVER
56 Series LED Kit Single Phase	1	50	56LEDK1
56 Series LED Kit Three Phase	1	50	56LEDK3
HIGH PRESSURE GASKET EXCEEDS IP66 (1600PSI) FOR WASH DOWN APPLICATIONS			
1 Gang suits 56E1 enclosure (back box)	5		56HPG1
2 Gang suits 56E2 enclosure (back box) and one x 2 gang covers e.g. 56CV Series	5		56HPG2/1
2 Gang suits 56E2 enclosure (back box) and two x 1 gang covers such as 56C Series	5		56HPG2/2
4 Gang suits 56E4 enclosure (back box) and one x one gang covers e.g. 56CB4N Series and two x 1 Gang covers e.g. 56C	5		56HPG4/3
4 Gang suits 56E4 enclosure (back box) and four x 1 gang covers such as two x 56C Series	5		56HPG4/4

Industrial Switchgear


56CB4N


56SB13


56FA3


56JB1


56L1


56MS


9-WE

DIN Rail Accessory and Mounting Cover Kits

Description	STD PK	CTN QTY	Reference
COVER WITH MOUNTING BRACKET AND NEON (LESS ENCLOSURE)			
240V / 440V suits 1, 2, 3 pole MCB, 4 pole RCD (4 Modules maximum) 240V / 415V Neon	1	12	56CB4N
240V / 440V suits 1, 2, 3 pole MCB, 4 pole RCD (4 Modules maximum) Less Neon	1	12	56CB4
DIN Rail Mounting Kit Assembly adapts to 56 series enclosures			56DINASS
COVER WITH MOUNTING BRACKET, NEON, AND PROTECTIVE MEMBRANE (LESS ENCLOSURE)			
240V / 440V Suits 1, 2, 3 pole MCB, 4 pole RCD (4 Modules maximum) 240V / 415V Neon	1	12	56CB4NM

Switchboard Surface Mounting - IP66

Description	STD PK	CTN QTY	Reference
SUPPLIED WITH NEUTRAL BAR AND EARTH CONNECTOR			
KG locking kit to suit 56SB4 and 56SB13	1	100	56SBLK
4 Module - full DIN rail	1	18	56SB4
SUPPLIED WITH NEUTRAL AND EARTH BARS			
13 Module - full DIN rail - 12 pole busbar	1		56SB13

NOTE: All Switchboards available Less Enclosure - add "LE" to cat. no.

Deduction for 56SB4LE is $19.11 and deduction for 56SB13LE is $45.00.

Flush Surrounds

Description	STD PK	CTN QTY	Reference
Flush surround suits 1 Gang 56 Series (157 x 157mm)	5	40	56FA1
Metal mounting bracket suits 56FA1	10	100	56FA1B
Flush surround suits 2 Gang 56 Series (157 x 254mm)	5	45	56FA2
Metal mounting bracket suits 56FA2	10	50	56FA2B
Flush surround suits 3 Gang 56 Series (157 x 350mm)	1	20	56FA3
Metal mounting bracket suits 56FA3 (141 x 338mm)	20	100	56FA3B
Flush surround suits 4 Gang 56 Series (254 x 254mm)	1	20	56FA4
Metal mounting bracket suits 56FA4 (242 x 242mm)	20	20	56FA4B

Junction Boxes - IP66

Description	STD PK	CTN QTY	Reference
1 gang (101 x 101 x 91mm high)	1	24	56JB1
2 gang (101 x 198 x 91mm high)	1	12	56JB2
3 gang (101 x 294 x 91mm high)	1	12	56JB3
4 gang (198 x 198 x 91mm high)	1	6	56JB4
1 gang suits SWA cable applications 3 x 20mm entries	1	24	56JB1SWA

Mounting Enclosure Lids

Description	STD PK	CTN QTY	Reference
1 gang - 95x95x28mm high	2	90	56L1
1 gang - 95x95x28mm high with 22mm hole	2	90	56L1/22
1 gang - 95x95x28mm high with 2 - 22mm holes	2	90	56L1/22/2
1 gang - 28mm high with 30mm hole	2	90	56L1/30
1 gang - 95x95x28mm high with 2 - 30mm holes	2	90	56L1/30/2
2 gang - 192x95x28mm	2	24	56L2
3 gang - 288x95x28mm	2	24	56L3
4 gang - 192x192x28mm	2	20	56L4

Anti-Corrosion Enclosure Screw

Description	STD PK	CTN QTY	Reference
Stainless Steel Screws (M3.5 x 0.8/6NC x 32mm long) to suit 56E Series Enclosure	500	2500	56MS

Screw Caps

Description	STD PK	CTN QTY	Reference
Cover Screw caps for 56 series wall mount products (colour reference Grey (LG), Orange (RO). White (WE).	100		9

NOTE: for mounting screw caps in 56E enclosures, order 220/10-GY.

Industrial Switchgear


56CTC


56CTC2SO


56CTC2SO15


56SWT216


56TCDB

Timers 40007 - FN0TK3GJ

Surface Mounting Combinations with Timer - IP56

Description	STD PK	CTN QTY	Reference
250V 10A - 3 Flat pins - 24 hour timer	1	10	56CTC
250V 15A - 3 Flat pins - 24 hour timer	1	10	56CTC15
250V 10A - 3 Flat pins - 24 hour timer, with extra socket	1	6	56CTC2SO
250V 15A - 3 Flat pins - 24 hour timer, with extra socket	1	6	56CTC2SO15

NOTE: 56CTC and 56CTC15 are available Less Enclosure - add “LE” to cat. No. Deduction for “LE” model is $25.94

Surface Switch with Timer - IP56

Description	STD PK	CTN QTY	Reference
Two hour process timer switch	1	24	56SWT216

NOTE: All switches available Less Enclosure - add “LE” to cat. no. Deduction for “LE” model is $10.45

Surface Mounting Timer Switches - IP66

Description	STD PK	CTN QTY	Reference
240V 16A - 24 hour quartz - battery reserve	1	24	56TC
240V 16A - 7 day quartz - battery reserve	1	24	56TC7

NOTE: Timer units available Less Enclosure - add “LE” to cat. no. Deduction for “LE” model is $10.45

Surface Mounting Digital Timer - IP66

Description	STD PK	CTN QTY	Reference
240V 16A 1 channel 42 memory locations (21 on / 21 off)	1	24	56TCDB

Industrial Switchgear


56DOL9/1


56DOL16/1


56DOL12/1R


56DOL9/1V6S


56YD12/1


56ROL9/10

56 Series Motor Starters

DOL Motor Starters - 56 Series 40008 - FN0TK3GZ

Complete with Tesys LC Contactor and LRD Overload

Description	STD PK	CTN QTY	Reference
2 PUSH BUTTONS (STOP / RESET AND START).			
Stop/Reset Button is mushroom head type, 40mm diameter and applies to 56DOL9, 56DOL12 and 56DOL16. Operating Temperature - 20 to +60°. 415V a.c. Rated. 56DOL22 - 56DOL38 have extended 'Stop/Reset' and flush 'Start' Buttons.			
4kW, 9A AC3, 25A AC1. Supplied with LRD05 0.63 - 1.0A overload	1		56DOL9/1
4kW, 9A AC3, 25A AC1. Supplied with LRD06 1.0 - 1.6A overload	1		56DOL9/1V6
4kW, 9A AC3, 25A AC1. Supplied with LRD07 1.6 - 2.5A overload	1		56DOL9/2V5
4kW, 9A AC3, 25A AC1. Supplied with LRD08 2.5 - 4.0A overload	1		56DOL9/4
4kW, 9A AC3, 25A AC1. Supplied with LRD10 4.0 - 6.0A overload	1		56DOL9/6
4kW, 9A AC3, 25A AC1. Supplied with LRD12 5.5 - 8.0A overload	1		56DOL9/8
4kW, 9A AC3, 25A AC1. Supplied with LRD14 7.0 - 10.0A overload	1	8	56DOL9/10
5.5kW, 12A AC3, 25A AC1. Supplied with LRD16 9.0 - 13.0A overload	1	8	56DOL12/1
7.5kW, 16A AC3, 25A AC1. Supplied with LRD21 12.0 - 18.0A overload	1	8	56DOL16/1
11kW, 25A AC3, 40A AC1. Fitted with LRD22 16.0 - 24.0A overload	1	5	56DOL22/1
RESET VERSION - 1 PUSH BUTTON (RESET).			
Operating Temperature - 20 to + 60°. 415V a.c. Rated.			
4kW, 9A AC3, 25A AC1. Supplied with LRD05 0.63 - 1.0 A overload	1		56DOL9/1R
4kW, 9A AC3, 25A AC1. Supplied with LRD06 1.0 - 1.6A overload	1		56DOL9/1V6R
4kW, 9A AC3, 25A AC1. Supplied with LRD07 1.6 - 2.5A overload	1		56DOL9/2V5R
4kW, 9A AC3, 25A AC1. Supplied with LRD08 2.5 - 4.0A overload	1		56DOL9/4R
4kW, 9A AC3, 25A AC1. Supplied with LRD10 4.0 - 6.0A overload	1		56DOL9/6R
4kW, 9A AC3, 25A AC1. Supplied with LRD12 5.5 - 8.0A overload	1		56DOL9/8R
4kW, 9A AC3, 25A AC1. Supplied with LRD14 7.0 - 10.0A overload	1	8	56DOL9/10R
5.5kW, 12A AC3, 25A AC1. Supplied with LRD16 9.0 - 13.0A overload	1	8	56DOL12/1R
7.5kW, 16A AC3, 25A AC1. Supplied with LRD21 12.0 - 18.0A overload	1	8	56DOL16/1R
11kW, 25A AC3, 40A AC1. Supplied with LRD22 16.0 - 24.0A overload	1	5	56DOL22/1R
SWITCH VERSION - 2 PUSH BUTTONS (STOP / RESET AND START) AND ISOLATING SWITCH.			
Stop/Reset Button is mushroom head type, 40mm diameter and applies to 56DOL9SW, 56DOL12SW and 56DOL16SW. Operating Temperature - 20 to +60°. 415V a.c. Rated. 56DOL22SW - 56DOL38SW have extended 'Stop/Reset' and flush 'Start' Buttons.			
4kW, 9A AC3, 25A AC1. Supplied with LRD05 0.63 - 1.0 A overload	1		56DOL9/1S
4kW, 9A AC3, 25A AC1. Supplied with LRD06 1.0 - 1.6A overload	1		56DOL9/1V6S
4kW, 9A AC3, 25A AC1. Supplied with LRD07 1.6 - 2.5A overload	1		56DOL9/2V5S
4kW, 9A AC3, 25A AC1. Supplied with LRD08 2.5 - 4.0A overload	1		56DOL9/4S
4kW, 9A AC3, 25A AC1. Supplied with LRD10 4.0 - 6.0A overload	1		56DOL9/6S
4kW, 9A AC3, 25A AC1. Supplied with LRD12 5.5 - 8.0A overload	1		56DOL9/8S
4kW, 9A AC3, 25A AC1. Supplied with LRD14 7.0 - 10.0A overload	1	5	56DOL9/10S
5.5kW, 12A AC3, 25A AC1. Supplied with LRD16 9.0 - 13.0A overload	1	5	56DOL12/1S
7.5kW, 16A AC3, 25A AC1. Supplied with LRD21 12.0 - 18.0A overload	1	5	56DOL16/1S
11kW, 25A AC3, 40A AC1. Fitted with LRD22 16.0 - 24.0A overload	1	4	56DOL22/1S
Note: All starters are available for 240V a.c. Coil - add "B" to catalogue number. Other coil Voltage and overloads are available as a special.			
56 SERIES DOL STARTERS - SPARE COVERS			
To replace the cover over the starter only. Available in Grey (GY) or Chemically Resistant Orange (RO).			
To suit 56DOL9, 12 & 16 ranges, includes cover and cradle and product stickers	1		56DOL9CVR/1

Star Delta Motor Starters - 56 Series 40009 - FN0TK3GZ

Description	STD PK	CTN QTY	Reference
COMPLETE WITH OVERLOAD WITH 2 PUSH BUTTONS - START/STOP - RESET.			
415V a.c. Control, 3-30 second adjustable runup delay and 20-300 millisecond adjustable transition delay, 30 starts per hour.			
11kW Supplied with LRD16 9.0 - 13.0A overload			56YD12/1
15kW Supplied with LRD21 12.0 - 18.0A overload			56YD16/1
Note: All starters are available for 240V a.c. Coil - add "B" to catalogue number. Other coil voltage and overloads are available as a special.			

Reversing DOL Motor Starters - 56 Series 40010 - FN0TK3GZ

Complete with Overload, in 56 Series Enclosures (IP66).

Description	STD PK	CTN QTY	Reference
TWO CONTACTOR VERSION.			
3 PUSH BUTTONS (FWD - STOP / RESET - REV). Operating temperature - 20 to + 60°. 415V a.c. Rated.			
4kW, 9A AC3, 25A AC1. Supplied with LRD14 7.0 - 10.0A overload	1		56ROL9/10
Note: All starters are available for 240V a.c. Coil - add "B" to catalogue number. Other coil voltage and overloads are available as a special.			

Industrial Switchgear


66CV450


66CV763


66SO450G


66P563-EO


66P763-RO


66P450G


FS5

66 Series Industrial Switchgear

- Combination Switched Sockets measuring 320xW160xD215mm
- 50A and 63A options
- One-piece cover with interlock to ensure plug can only be removed or inserted in OFF position
- Neon power indicator
- Key locking switch for added security
- Matching plugs - Length 260mm, where 56 series measures 112 to 175mm
- Plugs with transparent bodies to view cable connections or in resistant orange for chemical resistant environments

For environments where strong chemicals are used Clipsal offers a varied range of products with Chemical Resistant Properties. The range of available products can be ordered by nominating the selected colours in the catalogue number code.

For Resistant Orange please nominate “RO”. For more information please contact your Clipsal Representative or refer to the 56 and 66 Series Technical Catalogue.

Switched Socket Outlets 40101 - FN0U93MG

Description	STD PK	CTN QTY	Reference
SWITCHED SOCKET OUTLETS - IP66			
500V 50A - 4 Round pins	1	2	66CV450
500V 50A - 5 Round pins	1	2	66CV550
500V 63A - 4 Round pins	1	2	66CV463
500V 63A - 5 Round pins	1	2	66CV563
500V 50A - 7 Round pins	1	2	66CV750
500V 63A - 7 Round pins	1	2	66CV763

Internal Socket Housings

Description	STD PK	CTN QTY	Reference
500V 50A - 4 Round pins	1	30	66SO450G
500V 63A - 4 Round pins	1	30	66SO463G
500V 63A - 5 Round pins	1	30	66SO563G
500V 63A - 7 Round pins	1	30	66SO763G

Heavy Duty Plugs 40102 - FN0U93MH

Description	STD PK	CTN QTY	Reference
STRAIGHT PLUGS - IP66			
500V 50A - 4 Round pins	1	6	66P450
500V 50A - 5 Round pins	1	6	66P550
500V 63A - 4 Round pins	1	6	66P463
500V 63A - 5 Round pins	1	6	66P563
500V 50A - 7 Round pins	1	6	66P750
500V 63A - 7 Round pins	1	6	66P763

Plug Internal Pin Housings

Description	STD PK	CTN QTY	Reference
500V 50A - 4 Round pins	1	30	66P450G
500V 63A - 4 Round pins	1	30	66P463G
500V 63A - 5 Round pins	1	30	66P563G
500V 63A - 7 Round pins	1	30	66P763G

Float Switch & Accessories

Description	STD PK	CTN QTY	Reference
250V 20A Weatherproof Float Switch	1		FS5
FS5 Less Line, Float, Weight	1		FS5/1
FS5 Operating Arm Assembly	1		FS5/2
FS5 Float Ball only	1		FS5/3
FS5 Suspension Line, Operating Stops and Line Weight	1		FS5/4
FS5 Micro-switch Assembly	1		FS5/6

Industrial Switchgear


EY56AI310


EY56C310


EY56E2


EY56P532


EY56CSC310


EY56SO315


EY56SO532


EY56SW110


EY56SW110LE

Easy56 Industrial Switchgear

Appliance Inlets

Description	Reference
Appliance Inlet 3 Pin Flat, 250V 10A	EY56AI310
Appliance Inlet 3 Pin Flat, 250V 15A	EY56AI315

Combination Switched Socket Outlets

Description	Reference
Combination Switched Socket, 3 Pin Flat 250V 10A	EY56C310
Combination Switched Socket, 3 Pin Flat 250V 15A	EY56C315
Combination Switched Socket, 3 Pin Round 250V 20A	EY56C320
Combination Switched Socket, 3 Pin Round 250V 32A	EY56C332
Combination Switched Socket, 4 Pin Round 500V 10A	EY56C410
Combination Switched Socket, 4 Pin Round 500V 20A	EY56C420
Combination Switched Socket, 4 Pin Round 500V 32A	EY56C432
Combination Switched Socket, 5 Pin Round 500V 10A	EY56C510
Combination Switched Socket, 5 Pin Round 500V 20A	EY56C520
Combination Switched Socket, 5 Pin Round 500V 32A	EY56C532
Combination Switched Socket, 3 Pin Flat 250V 10A, Less Enclosure	EY56C310LE
Combination Switched Socket, 3 Pin Flat 250V 15A, Less Enclosure	EY56C315LE

Enclosures

Description	Reference
2 Gang Enclosure, 2x25mm & 1x32mm Conduit Entry	EY56E2
3 Gang Enclosure, 2x25mm & 1x32mm Conduit Entry	EY56E3
4 Gang Enclosure, 2x25mm & 4x32mm Conduit Entry	EY56E4

Plugs

Description	Reference
Straight Plug, 3 Pin Flat, 250V 10A	EY56P310
Straight Plug, 3 Pin Flat, 250V 15A	EY56P315
Straight Plug, 3 Pin Round, 250V 20A	EY56P320
Straight Plug, 3 Pin Round, 250V 32A	EY56P332
Straight Plug, 4 Pin Round, 500V 10A	EY56P410
Straight Plug, 4 Pin Round, 500V 20A	EY56P420
Straight Plug, 4 Pin Round, 500V 32A	EY56P432
Straight Plug, 5 Pin Round, 500V 10A	EY56P510
Straight Plug, 5 Pin Round, 500V 20A	EY56P520
Straight Plug, 5 Pin Round, 500V 32A	EY56P532

Plug Sockets

Description	Reference
Extension Socket/Appliance Connector 3 Pin Flat, 250V 10A	EY56CSC310
Extension Socket/Appliance Connector 3 Pin Flat, 250V 15A	EY56CSC315

Socket Outlets

Description	Reference
Socket Outlet 3 Pin Flat, 250V 10A	EY56SO310
Socket Outlet 3 Pin Flat, 250V 15A	EY56SO315
Socket Outlet 3 Pin Round, 250V 32A	EY56SO332
Socket Outlet 4 Pin Round, 500V 10A	EY56SO410
Socket Outlet 4 Pin Round, 500V 20A	EY56SO420
Socket Outlet 4 Pin Round, 500V 32A	EY56SO432
Socket Outlet 5 Pin Round 500V 10A	EY56SO510
Socket Outlet 5 Pin Round 500V 20A	EY56SO520
Socket Outlet 5 Pin Round 500V 32A	EY56SO532
Socket Outlet 3 Pin Flat, 250V 10A, Less Enclosure	EY56SO310LE
Socket Outlet 3 Pin Flat, 250V 15A, Less Enclosure	EY56SO315LE

Switches

Description	Reference
Switch 1 Pole 250V 10A	EY56SW110
Switch 1 Pole 250V 20A	EY56SW120
Switch 1 Pole 250V 32A	EY56SW132
Switch 3 Pole 500V 10A	EY56SW310
Switch 3 Pole 500V 20A	EY56SW320
Switch 3 Pole 500V 32A	EY56SW332
Switch 1 Pole 250V 10A, Less Enclosure	EY56SW110LE
Switch 1 Pole 250V 20A, Less Enclosure	EY56SW120LE

Industrial Switchgear



56SO332/6LE



56SO532/6LE



67SO332/6



67P316/6



67P416/6



67CSC316/6



67CSC416/6



67CC432/3

IEC309 56 Series Socket Outlets - Less Enclosure

Description	STD PK	CTN QTY	Reference
16A 6h 220/250V IP66 Round Pin Socket Outlet with blue flap - Less Enclosure			56SO316/6LE
32A 6h 220/250V IP66 Round Pin Socket Outlet with blue flap - Less Enclosure			56SO332/6LE
16A 6h 380/415V IP66 Round Pin Socket Outlet with red flap - Less Enclosure			56SO516/6LE
32A 6h 380/415V IP66 Round Pin Socket Outlet with red flap - Less Enclosure			56SO532/6LE

Grey (GY) product supplied as standard.

67 Series Industrial Switchgear

Socket Outlets - IP67 40201 - FN0U93MJ

Description	STD PK	CTN QTY	Reference
220/240V 16A 6 hour 3 round pins	1	10	67SO316/6
220/240V 32A 6 hour 3 round pins	1	10	67SO332/6
380/415V 16A 6 hour 4 round pins	1	10	67SO416/6
380/415V 32A 6 hour 4 round pins	1	10	67SO432/6

Plugs and Extension Sockets 40202 - FN0U93MK

67 Series to CEE17 FORM/BS4343

Straight Plugs IP67

Description	STD PK	CTN QTY	Reference
220/240V 16A 6 hour 3 round pins	1	10	67P316/6
220/240V 32A 6 hour 3 round pins	1	10	67P332/6
380/415V 16A 6 hour 4 round pins	1	10	67P416/6
380/415V 32A 6 hour 4 round pins	1	10	67P432/6
380/415V 32A 3 hour 4 round pins	1	10	67P432/3

Appliance Connectors IP67

Description	STD PK	CTN QTY	Reference
220/240V 16A 6 hour 3 round pins	1	10	67CSC316/6
220/240V 32A 6 hour 3 round pins	1	10	67CSC332/6
380/415V 16A 6 hour 4 round pins	1	10	67CSC416/6
380/415V 32A 6 hour 4 round pins	1	10	67CSC432/6
380/440V 32A 3 hour 4 round pins	1	10	67CSC432/3

Container Converter A.S. - C.E.E./B.S.

Description	STD PK	CTN QTY	Reference
440V 32A 4 pin B.S. connector to 32A A.S. plug	1	5	67CC432/3

Industrial Switchgear



WMB332R



WMB332



WMB563



WMC310



WMC310/LE



WMC315



WMC532



WMC563

Clipsal WilcoROWCO Metal Clad Switchgear

Appliance Inlets - WilcoROWCO A Series 40501 - FN1DB11A

Cast Aluminium - IP66

Description	STD PK	CTN QTY	Reference
SINGLE GANG - SINGLE PHASE - 250 VOLT			
32A 3 Round pin two gang	1	10	WMB332R
SINGLE GANG - MULTI PHASE - 500 VOLT			
32A 5 Round pin two gang	1	10	WMB532R
63A 5 Round pin size 3	1	12	WMB563R

Socket Outlets / Bases - WilcoROWCO A Series 40502 - FN1DB11B

Cast Aluminium - IP66

Description	STD PK	CTN QTY	Reference
SURFACE SOCKET OUTLETS			
Socket Outlet 1Gang 10A 250V 3F	1		WMB310
Socket Outlet 1Gang 10A 250V Less Enclosure	1		WMB310/LE
Socket Outlet 1Gang 10A 250V 2F 1R	1		WMB310L
Socket Outlet 1Gang 10A 250V 2PP	1		WMB210
Socket Outlet 1Gang 15A 250V 3F	1		WMB315
Socket Outlet 1Gang 15A 250V Less Enclosure	1		WMB315/LE
Socket Outlet 1Gang 15A 32V POLARISED	1		WMB215/32
Socket Outlet 1Gang 20A 250V 3R	1		WMB320
Socket Outlet 1Gang 32A 250V 3R	1		WMB332
Socket Outlet 1Gang 10A 500V 4R	1		WMB410
Socket Outlet 1Gang 20A 500V 4R	1		WMB420
Socket Outlet 1Gang 10A 500V 5R	1		WMB510
Socket Outlet 1Gang 20A 500V 5R	1		WMB520
Socket Outlet 1Gang 20A 500V 5R Less Enclosure	1		WMB520/LE
Socket Outlet 1Gang 20A 500V 7R	1		WMB720
Socket Outlet 1Gang 32A 500V 4R	1		WMB432
Socket Outlet 1Gang 32A 500V 5	1		WMB532
Socket Outlet 1Gang 32A 500V 5R Less Enclosure	1		WMB532/LE
Socket Outlet 63A 500V 4R	1		WMB463
Socket Outlet 63A 500V 5R	1		WMB563

Switched Socket Outlets - WilcoROWCO A Series 40503 - FN1DB11F

Cast Aluminium - IP66

Internal Interlock is suitable for 56 series plugs with round pins up to 32A.
50A & 63A products have external interlock facilty.

Description	STD PK	CTN QTY	Reference
COMBINATION SWITCHED SOCKET OUTLETS			
Switched Socket Outlet 2Gang 10A 250V 3F	1		WMC310
Switched Socket Outlet 2Gang 10A 250V 3F Less Enclosure	1		WMC310/LE
Switched Socket Outlet 2Gang DP 10A 250V 3F	1		WMC310D
Switched Socket Outlet 2Gang 10A 250V 2F 1R	1		WMC310L
Switched Socket Outlet 2Gang DP 10A 250V 2F 1R	1		WMC310LD
Switched Socket Outlet 2Gang 15A 250V 3F	1		WMC315
Switched Socket Outlet 2Gang 15A 250V 3F Less Enclosure	1		WMC315/LE
Switched Socket Outlet 2Gang DP 15A 250V 3F	1		WMC315D
Switched Socket Outlet 2Gang polarised 15A 32V	1		WMC115-TT
Switched Socket Outlet 2Gang 20A 250V 3R	1		WMC320
Switched Socket Outlet 2Gang 32A 500V 3R	1		WMC332
Switched Socket Outlet 2Gang 10A 500V 4R	1		WMC410
Switched Socket Outlet 2Gang 20A 500V 4R	1		WMC420
Switched Socket Outlet 2Gang 32A 500V 4R	1		WMC432
Switched Socket Outlet 2Gang 10A 500V 5R	1		WMC510
Switched Socket Outlet 2Gang 20A 500V 5R	1		WMC520
Switched Socket Outlet 2Gang 20A 500V 5R Less Enclosure	1		WMC520/LE
Switched Socket Outlet 2Gang 32A 500V 5R	1		WMC532
Switched Socket Outlet 2Gang 32A 500V 5R Less Enclosure	1		WMC532/LE
Switched Socket Outlet 50A 500V 4R	1		WMC450
Switched Socket Outlet 50A 500V 5R	1		WMC550
Switched Socket Outlet 63A 500V 4R	1		WMC463
Switched Socket Outlet 63A 500V 5R	1		WMC563

NOTE: F = Flat Pins, R = Round Pins

Industrial Switchgear


WMS110


WMS320/LE


WMS380


WMS120CO


WMDIN2


WMS3125


WMCDIN310RC


WMCDIN563

Switches - WilcoROWCO A Series 40504 - FN1DB11G

Cast Aluminium - IP66

Description	STD PK	CTN QTY	Reference
SWITCHES (99mm² MODULAR)			
Switch, Single Pole, 10A, 240V	1		WMS110
Switch, Double Pole, 10A, 240V	1		WMS210
Switch, Single Pole, Two-way, 10A, 240V	1		WMS110-TW
Switch, Single Pole, 16A, 240V	1		WMS116
Switch, Single Pole, 20A, 240V	1		WMS120
Switch, Single Pole, Two-way, 20A, 240V	1		WMS120-TW
Switch, Triple Pole, 10A, 415V	1		WMS310
Switch, Triple Pole, 20A, 415V	1		WMS320
Switch, Triple Pole, 32A, 415V	1		WMS332
Switch, Four Pole, 20A, 415V	1		WMS420
Switch, Four Pole, 32A, 415V	1		WMS432
SWITCHES (99mm² MODULAR) LESS ENCLOSURE			
Switch, Single Pole, 10A, 240V, Less Enclosure	1		WMS110/LE
Switch, Double Pole, 10A, 240V, Less Enclosure	1		WMS210/LE
Switch, Single Pole, 20A, 240V, Less Enclosure	1		WMS120/LE
Switch, Triple Pole, 20A, 415V, Less Enclosure	1		WMS320/LE
Switch, Triple Pole, 32A, 415V, Less Enclosure	1		WMS332/LE
Switch, Four Pole, 32A, 415V, Less Enclosure	1		WMS432/LE
SWITCHES (238 X 120mm)			
Switch, Triple Pole, 40A, 415V	1		WMS340
Switch, Triple Pole, 50A, 415V	1		WMS350
Switch, Triple Pole, 63A, 415V	1		WMS363
Switch, Four Pole, 40A, 415V	1		WMS440
Switch, Four Pole, 50A, 415V	1		WMS450
Switch, Four Pole, 63A, 415V	1		WMS463
Switch, Six Pole, 20A, 415V	1		WMS620
Switch, Six Pole, 32A, 415V	1		WMS632
Switch, Seven Pole, 32A, 415V	1		WMS732
SWITCHES (380 X 170mm)			
Switch, Triple Pole, 80A, 415V	1		WMS380
Switch, Triple Pole, 100A, 415V	1		WMS3100
Switch, Triple Pole, 125A, 415V			WMS3125
Switch, Four Pole, 80A, 415V			WMS480
Switch, Six Pole, 63A, 415V	1		WMS663

WilcoROWCO Reversing and Changeover Surface Switches - IP66

Description	STD PK	CTN QTY	Reference
240V 20A Single pole changeover switch – measures 99mm²	1		WMS120CO
240V 32A Single pole changeover switch – measures 99mm²	1		WMS132CO
415V 20A Triple pole changeover switch – measures 99mm²	1		WMS320CO
415V 32A Triple pole changeover switch – measures 99mm²	1		WMS332CO
415V 63A Triple pole changeover switch – measures W170 x H380mm	1		WMS363CO
415V 20A Four pole changeover switch	1		WMS420CO
415V 32A Four pole changeover switch – measures W120 x H238mm	1		WMS432CO
415V 20A Triple reversing switch – measures 99mm²	1		WMS320R
415V 32A Triple reversing switch – measures 99mm²	1		WMS332R
415V 63A Triple reversing switch – measures W170 x H380mm	1		WMS363R

Enclosures and Boxes - WilcoROWCO A Series 40508 - FN1DB11L

DIN Enclosure Less Equipment - Cast Aluminium - IP56

Description	STD PK	CTN QTY	Reference
DIN Enclosure 4 Module capacity, 2 gang, 99W x 201H x 117D	1		WMDIN2

Please Note: Standard Colour is Yellow.

DIN Enclosure with RCD Fitted - Cast Aluminium - IP56

Description	STD PK	CTN QTY	Reference
DIN protected socket outlet with 30mA RCD 3G 10A 240V – measure 99W x 303H x 117Dmm	1		WMCDIN310RC
DIN protected socket outlet with 30mA RCD 3G 20A 415V 5R – measure 99W x 303H x 117Dmm	1		WMCDIN520RC
DIN protected socket outlet with 30mA RCD 3G 32A 415V 4R – measure 99W x 303H x 117Dmm	1		WMCDIN432RC
DIN protected socket outlet with 30mA RCD 3G 32A 415V 5R – measure 99W x 303H x 117Dmm	1		WMCDIN532RC
DIN enclosure with socket outlet 63A 500V 5R (Less RCD) – measure 115W x 323H x 185Dmm	1		WMCDIN563

NOTE: For Residual Current Outlets use WMCDIN563 with unit in conjunction with required RCD unit.
Please Note: Standard Colour is Yellow.

Industrial Switchgear


WMJB1

WilcoROWCO Junction Boxes - IP66

Description	STD PK	CTN QTY	Reference
1 x 32 and 2 x 25 mm Entries Size A	1		WMJB1

Please Note: Standard Colour is Yellow.


WMMG4

WilcoROWCO Enclosures (back boxes)

Description	STD PK	CTN QTY	Reference
Enclosure (base only) Multigang 2 Gang	1		WMMG2
Enclosure (base only) Multigang 3 Gang	1		WMMG3
Enclosure (base only) Multigang 4 Gang	1		WMMG4


WMPB1SPML

WilcoROWCO Push Button Control Stations

Description	STD PK	CTN QTY	Reference
Control station start button	1		WMPB1ST
Control station stop button	1		WMPB1SP
Control station stop mushroom head latching button	1		WMPB1SPML


WCFSP5100-EC

Wilco Socket Outlets - Fuse / Switched 40509 - FN1DB11M
Combination Fuse - Switch and Socket Outlets - 500V

Description	STD PK	CTN QTY	Reference
63A 5 Socket triple pole and neutral	1		WCFSP563
63A 5 Socket triple pole and neutral (corrosion resistant)	1		WCFSP563-EC
100A Basic switch socket 4 socket triple pole	1		WCFSP4100
100A 4 Socket triple pole (corrosion resistant)	1		WCFSP4100-EC
100A Basic switch socket 5 socket triple pole and neutral	1		WCFSP5100
100A 5 Socket triple pole and neutral (corrosion resistant)	1		WCFSP5100-EC
100A 5 Socket appliance inlet	1		WCFSP5100R
100A 5 Socket triple pole and neutral with Reverse entry and H entry accessories (corrosion resistant)	1		WCFS/S354
160A Basic switch socket 4 socket triple pole	1		WCFSP4160
160A 5 Socket triple pole and neutral	1		WCFSP5160
160A 5 Socket triple pole and neutral (corrosion resistant)	1		WCFSP5160-EC
160A 5 Socket appliance inlet	1		WCFSP5160R
200A 5 Socket triple pole			WCFSP5200
200A 5 Socket appliance inlet			WCFSP5200R
E TYPE PIN CONFIGURATION			
63A Basic switch socket 4 socket triple pole and neutral	1		WCFSPE463

VARIATIONS: "R" type appliance inlet 'REVERSE' - add Suffix "R" (e.g. WCFSPE563R) no price variation.
Options available include: Junction Box or Termination Chamber. Reverse Entry.
NOTE - "EC" denotes Corrosion Resistant Electrical Orange. Interlock is standard on all WCFSP equipment


WCFSP5160R


WCFS363N

Wilco Switches - Fused 40510 - FN1DB11N
Weatherproof Industrial Fuse - Switchgear - Combination Fuse - Switches - 500V

Description	STD PK	CTN QTY	Reference
63A Triple pole and neutral	1		WCFS363N
200A Corrosion resistant switch triple pole and neutral	1		WCFS3200N-EC


P532

Wilco Plugs - Aluminium 40519 - FN1DB12F

Description	STD PK	CTN QTY	Reference
SINGLE PHASE - 250V			
32A 3 Round pin - with plastic screw ring	1		P132
MULTI PHASE - 500V			
32A 4 Round pin - with plastic screw ring	1		P432
32A 5 Round pin - with plastic screw ring	1		P532
50A 4 Round pin - with aluminium screw ring	1		WMP450
50A 5 Round pin - with aluminium screw ring	1		WMP550
63A 4 Round pin - with aluminium screw ring	1		WMP463
63A 5 Round pin - with aluminium screw ring	1		WMP563
100A 4 Round pin	1		P4100
100A 5 Round pin	1		P5100
160A 4 Round pin	1		P4160
160A 5 Round pin	1		P5160
200A 4 Round pin	1		P4200
200A 5 Round pin	1		P5200


WMP463

Accessory

Description	STD PK	CTN QTY	Reference
Bridge Divider to suit WilcoROWCO multigang enclosures			WM-BD


P4100

Industrial Switchgear


P4160


P5100R


E432B


E532B


E463BR


E463C

Wilco Appliance Connectors - Aluminium 40520 - FN1DB12P

Description	STD PK	CTN QTY	Reference
MULTI PHASE - 500V			
63A 4 Round sockets	1		WMP463R

Appliance Connectors 50A and 63A are available in yellow. To order add "YL", eg. WMP450R becomes WMP450R-YL.

Wilco Switched Socket Outlets - Cast Iron Series 40514 - FN1DB12A

Description	STD PK	CTN QTY	Reference
63A 5 Round pin, 500V (suits WMP563 plug)			SP563

Wilco Appliance Connectors - Aluminium 40520 - FN1DB12P

Description	STD PK	CTN QTY	Reference
MULTI PHASE - 500V			
63A 5 Round sockets	1		WMP563R
100A 5 Round sockets	1		P5100R
160A 4 Round sockets	1		P4160R
160A 5 Round sockets	1		P5160R
200A 5 Round sockets	1		P5200R

Appliance Connectors 50A and 63A are available in yellow. To order add "YL", eg. WMP450R becomes WMP450R-YL.

Wilco Socket Outlets - E Range 40522 - FN1DB12R

Description	STD PK	CTN QTY	Reference
MULTI PHASE - 500V			
32A 4 Round sockets	1		E432B
32A 5 Round sockets	1		E532B
63A 4 Round sockets	1		E463B
63A 5 Round sockets	1		E563B

Available in Gun Metal

Wilco Appliance Inlets - E Range 40523 - FN1DB12T

Description	STD PK	CTN QTY	Reference
MULTI PHASE - 500V			
32A 5 Round pin	1		E532BR
63A 4 Round pin	1		E463BR
63A 5 Round pin	1		E563BR

Wilco Switched Appliance Inlets - E Range

Description	STD PK	CTN QTY	Reference
MULTI PHASE - 500V			
32A 5 Round pin	1		E532CR
63A 4 Round pin	1		E463CR

Industrial Switchgear



E432P



E532P



E463P



E532P-SC



E432PR



E463SESC

63A 5 Round pin	1		E563CR

Wilco Switched Socket Outlets - E Range 40524 - FN1DB13C]

Description	STD PK	CTN QTY	Reference
MULTI PHASE - 500V			
32A 4 Round sockets	1		E432C
32A 5 Round sockets	1		E532C
63A 4 Round sockets	1		E463C
63A 4 Round sockets with fuses	1		E463CF
63A 5 Round sockets	1		E563C
63A 5 Round sockets with fuses	1		E563CF

Wilco Plug, Extension Socket and Connectors - E Range 40525 - FN1DB13J

Description	STD PK	CTN QTY	Reference
MULTI PHASE - 500V			
32A 4 Round pins	1		E432P
32A 5 Round pins	1		E532P
63A 4 Round pins	1		E463P
63A 5 Round pins	1		E563P
32A 4 Round pins - with screw cap	1		E432P-SC
32A 5 Round pins - with screw cap	1		E532P-SC
63A 4 Round pins - with screw cap	1		E463P-SC

Available in Gun Metal

Wilco Appliance Connectors - E Range

Description	STD PK	CTN QTY	Reference
MULTI PHASE - 500V			
32A 4 Round sockets	1		E432PR
32A 5 Round sockets	1		E532PR

Rotary Cam and Isolating Switches



7GF10/D91/U


7GF10/C98/U


7GN12/D90/U


7GF20/D10/U


7GF20/51/U


7GN32/D90/U


7GN32/D11/U

63A 4 Round sockets	1		E463PR
63A 5 Round sockets	1		E563PR

Wilco Extension Sockets - E Range

Description	STD PK	CTN QTY	Reference
MULTI PHASE - 500V			
32A 4 Round sockets with screw ring	1		E432SESC
32A 5 Round sockets with screw ring	1		E532SESC
63A 4 Round sockets with screw ring	1		E463SESC
63A 5 Round sockets with screw ring	1		E563SESC

Rotary Cam Switches

Rotary Cam Switches and Accessories 44001 - FN0U93MX

Description	STD PK	CTN QTY	Reference
Rated Thermal Current (Ith) = 10A. Rated Insulation Voltage Ui = 480V AC23A rating - 3kW at 415V. Maximum 10A Fuse (Gg/Gl) for 3kA short circuit protection. Terminals provide IP20 protection.			
1 Pole, 60° operation switch marked OFF / ON	1		7GF10/D90/U
2 Pole, 60° operation switch marked OFF / ON	1		7GF10/D91/U
3 Pole, 60° operation switch marked OFF / ON	1		7GF10/D10/U
1 Pole, 60° changeover switch with OFF marked 1-0-2	1		7GF10/51/U
1 Pole, 60° changeover switch marked MAN / OFF / AUTO	1		7GF10/D51/U
2 Pole, 60° changeover switch with OFF marked 1-0-2	1		7GF10/52/U
2 Pole, 60° changeover switch marked MAN / OFF / AUTO	1		7GF10/D52/U
3 Pole, 60° changeover switch with OFF marked 1-0-2	1		7GF10/53/U
1 Pole, 90° changeover switch without OFF marked 1-2	1		7GF10/54/U
3 Pole, 60° reversing switch with OFF marked 1-0-2	1		7GF10/11/U
3 Pole, 60° reversing switch marked FWD / OFF / REV	1		7GF10/D11/U
3 Current ammeter selector switch CT operation	1		7GF10/C98/U
Rated Thermal Current (Ith) = 12A AC23A rating - 6kW at 415V. Rated Insulation Voltage Ui = 480V. Maximum 16A Fuse (Gg/Gl) for 3kA short circuit protection.			
1 Pole 60° operation switch marked OFF / ON	1		7GN12/D90/U
2 Pole 60° operation switch marked OFF / ON	1		7GN12/D91/U
3 Pole 60° operation switch marked OFF / ON	1		7GN12/D10/U
3 Pole 60° reversing switch with OFF marked 1-0-2	1		7GN12/11/U
3 Pole 60° reversing switch marked FWD / OFF / REV	1		7GN12/D11/U
1 Pole 12A 60° changeover switch with OFF marked 1-0-2	1		7GN12/51/U
1 Pole 12A 60° changeover switch marked MAN / OFF / AUTO	1		7GN12/D51/U
2 Pole 12A 60° changeover switch with OFF marked 1-0-2	1		7GN12/52/U
3 Pole 12A 60° changeover switch with OFF marked 1-0-2	1		7GN12/53/U
Rated Thermal Current (Ith) = 20A AC23A rating - 7.5kW at 415V. Rated Insulation Voltage Ui = 480V. Maximum 20A Fuse (Gg/Gl) for 5kA short circuit protection. Terminals provide IP20 protection			
1 Pole 60° operation switch marked OFF / ON	1		7GF20/D90/U
2 Pole 60° operation switch marked OFF / ON	1		7GF20/D91/U
3 Pole 60° operation switch marked OFF / ON	1		7GF20/D10/U
1 Pole 60° changeover switch with OFF marked 1-0-2	1		7GF20/51/U
1 Pole 60° changeover switch marked MAN / OFF / AUTO	1		7GF20/D51/U
2 Pole 60° changeover switch marked MAN / OFF / AUTO	1		7GF20/D52/U
3 Pole 60° changeover switch with OFF marked 1-0-2	1		7GF20/53/U
3 Pole 60° changeover switch marked MAN / OFF / AUTO	1		7GF20/D53/U
3 Pole 60° reversing switch marked FWD / OFF / REV	1		7GF20/D11/U
3 Phase voltmeter selector switch marked O / L1-N / L2-N / L3-N	1		7GF20/68/U
Rated Thermal Current (Ith) = 25A AC23A rating - 11kW at 415V. Rated Insulation Voltage Ui = 690V. Maximum 25A Fuse (Gg/Gl) for 10kA short circuit protection			
2 Pole 25A 60° operation switch marked OFF / ON	1		7GN25/D91/U
3 Pole 25A 60° operation switch marked OFF / ON	1		7GN25/D10/U
1 Pole 60° changeover switch with OFF marked 1-0-2	1		7GN25/51/U
1 Pole 60° changeover switch marked MAN / OFF / AUTO	1		7GN25/D51/U
2 Pole 60° changeover switch with OFF marked 1-0-2	1		7GN25/52/U
2 Pole 60° changeover switch marked MAN / OFF / AUTO	1		7GN25/D52/U
3 Pole 60° changeover switch with OFF marked 1-0-2	1		7GN25/53/U
3 Pole 60° changeover switch marked MAN / OFF / AUTO	1		7GN25/D53/U
Rated Thermal Current (Ith) = 32A AC23A rating - 15kW at 415V. Rated Insulation Voltage Ui = 690V. Maximum 40A Fuse (Gg/Gl) for 10kA short circuit protection			
1 Pole 60° operation switch marked OFF / ON	1		7GN32/D90/U
3 Pole 60° changeover switch with OFF marked 1-0-2	1		7GN32/53/U

Rotary Cam and Isolating Switches


7GN63/D10/U


7G80/D53/U


7GN125/10/U


7GN125/D53/U

3 Pole 60° changeover switch marked MAN / OFF / AUTO	1	7GN32/D53/U
3 Pole 60° reversing switch with OFF marked 1-0-2	1	7GN32/11/U
3 Pole 60° reversing switch marked FWD / OFF / REV	1	7GN32/D11/U
Rated Thermal Current (Ith) = 63A AC23A rating - 30kW at 415V. Rated Insulation Voltage Ui = 690V.BR> Maximum 63A Fuse (Gg/Gl) for 10kA short circuit protection		
3 Pole 60° operation switch marked OFF / ON	1	7GN63/D10/U
2 Pole 60° changeover switch with OFF marked 1-0-2	1	7GN63/52/U
2 Pole 60° changeover switch marked MAN / OFF / AUTO	1	7GN63/D52/U
3 Pole 60° changeover switch with OFF marked 1-0-2	1	7GN63/53/U
3 Pole 60° changeover switch marked MAN / OFF / AUTO	1	7GN63/D53/U
3 Pole 60° reversing switch marked FWD / OFF / REV	1	7GN63/D11/U
Rated Thermal Current (Ith) = 80A AC23A rating - 37kW at 415V. Rated Insulation Voltage Ui = 660V. Maximum 80A Fuse (Gg/Gl) for 10kA short circuit protection		
3 Pole 60° operation switch marked OFF-ON	1	7G80/D10/U
3 Pole 60° changeover switch with OFF marked 1-0-2	1	7G80/53/U
3 Pole 60° changeover switch marked MAN / OFF / AUTO	1	7G80/D53/U
Rated Thermal Current (Ith) = 125A AC23A rating - 45kW @ 415V. Rated Insulation Voltage Ui = 690V. Maximum 125A Fuse (Gg/Gl) for 10kA short circuit protection		
3 Pole 60° operation switch marked 0-1	1	7GN125/10/U
3 Pole 60° changeover switch with OFF marked 1-0-2	1	7GN125/53/U
3 Pole 60° changeover switch marked MAN / OFF / AUTO	1	7GN125/D53/U

NOTE -
(1) "7" Series Switches are available enclosed in 56 Series or Sarel enclosures. Consult your Clipsal Sales Office for details.
(2) Switches may be ordered for base mount. Substitute letter "O" for "U" e.g. 7GF20/D10/U becomes 7GF20/D10/O for base mount version.
(3) Consult 7 SERIES ROTARY CAM SWITCH Technical Catalogue for details of other switch configurations which can be supplied to special order.
(4) Optional escutcheons, knobs, locking devices are available to special order, consult the Technical Catalogue for details.
(5) Switches are available up to 24 poles (16 poles in 7GF10) with customer designed configurations, to special order.
(6) Non-standard engraving on escutcheons can be provided to special order.
(7) 7GF Switches have IP20 terminal protection as standard.
(8) 7G and 7GN Switches are IP00 terminal protection.
(9) All terminals are Screw / Pressure plate types.
(10) Rotary Switches 200A to 1200A supplied to special order, contact your nearest Clipsal Sales Office for details.

Isolating Switches

Panel Mount Mains Switches - Clipsal 44202 - FN0U9564

Single Pole


PS35CO


PS20


PS80F

Description	STD PK	CTN QTY	Reference
35A Flush mounting single pole	10	100	SF35
35A Flush mounting single pole with neon indicator	10	100	SF35N
35A Changeover switch marked DAY - OFF - NIGHT	5	50	PS35CO
35A Changeover switch marked MAN - OFF - AUTO	5	50	PS35COA
20A Panel mounting single pole back wiring	10	200	PS20
20A Panel mounting single pole front wiring	10	200	PS20F
35A Panel mounting single pole back wiring	10	200	PS35

Rotary Cam and Isolating Switches


PD20


PD55F


DF35N


T200


T200FA


T300


T300FA


T630BL

35A Panel mounting single pole front wiring	10	200	PS35F
55A Panel mounting single pole back wiring	10	200	PS55
55A Panel mounting single pole front wiring	10	200	PS55F
70A Panel mounting single pole back wiring	10	200	PS70
70A Panel mounting single pole front wiring	10	200	PS70F
75A Back wiring with facility for locking in OFF ONLY	1	25	S75LF
80A Panel mounting single pole back wiring	10	200	PS80
80A Panel mounting single pole front wiring	10	200	PS80F
100A Changeover switch marked Mains - EMERGENCY	1	25	PS100CO
100A Back wiring, heavy duty - 2 tunnels per terminal	5	50	PS100HD

Double Pole

Description	STD PK	CTN QTY	Reference
20A Panel mounting double pole back wiring	5	50	PD20
20A Panel mounting double pole front wiring	5	50	PD20F
35A Panel mounting double pole back wiring	5	50	PD35
35A Panel mounting double pole front wiring	5	50	PD35F
55A Panel mounting double pole back wiring	5	50	PD55
55A Panel mounting double pole front wiring	5	50	PD55F
80A Panel mounting double pole back wiring	5	50	PD80

Triple Pole

Description	STD PK	CTN QTY	Reference
10A Flush mounting triple pole	10	200	TF10
20A Panel mounting triple pole back wiring	5	50	PT20
20A Panel mounting triple pole front wiring	5	50	PT20F
35A Panel mounting triple pole back wiring	5	50	PT35
35A Panel mounting triple pole front wiring	5	50	PT35F
35A Back wiring marked mains switch	5	50	PT35MS
55A Panel mounting triple pole back wiring	5	50	PT55
55A Panel mounting triple pole front wiring	5	50	PT55F
75A Panel mounting triple pole back wiring	1	25	T75
75A Panel mounting triple pole front wiring	1	25	T75F
80A Panel mounting triple pole back wiring	5	50	PT80
80A Panel mounting triple pole front wiring	5	50	PT80F
100A Panel mounting triple pole back wiring	1	10	T100
100A Panel mounting triple pole front wiring	1	10	T100F
150A Panel mounting triple pole back wiring	1	10	T150
150A Panel mounting triple pole front wiring	1	10	T150F
150A Back wiring with locking in OFF position only	1	10	T150LF
200A Panel mounting triple pole back wiring	1	2	T200
200A Panel mounting triple pole front wiring less cover	1	2	T200F
200A Panel mounting triple pole front wiring with cover	1	2	T200FA
200A Panel mounting triple pole lug connection	1	2	T200L
200 to 300A Spare cover only	1	10	T200X
300A Panel mounting triple pole front wiring with cover	1	2	T300FA
300A Panel mounting triple pole lug connection	1	2	T300L

Rotary Cam and Isolating Switches


NSF2ABW



8P



8AC



8WH

S Series Surface Main Switches PDL

Description	STD PK	CTN QTY	Reference
250V 20A Single pole back wiring	1	10	S120BW
250V 20A Single pole front wiring	1	10	S120FW
250V 32A Single pole back wiring	1	10	S132BW
250V 32A Single pole front wiring	1	10	S132FW
250V 32A Single pole FW/BW combination	1	10	S132FWBW
250V 80A Single pole back wiring	1	10	S180BW
250V 80A Single pole front wiring	1	10	S180FW
250V 80A Single pole FW/BW combination	1	10	S180FWBW
440V 20A Double pole front wiring	1	5	S220FW
440V 80A Triple pole back wiring	1	5	S380BW

Service Fuses PDL

Service Fuse Holders - Plastic

Description	STD PK	CTN QTY	Reference
100A Back wiring, suits NVK Cartridges	1	20	NSF2ABW
100A Front wiring, suits NVK Cartridges	1	20	NSF2AFW
100A Back wiring, suits NYK Cartridges	1	20	NSF2BBW
100A Back wiring with Anti-Intrusion, suits NYK Cartridges	1	20	NSF2BBWA
100A Front wiring with Anti-Intrusion, suits NYK Cartridges	1	20	NSF2BFWA

Note: NSF series fuses are to be phased out

Service Fuse Cartridges

Service Fuse Cartridges - NVK Series

Description	STD PK	CTN QTY	Reference
Diameter 57mm x 22.2mm			
415V 60A	1	20	NVK60
415V 80A	1	20	NVK80
415V 100A	1	20	NVK100

Note: NVK series fuses are to be phased out

Service Fuse Cartridges - NYK Series

Description	STD PK	CTN QTY	Reference
Diameter 57mm x 30.2mm			
415V 63A	1	20	NYK63
415V 80A	1	20	NYK80
415V 100A	1	20	NYK100

Note: NYK series fuses are to be phased out

Switchboard Labels

Note: NYK series fuses are to be phased out

Description	STD PK	CTN QTY	Reference
Light	50	2500	8L
Power	50	2500	8P
Range	50	2500	8R
Air Conditioner	50	2500	8AC
Main Switch	50	2500	8MS
Sub Mains	50	2500	8SM
Water Heater	50	2500	8WH

Automation & Control

Variable Speed Drives & Soft Starters

Soft Starters



Altistart 01

Starters and Options	Page 3.2.2
Enclosed Altistart 01	Page 3.2.5
Dimensions	Page 3.2.38
Wiring Diagrams	Page 3.2.39-40

3.2



Altistart 22

Starters	Page 3.2.3
Options	Page 3.2.3
Dimensions	Page 3.2.42



Altistart 48

Starters	Page 3.2.4
Options	Page 3.2.4
Enclosed Altistart 48	Page 3.2.6
Dimensions	Page 3.2.43

Variable Speed Drives



Altivar 12

Standard Version Page 3.2.10
Options Page 3.2.10, 13
Dimensions and Wiring Diagrams Page 3.2.44



Altivar 312

Standard Page 3.2.11
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Altivar 32

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Altivar 61

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Altivar 71

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Altivar Engineered Drives

IP23 & IP54 Compact Page 3.2.21 - 22
IP54 Separate Air Flow Page 3.2.21 - 22
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Altivar Process ATV600/ATV900

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Altivar Medium Voltage Solutions

Altivar 1200 Page 3.2.36

Selection Guide

Soft starters







		Altistart 01	Altistart 22	Altistart 48
Typical applications		Compressors, centrifugal pumps, fans, conveyors, automatic doors, washing gantries	Motor Starter solutions requiring a compact footprint (integral bypass), centrifugal pumps, automatic doors, washing gantries, fans and high line current limiting	Compressors, all pump types, fans and high inertia machines, conveyors, line current limiting
Supply voltage		1 Phase 110V to 230V 3 Phase 380V to 415V	3 Phase 230V to 440V	3 Phase 230V to 690V
Motor power range		0.37…15kW	7.5...315kW	7.5…1200kW
Output frequency range		—	—	—
Motor control		Reduced voltage starting	Full current limiting up to 350% on starting	Full current limiting to 700% on starting
Transient overtorque		Starting torque: 30…80% of DOL motor starting torque	Configurable Voltage Ramp	TCS (Torque Control System)
Built-in functions		1	—	36
No. of I/O	Analogue inputs	—	1x PTC Probe (isolated)	1× PTC Probe
	Logic inputs	3	3	4
	Analogue outputs	—	—	1
	Logic outputs	1	—	2
	Relay outputs	1	2	3
Communications	Integrated	—	Modbus	Modbus
	Option	Combined with TeSys U	DeviceNet, Modbus TCP, Proftibus DP etc available via a Gateway	DeviceNet, Ethernet TCP/IP, Fipio, Profibus DP
Option cards		—	—	—

Note
Schneider Electric also offers Variable Speed drives for specialised Industries. For higher power and voltage ratings (2.4MW and above), please consult your local sales office.

For more info:

- Catalogue: DIA2ED2140603EN
- Dimensions: Page 3.2.25
- Schematics: Pages 3.2.25-26

Soft Starters for Asynchronous Motors

Altistart 01 1-Phase and 3-Phase Asynchronous Motors up to 15kW Built-in Bypass Contactor



ATS01N106FT

*Soft Start Only – Single Phase – 200-240V

kW	In (A)	Width	Starter Reference (2)
0.37	3	22.5 mm	ATS01N103FT
0.75	6	22.5 mm	ATS01N106FT
1.1	9	45 mm	ATS01N109FT
1.5	12	45 mm	ATS01N112FT
2.2	25	45 mm	ATS01N125FT

*Soft Start Only – Three Phase – 380-415V

kW	In (A)	Width	Starter Reference (2)
1.1	3	22.5 mm	ATS01N103FT
2.2	6	22.5 mm	ATS01N106FT
4	9	45 mm	ATS01N109FT
5.5	12	45 mm	ATS01N112FT
11	25	45 mm	ATS01N125FT



ATS01N232QN

*Soft Start/Soft Stop – Three Phase – 380-415V (1)

kW	In (A)	Width	Starter Reference (2)
2.2	6	45 mm	ATS01N206QN
4	9	45 mm	ATS01N209QN
5.5	12	45 mm	ATS01N212QN
11	22	45 mm	ATS01N222QN
15	32	45 mm	ATS01N232QN

* ATS01N1•••• Starters suppress torque surges on starting.

* ATS01N2•••• Starters suppress torque surges as well as limit current peaks on starting.

Soft Start/Soft Stop – Three-Phase – 200-480 V

kW 230 V	kW 400 V	In (A)	Width	Reference
1.1	3	6	45 mm	ATSU01N206LT
1.5	4	9	45 mm	ATSU01N209LT
3	5.5	12	45 mm	ATSU01N212LT
5.5	11	11	45 mm	ATSU01N222LT
7.5	15	32	45 mm	ATSU01N222LT



ATSU01 + TESYS U



VW3G4104
Power Connector

Accessories

Description	Used for Starter	Reference
Power connector for ATS01	ATS01N2••QN	VW3G4104
Power connector for ATSU01 and TeSys U	ATSU01N••LT	VW3G4104
Auxiliary contact to indicate 'End of Start'	ATS01N2••Q	LAD8N11



Enclosed Soft Starters

• Please refer to page 3.2.5

Note:

(1) Duty Cycle:

ATS01	N206QN to N222QN		N232QN		N244Q to N285Q	
Starting time (sec)	1	5	1	5	1	12
Max no of cycles per hour	310	20	180	10	360	30

(2) Bypass contactor built-in

For more info:

Catalogue:
DIA2ED2140801EN
Dimensions:
Pages 3.2.29

Soft Starters for Asynchronous Motors

Altistart 22 (Built-in Bypass Contactor)
For 3-Phase Asynchronous Motors 7.5 to 315kW
50 Hz, 400V/415V Line Voltage



Soft Start/Soft Stop – 415V Line Voltage

Motor kW	In (A)	H x W x D	Starter Reference
7.5	17	265 x 130 x 170/210(1)	ATS22D17Q
15	32	265 x 130 x 170/210(1)	ATS22D32Q
22	47	265 x 130 x 170/210(1)	ATS22D47Q
30	62	295 x 145 x 210/250(1)	ATS22D62Q
37	75	295 x 145 x 210/250(1)	ATS22D75Q
45	88	295 x 145 x 210/250(1)	ATS22D88Q
55	110	295 x 145 x 210/250(1)	ATS22C11Q
75	140	350 x 150 x 230/270(1)	ATS22C14Q
90	170	350 x 150 x 230/270(1)	ATS22C17Q
110	210	425 x 200 x 300(2)	ATS22C21Q
132	250	425 x 200 x 300(2)	ATS22C25Q
160	320	425 x 200 x 300(2)	ATS22C32Q
220	410	425 x 200 x 300(2)	ATS22C41Q
250	480	455 x 300 x 340(2)	ATS22C48Q
315	590	455 x 300 x 340(2)	ATS22C59Q

Options and Accessories

	Reference
So Move Lite Setup Software	Free Download
USB / RJ45 Cordset for PC connection	TCSMCNAM3M002P
Remote Display Terminal - IP54	VW3G22101
Remote Display Terminal - IP65	VW3G22102
Remote mounting cordset, required for Remote Display - 1m	VW3A1104R10
Remote mounting cordset, required for Remote Display - 3m	VW3A1104R30
Additional Fans for demanding applications(3) (220V supply)	
ATS22D17Q…D47Q	VW3G22400
ATS22D62Q…D88Q	VW3G22401
ATS22C11Q…C17Q	VW3G22402
These are attached behind/underneath the softstarter to provide additional cooling(3)	
Protection Shrouds for Power Terminals(3)	
ATS22C11Q…C17Q	LA9F702(4)
ATS22C21Q…C59Q	LA9F703(4)

SoMove configuration software is available for a free download from Schneider-Electric.com.au



ATS22 Range



VW3G22101



VW3G22101*
- Fan for additional Cooling

Note:
(1) With / Without Fan
(2) With Fan
(3) The ATS22C11Q…C59Q have 6 unprotected power terminals
(4) Set of 6

For more info:

- Brochure: DIA2ED1121204EN
- Catalogue: DIA2ED2140604EN
- Dimensions: Pages 3.2.30

Soft Starters for Asynchronous Motors

Altistart 48 for 3-Phase Asynchronous Motors
5.5 to 1200kW
50 Hz, 415V/690V Line Voltage



ATS48D17Q



ATS48C14Q

Soft Start/Soft Stop Units 415V Line Voltage

Normal Duty (1)		Severe Duty (2)		Reference
Motor kW	In (A)	Motor kW	In (A)	
7.5	17	5.5	12	ATS48D17Q
11	22	7.5	17	ATS48D22Q
15	32	11	22	ATS48D32Q
18.5	38	15	32	ATS48D38Q
22	47	18.5	38	ATS48D47Q
30	62	22	47	ATS48D62Q
37	75	30	62	ATS48D75Q
45	88	37	75	ATS48D88Q
55	110	45	88	ATS48C11Q
75	140	55	110	ATS48C14Q
90	170	75	140	ATS48C17Q
110	210	90	170	ATS48C21Q
132	250	110	210	ATS48C25Q
160	320	132	250	ATS48C32Q
220	410	160	320	ATS48C41Q
250	480	220	410	ATS48C48Q
315	590	250	480	ATS48C59Q
355	660	315	590	ATS48C66Q
400	790	355	660	ATS48C79Q
500	1000	400	790	ATS48M10Q
630	1200	500	1000	ATS48M12Q

Soft Start/Soft Stop Units 690V Line Voltage

Normal Duty (1)		Severe Duty (2)		Reference
Motor kW	In (A)	Motor kW	In (A)	
15	17	11	12	ATS48D17Y
18.5	22	15	17	ATS48D22Y
22	32	18.5	22	ATS48D32Y
30	38	22	32	ATS48D38Y
37	47	30	38	ATS48D47Y
45	62	37	47	ATS48D62Y
55	75	45	62	ATS48D75Y
75	88	55	75	ATS48D88Y
90	110	75	88	ATS48C11Y
110	140	90	110	ATS48C14Y
160	170	110	140	ATS48C17Y
200	210	160	170	ATS48C21Y
250	250	200	210	ATS48C25Y
315	320	250	250	ATS48C32Y
400	410	315	320	ATS48C41Y
500	480	400	410	ATS48C48Y
560	590	500	480	ATS48C59Y
630	660	560	590	ATS48C66Y
710	790	630	660	ATS48C79Y
900	1000	710	790	ATS48M10Y
1200	1200	900	1000	ATS48M12Y

Connection to Motor Delta Terminals - 6 wires to motor

- Allows use of smaller size ATS48 as its line current is multiplied by 1.73. Please refer our specialist catalogue for tables.
- A line contactor must be used. Stopping is only by freewheel.



VW3G48101

Remote Display Module

		Reference
Remote terminal “Display-adjustment” kit IP54, includes 3m cable	ATS48 all ratings	VW3G48101

Note:
(1) Normal Duty - 4 In for 12 seconds. 10 starts per hour. Class 10 motor protection.
(2) Severe Duty - 4 In for 25 seconds. 5 starts per hour. Class 20 motor protection.

For more info:

Brochure:
AUSENCLATS01

Enclosed Soft Starters for Asynchronous Motors

Enclosed Altistart 01
Enclosed Altistart 48
Soft Start/Soft Stop Units for 3-Phase, 415 V Motors



ATS01N2• •QE41



ATS01N2• •QE41

Altistart 01 Soft Start/Soft Stop units in IP54 Metal Enclosure

Motor rating	Starter Continuous current rating	Overload range (1)	Supply Neutral available - Yes/ No (2)	Reference (3)
kW	A	A		
2.2	6	4...6	Yes	ATS01N206QE21
			No	ATS01N206QE41
3	6	5.5...8	Yes	ATS01N206QE22
			No	ATS01N206QE42
4	9	7...10	Yes	ATS01N209QE21
			No	ATS01N209QE41
5.5	12	9...13	Yes	ATS01N212QE21
			No	ATS01N212QE41
7.5	22	12...18	Yes	ATS01N222QE21
			No	ATS01N222QE41
11	22	16...24	Yes	ATS01N222QE22
			No	ATS01N222QE42
15	32	23...32	Yes	ATS01N232QE21
			No	ATS01N232QE41

3.2

Options for Customisation in Field (4)

Option	Item description	Reference
Phase failure detection	415V phase failure + under or overvoltage	RM22TR33
Thermistor monitoring	Manual reset thermistor relay	LT3SM00M
Delay on re-start	Multifunction timer	RE22R1MYMR
	Interface relay	RSB2A080P7
	Relay socket	RSZE1S48M
Auto-off-Manual	3 position stay-put switch	ZB4BD3
	2N/O contacts + collar	ZB4BZ103
	"AUTO-OFF-MAN" legend + holder	ZBY2385M
	Interface relay	RSB1A160P7
	Relay socket	RSZE1S48M
	24/7 timer (user to select)	
Bypass timer with	Multifunction timer (Use function "H")	RE22R1MYMR
pressure switch	70-1000 kPa diaphragm pressure switch	XMLB010A2S12

Note:
(1) LRD range thermal overload relay.
(2) If supply neutral is not available the starter is supplied with a 415V/240V control transformer. The control circuit is always 240V ac.
(3) The starters are supplied with a line contactor and start / stop pushbuttons wired to the door.
(4) Schematics for options are supplied with the above enclosed starters.

Enclosed Soft Starters for Asynchronous Motors

Soft Start/Soft Stop Units for 3-Phase, 415 V Motors



ATS48D• •QE41



ATS48D• •QE41

Altistart 48 Soft Start/Soft Stop units in IP54 Metal Enclosure

Motor rating (Normal Duty)	Starter Continuous current rating In (1)	Supply Neutral available - Yes/ No (2)	Reference (3)
kW	A		
7.5	17	Yes	ATS48D17QE21
		No	ATS48D17QE41
11	22	Yes	ATS48D22QE21
		No	ATS48D22QE41
15	32	Yes	ATS48D32QE21
		No	ATS48D32QE41
18.5	38	Yes	ATS48D38QE21
		No	ATS48D38QE41
22	47	Yes	ATS48D47QE21
		No	ATS48D47QE41
30	62	Yes	ATS48D62QE21
		No	ATS48D62QE41
37	75	Yes	ATS48D75QE21
		No	ATS48D75QE41
45	88	Yes	ATS48D88QE21
		No	ATS48D88QE41
55	110	Yes	ATS48C11QE21
		No	ATS48C11QE41
75	140	Yes	ATS48C14QE21
		No	ATS48C14QE41
90	170	Yes	ATS48C17QE21
		No	ATS48C17QE41
110	210	Yes	ATS48C21QE21
		No	ATS48C21QE41
132	250	Yes	ATS48C25QE21
		No	ATS48C25QE41
160	320	Yes	ATS48C32QE21
		No	ATS48C32QE41

Options for Customisation in Field (4)

Option (5)	Item description	Reference
Auto-off-Manual	3 position stay-put switch	ZB4BD3
	2N/O contacts + collar	ZB4BZ103
	"AUTO-OFF-MAN" legend + holder	ZBY2385M
	Interface relay	RSB2A080P7
	Relay socket	RSZE1S48M
	24/7 timer (user to select)	
Bypass timer with pressure switch	Multifunction timer (Use function "H")	RE22R1MYMR
	70-1000 kPa diaphragm pressure switch	XMLB010A2S12

Note:
(1) Electronic thermal overload protection in Altistart 48 can be adjusted down to 40% of In.
(2) If supply neutral is not available the starter is supplied with a 415V/240V control transformer. The control circuit is always 240V ac.
(3) The above starters are also supplied with line / bypass contactors and start / stop pushbuttons wired to the door.
(4) Schematics for options are supplied with the above enclosed starters.
(5) 'Phase failure protection', 'Thermistor protection', and 'Delay on restart' functions can be configured on a standard Altistart 48 unit.

Selection Guide

Variable speed drives







		Altivar 12	Altivar 312	Altivar 32
Typical applications		Compressors, Centrifugal pumps, fans, conveyors, garage and lift doors, automatic doors, saws, drills, OEM machines, pumping	All pump types, fans, conveyors, material handling machines, packaging, automatic parking barriers, textile machines, etc.	All pump types, fans, conveyors, material handling machines, packaging, automatic parking barriers, textile machines, etc. Built in safety functions safe torque off, safe speed limit and safe stop, and built in ATV Logic. Book shelf design, excellent for high density machines and applications.
Supply voltage		1 Phase 200V to 240V	1 Phase 200V to 240V 3 Phase 380V to 500V	1 Phase 200V to 240V 3 Phase 380V to 500V
Motor power range		0.18…2.2kW	0.18…15kW	0.18…15kW
Output frequency range		0.5...400Hz	0.5…500Hz	0...599Hz
Motor control		Standard (Voltage/Frequency ratio), Performance (Sensorless Flux Vector), Pump/Fan (Kn2 quadratic ratio)	Standard (Voltage/Frequency), Performance (sensorless flux vector), energy saving ratio	Voltage/frequency ratios: U/f and 5-point U/f Sensorless flux vector control ratio Pump/Fan (Kn2 quadratic ratio) Energy saving ratio
Transient overtorque		150…170% of Nominal Motor Torque	170…200% of Nominal Motor Torque	170…200% of Nominal Motor Torque
Built-in functions		40	50	>150
No. of I/O	Analogue inputs	1	3	3
	Logic inputs	4	6	6
	Analogue outputs	1	1	1: configurable as voltage (0-10 V) or current (0-20 mA)
	Logic outputs	1	—	1
	Relay outputs	1	2	2
Communications	Integrated	Modbus	Modbus and CANopen	Modbus and CANopen
	Option	—	DeviceNet, Profibus DP, CANopen Daisy Chain, Modbus TCP, Fipio	DeviceNet, PROFIBUS DP V1, EtherNet/IP, Modbus TCP, EtherCat
Option cards		—		-

Variable speed drives









Altivar 61	Altivar 71	Altivar 600	Altivar 900
Centrifugal and submersible pumps, multipumps, fans and compressors. Simple use in Cat3 Safety Systems.	Positive displacement pumps, hoisting, packaging, material handling, wood, textile, process machines and high inertia machines…Simple use in Cat3 Safety Systems.	Centrifugal and submersible pumps, multipumps, fans and compressors. Built in safety functions safe torque off (STO), SIL3/Ple. Incorporates applications specifically designed for WWW, O&G, MMM and F&B.	Hoisting, packaging, material handling, wood, textile, process machines and high inertia machines. Built in safety functions safe torque off (STO), SIL3/Ple. Incorporates complex high speed applications specifically designed for O&G, MMM and F&B.
1 Phase 200V to 240V 3 Phase 380V to 480V 3 Phase 500V to 690V	1 Phase 200V to 240V 3 Phase 380V to 480V 3 Phase 500V to 690V	3 phase : 200 to 240V 3 phase : 380 to 440V 3 phase : 380 to 480V	3 phase : 200 to 240V 3 phase : 380 to 440V 3 phase : 380 to 480V
0.37…2400kW	0.37…2000kW	0.75....800kW	0.75....800kW
0.5…1600Hz up to 37kW 0.5…500Hz 45 to 2400kW	0.5…1600Hz up to 37kW 0.5…500Hz 45 to 2000kW	0.1....500Hz	0.1....500Hz
Kn2 quadratic ratio, Sensorless Flux Vector voltage/frequency ratio (2 or 5 points), energy saving ratio	Flux vector control with or without sensor, voltage/ frequency ratio (2 or 5 points), ENA system	Kn2 quadratic ratio, Sensorless Flux Vector voltage/frequency ratio (2 or 5 points) and energy saving ratio.	Flux vector control with or without sensor, voltage/ frequency ratio (5 points) and ENA system.
Transient overload: 110…130% of the nominal motor torque for 60 seconds	220% of the nominal motor torque for 2s 170% for 60s	150% overload for high duty (Pn-1) and 110% overload for normal duty (Pn)	180% overload for high duty (Pn-1) and 135% overload for normal duty (Pn)
>150	>150	>200	>200
2…4	2…4	3...5 (PTC, Pt100, Pt1000 & KTY84)	3...5 (PTC, Pt100, Pt1000 & KTY84)
6…20	6…20	6...12 (plus 2 of STO)	6...12 (plus 2 of STO)
1…3	1…3	2	2
0…8	0…8	0...2	1...2
2…4	2…4	3...6	3...6
Modbus and CANopen	Modbus and CANopen	Modbus serial & Modbus/TCP	Modbus serial, Modbus/TCP & EtherNet/ IP (dual port)
Ethernet TCP/IP, Fipio, Modbus Plus, INTERBUS, Profibus DP, Modbus/Uni-Telway, DeviceNet, Modbus TCP Daisy Chain, LonWorks, METASYS N2, APOGEE FLN, BACnet, Ethernet IP Daisy Chain	Ethernet TCP/IP, Fipio, Modbus Plus, INTERBUS, Profibus DP, Modbus/Uni-Telway, DeviceNet, Modbus TCP Daisy Chain, Ethernet IP Daisy Chain	Modbus/TCP & EtherNet/IP (dual port), ProfiNet, CANOpen (RJ45 daisy chain, Sub_D & screw terminal), ProfiBus DP V1 and DeviceNet.	ProfiNet, CANOpen (RJ45 daisy chain, Sub_D & screw terminal), ProfiBus DP V1, DeviceNet and EtherCAT.
I/O extension cards, “Controller Inside” programmable card, multi-pump cards ...many more	Encoder interface card, I/O extension cards, user programmable IMC card, ...many more	I/O extension cards (PTC, Pt100, Pt1000 & KTY84 incl 3-wire), communication cards (2 slots)	I/O extension cards (PTC, Pt100, Pt1000 & KTY84 incl 3-wire), communication cards and encoder interface cards (3 slots)

Variable Speed Drives for Asynchronous Motors

Compact Drives, Simple Selection



Altivar 12 – small in size, big on performance
0.18 to 2.2kW, 240 V single-phase power supply

The Altivar 12 a low cost variable speed drive particularly suitable for small stand alone machines such as:

- Food industry (ventilation of catering kitchens, bagging machines, mixers etc
- Small handling applications (car washes, conveyors, etc.)
- Machines with a single-phase socket (wood-working machines, surface polishing and cleaning machines, swimming pool or irrigation pumps etc



Altivar 312 – compact, high performance industrial drive
0.18 to 2.2kW, 240 V single-phase power supply
0.37 to 15kW, 415 V three-phase power supply

The Altivar 312 is the bigger brother to the ATV12, with a wider power range and wider range of options it is ready for many of your common industrial applications:

- Pumps and fans and ventilation
- Conveyors
- Material handling and packing



Altivar 32 – modular, excellent for high density installations
0.18 to 2.2kW, 240 V single-phase power supply
0.37 to 15kW, 415 V three-phase power supply

The Altivar 32's builds on the ATV312 and is suitable for high density installations requiring multiple controllers mounted in cubicles with limited space availability, new innovative features include:

- Built in logic controller, free programming software via SoMove
- Built in safety, suitable for up to SIL 2 applications
- Modular range of accessories and options that reduce installation time

For more info:

- Brochure: DIA2ED1080901EN
- Catalogue: DIA2ED2130101EN
- Dimensions: Page 3.2.31

Variable Speed Drives for Asynchronous Motors

Altivar 12 for 0.18 to 2.2kW Asynchronous Motors
240V 1-Phase Input, 240V 3-Phase Output, IP20 Enclosure
Built-in RFI Filter



ATV12H075M2
(with door open)

Altivar 12 Standard Version on Heatsink

Motor Power	Max Line Current	Max Prospective Line Isc	Output Current	Power Dissipated at nominal load	Reference
kW	A	kA	A	W	
0.18	2.8	1	1.4	18	ATV12H018M2
0.37	4.9	1	2.4	27	ATV12H037M2
0.55	6.7	1	3.5	34	ATV12H055M2
0.75	8.5	1	4.2	44	ATV12H075M2
1.5	14.9	1	7.5	72	ATV12HU15M2
2.2	20.2	1	10	93	ATV12HU22M2



ATV12H037M2

Altivar 12 Accessories

	Size	Reference
Mounting plate (35mm rail)	H018…H075M2	VW3A9804
	HU15…HU22M2	VW3A9805
EMC Conformity Kit	H018…H075M2	VW3A9523
	HU15…HU22M2	VW3A9524
EMC Conformity Kit	H018…H075M2	VW3A4416
	HU15…HU22M2	VW3A4418
Remote Display	All Sizes - IP54	VW3A1006
	All Sizes - IP65	VW3A1007
Remote Mounting Cord Sets	Length: 1M	VW3A1104R10
	Length: 3M	VW3A1104R30



ATV12HU22M2



VW3A1006

Note:
(1) ATV12 is not supplied with EMC conformity kit, depending on the installation requirements this may be necessary
(2) 150% Transient Over Current Available for 60s

For more info:

- Brochure: DIA2ED1090301EN
- Catalogue: DIA2ED2090404EN
- Dimensions: Page 3.2.32
- Schematics: Page 3.2.33

Variable Speed Drives for Asynchronous Motors

Altivar 312 for Asynchronous Motors from 0.18 to 15kW
IP21
Built-in RFI Filter



ATV312H075M2

Altivar 312 Standard Version on Heatsink (4) (5)

Motor Power	Mains supply Max Line current (Isc = 1kA) V min	V max	Output Current	Power Dissipated at nominal load	Reference
kW	A	A	A	W	
Single Phase Supply Voltage: 200….240V 50/60Hz (3 Phase Motor)					
0.18	3.0	2.5	1.5	24	ATV312H018M2
0.37	5.3	4.4	3.3	41	ATV312H037M2
0.55	6.8	5.8	3.7	46	ATV312H055M2
0.75	8.9	7.5	4.8	60	ATV312H075M2
1.1	12.1	10.2	6.9	74	ATV312HU11M2
1.5	15.8	13.3	8	90	ATV312HU15M2
2.2	21.9	18.4	11	123	ATV312HU22M2
Three Phase Supply Voltage: 380….500V 50/60Hz (3 Phase Motor)					
0.37	2.2	1.7	1.5	32	ATV312H037N4
0.55	2.8	2.2	1.9	37	ATV312H055N4
0.75	3.6	2.7	2.3	41	ATV312H075N4
1.1	4.9	3.7	3.0	48	ATV312HU11N4
1.5	6.4	4.8	4.1	61	ATV312HU15N4
2.2	8.9	6.7	5.5	79	ATV312HU22N4
3	10.9	8.3	7.1	125	ATV312HU30N4
4	13.9	10.6	9.5	150	ATV312HU40N4
5.5	21.9	16.5	14.3	232	ATV312HU55N4
7.5	27.7	21	17	269	ATV312HU75N4



ATV312HU15M2



ATV312HD15N4

Altivar 312 Options

Option	Description / Size	Reference
Nema IP21 Wall Mounting Kit	ATV312H018…075M2	VW3A31812
	ATV312HU11…U15M2	VW3A31814
	ATV312HU22M2	VW3A31815
	ATV312H037…U15N4	VW3A31814
	ATV312HU22…U40N4	VW3A31815
	ATV312HU55…U75N4	VW3A31816
	ATV312HD11…D15N4	VW3A31817
Additional EMC input filters, IEC 61800-3 category C1/C2 - see catalogue	ATV312H018…075M2	VW3A31401
	ATV312HU11…U15M2	VW3A31403
	ATV312HU22M2	VW3A31405
	ATV312H037…U15N4	VW3A31404
	ATV312HU22…U40N4	VW3A31406
	ATV312HU55…U75N4	VW3A31407
	ATV312HD11…D15N4	VW3A31409
Braking Resistors	ATV312H018…U15M2	VW3A7701
	ATV312HU22M2	VW3A7702
	ATV312H037…U40N4	VW3A7701
	ATV312HU55…U75N4	VW3A7702
	ATV312HD11…D15N4	VW3A7703
Motor Chokes	ATV312HU22M2	VW3A4553
	ATV312HU22…U40N4	VW3A4552
	ATV312HU55N4	VW3A4553
	ATV312HU75…D11N4	VW3A4554
	ATV312HD15N4	VW3A4555

Communications Options		
CANopen daisy chain	Option Card(1)	VW3A31208
DeviceNet	Option Card(1)	VW3A31209
ProfiBus DP card	Option Card(1)	VW3A31207
Modbus TCP (Ethernet)	Gateway	TSXETG100

1. Female to female adaptor is only required for hand holding of display, not required if using VW3A1102

For more info:

Brochure:
DIA2ED2100401EN
Dimensions:
Page 3.2.28

Variable Speed Drives for Asynchronous Motors

Altivar 32 for Asynchronous Motors from 0.18 to 15kW
IP21
Built-in RFI Filter



ATV32HU15N4
+ GV2 Link
+ Mech. Bracket
+ GV2

Altivar 32 Standard Version on Heatsink

Motor Power	Main Supply Max Line Current (ICC =1kA) Vmin	Vmax	Output Current	Power Dissipated at nominal load	Reference
kW	A	A	A	W	
Single Phase Supply Voltage: 200….240V 50/60Hz (3 Phase Motor)					
0.18	3.4	2.8	1.5	25	ATV32H018M2
0.37	6	5	3.3	38	ATV32H037M2
0.55	7.9	6.7	3.7	42	ATV32H055M2
0.75	10.1	8.5	4.8	51	ATV32H075M2
1.1	13.6	11.5	6.9	64	ATV32HU11M2
1.5	17.6	14.8	8	81	ATV32HU15M2
2.2	23.9	20.1	11	102	ATV32HU22M2
Three Phase Supply Voltage: 380….500V 50/60Hz (3 Phase Motor)					
0.37	2.1	1.6	1.5	27	ATV32H037N4
0.55	2.8	2.2	1.9	31	ATV32H055N4
0.75	3.6	2.7	2.3	37	ATV32H075N4
1.1	5	3.8	3.0	50	ATV32HU11N4
1.5	6.5	4.9	4.1	63	ATV32HU15N4
2.2	8.7	6.6	5.5	78	ATV32HU22N4
3	11.1	8.4	7.1	100	ATV32HU30N4
4	13.7	10.5	9.5	125	ATV32HU40N4
5.5	20.7	14.5	14.3	233	ATV32HU55N4
7.5	26.5	18.7	17	263	ATV32HU75N4
11	36.6	25.6	27.7	403	ATV32HD11N4
15	47.3	33.3	33	480	ATV32HD15N4



ATV32
+ 90 degree kit

Altivar 32 Options & Accessories

Option	Description / Size		Reference
Mechanical Bracket for GV2 Mounting (sold in ... quantites of 10)	ATV312H018 ...	U22M2	VW3A9921
	ATV32H037 ...	U40N4	VW3A9921
Electrical Link Plate for GV2, requires VW3A9921 ...	ATV312H018 ...	U22M2	GV2AF4
	ATV32H037 ...	U40N4	GV2AF4
Faceplate/Control Module 90 degree mounting ... adaptor plate	ATV312H018 ...	U22M2	VW3A9920
	ATV32H037 ...	U40N4	VW3A9920
Communications Cards	CanOpen Daisy Chain (2x RJ45)		VW3A3608
	CanOpen (Sub D Connector)		VW3A3618
	CanOpen (Screw Terminals)		VW3A3628
	ModbusTCP & EtherNet IP		VW3A3616
	Profibus DPV1		VW3A3607
	DeviceNet		VW3A3609
	EtherCat		VW3A3601
Motor Chokes	ATV32HU22M2		VW3A4553
	ATV32HU22 ...	U40M2	VW3A4552
	ATV32HU55N4		VW3A4553
	ATV32HU75 ...	D11N4	VW3A4554
	ATV32HD15N4		VW3A4555



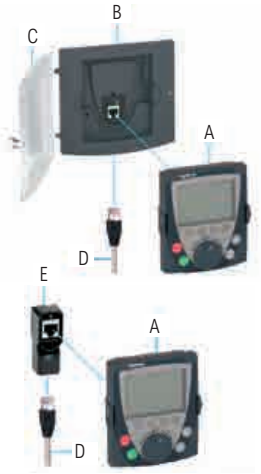
ATV32
+ Comms Card

Note:
(1) For HMI Options, please see p3.2.12 (ATV312 HMI Options)
(2) For programming options (Simple, MultiLoader & SoMove) see p3.2.12 (ATV312 options)
(3) For IP20 & IP65 Braking Resistors see DIA2ED2100401EN (ATV32 Catalog)
(4) For Line Chokes see DIA2ED2100401EN (ATV32 Catalog)

Common Options for Compact Drives ATV12, ATV312 and ATV32



VW3A1101
Remote HMI Graphic, suitable for ATV312, 32 only



Common Options and Accessories

Option	Description / Size	Reference
Configuration Tools		
Remote HMI Compact	4 digit display with navigation keys.	VW3A1007
	1 metre cable for HMI Compact	VW3A1104R10
	3 metre cable for HMI Compact	VW3A1104R30
Remote HMI Graphic (3)	8 lines of 24 characters, suitable for ATV312, ATV32 only 240 x 160 pixels. Large digit display (A)	VW3A1101
	1 metre cable for HMI Graphic - 1 m long (D)	VW3A1104R10
	3 metre cable for HMI Graphic - 3 m long (D)	VW3A1104R30
	5 metre cable for HMI Graphic - 5 m long (D)	VW3A1104R50
	Female to Female RJ45 adaptor (1) (E)	VW3A1105
	10 metre cable for HMI Graphic - 10 m long (D)	VW3A1104R100
Remote mounting dish (B)		VW3A1102
IP65 door for remote mounting kit (C)		VW3A1103
USB PC connection cable		TCSMCNAM3M002P
Bluetooth adaptor for PC	Adaptor is required for a PC that does not have Bluetooth hardware. Connects to a USB port.	VW3A8115
Multiloader		VW3A8121
Simple loader		VW3A8120
SoMove Setup Software	Includes SoMove setup software and technical documentation for variable speed drives and starters. Free download, see Schneider website: www.schneider-electric.com.au	

Potentiometer for panel mounting

Description	For drive	Reference
Potentiometer with dial and knob, IP65, 2.2 K ohms, wirewound	ATV12,32,312,61,71	SZ1RV1202
Component 4.7k ohm Potentiometer (see pg 3.2.15)	ATV12,32,312,61,71	ZBFE350-060 + ZB4BD912



VW3A8114 Bluetooth adaptor + SoMove Mobile

Communication Options for CANopen

	Length	Connectors	Reference
Cables for CANopen bus	0.3 m	2 RJ45 connectors	VW3CANCARR03
	1 m	2 RJ45 connectors	VW3CANCARR1
CANopen bus junction box			VW3CANTAP2



VW3A8120
Simple Loader



SZ1RV1202



ZB4BD912



VW3A8121 + VW3A8126

Note:
(1) There is a reduction in IO from 6 logic inputs to 3 when using these communications cards

Variable Speed Drives for Asynchronous Motors

Altivar 31
IP55 Enclosed Version Drives - 0.18 to 15kW
Options for IP55 Version



ATV31C075M2

Altivar 31 – IP55 Enclosed Version (4) (5)

Motor – Power indicated on rating plate (1)	Mains supply – Line current at (2) U min	U max	Max. prospective line Isc	Altivar 31 – Nominal current	Max. transient current (3)	Reference
kW	A	A	kA	A	A	
Single phase supply voltage: 200…240V 50/60 Hz (Motor 3 phase)						
0.18	3	2.5	1	1.5	2.3	ATV31C018M2
0.37	5.3	4.4	1	3.3	5	ATV31C037M2
0.55	6.8	5.8		3.7	5.6	ATV31C055M2
0.75	8.9	7.5	1	4.8	7.2	ATV31C075M2
1.1	12.1	10.2		6.9	10.4	ATV31CU11M2
1.5	15.8	13.3	1	8	12	ATV31CU15M2
2.2	21.9	18.4	1	11	16.5	ATV31CU22M2
3-phase supply voltage: 380…500V 50/60 Hz						
0.37	2.2	1.7	5	1.5	2.3	ATV31C037N4
0.55	2.8	2.2	5	1.9	2.9	ATV31C055N4
0.75	3.6	2.7	5	2.3	3.5	ATV31C075N4
1.1	4.9	3.7	5	3	4.5	ATV31CU11N4
1.5	6.4	4.8	5	4.1	6.2	ATV31CU15N4
2.2	8.9	6.7	5	5.5	8.3	ATV31CU22N4
3	10.9	8.3	5	7.1	10.7	ATV31CU30N4
4	13.9	10.6	5	9.5	14.3	ATV31CU40N4
5.5	21.9	16.5	22	14.3	21.5	ATV31CU55N4
7.5	27.7	21.0	22	17	25.5	ATV31CU75N4
11	37.2	28.4	22	27.7	41.6	ATV31CD11N4
15	48.2	36.8	22	33	49.5	ATV31CD15N4

Options

Potentiometer for Enclosed Altivar 31(6)
This potentiometer mounts in the top right slot of ATV31C..... after removing the blanking plate.

		Reference
Potentiometer IP65, 2.2 K ohms	ATV31C all ratings up to 4kW	VW3A58866

Remote Display Module

This module can be mounted on the door of a wall-fixing or floor-standing enclosure. It has the same programming buttons as the Altivar 31 with the addition of a switch to lock access to the menus and three buttons for controlling the speed controller.

		Reference
Kit comprising: - display module - cable fitted with 2 sockets - seal and screws for IP 65 mounting on enclosure door	ATV31 all ratings	VW3A31101



Example of customised ATV31C (to be done by user - up to 5.5kW only)

Communication and PC Connection Options

- Modbus and CANopen protocols built-in.
- For details of connection accessories please refer page 3.2.12.

Note:
(1) These power values are given for a switching frequency of 4kHz.
(2) Typical value for a 4 pole motor, without additional line choke. Umin and Umax: 200V and 240V or 380V and 500V.
(3) For 60 seconds.
(4) Fitted with EMC level A filters.
(5) Supplied with blanking plates. Allows mounting of 3x 22mm selector switches/pushbuttons/pilot lights and a potentiometer (VW3A58866).
(6) For a potentiometer usable on all drives refer page 3.2.12.

For more info:

- Catalogue: DIA2ED2140406EN
- Brochure: DIA2ED1110902EN
- Dimensions: Pages 3.2.32-34
- Schematics: Pages 3.2.29-34

Variable Speed Drives for Asynchronous Motors

Altivar 61 for Asynchronous Motors 0.75 to 2400kW
Variable Torque Applications (Fans, Centrifugal Pumps)
IP20/IP00 Version[8]



ATV61HD37N4



Graphic Display supplied with Altivar 61

3.2

Altivar 61, IP20/IP00 version

Motor – Power indicated on name plate (1)	Lines supply – Line current (2)		Max. prospective line Isc	Altivar 61 – Maximum continuous current (1)		Max. transient current for 60s	Reference (3)
	380V	480V		380V	480V		
kW	A	A	kA	A	A	A	
3-phase supply voltage: 380…480V 50/60 Hz							
0.75	3.7	3	5	2.3	2.1	2.7	ATV61H075N4 (4)
1.5	5.8	5.3	5	4.1	3.4	4.9	ATV61HU15N4 (4)
2.2	8.2	7.1	5	5.8	4.8	6.9	ATV61HU22N4 (4)
3	10.7	9	5	7.8	6.2	9.3	ATV61HU30N4 (4)
4	14.1	11.5	5	10.5	7.6	12.6	ATV61HU40N4 (4)
5.5	20.3	17	22	14.3	11	17.1	ATV61HU55N4 (4)
7.5	27	22.2	22	17.6	14	21.1	ATV61HU75N4 (4)
11	36.6	30	22	27.7	21	33.2	ATV61HD11N4 (4)
15	48	39	22	33	27	39.6	ATV61HD15N4 (4)
18.5	45.5	37.5	22	41	34	49.2	ATV61HD18N4 (4)
22	50	42	22	48	40	57.6	ATV61HD22N4 (4)
30	66	56	22	66	52	79.2	ATV61HD30N4 (4)
37	84	69	22	79	65	94.8	ATV61HD37N4 (4)
45	104	85	22	94	77	112.8	ATV61HD45N4 (4)
55	120	101	22	116	96	139.2	ATV61HD55N4 (4)
75	167	137	22	160	124	192	ATV61HD75N4 (4)
90	166	143	35	179	179	214.8	ATV61HD90N4 (5) (6)
110	202	168	35	215	215	236.5	ATV61HC11N4 (5) (6)
132	239	224	35	259	259	284.9	ATV61HC13N4 (5) (6)
160	289	275	50	314	314	345.4	ATV61HC16N4 (5) (6)
200	357	331	50	427	427	469.7	ATV61HC22N4 (5) (6)
220	396	383	50				
250	444	435	50	481	481	529.1	ATV61HC25N4 (5) (6)
280	494	494	50	616	616	677.6	ATV61HC31N4 (5) (6)
315	555	544	50				
355	637	597	50	759	759	834.9	ATV61HC40N4 (5) (6)
400	709	644	50				
500	876	760	50	941	941	1035.1	ATV61HC50N4 (5) (6)
560	978	858	50	1188	1188	1306.8	ATV61HC63N4 (5) (6)
630	1091	964	50				
3-phase supply voltage: 500…690V 50/60 Hz							
Please contact your sales representative for information and prices.							

Note:

(1) These values are for a nominal switching frequency of 12 kHz up to ATV61HD75N4, of 4 kHz for ATV61HD90N4 or of 2.5 kHz for ATV61HC11N4…HC63N4 drives for use in continuous operation. Derating applies for higher switching frequencies.

(2) Typical value for the indicated motor power and for the maximum prospective line Isc.

(3) The ATV61HD90N4…HC63N4 drives come in a reinforced versions as standard, enabling them to operate in particular environmental conditions as per IEC60721-3-3 class 3C2. To order the reinforced version of the ATV 61H075N4...HD75N4 drives, add S337 at the end of the reference. Example: ATV61H075N4 becomes ATV61H075N4S337.

(4) Optional DC choke available for this drive to reduce supply harmonics.

(5) Drive supplied as standard with a DC choke, which must be used when connecting the drive to the 3-phase supply.

(6) Drive supplied without plate for EMC mounting. The plate is included in the IP31 conformity kit VW3A91•••, to be ordered separately.

(7) For higher power and voltage ratings (2.4MW and above), please consult your local sales office.

(8) IP00 from 90kW and above, IP31 kit available.

For more info:
- Catalogue: DIA2ED2140406EN
- Brochure: DIA2ED1110902EN
- Dimensions: Page 3.2.36

Variable Speed Drives for Asynchronous Motors

Altivar 61 for Asynchronous Motors 0.75 to 2400kW
Variable Torque Applications (Fans, Centrifugal Pumps)
IP54 Version



IP54 ATV61

Altivar 61, IP54 version

Motor - Power indicated on name plate (1)	Line supply - Line current (2)		Max prospective line Isc	Altivar 61 - Maximum continuous current (1)		Max. transient current for 60s	Reference (3)
	380V	480V		380V	480V		
kW	A	A	kA	A	A	A	
3-phase supply voltage: 380....480V 50/60 Hz							
Wall mount enclosures							
0.75	1.8	1.5	5	2.3	2,1	2.5	ATV61W075N4 (4)
1.5	3.5	3	5	4.1	3.4	4.5	ATV61WU15N4 (4)
2.2	5	4.1	5	5.1	4.8	5.6	ATV61WU22N4 (4)
3	6.7	5.6	5	7.2	6.2	7.9	ATV61WU30N4 (4)
4	8.8	7.4	5	9.1	7.6	10	ATV61WU40N4 (4)
5.5	11.4	9.2	22	12	11	13.2	ATV61WU55N4 (4)
7.5	15.8	13.3	22	16	14	17.6	ATV61WU75N4 (4)
11	21.9	17.8	22	22.5	21	24.7	ATV61WD11N4 (4)
15	30.5	25.8	22	30.5	27	33.5	ATV61WD15N4 (4)
18.5	37.5	32.3	22	37	34	40.7	ATV61WD18N4 (4)
22	43.6	36.6	22	43.5	40	47.8	ATV61WD22N4 (4)
30	56.7	46.2	22	58.5	52	64.3	ATV61WD30N4 (4)
37	69.5	56.8	22	71.5	65	78.6	ATV61WD37N4 (4)
45	85.1	69.6	22	85	77	93.5	ATV61WD45N4 (4)
55	104.8	87	35	103	96	113.3	ATV61WD55N4 (4)
75	140.3	113.8	35	137	124	150.7	ATV61WD75N4 (4)
90	171.8	140.9	35	163	156	179.3	ATV61WD90N4 (4)
Floor mount enclosures							
110	202	168	35	215	215	236.5	ATV61WC11N4 (5)
132	239	224	35	259	259	284.9	ATV61WC13N4 (5)
160	289	275	50	314	314	345.4	ATV61WC16N4 (5)
200	357	331	50	427	427	469.7	ATV61WC22N4 (5)
220	396	383	50				
250	444	435	50	481	481	529.1	ATV61WC25N4 (5)
280	494	494	50	616	616	677.6	ATV61WC31N4 (5)
315	555	544	50				
355	637	597	50	759	759	834.9	ATV61WC40N4 (5)
400	709	644	50				
500	876	760	50	941	941	1035.1	ATV61WC50N4 (5)
560	978	858	50	1188	1188	1306.8	ATV61WC63N4 (5)
630	1091	964	50				

Note:
(1) These values are for a nominal switching frequency of 8 kHz up to ATV61WD15N4, of 4 kHz for ATV61WD18N4... ATV61WD90N4 or of 2.5 kHz for ATV61WC11N4…WC63N4 drives for use in continuous operation. Derating applies for higher switching frequencies.
(2) Typical value for the indicated motor power and for the maximum prospective line Isc.
(3) The ATV61WC11N4…WC63N4 drives come in a reinforced versions as standard, enabling them to operate in particular environmental conditions as per IEC60721-3-3 class 3C2.
(4) DC chokes are buit-in to reduce supply harmonics.
(5) Drive supplied as standard with a DC choke, which must be used when connecting the drive to the 3-phase supply. The ATV61WC16N4 .... ATV61WC63N4 drives are supplied with air to air heat exchanger.
(6) For higher power and voltage ratings (2.4MW and above), please consult your local sales office.

For more info:

- Catalogue: DIA2ED2140407EN
- Brochure: DIA2ED1110902EN
- Dimensions: Pages 3.2.37-39

Variable Speed Drives for Asynchronous Motors

Altivar 71 for Asynchronous Motors 0.75 to 2000kW Constant Torque and High Torque Applications IP20/IP00 Version[8]



ATV71HU22N4



Graphic Display supplied with Altivar 71



ATV71HC16N4 with DC Choke

Altivar 71, IP20/IP00 version

Motor – Power indicated on name plate (1)	Line supply – Line current (2)		Max. prospective line Isc	Altivar 71 – Maximum continuous current (1)	Max. transient current for		Reference (3)
	380V	480V		380V	60 s	2 s	
kW	A	A	kA	A	A	A	
3-phase supply voltage: 380…480V 50/60 Hz							
0.75	3.7	3	5	2.3	3.5	3.8	ATV71H075N4 (4)
1.5	5.8	5.3	5	4.1	6.2	6.8	ATV71HU15N4 (4)
2.2	8.2	7.1	5	5.8	8.7	9.6	ATV71HU22N4 (4)
3	10.7	9	5	7.8	11.7	12.9	ATV71HU30N4 (4)
4	14.1	11.5	5	10.5	15.8	17.3	ATV71HU40N4 (4)
5.5	20.3	17	22	14.3	21.5	23.6	ATV71HU55N4 (4)
7.5	27	22.2	22	17.6	26.4	29	ATV71HU75N4 (4)
11	36.6	30	22	27.7	41.6	45.7	ATV71HD11N4 (4)
15	48	39	22	33	49.5	54.5	ATV71HD15N4 (4)
18.5	45.5	37.5	22	41	61.5	67.7	ATV71HD18N4 (4)
22	50	42	22	48	72	79.2	ATV71HD22N4 (4)
30	66	56	22	66	99	109	ATV71HD30N4 (4)
37	84	69	22	79	118.5	130	ATV71HD37N4 (4)
45	104	85	22	94	141	155	ATV71HD45N4 (4)
55	120	101	22	116	174	191	ATV71HD55N4 (4)
75	167	137	22	160	240	264	ATV71HD75N4 (4)
90	166	134	35	179	269	295	ATV71HD90N4 (5) (6)
110	202	163	35	215	323	355	ATV71HC11N4 (5) (6)
132	239	192	35	259	388	427	ATV71HC13N4 (5) (6)
160	289	233	50	314	471	518	ATV71HC16N4 (5) (6)
200	357	286	50	387	580	638	ATV71HC20N4 (5) (6)
220	396	320	50	427	640	704	ATV71HC25N4 (5) (6)
250	444	357	50	481	721	793	
280	494	396	50	550	825	907	ATV71HC28N4 (5) (6)
315	555	444	50	616	924	1016	ATV71HC31N4 (5) (6)
355	637	512	50	671	1006	1107	ATV71HC40N4 (5) (6)
400	709	568	50	759	1138	1252	
500	876	699	50	941	1411	1552	ATV71HC50N4 (5) (6)
3-phase supply voltage: 500…690V 50/60 Hz							
Please contact your sales representative for information and prices.							

Note:

(1) These values are for a nominal switching frequency of 4 kHz up to ATV71HD30N4 or 2.5 kHz for ATV71HD37N4... ATV71HD50N4 drives for use in continuous operation.

(2) Typical value for the indicated motor power and for the maximum prospective line Isc. Derating applies for higher switching frequencies.

(3) The ATV71HD90N4…HC50N4 drives come in a reinforced versions as standard, enabling them to operate in environmental conditions as per IEC60721-3-3 classs 3C2.
To order the reinforced version of ATV71H075N4...HD75N4 drives, add S337 at the end of the reference.
Example: ATV71H075N4 becomes ATV71H075N4S337

(4) Optional DC choke available for this drive to reduce supply harmonics. DC chokes are IP00 up to 37kW, then IP20 from 45kW to 75kW

(5) Drive supplied as standard with a DC choke, which must be used when connecting the drive to the 3-phase supply.

(6) Drive supplied without plate for EMC mounting. The plate is included in the IP31 conformity kit, to be ordered separately.

(7) For higher power and voltage ratings (2.4MW and above), please consult your local sales office.

(8) IP00 from 90kW up, IP31 kit available.

For more info:
- Catalogue: DIA2ED2140407EN
- Brochure: DIA2ED1110902EN
- Dimensions: Page 3.2.39

Variable Speed Drives for Asynchronous Motors

Altivar 71 for Asynchronous Motors 0.75 to 2000kW
Constant and High Torque Applications
IP54 Version



IP54 ATV71



ATV71WC16N4
With air to air heat exchanger

Altivar 71, IP54 version

Motor - Power indicated on name plate (1)	Line supply - Line current (2)		Max prospective line Isc	Altivar 71 - Maximum continuous current (1)	Max. transient current for		Reference (3)
	380V	480V		380V	60 s	2 s	
kW	A	A	kA	A	A	A	
3-phase supply voltage: 380....480V 50/60 Hz							
Wall mount enclosures							
0.75	3.7	3	5	2.3	3.5	3.8	ATV71W075N4 (4)
1.5	5.8	5.3	5	4.1	6.2	6.8	ATV71WU15N4 (4)
2.2	8.2	7.1	5	5.8	8.7	9.6	ATV71WU22N4 (4)
3	10.7	9	5	7.8	11.7	12.9	ATV71WU30N4 (4)
4	14.1	11.5	5	10.5	15.8	17.3	ATV71WU40N4 (4)
5.5	20.3	17	22	14.3	21.5	23.6	ATV71WU55N4 (4)
7.5	27	22.5	22	17.6	26.4	29	ATV71WU75N4 (4)
11	36.6	30	22	27.7	41.6	45.7	ATV71WD11N4 (4)
15	48	39	22	33	49.5	54.5	ATV71WD15N4 (4)
18.5	45.5	37.5	22	41	61.5	67.7	ATV71WD18N4 (4)
22	50	42	22	48	72	79.2	ATV71WD22N4 (4)
30	66	56	22	66	99	109	ATV71WD30N4 (4)
37	84	69	22	79	118.5	130	ATV71WD37N4 (4)
45	104	85	22	94	141	155	ATV71WD45N4 (4)
55	120	101	22	116	174	191	ATV71WD55N4 (4)
75	167	137	22	160	240	264	ATV71WD75N4 (4)
Floor mount enclosures							
90	166	134	35	179	269	295	ATV71WD90N4 (5)
110	202	163	35	215	323	355	ATV71WC11N4 (5)
132	239	192	35	259	388	427	ATV71WC13N4 (5)
160	289	233	50	314	471	518	ATV71WC16N4 (5)
200	357	286	50	387	580	638	ATV71WC20N4 (5)
220	396	320	50	427	640	704	ATV71WC25N4 (5)
250	444	357	50	481	721	793	
280	494	396	50	550	825	907	ATV71WC28N4 (5)
315	555	444	50	616	924	1016	ATV71WC31N4 (5)
355	637	512	50	671	1006	1107	ATV71WC40N4 (5)
400	709	568	50	759	1138	1252	
500	876	699	50	941	1411	1552	ATV71WC50N4 (5)

For sizes larger than 500kW please consult your local sales office.

Note:

(1) These values are for a nominal switching frequency of 4 kHz up to ATV71WD30N4 or 2.5 kHz for ATV71WD37N4... ATV71WC50N4 drives for use in continuous operation.

(2) Typical value for the indicated motor power and for the maximum prospective line Isc. Derating applies for higher switching frequencies.

(3) The ATV71WD90N4…WC50N4 drives come in a reinforced versions as standard, enabling them to operate in environmental conditions as per IEC60721-3-3 classs 3C2.

(4) Optional DC choke available for this drive to reduce supply harmonics. The choke needs to be mounted outside the drive enclosure.

(5) Drive supplied as standard with a DC choke, which must be used when connecting the drive to the 3-phase supply. The ATV71WC13N4... ATV71WC50N4 drives are supplied with air to air heat exchanger.

(6) For higher power and voltage ratings (2.4MW and above), please consult your local sales office.

Variable Speed Drives for Asynchronous Motors

Options/Accessories
Altivar 61 and Altivar 71



SoMove and Bluetooth®

PC Connection – SoMove Software Workshop

Description	For controller (1)	Reference
USB Connection Cable to connect your PC	All	TCSMCNAM3M002P
Simple loader (allows upload and download to drive)	ATV61,71	VW3A8120
USB-Bluetooth® adaptor for PC		VW3A8115

Potentiometer for panel mounting

Description	For speed controller	Reference
Potentiometer with dial and knob, IP65, 2.2 K ohms, wirewound	ATV61,71	SZ1RV1202
Component 4.7k ohm Potentiometer (see p3.2.15)	ATV12,312,61,71	ZB4BD912 + ZBFE350-060

I/O Extension Cards

Description	For speed controller	Reference
Logic I/O card featuring 1x RO (O), 4x LI, 2x LO and an input for PTC probe	ATV61,71	VW3A3201
Extended I/O card featuring same I/Os as the above plus 2x AO, 1x differential current AI and a frequency control input	ATV61,71	VW3A3202



SZ1RV1202

Communication Cards

Description	For speed controller	Reference
ATV58 substitution Fipio	ATV71	VW3A3301
Standard Fipio	ATV61,71	VW3A3311
Modbus Plus	ATV61,71	VW3A3302
Modbus/ Uni-Telway	ATV61,71	VW3A3303
Interbus	ATV61,71	VW3A3304
ProfiBus DPV0 (existing customers only)	ATV61,71	VW3A3307
ProfiBus DPV1 (all new systems)	ATV61,71	VW3A3307S371
DeviceNet	ATV61,71	VW3A3309
Modbus TCP Daisy Chain	ATV61,71	VW3A3310D
Ethernet IP Daisy Chain	ATV61,71	VW3A3316
Modbus TCP/EtherNet IP (RSTP)	ATV61,71	VW3A3320
LONWORKS	ATV61	VW3A3312
METASYS N2	ATV61	VW3A3313
BACnet	ATV61	VW3A3315



Option Card

Controller Inside and Multipump Cards (2) (3)

Description	For speed controller	Reference
Controller Inside programmable card	ATV61,71	VW3A3501
Multipump card to support all multipump applications	ATV61	VW3A3503
IMC Card: Programmable card for use with SoMachine	ATV61,71	VW3A3521



Encoder Card

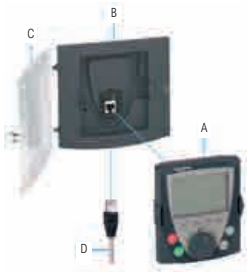
Encoder Interface Cards, Encoders (4)

Description	For speed controller	Reference
Card with RS422 compatible differential output - 5 V	ATV71	VW3A3401
Card with RS422 compatible differential output - 15 V	ATV71	VW3A3402
Card with open collector output - 12 V	ATV71	VW3A3403
Card with open collector output - 15 V	ATV71	VW3A3404
Card with push-pull output - 12 V	ATV71	VW3A3405
Card with push-pull output - 15 V	ATV71	VW3A3406
Card with push-pull output - 24 V	ATV71	VW3A3407

Note:
(1) Please contact your sales representative for the required minimum software version for each controller and bluetooth.
(2) The use of these cards requires training/application knowledge.
(3) Please consult your sales representative for details. Other specialist application cards are available, such as Crane control and Crane Anti-Sway. Please consult your local sales representative for further details or enquiries for custom solutions
(4) SSI encoder cards available. For help with selection please contact your sales representative.

Variable Speed Drives for Asynchronous Motors

Options/Accessories
Altivar 61 and Altivar 71





Remote location of Graphic Display

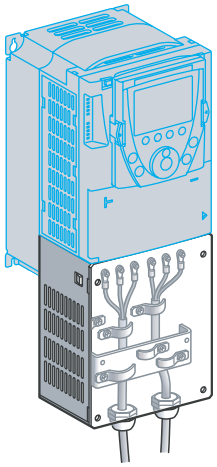
Kits for Remote Location of Graphic Display

Description	For speed controller	Reference
Remote mounting kit IP54 - remote base (B) and 3 m cable (D)	ATV61, 71	VW3AIP54KIT3M
Remote mounting kit IP65 - remote base (B), door (C) and 3m cable (D)	ATV61, 71	VW3AIP65KIT3M
Display (A) included with VSD, this reference is for additional HMI		VW3A1101

*For ordering individual components of the kits and other cable lengths please see below.

Components for Remote Location of Graphic Display

Description	For speed controller	Reference
Remote mounting base for IP54 or IP65 door mounting (B)	ATV61, 71	VW3A1102
Door (to cover display face) for IP65 remote mounting (C)	ATV61, 71	VW3A1103
Cable with 2x RJ45 connections - 1 m long (D)	ATV61, 71	VW3A1104R10
Cable with 2x RJ45 connections - 3 m long (D)	ATV61, 71	VW3A1104R30
Cable with 2x RJ45 connections - 5 m long (D)	ATV61, 71	VW3A1104R50
Cable with 2x RJ45 connections - 10 m long (D)	ATV61, 71	VW3A1104R100
RJ45 female/ female adaptor for direct connection of display to the cable ie without using the remote mounting base (E)	ATV61, 71	VW3A1105
Remote mounting dish (B)		VW3A1102
IP65 door for remote mounting kit (C)		VW3A1103



IP31 Conformity Kit for Direct Wall Mounting

Wall Mounting Kits - IP21 or IP31 Conformity

Conformity	For ATV61…..	For ATV71…..	Reference
Kit for IP21	H075N4 - HU22N4	H075N4 - HU22N4	VW3A9101
Kit for IP21	HU30N4, HU40N4	HU30N4, HU40N4	VW3A9102
Kit for IP21	HU55N4, HU75N4	HU55N4, HU75N4	VW3A9103
Kit for IP21	HD11N4	HD11N4	VW3A9104
Kit for IP21	HD15N4, HD18N4	HD15N4, HD18N4	VW3A9105
Kit for IP21	HD22N4	HD22N4	VW3A9106
Kit for IP21	HD30N4, HD37N4	HD30N4, HD37N4	VW3A9107
Kit for IP21	HD45N4 - HD75N4	HD45N4 - HD75N4	VW3A9108
Kit for IP31	HD90N4, HC11N4	HD90N4	VW3A9109
Kit for IP31	HC13N4	HC11N4	VW3A9110
Kit for IP31	HC16N4	HC13N4	VW3A9111
Kit for IP31	HC22N4	HC16N4	VW3A9112
Kit for IP31 without braking unit	HC25N4, HC31N4	HC20N4 - HC28N4	VW3A9113
Kit for IP31 with braking unit	HC25N4, HC31N4	HC20N4 - HC28N4	VW3A9114
Kit for IP31	HC40N4, HC50N4	HC31N4, HC40N4	VW3A9115
Kit for IP31	HC63N4	HC50N4	VW3A9116

Braking Units (1), Braking Resistors (2), Network Braking Units (3)

Description	For ATV61…..	For ATV71…..	Reference
Braking unit - 200 kW	HC25N4, HC31N4	HC20N4 - HC28N4	VW3A7101
Braking unit - 400 kW	HC40N4 - HC63N4	HC31N4 - HC50N4	VW3A7102



DC Choke

DC Chokes

Description	For ATV61…..	For ATV71…..	Reference
DC Choke, 2.25 A	H075N4	H075N4	VW3A4501
DC Choke, 4.3 A	HU15N4	HU15N4	VW3A4502
DC Choke, 8 A	HU22N4, HU30N4	HU22N4, HU30N4	VW3A4503
DC Choke, 10.7 A	HU40N4	HU40N4	VW3A4504
DC Choke, 14.3 A	HU55N4	HU55N4	VW3A4505
DC Choke, 19.2 A	HU75N4	HU75N4	VW3A4506
DC Choke, 27.4 A	HD11N4	HD11N4	VW3A4507
DC Choke, 44 A	HD15N4, HD18N4	HD15N4, HD18N4	VW3A4508
DC Choke, 84.5 A	HD22N4 - HD37N4	HD22N4 - HD37N4	VW3A4510
DC Choke, 171.2 A	HD45N4 - HD75N4	HD45N4 - HD75N4	VW3A4511

Note:
(1) Built-in dynamic brake transistor in ATV61H075N4 - HC22N4 and ATV71H075N4 - HC16N4.
(2) For braking resistor selection please contact your sales representative.
(3) For Braking units or Active Front End to regenerate energy back to supply network, please contact your sales representative.

For more info:

Catalogue:
DIA2ED2050905EN &
DIA2ED2050104EN

Altivar Engineered Drive Solutions

Variable Speed Drives Engineered to Your Specifications
Low Voltage Drives Available in 415, 500 and 690V from 90 to 2400kW



Compact Altivar in a ready to use IP23 or IP54 floor standing enclosure

The Altivar Engineered Drives range is made up of two distinct architectures;

1. Configurable chassis based range up to 800kW at 690VAC
2. A modular cell based offer up to 2400kW at 690VAC

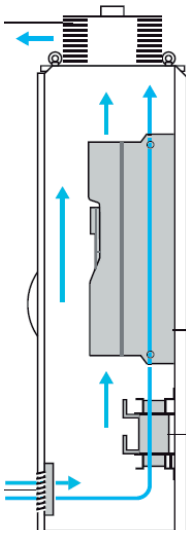
The configurable chassis based range is comprised of a *separate air* flow and *compact* versions.

The separate air flow version allows for the separation of the power stage heat load and control heat load. With appropriate installation air condition costs can be lowered by up to 90%.

The separate air flow design differs from the IP54 VSDs by the omission of a door mounted air to air heat exchanger.

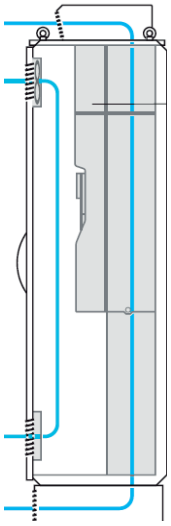
The additional space in the compact version enclosure allows for the following standard options:

- Integrated DC Choke
- Motor Terminals
- Circuit Breaker



Compact Version

One common air circuit provides Cooling for the VSD power stage and control components .



Separate Air Flow

Two separate air circuits ensure optimum enclosure ventilation, the power section can be ducted separately reducing cooling costs and contributing to overall system efficiency.



Custom Engineered Altivar Process Range, starting from 160kW at only 400mm wide



160kW Altivar Process

Note:
Please see your local Schneider Electric Sales represenative for further configuration and option advice for Engineered Drives.

Altivar Engineered Drives

Variable Speed Drives Engineered to Your Specifications
Low Voltage Drives Available in 415, 500 and 690V from 90 to 2400kW



Customised solutions including:

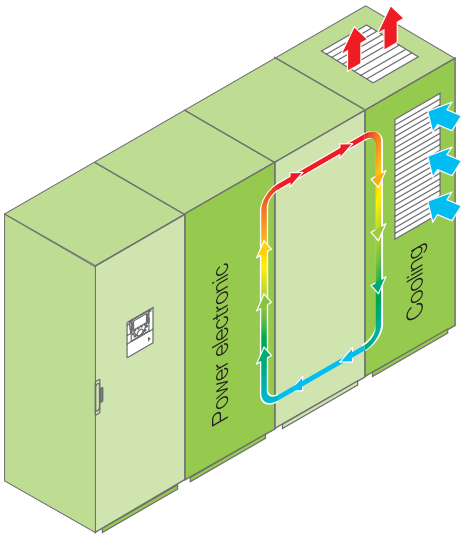
- Circuit Breaker
- Line / Motor Contactor
- 6 pulse, 12 pulse, 24 pulse inputs
- Active Front End (AFE)
- Braking Unit
- Customised Cubicle Painting
- Customer Specific Control Functions
- Control Indicators on the Door
- Control Relays and Contactors
- Bypass Circuits
- DC Coupling of Numerous Inverters
- Transformer Protection
- Control of HV Switch Gear
- CAT3 Safety Systems
- Integration of Integrated PLC System
- Multi Motor Operation
- Motor External Fan Control
- Motor Heating
- PT100 Protection
- IO Extension
- Your Choice of Field Bus
- Motor Chokes
- Sine Filters
- etc
- Low Harmonic three level input design

"Altivar Engineered Drives offer complete piece of mind via a tested, validated and guaranteed design. This guaranteed design results in reduced costs for design, installation and operation."

Cooling solutions include air cooled heat sinks to fully liquid cooled heat exchanged systems.

Solution 1

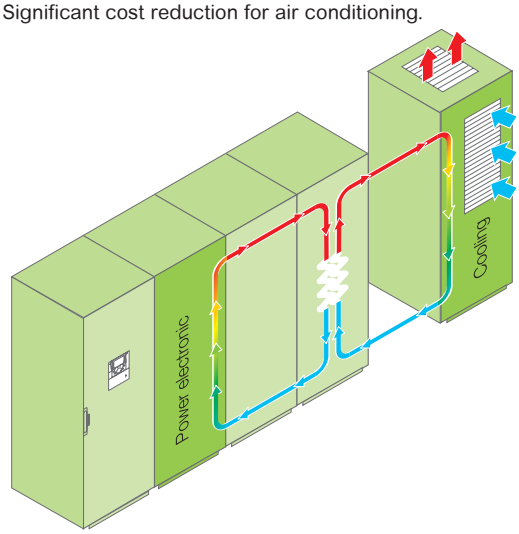
Internal liquid cooling circuit, an air cooled heat exchanger.



Solution 2

Internal liquid cooling circuit, coupled to a liquid-liquid exchanger, heat dealt with outside of the electrical room.

Significant cost reduction for air conditioning.



Altivar 680 Low Harmonic (AFE)

Low harmonic and Active Front End Variable Speed Drives

The low harmonic ATV680 range provides a pre-built low-harmonic, compliant and compact variable speed drive solution for installations requiring minimal power network disturbance. State-of-the-art components, a new three level input stage and high quality filtering reduce the total current distortion factor, THD(i), to less than 5%, ensuring compliance with standards such as IEEE519. Designed for motor ratings from 55kW to 2400kW, Altivar Low Harmonic VSDs are modular and configurable brick based architecture to suit the specific needs of individual application. Note: Low Harmonic ATV900 (980) is also available.



ATVV680 LOW HARMONIC

Altivar 680 Low Harmonic

Rating (Normal Duty / Heavy Duty) kW	Output Current (Normal Duty / Heavy Duty) A	Width mm	Depth mm	Height mm	Reference
110 / 90	210 / 173	600	600	2150	ATV680C11Q4X1
132 / 110	250 / 210	600	600	2150	ATV680C13Q4X1
160 / 132	302 / 250	600	600	2150	ATV680C16Q4X1
200 / 160	370 / 302	1000	600	2150	ATV680C20Q4X1
250 / 200	477 / 370	1000	600	2150	ATV680C25Q4X1
315 / 250	590 / 477	1000	600	2150	ATV680C31Q4X1
355 / 280	660 / 520	1600	600	2150	ATV680C35Q4X1
400 / 315	730 / 590	1600	600	2150	ATV680C40Q4X1
450 / 355	830 / 650	1600	600	2150	ATV680C45Q4X1
500 / 400	900 / 730	1600	600	2150	ATV680C50Q4X1
560 / 450	1020 / 830	2000	600	2150	ATV680C56Q4X1
630 / 500	1140 / 900	2000	600	2150	ATV680C63Q4X1
710 / 560	1260 / 1020	2600	600	2150	ATV680C71Q4X1
800 / 630	1420 / 1140	2600	600	2150	ATV680C80Q4X1

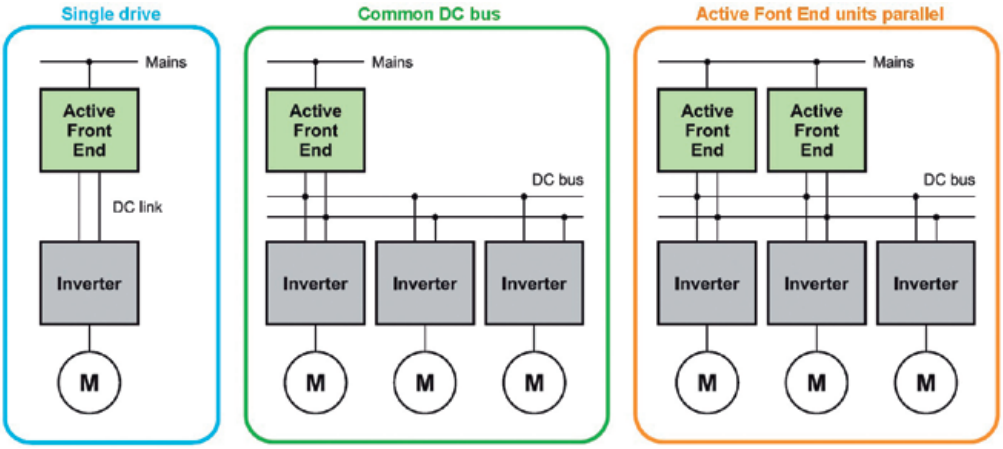
Modular Active Front End Options for standard drives

The modular Altivar AFE solution provides a highly customisable solution for your applications. The full regenerative capability allows for regeneration back onto the mains whilst maintaining a low harmonic footprint.



MODULAR ALTIVAR AFE

- One to one AFE/single drive solution: ideal for repetitive hoisting applications significant kinetic energy can be regenerated back into the mains increasing system efficiency.
- One AFE to many VSDs: ideal for grouped sheet metal machines/roller conveyor applications; VSD power can be four fold higher than the nominal AFE Power
- Many AFE to Many VSD: enhanced system redundancy and enables easy scaling of AFE units.



Note:
For full technical information, please see the Altivar Configuration Guide and technical manuals.
See your local sales representative.

Variable Speed Drives for Asynchronous & Synchronous Motors

Altivar Process
ATV 600 for 0.75 to 800kW
IP 21 version


ATV630D15N4


ATV630D30N4


ATV630D55N4

Altivar 600, IP21 - Wall Mounting

Motor - Power indicated on name plate (1)	Lines supply -	Line current (2)	Max. prospective line Isc	Maximum continuous current (1)	Max.transient current for 60s	References
kW	A	A	kA	A	A	
3-phase supply voltage: 380...480V 50/60Hz						
	380 V	**480 V**				
1.5	3.0	2.6	50	4.0	4.4	ATV630U15N4
2.2	4.3	3.8	50	5.6	6.2	ATV630U22N4
3.0	5.8	5.1	50	7.2	7.9	ATV630U30N4
4.0	7.6	6.7	50	9.3	10.2	ATV630U40N4
5.5	10.4	9.1	50	12.7	14.0	ATV630U55N4
7.5	13.8	11.9	50	16.5	18.2	ATV630U75N4
11.0	19.8	17	50	23.5	25.9	ATV630D11N4
15.0	27.0	23.3	50	31.7	34.9	ATV630D15N4
18.5	33.4	28.9	50	39.2	43.1	ATV630D18N4
22.0	39.6	34.4	50	46.3	50.9	ATV630D22N4
30.0	53.3	45.9	50	61.5	67.7	ATV630D30N4
37.0	66.2	57.3	50	74.5	82.0	ATV630D37N4
45.0	79.8	69.1	50	88.0	96.8	ATV630D45N4
55.00	97.2	84.2	50	106.0	116.6	ATV630D55N4
75.00	131.3	112.7	50	145.0	159.5	ATV630D75N4
90.00	156.2	135.8	50	173.0	190.3	ATV630D90N4
110.00	201.0	165.0	50	211.0	232.1	ATV630C11N4 (3)
132.00	237.0	213.0	50	250.0	275.0	ATV630C13N4 (3)
160.00	284.0	262.0	50	302.0	332.2	ATV630C16N4 (3)

Note:
(1) These values are given for a nominal switching frequency of 4 kHz for use in continuous operation.
The switching frequency is adjustable from 2…12 kHz for all ratings.
(2) Typical value for the indicated motor power and for the maximum prospective line Isc.
(3) Product supplied as IP 00 for mounting in an enclosure. For IP 21/UL Type 1 wall mounting, order separately the kit for IP 21/ UL Type 1 conformity VW3A9704.

Variable Speed Drives for Asynchronous & Synchronous Motors

Altivar Process
ATV 600 for 0.75 to 800kW
IP 55/IP54 version


ATV650D15N4


ATV650D30N4


ATV650D55N4

Altivar 600, IP55/ IP54 - Wall Mounting & Floor Standing

Motor - Power indicated on name plate (1)	Lines supply -	Line current (2)	Max. prospective line Isc	Maximum continuous current (1)	Max.transient current for 60s	References
kW	A	A	kA	A	A	
IP55 - Wall Mounting (3)						
3-phase supply voltage: 380...480V 50/60Hz						
	380 V	480 V				
1.5	3.0	2.6	50	4.0	4.4	ATV650U15N4
2.2	4.3	3.8	50	5.6	6.2	ATV650U22N4
3.0	5.8	5.1	50	7.2	7.9	ATV650U30N4
4.0	7.6	6.7	50	9.3	10.2	ATV650U40N4
5.5	10.4	9.1	50	12.7	14.0	ATV650U55N4
7.5	13.8	11.9	50	16.5	18.2	ATV650U75N4
11.0	19.8	17	50	23.5	25.9	ATV650D11N4
15.0	27.0	23.3	50	31.7	34.9	ATV650D15N4
18.5	33.4	28.9	50	39.2	43.1	ATV650D18N4
22.0	39.6	34.4	50	46.3	50.9	ATV650D22N4
30.0	53.3	45.9	50	61.5	67.7	ATV650D30N4
37.0	66.2	57.3	50	74.5	82.0	ATV650D37N4
45.0	79.8	69.1	50	88.0	96.8	ATV650D45N4
55.00	97.2	84.2	50	106.0	116.6	ATV650D55N4
75.00	131.3	112.7	50	145.0	159.5	ATV650D75N4
90.00	156.2	135.8	50	173.0	190.3	ATV650D90N4
IP54 - Floor Standing						
3-phase supply voltage: 380...440V 50/60Hz						
	380 V	400 V				
110.00	207.0	195.0	50	211.0	232.0	ATV650C11N4F
132.00	250.0	232.0	50	250.0	275.0	ATV650C13N4F
160.00	291.0	277.0	50	302.0	332.0	ATV650C16N4F
200.00	369.0	349.0	50	370.0	407.0	ATV650C20N4F
250.00	453.0	432.0	50	477.0	524.0	ATV650C25N4F
315.00	566.0	538.0	50	590.0	649.0	ATV650C31N4F

Note:
(1) These values are given for a nominal switching frequency of 4 kHz adjustable from 2...12 kHz up to ATV650D45N4 or 2.5 kHz adjustable from 2..8 kHz for ATV650D55N4..D90N4, for use in continuous operation.
(2) Typical value for the indicated motor power and for the maximum prospective line Isc.
(3) Supplied with cable gland.

Variable Speed Drives for Asynchronous & Synchronous Motors

Altivar Process
ATV 900 for 0.75 to 800kW
IP 21 version



ATV930D15N4



ATV930D30N4

Altivar 900, IP21 - Wall Mounting

Motor - Power indicated on name plate (1)	Lines supply -	Line current (2)	Max. prospective line Isc	Maximum continuous current (1)	Max.transient current for 60s	References
kW	A	A	kA	A	A	
3-phase supply voltage: 380...480V 50/60Hz						
	380 V	480 V				
0.75	1.5	1.3	50	2.2	2.6	ATV930U07N4
1.5	3.0	2.6	50	4.0	4.8	ATV930U15N4
2.2	4.3	3.8	50	5.6	6.7	ATV930U22N4
3.0	5.8	5.1	50	7.2	8.6	ATV930U30N4
4.0	7.6	6.7	50	9.3	11.2	ATV930U40N4
5.5	10.4	9.1	50	12.7	15.2	ATV930U55N4
7.5	13.8	11.9	50	16.5	19.8	ATV930U75N4
11.0	19.8	17	50	23.5	28.2	ATV930D11N4
15.0	27.0	23.3	50	31.7	38.0	ATV930D15N4
18.5	33.4	28.9	50	39.2	47.0	ATV930D18N4
22.0	39.6	34.4	50	46.3	55.6	ATV930D22N4
30.0	53.3	45.9	50	61.5	73.8	ATV930D30N4
37.0	66.2	57.3	50	74.5	89.4	ATV930D37N4
45.0	79.8	69.1	50	88.0	105.6	ATV930D45N4
55.00	97.2	84.2	50	106.0	127.2	ATV930D55N4
75.00	131.3	112.7	50	145.0	174.0	ATV930D75N4
90.00	156.2	135.8	50	173.0	207.6	ATV930D90N4
110.00	201.0	165.0	50	211.0	253.0	ATV930C11N4C(5)
132.00	237.0	213.0	50	250.0	300.0	ATV930C13N4C(5)
160.00	284.0	262.0	50	302.0	362.0	ATV930C16N4C(5)

Note:
(1) These values are given for an adjustable nominal switching frequency of 4 kHz for ATV930U07N4...ATV930D45N4 or 2.5 kHz for ATV930D55N4...D90N4, for use in continuous operation. Above 2.5 or 4 kHz (depending on the rating), the drive will automatically reduce the switching frequency in the event of an excessive temperature rise.
For continuous operation above the nominal switching frequency, derate the nominal drive current.
(2) Typical value for the indicated motor power and for the prospective line Isc.
(3) Values given for applications requiring a slight overload (up to 120%).
(4) Values given for applications requiring a significant overload (up to 150%).
(5) The power parts are accessible at the bottom of the drive. hence the product is supplied as IP 00 for mounting in an enclosure.
For IP 21/UL Type 1 wall mounting, order the IP 21/UL Type 1 conformity kit VW3A9704 separately.

Variable Speed Drives for Asynchronous & Synchronous Motors

Altivar Process
ATV 900 for 0.75 to 800kW
IP 55/ IP 54 version



ATV950D15N4



ATV950D55N4

Altivar 900, IP54/IP55 - Wall Mounting & Floor Standing versions

Motor - Power indicated on name plate (1)	Lines supply -	Line current (2)	Max. prospective line Isc	Maximum continuous current (1)	Max.transient current for 60s	References
kW	A	A	kA	A	A	
IP55 - Wall Mounting (3)						
3-phase supply voltage: 380...480V 50/60Hz						
	380 V	480 V				
1.5	3.0	2.6	50	4.0	4.8	ATV950U15N4
2.2	4.3	3.8	50	5.6	6.7	ATV950U22N4
3.0	5.8	5.1	50	7.2	8.6	ATV950U30N4
4.0	7.6	6.7	50	9.3	11.2	ATV950U40N4
5.5	10.4	9.1	50	12.7	15.2	ATV950U55N4
7.5	13.8	11.9	50	16.5	19.8	ATV950U75N4
11.0	19.8	17	50	23.5	28.2	ATV950D11N4
15.0	27.0	23.3	50	31.7	38.0	ATV950D15N4
18.5	33.4	28.9	50	39.2	47.0	ATV950D18N4
22.0	39.6	34.4	50	46.3	55.6	ATV950D22N4
30.0	53.3	45.9	50	61.5	73.8	ATV950D30N4
37.0	66.2	57.3	50	74.5	89.4	ATV950D37N4
45.0	79.8	69.1	50	88.0	105.6	ATV950D45N4
55.0	97.2	84.2	50	106.0	127.2	ATV950D55N4
75.0	131.3	112.7	50	145.0	174.0	ATV950D75N4
90.0	156.2	135.8	50	173.0	207.6	ATV950D90N4
IP54 - Floor Standing						
3-phase supply voltage: 380...440V 50/60Hz						
	380 V	400 V				
110.0	207.0	195.0	50	211.0	253.0	ATV950C11N4F
132.0	250.0	232.0	50	250.0	300.0	ATV950C13N4F
160.0	291.0	277.0	50	302.0	362.0	ATV950C16N4F
200.0	369.0	349.0	50	370.0	444.0	ATV950C20N4F
250.0	453.0	432.0	50	477.0	572.0	ATV950C25N4F
315.0	566.0	538.0	50	590.0	708.0	ATV950C31N4F

Note:

(1) These values are given for an adjustable nominal switching frequency of 4 kHz up to ATV950D45N4 or 2.5 kHz for ATV950D55N4...D90N4, for use in continuous operation. Above 2.5 or 4 kHz (depending on the rating), the drive will automatically reduce the switching frequency in the event of an excessive temperature rise. For continuous operation above the nominal switching frequency, derate the nominal drive current, see derating curves on our website www.schneider-electric.com.

(2) Typical value for the indicated motor power and for the prospective line Isc.

(3) Supplied with cable gland.

(4) Integrated motor chokes allowing a shielded motor cable length up to 300 m in category C3 and an unshielded cable length up to 450 m/1,476 ft in category C4.

Variable Speed Drives for Asynchronous & Synchronous Motors

Options/Accessories
Altivar 600 and Altivar 900


VW3A1111

Graphic display terminal and accessories

Description	For	References
Display (included with VSD), this reference is for additional display	ATV600, 900	VW3A1111
Remote mounting kit IP65 - Order with remote-mounting cordset VW3A1104R***	ATV600, 900	VW3A1112
Tightening tool for remote mounting kit	ATV600, 900	ZB5AZ905
Remote-mounting cable with 2 RJ45 connectors - 1m long	ATV600, 900	VW3A1104R10
Remote-mounting cable with 2 RJ45 connectors - 3m long	ATV600, 900	VW3A1104R30
Remote-mounting cable with 2 RJ45 connectors - 5m long	ATV600, 900	VW3A1104R50
Remote-mounting cable with 2 RJ45 connectors - 10m long	ATV600, 900	VW3A1104R100
USB/Mini B USB cable for connecting the display terminal to a PC	ATV600, 900	TCSXCNAMUM3P
IP 65 remote mounting kit for Ethernet port (1)	ATV600, 900	VW3A1115


VW3A3203

Multidrop connection accessories

Description		For	References
Modbus splitter box		ATV600, 900	LU9GC3
Modbus T-junction boxes	With 0.3 m cable	ATV600, 900	VW3A8306TF03
	With 1 m cable	ATV600, 900	VW3A8306TF10
Modbus line terminator	For RJ45 connector	ATV600, 900	VW3A8306RC
Cordset with 2 RJ45 connector for serial link	0.3 m	ATV600, 900	VW3A8306R03
	1 m	ATV600, 900	VW3A8306R10
	3 m	ATV600, 900	VW3A8306R30


VW3A3204

I/O expansion modules

Description	I/O type				For	References
	Digital Inputs	Digital Outputs	Analogue Inputs	Relay Outputs		
Module with digital & analogue I/O	6	2	2(2)	-	ATV600, 900	VW3A3203
Modules with relay outputs	-	-	-	3(3)	ATV600, 900	VW3A3204

Note:
1) Used to connect a remote PC to the RJ45 port on an IP 21 drive mounted in an enclosure or on a wall. Drill hole with a standard Ø 22 tool, as used for a pushbutton.(Requires a remote-mounting cordset VW3A1104R*** equipped with 2 RJ45 connectors).
(2) Differential analogue inputs configurable via software as current 0-20 mA/4-20 mA), or for PTC, PT100 or PT1000, 2 or 3-wire. When configured as PTC probe inputs, they must never be used to protect an ATEX motor in applications in explosive atmospheres. Please refer to the ATEX guide on our website www.schneider-electric.com.
(3) NO contacts

Variable Speed Drives for Asynchronous & Synchronous Motors

Options/Accessories
Altivar 600 and Altivar 900



SOMOVE SOFTWARE

SoMove software & PC connections

Description	For	References
SoMove software	All	Available at schneider-electric.com
USB Connection Cable to connect your PC	All	TCSMCNAM3M002P

Communication modules (1)

Description		For	References
EtherNet/IP and Modbus TCP dual port module		ATV600, 900	VW3A3720
CANopen Daisy chain module		ATV600, 900	VW3A3608
CANopen cordsets equipped with 2 RJ45 connectors	0.3 m long	ATV600, 900	VW3CANCARR03
	1.0 m long	ATV600, 900	VW3CANCARR1
CANopen line terminator for RJ45 connector		ATV600, 900	TCSCAR013M120
CANopen SUB-D module		ATV600, 900	VW3A3618
CANopen cables - connection to SUB-D connector (2)(3)	50m long	ATV600, 900	TSXCANCA50
	100m long	ATV600, 900	TSXCANCA100
	300m long	ATV600, 900	TSXCANCA300
IP 20 straight CANopen connector (4)		ATV600, 900	TSXCANKCDF180T
CANopen module Port: 1 x 5-way screw terminal block		ATV600, 900	VW3A3628
CANopen IP 20 cordsets (2)	0.3 m	ATV600, 900	TSXCANCADD03
	1 m	ATV600, 900	TSXCANCADD1
	3 m	ATV600, 900	TSXCANCADD3
	5 m	ATV600, 900	TSXCANCADD5
IP 20 CANopen tap junction boxes equipped with: - 4 x 9-way male SUB-D connectors + screw terminal block for trunk cable tap link - Line terminator		ATV600, 900	TSXCANTDM4
IP 20 CANopen tap junction boxes equipped with: - 2 screw terminal blocks for trunk cable tap link - 2 RJ45 connectors for connecting drives - 1 RJ45 connector for connecting a PC		ATV600, 900	VW3CANTAP2



VW3A3720



VW3A3618



VW3A3628

Note:
(1) Altivar Process drives can only take one communication module.
(2) Cable depends on the PLC.
(3) Standard environment:
- No particular environmental constraints
- Operating temperature between +5 °C and +60 °C
- Fixed installation

Harsh environment:
- Resistance to hydrocarbons, industrial oils, detergents, solder splashes
- Relative humidity up to 100%
- Saline atmosphere
- Operating temperature between -10 °C and +70 °C
- Significant temperature variations

(4) Only straight connectors are compatible with Altivar Process drives.

Variable Speed Drives for Asynchronous & Synchronous Motors

Options/Accessories
Altivar 600 and Altivar 900


VW3A3627


VW3A3607


VW3A3609

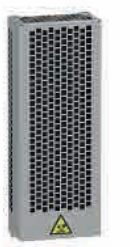

VW3A7741

Communication modules

Description	For	References
PROFINET module equipped with 2 RJ45 connectors(1)(2)	ATV600, 900	VW3A3627
PROFIBUS DP V1 module (1)(3) Port: 1 x 9-way female SUB-D connector	ATV600, 900	VW3A3607
IP 20 straight connectors for Profibus DP V1 module(4)	ATV600, 900	LU9AD7
DeviceNet module (1)(5) Port: 1 removable 5-way screw connector	ATV600, 900	VW3A3609
EtherCAT module equipped with 2 RJ45 connectors	ATV900	VW3A3601

Braking resistors for a medium braking cycle

For Drives	Degree of protection	Average power available (kW)	For	Reference
Supply voltage: 200…240 V or 380…480 V 50/60 Hz				
ATV930U07M3 ATV930U07N4...U15N4 ATV950U07N4…U15N4 ATV950U07N4E…U15N4E	IP20	0.1	ATV900	VW3A7730
ATV930U15M3...U22M3	IP20	0.16	ATV900	VW3A7731
ATV930U30M3...U40M3	IP20	0.3	ATV900	VW3A7732
ATV930U55M3…U75M3	IP20	1.1	ATV900	VW3A7733
ATV930D11M3	IP20	1.1	ATV900	VW3A7734
ATV930D15M3	IP20	1.1	ATV900	VW3A7735
ATV930D18M3...D22M3	IP23	1.9	ATV900	VW3A7736
ATV930D30M3...D45M3	IP23	3.2	ATV900	VW3A7737
ATV930U22N4...U40N4 ATV950U22N4...U40N4 ATV950U22N4E...U40N4E	IP20	0.26	ATV900	VW3A7740
ATV930U55N4...U75N4 ATV950U55N4...U75N4 ATV950U55N4E...U75N4E	IP20	0.5	ATV900	VW3A7741
ATV930D11N4...D15N4 ATV950D11N4...D15N4 ATV950D11N4E...D15N4E	IP20	1.1	ATV900	VW3A7742
ATV930D18N4...D30N4 ATV950D18N4...D30N4 ATV950D18N4E...D30N4E	IP20	2.2	ATV900	VW3A7743
ATV930D37N4...D45N4 ATV950D37N4...D45N4 ATV950D37N4E...D45N4E	IP20	3.4	ATV900	VW3A7744
ATV930D55N4 ATV950D55N4 ATV950D55N4E	IP23	3.8	ATV900	VW3A7745
ATV930D75N4...D90N4 ATV950D75N4...D90N4 ATV950D75N4E...D90N4E	IP23	6.9	ATV900	VW3A7746
ATV930C11N4C...C16N4C	IP23	11	ATV900	VW3A7747
ATV930D55M3C...D75M3C	IP23	5.1	ATV900	VW3A7748



VW3A7741

Braking resistors for a severe braking cycle

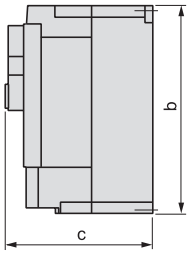
For Drives	Degree of protection	Average power available (kW)	For	Reference
Supply voltage: 200…240 V or 380…480 V 50/60 Hz				
ATV930U07M3	IP20	0.26	ATV900	VW3A7740
ATV930U15M3	IP20	0.5	ATV900	VW3A7741
ATV930U22M3	IP20	3.4	ATV900	VW3A7751
ATV930U30M3	IP20	1.1	ATV900	VW3A7742
ATV930U55M3	IP20	2.2	ATV900	VW3A7743
ATV930D11M3	IP20	3.4	ATV900	VW3A7744
ATV930D18M3	IP23	6.9	ATV900	VW3A7746
ATV930U07N4...U40N4 ATV950U07N4...U40N4 ATV950U07N4E...U40N4E	IP20	1.7	ATV900	VW3A7750
ATV930U55N4…U75N4 ATV950U55N4…U75N4 ATV950U55N4E…U75N4E	IP20	3.4	ATV900	VW3A7751
ATV930U40M3 ATV930D11N4...D15N4 ATV950D11N4...D15N4 ATV950D11N4E...D15N4E	IP23	5.1	ATV900	VW3A7752
ATV930U75M3 ATV930D18N4…D30N4 ATV950D18N4…D30N4 ATV950D18N4E…D30N4E	IP23	14.0	ATV900	VW3A7753
ATV930D37N4...D45N4 ATV950D37N4...D45N4 ATV950D37N4E...D45N4E	IP23	19.0	ATV900	VW3A7754
ATV930D90N4 ATV950D90N4 ATV950D90N4E	IP23	19.0	ATV900	
ATV930D15M3 ATV930D55N4 ATV950D55N4 ATV950D55N4E	IP23	25.0	ATV900	VW3A7755
ATV930D22M3 ATV930D75N4 ATV950D75N4 ATV950D75N4E	IP23	32.0	ATV900	VW3A7756
ATV930D30M3…D45M3 ATV930C11N4C...C16N4C	IP23	32.0	ATV900	
ATV930D55M3C...D75M3C	IP23	29.0	ATV900	VW3A7757

Variable Speed Drives for Asynchronous Motors

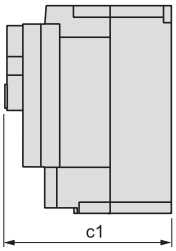
Altivar 71 - IP20/IP00 Version Dimensions

ATV71H075N4...HD18N4

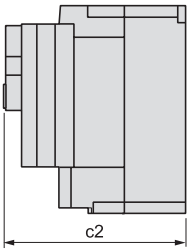
Without option card



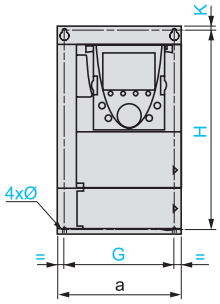
1 option card (1)



2 option cards (1)



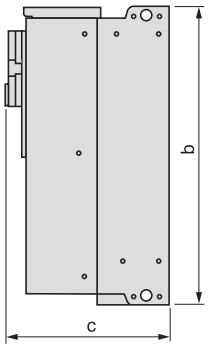
Common front view



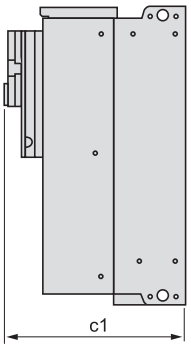
ATV71H	a	b	c	c1	c2	G	H	K	Ø
075N4...U22N4	130	230	175	198	221	113.5	220	5	5
U30N4, U40N4	155	260	187	210	233	138	249	4	5
U55N4, U75N4	175	295	187	210	233	158	283	6	6
D11N4	210	295	213	236	259	190	283	6	6
D15N4, D18N4	230	400	213	236	259	210	386	8	6

ATV71HD22N4...HD37N4

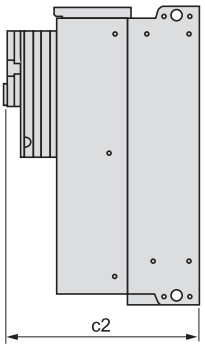
Without option card



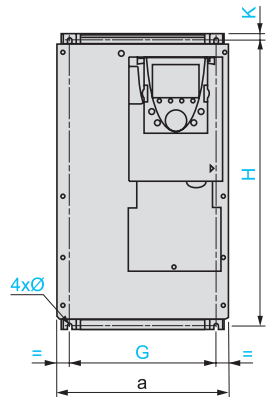
1 option card (1)



2 option cards (1)



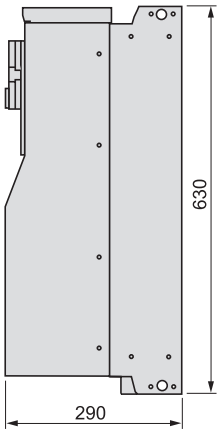
Common front view



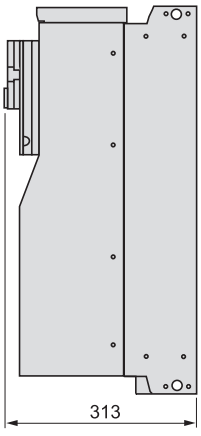
ATV71H	a	b	c	c1	c2	G	H	K	Ø
D22N4	240	420	236	259	282	206	403	8.5	6
D30N4, D37N4	240	550	266	289	312	206	529	10	6

ATV71HD45N4...HD75N4

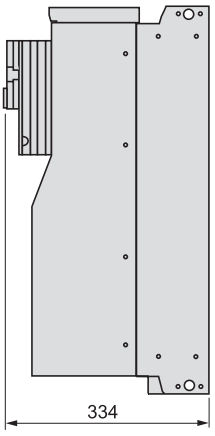
Without option card



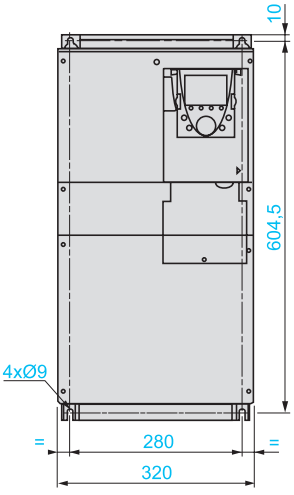
1 option card (1)



2 option cards (1)



Common front view



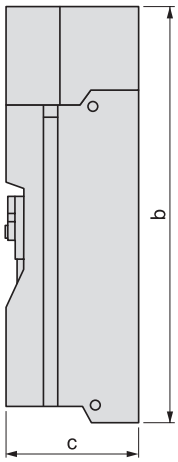
(1) Option cards: I/O extension cards, communication cards or “Controller Inside” programmable card.

Variable Speed Drives for Asynchronous Motors

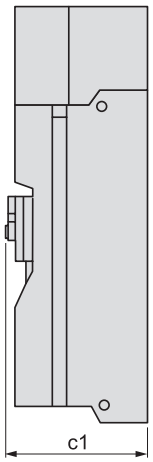
Altivar 71
Dimensions

ATV71HD90N4...HC28N4

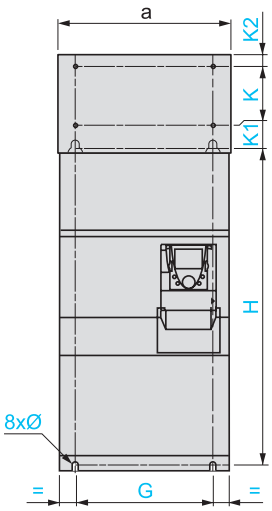
With or without 1 option



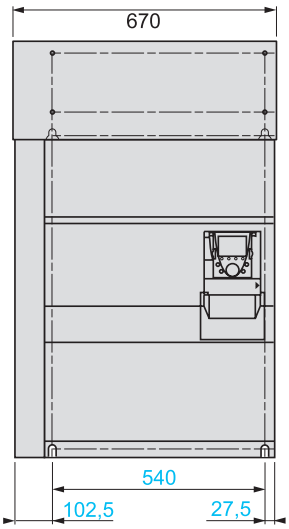
2 option cards (1)



Common front view



ATV71HC20N4…HC28N4 card (1) with braking unit VW3A7101

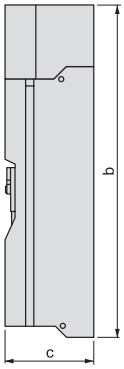


ATV71H	a	b	c	c1	G	H	K	K1	K2	Ø
D90N4	320	920	377	392	250	650	150	75	30	11.5
C11N4	360	1022	377	392	298	758	150	75	30	11.5
C13N4	340	1190	377	392	285	920	150	75	30	11.5
C16N4	440	1190	377	392	350	920	150	75	30	11.5
C20N4…C28N4	595	1190	377	392	540	920	150	75	30	11.5

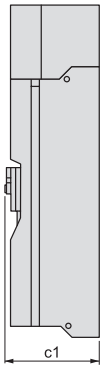
(1) Option cards: I/O extension cards, communication cards or “Controller Inside” programmable card.

ATV71HC31N4…HC50N4

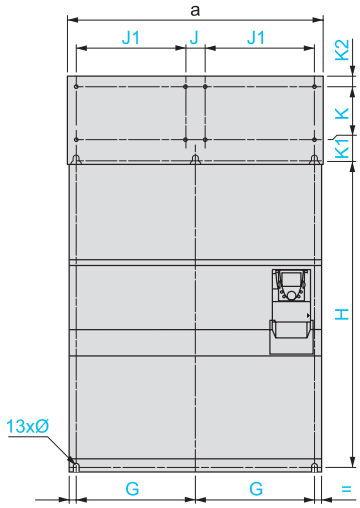
With or without 1 option card (1)



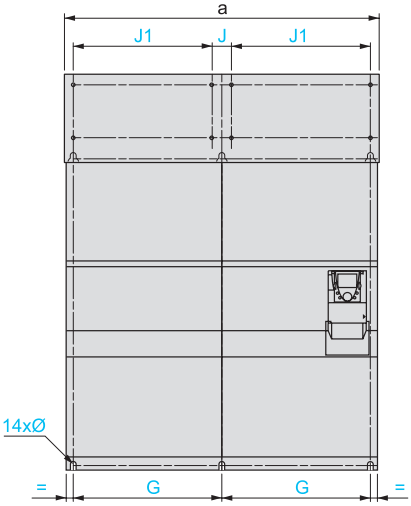
2 option cards (1)



ATV71HC31N4, HC40N4 Front view



ATV71HC50N4 Front view



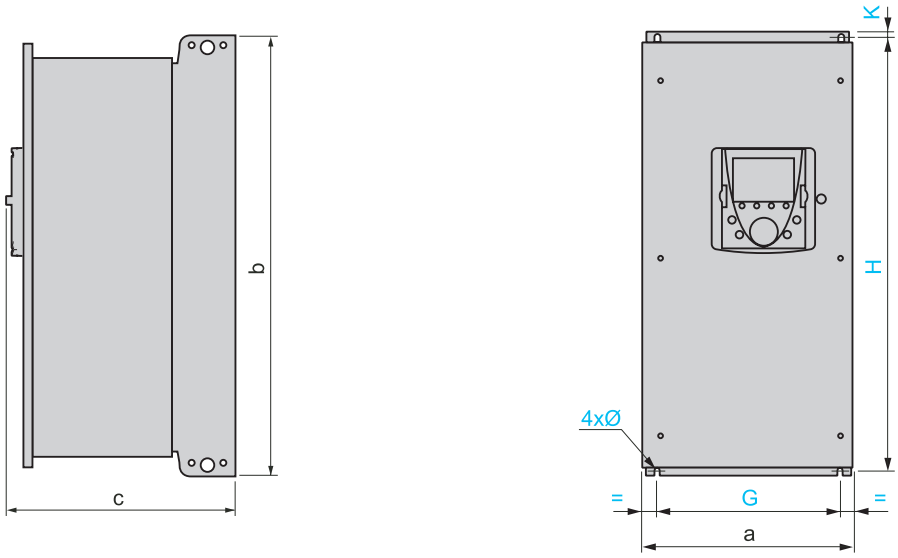
ATV71H	a	b	c	c1	G	J	J1	H	K	K1	K2	Ø
C31N4, C40N4	890	1390	377	392	417.5	70	380	1120	150	75	30	11.5
C50N4	1120	1390	377	392	532.5	70	495	1120	150	75	30	11.5

Variable Speed Drives for Asynchronous Motors

Altivar 71 - IP54 Version Dimensions

Wall Mount Enclosures

ATV 71W075N4…WD75N4 variable speed drives



Dimensions (mm)

ATV 71W	a mm	b mm	c mm	G mm	H mm	K mm	Ø mm
075N4…U22N4	235	490	272	200	478	6	6
U30N4, U40N4	235	490	286	200	478	6	6
U55N4, U75N4	255	525	286	220	513	6	6
D11N4	290	560	315	250	544	8	6
D15N4, D18N4	310	665	315	270	650	10	6
D22N4	284	720	315	245	700	10	7
D30N4, D37N4	284	880	343	245	860	10	7
D45N4…D75N4	362	1000	364	300	975	10	9

Floor Mount Enclosures

ATV 71W	Width mm	Height mm	Depth mm
C11N4 C11N4 C13N4 C16N4	616	2360	659
C20N4 C25N4 C28N4	816	2360	659
C31N4 C40N4	1016	2360	659
C50N4	1216	2360	659

Altistart 22

Soft Starters with integrated bypass contactor for 3-phase motors



Compact

Easy to use

Reliable

Complete Protection

- Available from 7.5kW to 315kW at 400V supply
- Application specific protection settings
- Integrated bypass contactor
- Continuous protection for the motor, starter and application
- Quick and easy star/delta or DOL starter upgrade

Schneider Electric

Altivar 1200 available up to 11kV ranging from 315 to 16200 kVA

Take advantage of MV technology without any compromises

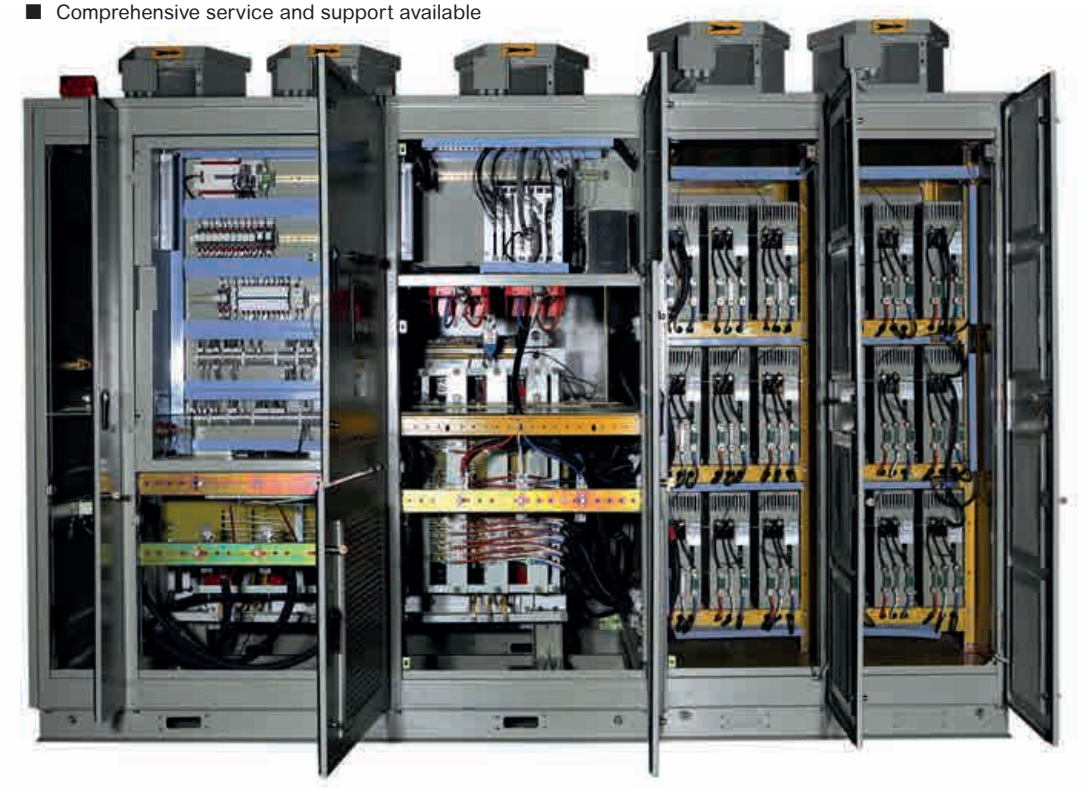


Altivar 1200 enriches the range of electrical distribution, motor control and control systems available from Schneider Electric.

It is a simple and high performance MV drive dedicated to industrial and utility applications such as fan, pump and compressors etc.

Altivar 1200 provides:

- Reduction of energy consumption
- Reliable, high-performance motor control solution
- Easy integration into existing or new installations
- Reduced maintenance costs
- Comprehensive service and support available



Altivar 1200 inverter is composed of transformer cabinet, power unit and control cabinet

Key functions

- Multi-pump (cascade mode)
- Multi motors (cascade motors)
- Catch on fly (low and high inertia)
- Simulation mode for commissioning
- Motor autotuning
- Auto restart (after control signal interruption)
- Soft start function (including synchronisation and bypass)

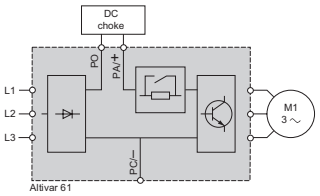
Note:
(1) For full details of the offer and the selection please refer to the product catalogue or contact your sales representative.

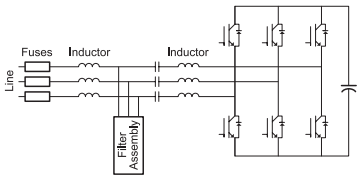
Input power quality solutions (1)

The main solutions for reducing current harmonics are as follows:

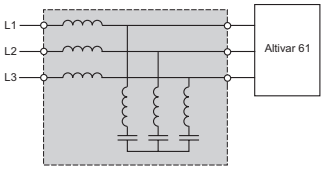
- DC chokes
  provide a compact and economical solution. Drives above 90 kW are supplied with a DC choke that reduces total current harmonic distortion (THDI) to below 48%. For full details please refer to the product catalogue.
  For drives upto 75 kW optional DC choke selection is given on the previous page.
- Line chokes
  can be used to not only reduce harmonic distortion but also to provide improved protection against overvoltages on the line supply. The use of a line choke is recommended in the following circumstances:
  - Close connection of several drives in parallel
  - Line supply with significant disturbances from other equipment (interference, overvoltages)
  - Line supply with voltage imbalance between phases above 1.8% of the nominal voltage
  - Drive supplied by a line with very low impedance (in the vicinity of a power transformer 10 times more powerful than the drive rating.
- Active Harmonic Filters
  reduce harmonic levels in bus type networks. Total harmonic current distortion can be managed at varying loads to meet Australian standards.
- Passive filters
  are used to reduce current harmonics with total harmonic distortion factors of less than 16% or 10%.
  These ratios may be less than 10% or 5% if used with a DC choke.

A range of other harmonic solutions are also available to meet your installation needs. For further details please contact your sales representative.





Active Harmonic Filter



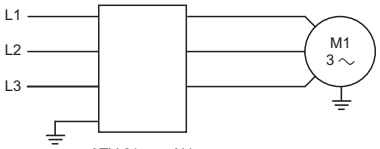
Passive Filter

Electromagnetic compatibility (EMC)

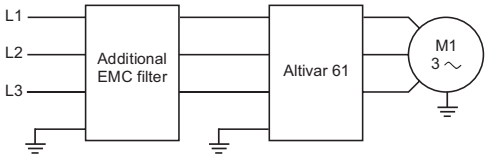
Altivar 61 and 71 drives listed in this catalogue have built-in radio interference input filters to meet the EMC standard for variable speed electrical power drive 'products' IEC/EN61800-3, edition 2, category C3 in environments 2.

Additional EMC input filters

Additional EMC input filters can be used to meet more stringent requirements and are designed to reduce conducted emissions on the line supply below the limits of standard EN55011 group 1, class A or B and IEC/ EN61800-3 category C2/ C1. These filters are mounted under the drives. For ratings up to 75 kW they can also be mounted on the side of the product.



ATV 61●●●●N4
ATV 71●●●●N4
with integrated filter

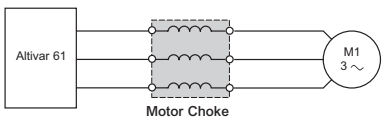


Output power quality solutions

The Altivar 61 and 71 drives include as standard a software function used to limit overvoltages at the motor terminals. Depending on the cable length or the type of application, it may be necessary to use output filters:

Motor chokes to:

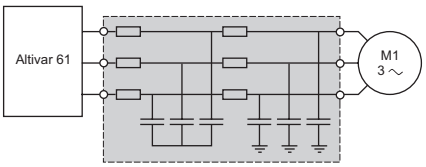
- limit the dv/dt to 500 V/us
- limit overvoltage on the motor terminal:
  1000 V to 400 V~ (rms value)
- reduce the motor earth leakage current



Motor Choke

Sine filters

- for very long cable runs



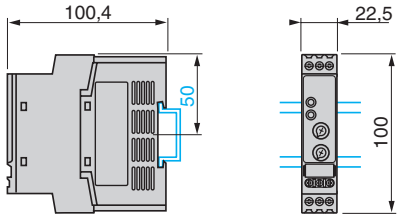
Sine Filter

Note:
(1) For full details of the offer and the selection please refer to the product catalogue or contact your sales representative.

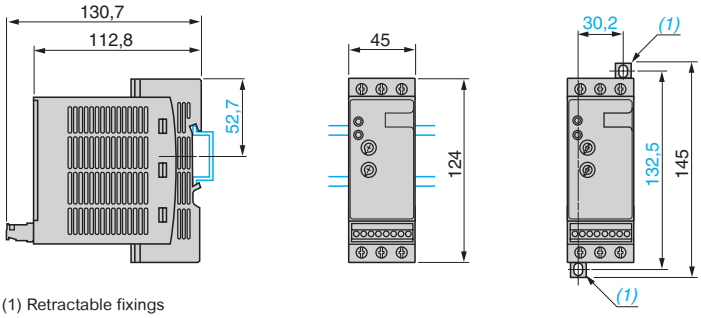
Solid State Starters for Asynchronous Motors

Altistart 01 Dimensions

ATS 01N103FT, ATS01N106FT
Mounting on ⊔ (35mm) rail or rail with adaptor RHZ 66

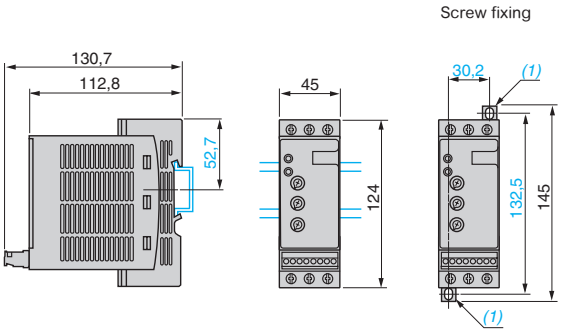


ATS01N109FT, ATS01N112FT, ATS01N125FT
Mounting on ⊔ (35mm) rail



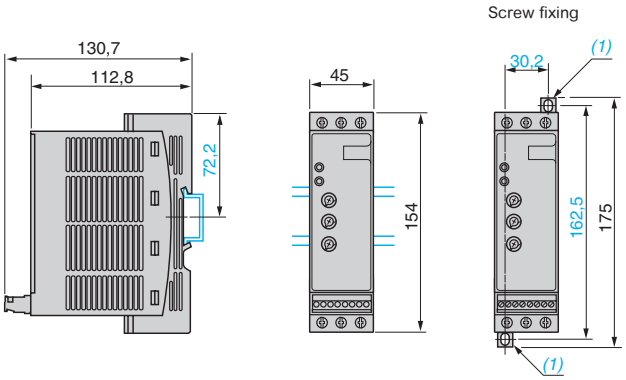
(1) Retractable fixings

ATS01N206QN to ATS01N212QN, ATSU01N206LT to ATSU01N212LT
Mounting on ⊔ (35mm) rail



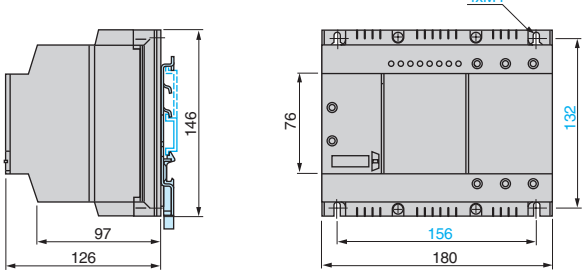
(1) Retractable fixings

ATS01N222QN, ATS01N232QN, ATSU01N222LT, ATSU01N232LT
Mounting on ⊔ (35mm) rail

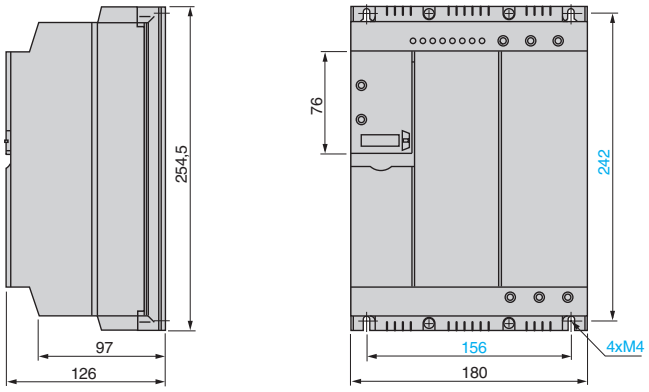


(1) Retractable fixings

ATS01N244Q



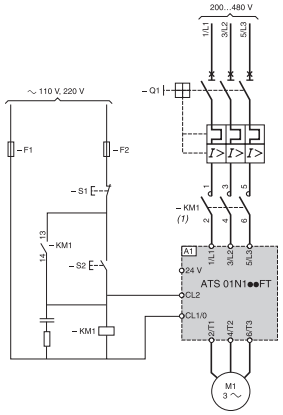
ATS01N272Q, ATS01N285Q



Solid State Starters for Asynchronous Motors

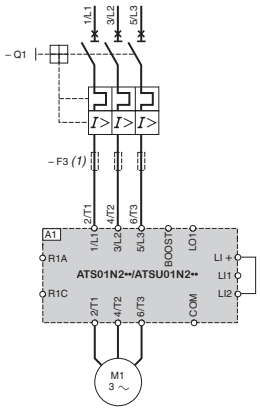
Altistart 01 Wiring Diagrams

ATS01N1••FT soft starters
Single-phase or 3-phase power supply

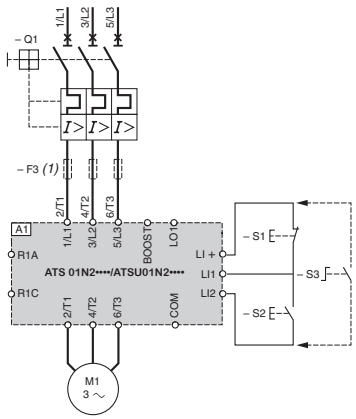


Note:
For single-phase motors, use the ATS01N1••FT without connecting the 2nd phase 3/L2, 4/T2. Wait 5 seconds after switching the soft starter off before switching it on again.
(1) A line contactor must be used in the sequence.

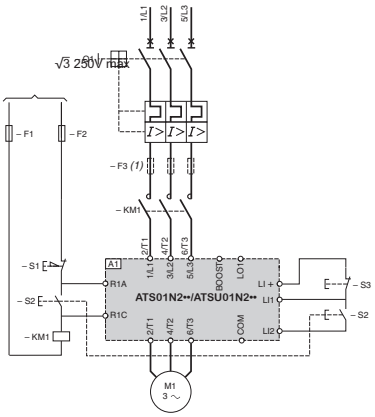
ATS01N2••QN/ATSU01N2••LT soft start/soft stop units
Manual control without deceleration (freewheel), with GV2 and GV3 motor circuit breaker
ATS 01N206QN to ATS 01N232QN



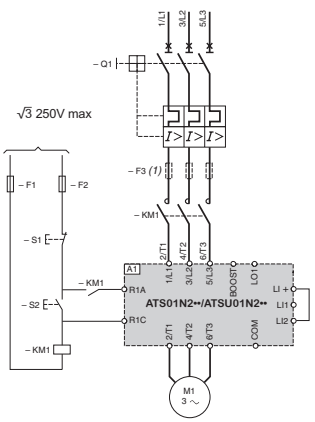
ATS01N2••QN/ATSU01N2••LT soft start/soft stop units
Automatic control with or without deceleration (freewheel), without contactor.
ATS01N206QN to ATS01N232QN/ATSU01N206LT to ATSU01N232LT



ATS01N2••QN/ATSU01N2••LT soft start/soft stop units
Automatic control with or without deceleration (freewheel), without contactor.
ATS01N206QN to ATS01N232QN/ATSU01N206LT to ATSU01N232LT



ATS01N2••QN/ATSU01N2••LT soft start/soft stop units
Automatic control without deceleration (freewheel), with a maintaining function.
ATS01N206QN to ATS01N232QN/ATSU01N206LT to ATSU01N232LT

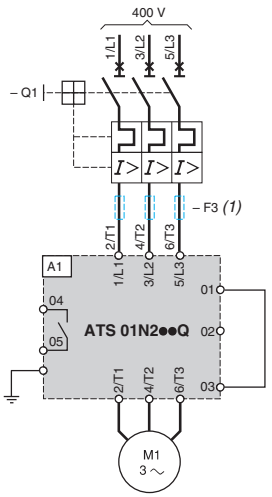


(1) For type 2 coordination.

Solid State Starters for Asynchronous Motors

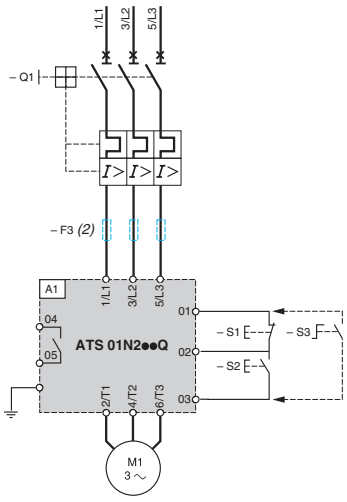
Altistart 01
Wiring Diagrams (contd)

ATS01N2••Q soft start/soft stop units
Manual control without deceleration (freewheel), with GV3 and GV7 motor circuit breaker.
ATS01N244Q to ATS01N285Q



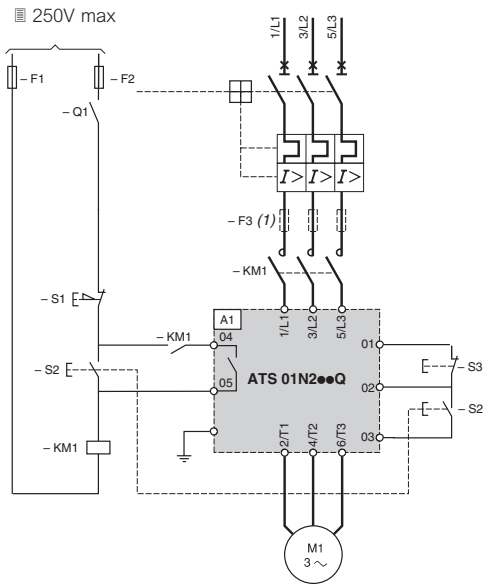
(1) For type 2 coordination.

ATS01N2••Q soft start/soft stop units
Automatic control with or without deceleration (freewheel), without contactor.
ATS01N244Q to ATS01N285Q

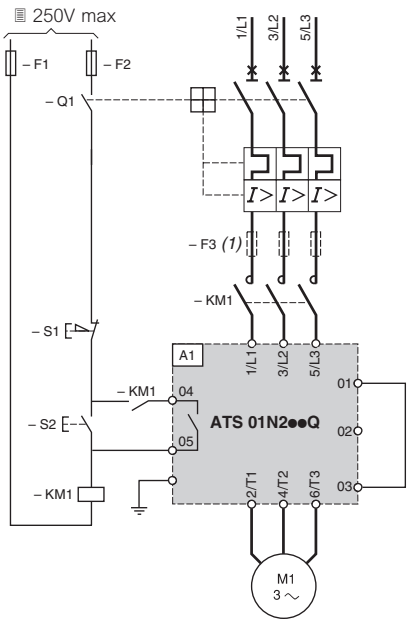


(1) Use shielded wires above 1m.
(2) For type 2 coordination.

ATS01N2••Q soft start/soft stop units
Automatic control with or without deceleration (flywheel), with contactor.
ATS01N2244Q to ATS01N285Q



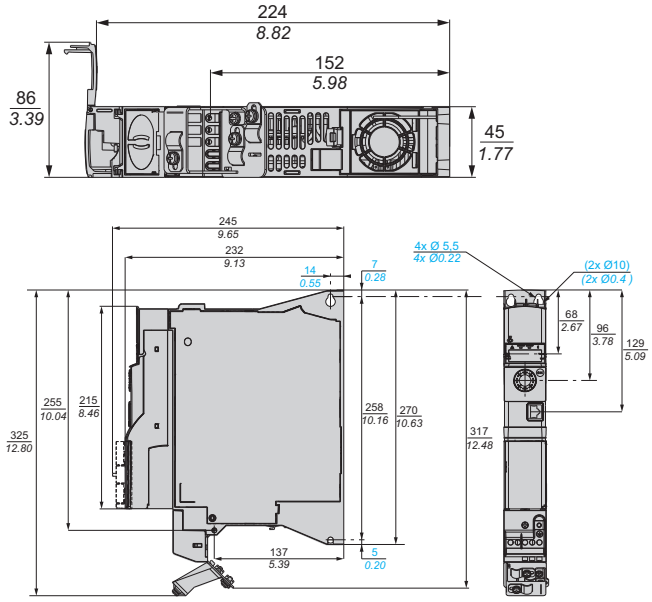
ATS01N2••Q soft start/soft stop units
Automatic control without deceleration (flywheel), with a maintaining function.
ATS01N2244Q to ATS01N285Q



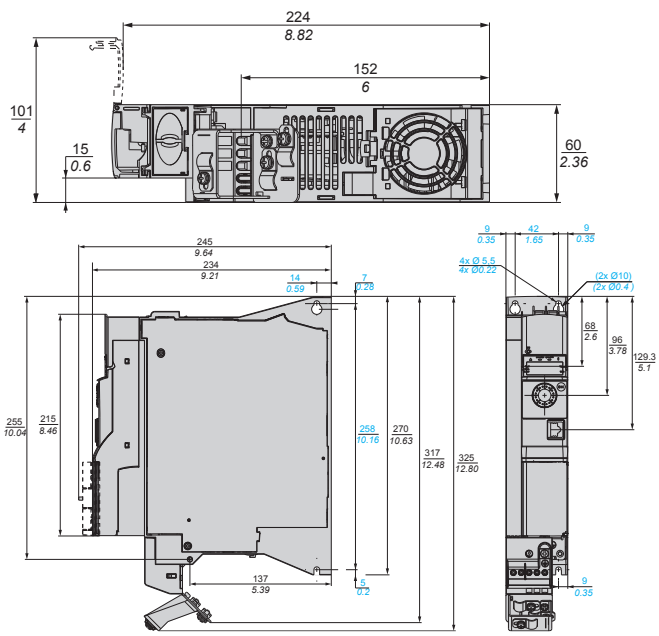
3.2

Altivar 32
Dimensions

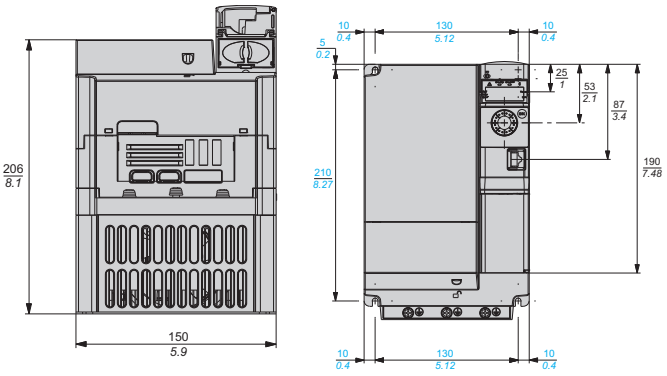
ATV32HO••M2, HO••N4, HU1•N4
- size A - dimensions and weight

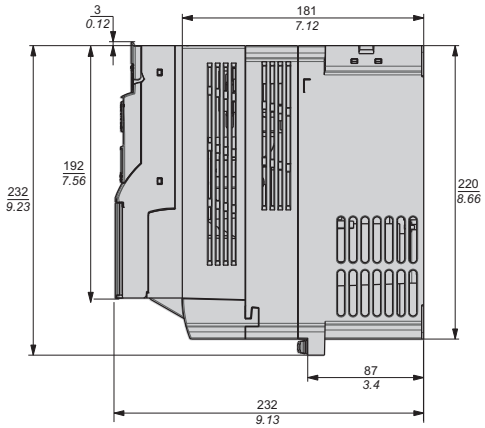


ATV32HU11M2, U15M2, U22M2, U22N4, U30N4, U40N4

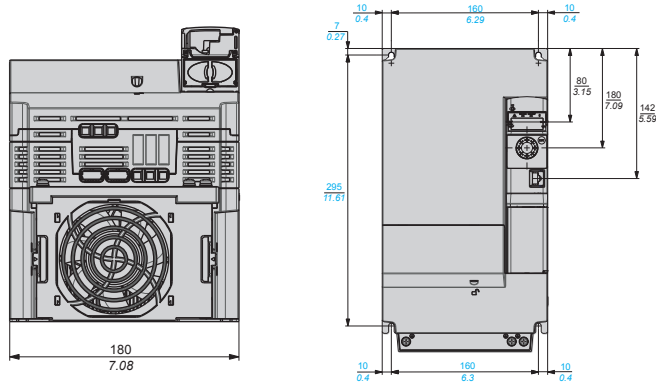


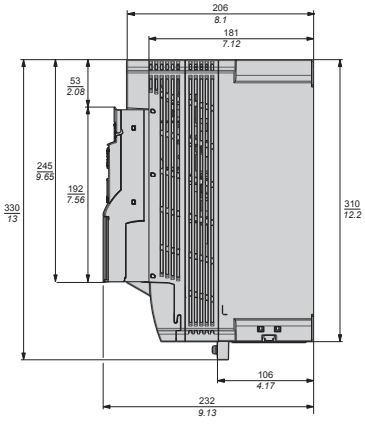
ATV32HU55N4, U75N4 - size C





ATV32HD11N4, D15N4 - size D





Single or three-phase power supply - Diagram with switch disconnect

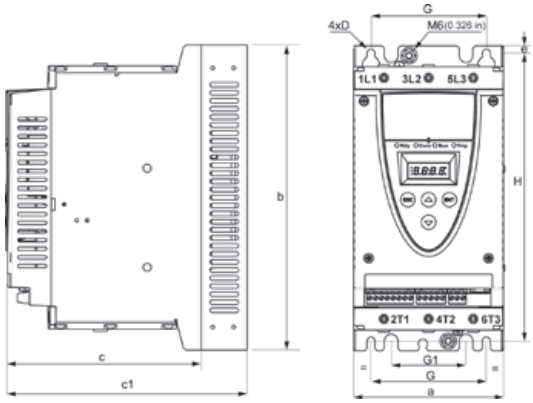
Connection diagrams conforming to standards EN 954-1 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1.

(1) Line choke (if used)
(2) Fault relay contacts, for remote signalling of drive status

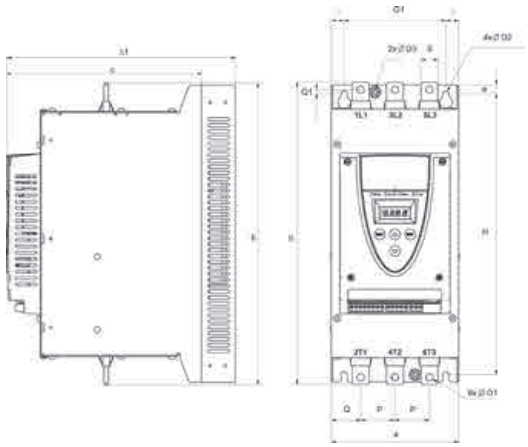
Due to extensive safety functionality please see the installation manual and/or programming manual for control wiring.

Altistart 22 Soft Start-Soft Stop Units
Dimensions

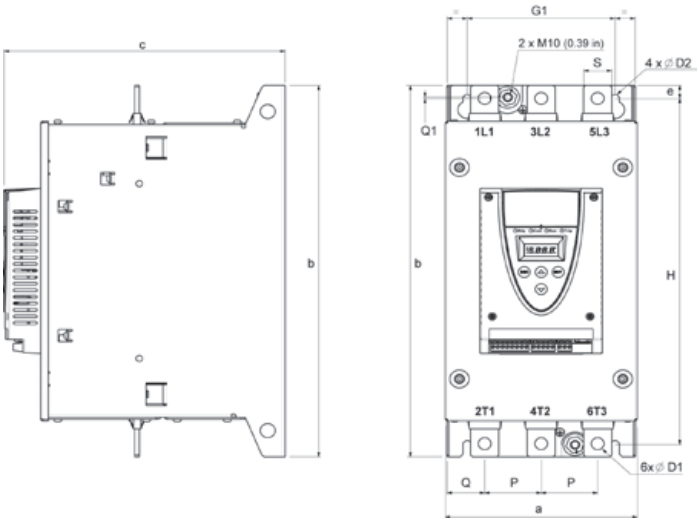
ATS22D17 to D88



ATS22C11 to C17



ATS22C21 to C59



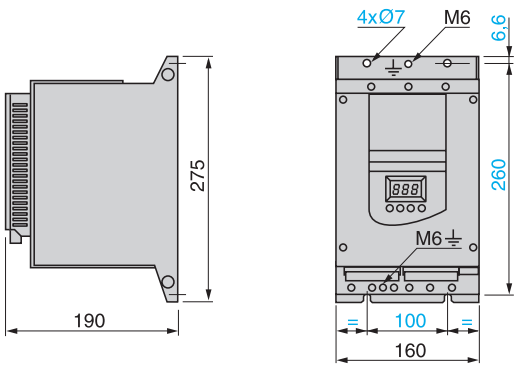
ATS22	Frame size	a mm (in.)	b mm (in.)	c mm (in.)	c1 mm (in.)	e mm (in.)	H	Standard G mm (in.)	With fan mm (in.)	D mm (in.)	Weight kg (lb)
D17	A	130 (5.1)	265 (10.4)	169 (6.6)	209 (8.2)	6.5 (0.3)	250 (9.8)	100 (3.9)	65 (2.6)	7 (0.28)	5.5 (12.1)
D32											
D47											
D62	B	145 (5.7)	295 (11.6)	207 (8.1)	247 (9.7)	10.5 (0.4)	276 (10.9)	115 (4.5)	80 (3.15)	7 (0.28)	7.8 (17.2)
D75											
D88											

ATS22	Frame size	a mm (in.)	b mm (in.)	c mm (in.)	c1 mm (in.)	e mm (in.)	H mm (in.)	G1 mm (in.)	P mm (in.)	Q mm (in.)	Q1 mm (in.)	S mm (in.)	D1 mm (in.)	D2 mm (in.)	D3 mm (in.)	Weight kg (lb)
C11	C	150 (5.9)	356 (14)	229.5 (9)	269.5 (10.6)	10.5 (0.41)	331 (13)	120 (4.7)	40.5 (1.6)	34.5 (1.3)	5 (0.2)	20 (0.8)	9 (0.35)	7 (0.28)	6 (0.23)	12.2 (26.9)
C14																
C17																
C21	D	206 (8.1)	425 (16.7)	299 (11.8)		15 (0.59)	396 (15.6)	157 (6.2)	60 (2.4)	40 (1.6)	1.3 (0.05)	30 (1.2)	13.5 (0.53)	9 (0.35)		20.5 (45.2)
C25																
C32																
C41																
C48	E	304 (11.9)	455 (17.9)	339.7 (13.4)		15 (0.59)	426 (16.8)	264 (10.4)	94 (3.7)	55 (2.2)	1 (0.04)	40 (1.6)	13.5 (0.53)	9 (0.35)		33 (73.3)
C59																

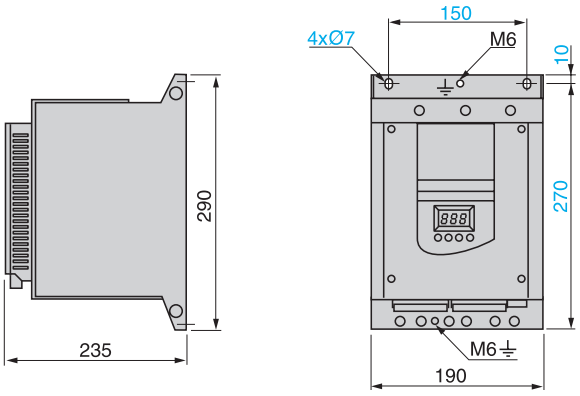
c: dimension of the product alone.
c1: dimension of the product with its fan.
(1) The voltage of the fan has to match the control voltage of the soft starter:
ATS22pppQ or ATS22pppS6 Fan 230V (VW3G22ppp, ppp = 400 for size A, 401 for size B or 402 for size C)
ATS22pppS6U Fan 110V (VW3G22Uppp, ppp = 400 for size A, 401 for size B or 402 for size C)

Altistart 48 Soft Start-Soft Stop Units
Dimensions

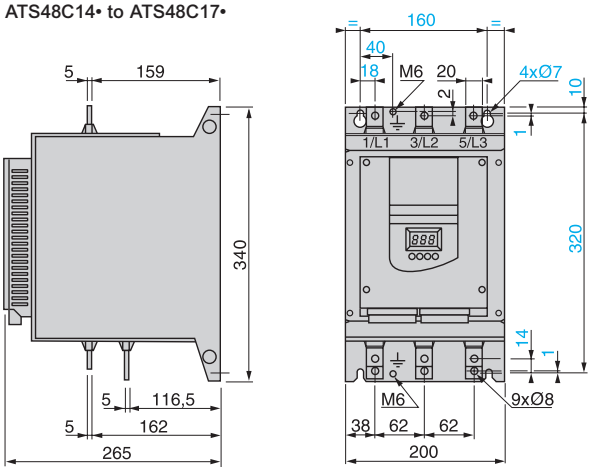
ATS48D17• to ATS48D47•



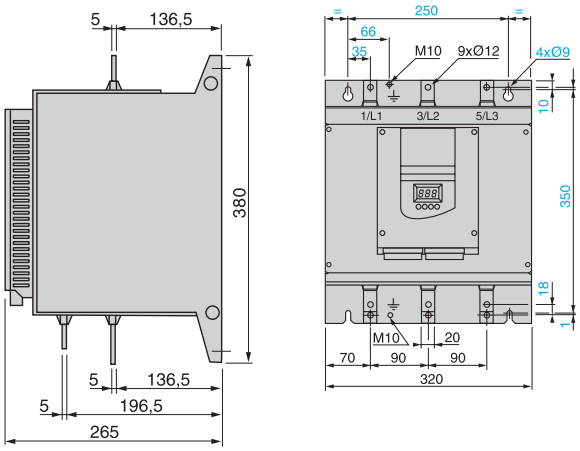
ATS48D62• to ATS48C11•



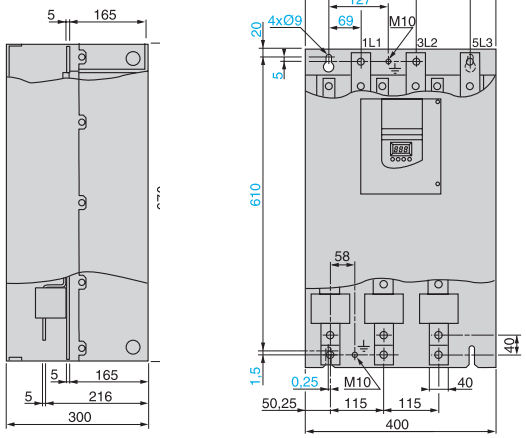
ATS48C14• to ATS48C17•



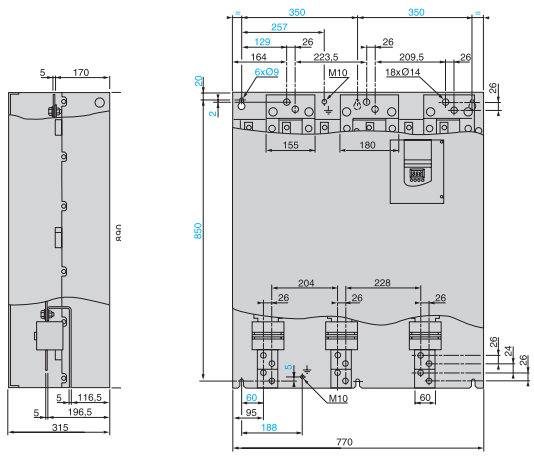
ATS48C21• to ATS48C32•



ATS48C41• to C66•

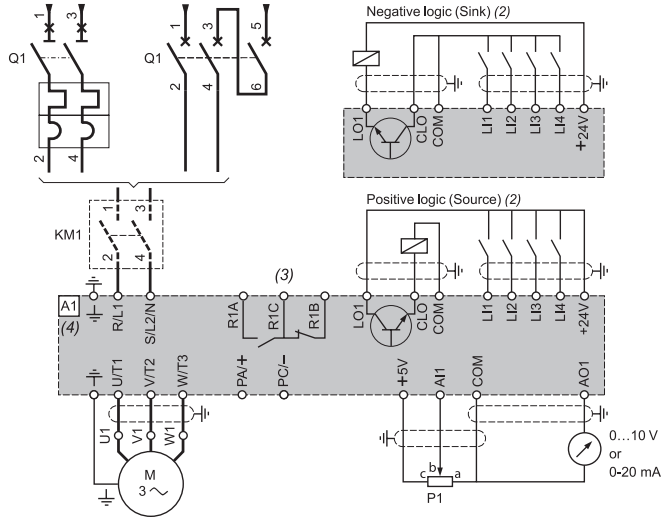


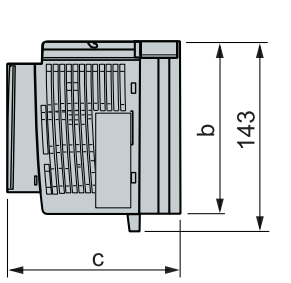
ATS48C79• to M12•

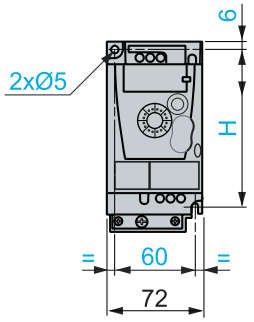


Altivar 12

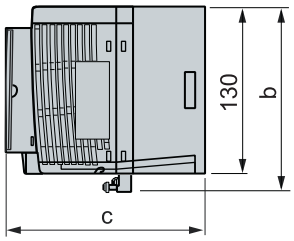
ATV12••••F1, ATV12••••M2
Single phase power supply

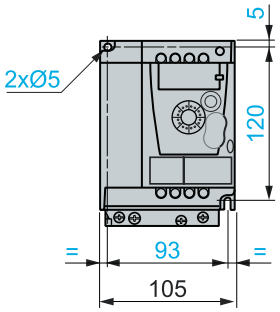






Dimensions in mm	B	C	C1	H
ATV12H018M2	142	102.2	34	131
ATV12H037M2	130	121.2	53	120
ATV12H075M2	130	131.2	63	120





Dimensions in mm	B	C	C1
ATV12HU15M2	142	188.2	156.2
ATV12HU22M2	143	189.3	131.2
ATV12H075M2	130	131.2	63

Note:
Install interference suppressors on all inductive circuits near the drive or connected on the same circuit, such as relays, contactors, solenoid valves, fluorescent lighting, etc.

Compatible components

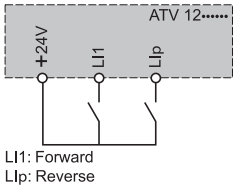
(for a complete list of references, please refer to the "Motor starter solutions - Control and protection components" and "Motor starters up to 150 A" catalogues or visit "www.schneider-electric.com")

Item No.	Description
A1	ATV 12••••F1 or ATV 12••••M2 drive (see page 60402/2)
A2	ATV 12••••M3 drive (see page 60402/2)
KM1	Contactor (only if a control circuit is needed; see page 60406/2)
P1	2.2 kΩ reference potentiometer, SZ1 RV1202. This can be replaced by a 10 kΩ potentiometer (maximum).
Q1	Circuit breaker (see page 60406/2)

Examples of recommended schemes

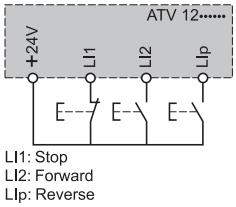
Logic and analogue I/O

2-wire control



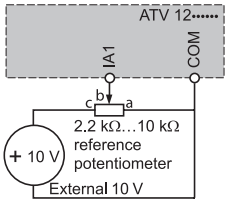
LI1: Forward
LIp: Reverse

3-wire control

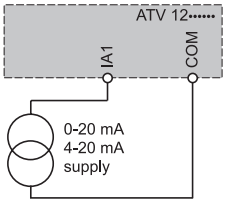


LI1: Stop
LI2: Forward
LIp: Reverse

Analogue input configured for voltage

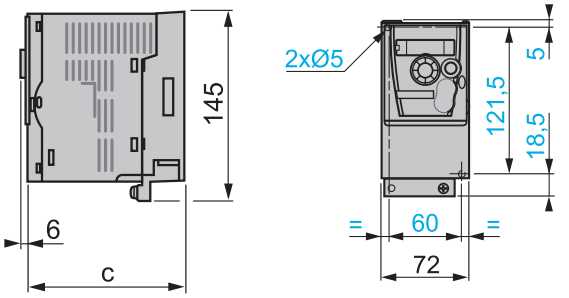


Analogue input configured for current

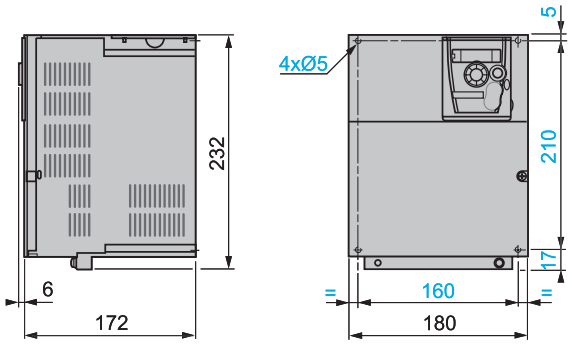


(1) The control section is connected in exactly the same way as for the ATV 12••••F1 and ATV 12••••M2 drives.
(2) Connection as positive logic (Source) or negative logic (Sink) is configured via parameters; the factory-set configuration is positive logic (Source).
(3) Fault relay contacts for remote signalling of the drive status.
(4) The R/L1, S/L2/N and T/L3 terminals are connected at the top of the drive. The other terminals are connected on the underside of the drive.

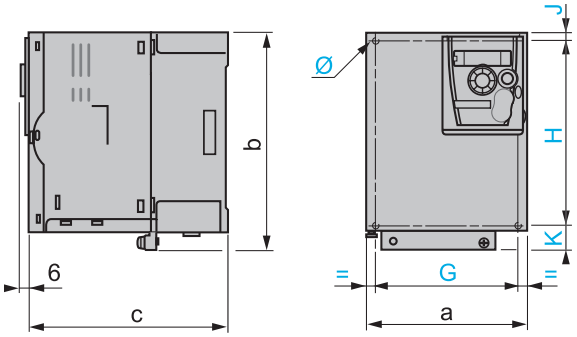
Altivar 312 and ATV31C
Dimensions and Mounting Precautions



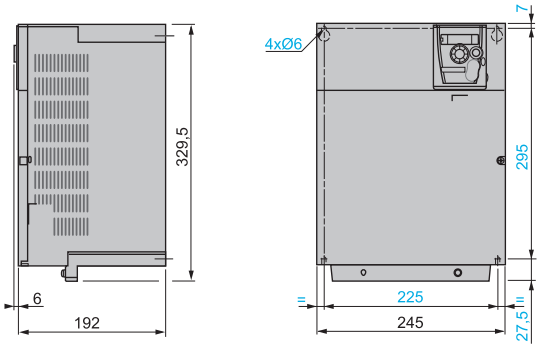
ATV312... (mm)	C	C1
ATV312H018 – H037M2	132	61.5
ATV312H055 – H075M2	142	61.5
ATV12H075M2	130	131.2



ATV312... (mm)	
ATV312HU55N4	as above
ATV312HU75N4	as above



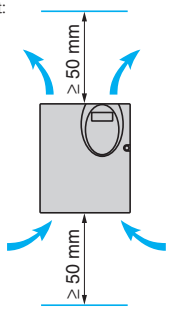
ATV312... (mm)	a	b	c	C1	d
HU11M2 – HU15M2	107	143	152	67.3	49
H037N4 – HU15N4	107	143	152	67.3	49
HU22M2	142	184	152	88.8	48
HU22N4 – HU40N4	142	184	152	88.8	48



ATV312... (mm)	
ATV312HD11N4	as above
ATV312HD15N4	as above

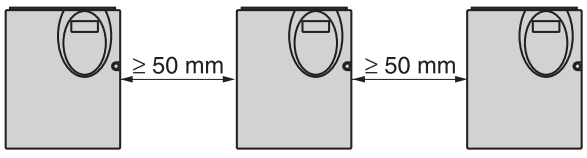
Mounting - ATV312

Free space in front of unit:
10mm minimum

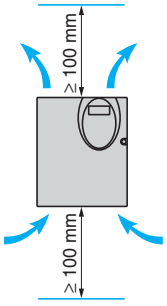


Common mounting types - ATV312

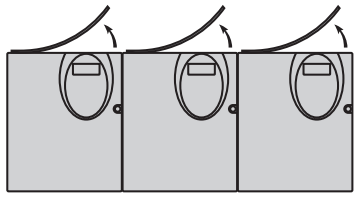
Free space ≥ 50 mm on each side with protective cover fitted



Mounting - ATV31C



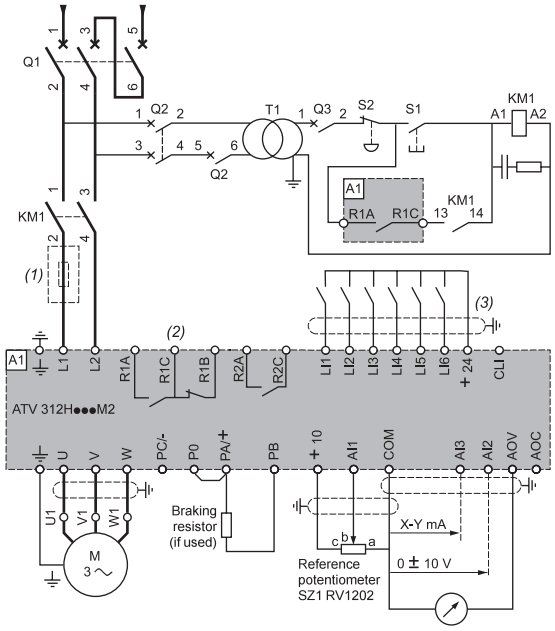
Drives mounted side-by-side, protective cover removed
(the degree of protection becomes IP20)



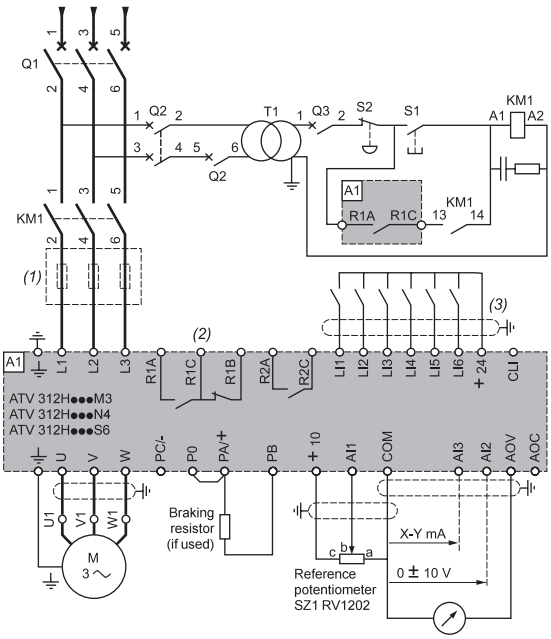
Variable Speed Drives for Asynchronous Motors

Altivar 312
Wiring Diagrams

ATV 312H•••M2
Single phase power supply



ATV 312H•••M3, ATV 312H•••N4, ATV 312H•••S6
Three-phase power supply



(1) Line choke (single phase or 3-phase).
(2) Fault relay contacts. Used for remote signalling of drive status.
(3) Connection of the common for the logic inputs depends on the position of a switch (see schemes below).

Note:
All terminals are located at the bottom of the drive. Install interference supressors on all inductive circuits near the drive or connected on the same circuit, such as relays, contactors, solenoid valves, fluorescent lighting etc.

Compatible components

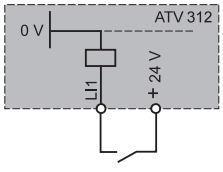
(for a complete list of references, please refer to the "Motor Starter Solutions - Control and Protection Components" catalogue)

Item No.	Description
KM1	Line contactor LC1 • • • + suppressor module LA4 DA2U
Q1	GV2 L magnetic circuit-breaker OR Compact NS circuit-breaker
Q2	GV2 L magnetic circuit-breaker rated at twice the nominal primary current of T1
Q3	GB2 CB05 thermal magnetic circuit-breaker
S1, S2	XB4 B or XB5 A pushbuttons
T1	100 VA transformer 220 V secondary

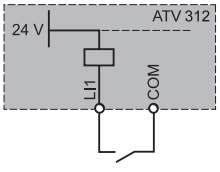
Examples of recommended schemes

Logic input switches

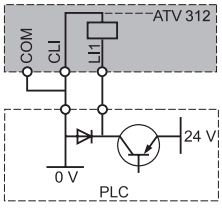
"Source" position

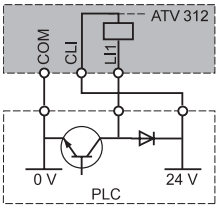


"Sink" position



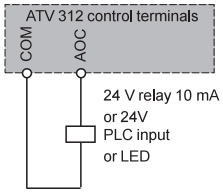
CLI position with PLC transistor outputs



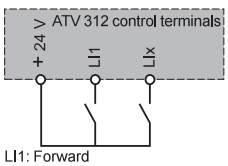


AOC output

Wired as logic output

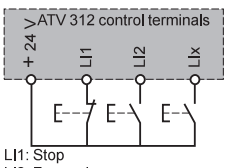


2-wire control



LI1: Forward
LIx: Reverse

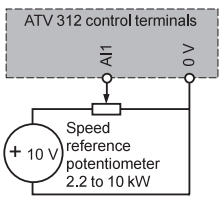
3-wire control



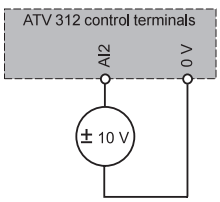
LI1: Stop
LI2: Forward
LIx: Reverse

Voltage analogue inputs

External + 10 V

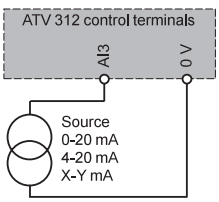


External ± 10 V



Current analogue input

0-20 mA, 4-20 mA, X-Y mA



Automation & Control

Control and Connection Components

Relays, Timers & Analogue Converters



Zelio Relays

Selection Guide	Page 3.3.1
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Solid State Relays	Page 3.3.8

Zelio Timing Relays

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Zelio Control & Measurement Relays

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Zelio Analogue Converters

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3.3

Smart Relays



Zelio Logic Smart Relays

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Communication modules	Page 3.3.28
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Transformers & Power Supplies



Phaseo Power Supplies

Modular Power Supplies	Page 3.3.29
Optimum Power Supplies	Page 3.3.30
Universal Power Supplies	Page 3.3.30
DC-DC Converters	Page 3.3.29
Battery & Back Up Modules	Page 3.3.29
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Transformers

Control and Isolation Transformers	Page 3.3.30

Automation & Wiring Systems



M221 Programmable Logic Controllers

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Wiring Systems

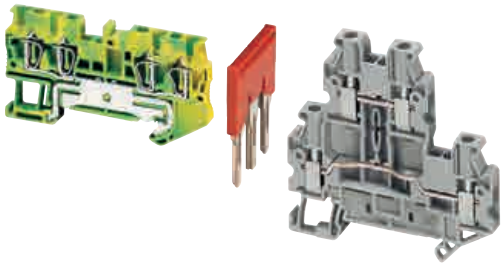
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AS-interface Components

AS-interface Masters	Page 3.3.40
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AS-interface IP67 Components	Page 3.3.41
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3.3

Terminal Blocks & Cable Ends



Terminal Blocks

Screw Terminal Blocks	Page 3.3.43
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Cable Ends

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Fixing Accessories



Fixing Accessories

Cavity & Masonry Fixings	Page 3.3.49

Selection Guide

Electromechanical Plug-In Relays



Reference family	RSL Slim Relays	RSB Interface Relay	RXG Interface Relay	RXM Miniature Relays	RUM Universal Relays	RPM Power Relays
Number of contacts	1 CO	1 or 2 CO	1 or 2 CO	2, 3 or 4 CO	2 or 3 CO	1, 2, 3 or 4 CO
Current	6A	8-12-16A	5-10A	6-10-12A	10A	15A
Mounting	DIN rail	DIN rail	DIN rail	DIN rail	DIN rail	DIN rail or Panel
Width	6.2 mm	15.5 mm	16mm	27 mm	38 mm	<41 mm
Option for Test Button & LED	LED	No	Test Button & LED	Test Button & LED	Test Button & LED	Test Button & LED

3.3

Benefit from

- Wide choice of number of contacts (up to 4CO).
- Simplicity of installation and maintenance.
- Standardization of relay pin arrangement on its socket.
- “Test” button for checking the relay functions, even in a remote enclosure.
- Clear indication of contact status via mechanical indicator and LED indicator.
- Suitable input/output currents and switching voltages.



Selection Guide

Solid State Relays







Reference family	SSL Slim SSR	SSM Modular SSR	SSP Panel Mount SSR
Number of contacts	1 N/O	1 or 2 NO	1 or 3 NO
Load Current	up to 2A	up to 12A	up to 125A
DC Load Voltage	1...48VDC	1...100VDC	3...150VDC
AC Load Voltage	24...280VAC	24...600VAC	24...660VAC
Mounting	Din Rail	DIN Rail	Panel Mount
Width	6.2mm	12mm / 18mm	Refer to individual model

Benefit from

- Unlimited service life.
- Insensitive to vibration.
- Wide supply voltage range and high breaking current (up to 125A), suited to packaging and textile machines.
- Completely silent switching, providing suitability for building and hospital applications.



Zelio RSL Slim Relays and Accessories



RSL1PVJU

RSL Slim Relay, pre-assembled

Standard relays mounted on socket equipped with LED and protection circuit
1 C/O contact, 6A thermal current, 6mm wide, maximum switching voltage 400VAC/300VDC
Screw connector or spring terminal socket type

Operating Voltage (V)	Screw terminal Reference	Spring terminal Reference
12VAC/DC	RSL1PVJU	RSL1PRJU
24VAC/DC	RSL1PVBU	RSL1PRBU
48VAC/DC	RSL1PVEU	RSL1PREU
110VAC/DC	RSL1PVFU	RSL1PRFU
230VAC/DC	RSL1PVPU	RSL1PRPU



RSL1GB4BD

Replacement Relays

Relays with flat, reinforced pin (PCB type)
1 C/O contact, 6A thermal current
Standard or low level

Control Circuit Voltage (V)	Standard Reference	Low Level Reference
12VDC	RSL1AB4JD	RSL1GB4JD
24VDC	RSL1AB4BD	RSL1GB4BD
48VDC	RSL1AB4ED	RSL1GB4ED
60VDC	RSL1AB4ND	RSL1GB4ND

3.3



RSLZVA1

Replacement Sockets

Sockets equipped with LED and protection circuit

Operating Voltage (V)	For use with relays	Screw Terminal Reference	Spring Terminal Reference
12VAC/DC AND 24VAC/DC	RSL1•B4JD RSL1•B4BD	RSLZVA1	RSLZRA1
48VAC/DC AND 60VAC/DC	RSL1•B4ED RSL1•B4ND	RSLZVA2	RSLZRA2
110VAC/DC	RSL1•B4ND	RSLZVA3	RSLZRA3
230VAC/DC	RSL1•B4ND	RSLZVA4	RSLZRA4

Accessories for Sockets

Description	Compatibility	Reference
Clip-in legend (2 sheets of 64 legends)	With all sockets	RSLZ5
Bus jumper (10x20-pole jumper)	With all sockets	RSLZ2
Partition plate (10 partition plates)	With all sockets	RSLZ3

Zelio RXG and RSB Interface Relays



RXG22BD

RXG Interface Relay

Type of contacts	Integrated LED	Test button	Reference
1 C/O - 10A	No	No	RXG15 ·· (1)
	Yes	No	RXG13 ·· (1)
	Yes	Yes	RXG12 ·· (1)
2 C/O - 5A	No	No	RXG25 ·· (1)
	Yes	No	RXG23 ·· (1)
	Yes	Yes	RXG22 ·· (1)



RSB2A080BD

RSB Interface Relays

Type of contacts	Integrated LED	Test button	Coil type	Reference
1 C/O - 16A	No	No	DC	RSB1A160•• (1)
			AC	RSB1A160•• (1)
			230V AC	RSB1A160P7 (1)
2 C/O - 8A	No	No	DC	RSB2A080•• (1)
			AC	RSB2A080•• (1)
			230V AC	RSB2A080P7 (1)

Standard coil voltages ••						
AC supply						
Volts ⌙			24	48	110	230
Code			B7	E7	F7	P7
DC supply						
Volts ⎓	6	12	24	48	110	
Code	RD	JD	BD	ED	FD	



RSZE1S48M

Base to suit RXG and RSB Relays

Description	Reference
Standard socket for RSB relay When using an RSB1A160** relay with an RSZE1S148M base, the base terminals must be linked: 11 - 21, 14 - 24 and 12 - 22.	RSZE1S48M
Socket for 1 C/O RXG Relays with clamp	RGZE1S35M
Socket for 2C/O RXG Relays with clamp	RGZE1S48M



Relay RSB +
Base RSZE1S48M
+ accessories

Protection Modules and Accessories

Description	For use with	Voltage	Reference
Diode	RGZ and RSZ bases	⎓ 6…230	RZM040W
RC Circuit	RGZ and RSZ bases	∿ 24…60	RZM041BN7
		∿110…240	RZM041FU7
Diode + green LED	RGZ and RSZ bases	⎓ 6…24	RZM031RB
		⎓ 24…60	RZM031BN
		⎓ 110…230	RZM031FPD
Varistor + green LED	RGZ and RSZ bases	∿ or ⎓ 6…24	RZM021RB
		∿ or ⎓ 24…60	RZM021BN
		∿ or ⎓ 110…240	RZM021FP
Plastic maintaining clamp	RGZ and RSZ bases	-	RSZR215
Clip-on Legend for Socket	RGZ and RSZ bases	-	RSZL300

Note:
(1) "••" complete reference with coil voltage code as per table. eg. RSB2A080BD for 24VDC.

Zelio RXM Miniature Relays and Accessories



RXM4AB2P7

RXM Miniature Relays

Type of contacts	Integrated LED	Test button (1)	Reference
2 C/O - 12A	No	Yes	RXM2AB1•• (2)
3 C/O - 10A	No	Yes	RXM3AB1•• (2)
4 C/O - 6A	No	Yes	RXM4AB1•• (2)
2 C/O - 12A	Yes	Yes	RXM2AB2•• (2)
3 C/O - 10A	Yes	Yes	RXM3AB2•• (2)
4 C/O - 6A	Yes	Yes	RXM4AB2•• (2)
4 C/O - 3A (low signal)	No	Yes	RXM4GB1•• (2)
4 C/O - 3A (low signal)	Yes	Yes	RXM4GB2•• (2)



Relay RXM + Base RXZE2M114M

Standard coil voltages ••					
AC supply					
Volts ∿		24	48	120	230/240
Code		B7	E7	F7	P7
DC supply					
Volts ⎓	12	24	48	110	
Code	JD	BD	ED	FD	

Spring clamp



RXZE2S114S

RXZ Bases

Relay Type	Contact terminals arrangement	Terminal Type	Reference
Base to suit RXM2 relays	coil and contact terminals separate	Screw clamp	RXZE2S108M
Base to suit RXM3 relays	coil and contact terminals separate	Screw clamp	RXZE2S111M
Base to suit RXM4 relays	coil and contact terminals separate	Screw clamp	RXZE2S114M
Base to suit RXM2 and RXM4 relays	coil terminals on the same side with contacts	Screw clamp	RXZE2M114M
Base to suit RXM2 and RXM4 relays	coil and contact terminals separate	Spring clamp	RXZE2S114S



Relay RXM + Base RXZE2S114M + accessories

RXM Protection Modules and Accessories

Description	For use with	Voltage	Reference
Diode	RXZ bases	⎓ 6…250	RXM040W
RC Circuit	RXZ bases	∿ 24…60	RXM041BN7
		∿ 110…240	RXM041FU7
Varistor	RXZ bases	∿ or ⎓ 6…24	RXM021RB
		∿ or ⎓ 24…60	RXM021BN
		∿ or ⎓ 110…240	RXM021FP
Metal maintaining clamp	RXZ bases	-	RXZ400
Plastic maintaining clamp	RXZ bases	-	RXZR335
Jumper link - 2-pole	RXZE2S bases	-	RXZS2
Clip-in tag/legend	All relays (sheet of 108)	-	RXZL520
	RXZ bases	-	RXZL420

Note:

(1) All RXM relays as standard: mechanical flag indicator; removable tag and test button with manual override.

(2) "••" complete reference with coil voltage code as per table. eg. RXM4AB2BD for 24VDC.
For stocking policy of coil voltages, please refer to the Alpha Numeric section.

Zelio RUM Universal Relays and Accessories



RUMC32P7

RUM Universal Relays, 10A - Round Pin

Type of contacts	Integrated LED	Test button (1)	Reference
2 C/O - 10A - 8 pins	No	Yes	RUMC21•• (2)
3 C/O - 10A - 11 pins	No	Yes	RUMC31•• (2)
2 C/O - 10A - 8 pins	Yes	Yes	RUMC22•• (2)
3 C/O - 10A - 11 pins	Yes	Yes	RUMC32•• (2)



Base RUZC3M
11 round pins

RUM Universal Relays, 10A - Flat Pin

Type of contacts	Integrated LED	Test button (1)	Reference
2 C/O - 10A	Yes	Yes	RUMF22•• (2)
3 C/O - 10A	Yes	Yes	RUMF32•• (2)

Standard coil voltages ••					
AC supply					
Volts ⌙		24	48	120	230/240
Code		B7	E7	F7	P7
DC supply					
Volts ⎓	12	24	48	110	
Code	JD	BD	ED	FD	



Base RUZSF3M
Flat pins

RUZ Bases

Relay type	Contact terminals arrangement	Screw Terminal Type	Reference
Base to suit RUMC2 relays	coil and contact terminals separate	Box clamp	RUZSC2M
Base to suit RUMC3 relays	coil and contact terminals separate	Box clamp	RUZSC3M
Base to suit RUMC2 relays	coil terminals on the same side with contacts	Box clamp	RUZC2M
Base to suit RUMC3 relays	coil terminals on the same side with contacts	Box clamp	RUZC3M
Base to suit RUMF2 and RUMF3 relays	coil and contact terminals separate		RUZSF3M

RUM Protection Modules and Accessories

Description	For use with	Voltage	Reference
Diode	RUZ bases	⎓ 6…250	RUW240BD
RC Circuit	RUZ bases	∿ 110…240	RUW241P7
Varistor	RUZ bases	∿ or ⎓ 24	RUW242B7
		∿ or ⎓ 240	RUW242P7
Metal maintaining clamp	RUZ bases	-	RUZC200
Jumper link - 2 pole	RUZS bases	-	RUZS2
Clip-in tag/legend	All relays (sheet of 108)	-	RXZL520
	RUZS bases	-	RUZL420

Note:
(1) All RUM relays as standard: mechanical flag indicator; removable tag and test button with manual override.
(2) "••" complete reference with coil voltage code as per table. E.g: RUMC2AB2BD for 24VDC.
For stocking policy of coil voltages, please refer to the Alpha Numeric section.

Zelio RPM/RPF Power Relays and Accessories

RPM Power Relays, 15A



rpm22bd

Type of contacts	Integrated LED	Test button (1)	Reference
1 C/O - 15A	No	Yes	RPM11•• (2)
2 C/O - 15A	No	Yes	RPM21•• (2)
3 C/O - 15A	No	Yes	RPM31•• (2)
4 C/O - 15A	No	Yes	RPM41•• (2)
1 C/O - 15A	Yes	Yes	RPM12•• (2)
2 C/O - 15A	Yes	Yes	RPM22•• (2)
3 C/O - 15A	Yes	Yes	RPM32•• (2)
4 C/O - 15A	Yes	Yes	RPM42•• (2)

Standard coil voltages ••					
AC supply					
Volts ⌙		24	48	120	230/240
Code		B7	E7	F7	P7
DC supply					
Volts ⎓	12	24	48	110	
Code	JD	BD	ED	FD	

RPZ Bases



Relay RPM42BD + Base RPZF4 + Varistor RXM021RB

Description	Screw Terminal Type	Reference
Base to suit RPM1 relays	Box clamp	RPZF1
Base to suit RPM2 relays	Box clamp	RPZF2
Base to suit RPM3 relays	Box clamp	RPZF3
Base to suit RPM4 relays	Box clamp	RPZF4

RPM Protection Module and Accessories

Description	For use with	Voltage	Reference
Diode	RPZF1 and RPZF2 bases	⎓ 6…250	RXM040W
	RPZF3 and RPZF4 bases	⎓ 6…250	RUW240BD
RC Circuit	RPZF1 and RPZF2 bases	∿ 24…60	RXM041BN7
		∿ 110…240	RXM041FU7
	RPZF3 and RPZF4 bases	∿ 110…240	RUW241P7
Varistor	RPZF1 and RPZF2 bases	∿ or ⎓ 6…24	RXM021RB
		∿ or ⎓ 24…60	RXM021BN
		∿ or ⎓ 110…240	RXM021FP
	RPZF3 and RPZF4 bases	∿ or ⎓ 24	RUW242B7
		∿ or ⎓ 240	RUW242P7
Metal maintaining clamp	RPZF1 base	-	RPZR235

RPF Power Relays, 30A (3) (4)



Relay RPF2BP7

Type of contacts	Integrated LED	Test button	Reference
2 C/O - 30A (4)	No	No	RPF2B••
2 N/O - 30A (4)	No	No	RPF2A••

Standard coil voltages				
AC supply				
Volts ∿	24		120	230/240
Code	B7		F7	P7
DC supply				
Volts ⎓	12	24	110	
Code	JD	BD	FD	

Note:
(1) All RPM relays as standard: mechanical flag indicator; removable tag and test button with manual override.
(2) "••" complete reference with coil voltage code as per table. E.g: RPF2BBD for 24VDC.
For stocking policy of coil voltages, please refer to the Alpha Numeric section.
(3) Din rail or panel mounting.
(4) 30A when mounted with a 13mm gap between two relays and 25A when mounted without gap.

Zelio SSR Solid State Relays and Accessories



SSL1A12JD



SSLZVA1 + SSL1D03JD



RSLZ2

SSL Solid State Slim Relays

Switching	Voltage Control Input	Load Output	Load Current	Reference
DC Switching	3...12VDC	1...24VDC	3.5A	SSL1D03JD
		1...48VDC	0.1A	SSL1D101JD
	15...30VDC	1...24VDC	3.5A	SSL1D03BD
	16...30VDC	1...48VDC	0.1A	SSL1D101BD
	38...72VDC	1...24VDC	3.5A	SSL1D03ND
		1...48VDC	0.1A	SSL1D101ND
Zero Voltage Switching	3...12VDC	24...280VAC	2A	SL1A12JD
	15...30VDC	24...280VAC	2A	SL1A12BD
	38...72VDC	24...280VAC	2A	SL1A12ND
Random Switching	3...12VDC	24...280VAC	2A	SL1A12JDR
	15...30VDC	24...280VAC	2A	SL1A12BDR
	38...72VDC	24...280VAC	2A	SL1A12NDR

SSL Sockets with LED

Control Voltage (Nominal)	For use with Relays	Screw Connector Socket Reference	Spring Terminal Socket Reference
5VDC	SSL1D03JD, SSL1D101JD SSL1A12JD, SSL1A12JDR	SSLZVA1	SSLZRA1
24VDC	SSL1D03BD, SSL1D101BD SSL1A12BD, SSL1A12BDR	SSLZVA1	SSLZRA1
60VDC	SSL1D03ND, SSL1D101ND SSL1A12ND, SSL1A12NDR	SSLZVA2	SSLZRA2
110VAC/DC	SSL1D03ND, SSL1D101ND SSL1A12ND, SSL1A12NDR	SSLZVA3	SSLZRA3
230VAC/DC	SSL1D03ND, SSL1D101ND SSL1A12ND, SSL1A12NDR	SSLZVA4	SSLZRA4

Accessories for SSL Sockets

Description	Compatibility	Reference
Clip-on Legend (2 sheets of 64 legends)	SSL sockets	RSLZ5
Bus Jumper (10 x 20 pole jumpers)	SSL sockets	RSLZ2
Partition plate (10 partition plates)	SSL sockets	RSLZ3

Note:
(1) For load current range 75, 90 and 125A relays, please contact Schneider Electric at 1300 369 233
(2) Panel mounted SSR relays can be fitted with heat sink accessory.
(3) DIN rail mounted SSR relays has a built-in heat sink.

Zelio SSR Solid State Relays and Accessories



SSM1A36BD



SSM1A120M7



SSM1A445BD



SSM3A325F7

SSM1 DIN Rail Mount Single Phase Solid State Relays (12 and 18mm)

Switching	Voltage Control Input	Load Output	Load Current	Reference
DC Switching	4...32VDC	1...60VDC	6A	SSM1D26BD
			12A	SSM1D212BD
		1...100VDC	6A	SSM1D36BD
			12A	SSM1D312BD
Zero Voltage Switching*	4...32VDC	24...280VAC	6A	SSM1A16BD
			12A	SSM1A112BD
		48...600VAC	6A	SSM1A36BD
			12A	SSM1A312BD
	18...36VAC	24...280VAC	6A	SSM1A16B7
			12A	SSM1A112B7
		48...600VAC	12A	SSM1A312B7
	90...140VAC	24...280VAC	6A	SSM1A16F7
			12A	SSM1A112F7
		48...600VAC	12A	SSM1A312F7
	200...265VAC	24...280VAC	6A	SSM1A16P7
			12A	SSM1A112P7
		48...600VAC	12A	SSM1A312P7

*For Random Switching SSR, add "R" at the end of the part number i.e. SSM1A16BD**R**

SSM1 Panel Mount Single Phase Solid State Relays (22.5 and 45mm)

Switching	Voltage Control Input	Load Output	Load Current	Reference
Zero Voltage Switching	4...32VDC	24...280VAC	20A	SSM1A120BD
			30A	SSM1A130BD
	3...32VDC	24...280VAC	45A	SSM1A145BD
	4...32VDC	48...660VAC	30A	SSM1A430BD
			45A	SSM1A445BD
		48...600VAC	55A	SSM1A455BD
	90...280VAC	24...280VAC	20A	SSM1A120M7
			30A	SSM1A130M7
		48...660VAC	30A	SSM1A430M7
	90...140VAC	24...280VAC	45A	SSM1A145F7
		48...660VAC	55A	SSM1A455F7

SSM2 Panel Mount Three Phase Solid State Relays, Dual Channel

Switching	Voltage Control Input	Load Output	Load Current	Reference
Zero Voltage Switching	4...32VDC	24...280VAC	6A	SSM2A16BD
		48...600VAC	6A	SSM2A36BD
Random Switching	4...32VDC	24...280VAC	6A	SSM2A16BDR
		48...660VAC	6A	SSM2A36BDR

SSM3 Panel Mount Three Phase Solid State Relays

Switching	Voltage Control Input	Load Output	Load Current	Reference
Zero Voltage Switching	4...32VDC	48...600VAC	25A	SSM3A325BD
	90...140VAC	48...600VAC	25A	SSM3A325F7
Random Switching	180...280VAC	48...600VAC	25A	SSM3A325P7
	4...32VDC	48...660VAC	25A	SSM3A325BDR

Zelio SSR Solid State Relays and Accessories



SSP1D425BDT



SSP1A125BDS



SSP3A225P7T



SSRHP07



SSRAL1

SSP1 Panel Mount Single Phase Solid State Relays with embedded thermal pad

Switching	Voltage Control Input	Load Output	Load Current	Reference
DC Switching	3...32VDC	1...150VDC	12A	SSP1D412BDT
			25A	SSP1D425BDT
			40A	SSP1D440BDT
Zero Voltage Switching	3...32VDC	24...300VAC	10A	SSP1A110BDT
			25A	SSP1A125BDT
		48...600VAC	50A	SSP1A150BDT
			75A	SSP1A175BDT
	4...32VDC	24...300VAC	50A	SSP1A450BDT
			75A	SSP1A475BDT
			90A	SSP1A490BDT
			125A	SSP1A4125BDT
	90...280VAC	24...300VAC	10A	SSP1A110M7T
			25A	SSP1A125M7T
			50A	SSP1A150M7T
			75A	SSP1A175M7T
	90...280VAC	24...300VAC	50A	SSP1A450M7T
			75A	SSP1A475M7T
			90A	SSP1A490M7T
			125A	SSP1A4125M7T
Zero Voltage Switching include smart diagnostic feature	3...32VDC	24...300VAC	25A	SSP1A125BDS
			50A	SSP1A150BDS
	4...32VDC	24...300VAC	50A	SSP1A450BDS
			75A	SSP1A475BDS
			90A	SSP1A490BDS
			125A	SSP1A4125BDS

SSP3 Panel Mount Three Phase Solid State Relay with embedded thermal pad

Switching	Voltage Control Input	Load Output	Load Current	Reference
Zero Voltage Switching*	4...32VDC	48...530VAC	25A	SSP3A225BDT
			50A	SSP3A250BDT
	18...36VAC	48...530VAC	25A	SSP3A225B7T
			50A	SSP3A250B7T
	90...140VAC	48...530VAC	25A	SSP3A225F7T
			50A	SSP3A250F7T
	180...280VAC	48...530VAC	25A	SSP3A225P7T
			50A	SSP3A250P7T

*For Random Switching, replace the last letter "T" with "RT" i.e SSP3A225BD**RT**

Heat Sink for SSP Relays

Mounting	Number and type of relays supported	Surface area cm²	Thermal °C/W	Reference
Panel Mount	Up to 3 units of SSP1 1 unit of SSP3	4406	0.5	SSRHP05
	1 unit of SSP1	1640	0.7	SSRHP07
	Up to 3 units of SSP1 1 unit of SSP3	1640	1	SSRHP10
	Up to 2 units of SSP1	659	1.7	SSRHP17
DIN Rail Mount	Up to 3 units of SSP1 1 unit of SSP3	1425	1	SSRHD10

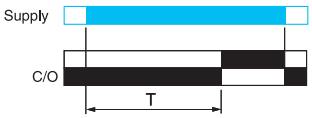
Accessories

Description	Type of Relay supported	Reference
Copper terminal lug for AWG 6 (13.3 mm²) to AWG 0 (53.5 mm²)	SSP1	SSRAL1 *
Copper terminal lug for AWG 14 (2.1 mm²) to AWG 6 (13.3 mm²)	SSP1	SSRAL2 *

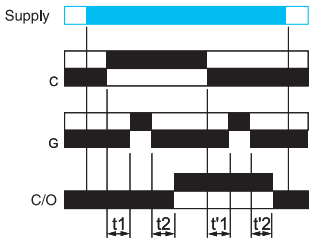
*in lots of 10pcs

Timing Diagrams

Function A:
Delay on energisation

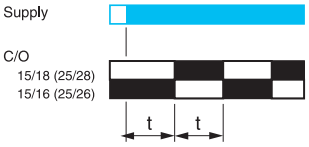


Function Ac:
Timing after closing and opening of control contact

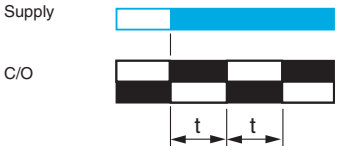


T = t1 + t2 + …
T = t'1 + t'2 + …

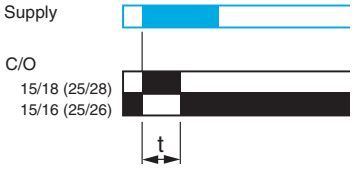
Function D:
Symmetrical flasher, start with output in rest position



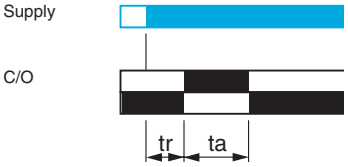
Function Di:
Symmetrical flasher, start with output in operating position



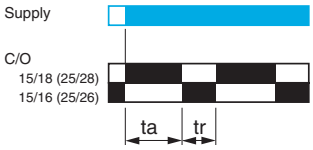
Function H:
Timing on energisation
Pulse-on energisation



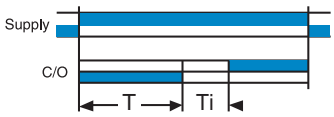
Function L:
Asymmetrical recycler
Start after pause



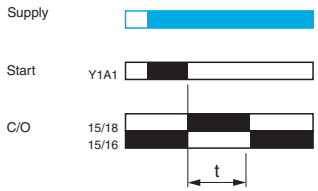
Function Li:
Asymmetrical recycler
Pulse star



Function Q:
Star-delta starting



Function W:
Star on opening of external control contact



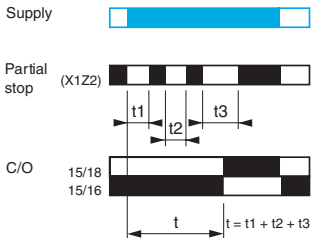
Functions

C/O: relay or solid state output
t, T: timing period
C: Control Contact
G: Gate
ta: Adjustable On-Delay
tr: Adjustable Off-Delay

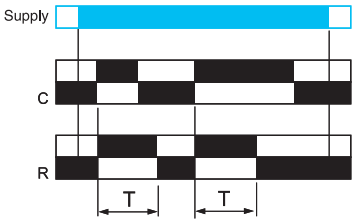
Function diagram:
Relay de-energised
Relay energised
Output open
Output closed

Timing Diagrams

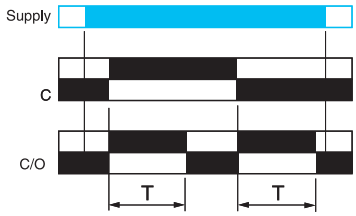
Function At:
Timing on energisation with memory



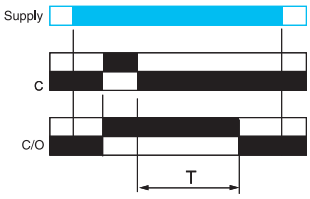
Function B:
Timing on impulse, one shot



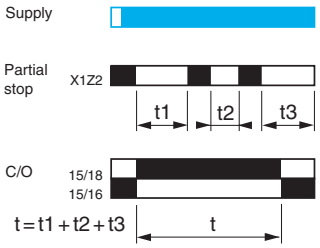
Function Bw:
Pulse output (adjustable)



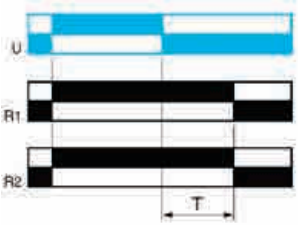
Function C:
Off-delay, with control contact



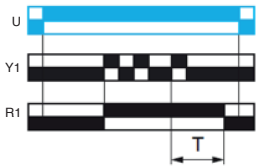
Function Ht:
Delay on energisation with memory



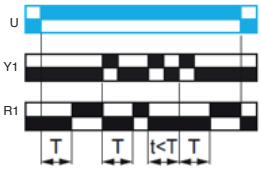
Function K:
Delay on de-energisation True off-delay (without auxiliary supply) 2 timed contracts



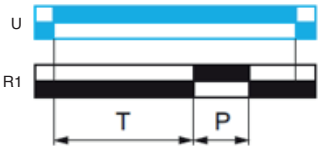
Function N:
Safe-guard relay



Function O:
Delayed safe-guard relay

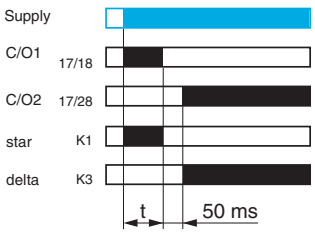


Function P:
Pulse delay relay with fixed pulse length

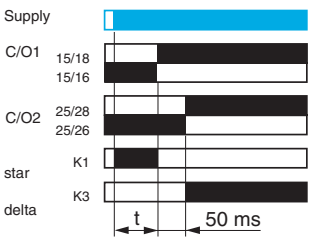


P = 500 ms

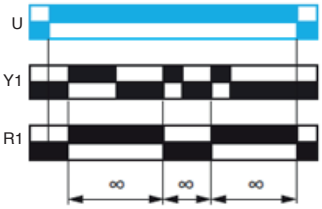
Function Qg:
Timing relays for star-delta starters



Function Qt:
Timing relay for star-delta starters



Function Ti:
Bistable Relay with control signal on



Timing Relays and Counters

Selection Guide

Timing Relays				Counters	
					
Format	**Modular 17.5 mm**	**Industrial 22.5 mm**	**Plug-in 22mm or 48 mm**	**Panel 24 x 48**	**Panel 48 x 48**
Timing range	1 s-100 h	0.6 s-300 h	1.2 s-300 h		
Functions	30 possibilities and combinations including On-delay, Off-delay, Flashing, Star-Delta, etc				
Number of Functions	26	24	10		
Output Relay	Yes	Yes	Yes		
Solid state output	Yes	Yes	No		
Display Type	Mechanical and LED		Mechanical	LCD	
Number of digits				6 or 8	6
Supply	24VDC, 24….240VAC			Battery	24VDC, 115-230VAC
References	RE17	RE22	REXL, RE48	XBKT	XBKP6
Pages	3.3.12	3.3.13	3.3.15	3.3.16	3.3.16

3.3

Benefit from

- Modular or Industrial or plug-in offers.
- Single or multifunction ranges.
- Wide power supply range.
- Time range : 0.1s to 300h.
- Relay or solid-state output.
- Settings protection by sealable plastic cover.
- Choice of frequency from 30 to 7.5 kHz.
- High autonomy and low power consumption.
- LED powered rotating dial for easy identification and configuration

Zelio RE17 Modular Timers
Relay or Solid state Output - 17.5mm 1 C/O, 8A



RE17RAMU



RE17LAMW



RE17RMMW



RM17RMMWS
Spring Clamp Connections

On-delay

Description	Function Code (1)	Output Type	Supply Voltage	Reference
Delay on energisation - supply control or external control - with memory (T=T1 + T2) - 1s to 100h in 7 settings	A, At	1 C/O relay (8A)	24VDC or 24…240VAC	RE17RAMU
	A	1 solid state (0.7A)	24...240VAC/DC	RE17LAMW

Off-delay

Description	Function Code (1)	Output Type	Supply Voltage	Reference
Delay on de-energisation - external control - 1s to 100h in 7 settings	C	1 C/O relay (8A)	24VDC or 24…240VAC	RE17RCMU
	C	1 solid state (0.7A)	24…240VAC	RE17LCBM

Timing on Energisation

Description	Function Code (1)	Output Type	Supply Voltage	Reference
Timing on energisation - supply control or external control - with memory (T=T1+T2) - 1s to 100h in 7 settings	H, Ht	1 C/O relay (8A)	24VDC or 24…240VAC	RE17RHMU
	H	1 solid state (0.7A)	24…240VAC	RE17LHBM

Timing on Impulse

Description	Function Code (1)	Output Type	Supply Voltage	Reference
One shot impulse timing - external control - 1s to 100h in 7 settings	B	1 C/O relay (8A)	24VDC or 24…240VAC	RE17RBMU

Flashing

Description	Function Code (1)	Output Type	Supply Voltage	Reference
Asymetrical flashing - on time different to off time - supply control - start with output on or off - 1s to 100h in 7 settings	L, Li	1 C/O relay (8A)	24VDC or 24…240VAC	RE17RLMU
			12VAC/DC	RE17RLJU

Multi-function

Description	Function Code (1)	Output Type	Supply Voltage	Reference
8 functions: - On-delay - Off-delay - timing on energisation - timing on impulse - symmetrical flashing	A-At-B-C-D-Di-H-Ht	1 C/O relay (8A)	24VDC or 24…240VAC	RE17RMEMU
10 functions: - On-delay - Off-delay - timing on energisation - timing on impulse - symmetrical flashing - timing on external input edges - pulsed output on external input edges	A-Ac-At-B-Bw-C-D-Di-H-Ht	1 C/O relay (8A)	24VDC or 24…240VAC	RE17RMMU
			12…240VAC/DC	RE17RMMW
			12VAC/DC	RE17RMJU
	A-Ac-At-B-Bw-C-D-Di-H-Ht	1 solid state (0.7A)	24…240VAC	RE17LMBM

Note:
(1) Utilise timing diagrams on page 3.3.9 and 3.3.10 for characteristics of relays.

Zelio RE22 Industrial Timers – Relay Output – 22.5mm



RE22R2AMU

On-Delay

Timing Range	Function Code (1)	Relay Output	Supply Voltage	Reference
0.1s...100h	A, At	2 C/O (8A)	AC or DC 24...240V	RE22R2AMU
0.05...300hr	A, At, Aw	1 C/O (8A)	AC or DC 24...240V	RE22R1MAMR
	A, Aw	1 C/O (8A)	AC or DC 24...240V	RE22R1AMR
		2 C/O (8A)	AC or DC 24...240V	RE22R2AMR



RE22R2KMR

Off-Delay

Timing Range	Function Code (1)	Relay Output	Supply Voltage	Reference
0.05s...10min	K	1 C/O (5A)	AC or DC 24...240V	RE22R1KMR
		2 C/O (5A)	AC or DC 24...240V	RE22R2KMR
0.05...300hr	C, Ct	1 C/O (8A)	AC or DC 24...240V	RE22R1CMR
		2 C/O (8A)	AC or DC 24...240V	RE22R2CMR

On & Off Delay

Timing Range	Function Code(1)	Relay Output	Supply Voltage	Reference
0.05...300hr	Ak, Akt	1 C/O (8A)	AC or DC 24...240V	RE22R1AKMR
	Ac, Act	1 C/O (8A)	AC or DC 24...240V	RE22R1ACMR
	Ac	2 C/O (8A)	AC or DC 24...240V	RE22R2ACMR



RE22R1AKMR

Multifunction Timer

Timing Range	Function Code (1)	Relay Output	Supply Voltage	Reference
0.1s...100h - on/off delay - pulse start - flashing	A, At, Ac, B, Bw, C, D, Di, H,	2 C/O (8A)	DC 12...240V AC 12...240V	RE22R2MMW
	A, At, Ac, B, Bw, C, D, Di, H, Ht	2 C/O (8A)	DC 24V AC 24...240V	RE22R2MMU
			AC or DC 12V	RE22R2MJU
External control: - partial stop - adjustment time	Ad, Ah, N, O, P, Pt, Ti, Tt, W	2 C/O (8A)	DC 24V AC 24...240V	RE22R2MXMU
0.05s...300h	A, At, Aw, C, Ct, D, Dt, Dw, Di, Dit, Diw H, Ht, Hw, W, Wt	1 C/O (8A)	AC or DC 24...240V	RE22R1MYMR
0.05s...300h including star-delta starting	A, At, Aw, C, Ct, D, Dt, Dw, Di, Dit, Diw H, Ht, Hw, W, Wt Qg, Qgt, Qt, Qtt	2 C/O (8A)	AC or DC 24...240V	RE22R2MYMR
0.05s...300h pulse-on / delay on de-energisation	He, K	1 C/O (5A)	AC or DC 24...240V	RE22R1MKMR



RE22R2MMW



RE22R1MYMR

Note:

Utilise timing diagram in the pages before for Function Code reference

(1) Function code ends with additional "t" at the end : external pause/summation control available
Function code ends with additional "w" at the end : external retrigger/restart control available

Utilise timing diagram in the pages before for Function Code reference

(2) Remote adjustment by external potentiometer to be ordered separately. If external potentiometer is fitted, the internal potentiometer is automatically disconnected

Zelio RE22 Industrial Timers – Relay Output – 22.5mm
Zelio XBK Counters


RE22R1QMU

Start-Delta Timing Relay

Timer Range	Function Code (1)	Relay Output	Supply Voltage	Reference
0.1s...100hr	Q	1 C/O (8A)	DC 24V AC 24...240V	RE22R1QMU
			AC 230...440VAC	RE22R1QMQ
0.05s...300hr	Qt	2 C/O (8A)	AC or DC 24...240V	RE22R2QTMR
	Qg	2 C/O (8A)	AC or DC 24...240V	RE22R2QGMR
0.1s...300s	Qc	1 C/O (8A)	DC 24V AC 24...240V	RE22R1QCMU
0.3s...30s	Qe	2 C/O (8A)	AC or DC 24...240V	RE22R2QEMR
			AC 230...440VAC	RE22R2QEMT


RE22R1MLMR

Asymmetrical Flashing

Function	Function Code (1)	Relay Output	Supply Voltage	Reference
0.05s...300h	L, Lt, Li, Lit	1 C/O (8A)	AC or DC 24...240V	RE22R1MLMR


RE22R1DMR

Symmetrical Flashing

Function	Function Code (1)	Relay Output	Supply Voltage	Reference
0.05s...300h	D, Dw	1 C/O (8A)	AC or DC 24...240V	RE22R1DMR
		2 C/O (8A)	AC or DC 24...240V	RE22R2DMR

Interval Timing Relay

Function	Function Code (1)	Relay Output	Supply Voltage	Reference
0.05s...300h	H, Hw	1 C/O (8A)	AC or DC 24...240V	RE22R1HMR
		2 C/O (8A)	AC or DC 24...240V	RE22R2HMR
	W, Wt	2 C/O (8A)	AC or DC 24...240V	RE22R2MWMR


XBKT81030U33E

Totalising Counter

Display Type	Input Type	Counting Frequency	Size (mm)	Number of Digit	Supply Voltage	Reference
LCD	Transistor	30Hz to 7500Hz	24 x 48	8	Battery	XBKT81030U33E
Mechanical	Contact	Up to 25Hz	50 x 60	6	24VDC	XBKT60000U10M


XBKP61130G3

Hour Counter

Display Type	Input Type	Counting Frequency	Size (mm)	Number of Digit	Supply Voltage	Reference
LCD	Transistor/ Contact	Adding 1/100 of an hour	24 x 48	8	Battery	XBKH81000033E

Multifunction Counter 48 x 48mm

Display Type	Input Type	Counting Frequency	Number of Digit	Supply Voltage	Reference
Predetermining	Contact	Uni-directional 5000 Hz Bi-directional 2500 Hz	6 LCD	24VDC	XBKP61130G30E
				240VAC	XBKP61130G32E

Note:
Utilise timing diagram in the pages before for Function Code reference
(1) Function code ends with additional "t" at the end : external pause/summation control available
Function code ends with additional "w" at the end : external retrigger/restart control available
Utilise timing diagram in the pages before for Function Code reference
(2) Remote adjustment by external potentiometer to be ordered separately. If external potentiometer is fitted, the internal potentiometer is automatically disconnected

Timing Relays

Zelio REXL Miniature Plug-in Timing Relays
Zelio RE48 Industrial Plug-in Timing Relays
Zelio RE88 Digital Panel Mount Timing Relays



REXL2TMBD



REXL4TMBD

Miniature Plug-in Timing Relays

Description	Function Code (1)	Output Type	Supply Voltage	Reference
Delay on energisation - supply control - 1s to 100h in 7 settings	A	2 C/O (5A)	12VDC	REXL2TMJD
			24VDC	REXL2TMBD
			24VAC	REXL2TMB7
			120VAC	REXL2TMF7
			240VAC	REXL2TMP7
		4 C/O (3A)	12VDC	REXL4TMJD
			24VDC	REXL4TMBD
			24VAC	REXL4TMB7
			120VAC	REXL4TMF7
			240VAC	REXL4TMP7

Miniature Timing Relay Bases

Description	For use with	Reference
Base with contact and coil terminals separated	REXL relays	RXZE2S114M



RE48AML12MW

Industrial Plug-in Timing Relays (48 x 48mm)

Description	Function Code (1)	Output Type	Supply Voltage	Reference
8-pin delay on energisation - supply control or external control - with memory (T=T1+T2) - 1.2s to 300h in 14 settings	A, At	2 C/O (5A)	24…240VAC/DC	RE48ATM12MW
11-pin asymmetrical flasher - on time different to off time - supply control - start with output on or off - 1.2s to 300h in 14 settings	L, Li	2 C/O (5A)	24…240VAC/DC	RE48ACV12MW
11-pin multi-function - on-delay - off-delay - timing on impulse - symmetrical flasher	A, B, C, Di	2 C/O (5A)	24…240VAC/DC	RE48AML12MW
8-pin multifunction - on-delay - pulsed output on energisation	A1, A2, H1, H2 (2)	1 timed C/O 1 instant C/O (5A)	24…240VAC/DC	RE48AMH13MW

Industrial Timing Relay Bases

Description	Reference
Base for 8-pin timer	RUZC2M
Base for 11-pin timer	RUZC3M
11-pin base with rear face terminals	RE48ASOC11AR

Industrial Timing Relay Accessories

Description	For use with	Reference
Protection of settings cover (3)	RE48A relays	RE48ASETCOV
IP64 protective cover (3)	RE48A relays	RE48AIPCOV



RE88857005

Digital Panel Mount Multifunction Relays

Function	Function code (1)	Supply voltages	Relay output	Reference
Multifunction relay	A, B, C, D, Di, H	DC 12V AC/DC 24…48V	1 C/O	RE88857003
		AC/DC 24V AC 110…240V	1 C/O	RE88857005

Note:
(1) Utilise timing diagrams on pages 3.3.9 and 3.3.10 for characteristics of relays.
(2) Functions A1 and H1 use 1 timed C/O and 1 instantaneous C/O. Functions A2 and H2 use 2 timed C/O.
(3) Not possible to use both Settings Cover and IP65 Cover together.

Selection Guide

Measurement and Control Relays







Reference Family	RM17	RM35	RM22
Number of contacts	1 or 2 C/O	1 or 2 C/O; 2 NO	1 or 2 C/O; 2NO
3 Phase Network or Motor Control	Available in RM17 & RM35 form - Page 3.3.17		
Functions	Phase Sequence, Phase Failure Asymmetry, Undervoltage	Phase Sequence, Phase Failure Asymmetry Over/Undervoltage, Motor Temperature	Phase Sequence, Phase Failure, Over/Undervoltage, Over/Under Current, Level Control
Voltage Range	208...480V	208...480V	20...480V
Voltage & Current Control	Available in RM17 & RM35 form - Page 3.3.18		
Voltage Range	9...260 VDC 20…528 VAC	0.05...600 VDC 0.05…600 VDC	24...240 AC / DC
Current Range	2…20A	2…500 mA 0.15…15A	4mA...15A
Process Control		Level, Pump speed, Frequency	Level
Dimension width	17.5mm	35mm	22.5mm
Features			"Easy-set" LED lighted dials to improve usability on set up and power indication. "Easy-test" test button that enables output circuit to be tested easily during commissioning

Simple and accurate adjustments are a sure-fire way to achieve quick and easy setup. These relays can satisfy all the monitoring requirements of mobile process control or network equipment.

Zelio RM17, RM22 and RM35 3-phase Supply Relays



3-phase Relay
RM17TG20

Phase Sequence and Phase Loss

Rated Voltage	Rated Output	Time Delay (threshold crossed)	Time delay (phase loss / sequence)	Reference
208V…480V AC	1 C/O (5A)	-	Fixed <100ms	RM17TG00
208V…440V AC	2 C/O (5A)	-	Fixed <100ms	RM17TG20
208V...480V AC	2 C/O (8A)		Fixed 200ms	RM22TG20

Phase Sequence, Phase Loss (1)

208V…480V AC	1 C/O (5A)	-	Fixed <200ms	RM17TT00



RM22TG20

Phase Sequence, Phase Loss, Asymmetry

208V...480V (1)	1 C/O (5A)	0.1s…10s	Fixed <200ms	RM17TA00
200V...240VAC	2 C/O (8A)	0.1s...30s	Fixed <300ms	RM22TA31
380V...480VAC	2 C/O (8A)	0.1s...30s	Fixed <300ms	RM22TA33

Phase Sequence, Phase Loss, Undervoltage

208V...480VAC (1)	1 C/O (5A)	0.1s…10s	Fixed <200ms	RM17TU00
200V...240V	2 C/O (8A)		No Fixed <200ms	RM22TU21
380V...480V	2 C/O (8A)		No Fixed <200ms	RM22TU23



RM22TA31

Phase Sequence, Phase Loss, Undervoltage & Overvoltage

200V...240VAC	2 C/O (8A)	0.1s...30s	Fixed <200ms	RM22TR31
380V...480VAC	2 C/O (8A)	0.1s...30s	Fixed <200ms	RM22TR33

Phase Sequence, Phase Loss (1), Undervoltage & Overvoltage (2), Asymmetry

208V…480V AC	1 C/O (5A)	0.1s…10s	Fixed <200ms	RM17TE00



3-phase Relay
RM35TF30

Phase Sequence, Phase Loss, Undervoltage & Overvoltage (2), Asymmetry

220V…480V AC	2 C/O (5A)	0.1s…10s	Fixed <200ms	RM35TF30

Phase Sequence, Phase Loss, Motor Temperature via PTC Thermistors

Rated Voltage	Relay Output (5A)	Time Delay (threshold crossed)	Supply voltage	Reference
208V…480V AC	2 N/O	Fixed <300ms	24V…480V AC/DC	RM35TM50MW
208V…480V AC	2 N/O (3)	Fixed <300ms	24V…480V AC/DC	RM35TM250MW

Note:

(1) Including phase loss with regeneration from motor

(2) Window mode

(3) Test / Reset button and Memory mode available. If switched to memory mode, output relay latched open after a fault measured

Zelio RN17, RM22 and RM35 Voltage and Current Relay



Voltage Relay
RM17UAS15

3-Phase Voltage Measurement: Overvoltage, Undervoltage and Phase Loss

Volts to be measured	Supply voltage	Relay Output 5A	Time delay (threshold crossed)	Reference
194V…528V AC	220…480V AC	2 C/O (1)	0.3s…30s (2)	RM35UB330
183V…528V AC	220…480V AC	1 C/O	0.3s…30s (2)	RM17UB310
114V…329V AC	120…277V AC	2 C/O (1)	0.3s…30s (2) (3)	RM35UB3N30

Single Phase or DC voltage measurement: Overvoltage or Undervoltage

Volts to be measured	Supply voltage	Relay Output	Time delay (threshold crossed)	Reference
65V…260V AC/DC	110V…240V AC/DC	1 C/O 5A (4)	0.1s…10s	RM17UAS15
20V…80V AC/DC	24V…48V AC/DC	1 C/O 5A (4)	0.1s…10s	RM17UAS16
80V...300V AC/DC	110V...240V AC/DC	2 C/O 8A	0.1s...30s	RM22UB34



RM22UB34

Single Phase or DC Voltage Measurement: Overvoltage or Undervoltage

Volts to be measured	Supply voltage	Relay Output 5A	Time delay (threshold crossed)	Reference
0.05V…0.5V ; 0.3V…3V; 0.5…5V AC/DC	24V…240V AC/DC	2 C/O (4)	0.3s…30s	RM35UA11MW
1V…10V ; 5V…50V; 10…100V AC/DC	24V…240V AC/DC	2 C/O (4)	0.3s…30s	RM35UA12MW
15V…150V ; 30V…300V; 60…600V AC/DC	24V…240V AC/DC	2 C/O (4)	0.3s…30s	RM35UA13MW
15V...500V AC	380V...480V AC	2 C/O 8A	0.1s...30s	RM22UA33MT



Current Relay
RM17JC00MW

Single Phase or DC Voltage Measurement: Overvoltage & Undervoltage
(window mode)

Volts to be measured	Supply voltage	Relay Output 5A	Time delay (threshold crossed)	Reference
65V…260V AC/DC	110V…240V AC/DC	1 C/O	0.1s…10s	RM17UBE15
20V…80V AC/DC	24V…48V AC/DC	1 C/O	0.1s…10s	RM17UBE16

*RM22 Relay with 2 C/O (8A) available



RM35JA32MT

Current Measurement:
Overcurrent Detection with Internal Current Transformer

Amps to be measured	Supply voltage	Relay Output	Time Delay (threshold crossed)	Reference
2A…20A	24V…240V AC/DC	1 C/O 5A	Fixed < 200ms	RM17JC00MW



Current Relay
RM35JA32MW

Current Measurement: Overcurrent or Undercurrent

Amps to be measured	Supply voltage	Relay Output	Time Delay (threshold crossed)	Reference
2mA…20mA; 10mA…100mA; 50mA…500mA	24V…240V AC/DC	2 C/O 5A	0.3s…30s (5)	RM35JA31MW
0.15A…1.5A; 0.5A…5A; 1.5A…15A	24V…240V AC/DC	2 C/O 8A (4)	0.3s…30s (5)	RM35JA32MW
4mA...1A	24V...240V AC/DC	2 C/O 8A	0.1s...30s	RM22JA31MR
1.5A...15A	24V...240V AC/DC	2C/O 8A	0.1s...30s	RM35JA32MR
1.5A...15A	380V...415V AC	2C/O 8A	0.1s...30s	RM35JA32MT

Note:
(1) Overvoltage only
(2) In the event of phase loss time delay <200ms
(3) RM35UB3N30 also detects absence or loss of neutral
(4) Memory mode available. If switched to memory mode, output relay stays open when a fault measured
(5) Inhibition time delay 1s…20s is adjustable by another potentiometer

Zelio RM848, RM35 Level and Speed Relays, Zelio RM35 Pump Relay, Zelio RM35 Frequency Relay, Zelio RM35 Temperature and 3-Phase Supply Relays



Level Relay
RM35LM33MW

Level Control Relay, Empty and Fill

Measured Range (Ohm)	Relay Output	Time Delay	Supply Voltage	Reference
250...100k	2 C/O (5A)	0.1s...5s	24V...240 AC/DC	RM35LM33MW
250...100k	2 C/O (8A)	0.1s...30s	24V...240 AC/DC	RM22LA32MR
			380V...415VAC	RM22LA32MT

Liquid Level Control Relay, Empty and Fill

Base	Supply voltage	Sensitivity scale k Ohms	Relay output	Reference
RUZ1A (11-PIN)	240VAC	5-100	1 C/O 8A	RM84870404

Liquid Level Control Relay, Empty

Base	Supply voltage	Sensitivity scale k Ohms	Relay output	Reference
RUZ1D (8-PIN)	240VAC	5-100	1 C/O 8A	RM84870304



RM22LA32MR

Liquid Level Probes

Mounting	Maximum Operating Temperature	Operating Pressure	Reference
Suspended by cable	100°C		LA9RM201
Thread mounting electrode holder	350°C	15kg/sq.cm	RM79696006
Threaded probe	200°C	25kg/sq.cm	RM79696014
Probe suspended by cable	-	-	RM79696043
Threaded Probe (compact size)	80°C	2kg/sq.cm	RM79696044



RM35S0MW

Speed Relay, Under Speed or Over Speed

Input	Measured ranges	Relay output, 5 A	Supply Voltage	Reference
3-wire NPN/PNP Dry Contact Voltage 0…30V	0.05 s... 10 min (1)	1 C/O	24...240V AC/DC	RM35S0MW

Pump Relay, 3-phase and single-phase, Over Current and Under Current, Phase Sequence and Phase loss (2)

Time Delay on crossing threshold	Measured ranges	Relay Output, 5 A	Supply Voltage	Reference
1...10 s (1)	1...10 A	1 C/O	3-phase 208... 480V AC	RM35BA10
			single-phase 240V AC	

50 Hz Frequency Relay, Under Frequency and Over Frequency

Time Delay	Supply voltage	Measured ranges	Relay output	Reference
0.1...10 s	120...277V AC	40...60Hz	2 C/O 5A	RM35HZ21FM

Temperature Control Relays, via PTC 3-Wire Probe

Function	Measured ranges	Relay Output (5A)	Supply voltage	Reference
Temperature	-1…+11C / +34…+46C	1 C/O	24…240V AC/DC	RM35ATL0MW
Temperature	-1…+11C / +34…+46C	2N/O	24…240V AC/DC	RM35ATR5MW
Temperature, phase failure, phase sequence	-1…+11C / +34…+46C	2N/O	24…240V AC/DC	RM35ATW5MW

Note:
(1) Inhibition adjustable time delay 0.6…60 s by another potentiometer
(2) Additional functions for 3-phase application: phase sequence and phase failure

Eliwell Temperature Controllers

Eliwell Controls for Temperature, Pressure and Humidity



Eliwell by Schneider Electric develops products and solutions that are distinguished by high quality and reliability, the result of more than 35 years of experience and of collaboration with the leading manufacturers of appliances that use temperature, humidity and pressure regulators.

The vast range of formats that Eliwell has developed always enables the most suitable solution to be found for any specific application requirements.









Eliwell Controls for Temperature, Pressure and Humidity

Eliwell ICPlus 32x74 Universal Controls

The Eliwell ICPlus range are new-generation devices with up to two activation points, typically used for industrial heating, cooling, pressure and humidity control. ICPlus controllers are equipped with various features including:

- Temperature, Pressure or Humidity Control
- Alarm Management
- Simple and Intuitive programming
- Network connectivity with Eliwell Televis or standard Modbus



ICP22D1750000

Eliwell ICPlus 32x74 Temperature Controllers

Model	Mounting	Display Range	Inputs	Outputs	Supply Voltage	Reference
ICPlus 902	Panel Mount: 71x29mm	-50..+140C	1x NTC, PTC	1x 8A	12/24V ACDC	ICP11D0450000
					230VAC	ICP11D0750000
				1x 16A	230VAC	ICP16D0750000
		-150..+1350C	1x TCJ/K, PT100	1x 8A	12/24V ACDC	ICP11J0450000
		-1999..+1999	0..1, 0..5, 0..10V	1x 8A	12/24V ACDC	ICP11I0450000
			0..20, 4..20mA		230VAC	ICP11I0750000
ICPlus 915	Panel Mount: 71x29mm	-50..+140C	1x NTC, PTC	2x 8A	12/24V ACDC	ICP22DI450000
					230VAC	ICP22DI750000
		-150..+1350C	1x TCJ/K, PT100	2x 8A	12/24V ACDC	ICP22JI450000
					230VAC	ICP22JI750000
		-1999..+1999	0..1, 0..5, 0..10V	2x 8A	12/24V ACDC	ICP22I0450000
			0..20, 4..20mA		230VAC	ICP22I0750000

Note:
(1) Analogue input type selectable by parameter.
(2) TTL-RS485 BusAdaptor required for communication. Cat No BA11250N3700

Eliwell Industrial Universal Controls



E4D12EASBH710

Eliwell DR4000 DIN Rail Temperature Controllers

Model	Mounting	Display Range	Inputs	Outputs	Supply Voltage	Reference
DR4020	DIN Rail or Panel Mount: 70x45mm	-200..+800C	1x PT100	2x 8A	12/24V ACDC	E4D12E00BH410
					100..240VAC	E4D12E00BH710
		-55..+150C	1x NTC, PTC, PT1000	2x 8A	12/24V ACDC	E4D12N00BH410
					12/24V ACDC	E4D12N00BH710
		-40..+1350C	1x TCJ/K/R/S/T	2x 8A	12/24V ACDC	E4D12A00BD410
					100..240VAC	E4D12A00BD710
DR4022	DIN Rail or Panel Mount: 70x45mm	-200..+800C	1x PT100 1x DI	2x 8A 1x AO	100..240VAC	E4D12EASBH710
		-40..+1350C	1x TC J/K/R/S/T, 1x DI	2x 8A 1x AO	100..240VAC	E4D12AASBD710

Note:
(1) Analogue input type selectable by parameter.
(2) TTL-RS485 BusAdaptor required for communication for DR4022. Cat No BA11250N3700



E481BPAXBH700

Eliwell EW4800 48x48 Temperature Controllers

Model	Mounting	Display Range	Inputs	Outputs	Supply Voltage	Reference
EW4820	Panel Mount: 45x45mm	-1999..+1999	0..1/5/10V, 0/4.. 20mA	1x 3A 1x 2A	100..240VAC	E481BI0XBN700
		-200..+1600C	1x DI, 1x TCJ/K/R/S/T, PTC,	1x 3A 1x 2A	100..240VAC	E481BP0XBH700
			NTC, PT100, PT1000	1x 2A 1x SSR	100..240VAC	E481SP0XBH700
EW4821	Panel Mount: 45x45mm	-200..+1600C	1x DI, 1x TCJ/K/R/S/T, PTC,	1x 3A 1x 2A 1x AO	12/24V ACDC	E481BPAXBH400
			NTC, PT100, PT1000		100..240VAC	E481BPAXBH700

Note:
(1) Analogue input type selectable by parameter.
(2) TTL-RS485 BusAdaptor required for communication. Cat No BA11250N3700

Eliwell Controls for Temperature, Pressure and Humidity



E7212E0XBH700



SN9S0A2500



SN5PPN116I3M0



SN5NPM1A6I4M0

Eliwell Industrial Universal Controls

Eliwell EW7200 72x72 Temperature Controllers

Model	Mounting	Display Range	Inputs	Outputs	Supply Voltage	Reference
EW7220	Panel Mount: 67x67mm	-200..+800C	1x PT100	2x 8A	100..240VAC	E7212E0XBH700
		-200..+1600C	1x TCJ/K/R/S/T, PTC, NTC, PT100, PT1000	2x 8A	100..240VAC	E7212P0XBH700
		-1999..+1999	0..1, 0..5, 0..10V	2x 8A	12/24V ACDC	E7212I0XBH400
			0..20, 4..20mA, PT100	2x 8A	100..240VAC	E7212I0XBH700
EW7221	Panel Mount: 67x67mm	-1999..+1999	0..1, 0..5, 0..10V, 0..20, 4..20mA, PT100	2x 8A 1x 5A 1x AO	100..240VAC	E7213IAXBH700
		-200..+1600C	1x TCJ/K/R/S/T, PTC,	2x 8A 1x 5A 1x AO	100..240VAC	E7213PAXBD700
			NTC, PT100, PT1000		12/24V ACDC	E7213PAXBH400

Note:
(1) Analogue input type selectable by parameter.
(2) TTL-RS485 BusAdaptor required for communication. Cat No BA11250N3700

Eliwell Temperature and Humidity Sensors

Sensor Type	Tip Dimensions	Range	Cable Material	Protection	Reference
PT100 3 Wire	6x100mm AISI316	0..+600C	Vetrotex 3m	IP44	SN200009
Thermocouple K	4x50mm AISI304	0..+350C	TTS Fibreglass 3m	IP45	SN400034
PTC KTY82-121	6x40mm AISI304	-30..+80C	PVC 3m	IP67 Tip Only	SN7P0A3000K
NTC 103AT11	6x40mm AISI304	-30..+80C	PVC 1.5m	IP67 Tip Only	SN8P0A1500K
PT1000 2 wire	6x40mm AISI304	-50..+200C	Silicone	IP67 Tip Only	SN9S0A2500
Humidity 4..20mA	25x130mm	15..90% RH	PVC 1.5m	IP54	SN5PPN116I3M0
Humidity 4..20mA	80x80 x52mm	0..100% RH	None	IP65	SN5NPM1A6I4M0

Selection Guide

Analogue Converters






Input type	**J (Fe-CuNi)**	**K (Ni-KrNi)**	**Pt100 – 2…4 wire**	**Voltage / Current**
Input range	0 to 600 °C	0 to 1200 °C	-100 to 100 / 0 to 500 °C	0 to 500 V / 0 to 15 A
Output signal	0 to 10 V / 0 to 20 mA		0 to 10 V / 4 to 20 mA	0 to 10 V/± 10 V/0 to 20 mA
Mounting	DIN rail or direct panel mounting			
References	RMTJ	RMTK	RMPT	RMC
Pages	3.3.23	3.3.23	3.3.23	3.3.23

3.3

Benefit from

- Ease of installation with pre-calibration of input and outputs.
- Reliability of repetition of output signal as a function of input signal.
- Outputs protected against polarity inversion, short circuit and overvoltage.
- Loop breakdown detection.
- Sealable protective cover.



Analogue Converters

Zelio Model RMT, RMP & RMC Analogue Interfaces



RMTJ40BD

Analogue Converters for Thermocouples

Supply voltage	Thermo couple type	Temperature Range	Output Range	Reference
24V DC non isolated	J	0-150° C	0-10V / 0-20mA / 4-20mA	RMTJ40BD
		0-300° C	0-10V / 0-20mA / 4-20mA	RMTJ60BD
		0-600° C	0-10V / 0-20mA / 4-20mA	RMTJ80BD
	K	0-600° C	0-10V / 0-20mA / 4-20mA	RMTK80BD
		0-1200° C	0-10V / 0-20mA / 4-20mA	RMTK90BD



RMPT70BD

Analogue Converters for Pt100 Probes

Supply voltage	Temperature Range	Output Range	Reference
24V DC non isolated	-40-40°C	0-10V / 0-20mA / 4-20mA	RMPT10BD
	-100-100°C	0-10V / 0-20mA / 4-20mA	RMPT20BD
	0-100°C	0-10V / 0-20mA / 4-20mA	RMPT30BD
	0-250°C	0-10V / 0-20mA / 4-20mA	RMPT50BD
	0-500°C	0-10V / 0-20mA / 4-20mA	RMPT70BD



RMCA61BD

Analogue Voltage / Current Converters

Supply voltage	Input Range	Output Range	Reference
24V DC non isolated	0-10V or 4-20mA	0-10V or 4-20mA	RMCN22BD
24V DC isolated	0-10V / +10V...-10V 0-20mA / 4-20mA	0-10V / +10V...-10V 0-20mA / 4-20mA	RMCL55BD
	0-50V / 0-300V / 0-500V ~ or ⎓	0-10V / 0-20mA / 4-20mA	RMCV60BD
	0-1.5A / 0-5A / 0-15A ~ or ⎓	0-10V or 0-20mA or 4-20mA	RMCA61BD

Zelio Logic Smart Relays

Compact Smart Relays with Display, not extendable



SR2B201BD

Voltage Supply	Discrete Inputs	Including 0-10V analogue inputs (1)	Outputs	Clock	Reference
⎓ 12 V	8	4	4 relay	Yes	SR2B121JD
	12	6	8 relay	Yes	SR2B201JD
⎓ 24 V	6	-	4 relay	No	SR2A101BD (2)
	8	4	4 relay	Yes	SR2B121BD
	8	4	4 transistor	Yes	SR2B122BD
	12	2	8 relay	No	SR2A201BD (2)
	12	6	8 relay	Yes	SR2B201BD
	12	6	8 transistor	Yes	SR2B202BD
∿ 24 V	8	-	4 relay	Yes	SR2B121B
	12	-	8 relay	Yes	SR2B201B
∿ 48V	12	-	8 relay	No	SR2A201E
∿ 100...240 V	6	-	4 relay	No	SR2A101FU (2)
	8	-	4 relay	Yes	SR2B121FU
	12	-	8 relay	No	SR2A201FU (2)
	12	-	8 relay	Yes	SR2B201FU

Compact Smart Relays without Display, not extendable



SR2E121BD

Voltage Supply	Discrete Inputs	Including 0-10V analogue inputs (1)	Outputs	Clock	Reference
⎓ 24 V	6	-	4 relay	No	SR2D101BD (2)
	8	4	4 relay	Yes	SR2E121BD
	12	2	8 relay	No	SR2D201BD (2)
	12	6	8 relay	Yes	SR2E201BD
∿ 24 V	8	-	4 relay	Yes	SR2E121B
	12	-	8 relay	Yes	SR2E201B
∿ 100...240 V	6	-	4 relay	No	SR2D101FU (2)
	8	-	4 relay	Yes	SR2E121FU
	12	-	8 relay	No	SR2D201FU (2)
	12	-	8 relay	Yes	SR2E201FU

Modular Smart Relays with Display, extendable (3)



SR3B101BD

Voltage Supply	Discrete Inputs	Including 0-10V analogue inputs (1)	Outputs	Clock	Reference
⎓ 12 V	16	6	10 relay (4)	Yes	SR3B261JD
⎓ 24 V	6	4	4 relay	Yes	SR3B101BD
	6	4	4 transistor	Yes	SR3B102BD
	16	6	10 relay (4)	Yes	SR3B261BD
	16	6	10 transistor	Yes	SR3B262BD
∿ 24 V	6	-	4 relay	Yes	SR3B101B
	16	-	10 relay (4)	Yes	SR3B261B
∿ 100...240 V	6	-	4 relay	Yes	SR3B101FU
	16	-	10 relay (4)	Yes	SR3B261FU

Discrete I/O Expansion Modules



SR3XT61BD

For use with	Discrete Inputs	Relay outputs	Reference
SR3B•••JD	4	2	SR3XT61JD
	6	4	SR3XT101JD
	8	6 (5)	SR3XT141JD
SR3B•••BD	4	2	SR3XT61BD
	6	4	SR3XT101BD
	8	6 (5)	SR3XT141BD
SR3B•••B	4	2	SR3XT61B
	6	4	SR3XT101B
	8	6 (5)	SR3XT141B
SR3B•••FU	4	2	SR3XT61FU
	6	4	SR3XT101FU
	8	6 (5)	SR3XT141FU

Note:
(1) Some of 24VDC discrete inputs are also usable as 0-10V analogue inputs.
(2) Programming using LADDER language only.
(3) Each modular base can be fitted with one I/O expansion module and one communication module.
(4) 8 relay outputs 8A max and 2 relay outputs 5A max.
(5) 4 relay outputs 8A max and 2 relay outputs 5A max.

Zelio Logic Smart Relays



SR3NET01BD

Analogue I/O Expansion Module

Description	Analogue Outputs 0-10V	Analogue inputs 0-10V, 0-20mA or Pt100	Reference
Analogue module 4 I/O	2	2	SR3XT43BD

Remote Communication

Description	Voltage Supply	Reference
Communication Interface module (Including cable)	12…24 VDC	SR2COM01
Pre-Configured GSM modem for using with Zelio logic Smart Relays (1)(3)	12…24 VDC	SR2MOD02



SR2USB01

Network Communication Modules

Description	For use with	Reference
Modbus slave	SR3B•••BD	SR3MBU01BD
Ethernet module	SR3B•••BD	SR3NET01BD



SR2PACK•••

Programming Software and Connection Accessories

Description	For use with	Reference
Programming software, documentation, manual (CD ROM)		SR2SFT01
USB programming connection cable 3m		SR2USB01
EEPROM memory cartridge	Relay with firmware >= 3.0	SR2MEM02
EEPROM memory cartridge	Relay with firmware <= 2.4 (2)	SR2MEM01

Free software available on www.schneider-electric.com.au

Starter Packs

Type	Voltage Supply	Includes	Reference
Compact	⎓ 24 V	SR2B121BD relay + USB programming cable + software CD	SR2PACKBD
		SR2B201BD relay + USB programming cable + software CD	SR2PACK2BD
	∿ 100...240 V	SR2B121FU relay + USB programming cable + software CD	SR2PACKFU
		SR2B201FU relay + USB programming cable + software CD	SR2PACK2FU
Modular	⎓ 24 V	SR3B101BD relay + USB programming cable + software CD	SR3PACKBD
		SR3B261BD relay + USB programming cable + software CD	SR3PACK2BD
	∿ 100...240 V	SR3B101FU relay + USB programming cable + software CD	SR3PACKFU
		SR3B261FU relay + USB programming cable + software CD	SR3PACK2FU

Note:

(1) Includes SR2CBL07 cable connection to Zelio comms module.
Optional order separately SR2CBL06 to test modem with PC.

(2) Firmware can be updated from the programming software.

(3) SR2MOD02 only operates on the 2G Network, the 2G network is being decommissioned throughout Australia and is set to stop working on 1st Dec 2016. A new 3G modem will be available for the Zelio range and is planned to be launched locally between Oct - Dec 2016, for more information contact Schneider Technical Support on 1300 369 233.

Power Supplies and Transformers

Phaseo Switch Mode Power Supplies With Auto-Regulated Output Back Up Modules



ABL8MEM24006

Modular Single-Phase Power Supplies (auto reset)

Input voltage, 50 Hz	Output Voltage	Nominal Power	Nominal Current	Reference
100…240V AC (1)	5V DC	20 W	4 A	ABL8MEM05040
	12V DC	25 W	2 A	ABL8MEM12020
	24V DC	7 W	0.3 A	ABL8MEM24003
		15 W	0.6 A	ABL8MEM24006
		30 W	1.2 A	ABL8MEM24012
		60 W	2.5 A	ABL7RM24025



ABL8REM24030

Optimum Single-Phase Power Supplies

Input voltage, 50 Hz	Output Voltage	Nominal Power	Nominal Current	Reference
100...240V AC (1)	12V DC (2) (3)	60 W	5 A	ABL7RP1205
	24V DC (4) (5)	72 W	3 A	ABL8REM24030
	24V DC (4) (5)	120 W	5 A	ABL8REM24050
	48V DC (2) (3)	144 W	2.5 A	ABL7RP4803

DC-DC Converters

Input volts	Output Voltage	Nominal current	Reference
22V…30V DC	5V DC	6 A	ABL8DCC05060
22V…30V DC	12V DC	2 A	ABL8DCC12020

Buffer Module (protection against short voltage dips, 0.1...2s, capacitive type)

Input volts	Output Voltage	Maximum current	Reference
22V…30V DC	24V DC	40 A	ABL8BUF24400



ABL8BBU24400

Battery back up (protection against long power supply cuts, up to 2hrs to ensure continuity of service)

Description	Output Voltage	Maximum current	Reference
Battery charger	-	20 A	ABL8BBU24200
Battery charger	-	40 A	ABL8BBU24400
Battery	24V DC	3.2 Ah	ABL8BPK24A03
Battery	24V DC	7 Ah	ABL8BPK24A07
Battery	24V DC	12 Ah	ABL8BPK24A12



ABL8PRP24100

Redundancy Module (paralleling two power supplies to ensure uninterrupted DC supply)

Input volts	Output Voltage	Maximum current	Reference
22V…30V DC	24V DC	40 A	ABL8RED24400

Electronic Protection Module

Description	Setting range	Reference
4-channel downstream discrimination providing fast electronic protection	1...10A	ABL8PRP24100

Note:
(1) Input voltage also could be 120…250V DC (exception: ABL7RM24025).
(2) Auto / manual reset.
(3) Power supply with harmonic filter.
(4) Auto reset.
(5) Power supply without harmonic filter.

Power Supplies and Transformers

Phaseo Rectified Filtered Power Supplies With Non Regulated-Output Phaseo Transformers



ABL1RPM12083

Open Frame Power Supply (auto-regulated output)

Input volts	Output Volts	Maximum current	Reference
100…240VAC	12V DC	8.3A	ABL1RPM12083
Plate for mounting on din rail (2 plates required)			ABL1A02



ABL8TEQ24400

Rectified Filtered Power Supplies (non regulated output)

Input voltage, 50/60 Hz	Output Voltage	Nominal Power	Nominal Current	Reference
230/400V AC +/- 15V AC Single-phase or phase-phase connection	24V DC	12 W	0.5 A	ABL8FEQ24005
		24 W	1 A	ABL8FEQ24010
		48 W	2 A	ABL8FEQ24020
		96 W	4 A	ABL8FEQ24040
		144 W	6 A	ABL8FEQ24060
		240 W	10 A	ABL8FEQ24100
		360 W	15 A	ABL8FEQ24150
		480 W	20 A	ABL8FEQ24200
400V AC 3-phase connection	24V DC	240 W	10 A	ABL8TEQ24100
		480 W	20 A	ABL8TEQ24200
		720 W	30 A	ABL8TEQ24300
		960 W	40 A	ABL8TEQ24400
		1440 W	60 A	ABL8TEQ24600



ABL6TS•••

Optimum Transformers (single winding)

Input voltage, 50/60 Hz	Output Voltage	Nominal Power	Secondary Voltages Available	Reference complete with Secondary Voltage code
230/400V AC +/- 15V AC Single-phase or phase-phase connection	12V AC (J) 24V AC (B) 115V AC (G) 240V AC (U)	25 VA	J B G U	ABL6TS02• (1)
		40 VA	J B G U	ABL6TS04• (1)
		63 VA	J B G U	ABL6TS06• (1)
		100 AV	J B G U	ABL6TS10• (1)
		160 VA	J B G U	ABL6TS16• (1)
		250 VA	J B G U	ABL6TS25• (1)
		400 VA	B G U	ABL6TS40• (1)
		630 VA	B G U	ABL6TS63• (1)
		1000 VA	B G U	ABL6TS100• (1)
		1600 VA	B G U	ABL6TS160• (1)
		2500 VA	B G U	ABL6TS250• (1)

Mounting Plates for ABL6

Description	Use with	Reference
Plates for mounting on din rail	ABL6TS02•	ABL6AM00
	ABL6TS04•	ABL6AM01
	ABL6TS06•	ABL6AM02
	ABL6TS10•	ABL6AM03



ABT7DU

Universal Transformers (double winding)

Input voltage, 50/60 Hz	Output Voltage	Nominal Power	Secondary Voltages Available	Reference complete with Secondary Voltage code
230/400V AC +/- 15V AC Single-phase Transformer with cover and jumpers under cover	2 x 24V AC (B) 2 x 115V AC (G)	25 VA	B G	ABT7PDU002• (1)
		40 VA	B G	ABT7PDU004• (1)
		63 VA	B G	ABT7PDU006• (1)
		100 AV	B G	ABT7PDU010• (1)
		160 VA	B G	ABT7PDU016• (1)
		250 VA	B G	ABT7PDU025• (1)
		320 VA	B G	ABT7PDU032• (1)
230/400V AC +/- 15V AC Single-phase Transformer without cover and external jumpers	2 x 24V AC (B) 2 x 115V AC (G)	400 VA	B G	ABT7PDU040• (1)
		630 VA	B G	ABT7PDU063 (1)
		1000 VA	B G	ABT7PDU100 (1)
		1600 VA	B G	ABT7PDU160• (1)
		2500 VA	B G	ABT7PDU250 (1)

Note:
(1) Complete reference with the secondary voltage code.

Small Programmable Controllers

Modicon M221 Compact and M221 Book logic controllers general overview

Designed for simple machines, the particularly small dimensions of Modicon **M221** and **M221 Book** logic controllers are ideal for optimizing the size of wall-mounted and floor standing control system enclosures.

The controllers are available in 2 formats:

Modicon **M221** (TM221C**** references), give excellent connection capacity and customization options using I/O, communication or application cartridges without increasing the controller size.

Modicon **M221 Book** (TM221M***references), combine very small dimensions with a wide choice of connections.

M221 and M221 Book controllers have an embedded Ethernet port meaning they can easily be integrated in control system architectures, for remote control and maintenance of machines by means of applications for smartphones, tablets and PCs.

The wealth of functions embedded in M221 and M221 Book controllers minimizes the cost of the machine:

Functions embedded in the controller: Modbus serial link, dedicated display unit, USB port dedicated to programming and simple position control functions (high-speed counters and pulse train outputs with trapezoidal profile and S curve).

Functions embedded in the Modicon TM3 expansion: functional safety modules, motor-starter control modules, and a remote expansion system.

SoMachine Basic's programming software is intuitive, making it quick to create applications, and also has embedded configuration of the display unit and extensions, including the Functional Safety modules. This software environment makes it easy to retrieve Twido range applications, maximizing use of the investment already made.

Compatibility of offers

Modicon M221 and M221 Book logic controllers

> Modicon TM3 expansion modules
> Modicon TM2 expansion modules
> SoMachine Basic software





Modicon M221 logic controllers (standard format)
16 I/O channels — 24 I/O channels



40 I/O channels

SoMachine Basic software





Modicon M221 Book logic controllers (standard format)
16 I/O channels — 32 I/O channels

Key features

Modicon TM221C***	Modicon TM221M***
w x h x d	
16 I/O: 95 x 90 x 70 mm	16 I/O: 70 x 90 x 70mm
24 I/O: 110 x 90 x 70 mm	32 I/O: 70 x 90 x 70 mm
40 I/O: 163 x 90 x 70 mm	
Supply voltage	
24VDC or 100..240 Vac – 50/60 Hz	24 VDC
Connection of the embedded I/O	
On removable screw terminal blocks at intervals of 5.08mm; 24V/0.25A supply provided by the controller to the sensor inputs on TM221C**R models	16 I/O: on removable spring or screw terminal blocks at intervals of 3.81mm/0.15 in. 32 I/O: on HE10 connectors with HE 10 cables/bare wires or Telefast ABE7 connection sub-bases
Analogue inputs	
2 embedded inputs on each TM221Mppp and TM221C*** controller	
2 to 4 optional analogue inputs with TMC2*** cartridges	–
Embedded Ethernet communication	
Yes on TM221CE**	Yes on TM221ME**
Serial link	
1 embedded	1 & 2 embedded
1 optional serial link with TMC2SL1 communication cartridge	–
Cartridges	
One slot for 1 or 2 cartridges depending on the model of controller: analogue I/O cartridge, communication cartridge or application cartridges.	–
Hardware characteristics	
M221 and M221 Book controllers each have an embedded: * Run/Stop switch * slot for SD memory card * QR code for direct access to its technical documentation	

Small Programmable Controllers

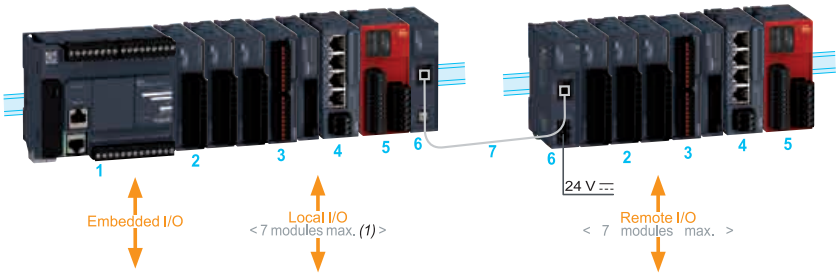
Modicon M221 Compact and M221 Book logic controllers I/O extensions with Modicon TM3 expansion modules

I/O extensions with Modicon TM3 expansion modules Modicon TM3

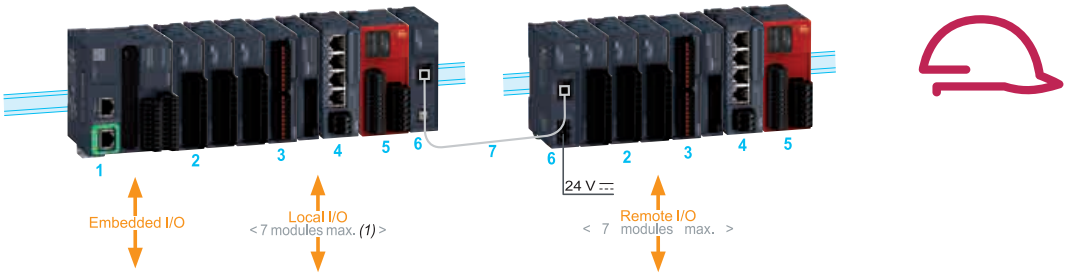
The capacity of M221 and M221 Book logic controllers can be enhanced with the Modicon TM3 expansion module offer:

- Digital I/O modules which can be used to create configurations with up to 264 digital I/O. These modules are available with the same connections as the controllers.
- Analogue I/O modules which can be used to create configurations with up to 114 analogue I/O and are designed to receive, amongst other things, position, temperature, and speed sensor signals. They are also capable of controlling variable speed drives or any other device equipped with a current or voltage input.
- Expert module for control of TeSys motor-starters, connected with RJ 45 cables to simplify wiring up the control section.
- Functional Safety modules that simplify wiring and can be configured in the SoMachine Basic software.

In addition, the TM3 expansion system is flexible due to the possibility of remotely locating some of the TM3 modules in the enclosure or another cabinet, up to 5 metres/16.404 ft. away, using a bus expansion system. The Modicon TM3 expansion system is common to the whole range of Modicon M2xx logic controllers, meaning that the model of controller can be revised without changing expansion module.



SoMachine Basic software



1 Modicon M221/M221 Book logic controller
2 Modicon TM3 digital I/O modules
3 Modicon TM3 analogue I/O modules (2)
4 Modicon TM3 expert module: control of TeSys motor-starters
5 Modicon TM3 functional safety modules
6 Modicon TM3 bus expansion module (transmitter and receiver)
7 TM3 bus expansion cable – Refer TCSECE3M3M*S4 Ethernet cables

Remote I/O

Maximum configuration: 14 Modicon TM3 expansion modules (7 local modules + 7 remote modules) with the use of Modicon TM3 bus expansion system transmitter and receiver modules).

The transmitter and receiver bus expansion modules can be used to: increase from 7 to 14 the number of I/O expansion modules that can be connected to an M2xx logic controller

Note:
(1) Depending on type of TM3 module used, please consult our website www.schneider-electric.com

Small Programmable Controllers

M221 Compact & Modular Controllers


TM221CE16R
TM221CE16T


TM221CE24R
TM221CE24T


TM221CE40R
TM221CE40T


TM22M16RG


TM221M16TG


TM221ME32TK


TMC2AQ2C


TMC2AQ2V


TMC2TI2


TMC2AI2

M221 Logic Compact (all in one) Controllers - 240 VAC power supply (1)

Number of Logic I/O	Logic Inputs Sink/Source	Outputs Relay	Analogue Inputs 0-10V	Integrated comms ports (2)	Reference
16	9 inc 4 high speed	7 Relay	2	Serial RJ45	TM221C16R
				Serial & Ethernet	TM221CE16R
24	14 inc 4 high speed	10 Relay	2	Serial RJ45	TM221C24R
				Serial & Ethernet	TM221CE24R
40	24 inc 4 high speed	16 Relay	2	Serial RJ45	TM221C40R
				Serial & Ethernet	TM221CE40R

M221 Logic Compact (all in one) Controllers - 24 VDC power supply (1)

Number of Logic I/O	Logic Inputs Sink/Source	Outputs Transistor	Analogue Inputs 0-10V	Integrated comms ports (2)	Reference
16	9 inc 4 high	7 source, inc 2 high speed	2	Serial RJ45	TM221C16T
				Serial & Ethernet	TM221CE16T
24	14 inc 4 high	10 source, inc 2 high speed	2	Serial RJ45	TM221C24T
				Serial & Ethernet	TM221CE24T
40	24 inc 4 high	16 source, inc 2 high speed	2	Serial RJ45	TM221C40T
				Serial & Ethernet	TM221CE40T

M221 Logic Book (Modular) Controllers - 24 VDC power supply (1)

Number of Logic I/O	Logic Inputs Sink/Source	Outputs Relay	Analogue Inputs 0-10V	Integrated comms ports (2)	Reference
16 Screw Term	8 inc 4 high speed	8 Relay	2	2 x Serial RJ45	TM221M16R
				Serial & Ethernet	TM221ME16R
16 Spring Term	8 inc 4 high speed	8 Relay	2	2 x Serial RJ45	TM221M16RG
				Serial & Ethernet	TM221ME16RG

M221 Logic Book (Modular) Controllers - 24 VDC power supply (1)

Number of Logic I/O	Logic Inputs Sink/Source	Outputs Transistor	Analogue Inputs 0-10V	Integrated comms ports (2)	Reference
16 Screw Term	8 inc 4 high speed	8 source, inc 2 high speed	2	2 x Serial RJ45	TM221M16T
				Serial & Ethernet	TM221ME16T
16 Spring Term	8 inc 4 high speed	8 source, inc 2 high speed	2	2 x Serial RJ45	TM221M16TG
				Serial & Ethernet	TM221ME16TG
32 HE10 Conn	16 inc 4 high speed	16 source, inc 2 high speed	2	2 x Serial RJ45	TM221M32TK
				Serial & Ethernet	TM221ME32TK

Options for Modicon M221 Logic Compact (all in one) controllers (3)

Description	Function	Reference
I/O cartridges	2 analogue inputs (12-bit resolution) can be configured as: 0-10 V, 0…20 mA/4…20 mA Connection via screw terminal block	TMC2AI2
	2 analogue outputs (12-bit resolution) 0-10 V Connection via screw terminal block	TMC2AQ2V
	2 analogue outputs (12-bit resolution) 4-20 mA Connection via screw terminal block	TMC2AQ2C
	2 temp inputs (12-bit res) type K, J, R, S, B, E, T, N, C, PT100, PT1000, NI100, NI1000 - Screw Term	TMC2TI2
Communication cartridge	1 additional serial link on screw terminal block	TMC2SL1
Cartridges for specific industry segment Applications	Hoisting application 2 analogue inputs	TMC2HOIS01
	Packaging application 2 analogue inputs	TMC2PACK01
	Conveyor system application 1 serial link	TMC2CONV01

Notes:

(1) M221 controllers are supplied with:
- removable screw terminal blocks for connecting the I/O
- a removable screw terminal block for connecting the power supply
- a button cell backup battery (BR2032)
- a cable for connecting the analogue inputs

(2) Each M221 logic controller has an embedded USB mini-B programming port.

(3) One cartridge for controllers with 16 and 24 I/O. Two cartridges maximum for controllers with 40 I/O, only one of which can be a communication cartridge.

Small Programmable Controllers

M221 Digital & Analogue I/O Expansion Modules



TM3DI8



TM3DI32K



TM3AI4



TM3AM6G

M221 TM3 Digital I/O Modules

Number of Inputs	Description	Reference
8 Inputs	Module TM3-8 Inputs	TM3DI8
	Module TM3-8 Inputs 120VAC	TM3DI8A
	Module TM3-8 Inputs - Spring Term	TM3DI8G
16 Inputs	Module TM3-16 Inputs	TM3DI16
	Module TM3-16 Inputs - Spring Term	TM3DI16G
	Module TM3-16 Inputs HE10 Connector	TM3DI16K
32 Inputs	Module TM3-32 Inputs HE10 Connector	TM3DI32K

Number of Outputs	Description	Reference
8 Outputs	Module TM3-8 OUT Relays	TM3DQ8R
	Module TM3-8 OUT Relays - Spring Term	TM3DQ8RG
	Module TM3-8 OUT TR.PNP	TM3DQ8T
	Module TM3-8 OUT TR.PNP - Spring Term	TM3DQ8TG
	Module TM3-8 OUT TR.NPN	TM3DQ8U
	Module TM3-8 OUT TR.NPN - Spring Term	TM3DQ8UG
16 Outputs	Module TM3-16 OUT RELAYS	TM3DQ16R
	Module TM3-16 OUT RELAYS - Spring Term	TM3DQ16RG
	Module TM3-16 OUT TR.PNP	TM3DQ16T
	Module TM3-16 OUT TR.PNP - Spring Term	TM3DQ16TG
	Module TM3-16 OUT TR.PNP HE10 Connector	TM3DQ16TK
	Module TM3-16 OUT TR.NPN	TM3DQ16U
	Module TM3-16 OUT TR.NPN - Spring Term	TM3DQ16UG
	Module TM3-16 OUT TR.NPN HE10 Connector	TM3DQ16UK
32 Outputs	Module TM3-32 OUT TR.PNP HE10 Connector	TM3DQ32TK
	Module TM3-32 OUT TR.NPN HE10 Connector	TM3DQ32UK

Number of Inputs/Outputs	Description	Reference
8 In/Out	Module TM3-8 IO Relays - (4 Inputs & 4 Relay Outputs)	TM3DM8R
	Module TM3-8 IO Relays Spring (4 Inputs & 4 Relay Outputs)	TM3DM8RG
16 In/Out	Module TM3-24 IO Relays - (16 Inputs & 8 Relay Outputs)	TM3DM24R
	Module TM3-24 IO Relays Spring (16 Inputs & 8 Relay Outputs)	TM3DM24RG

M221 TM3 Analogue & Temp I/O Modules

Number of Analogue I/O	Description	Reference
2 Inputs	Module TM3-2 Analogue Inputs High Res.	TM3AI2H
	Module TM3-2 Analogue Inputs High Res. - Spring Term	TM3AI2HG
4 Inputs	Module TM3-4 Analogue Inputs	TM3AI4
	Module TM3-4 Analogue Inputs - Spring Term	TM3AI4G
8 Inputs	Module TM3-8 Analogue Inputs	TM3AI8
	Module TM3-8 Analogue Inputs - Spring Term	TM3AI8G
2 Outputs	Module TM3-2 Analogue Outputs	TM3AQ2
	Module TM3-2 Analogueue Outputs - Spring Term	TM3AQ2G
4 Outputs	Module TM3-4 Analogue Outputs	TM3AQ4
	Module TM3-4 Analogue Outputs - Spring Term	TM3AQ4G
2 In & 4 Out	Module TM3-4 Analogue Outputs & 2 Analogue Inputs.	TM3AM6
	Module TM3-4 Analogue Outputs & 2 Analogue Inputs. Spring Term	TM3AM6G
4 Inputs Temperature	Module TM3-4 Inputs Temperature	TM3TI4
	Module TM3-4 Inputs Temperature - Spring Term	TM3TI4G
2 In & 4 Out Temperature	Module TM3-8 Inputs Temperature	TM3TI8T
	Module TM3-8 Inputs Temperature - Spring Term	TM3TI8TG
2 In & 1 Out Temperature	Module TM3-2 Temperature Inputs & 1 Analogue Output	TM3TM3
	Module TM3-2 Temperature Inputs & 1 Analogue Output	TM3TM3G

Note:
Modicon TM3 expansion modules have been designed with a simple interlocking assembly mechanism. A bus expansion connector is used to distribute data and the power supply when assembling the Modicon TM3 expansion modules with logic controllers. A wide choice of connections is available depending on the model of Modicon TM3 module: removable screw terminal blocks (1), removable spring terminal blocks (1), HE 10 connector, to be used with HE 10 cables/bare wires or HE 10/HE 10 and Telefast sub-bases (2). The connectors (screw terminal blocks, spring terminal blocks, HE 10 connector, RJ 45) are located on the front of the TM3 expansion modules and are therefore accessible.

(1) The terminal blocks are supplied with Modicon TM3 expansion modules.

(2) Telefast Modicon ABE7 pre-wired system to be ordered separately - visit our website www. schneider-electric.com/au.

Small Programmable Controllers

M221 Safety/Expert Modules & Accessories



TM3SAK6R



TM3XTRA1

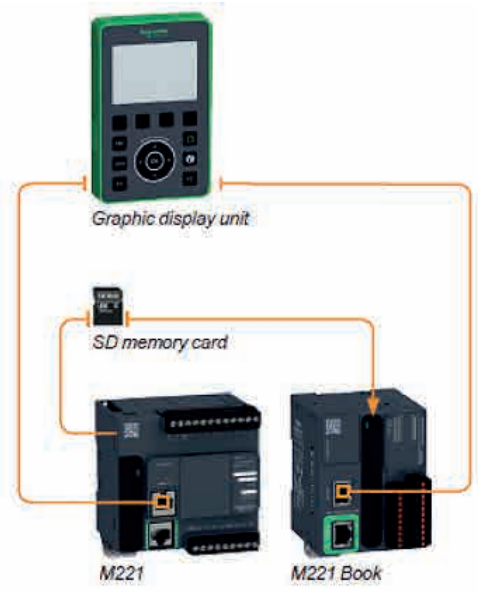


BMXXCAUSBH018

SoMachine Basic software



TCSECE3M3M1S4



M221 TM3 Safety Modules

Number of Functions	Description	Reference
1	Module TM3 Safety Cat.3	TM3SAC5R
	Module TM3 Safety Cat. 3, Spring	TM3SAC5RG
	Module TM3 Safety EStop, Cat. 4	TM3SAF5R
	Module TM3 Safety EStop, Cat. 4, Spring	TM3SAF5RG
2	Module TM3 Safety ES SLB	TM3SAFL5R
	Module TM3 Safety ES SLB, Spring	TM3SAFL5RG
3	Module TM3 Safety Cat.4	TM3SAK6R
	Module TM3 Safety Cat.4, Spring	TM3SAK6RG

M221 TM3 Expert Modules

	Description	Reference
RX	Module TM3-BUS Receiver	TM3XREC1
TX	Module TM3-BUS Transmitter	TM3XTRA1
DOL Interface	Module TM3-TeSys Interface 4XRJ45	TM3XTYS4

M221 Software, Programing Cable & Accessories

	Description	Reference
	SoMachine Basic Software - Free Issue, see: www.schneider-electric.com/au	
	Programming USB Cable - PC USB port to the M221 USB mini-B port	BMXXCAUSBH018
	Display For M221 Controller	TMH2GDB
	SD Memory Cartridge - 256 MB	TMASD1
	Set of 2 battery holders for M221 logic controllers	TMAHOL02
	Bluetooth Adaptor	TCSWAAC13FB

M221 Ethernet Cables (rugged)

	Description	Length	Reference
	Straight-through copper cables 2 RJ 45 connectors - Shielded Cat 6	1 M	TCSECE3M3M1S4
		2 M	TCSECE3M3M2S4
		3 M	TCSECE3M3M3S4
	Suitable for use with TM3XREC1/TRA1	5 M	TCSECE3M3M5S4

TMH2GDB remote graphic display unit

The TMH2GDB remote graphic display unit is an HMI dedicated to M221 and M221 Book logic controllers. It is mounted on the front panel of a wall-mounted or floor-standing enclosure (degree of protection IP 65) offering diagnostic, maintenance and runtime functions.

- The display unit can be connected to the SL1 serial link of M221 and M221 Book controllers. This port also provides the power needed by the display unit.
- A single hole with diameter 22 mm for easy panel mounting.
- Perform machine control actions, enter or modify data & customize buttons on the display.
- Backlit monochrome STN LCD 60 x 40 mm, 5 Lines of 20 – 35 characters, 6 x Languages
- 100 pages HMI max, Display information in the form of text, values, bar graphs or gauges

Memory card

The **TMASD1** SD memory card, with 256 MB capacity, is available for:

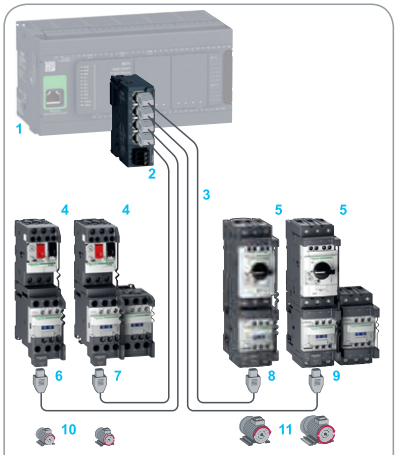
- backup and transfer application
- firmware loading
- duplication of application between controllers

Small Programmable Controllers

M221 TeSys Expert Module, Safety Modules & Control Architecture for Standalone Machines

TM3XTYS4 Expert Module

Is a component of TeSys Solink system, offering up to 20 times faster wiring times than conventional methods, allowing for on/off/reversing operation & trip out monitoring.

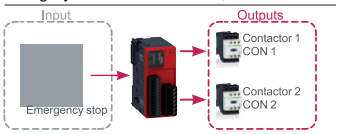
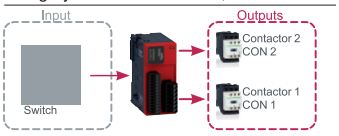
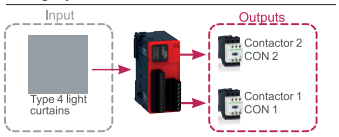
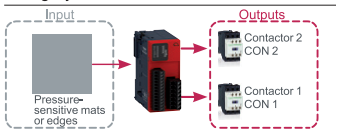


1 *Modicon M221, M221 book, M241, M251 logic controllers*
2 *Modicon TM3XTYS4 expert Module (provides the 24 V ⎓ control voltage to the TeSys motor starter coil)*
3 *RJ45 cables LU9R●●*
4 *D.O.L. or reversing starters GV2ME●● + LC1D●●●●*
5 *D.O.L. or reversing starters GV3P●● + LC1D●●●●*
6 *Adaptor LAD5C11*
7 *Adaptor LAD5C12*
8 *Adaptor LAD5C3*
9 *Adaptor LAD5C32*
10 *Medium power motor up to 15 kW*
11 *Medium power motor up to 30 kW*
Non reversing control
Reversing

TM3SA*** Safety Modules

Modicon TM3 functional safety modules are designed using Preventa technology.

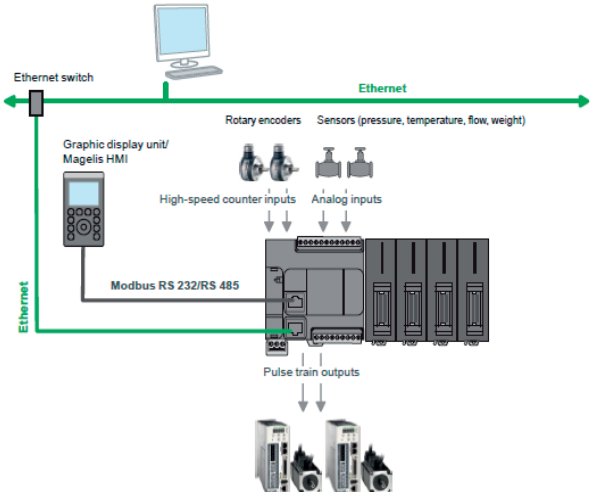
They can be used to incorporate machine safety into the overall machine control. The TM3 functional safety modules control the input signals from monitoring devices and act as an interface with contactors and variable speed drives, causing the machine to stop.

Modicon TM3 functional safety modules	Safety system/Performance level reached
For control of emergency stops	Category 4 architecture / PL e, SIL3 
For control of switches	Category 4 architecture / PL e, SIL3 
For control of type 4 light curtains	Category 4 architecture / PL e, SIL3 
For control of pressure-sensitive mats or edges	Category 4 architecture / PL e, SIL3 

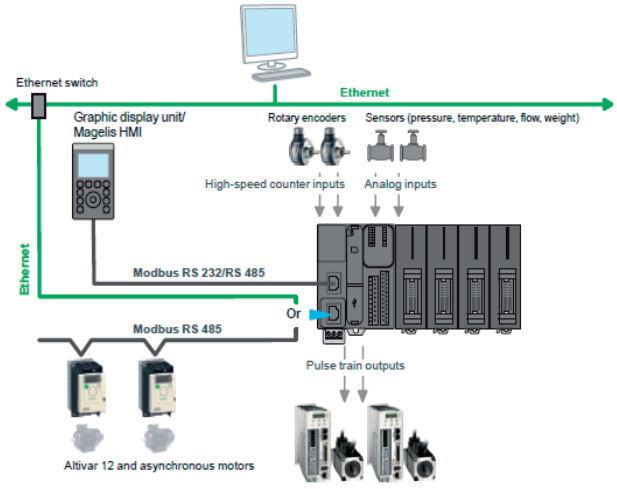
Typical applications: repetitive machines

Packaging: recycling machines, textile-clothing machines, commercial equipment: automatic wash units, advertising hoardings, etc. Construction/service sector: access and entry control for automated systems and other sectors: woodworking, agriculture, fish farming, incubators, swimming pools, etc.

■ M221 (TM221C●●●●) controllers



■ M221 Book (TM221M●●●) controllers



Connection Interfaces

Pre-formed Cables for M221 Telefast 2 Pre-Wired System

TM221 Pre-formed Cables with Flying Leads

Cable	For use with	Length	Reference
One end with HE10 connector, other end with flying leads	I/O Expansions: TM221****K & TM3***K	3 m	TWDFCW30K
		5 m	TWDFCW50K

Telefast Pre-formed Cables (1)

Twido associations	Cable description	Length	Reference
Link TM3DI16K / 32K inputs to 16 channels Telefast-2 input bases	HE10 20-way connector on each end	1 m	ABFTE20EP100
		2 m	ABFTE20EP200
		3 m	ABFTE20EP300
Link TM3DQ16TK / 32TK outputs to 16 channels Telefast-2 output bases	HE10 20-way connector on each end	1 m	ABFTE20SP100
		2 m	ABFTE20SP200
		3 m	ABFTE20SP300

Compact Passive Connection Sub-bases for Discrete Signals (2)

Function	Channels	Terminals per channel	Reference
Input or Output	16	1	ABE7H20E000

Passive Connection Sub-bases for Discrete Signals (2)



ABE7H16R31

Function	Channels	Terminals per channel	Reference
Input or Output	16	1	ABE7H16R11
Input or Output	16	2	ABE7H16R20
Input or Output	16	2	ABE7H16R21
Input or Output	16	3	ABE7H16R31

Sub-bases With Soldered Solid State Inputs (2)

Function	Channels	Terminals per channel	Voltage	Reference
Input	16	2	24VDC	ABE7S16E2B1
Input	16	2	110VAC	ABE7S16E2F0
Input	16	2	240VAC	ABE7S16E2M0

Sub-bases With Soldered Electromechanical Relay Outputs (2)

Function	Channels	Terminals per channel	Relay size	Reference
Output	8	1	5mm	ABE7R08S111
Output	16	1	5mm	ABE7R16S111
Output	16	2	10mm	ABE7R16S210



ABE7R16T230

Sub-bases Equipped With Plug-in Electromechanical Relay Outputs (2)

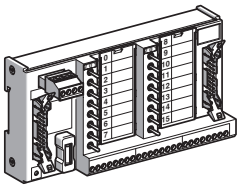
Function	Channels	Terminals per channel	Relay size	Reference
Output	16	1	5mm	ABE7R16T111
Output	16	3	10mm	ABE7R16T231
Output	16	3	10mm	ABE7R16T230
Output	16	3	12mm	ABE7R16T330
Output	16	6	12mm	ABE7R16T370

Note:

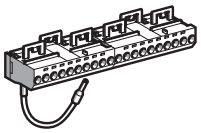
(1) Cables can be used with classic Telefast-2 bases only listed on this page. Cannot be used with the new Advantys Telefast bases (not shown in the Catalogue).

(2) Use ABFTE20 or ABFTP26 cables to connect sub-base to M221 I/O or M221 modular base. Use cable TSXCDP (Pg. 3.3.34) to connect to Modicon PLCs.

Telefast 2 Accessories
Cables for Modicon PLCs



ABE7TES160



ABE7BV20



TSXCDP•01



TSXCDP•02



TSXCDP•03



OTB1E0DM9LP

Accessories for Telfast 2 Bases

Function	Nb of points	Reference
Additional snap-on terminal block	8	ABE7BV10
Additional snap-on terminal block	16	ABE7BV20
I/O Simulator sub-base	16	ABE7TES160
0.5A Fast blow fuse 5x20	-	ABE7FU050
1A Fast blow fuse 5x20	-	ABE7FU100
2A Fast blow fuse 5x20	-	ABE7FU200
6.3A Fast blow fuse 5x20	-	ABE7FU630
5 mm plug-in relays extractor	-	ABE7ACC12

Plug-in Electromechanical Relays

Control Voltage	Contact	Width	Reference
24V DC	1 N/O	5mm	ABR7S11
24V DC	1 N/O	10mm	ABR7S21
24V DC	1 C/O	15mm	ABR7S33
48V DC	1 C/O	15mm	ABR7S33E
24V DC	2 C/O	15mm	ABR7S37

Connecting Cables for Modicon PLCs (1)

Connection PLC End	Connection Telefast End	Length	Reference
20-way HE10	Bare Wires	3m	TSXCDP301
20-way HE10	Bare Wires	5m	TSXCDP501
20-way HE10	20-way HE10	1m	TSXCDP102
20-way HE10	20-way HE10	3m	TSXCDP302
20-way HE10	20-way HE10	0.5m	TSXCDP053
20-way HE10	20-way HE10	1m	TSXCDP103
20-way HE10	20-way HE10	2m	TSXCDP203
20-way HE10	20-way HE10	3m	TSXCDP303
20-way HE10	20-way HE10	5m	TSXCDP503

Advantys OTB (Distributed inputs and outputs, IP20) (2)

Network	Nb and type of inputs	Nb and type of outputs	Nb of I/O expansion modules	Reference
CANopen	12 x 24V DC	6 relay + 2 transistor 24V DC	7 digital or analogue I/O	OTB1C0DM9LP
Ethernet TCP/IP/Modbus	12 x 24V DC	6 relay + 2 transistor 24V DC	7 digital or analogue I/O	OTB1E0DM9LP
Modbus RS485 serial	12 x 24V DC	6 relay + 2 transistor 24V DC	7 digital or analogue I/O	OTB1S0DM9LP

Note:
(1) Cables to be used with Modicon range of PLCs: Premium and Quantum.
(2) Extendable with up to 7 TM2 I/O discrete and analogue modules (page 3.3.30).

AS-i Wiring System

Introduction

AS-i (Actuator Sensor Interface), the cabling system that meets your needs for automation system integration.

Interfaces for Generic Products

These IP20 or IP67 interfaces allow any standard automation components to be connected to the AS-i cable.

Dedicated Components

These handle automation functions and can be connected directly to the AS-i cable. An integrated circuit (ASIC) built into the products manages all interfacing functions and communication.

Installation System

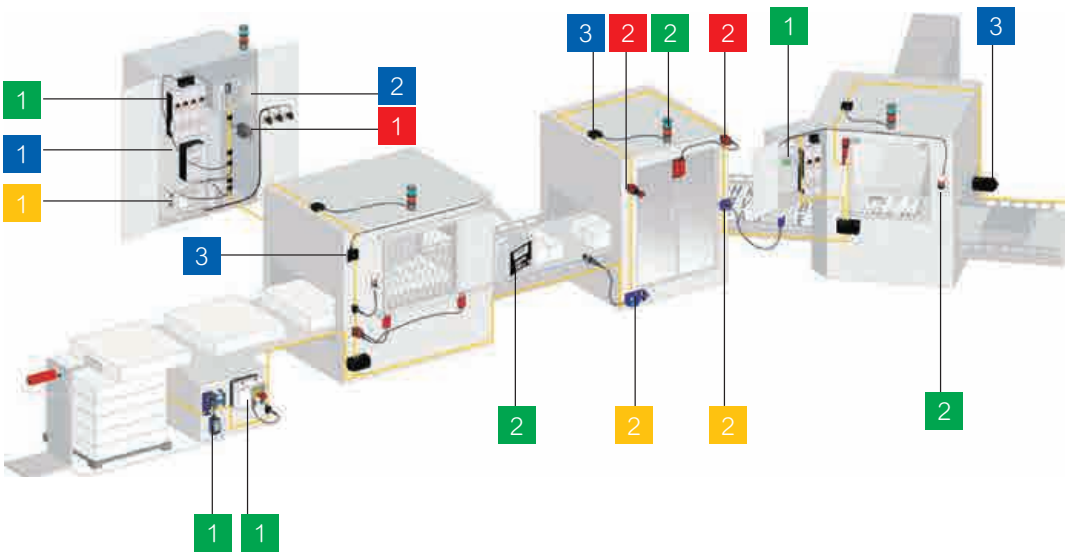
Sensors and actuators are connected to the processing unit by the AS-i system. This system consists of an AS-i cable and accessories, an AS-i master and an AS-i power supply.

- **Power supplies**
  Each installation is supplied by a specific AS-i power supply unit, suited to the total consumption of the system.
- **Master modules**
  AS-i communications are managed by the AS-i master:
  - The AS-i PLC module (master): ensures transparent communication of AS-i product status.
  - The AS-i gateway module: allows connection between the AS-i system and various field buses.
- **The cable and connection accessories**
  A set of cables and accessories (in an enclosure or on-board the machine) allows easy set up of the AS-i system.

Tools

- **AS-i Design software**
  An aid to AS-i system design and installation
- **Adjustment terminal**
  Allows adjustment of AS-i components so that they can communicate with the master (addressing)

1 IP20 interface
2 IP67 interface
1 Dedicated control components
2 Dedicated dialogue components
1 Safety monitor
2 Safety interface
1 Power supplies & insulation control relays
2 AS-i master
3 Connection components



AS-i Wiring System

Interfaces for Generic Products

AS-Interface Masters

Description	Reference
V2.1 for Premium PLCs	TSXSAY1000
For Quantum PLCs	140EIA92100
V3.0 for Modicon M340 PLCs	BMXEIA0100



IP20, AS-Interface, V2.1 Modules for Analogue Inputs

Type	Inputs	Type	Outputs	Type	Reference
	2	0…10V	-	-	ASI20MA2VU
	2	0…20mA 4…20mA	-	-	ASI20MA2Vi



ASI20MA2VU

IP20, AS-Interface, V2.1 Modules for Discrete Inputs/Outputs

Type	Inputs	Type	Outputs	Type	Reference
Standard addressing	4	digital	4	relay 250V, 2A	ASI20MT4I4OR
	4	digital	4	solid state 24V, 0.5A	ASI20MT4I4OS
	4 isolated	digital	4	solid state 24V, 0.5A	ASI20MT4I4OSA
A/B extended addressing	4	digital			ASI20MT4IE
	2	digital	1	triac 250V, 2A	ASI20MT2I1OTE
	4	digital	3	relay 250V, 2A	ASI20MT4I3ORE
	4	digital	3	solid state 24V, 0.5A	ASI20MT4I3OSE
	4 isolated	digital	3	solid state 24V, 0.5A	ASI20MT4I3OSAE

3.3

Rules for As-Interface

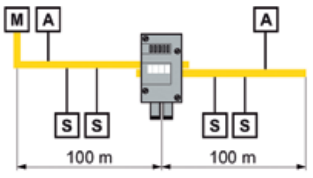
1) Power supply: Never use a standard power supply, only use ASI power supply in section 3.3.38

2) Calculating the length of the AS-Interface network:
Add the length of the yellow cable to 2 x the length of the connection accessories.
Example: 50 m yellow cable and 5 tap-offs with 2 m cable (ref. TCSATV011F2)
Network length = 50 + 2 x 5 x 2 = 70 m.

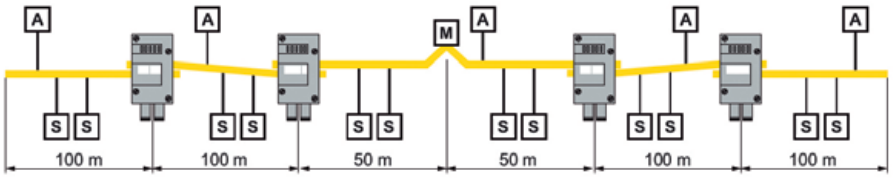
3) It is recommended that unnecessary cable runs are avoided.

4) The maximum length of the network is 100 m, but this can be extended to 200 m by using 1 repeater or to 300 m by using 2 repeaters. By positioning the master module at the centre of the network, it is possible to achieve 500 m. It is not possible to exceed this value using a single master.

5) The AS-Interface cable:
Preferably use the flat yellow cable and take note of the polarities (+ brown, – blue).



M = Master
S = Interface or Component
A = Power supply



Note:
(1) Supplied with two M12 plugs, not fitted (for 45mm type) and one M12 plug (addressing) fitted.
Supplied with four M12 plugs, not fitted (for 60mm type) and one M12 plug (addressing) fitted.

AS-i Wiring System

Dedicated AS-i Devices
Cables and Installation Accessories



ASI67FFP44D

IP67 AS-Interface, V2.1 interfaces (for use with Connection Bases) (1)

Use with	Inputs	Outputs	Housing type	M12 pin layout	Reference
Standard addressing	4	-	Compact, 45 mm, 4 channel	Standard	ASI67FFP40D
	2	2	Compact, 45 mm, 4 channel	Standard	ASI67FFP22D
	-	4	Compact, 45 mm, 4 channel	Standard	ASI67FFP04D
	4	4	Flat, 60 mm, 8 channel	Standard	ASI67FFP44D
	4	4	Flat, 60 mm, 8 channel	Dual (Y)	ASI67FFP44DY
A/B extended addressing	4	-	Compact, 45 mm, 4 channel	Standard	ASI67FFP40E
	2	2	Compact, 45 mm, 4 channel	Standard	ASI67FFP22E
	-	3	Compact, 45 mm, 4 channel	Standard	ASI67FFP03E
	4	3	Flat, 60 mm, 8 channel	Standard	ASI67FFP43E
	4	3	Flat, 60 mm, 8 channel	Dual (Y)	ASI67FFP43EY



ASI67FFB03

Connection Bases

For use with	Fixing	Rail mounting	Reference
Compact, 45mm, 4 channel interface	2 points	Yes	ASI67FFB01
Compact, 45mm, 4 channel interface	4 points (CNOMO centres)	No	ASI67FFB02
Flat, 60mm, 8 channel interface	4 points (CNOMO centres)	No	ASI67FFB03



ASI67FACC1

AS-i Devices

Description	Reference
Pushbutton control station white/black	XALS2001H
Pushbutton control station green/red	XALS2002H
Pushbutton control station illuminated green/red	XALS2003H
Indicator Bank	XVBC21A



XALS2003

AS-i Cable

Description	Reference
AS-i cable yellow 20m	XZCB10201
AS-i cable yellow 50m	XZCB10501
AS-i cable yellow 100m	XZCB11001
AS-i cable black 20m	XZCB10202
AS-i cable black 50m	XZCB10502
AS-i cable black 100m	XZCB11002

Note:

(1) Supplied with two M12 plugs, not fitted (for 45mm type) and one M12 plug (addressing) fitted.
Supplied with four M12 plugs, not fitted (for 60mm type) and one M12 plug (addressing) fitted.

AS-i Wiring System

Masters, Gateways and Configuration Tools



XZCB10201

Tap-offs

Description	Reference
Tap off with 1m cable with M12 Connector	TCSATN011F1
Tap off with 2m cable with M12 Connector	TCSATN011F2
Tap off with 2m cable with bared wires	TCSATN01N2
Tap off with 1m cable with M12 Connector with Auxiliary	TCSATV011F1
Tap off with 2m cable with M12 Connector with Auxiliary	TCSATV011F2
Tap off with 2m cable with bared wires with Auxiliary	TCSATV01N2
Branch extension for 2 flat cables	TCSATN02V
Straight M12 connector male type	XZCC12MDM40B
Elbowed M12 connector male type	XZCC12MCM40B
Pre-wired M12 connector 0.5m cable	XZCP1564L05
Pre-wired M12 connector 2m cable	XZCP1564L2
M12 Splitter	FTXCY1212
M12 Splitter	XZLC1220C1



ASIABLD3004

Power Supplies and Repeaters

Description	Reference
2.4A AS-i power supply	ASIABLB3002
4.8A AS-i power supply	ASIABLB3004
2.4A AS-i power supply with earth fault detection	ASIABLD3002
4.8A AS-i power supply with earth fault detection	ASIABLD3004
2.4A AS-i power supply with 3A 24VDC auxiliary supply	ASIABLM3024
Repeater	ASIRPT01



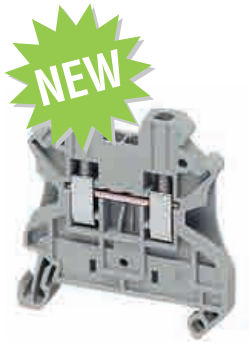
ASITERV2

Configuration Tools

Description	Reference
Addressing terminal	ASITERV2
Addressing cable for devices with sockets	XZMG12
Addressing cable for infrared V2.1 devices	ASITERIR1
Addressing cable for devices with male M12	ASITERACC1M
Addressing cable for devices with female M12	ASITERACC1F
Addressing cable for devices with a jack	ASITERACC

Screw Terminal Blocks

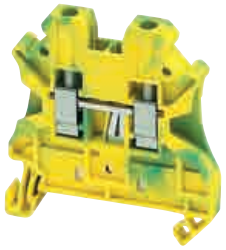
Screw Terminal Blocks for Use on DIN 35 Rail
Coloured Terminals



NSYTRV22

Screw Terminal Blocks for use on DIN 35 - Passthrough (1)

Terminal (CSA mm²)	Rating	Pack Qty	Reference
2.5 mm²	24 A	50	NSYTRV22
4 mm²	32 A	50	NSYTRV42
6 mm²	41A	50	NSYTRV62
10 mm²	57 A	50	NSYTRV102
16 mm²	76 A	50	NSYTRV162
35 mm²	125 A	50	NSYTRV352
50 mm²	150 A	10	NSYTRV502
70 mm²	192 A	10	NSYTRV702
95 mm²	232 A	10	NSYTRV952BB
95 mm²	232 A	10	NSYTRV952BC
150 mm²	309 A	10	NSYTRV1502BB



NSYTRV42PE

Screw Terminal Passthrough - Accessories (2)

Description	Colour	CSA mm²/Pack Qty	Reference
End plate width 2.2 mm	Grey	2.5 - 10/50	NSYTRAC22
		16/ 50	NSYTRAC162
	Blue	2.5 - 10/50	NSYTRAC22BL
Partition plate width 2 mm	Grey	2.5 - 10/50	NSYTRAP22
		95 - 150/10	NSYTRAC952
	Blue	2.5 - 10/50	NSYTRAP22BL



NSYTRV702

Step-Down Bridge; down to 2.5/4 mm², Pack Qty 10

Nominal CSA mm²	Type	Reference
6	Screw to screw terminal	NSYTRALV62
	Screw to spring terminal	NSYTRALVR62
10	Screw to screw terminal	NSYTRALV102
	Screw to spring terminal	NSYTRALVR102
16	Screw to screw terminal	NSYTRALV162
	Screw to spring terminal	NSYTRALVR162
35	Screw to screw terminal	NSYTRALV352
	Screw to spring terminal	NSYTRALVR352



NSYTRV1502BB

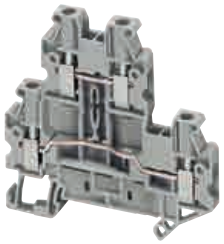
Note:

1) Available colours:
   70 mm², 95 mm², 150 mm² - Grey only
   6 mm², 10 mm², 16 mm², 35 mm², 50 mm² - Grey, Blue and Green-Yellow only
   2.5 mm² - Grey, Blue, Orange, Red, White and Green-Yellow only
   4 mm² - Grey, Blue, Orange, Red, Green, White, Black and Green-Yellow only
   Complete reference by adding suffix: BL for blue, AR for orange, RD for red, GN for green, WH for white, BK for black and PE for green-yellow.
2) End plate is included for terminals 35 mm², 50 mm² and 70 mm².

For old part numbers starting with 'AB1', please refer to the 2012 catalogue.

Screw Terminal Blocks

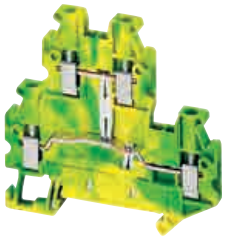
Screw Terminal Blocks Multideck



NSYTRV44D

Screw Terminal Blocks - Multideck Passthrough, Pack Qty 50

Nominal CSA mm²	Type of connection	Reference
2.5 mm²	Double deck, 2 pole, 1x 1	NSYTRV24D
	Triple deck, 3 pole, 1 x 1	NSYTRV26T
4 mm²	Single deck, 1 pole, 1 x 2	NSYTRV43
	Single deck, 1 pole, 2 x 2	NSYTRV44
	Double deck, 2 pole, 1 x 1	NSYTRV44D



NSYTRV24DPE

Screw Terminal Blocks - Multideck Protective Earth, Pack Qty 50

Nominal CSA mm²	Type of connection	Reference
2.5 mm²	Double deck, 1 pole, 2 x 2	NSYTRV24DPE
4 mm²	Single deck, 1 pole, 1 x 2	NSYTRV43PE
	Single deck, 1 pole, 2 x 2	NSYTRV44PE
	Double deck, 1 pole, 2 x 2	NSYTRV44DPE

Screw terminal - Multideck Accessories, Pack Qty 50

Description	Type of connection	Colour	Reference
End plate width 2.2 mm	Single deck, 1pole, 1 x 2	Grey	NSYTRAC23
	Single deck, 1pole, 2 x 2	Grey	NSYTRAC24
	Double deck, 2pole, 1 x 1	Grey	NSYTRACE24
		Grey, partial plate	NSYTRACEP24
	Triple deck, 3pole, 1 x 1	Grey	NSYTRACE26
Partition plate width 2 mm	Single deck, 1pole, 1 x 2	Grey	NSYTRAP23
	Single deck, 1pole, 2 x 2	Grey	NSYTRAP24
	Double deck, 2pole, 1 x 1	Grey	NSYTRACE24



NSYTRV162SF

Screw Terminal Block - Disconnect, 4 mm², Pack Qty 50

Type of block	Description	Reference
Disconnect (for blade)	Grey	NSYTRV42SC
	Grey, with test points	NSYTRV42ST
	Orange, with test points	NSYTRV42STAR
Disconnect (for carrier)	Grey	NSYTRV42TB
Disconnect (double deck)	Grey	NSYTRV42SCD



NSYTRV42SF5LA

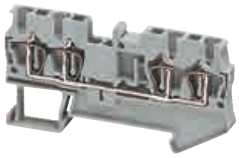
Screw Terminal Block - Fuse Disconnect, Pack Qty 50

Nominal CSA mm²	Type of connection	Description	Reference
4	Disconnect (Lever-type fuse)	Black	NSYTRV42SF5
		Black, with light indicator, 12-30 V AC/DC [1]	NSYTRV42SF5LD
		Black, with light indicator, 110-250 V AC/DC [2]	NSYTRV42SF5LA
16	Disconnect (Lever-type fuse)	Black	NSYTRV42SF6
		Black, with light indicator, 12-30 V AC/DC [1]	NSYTRV42SF6LD
		Black, with light indicator, 110-250 V AC/DC [2]	NSYTRV42SF6LA
	Disconnect (fixed carrier)	Black	NSYTRV162SF

Note:
For old part numbers starting with 'AB1', please refer to the 2012 catalogue.

Spring Terminal Blocks

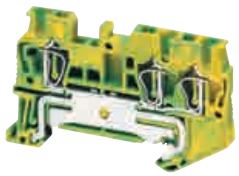
Spring Terminal Blocks for Use on DIN 35 Rail



NSYTRR24

Spring Terminal Blocks - Pass through

Nominal CSA mm²	Type of connection	Pack Qty	Reference (1)
2.5 mm²	1 pole - 1 x 1	50	NSYTRR22
	1 pole - 1 x 2	50	NSYTRR23
	1 pole - 2 x 2	50	NSYTRR24
4 mm²	1 pole - 1 x 1	50	NSYTRR42
	1 pole - 1 x 2	50	NSYTRR43
	1 pole - 2 x 2	50	NSYTRR44
6 mm²	1 pole - 1 x 1	50	NSYTRR62
	1 pole - 1 x 2	50	NSYTRR63
10 mm²	1 pole - 1 x 1	50	NSYTRR102
16 mm²	1 pole - 1 x 1	50	NSYTRR162



NSYTRR23PE

End Plate width 2.2 mm

Nominal CSA mm²	Type of connection	Pack Qty	Reference (2)
2.5 mm²	1 pole - 1 x 1	50	NSYTRACR22
	1 pole - 1 x 2	50	NSYTRACR23
	1 pole - 2 x 2	50	NSYTRACR24
4 mm²	1 pole - 1 x 1	50	NSYTRACR42
	1 pole - 1 x 2	50	NSYTRACR43
	1 pole - 2 x 2	50	NSYTRACR44
6 mm²	1 pole - 1 x 1	50	NSYTRR62
	1 pole - 1 x 2	50	NSYTRR63
10 mm²	1 pole - 1 x 1	50	NSYTRR102
16 mm²	1 pole - 1 x 1	50	NSYTRR162



Partition Plate width 2 mm

Nominal CSA mm²	Type of connection	Pack Qty	Reference (2)
2.5 mm²	1 pole - 1 x 1	50	NSYTRAPR42
	1 pole - 1 x 2	50	NSYTRAPR23
	1 pole - 2 x 2	50	NSYTRAPR24
4 mm²	1 pole - 1 x 1	50	NSYTRAPR42

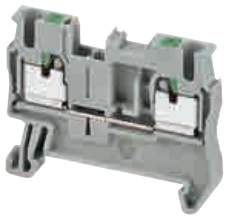
Step-down Bridge Down to 2,5/4 mm² - Screw to Spring Terminal

Nominal CSA mm²	Type of connection	Pack Qty	Reference
6 mm²	1 pole - 1 x 1	10	NSYTRALR62
	1 pole - 1 x 2	10	NSYTRALR62
10 mm²	1 pole - 1 x 1	10	NSYTRALR102
16 mm²	1 pole - 1 x 1	10	NSYTRALR162

Note:
(1) 2.5 mm2, 4 mm2 - Grey, Blue, Orange and Green-Yellow
6 mm2 (1 pole 1 x 1), 10 mm2, 16 mm2 - Grey, Blue and Green-Yellow only
6 mm2 (1pole 1 x 2) - Grey only
Complete reference by adding suffix: BL for blue, AR for orange and PE for green-yellow
(2) 2.5 mm2 End plate is also available in blue colour. Complete reference by adding suffix: BL for blue.
For old part numbers starting with 'AB1', please refer to the 2012 catalogue.

Push-in Terminal Blocks
Common Accessories

Push-in Terminal Blocks for Use on DIN 35 Rail
Plug-in Bridge Accessories



NSYTRP22

Push-in Terminal Blocks

Nominal CSA mm²	Type of connection	Pack Qty	Reference (1)
2.5 mm²	1 pole - 1 x 1	50	NSYTRP22
	1 pole - 1 x 2	50	NSYTRP23
	1 pole - 2 x 2	50	NSYTRP24
4 mm²	1 pole - 1 x 1	50	NSYTRP42
	1 pole - 1 x 2	50	NSYTRP43
	1 pole - 2 x 2	50	NSYTRP44

Common Accessories

Description 1	Description 2	Nominal CSA mm²/ Pack Qty	Reference
End stop for 35mm DIN rail	Clip-on, 5.2 mm	2.5 - 150/ 50	NSYTRAAB35
	With screw, 9.5 mm	2.5 - 150/ 50	NSYTRAABV35
Test plug	Metallic part, Ø 2.3 mm	2.5 - 150/ 10	NSYTRAATM1
	Insulating sleeve, red	2.5 - 150/ 10	NSYTRAATP1
Test adaptor	For plug-in bridge	2.5 - 50/ 10	NSYTRAFT
Warning label	Yellow	2.5/ 10	NSYTRACS2
		4/ 10	NSYTRACS4
		6/ 10	NSYTRACS6
		10 - 50/ 10	NSYTRACS10
Cover	Yellow	95/ 10	NSYTRACP1
		150/ 10	NSYTRACP2
Marker tag holder	For *AB35 end stop	2.5 - 150/ 100	NSYTRASB4
DIN rail 35x7.2mm	Perforated, 2m long	2.5 - 150/ 20	NSYSDR200BD

Please contact us for more marking accessories.



NSYTRACS10

Common Accessories - Plug-in Bridge Red

No. of Poles	CSA mm²	Pack Qty	Reference
2	2.5	50	NSYTRAL22
	4	50	NSYTRAL42
	6	10	NSYTRAL62
	10	10	NSYTRAL102
	16	10	NSYTRAL162
	35	10	NSYTRAL352
	50	10	NSYTRAL502*
3	2.5	50	NSYTRAL23
	4	50	NSYTRAL43
	6	10	NSYTRAL63
	50	10	NSYTRAL503*
4	2.5	50	NSYTRAL24
	4	50	NSYTRAL44
5	2.5	50	NSYTRAL25
	4	50	NSYTRAL45
10	2.5	10	NSYTRAL210
	4	10	NSYTRAL410
	6	10	NSYTRAL610
20	2.5	10	NSYTRAL220
	4	10	NSYTRAL420



NSYTRAL610

Markers for Terminal Blocks

Description	Strips lot qty	Marking	To use with	CatNo
Strips of 10 identical clip-in markers	25	Letters A to Z		AB1G•
Strips of 10 identical clip-in markers	25	Numbers 0 to 9		AB1R•
Strips of 10 identical clip-in markers	25	Symbol " + "		AB1R12
Strips of 10 identical clip-in markers	25	Symbol " - "		AB1R13
Strips of 10 identical clip-in markers	25	Blank		AB1RV
Strips of 10 identical clip-in markers	25	Set of numbers 0 to 9		AB1R11
Strips of 10 identical adaptors	10		All type of terminal blocks, 2.5mm²	NSYTRABB5 (2)
Strips of 10 identical adaptors	10		All type of terminal blocks, 4mm²	NSYTRABB6 (2)
Strips of 10 identical adaptors	10		All type of terminal blocks, 6mm²	NSYTRABB8 (2)

Note:

1) 2.5 mm², 4 mm² – Grey, Blue, Orange and Green-Yellow.
Complete reference by adding suffix: BL for blue, AR for orange and PE for green-yellow.

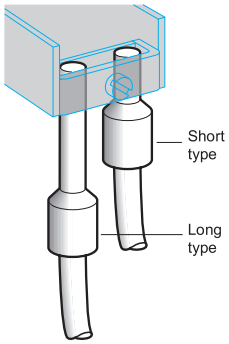
* Screw bridge.

(2) Allow the use of individual AB1R* type of marking for Linergy terminal block range (NSY series)

For old part numbers starting with 'AB1', please refer to the 2012 catalogue.

Cable Ends

Cable Ends and Marking Accessories



DZ5CE

Insulated Cable Ends, pack of 100

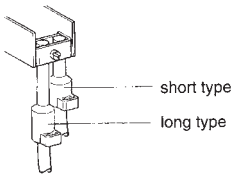
Wire, mm²	Colour	Type	Length of metal part, mm	Reference
0.5	White	short	6.2	DZ5CE005L6P
	White	medium	8.2	DZ5CE005P
	White	long	12	DZ5CE005L12P
0.75	Blue	short	6.2	DZ5CE007L6P
	Blue	medium	8.2	DZ5CE007P
1	Red	short	6.2	DZ5CE010L6P
	Red	medium	8.2	DZ5CE010P
	Red	long	12	DZ5CE010L12P
1.5	Black	short	6.2	DZ5CE015L6P
	Black	medium	8.2	DZ5CE015P
	Black	long	17.7	DZ5CE0153P
2	Yellow	medium	8.2	DZ5CE020P
2.5	Grey	medium	8.2	DZ5CE025P
	Grey	long	17.7	DZ5CE0253P
4	Orange	medium	9.8	DZ5CE042P
	Orange	long	17.5	DZ5CE043P
6	Green	medium	11.5	DZ5CE062P
	Green	long	17.5	DZ5CE063P



DZ5CA010P

Insulated Single Markable Cable Ends, pack of 100

Wire, mm²	Colour	Type	Length of metal part, mm	Reference
0.5	White	medium	8	DZ5CA005P
0.75	Blue	medium	8	DZ5CA007P
1	Red	medium	8	DZ5CA010P
1.5	Black	medium	8	DZ5CA015P
2.5	Grey	medium	8	DZ5CA025P



DZ5CA

Insulated Single Cable Ends with Facility for fitting Clip-in Marker Tag Holders, pack of 100

Wire, mm²	Colour	Type	Length of metal part, mm	Reference
4	Orange	medium	8.2	DZ5CA042P
	Orange	long	12	DZ5CA043P
6	Green	medium	6.2	DZ5CA062P
	Green	long	8.2	DZ5CA063P
10	Brown	medium	6.2	DZ5CA102P
	Brown	long	8.2	DZ5CA103P
16	White	medium	6.2	DZ5CA162P
	White	long	17.7	DZ5CA163P
25	Black	long	8.2	DZ5CA253P

Insulated Single Cable Ends with Facility for fitting Clip-in Marker Tag Holders, pack of 20

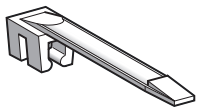
Wire, mm²	Colour	Type	Length of metal part, mm	Reference
35	Red	medium	8.2	DZ5CA352P
	Red	long	17.7	DZ5CA353P
50	Blue	medium	9.8	DZ5CA502P
	Blue	long	17.5	DZ5CA503P

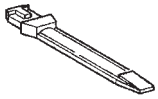
Insulated Twin Cable Ends, pack of 100

Wire, mm²	Colour	Type	Length of metal part, mm	Reference
2 x 0.75	Blue	medium	8	AZ5DE007P
2 x 1	Red	medium	8	AZ5DE010P
2 x 1.5	Black	medium	8	AZ5DE015P
2 x 2.5	Grey	medium	10	AZ5DE025P

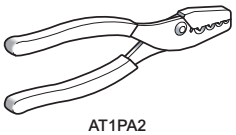
Cable Ends, Cable Ducts and DIN Rail

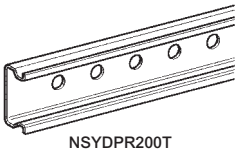
Cable Ends and Marking Accessories
DIN Rails
Cable Ducts

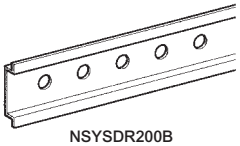

AR1SC02

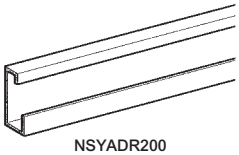

AR1SC03


AT1PA1


AT1PA2


NSYDPR200T


NSYSDR200B


NSYADR200


AK2GA••


AK2GD•••

Markers for Cables and Cable Ends

Description	For use with	Pack Qty	Reference
Clip-on marker holder, can carry up to 7 markers AR1M• • •	Cables 1 mm^2 to 1.5 mm^2	100	AR1SC02
Clip-in marker tag holder, can carry up to 7 markers AR1M• • •	Single conductor cable ends DZ5CA• • • • from 4mm^2 to 50 mm^2	100	AR1SC03
Markers with numbers from 0 to 9 (1)	Marker holders and markable cable ends	200 of each number	AR1MA01
Markers with letters from A to Z (1)	Marker holders and markable cable ends	200 of each letter	AR1MB01
Markers with number (2)	Marker holders and markable cable ends	200	AR1MA01•C
Markers with letter (2) (3)	Marker holders and markable cable ends	200	AR1MB01•C

Miscellaneous Accessories

Description	For use with	Reference
Positioning tool	markers and cable ends	AT1PA1
Crimping tool	cables 0.5 mm^2 to 16 mm^2	AT1PA2
Crimping tool	cables 10 mm^2 to 35 mm^2	AT1PA4

DIN Rail

Description		Pack Qty	Reference
DIN 32 G Rail	(L = 2m, D = 15mm)		NSYADR200
DIN 35 Omega Rail	(L = 2m, D = 7.5mm)		NSYSDR200B
DIN 35 Combination Rail	(L = 2m, D = 15mm)		NSYDPR200T

Cable Duct – Slotted Blue RAL 5000

Description		Reference
(30 x 35 mm, L = 2m) (cover sold separately)		AK2GA33
(30 x 55 mm, L = 2m) (cover sold separately)		AK2GA35
(30 x 90 mm, L = 2m) (cover sold separately)		AK2GA39
(60 x 55 mm, L = 2m) (cover sold separately)		AK2GA65
(60 x 90 mm, L = 2m) (cover sold separately)		AK2GA69
Cover For	AK2GA33, GA35, GA39	AK2CA3
(L = 2m)	AK2GA65, GA69	AK2CA6

Cable Duct – Slotted Grey RAL 7030

Description		Reference
(25 x 50mm, L = 2m) (cover sold separately)		AK2GD2550
(37.5 x 75mm, L = 2m) (cover sold separately)		AK2GD3775
(50 x 75mm, L = 2m) (cover sold separately)		AK2GD5075
(75 x 75mm, L = 2m) (cover sold separately)		AK2GD7575
(100 x 75mm, L = 2m) (cover sold separately)		AK2GD10075
(125 x 75mm, L = 2m) (cover sold separately)		AK2GD12575
Cover for: (L = 2m)	AK2GD2550	AK2CD25
	AK2GD3775	AK2CD37
	AK2GD5075	AK2CD50
	AK2GD7575	AK2CD75
	AK2GD10075	AK2CD100
	AK2GD12575	AK2CD125

Note:
(1) Also includes 200 green earth markers, 200 yellow earth markers, 200 "-" symbols, 200 "+" symbols and positioning tool.
(2) Complete the reference by replacing • by required number or letter.
(3) AR1MB01IC and AR1MB01OC not available, order AR1MB011C and AR1MB010C respectively instead.

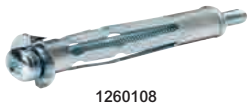
Fixing Accessories

Fasteners for the professional electrical contractor

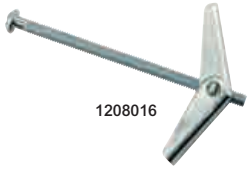

IMT37413


IMT37416


1206028


1260108


1220104


1208016


1501530


IMT39082


IMT37488


IMT37489

Cavity & Masonry Fixings

Fixing Type	Standard Pack	Description	Reference
Cavity Fixing Toggle PLATTI	1	Platti tpp toggle 10xm4k hook hangcard 2pcs	IMT37412
Cavity Fixing Toggle PLATTI	1	Platti tpp toggle 13xm5s hangcard 5pcs	IMT37413
Cavity Fixing Toggle PLATTI	1	Platti tpp toggle 10xm4s hangcard 5pcs	IMT37498
Cavity Fixing DUOMAX TSP	1	Duo max tsp 10/50 hangcard 5pcs	IMT37415
Cavity Fixing DUOMAX TSP	1	Duo max tsp 10/75 hangcard 5pcs	IMT37416
Cavity Fixing DUOMAX TSP	25	Duo max tsp 6/50	1240001
Cavity Fixing DUOMAX TSP	25	Duo max tsp 10/50	1244003
Cavity Fixing DUOMAX TSP	25	Duo max tsp 10/75	1249002
Cavity Fixing for light load MONOMAX TMM	100	Monomax	1206028
Cavity Fixing Hollow Wall Anchor TMX	1	Tmx hollow wall anchor 4e 8 x 5-15 hang 10pcs	IMT37418
Cavity Fixing Hollow Wall Anchor TMX	1	Tmx hollow wall anchor 4d 8 x 16-26 hang 5pcs	IMT37419
Cavity Fixing Hollow Wall Anchor TMX	1	Tmx hollow wall anchor 5e 10 x 3-16 hang 5pcs	IMT37420
Cavity Fixing Hollow Wall Anchor TMX	100	Tmx hollow wall anchor 4e 8 x 5-15	1260025
Cavity Fixing Hollow Wall Anchor TMX	100	Tmx hollow wall anchor 4d 8 x 16-26	1260066
Cavity Fixing Hollow Wall Anchor TMX	100	Tmx hollow wall anchor 5e 10 x 3-16	1260108
Cavity Fixing Hollow Wall Anchor TMX	100	Tmx hollow wall anchor 6e 12 x 3-16	1260140
Cavity Fixings DRIVA TPD	1	Driva tpd plastermates zinc hangcard 5pcs	IMT37414
Cavity Fixings DRIVA TPD	100	Driva tpd plastermates zinc	1220104
Cavity Fixings DRIVA TPD	100	Driva tpd plastermates nylon	1220010
Cavity Fixing Spring Toggle	50	Spring toggle 3x50	1208016
Cavity Fixing Spring Toggle	50	Spring toggle 5x50	1208057
Cavity Fixing Spring Toggle	50	Spring toggle 5x80	1208060
Masonry Bolt	100	Sleeve anchor 8x40	1501500
Masonry Bolt	100	Sleeve anchor 8x65	1501506
Masonry Bolt	100	Sleeve anchor 10x50	1501520
Masonry Bolt	50	Sleeve anchor 10x80	1501526
Masonry Bolt	50	Sleeve anchor 10x97	1501530
Masonry Bolt	50	Sleeve anchor 12x60	1501540
Masonry Bolt	50	Sleeve anchor 12x75	1501546
Masonry Bolt	30	Sleeve anchor 12x99	1501550
Masonry Bolt	30	Sleeve anchor 12x129	1501556
Masonry Bolt	20	Sleeve anchor 16x65	1501560
Masonry Bolt	25	Sleeve anchor 16x111	1501566
Masonry Bolt	100	Sheild anchor m8x55	1511203
Masonry Bolt	25	Anchor bolt eye m8	1511227
Masonry Bolt	25	Anchor bolt hook m8	1511234
High Performance Plugs GREPI	20	Grepi superplug 10x67	IMT39082
High Performance Plugs GREPI	20	Grepi superplug 10x110	IMT39086
Nail Plugs THI	100	Thi hammer fixing 5x30	1131110
Nail Plugs THI	100	Thi hammer fixing 5x50mm	1131115
Nail Plugs THI	100	Thi hammer fixing 6x35	1131130
Nail Plugs THI	100	Thi hammer fixing 6x50	1131135
Nail Plugs THI	100	Thi hammer fixing 6x70	1131145
Concrete Screw	100	Tmp concrete screw c3 5x45	3764030
Cable Wing	1	Cablewing sgl w/o nail hangcard 2pcs	IMT37488
Cable Wing	1	Cablewing dbl without nail hangcard 2pcs	IMT37489
Cable Wing	25	Cable wing single with nail	IMT39078
Cable Wing	25	Cable wing double with nail	IMT39080
Cable Clip	100	Nail clip 6x10 2x25mm white flat	2126019
Cable Clip	2000	Nail clip 6x10 2x25mm white flat	2126711
Cable Clip	100	Nail clip 7x14 2.5X25mm white flat	2131019
Cable Clip	100	Nail Clip 9x18 2.5x30mm white flat	2136018

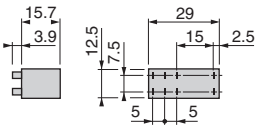
Dimensions

Zelio Plug in Relays

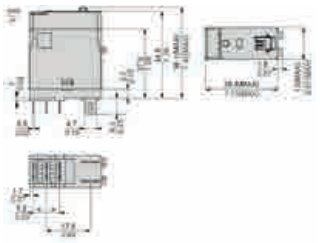
RSL Slim Relays



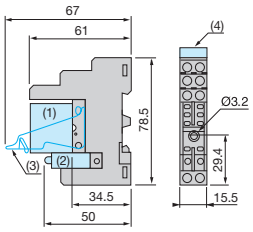
Interface relays
RSB 2A080, RSB 1A160



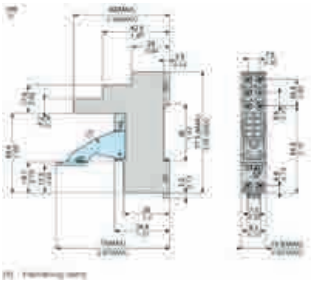
RXG Relays



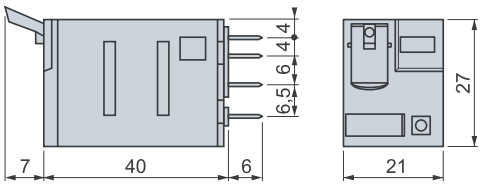
Sockets
RSZ E1S48M



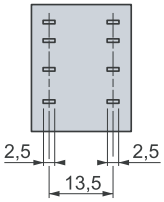
Socket for RXG Relays



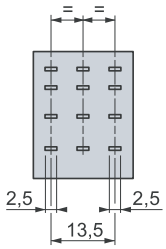
RXM MIniature Relays
Common view



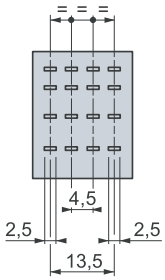
RXM 2



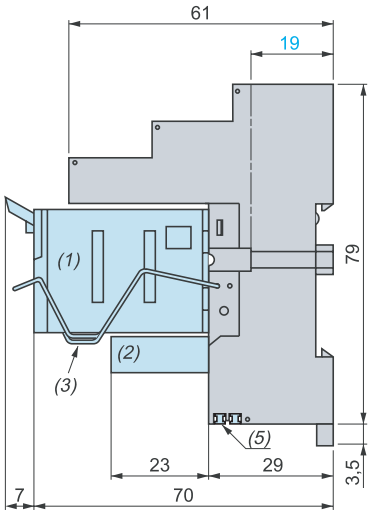
RXM 3



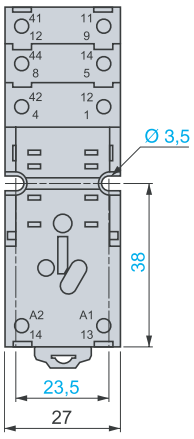
RXM 4



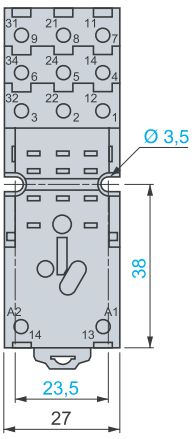
RXM MIniature Sockets
Common side view



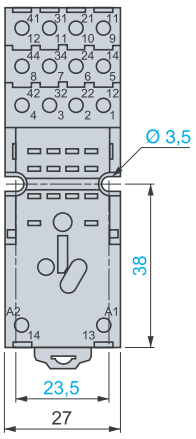
RXE2S108M



RXE2S111M



RXE2S114M

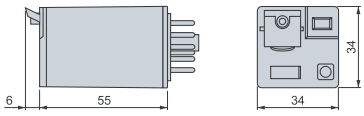


(1) Relays
(2) Add-on protection module
(3) Maintaining clamp
(4) 2 elongated holes Ø 3.5 x 6.5
(5) 2 bus jumpers

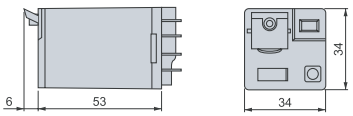
Dimensions

Zelio Plug in Relays

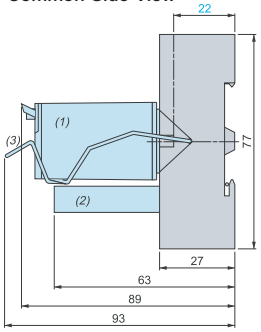
RUM Universal Relays
RUMC



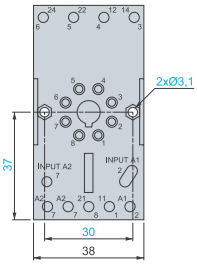
RUMF



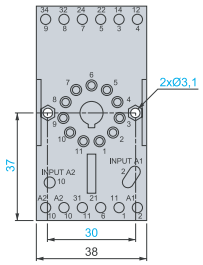
RUM Universal Sockets
Common Side View



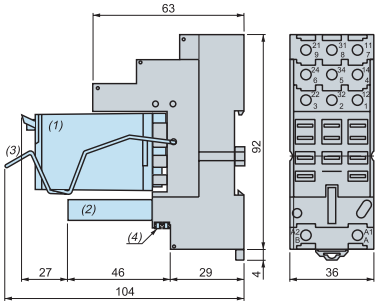
RUZC2M



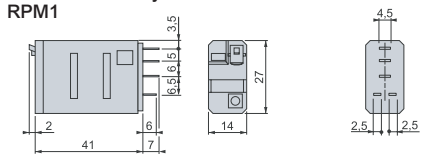
RUMC3M



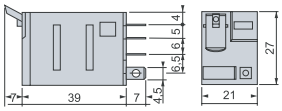
RUZSF3M



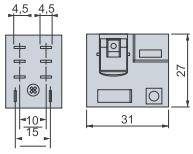
RPM Power Relays
RPM1



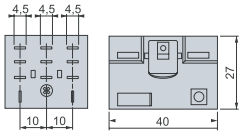
Common Side View



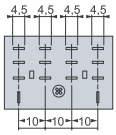
RPM2



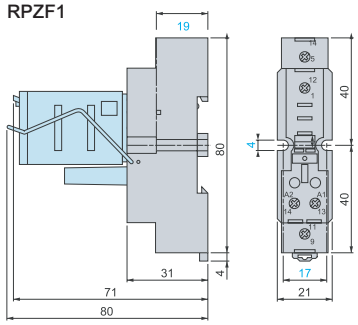
RPM3



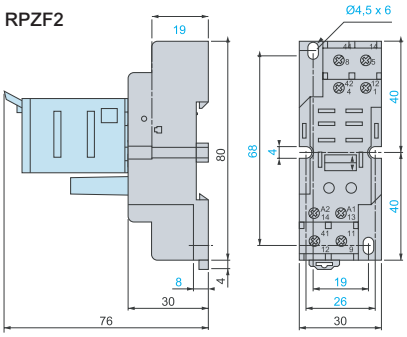
RPM4



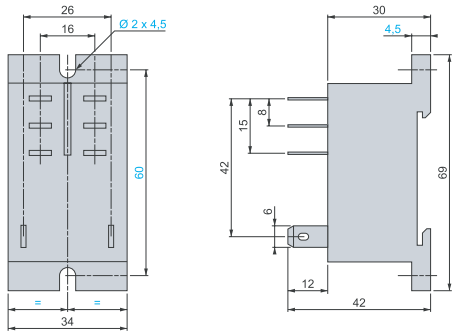
RPF Power Sockets
RPZF1



RPZF2



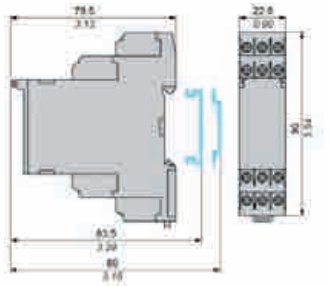
RPF Power Relays
RPF2A, RPF2B



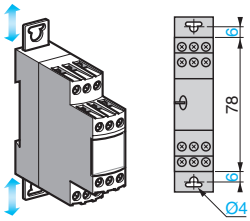
Dimensions

Zelio Timing and Measurement Relays

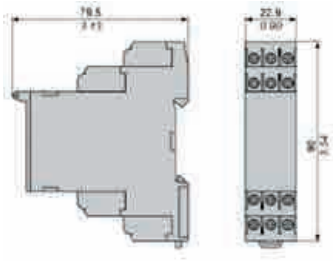
RE22 rail mounting



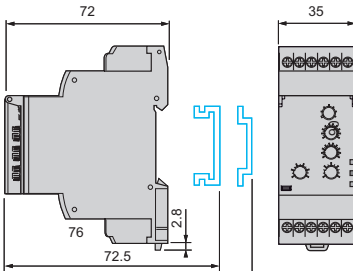
Screw fixing



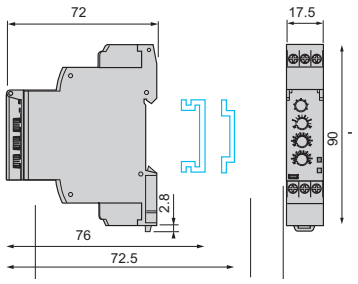
RM22 Relays



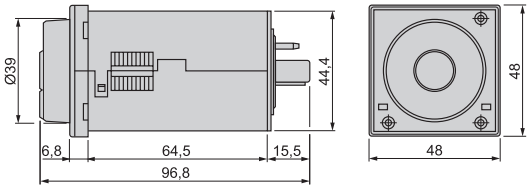
RM35 Relays



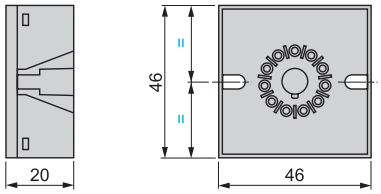
RM17 Relays (4)



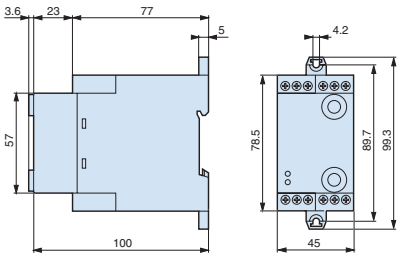
RE48A Relays



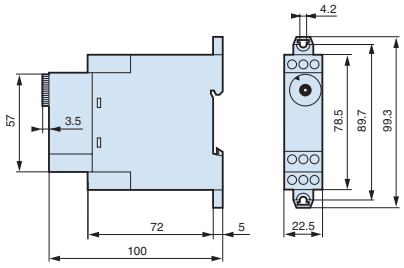
RE48A Sockets



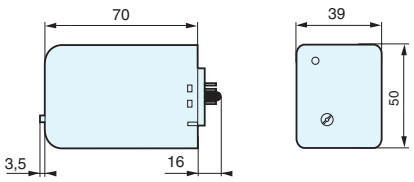
RM84



RM84



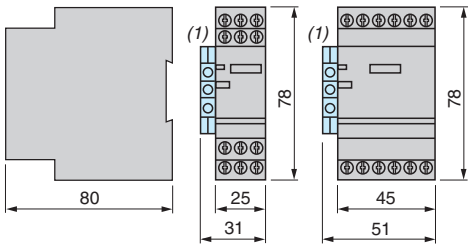
RM84870••• Plug-in versions



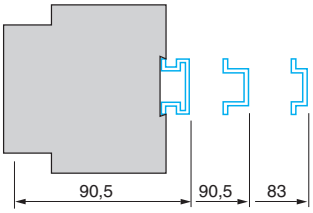
Dimensions

Zelio Analogue Interfaces & Counters

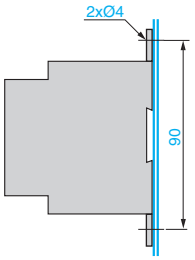
RMT••••••RMCA61BD
RMP••••••
RMC••••••



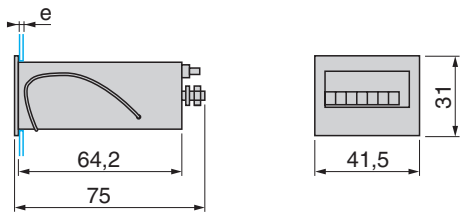
Mounting on rails AM1•••••



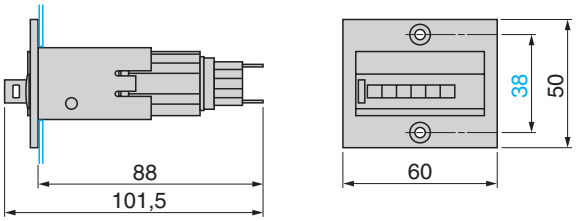
Panel mounting



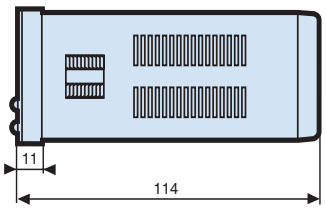
XBKT50000U••M, XBKT70000U00M



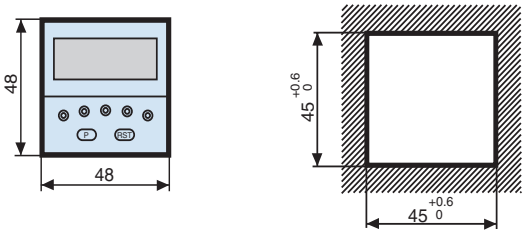
XBKT60000U1•M



RC87618•••



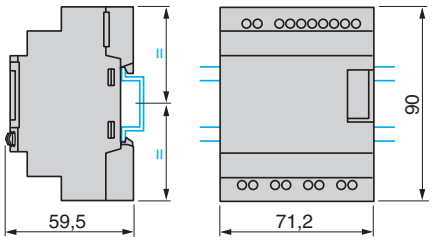
XBKP



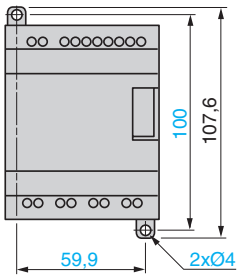
Compact and Modular Zelio Smart Relays

SR••1•••••

Mounting on 35mm § rail

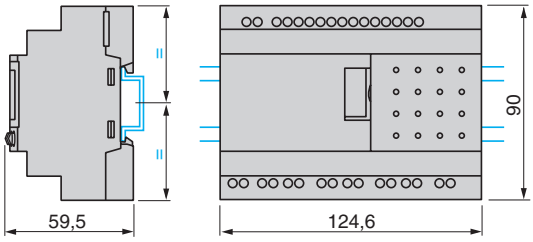


Screw fixing (retractable lugs)

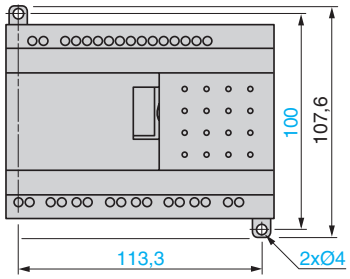


SR••2•••••

Mounting on 35mm ⊔ rail



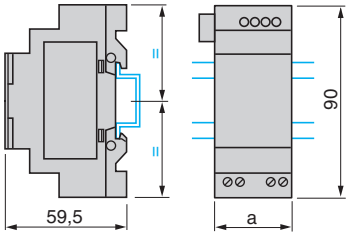
Screw fixing (retractable lugs)



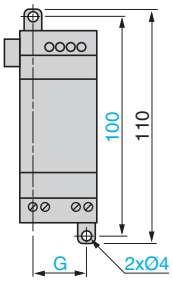
I/O Extension Modules

SR3XT61•• (6 I/O)

Mounting on 35mm ⊔ rail

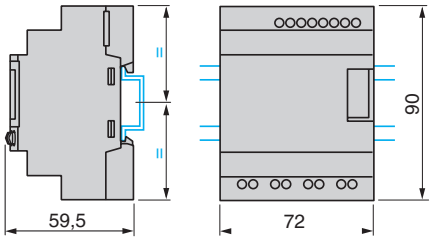


Screw fixing (retractable lugs)

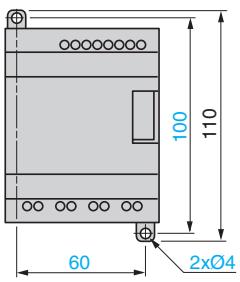


SR3XT101•• and SR3XT141•• (10 and 14 I/O)

Mounting on 35mm ⊔ rail



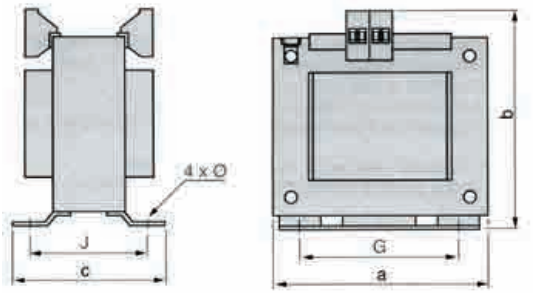
Screw fixing (retractable lugs)



Dimensions

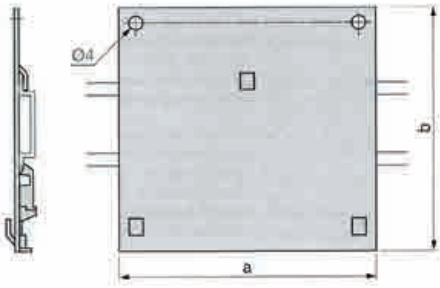
Phaseo Power Supplies
Transformers

Transformers ABL6TS and ABL7TDU



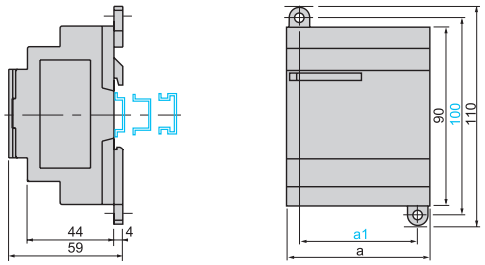
	a	b	c	G	J	Ø
ABL6TS04•	78	90	68	56	47.5	4.8
ABL6TS06•	78	90	80	56	56	4.8
ABL6TS10•	85	94	86	64	65.5	4.8
ABL6TS16•	106	109	81	80.5	63	5.8
ABL6TS25•	120	122	85	90	74.5	5.8
ABL6TS40•	136	140	120	104	87	5.8
ABL6TS63	150	152	138	122		7
ABL6TS100•	174	164	146	135		7
ABL6TS160	174	221	167	135	138	7
ABL6TS250•	198	335	145	125	117	10
ABT7TDU063B	150	167	137	122	107.5	
ABT7TDU063G	150	146	129	122	107.5	
ABT7TDU100B	174	177	186	135	111.5	
ABT7TDU100G	174	146	137	135	111.5	
ABT7TDU160B	174	220	168	135	141.5	
ABT7TDU160G	174	163	167	135	138	
ABT7TDU250B	196	324	147	124	119	
ABT7TDU250G	196	318	147	124	119	

Mounting plates ABL6AM0•



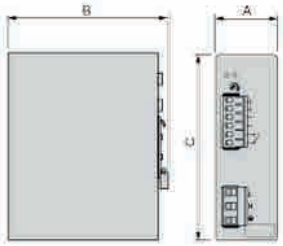
	a	b
ABL6AM01	78	56
ABL6AM02	78	56
ABL6AM03	84	64

ABL8MEM••••• / ABL7RM24025 power supply



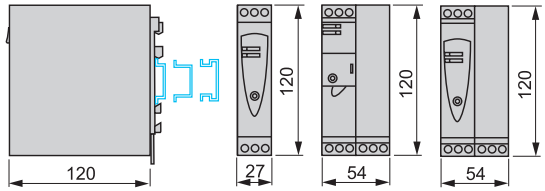
	a	a1
ABL8MEM05040	54	42
ABL8MEM12020	54	42
ABL8MEM24003	36	24
ABL8MEM24006	36	24
ABL8MEM24012	54	42
ABL7RM24025	72	60

ABL4 Power Supplies

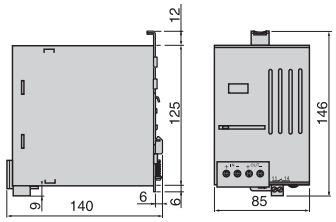


	a	b	c
ABL4RSM24030	39	128	115
ABL4RSM24050	39	128	115
ABL4RSM24100	63.5	140	118
ABL4RSM24200	80	139	127
ABL4WSR24200	80	139	127
ABL4WSR24300	80	139	127
ABL4WSR24400	80	139	127

ABL7RP••••• Common side view mounted on 35 and 75mm rails



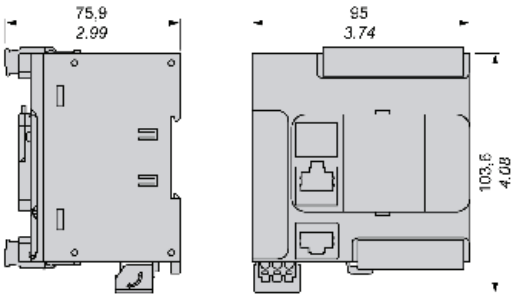
ABL8BUF24400 Buffer Module



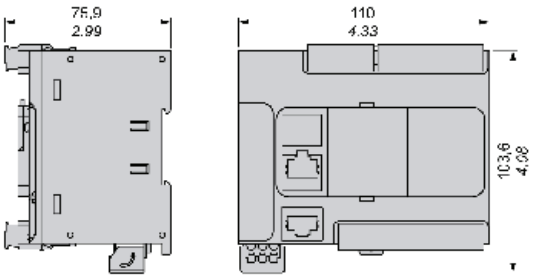
Dimensions

Compact Style

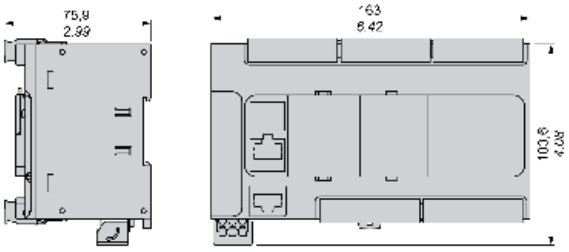
TM221C16R/TM221CE16R/TM221C16T/TM221CE16T



TM221C24R/TM221CE24R/TM221C24T/TM221CE24T

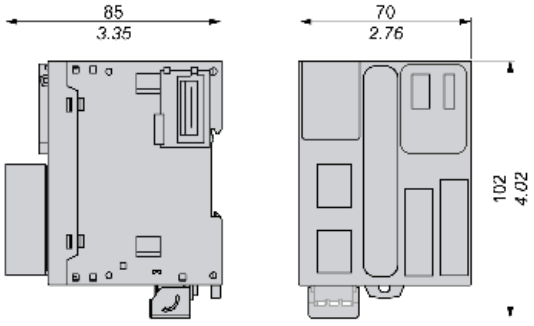


TM221C40R/TM221CE40R/TM221C40T/TM221CE40T

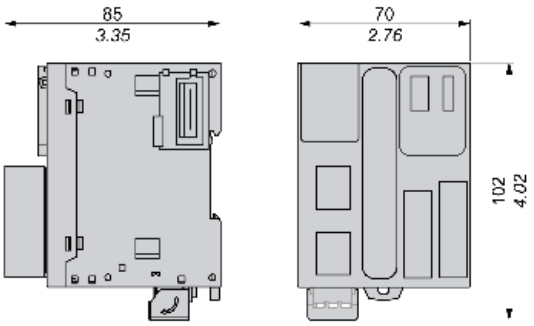


Book Style

TM221M16T / TM221M16TG/TM221M16T / TM221M16TG



TM221M32TK/TM221ME32TK



Control & Signalling Components

Control & Signalling Units Ø22mm



Chromium Plated Metal Bezel – Harmony® Style 4

Assembly of Components	Page 3.4.1
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Illuminated Pushbutton & Selector Switch Heads	Page 3.4.5
Double-Headed & Triple-Headed Pushbutton Heads	Page 3.4.7
Pushbutton & Illuminated Pushbutton Bodies	Page 3.4.8
Additional Light Sources & Contact Blocks	Page 3.4.9
Pilot Lights, Pilot Light Heads & Bodies	Page 3.4.12
Legends, Marking Accessories & Components	Page 3.4.13
Accessories & Spare Parts	Page 3.4.15
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Wireless & Batteryless Pushbutton	Page 3.4.33



Ø22 Black Double Insulated Bezel – Harmony® Style 5

Legends, Marking Accessories & Components	Page 3.4.13
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Mushroom Heads & Emergency Stop Heads	Page 3.4.20
Selector Switch & Key Switch Heads	Page 3.4.21
Illuminated Pushbutton & Selector Switch Heads	Page 3.4.22
Illuminated & Non-illuminated Pushbutton & Selector Switch Bodies	Page 3.4.24
Additional Light Sources & Contact Blocks	Page 3.4.25
Pilot Lights, Pilot Light Heads & Bodies	Page 3.4.28
Accessories & Specific Function Units	Page 3.4.29
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Control & Signalling Units Ø30mm



Ø30 9001K Metal – Harmony® Style 9 – IP66

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Illuminated Pushbutton & Selector Switch Heads	Page 3.4.37
Push to Test Pilot Light, Contact Blocks & Pilot Lights	Page 3.4.39
Joysticks & 9001K & SK Components & Accessories	Page 3.4.41

Ø30 9001K Plastic – Harmony® Style 9 – IP66

Assembly of Components	Page 3.4.42
Pushbutton & Selector Switch Heads	Page 3.4.43
Illuminated Pushbutton & Selector Switch Heads	Page 3.4.44
Push to Test Pilot Light, Contact Blocks & Pilot Lights	Page 3.4.46

Control Stations & Enclosures



Double Insulated Control Stations Ø22mm

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Factory Assembled Units	Page 3.4.49
Variable Composition	Page 3.4.50

Metal Control Stations Ø22mm

Empty Enclosures & Factory Assembled Units	XAP	Page 3.4.51

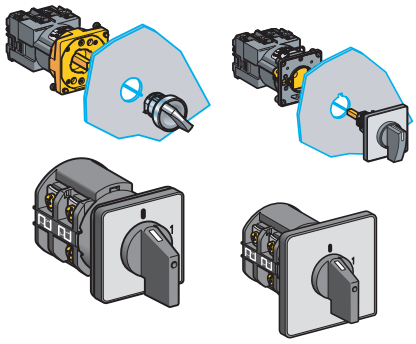
Control Stations & Enclosures (cont.)



Metal & Double Insulated Control Stations 9001 Ø30 mm

Empty Enclosures & Factory Assembled Units – IP66, NEMA 1, 3, 4, 4X & 13 — Page 3.4.52

Cam Switches



Type K1 & K2

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Complete Switches,12A & 20A For Ø22 Hole Mounting — Page 3.4.54
Contact Block Assemblies 20A, Mounting By Ø22 Hole — Page 3.4.56
Operating Heads – IP65 — Page 3.4.58
Legend Plates & Holders — Page 3.4.63

Type K30 - K150

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Complete Switches, 32A to 150A — Page 3.4.60
Legend Plates & Holders — Page 3.4.63

Pendant Stations



Double Insulated Pendant Stations Ø22 Control & Signalling Units

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Factory Assembled Units — 9001BW/XAC — Page 3.4.66
Variable Composition Units — XAC — Page 3.4.67

Wireless Remote Controller for Hoisting

Harmony eXLhoist controller — ZAR — Page 3.4.70

Custom Engraved Legend Plates



Ø22mm & Ø30mm

Control & Signalling Units & Cam Switches — Page 3.4.64

Signalling Units



Assembly of Tower Lights — XVB — Page 3.4.70
Tower Light Beacons & Banks — XVB, XVU — Page 3.4.71
Configurable USB Tower Lights — XVG — Page 3.4.73
Beacons — XVR — Page 3.4.73
Sirens — XVS — Page 3.4.73

Joystick Controllers



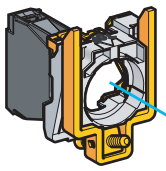
Heavy Duty Joystick Controllers XK Variable Composition Units

Controllers for Light Duty Lifting Gear — XKB — Page 3.4.75
Controllers for Medium Duty Lifting Gear — XKD — Page 3.4.79

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4
Assembly of Components

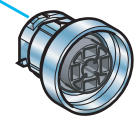
Pushbutton Assembly

Body sub-assemblies

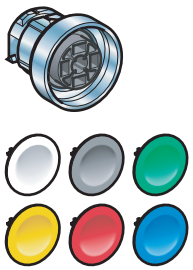


Screw clamp terminals

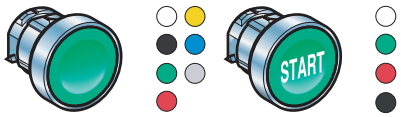
Head sub-assemblies



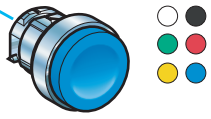
Flush push
without cap



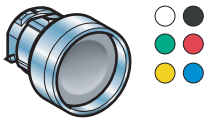
Flush push
with set of 6 caps



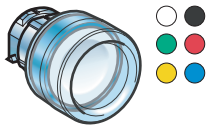
Flush push



Projecting push



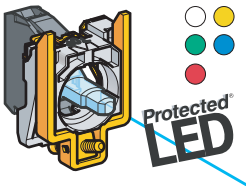
Recessed push



Booted flush push

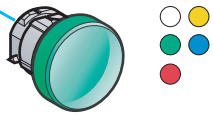
Pilot Light Assembly

Body sub-assemblies with integral LED



Screw clamp terminals

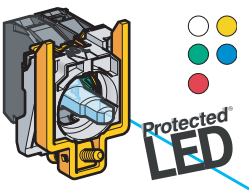
Head sub-assemblies



With lens mounted

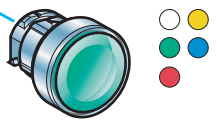
Illuminated Pushbutton Assembly

Body sub-assemblies with integral LED

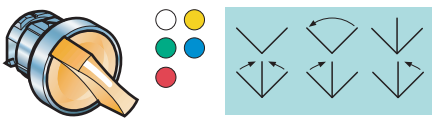


Screw clamp terminals

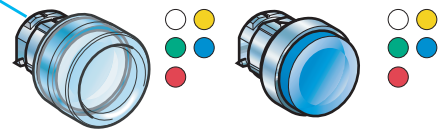
Head sub-assemblies



Flush push



Selector switches with standard handle



Booted flush push

Projecting push

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4 Pushbutton Heads – IP66, NEMA 4X & 13


ZB4BA0


ZB4BA1


ZB4BA18


ZB4BL1


ZB4BA36


ZB4BA331


ZB4BL432

Heads for spring return pushbuttons - unmarked (5) (6)

Type	Colour	Reference
Flush, without colour cap (1)	-	ZB4BA0
Flush	White	ZB4BA1
	Black	ZB4BA2
	Green	ZB4BA3
	Red	ZB4BA4
	Yellow	ZB4BA5
	Blue	ZB4BA6
	Grey	ZB4BA8
Flush with transparent cap, for insertion of legend (2) (7)	White	ZB4BA18
	Green	ZB4BA38
	Red	ZB4BA48
	Yellow	ZB4BA58
	Blue	ZB4BA68
Booted (coloured) (3)	White	ZB4BP1S
	Black	ZB4BP2S
	Green	ZB4BP3S
	Red	ZB4BP4S
	Yellow	ZB4BP5S
	Blue	ZB4BP6S
Projecting	White	ZB4BL1
	Black	ZB4BL2
	Green	ZB4BL3
	Red	ZB4BL4
	Yellow	ZB4BL5
	Blue	ZB4BL6
Recessed (high guard)	White	ZB4BA16
	Black	ZB4BA26
	Green	ZB4BA36
	Red	ZB4BA46
	Yellow	ZB4BA56
	Blue	ZB4BA66

Heads for spring return pushbuttons - marked (5) (6)

Type	Marking Text	Colour	Colour of cap	Reference
Flush	I	White	Green	ZB4BA331
	START	White	Green	ZB4BA333
	ON	White	Green	ZB4BA341
	O	White	Red	ZB4BA432
	STOP	White	Red	ZB4BA434
	OFF	White	Red	ZB4BA435
	↑ (4)	Black	White	ZB4BA334
	↓ (4)	White	Black	ZB4BA335
Projecting	O	White	Red	ZB4BL432
	STOP	White	Red	ZB4BL434
	OFF	White	Red	ZB4BL435

Heads for latching Pushbuttons (5) (6)

Type	Colour	Reference
Flush	White	ZB4BH01
	Black	ZB4BH02
	Green	ZB4BH03
	Red	ZB4BH04
	Yellow	ZB4BH05
	Blue	ZB4BH06
Projecting	White	ZB4BH1
	Black	ZB4BH2
	Green	ZB4BH3
	Red	ZB4BH4
	Yellow	ZB4BH5
	Blue	ZB4BH6

Note:
(1) Colour caps to be ordered separately: see page 3.4.14.
(2) For legend ordering information, refer to page 3.4.14.
(3) Boot replaceable from front without dismantling the head.
(4) Cap supplied not clipped-in, allowing orientation of arrow in 4 directions: ↑, ↓, ← or →.
(5) Refer to Controls and Signalling Components Catalogue for the recommended maximum number of contacts and sequence of contacts constituting the body (fixing collar + contact) associated with the head.
(6) Heads with black metal bezel also available. Add suffix "7" to reference. e.g. ZB4BA07
(7) Can also be used for illuminated type.

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4 Pushbutton Heads – IP66, NEMA 4X & 13 AS 60947.5.1



ZB4BC2

Mushroom heads pushbuttons (2) (3)

Diameter	Type of reset	Colour	Reference
Ø40mm (1)	Spring-return	Black	ZB4BC2
		Green	ZB4BC3
		Red	ZB4BC4
		Yellow	ZB4BC5
		Blue	ZB4BC6
	Push-pull	Black	ZB4BT2
	Turn-to-release	Black	ZB4BS52
		Yellow	ZB4BS55
	Key release (key no 455) (5)	Black	ZB4BS12



ZB4BW443

Diameter		Colour	Reference
Ø40mm (Only for use with bodies comprising a light block with integral LED)	Protected LED	White	ZB4BW413
		Green	ZB4BW433
		Red	ZB4BW443
		Orange	ZB4BW453
		Blue	ZB4BW463



ZB4BS54

Illuminated mushroom heads for push-pull pushbuttons (2) (3) (4)

Type		Diameter	Colour	Reference
Push-pull (Only for use with bodies comprising a light block with superbright integral LED)	Protected LED	Ø40mm	White	ZB4BW613
			Green	ZB4BW633
			Orange	ZB4BW653
			Blue	ZB4BW663



ZB4BS64

Mushroom heads for Emergency stop pushbuttons, trigger type (2) (6)

Type	Diameter	Colour	Reference
Push-pull	30	Red	ZB4BT844
	40	Red	ZB4BT84
	60	Red	ZB4BX84
Trigger action. Turn to release	30	Red	ZB4BS834
	40	Red	ZB4BS844
	60	Red	ZB4BS864
Key release (key no 455)	30	Red	ZB4BS934
	40	Red	ZB4BS944
	60	Red	ZB4BS964



ZB4BW643

Illuminated Emergency stop mushroom heads, Non-trigger

mechanical latching pushbuttons (2) (7)

Type	Diameter	Colour	Reference
Push-pull (only for use with bodies comprising a light block with superbright integral LED)	40	Red	ZB4BW643

Note:

(1) Also available in Ø30 & 60mm except for push-pull type of reset. Please consult Schneider Electric on 1300 369 233.

(2) Refer to Controls and Signalling catalogue for recommended maximum number of contacts constituting the body (fixing collar+contact) associated with the head.

(3) Not suitable for use as an emergency stop device.

(4) Heads with black metal bezel also available. Add suffix "7" to reference. e.g. ZB4L94347.

(5) Other key numbers are available:
- key no. 421E: add suffix 12 to the reference
- key no. 458A: add suffix 10 to the reference
- key no. 520E: add suffix 14 to the reference
- key no. 3131A: add suffix 20 to the reference

(6) Conforming to Machinery Directive 98/37/EC and standard En418/ISO13850.

(7) Conforming to IEC 60365-5-53 and EN/IEC60947-5-5 standards.

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4 Pushbutton & Key Switch Heads – IP66, NEMA 4X & 13 AS 60947.5.1



ZBZ58

Bellows for harsh environments (IP69K)

For use in	Material	Colour	Reference
Environments subject to humidity, dust, high pressure cleaning, etc.	EDPM	Black	ZBZ28
		Yellow	ZBZ58



ZB4BG8

Heads for key switches (1) (3)

Type of operator	Number and type of positions		Reference
Key switch with key (n° 455) (2)	2 - stay put		ZB4BG2
⚷ - key withdrawal position(s)			ZB4BG4
	2 - spring return from right to left		ZB4BG6
	3 - stay put		ZB4BG0
			ZB4BG3
			ZB4BG5
			ZB4BG9
			ZB4BG09
	3 - spring return from left to centre		ZB4BG1
	3 - spring return to centre		ZB4BG7
	3 - spring return from right to centre		ZB4BG8
			ZB4BG08

Note:
(1) Refer to Controls and Signalling Catalogue for recommended maximum number of contacts constituting the body (fixing collar + contact) associated with the head.
(2) Other key numbers are available. (Please consult Schneider Electric on 1300 369 233).
(3) Other version: (Please consult Schneider Electric on 1300 369 233). Heads with metal black bezel available.

Control & Signalling Units Ø22mm

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4 Illuminated Pushbutton, Selector & Toggle Switch Heads – IP66, NEMA 4X & 13 AS 60947.5.1


ZB4BD4


ZB4BJ3


ZB4BD28


ZB4BW343


ZB4BW563


ZB4BW113


ZB4BW33

Heads for selector switches (1)

Type of operator	Number and type of positions	Reference
Standard - handle, black (4)(5)	2 - stay put	ZB4BD2
	2 - spring return from right to left	ZB4BD4
	3 - stay put	ZB4BD3
	3 - spring return to centre	ZB4BD5
	3 - spring return from left to centre	ZB4BD7
	3 - spring return from right to centre	ZB4BD8
Long - handle, black	2 - stay put	ZB4BJ2
	2 - spring return from right to left	ZB4BJ4
	3 - stay put	ZB4BJ3
	3 - spring return to centre	ZB4BJ5
	3 - spring return from left to centre	ZB4BJ7
	3 - spring return from right to centre	ZB4BJ8

Heads for toggle switches (black lever) (1) (3)

Number of positions	Type of positions	Reference
2 position	Stay put	ZB4BD28
	Spring return	ZB4BD48

Heads for spring return illuminated pushbuttons (with plain lens) (1) (3)

Type of push	Colour	Reference
Only for use with bodies comprising a light block with "Protected LED"		
Flush (2)	White	ZB4BW313
	Green	ZB4BW333
	Red	ZB4BW343
	Orange	ZB4BW353
	Blue	ZB4BW363
Flush with clear boot	White	ZB4BW513
	Green	ZB4BW533
	Red	ZB4BW543
	Orange	ZB4BW553
	Blue	ZB4BW563
Projecting (2)	White	ZB4BW113
	Green	ZB4BW133
	Red	ZB4BW143
	Orange	ZB4BW153
	Blue	ZB4BW163
Only for use with bodies comprising a light block for a BA 9s base fitting bulb (incandescent, neon or LED)		
Flush (2)	White	ZB4BW31
	Green	ZB4BW33
	Red	ZB4BW34
	Orange	ZB4BW35
	Blue	ZB4BW36
	Clear	ZB4BW37
Projecting (2)	White	ZB4BW11
	Green	ZB4BW13
	Red	ZB4BW14
	Orange	ZB4BW15
	Blue	ZB4BW16
	Clear	ZB4BW17

Note:

(1) Refer to Controls and Signalling Catalogue for recommended maximum number of contacts and sequence of contacts constituting the body (fixing collar + contact) associated with the head.

(2) Other version: (Please consult Schneider Electric on 1300 369 233). Illuminated Pushbutton heads with grooved lens for bright ambient light conditions (eg outdoor in sunlight).

(3) Other version: (Please consult Schneider Electric on 1300 369 233). Heads with metal black bezel also available.

(4) Other version: (Please consult Schneider Electric on 1300 369 233). Knob version also available.

(5) Heads only with other coloured standard handle:

white	add suffix 01 to the reference, example: ZB4BD201
green	add suffix 03 to the reference, example: ZB4BD203
red	add suffix 04 to the reference, example: ZB4BD204
yellow	add suffix 05 to the reference, example: ZB4BD205
blue	add suffix 06 to the reference, example: ZB4BD206

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4
Illuminated Pushbutton Heads – IP66, NEMA 4X & 13
Illuminated Selector Switch Heads – IP66, NEMA 4X & 13, AS 60947.5.1


ZB4BH033

Heads for illuminated latching Pushbuttons (1) (3)

Type	Colour	Reference
Only for use with bodies comprising a light block with "Protected LED"		
Flush	White	ZB4BH013
	Green	ZB4BH033
	Red	ZB4BH043
	Orange	ZB4BH053
	Blue	ZB4BH063
Projecting	White	ZB4BH13
	Green	ZB4BH33
	Red	ZB4BH43
	Orange	ZB4BH53
	Blue	ZB4BH63


ZB4BK1343

Heads for illuminated selector switches, standard handle (1) (2)

Number and type of positions	Colour of handle	Reference
Only for use with bodies comprising a light block with "Protected LED"		
2 - stay put	White	ZB4BK1213
	Green	ZB4BK1233
	Red	ZB4BK1243
	Orange	ZB4BK1253
	Blue	ZB4BK1263
2 - spring return from right to left	White	ZB4BK1413
	Green	ZB4BK1433
	Red	ZB4BK1443
	Orange	ZB4BK1453
	Blue	ZB4BK1463
3 - stay put	White	ZB4BK1313
	Green	ZB4BK1333
	Red	ZB4BK1343
	Orange	ZB4BK1353
	Blue	ZB4BK1363
3 - spring return to centre	White	ZB4BK1513
	Green	ZB4BK1533
	Red	ZB4BK1543
	Orange	ZB4BK1553
	Blue	ZB4BK1563
3 - spring return from right to centre	White	ZB4BK1813
	Green	ZB4BK1833
	Red	ZB4BK1843
	Orange	ZB4BK1853
	Blue	ZB4BK1863
3 - spring return from left to centre	White	ZB4BK1713
	Green	ZB4BK1733
	Red	ZB4BK1743
	Orange	ZB4BK1753
	Blue	ZB4BK1763

Note:
(1) Refer to Controls and Signalling Catalogue for recommended maximum number of contacts and sequence of contacts constituting the body (fixing collar + contact) associated with the head.
(2) Other version: (Please consult Schneider Electric on 1300 369 233). Heads with metal black bezel also available.
(3) Colour of centrally positioned pilot light determined by the colour of the LED incorporated in the body sub-assembly.

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4 Double-Headed & Triple-Headed Pushbuttons IP66, NEMA 4X & 13, AS 60947.5.1


ZB4BL7341

Double-headed pushbuttons, IP66

Description	Colour and marking of caps	Reference
1 flush black push 1 projecting red push	Green + red red background, unmarked	ZB4BL7340
	White "I" on green background White "0" on red background	ZB4BL7341
2 flush black pushes	Without cap (1)	ZB4BA79


ZB4BW7A3741

Double-headed pushbuttons + 1 white central pilot light block, IP66 (2)

Description	Colour and marking of caps	Reference
1 flush black push 1 projecting red push 1 clear central pilot light (3)	Green + red red background, unmarked	ZB4BW7L3740
	White "I" on green background White "0" on red background	ZB4BW7L3741
2 flush black pushes 1 clear central pilot light (3)	Without cap (1)	ZB4BW7A9



ZB4BA71114

Triple-headed pushbuttons, IP66

Description	Colour and marking of caps	Reference
2 flush black pushes 1 central projecting red push marked "STOP" in white	Black "→" on white background White "←" on black background	ZB4BA71113
	Black "↑" on white background White "↓" on black background	ZB4BA71114
	Without cap (1)	ZB4BA791


ZBA7235

Caps for double-headed and triple-headed pushbuttons

Description	Background colour	Marking	Reference
Caps only for double or triple-headed pushbuttons, clip-on mounting (4)	White	Unmarked	ZBA71
		"I" black	ZBA7131
		"→" black	ZBA7134
		"+" black	ZBA7138
	Black	Unmarked	ZBA72
		"O" white	ZBA7232
		"+" white	ZBA7233
		"→" white	ZBA7235
		"I" white	ZBA7237
	Green	Unmarked	ZBA73
		"I" white	ZBA7331
		"+" white	ZBA7333
		"↑" white	ZBA7335
		"II" white	ZBA7336
	Red	Unmarked	ZBA74
		"O" white	ZBA7432
	Yellow	Unmarked	ZBA75
	Blue	Unmarked	ZBA76


ZBA7331


ZBA7432

Boots for double-headed and triple-headed pushbuttons

Description	For pushbuttons	Reference
Clear silicone boots (5)	Double-headed with 2 flush pushes	ZBA708
	Triple-headed	ZBA709
	Double-headed with 1 flush push + 1 projecting push	ZBA710


ZBA709

Note:
(1) Please refer to "Caps for double-headed and triple headed pushbuttons" for the selection table of the available caps.
(2) Only for use with bodies comprising a light source with integral LED.
(3) Colour of the central pilot lights depends on the colour of the LED light block.
(4) Caps can be clipped-in at 90° steps, through 360°.
(5) Boots can be fitted without dismantling the pushbutton head.

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4 Pushbutton & Illuminated Pushbutton Bodies AS 60947.5.1



ZB4BZ101

Pushbutton & selector switch bodies (Schneider Electric anti-retightening system) (1)

Description	Type of contact N/O	Type of contact N/C	Reference Screw clamp terminal connections
Fixing collar + single contact block	1	–	ZB4BZ101
	–	1	ZB4BZ102
	2	–	ZB4BZ103
	–	2	ZB4BZ104
	1	1	ZB4BZ105



ZB4BW0B11

Illuminated pushbutton & selector switch bodies (Schneider Electric anti-retightening system) (1)

Light source	Supply voltage V		Type of contact N/O	Type of contact N/C	Colour	Reference Screw clamp terminal connections
Integral LED (to combine with heads for integral LED) Protected LED	⎓ 24		1	–	White	ZB4BW0B11
					Green	ZB4BW0B31
					Red	ZB4BW0B41
					Orange	ZB4BW0B51
					Blue	ZB4BW0B61
			–	1	Red	ZB4BW0B42
			1	1	White	ZB4BW0B15
					Green	ZB4BW0B35
					Red	ZB4BW0B45
					Orange	ZB4BW0B55
					Blue	ZB4BW0B65
	~ 110...120 (2)		1	–	White	ZB4BW0G11
					Green	ZB4BW0G31
					Red	ZB4BW0G41
					Orange	ZB4BW0G51
					Blue	ZB4BW0G61
			–	1	Red	ZB4BW0G42
			1	1	White	ZB4BW0G15
					Green	ZB4BW0G35
					Red	ZB4BW0G45
					Orange	ZB4BW0G55
					Blue	ZB4BW0G65
	~ 230…240 (2)		1	–	White	ZB4BW0M11
					Green	ZB4BW0M31
					Red	ZB4BW0M41
					Orange	ZB4BW0M51
					Blue	ZB4BW0M61
			–	1	Red	ZB4BW0M42
			1	1	White	ZB4BW0M15
					Green	ZB4BW0M35
					Red	ZB4BW0M45
					Orange	ZB4BW0M55
					Blue	ZB4BW0M65
Direct supply	BA 9s base fitting bulb 2.4 W max. bulb not included (3)	⩽ 250	1	–	–	ZB4BW061
			–	1	–	ZB4BW062
			2	–	–	ZB4BW063
			1	1	–	ZB4BW065
Supply via integral transformer 1.2 VA, 6 V secondary	BA 9s base fitting bulb incandescent bulb included	~ 110…120 50/60 Hz	1	–	–	ZB4BW031
			1	1	–	ZB4BW035
		~ 230, 50 Hz	1	–	–	ZB4BW041
		~ 220…240, 60 Hz	1	1	–	ZB4BW045
		~ 400 50 Hz	1	–	–	ZB4BW051
			1	1	–	ZB4BW055



ZB4BW061



ZB4BW055

Note:
(1) Refer to Controls and Signalling Catalogue for recommended maximum number of contacts and sequence of contacts constituting the body (fixing collar + contact) associated with the head.
(2) Use in conjunction with LED suppressor block ZBZV• when connected in parallel with inductive loads. See page 3.4.11
(3) Bulb to be ordered separately: see page 3.4.12.

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4
Additional Light Sources – IP66, NEMA 4X & 13
AS 60947.5.1

Simply Smart!

Leveraging **ingenuity** and intelligence for **ease of use**

Pilot Lights and Illuminated Pushbuttons

Harmony

High intensity and true colours

The pilot lights and illuminated pushbuttons enable the operator to be kept clearly informed on the status of a machine or installation. High intensity "Protected LED®™ technology, available as standard on the Ø 22mm XB4/XB5 offers, assures high performance and environmentally friendly optimised energy consumption.

Characterised by extreme robustness, refined ergonomics and maximum installation simplicity, the extensive range of Telemecanique pilot lights and illuminated pushbuttons provide ideal solutions for all your applications.



ZBVB1



ZBV6

Additional light sources

Description	Supply Voltage V	Colour	Reference Screw clamp terminal connections
Integral LED (to combine with heads for integral LED) Protected LED	⎓ 12	White	ZBVJ1
		Green	ZBVJ3
		Red	ZBVJ4
		Orange	ZBVJ5
		Blue	ZBVJ6
	⎓ 24	White	ZBVB1
		Green	ZBVB3
		Red	ZBVB4
		Orange	ZBVB5
		Blue	ZBVB6
	⎓ 24 - 120 (1)	White	ZBVBG1
		Green	ZBVBG3
		Red	ZBVBG4
		Orange	ZBVBG5
		Blue	ZBVBG6
	~ 110 - 120 (1)	White	ZBVG1
		Green	ZBVG3
		Red	ZBVG4
		Orange	ZBVG5
		Blue	ZBVG6
	~ 230 - 240 (1)	White	ZBVM1
		Green	ZBVM3
		Red	ZBVM4
		Orange	ZBVM5
		Blue	ZBVM6
Complete bodies with flashing Integral LED (to combine with heads for integral LED) Protected LED	⎓ 24	White	ZBV18B1
		Green	ZBV18B3
		Red	ZBV18B4
		Orange	ZBV18B5
		Blue	ZBV18B6
	~ 110...120	White	ZBV18G1
		Green	ZBV18G3
		Red	ZBV18G4
		Orange	ZBV18G5
		Blue	ZBV18G6
	~ 230/240	White	ZBV18M1
		Green	ZBV18M3
		Red	ZBV18M4
		Orange	ZBV18M5
		Blue	ZBV18M6
Direct supply for BA 9s, base fitting bulb 2.4 W max. bulb not included (2)	⩽ 250		ZBV6

Note:
(1) Use suppressor in conjunction with protected LED when connected in parallel to inductive loads. See page 3.4.11
(2) Bulb to be ordered separately: see page 3.4.12

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4
Additional Contact Blocks – IP66, NEMA 4X & 13
AS 60947.5.1



ZBE101



ZBE204

Additional contact blocks with screw clamp terminal connections (1)

Description	Contact Rating	Type of contact N/O	Type of contact N/C	Reference Screw clamp terminal connections
Standard single	3A, 240V AC 0.55A, 125V DC	1	–	ZBE101
		–	1	ZBE102
Standard double	3A, 240V AC 0.55A, 125V DC	2	–	ZBE203
		–	2	ZBE204
		1	1	ZBE205
Special contact blocks (2) (for low power switching)	0.1A, 24V DC	1	–	ZBE1016
		–	1	ZBE1026



ZBE1015

Additional contact blocks with spring terminal connections (2)

Description Standard single	Type of contact N/O	N/C	Reference
	1	-	ZBE1015
	-	1	ZBE1025



ZBVM45

Additional light blocks with spring terminal connections (2)

Description	Supply Voltage	Colour of LED	Reference
Integral LED (to combine with heads for integral LED)	12Vac/dc (50/60 Hz)	White	ZBVJ15
		Green	ZBVJ35
		Red	ZBVJ45
		Orange	ZBVJ55
		Blue	ZBVJ65
	24Vac/dc (50/60 Hz)	White	ZBVB15
		Green	ZBVB35
		Red	ZBVB45
		Orange	ZBVB55
		Blue	ZBVB65
	110..120Vac (50/60 Hz)	White	ZBVG15
		Green	ZBVG35
		Red	ZBVG45
		Orange	ZBVG55
		Blue	ZBVG65
	230..240Vac (50/60 Hz)	White	ZBVM15
		Green	ZBVM35
		Red	ZBVM45
		Orange	ZBVM55
		Blue	ZBVM65

3.4

Note:
(1) Refer to Controls and Signalling Catalogue for recommended maximum number of contacts or sequence of contact constituting the body (fixing collar + contact) associated with the head.
(2) It is not possible to fit these contact blocks with supplementary contact blocks.

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4
Additional Contact Block & Accessories – IP66, NEMA 4X & 13
AS 60947.5.1

High-current contact block (1) (2)

Description	Contact ratings	Reference
High current contact block	1 N/O with support plate	ZBE501
	1 N/C with support plate	ZBE502
	2 N/O with support plate	ZBE503
	2 N/C with support plate	ZBE504
	1 N/O + 1 N/C with support plate	ZBE505



ZBZG156

Blocks for “test light” function

For use with	Supply voltage V	Description	Reference
Light blocks (3)	⎓ 12 and 24 ⎓ 24 ...120	Single module, 1 connecting wire	ZBZG156
Light blocks with integral LED (4)	∿ 48...230	Double module, with connecting wires	ZBZM156



ZBZM156

LED suppressors

For use with	Supply voltage V	Level of Protection	Reference
Light blocks with integral LED fitted with screw clamp terminal connections	∿ 120	25...120VA	ZBZVG
	∿ 230	30...230VA	ZBZVM



ZBZVM



ZB4BZ009

Body/fixing collar (Schneider Electric anti-retightening system)

For use with	Reference
Electrical blocks (contact or light)	ZB4BZ009



ZB5SZ3

Blanking plugs

Description	For use with	Reference
Metal blanking plug, round chromium plated (5)	For Ø22 control & signalling units	ZB4SZ3
Plastic blanking plug round, black (6)	For Ø22 control & signalling units	ZB5SZ3



ZB4SZ3

Note:
(1) Can be fitted with ZB4BZ009 or ZB5AZ009 fixing collar
(2) High-current contact block cannot be combined with the standard contact blocks
(3) Block for use with ⎓ light blocks with integral LED types ZBVJ•, ZBVB•, ZBVBG• or with direct supply light block for BA 9s bulb, ZBV6.
(4) Block for use with ∿ light blocks with integral LED types ZBVG•, ZBVM•.
(5) Requires a ZB4BZ009 body/fixing collar.
(6) Supplied complete with fixing nut.

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4 & 5
Pilot Lights, Pilot Light Heads & Bodies
IP66, NEMA 4X&13 AS 60947.5.1


XB4BVB5

Complete pilot lights with "Protected LED" (Schneider Electric anti-retightening system)

Supply Voltage V	Colour	Body + Head	Reference
⎓ 24	White	ZB4BVB1 + ZB4BV013	XB4BVB1
Protected LED	Green	ZB4BVB3 + ZB4BV033	XB4BVB3
	Red	ZB4BVB4 + ZB4BV043	XB4BVB4
	Orange	ZB4BVB5 + ZB4BV053	XB4BVB5
	Blue	ZB4BVB6 + ZB4BV063	XB4BVB6
~ 110...120	White	ZB4BVG1 + ZB4BV013	XB4BVG1
	Green	ZB4BVG3 + ZB4BV033	XB4BVG3
	Red	ZB4BVG4 + ZB4BV043	XB4BVG4
	Orange	ZB4BVG5 + ZB4BV053	XB4BVG5
	Blue	ZB4BVG6 + ZB4BV063	XB4BVG6
~ 230...240	White	ZB4BVM1 + ZB4BV013	XB4BVM1
	Green	ZB4BVM3 + ZB4BV033	XB4BVM3
	Red	ZB4BVM4 + ZB4BV043	XB4BVM4
	Orange	ZB4BVM5 + ZB4BV053	XB4BVM5
	Blue	ZB4BVM6 + ZB4BV063	XB4BVM6


ZB4BV053

Pilot light heads to suit "Protected LED" (2) (3)

For use with body comprising light source type	Colour of lens	Reference
Integral LED only	White	ZB4BV013
Protected LED	Green	ZB4BV033
	Red	ZB4BV043
	Orange	ZB4BV053
	Blue	ZB4BV063


ZB4BV04


ZB4BV6


ZB4BV8

Pilot light heads to suit incandescent globes (2)

For use with body comprising light source type	Colour	Reference
BA 9s incandescent globe	White	ZB4BV01
	Green	ZB4BV03
	Red	ZB4BV04
	Orange	ZB4BV05
	Blue	ZB4BV06
	Clear	ZB4BV07

Pilot light bodies (Schneider Electric anti-retightening system)

Description	Light source	Supply voltage V	Reference
Direct supply	BA 9s bulb 2.4 W max. Not included (4)	⩽ 250	ZB4BV6
Via integral transformer 1.2 VA, 6 V secondary	BA 9s incandescent bulb included	~ 110…120 - 50/60 Hz	ZB4BV3
		~ 230...240 - 50/60 Hz	ZB4BV4
		~ 400 - 50 Hz	ZB4BV5
		~ 440…480 - 60 Hz	ZB4BV8
		~ 550…600 - 60 Hz	ZB4BV9

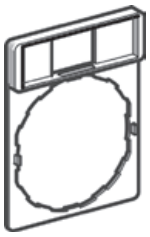

DL1CE•••

BA9s globes (incandescent)

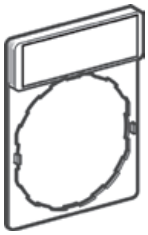
Description	Voltage	Reference
Incandescent filament lamp (max. power 2.4W)	6V AC/DC	DL1CB006
	12V AC/DC	DL1CE012
	24V AC/DC	DL1CE024
	48V AC/DC	DL1CE048
	130V AC/DC	DL1CE130

Note:
(1) Push to test pilot lights available, contact Schneider Electric Help Centre for more details.
(2) Other version: (Please consult Schneider Electric on 1300 369 233). Pilot light heads with grooved lens for use in bright ambient light conditions (eg outdoors in sunlight).
(3) Other version: (Please consult Schneider Electric on 1300 369 233). Pilot light heads with plain lens for insertion legend. For legend ordering information, refer to page 3.4.14
(4) Bulb to be ordered separately.

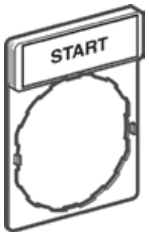
Ø22 Chromium Plated Metal Bezel – Harmony® Style 4 & 5
Marking Accessories for Control & Signalling Units
AS 60947.5.1



ZBZ32



ZBY2101



ZBY2303

Standard (30 x 40mm) legend holders for 8 x 27mm legends

Description	Legend Colour	Marking	Reference
Without legend	–	–	ZBZ32
With blank legend (3) (for engraving)	Black or red background	–	ZBY2101
	White or yellow background	–	ZBY4101
With marked legend		0 (black background)	ZBY2146
		0 (red background)	ZBY2931
		I	ZBY2147
		II	ZBY2148
		0-I	ZBY2178
		I-II	ZBY2179
		I-0-II	ZBY2186
		Auto	ZBY2115
		Stop	ZBY2304
		Auto-hand	ZBY2364
		Auto-0-hand	ZBY2385
		AUTO-OFF-MAN	ZBY2385M
		AUTO-MAN	ZBY2364M
		Close	ZBY2314
		Down	ZBY2308
		Emergency stop (red background)	ZBY2330
		Fast	ZBY2328
		Forward	ZBY2305
		Hand	ZBY2316
		Hand-OFF-AUTO	ZBY2387
		Inch	ZBY2321
		LEFT	ZBY2310
		LOWER	ZBY23LO
		Off	ZBY2312
		Off-on	ZBY2367
		On	ZBY2311
		Open	ZBY2313
		Power on	ZBY2326
		RAISE	ZBY23RA
		Reset (red background)	ZBY2323
		Reset (black background)	ZBY2322
		Reverse	ZBY2306
		Right	ZBY2309
		Run	ZBY2334
		Slow	ZBY2327
		Start (1)	ZBY2303
		STOP-Start	ZBY2366
		Up	ZBY2307



ZBZ33

Standard (30 x 50mm) legend holders for 18 x 27mm legends

Description	Legend colour	Reference
Without legend	–	ZBZ33
Blank legend (2) (for engraving)	Black or red background	ZBY5101
	White or yellow background	ZBY5102



ZBY010•

Legends for engraving (2)

Description mm	For use with	Colour	Reference
8 x 27	30 x 40mm legend holders	Black or red background	ZBY0101
		White or yellow background	ZBY0102

Note:
(1) "Start" functions: white letters on black background. "Stop" functions: white letters on red background (unless otherwise specified above).
(2) For custom engraved legends use order form on 3.4.60
(3) Custom engraving cost not included. Refef to page 3.4.60 for custom engraved legends.

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4 & 5
Marking Accessories & Components
AS 60947.5.1

Peel off labels

Application		Reference
Sheets of 66 circular peel-off legend	Transparent self-adhesive (without marking)	ZBY1101
Sheet of 76, 8 x 27mm peel-off legends	30 x 40mm legend holders| ZBZ-32 with backing board and protective transparent cover	ZBY4100
Sheets of 40, 18 x 27mm peel-off legends	30 x 50mm legend holders ZBZ33 with backing board and protective transparent cover	ZBY5100



ZBY9320

Circular legends for Emergency stop mushroom heads pushbuttons

Diameter mm	Marking, on yellow background	Reference
60	EMERGENCY STOP	ZBY9320
90	EMERGENCY STOP	ZBY8330
60mm for padlocking device ZBZ3605	EMERGENCY STOP	ZBY9330T



ZBA333



ZBA639

Pushbutton caps - marked and plain

For use with	Marking Text	Colour of text	Colour of cap	Reference
ZB5-AA0 and ZB4-BA0	START (1)	White	Green	ZBA333
	ON	White	Green	ZBA341
	UP (1)	Black	White	ZBA343
	DOWN (1)	White	Black	ZBA344
	STOP (1)	White	Red	ZBA434
			Black	ZBA234
	OFF	White	Red	ZBA435
			Black	ZBA235
	R (1)	White	Blue	ZBA639
	Unmarked caps for flush pushbutton	–	6 colours (2)	ZBA9
	Unmarked caps for projecting pushbutton		6 colours (2)	ZBL9


ZBP0

Boots for pushbuttons, selector switches and key switches

Description	For use with pushbutton types (illuminated or non-illuminated)	Reference
Clear single boots	Flush (with circular head)	ZBPA
	Projecting with circular heads	ZBP0
	Flush or Projecting with circular head in food industry applications	ZBP0A
Rubber boots	For selector switch with standard handle	ZBDD2
Keyhole cover	Protection of lock barrel when no key inserted in lock	ZBGP
Bellows	For use on emergency stop pushbutton, black, EDPM	ZBZ28
	For use on emergency stop pushbutton, yellow, EDPM	ZBZ58

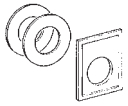

ZBZ58

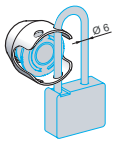
Coloured Boots for Spring Return Pushbuttons

Description	Colour	Reference
Pushbutton cover	White	ZBP011
	Blacks	ZBP012
	Green	ZBP013
	Red	ZBP014
	Yellow	ZBP015
	Blue	ZBP016

Note:
(1) Double injection moulded marking.
(2) Set of 6 different colour caps: white, black, green, red, yellow and blue.

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4
Components & Accessories for Specific Function Units
IP65, NEMA 4x & 13 AS 60947.5.1


ZB2BZ4


ZBZ1606


ZB4BZ021


15151


ZBG455


ZBZ3605


ZBZ8


XBFX13


XB4BA821


ZB4BD912
+ ZBFE350-060

Accessories

Description			Reference
Flush mounting for Push buttons and Pilot lights (4) (5)			ZB4BZ021
Flush mounting for Selector Switch and Illuminated Pilot Light			ZB4BZ022
Adaptor plate for mounting a ZB4 unit into a Ø30mm hole, with seal & back washer			ZB4BZ012
Lockable flap, Suits ZB4-BA	Lockable with Pushbutton unoperated	Padlocks not supplied	ZB4BZ66
Protective metal guard (padlockable) (1) (4) for Ø40mm mushroom head Pushbuttons	4 x Ø7mm holes for padlocking	Blue	ZBZ1606
		Black	ZBZ1602
Protective plastic guard For selector switches and key switches		Black	ZBZ2102
Padlocking Kit (1) (3) conforming to EN418/ISO13850 (padlockable)	For emergency stop only, with the following 40mm dia trigger-action pushbutton XB4BT8, XB4BS8, XB4BS9, ZB4BT8, ZB4BS8, ZB4BS9	Yellow	ZBZ3605
Spare key for key operated units (2)	Set of 2 keys	Ronis No.455	ZBG455
Spacer bracket	liquid spray protective washer for insertion beneath head of Ø22mm devices	Chronium plated	ZB4BZ007
Pushbutton holder	For use on 35mm DIN rail, in modular cabinets or enclosures		15151

Pushbutton Tools

Description	Reference
Lens cap tightening tool for illuminated Pushbuttons with flush push	ZBZ8
Bulb extractor for use with BA 9s bulb	XBFX13

Heads for manual overload reset buttons, flush push

Travel mm	Actuation distance mm	Colour	Reference
10	6...16	Black	XB4BA821
		Red	XB4BA841
		Blue	XB4BA861
	6...26	Black	XB4BA822
		Red	XB4BA842
		Blue	XB4BA862
14	30...130	Black	XB4BA921
		Red	XB4BA941
		Blue	XB4BA961
	130...257	Black	XB4BA922
		Red	XB4BA942
		Blue	XB4BA962

Heads + mounting base for potentiometer

Description	Application	Reference
For potentiometer with shaft length 45 to 50mm (potentiometer not included)	For shaft Ø6mm	ZB4BD912
	For shaft Ø6.35mm	ZB4BD922
4.7K ohm Potentiometer	To suit ZB4BD9	ZBFE350-060

Note:
(1) No isolation function is possible when this guard is fitted.
(2) Other key types also available. (Please consult Schneider Electric on 1300 369 233).
(3) Standard circular legends are not compatible with this product. Use legend ZBY9330T.
(4) Not suitable for emergency stop devices.
(5) For black coating flush mounting kit ZB4BZ0117

Ø22 Chromium Plated Metal Bezel – Harmony® Style 4 Joysticks & Miscellaneous Devices – IP65, NEMA 4x & 13 AS 60947.5.1



XD4PA12

Ø 22 Complete units type XD4-P

Description	Operation	Spring return to Off position	Bezel	Reference
2 direction (A ← ○ → B)	1 notch 1 N/O contact per direction	Without	Metal	XD4PA12
		With	Metal	XD4PA22
4 direction (D / A ← ○ → B / C)	1 notch 1 N/O contact per direction	Without	Metal	XD4PA14
		With	Metal	XD4PA24

Sub-assemblies for joystick controllers

Description	Functions		Reference
Complete body/contact assemblies	2-direction		ZD4PA103
	4-direction		ZD4PA203
Complete head assemblies with operating shaft	2-direction, stay put		ZD4PA12
	2-direction, spring return to zero position		ZD4PA22
	4-direction, stay put		ZD4PA14
	4-direction, spring return to zero position		ZD4PA24
Legends 30x48mm blank	2-direction	Black one side, red reverse	ZBG2201
		White one side, yellow reverse	ZBG2401
Legends 48x48mm blank	4-direction	Black one side, red reverse	ZBG4201
		White one side, yellow reverse	ZBG4401
Wobblestick heads	omnidirectional, spring return	Black	ZB4BB2
		Red	ZB4BB4



XD2GA8211

Ø 22 Complete units type XD2-G (interchangeable contact blocks) (1)

Description	Operation	Spring return to Off position	Reference
2 direction 90-x-90mm fixing centres (A ← ○ → B)	2 notches 2 N/O contacts per direction	With	XD2GA8241
		1st notch stayput 2nd notch with spring return to 1st notch	XD2GA8251
4 direction 90-x-90mm fixing centres (D / A ← ○ → B / C)	2 notches 2 N/O contacts per direction	With	XD2GA8441
		1st notch stayput 2nd notch with spring return to 1st notch	XD2GA8451



ZB2BE101

Spare contact blocks

Description	For use with	Reference
1 N/O contact block, slow break	XD2-G 2 & 4 direction	ZB2BE101

Pilot Light, with Integral Lens Cap and Covered LED

Description	Voltage	Colour	Reference
Ø 8mm with integral ballast resistor and reverse polarity protection diode IP40	24V d.c.	Green	XVLA233
		Red	XVLA234
		Yellow/Orange	XVLA235
Ø 12mm with integral ballast resistor and reverse polarity protection diode IP40	24V d.c.	Green	XVLA333
		Red	XVLA334
		Yellow/Orange	XVLA335



XVLA233



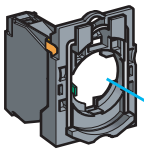
XVLA335

Note:
(1) Other version: (Please consult Schneider Electric on 1300 369 233). Black metal bezel also available.

Ø22 Black Double Insulated Bezel – Harmony® Style 5
Assembly of Components

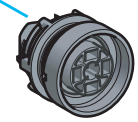
Pushbutton Assembly

Body sub-assemblies



Screw clamp terminals

Head sub-assemblies

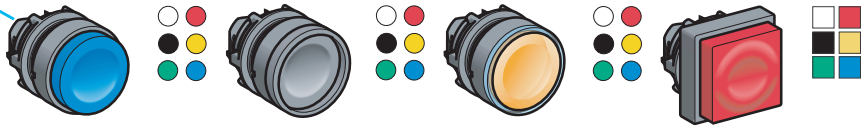




Flush push



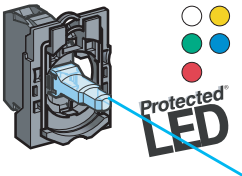
Flush push



Projecting push | Recessed push | Booted flush push | Projecting push

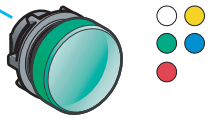
Pilot Light Assembly

Body sub-assemblies with integral LED

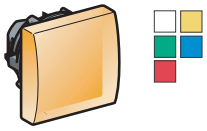


Screw clamp terminals

Head sub-assemblies

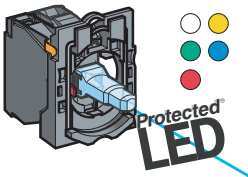


With lens mounted



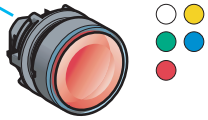
Illuminated Pushbutton Assembly

Body sub-assemblies with integral LED

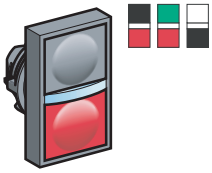


Screw clamp terminals

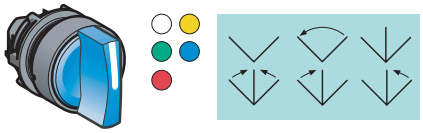
Head sub-assemblies



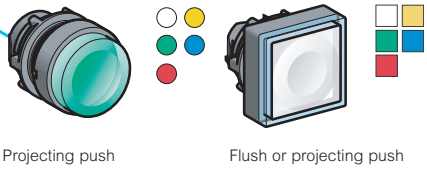
Flush push with cap mounted/not mounted



Flush push for without/with markings



Standard handle operator



Projecting push | Flush or projecting push

Ø22 Black, Double Insulated Bezel – Harmony® Style 5 Pushbutton Heads – IP66, NEMA 4X & 13 AS 60947.5.1


ZB5AA0


ZB5AA5


ZB5AL3


ZB5AA331


ZB5AH04

Heads for spring return pushbuttons - unmarked (5)

Type	Colour	Reference
Flush, without colour cap (1)	–	ZB5AA0
Flush	White	ZB5AA1
	Black	ZB5AA2
	Green	ZB5AA3
	Red	ZB5AA4
	Yellow	ZB5AA5
	Blue	ZB5AA6
	Grey	ZB5AA8
Flush with transparent cap, for insertion of legend (2)	White	ZB5AA18
	Green	ZB5AA38
	Red	ZB5AA48
	Yellow	ZB5AA58
	Blue	ZB5AA68
Booted (coloured) (3)	White	ZB5AP1S
	Black	ZB5AP2S
	Green	ZB5AP3S
	Red	ZB5AP4S
	Yellow	ZB5AP5S
	Blue	ZB5AP6S
Projecting	White	ZB5AL1
	Black	ZB5AL2
	Green	ZB5AL3
	Red	ZB5AL4
	Yellow	ZB5AL5
	Blue	ZB5AL6
Recessed (high guard)	White	ZB5AA16
	Black	ZB5AA26
	Green	ZB5AA36
	Red	ZB5AA46
	Yellow	ZB5AA56
	Blue	ZB5AA66

Heads for spring return pushbuttons - marked (5)

Type	Marking		Colour of cap	Reference
	Text	Colour		
Flush	START	White	Green	ZB5AA333
	STOP	White	Red	ZB5AA434
	UP	Black	White	ZB5AA343
	DOWN	White	Black	ZB5AA344
	↑ (4)	Black	White	ZB5AA334
	↓ (4)	White	Black	ZB5AA335

Heads for latching pushbuttons (5)

Type	Colour	Reference
Flush	White	ZB5AH01
	Black	ZB5AH02
	Green	ZB5AH03
	Red	ZB5AH04
	Yellow	ZB5AH05
	Blue	ZB5AH06
Projecting	White	ZB5AH1
	Black	ZB5AH2
	Green	ZB5AH3
	Red	ZB5AH4
	Yellow	ZB5AH5
	Blue	ZB5AH6

Note:
(1) Colour cap to be ordered separately, see page 3.4.14.
(2) For legend ordering information, see page 3.4.14.
(3) Boot replaceable from front without dismantling the head.
(4) Cap supplied not clipped-in, allowing orientation of arrow in 4 directions : ↑, ↓, ← or →.
(5) Refer to Controls and Signalling Catalogue for the recommended maximum number of contacts constituting the body (fixing collar + contact) associated with the head.

Ø22 Black, Double Insulated Bezel – Harmony® Style 5
Double-Headed & Triple-Headed Pushbuttons
IP66, NEMA 4X & 13 AS 60947.5.1



ZB5AL7341

Double-headed pushbuttons, IP66

Description	Colour and marking of caps	Reference
1 flush black push 1 projecting red push	Green + red background, unmarked	ZB5AL7340
	White "I" on green background White "0" on red background	ZB5AL7341
2 flush black pushes	Without cap (1)	ZB5AA79



ZB5AA7121

Double-headed pushbuttons + 1 white central pilot light block, IP66 (2)

Description	Colour and marking of caps	Reference
1 flush black push 1 projecting red push 1 clear central pilot light (3)	Green + red background, unmarked	ZB5AW7L3740
	White "I" on green background White "0" on red background	ZB5AW7L3741
2 flush black pushes 1 clear central pilot light (3)	Without cap (1)	ZB5AW7A9



ZB5AA71114

Triple-headed pushbuttons, IP66

Description	Colour and marking of caps	Reference
2 flush black pushes 1 central projecting red push marked "STOP" in white text	Black "→" on white background White "←" on black background	ZB5AA71113
	Black "↑" on white background White "↓" on black background	ZB5AA71114
	Without cap (1)	ZB5AA791



ZBA7235

Caps for double-headed and triple-headed pushbuttons

Description	Background colour	Marking	Reference
Caps only for double or triple-headed pushbuttons, clip-on mounting (4)	White	Unmarked	ZBA71
		"I" black	ZBA7131
		"→" black	ZBA7134
		"+" black	ZBA7138
	Black	Unmarked	ZBA72
		"O" white	ZBA7232
		"+" white	ZBA7233
		"→" white	ZBA7235
		"I" white	ZBA7237
	Green	Unmarked	ZBA73
		"I" white	ZBA7331
		"+" white	ZBA7333
		"↑" white	ZBA7335
		"II" white	ZBA7336
	Red	Unmarked	ZBA74
		"O" white	ZBA7432
	Yellow	Unmarked	ZBA75
	Blue	Unmarked	ZBA76



ZBA7331



ZBA7432



ZBA709

Boots for double-headed and triple-headed pushbuttons

Description	For pushbuttons	Reference
Clear silicone boots (5)	Double-headed with 2 flush pushes	ZBA708
	Triple-headed	ZBA709
	Double-headed with 1 flush push + 1 projecting push	ZBA710

Note:
(1) Please refer to "Caps for double-headed and triple headed pushbuttons" for the selection table of the available caps.
(2) Only for use with bodies comprising a light source with integral LED.
(3) Colour of the central pilot lights depends on the colour of the LED light block.
(4) Caps can be clipped-in at 90° steps, through 360°.
(5) Boots can be fitted without dismantling the pushbutton head.

Ø22 Black, Double Insulated Bezel – Harmony® Style 5 Pushbutton & Key Switch Heads – IP66, NEMA 4X & 13 AS 60947.5.1

Illuminated mushroom heads for latching pushbuttons (2) (3)

Type	Diameter	Colour	Reference
Turn to release (Only for use with bodies comprising a light block with superbright integral LED)	Ø40mm	White	ZB5AW713
		Green	ZB5AW733
		Orange	ZB5AW753
		Blue	ZB5AW763



ZB5AC2

Mushroom heads for spring return pushbuttons (2) (3)

	Diameter	Colour of push	Reference
	Dia, 40mm (1)	Black	ZB5AC2
		Green	ZB5AC3
		Red	ZB5AC4
		Yellow	ZB5AC5
		Blue	ZB5AC6



ZB5AS934

Mushroom heads for latching Emergency stop Pushbuttons, trigger type (2) (4)

Type	Diameter	Colour	Reference
Push-pull	30	Red	ZB5AT844
	40	Red	ZB5AT84
	60	Red	ZB5AX84
Trigger action / Turn to release	30	Red	ZB5AS834
	40	Red	ZB5AS844
Key release (key no 455) (2 keys included with head)	30	Red	ZB5AS934
	40	Red	ZB5AS944
	60	Red	ZB5AS964



ZB5AS844

Illuminated mushroom heads for latching Pushbuttons (2)

Function	Type	Diameter	Colour	Reference
Emergency stop, trigger type, with state indicator (for elevator inspection box applications) (only for bodies comprising a light source with integral LED) (4)(6)	Push-pull	Ø40mm	Red	ZB5AT8643M



ZB5AW743



ZBZ58

Mushroom head bellows for harsh environments (IP69K)

For use in	Material	Colour	Reference
Environments subject to humidity, dust, etc.	EDPM	Black	ZBZ28
		Yellow	ZBZ58

Note:
(1) Ø30 and Ø60 mushroom heads are also available. Please consult Schneider Electric on 1300 369 233.
(2) Refer to Controls and Signalling catalogue for the recommended maximum number of contacts constituting the body (fixing collar + contact) associated with the head.
(3) Not suitable for emergency stop function, therefore, it is recommended that a legend with a black or white background is used.
(4) Conforming to Machinery Directive 93/37/EC and standard EN418/ISO13850.
(5) Conform to standards IEC 60364-5-53 and EN/IEC60947-5-5.
(6) Cannot be used with metal guard ZBZ160.

Ø22 Black, Double Insulated Bezel – Harmony® Style 5 Selector Switch & Key Switch Heads – IP66, NEMA 4X & 13 AS 60947.5.1



ZB5AD2



ZB5AJ3

Heads for selector switches (1)

Type of operator	Number and type of positions		Reference
Standard handle, black (3) (2)	2 - stay put		ZB5AD2
	2 - spring return from right to left		ZB5AD4
	3 - stay put		ZB5AD3
	3 - spring return to centre		ZB5AD5
	3 - spring return from left to centre		ZB5AD7
	3 - spring return from right to centre		ZB5AD8
Long handle, black	2 - stay put		ZB5AJ2
	2 - spring return from right to left		ZB5AJ4
	3 - stay put		ZB5AJ3
	3 - spring return to centre		ZB5AJ5
	3 - spring return from left to centre		ZB5AJ7
	3 - spring return from right to centre		ZB5AJ8



ZB5AG4

Heads for key switches (1)

Type of operator	Number and type of positions (5)		Reference
Key switch with key (no 455) (4)	2 - stay put		ZB5AG2
- key withdrawal position (s)			ZB5AG4
	2 - spring return from right to left		ZB5AG6
	3 - stay put		ZB5AG0
			ZB5AG3
			ZB5AG5
			ZB5AG9
			ZB5AG09
	3 - spring return from left to centre		ZB5AG1
	2 - spring return to centre		ZB5AG7
	3 - spring return from right to centre		ZB5AG8
	3 - spring return from right to centre		ZB5AG08

Note:
(1) Refer to Controls and Signalling catalogue for the recommended maximum number of contacts and sequence of contacts constituting the body (fixing collar + contact) associated with the head.
(2) Other version: (Please consult Schneider Electric on 1300 369 233). Knob version also available.
(3) Selector switch heads only with other coloured handle
Standard handle, white, add suffix 01 to the reference, example: ZB5AD201
Standard handle, green, add suffix 03 to the reference, example: ZB5AD203
Standard handle, red, add suffix 04 to the reference, example: ZB5AD204
Standard handle, yellow, add suffix 05 to the reference, example: ZB5AD205
Standard handle, blue, add suffix 06 to the reference, example: ZB5AD206
(4) Other key numbers are available. Please consult Schneider Electric on 1300 369 233.
(5) Other version: (Please consult Schneider Electric on 1300 369 233)

Ø22 Black, Double Insulated Bezel – Harmony® Style 5 Toggle Switch & Illuminated Pushbutton Heads – IP66, NEMA 4X & 13 AS 60947.5.1


ZB5AAD28

Heads for toggle switches (1)

Description	Lever colour	Type of position	Reference
2 positions	Black	Stay put	ZB5AD28
		Spring return	ZB5AD48
	White	Stay put	ZB5AD2801
	Red	Stay put	ZB5AD2804
	Blue	Stay put	ZB5AD2806


ZB5AW363


ZB5AW533


ZB5AW143


ZB5AW33

Heads for spring return illuminated Pushbuttons (1)

Type	Colour	Reference
Only for use with bodies comprising a light block with "Protected LED"		
Flush (2)	White	ZB5AW313
	Green	ZB5AW333
	Red	ZB5AW343
	Orange	ZB5AW353
	Blue	ZB5AW363
Flush with clear boot	White	ZB5AW513
	Green	ZB5AW533
	Red	ZB5AW543
	Orange	ZB5AW553
	Blue	ZB5AW563
Flush for insertion of legend (3)	White	ZB5AA18
	Green	ZB5AA38
	Red	ZB5AA48
	Orange	ZB5AA58
	Blue	ZB5AA68
Projecting (2) (with plain lens)	White	ZB5AW113
	Green	ZB5AW133
	Red	ZB5AW143
	Orange	ZB5AW153
	Blue	ZB5AW163
Only for use with bodies comprising a light block for a BA 9s bulb		
Flush (2) (with plain lens)	White	ZB5AW31
	Green	ZB5AW33
	Red	ZB5AW34
	Orange	ZB5AW35
	Blue	ZB5AW36
	Clear	ZB5AW37
Projecting (2) (with plain lens)	White	ZB5AW11
	Green	ZB5AW13
	Red	ZB5AW14
	Orange	ZB5AW15
	Blue	ZB5AW16
	Clear	ZB5AW17


ZB5AH033

Heads for latching illuminated Pushbuttons (1)

Type	Colour	Reference
Only for use with bodies comprising a light block with "Protected LED"		
Flush	White	ZB5AH013
	Green	ZB5AH033
	Red	ZB5AH043
	Orange	ZB5AH053
	Blue	ZB5AH063
Projecting	White	ZB5AH13
	Green	ZB5AH33
	Red	ZB5AH43
	Orange	ZB5AH53
	Blue	ZB5AH63

Note:
(1) Refer to Control and Signalling catalogue for the recommended maximum number of contacts and sequence of contacts constituting the body (fixing collar + contact) associated with the head.
(2) Other version: (Please consult Schneider Electric on 1300 369 233) for illuminated Pushbutton heads with grooved lens for bright ambient light conditions (e.g. outdoor in sunlight).
(3) For legend ordering information, refer to page 3.4.14

Ø22 Black, Double Insulated Bezel – Harmony® Style 5
Biometric Switch, Illuminated Pushbutton & Selector Switch Heads
IP66, NEMA4X & 13, AS 60947.5.1



ZB5AK1213

Heads for illuminated selector switches, standard handle (1)

Number and type of positions	Colour of handle	Reference
Only for use with bodies comprising a light block with "Protected LED"		
2 - stay put	White	ZB5AK1213
	Green	ZB5AK1233
	Red	ZB5AK1243
	Orange	ZB5AK1253
	Blue	ZB5AK1263
2 - spring return from right to left	White	ZB5AK1413
	Green	ZB5AK1433
	Red	ZB5AK1443
	Orange	ZB5AK1453
	Blue	ZB5AK1463
3 - stay put	White	ZB5AK1313
	Green	ZB5AK1333
	Red	ZB5AK1343
	Orange	ZB5AK1353
	Blue	ZB5AK1363
3 - spring return to centre	White	ZB5AK1513
	Green	ZB5AK1533
	Red	ZB5AK1543
	Orange	ZB5AK1553
	Blue	ZB5AK1563
3 - spring return from right to centre	White	ZB5AK1813
	Green	ZB5AK1833
	Red	ZB5AK1843
	Orange	ZB5AK1853
	Blue	ZB5AK1863
3 - spring return from left to centre	White	ZB5AK1713
	Green	ZB5AK1733
	Red	ZB5AK1743
	Orange	ZB5AK1753
	Blue	ZB5AK1763

Note:
(1) Refer to Controls and Signalling Catalogue for the recommended maximum number of contacts or sequence of contacts constituting the body (fixing collar + contacts) associated with the head.

Ø22 Black, Double Insulated Bezel – Harmony® Style 5 Illuminated & Non-Illuminated Pushbutton & Selector Switch Bodies IP66, NEMA 4X & 13 AS 60947.5.1



ZB5AZ101

Pushbutton & selector switch bodies (Schneider Electric anti-retightening system) (1)

Description	Type of contact N/O	Type of contact N/C	Reference Screw clamp terminal connections
Fixing collar + single contact block	1	–	ZB5AZ101
	–	1	ZB5AZ102
	2	–	ZB5AZ103
	–	2	ZB5AZ104
	1	1	ZB5AZ105

Illuminated Pushbutton & selector switch bodies (1)

Light source	Supply voltage V		Type of contact N/O	Type of contact N/C	Colour	Reference Screw clamp terminal connections
Integral LED (to combine with heads for Integral LED)	⎓ 24		1	–	White	ZB5AW0B11
					Green	ZB5AW0B31
					Orange	ZB5AW0B51
					Blue	ZB5AW0B61
			–	1	Red	ZB5AW0B42
	~ 110...120 (2)		1	–	White	ZB5AW0G11
					Green	ZB5AW0G31
					Orange	ZB5AW0G51
					Blue	ZB5AW0G61
			–	1	Red	ZB5AW0G42
	~ 230...240 (2)		1	–	White	ZB5AW0M11
					Green	ZB5AW0M31
					Orange	ZB5AW0M51
					Blue	ZB5AW0M61
			–	1	Red	ZB5AW0M42
Direct supply	BA 9s base fittings 2.4 W max. bulb not included (3)	⩽ 250	1	–	–	ZB5AW061
			–	1	–	ZB5AW062
			2	–	–	ZB5AW063
			1	1	–	ZB5AW065
Via integral transformer 1.2 VA, 6V secondary	BA 9s incandescent bulb included	~ 110…120 50/60 Hz	1	–	–	ZB5AW031
			1	1	–	ZB5AW035
		~ 230 - 50Hz	1	–	–	ZB5AW041
		~ 220…240 60Hz	1	1	–	ZB5AW045
		~ 400 - 50 Hz	1	–	–	ZB5AW051
			1	1	–	ZB5AW055



ZB5AW065

Note:
(1) Refer to Controls and Signalling Catalogue to the recommended maximum number of contacts and sequence of contacts constituting the body (fixing collar + contacts) associated with the head.
(2) Use in conjunction with LED suppressor block ZBZV• when connected in parallel with inductive loads. See page 3.4.27.
(3) Bulb to be ordered separately : see page 3.4.12.

Ø22 Black, Double Insulated Bezel – Harmony® Style 5 Additional Light Sources – IP66, NEMA 4X & 13 AS 60947.5.1

Simply Smart!

Leveraging **ingenuity** and intelligence for **ease of use**

Pilot Lights and Illuminated Pushbuttons

Harmony

High intensity and true colours

The pilot lights and illuminated pushbuttons enable the operator to be kept clearly informed on the status of a machine or installation. High intensity "Protected LED®™ technology, available as standard on the Ø 22mm XB4/XB5 offers, assures high performance and environmentally friendly optimised energy consumption.

Characterised by extreme robustness, refined ergonomics and maximum installation simplicity, the extensive range of Telemecanique pilot lights and illuminated pushbuttons provide ideal solutions for all your applications.



ZBVB1



ZBV6

Additional light sources

Description	Supply voltage V	Colour	Reference Screw clamp terminal connections
Integral LED (to combine with heads for integral LED) Protected LED	⎓ 12	White	ZBVJ1
		Green	ZBVJ3
		Red	ZBVJ4
		Orange	ZBVJ5
		Blue	ZBVJ6
	⎓ 24	White	ZBVB1
		Green	ZBVB3
		Red	ZBVB4
		Orange	ZBVB5
		Blue	ZBVB6
	⎓ 24 - 120 (1)	White	ZBVBG1
		Green	ZBVBG3
		Red	ZBVBG4
		Orange	ZBVBG5
		Blue	ZBVBG6
	~ 110 - 120 (1)	White	ZBVG1
		Green	ZBVG3
		Red	ZBVG4
		Orange	ZBVG5
		Blue	ZBVG6
	~ 230- 240 (1)	White	ZBVM1
		Green	ZBVM3
		Red	ZBVM4
		Orange	ZBVM5
		Blue	ZBVM6
Flashing Integral LED (to combine with heads for integral LED) Protected LED	⎓ 24	White	ZBV18B1
		Green	ZBV18B3
		Red	ZBV18B4
		Orange	ZBV18B5
		Blue	ZBV18B6
	~ 48...120	White	ZBV18G1
		Green	ZBV18G3
		Red	ZBV18G4
		Orange	ZBV18G5
		Blue	ZBV18G6
	~ 230/240	White	ZBV18M1
		Green	ZBV18M3
		Red	ZBV18M4
		Orange	ZBV18M5
		Blue	ZBV18M6
Direct supply for BA 9s, base fitting 2.4 W max. bulb not included (2)	⩽ 250		ZBV6

Note:
(1) Use suppressor in conjunction with protected LED when connected in parallel to inductive loads.
(2) Bulb to be ordered separately: see page 3.4.27.

Ø22 Black, Double Insulated Bezel – Harmony® Style 5
Additional Contact Blocks – IP66, NEMA 4X & 13
AS 60947.5.1



ZBE101



ZBE204

Additional contact blocks with screw clamp terminal connections (1)

Description	Contact Rating	Type of contact N/O	Type of contact N/C	Reference Screw clamp terminal connections
Standard single	3A, 240VAC 0.55A, 125VDC	1	–	ZBE101
		–	1	ZBE102
Standard double	3A, 240VAC 0.55A, 125VDC	2	–	ZBE203
		–	2	ZBE204
		1	1	ZBE205
Special contact blocks (2) (for low power switching)	0.1A, 24VDC	1	–	ZBE1016
		–	1	ZBE1026



ZBE1015

Additional contact blocks with spring terminal connections (2)

Description	Type of contact N/O	Type of contact N/C	Reference
Standard single	1	-	ZBE1015
	-	1	ZBE1025

Additional light blocks with spring terminal connections (3)

Description	Supply Voltage	Colour of LED	Reference
Integral LED (to combine with heads for integral LED)	12Vac/dc (50/60 Hz)	White	ZBVJ15
		Green	ZBVJ35
		Red	ZBVJ45
		Orange	ZBVJ55
		Blue	ZBVJ65
	24Vac/dc (50/60 Hz)	White	ZBVB15
		Green	ZBVB35
		Red	ZBVB45
		Orange	ZBVB55
		Blue	ZBVB65
	110..120Vac (50/60 Hz)	White	ZBVG15
		Green	ZBVG35
		Red	ZBVG45
		Orange	ZBVG55
		Blue	ZBVG65
	230..240Vac (50/60 Hz)	White	ZBVM15
		Green	ZBVM35
		Red	ZBVM45
		Orange	ZBVM55
		Blue	ZBVM65



ZBVM45

Note:
(1) The contact blocks enable variable composition of body sub-assemblies and can be stacked to 3 rows, either: 3 rows of 3 single contacts or 1 row of 3 double contacts + 1 row of 3 single contacts (double contact blocks occupy 2 rows). Unless otherwise specified.
(2) It is not possible to fit these contact blocks with supplementary contact blocks.
(3) It is not possible to fit an additional block on the back of standard contact block or light blocks

Ø22 Black, Double Insulated Bezel – Harmony® Style 5 Additional Contact Blocks & Accessories for Specific Function, IP66, NEMA 4X & 13, AS 60947.5.1



ZBZG156

High-current contact block (2) (1)

Description		Reference
High current contact block	1 N/O with support plate	ZBE501
	1 N/C with support plate	ZBE502
	2 N/O with support plate	ZBE503
	2 N/C with support plate	ZBE504
	1 N/O + 1 N/C with support plate	ZBE505



ZBZM156

Blocks for “test light” function

For use with	Supply voltage V	Description	Reference
Light blocks (3)	⎓ 12 and 24 ⎓ 24 ...120	Single module, 1 connecting wire	ZBZG156
Light blocks with integral LED (4)	∿ 48...230	Double module, with connecting wires	ZBZM156



ZBZVM

LED suppressors

For use with	Supply voltage V	Level of Protection	Reference
light blocks with integral LED	∿ 120	25...120VA	ZBZVG
	∿ 230	30...230VA	ZBZVM



ZB5AZ009

Body/fixing collar

For use with	Reference
Electrical blocks (contact or light)	ZB5AZ009

Note:
(1) Can be fitted with ZB4BZ009 or ZB5AZ009 fixing collar.
(2) High-current contact block cannot be combined with the standard contact blocks.
(3) Block for use with ⎓ light blocks with integral LED types ZBVJ•, ZBVB•, ZBVBG• or with direct supply light block for BA 9s bulb, ZBV6.
(4) Block for use with ∿ light blocks with integral LED types ZBVG•, ZBVM•.

Ø22 Black, Double Insulated Bezel – Harmony® Style 5 Pilot Light, Pilot Light Heads & Bodies - IP66 NEMA 4X & 13 AS 60947.5.1


XB5AVB5

Complete pilot lights with "Protected LED" (Schneider Electric anti-retightening system)

Supply voltage V	Colour	Body & Head	Reference
⎓ 24	White	ZB5AVB1 + ZB5AV013	XB5AVB1
Protected LED	Green	ZB5AVB3 + ZB5AV033	XB5AVB3
	Red	ZB5AVB4 + ZB5AV043	XB5AVB4
	Orange	ZB5AVB5 + ZB5AV053	XB5AVB5
	Blue	ZB5AVB6 + ZB5AV063	XB5AVB6
~ 110...120	White	ZB5AVG1 + ZB5AV013	XB5AVG1
	Green	ZB5AVG3 + ZB5AV033	XB5AVG3
	Red	ZB5AVG4 + ZB5AV043	XB5AVG4
	Orange	ZB5AVG5 + ZB5AV053	XB5AVG5
	Blue	ZB5AVG6 + ZB5AV063	XB5AVG6
~ 230...240	White	ZB5AVM1 + ZB5AV013	XB5AVM1
	Green	ZB5AVM3 + ZB5AV033	XB5AVM3
	Red	ZB5AVM4 + ZB5AV043	XB5AVM4
	Orange	ZB5AVM5 + ZB5AV053	XB5AVM5
	Blue	ZB5AVM6 + ZB5AV063	XB5AVM6


ZB5AV053

Pilot light heads to suit "Protected LED" (3) (4)

For use with body comprising light source type	Colour of lens	Reference
Integrated LED only with plain lens	White	ZB5AV013
Protected LED	Green	ZB5AV033
	Red	ZB5AV043
	Orange	ZB5AV053
	Blue	ZB5AV063


ZB5AV01

Pilot light heads to suit incandescent globes (3)

For use with body comprising light source type	Colour of lens	Reference
BA 9s base fitting (incandescent, neon or LED)	White	ZB5AV01
	Green	ZB5AV03
	Red	ZB5AV04
	Orange	ZB5AV05
	Blue	ZB5AV06
	Clear	ZB5AV07


ZB5AV6

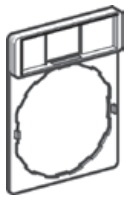

ZB5AV4

Pilot light bodies

Supply	Light source	Supply voltage V	Reference
Direct supply	BA 9s base fitting bulb 2.4 W max. not included (1)	⩽ 250	ZB5AV6
Via integral transformer 1.2 VA, 6 V secondary	BA 9s base fitting incandescent bulb included	~ 110…120 50/60 Hz	ZB5AV3
		~ 230, 50Hz ~ 220...240, 60 Hz	ZB5AV4
		~ 400, 50 Hz	ZB5AV5
		~ 440…480V, 60 Hz	ZB5AV8
		~ 550…600V, 60 Hz	ZB5AV9

Note:
(1) Bulb to be ordered separately : see page 3.4.12.
(2) Push to test pilot lights available, contact Schneider Electric Help Centre for more details.
(3) Other version: (Please consult Schneider Electric on 1300 369 233) for illuminated Pushbutton heads with grooved lens for bright ambient light conditions (eg outdoor in sunlight).
(4) Other version: (Please consult Schneider Electric on 1300 369 233) for illuminated pushbutton heads with plain lens, for insertion of legend. For legend ordering information, refer to page 3.4.14.

Ø22 Black, Double Insulated Bezel – Harmony® Style 5 Accessories for Specific Function, IP66, NEMA 4X & 13, AS 60947.5.1



ZBZ32

Marking accessories

Description	Reference
30 x 40mm legend holders (for 8 x 27mm legends)	ZBZ32
Legend holders with pre marked legends (refer p 3.4.13)	ZBY2•••
Insert for Pushbuttons (refer p 3.4.14)	ZBA•••



ZB5BZ021

ZB5 Flush Mounting Accessories

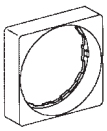
Description	Reference
Plastic flush mounting kit for Pushbuttons and Pilot Lights	ZB5AZ021
Plastic flush mounting kit for Selector Switch and Illuminated Pilot Lights	ZB5AZ022
Plastic flush mounting kit with legend 8x27 for Pushbuttons and Pilot Lights	ZB5AZ023
Plastic flush mounting kit with legend 8x27 for Selector Switch and Illuminated Pilot Lights	ZB5AZ024
Plastic flush mounting kit with legend 18x27 for Pushbuttons and Pilot Lights	ZB5AZ025
Plastic flush mounting kit with legend 18x27 for Selector Switch and Iluminated Pilot Lights	ZB5AZ026



ZB5AZ023

Accessories (1)

Description	Application	Reference
Plastic blanking plug, round, black (2)	For Ø 22 units with round heads	ZB5SZ3
Add-on square trim	To give square appearance to ZB5-A round heads	ZB5AZ31
Lock nut	Fixing head	ZB5AZ901
Tightening Tool	For tightening lock nut ZB5-AZ901	ZB5AZ905
Anti-rotation Plate	Anti-rotation of head	ZB5AZ902
Spacer bracket	for liquid spray protective washer for insertion beneath head of dia 22 head	ZBZ007



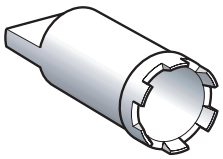
ZB5AZ31



ZB5SZ3

Heads + mounting base for potentiometer

Description	Application	Reference
For potentiometer with shaft length 44 to 50mm (potentiometer not included)	For shaft Ø 6.35mm	ZB5AD922
	For shaft Ø 6.0mm	ZB5AD912
4.7K ohm Potentiometer	To suit ZB5AD922	ZBFE350-060



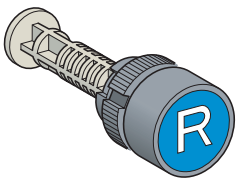
ZB5AZ905

Manual overload reset buttons (travel 10mm)

Actuation distance (mm)	Marking	Colour	Reference
17...120	R	Blue	XB5AA86102
120...257	R	Blue	XB5AA86202



ZB5AD912



XB5AA86202

Note:
(1) Accessories common to style 4 (metal) & style 5 (double insulated) control & signalling units are shown on p 3.4.14.
(2) Lock nut included with blanking plug.

Ø22 Black, Double Insulated Bezel – Harmony® Style 5
Joysticks & Miscellaneous Devices – IP66, NEMA 4x & 13
AS 60947.5.1



XD5PA12

Ø 22 Complete Units Type XD5-P (with 54mm long operating shaft) (1)

Description	Operation	Spring return to Off position	Bezel	Reference
2 direction Ⓐ ← ○ → Ⓑ	1 notch 1 N/O contact per direction	Without	Double insulated	XD5PA12
		With	Double insulated	XD5PA22
4 direction Ⓓ / Ⓐ ← ○ → Ⓑ / Ⓒ	1 notch 1 N/O contact per direction	Without	Double insulated	XD5PA14
		With	Double insulated	XD5PA24

Sub-assemblies and accessories for joystick controllers (XD5)

Description	For use with		Reference
Complete body/ contact assemblies	2-directions		ZD5PA103
	4-directions		ZD5PA203
Complete head assemblies with operating shaft	2-directions, stay-put		ZD5PA12
	2-direction, spring return to 0 position		ZD5PA22
	4-directions, stay-put		ZD5PA14
	4-directions, spring return to 0 position		ZD5PA24
Legends 30x48mm blank	2-direction	black one side, red reverse	ZBG2201
	2-direction	white one side, yellow reverse	ZBG2401
Legends 48x48mm blank	4-direction	black one side, red reverse	ZBG4201
	4-direction	white one side, yellow reverse	ZBG4401

3.4



XB5DS•

Hour counters

Characteristics	Supply voltage V	Reference
Indication 0...9999.9	⎓ 12...24 - 50/60 Hz	XB5DSB
	∿ 230...240 - 50 Hz	XB5DSM



XB5KS•

Annunciators

Characteristics	Supply voltage V	Reference
85 db buzzer, 4kHz, continuous or intermittent operation IP40 (NEMA 1)	⎓ 24 - 50/60 Hz	XB5KSB
	∿ 230...240 - 50 Hz	XB5KSM
	∿ 120 - 50/60Hz	XB5KSG



XB5DT1S

Fuse carrier

Description	For use with	Reference
Fuse carrier	5 x 20mm fuse 6.3A - 250V	XB5DT1S

Note:
(1) Must not be used with standard contact blocks ZBE10• (single) or ZBE20• (double).

Ø22 Black, Double Insulated Bezel – Harmony® Style 5 Biometric Switch

Harmony XB5S range of fingerprint reader biometric switches

Control access to your machines and processes in complete safety

Based on fingerprint recognition, the Harmony XB5S biometric switches eliminate security risks and costs associated with lost, forgotten or stolen keys, badges and passwords. You can use them to limit access to your HMI, sensitive zones and machine functions such as maintenance mode, restart after emergency stop, etc. to only authorised personnel.



Simplicity

- Quick installation on Ø22mm cut-out, no tools needed
- Enrolment and recognition performed directly on the device

Performance

- Up to 200 fingerprints stored directly in device memory
- Less than 1 second to authenticate/refuse access



Reliability

- IP65 degree of protection from dust and water
- Excellent resistance to mechanical shock and vibration

Multiple Clearance Levels

- Administrator – Manages user enrolments and deletions
- Operator – Once enrolled, uses the device to gain access





Selection Guide

Harmony XB5S fingerprint reader biometric switch

Biometric Switches





Function	Stand-alone	PC Interfacing	HMI Interfacing
Output	N/O Solid State - Operates 0 or 1 states of the machine/process		USB - Grants access to HMI pages as per user's profile
Communication	None	To PC or IPC via USB port when needed to manage profiles	To HMI permanently via USB port
Software tools	None	Harmony XB5SSoft (free)	VijeoDesigner or Harmony XB5SSoft
Reference	XB5S1, XB5S2	XB5S3, XB5S4	XB5S5


XB5S1B2L2

Biometric Switches, 24VDC

Description	Communication	Output	Reference
Stand-alone	None	Bistable Solid State N/O	XB5S1B2L2
	None	Monostable Solid State N/O	XB5S2B2L2
PC Interfacing	USB	Bistable Solid State N/O	XB5S3B2L2
	USB	Monostable Solid State N/O	XB5S4B2L2
HMI Interfacing	USB	Bistable USB to HMI	XB5S5B2L2


ZB5SZ70

Biometric Switch Accessories

Description	Function	Reference
Protective cover, translucent and self adhesive	Protection of the sensing screen	ZB5SZ70
Fixing nut, Ø22mm	Replacement part	ZB5SZ71

Ø22 Harmony®, XB5 Plastic & XB4 Metal
Wireless & Batteryless Pushbutton



Permanent availability

- No battery to replace, recharge or recycle
- Non-current consuming transmitter pushbutton

Simplification of cabling

- Reduction in costs and time for installation
- No configuration needed with ready to use packs
- Freedom of movement around the machine
- Ideal solution when you need to add or move a control function

Tried and tested robustness

- No risk of cable damage or cables connection issues at transmitter
- High protection from dust with no cable entry
- 100m range in line of sight with no obstacles - 25m range if it is enclosed in a cabinet
- ZBRA1 antenna can be used to boost the distance

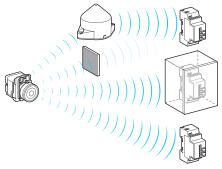


Figure A

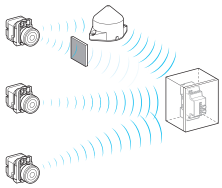


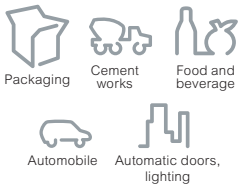
Figure B

The Harmony, wireless and batteryless

The Harmony wireless and batteryless pushbutton range enables remote control of a relay (receiver) by means of a pushbutton (transmitter). Each transmitter sends a single pulse radio-encoded message with a unique ID. One transmitter can be used to actuate one or more receivers (see figure A). Also multiple transmitters can actuate one single receiver (see figure B). A maximum of 32 transmitters can be paired with a single receiver. A relay-antenna can be used to get around an obstacle that impedes transmission or to increase the range (see figures A and B).

Typical Applications

This technology also allows an operator to be mobile or to have a control mounted on-board a vehicle (trolley, truck, etc.). There are numerous possible applications, both in industry (production line, conveyors, etc.) and in industrial buildings and infrastructures (lighting, door opening, start-up of fans, etc.).





XB5 RFA02

Ready to use packs

Description	Receiver Type	Receiver Voltage	Transmitter Type	Reference
Packs comprising: - 1 Receiver, - 1 wireless and batteryless pushbutton assembled on fixing collar. The pushbutton and receiver are factory-paired	Programmable receiver equipped with: - 2 relay outputs type RT 3A (1), - 2 buttons (learn, parameter setting) - 6 indicating LEDs (power ON, outputs, signal strength)	24...240V AC/DC	Wireless and batteryless pushbutton + Ø 22 mm plastic head + 1 set of 10 different coloured caps (1 cap to be selected and fitted)	XB5RFA02
			Wireless and batteryless pushbutton + Ø 22 mm metal head + 1 set of 10 different coloured caps (1 cap to be selected and fitted)	XB4RFA02
	Non-programmable receiver: - with 1 relay output type RT 3A (2) - without pushbutton - without indicating LED	24VDC	Wireless and batteryless pushbutton + Ø 22 mm plastic head + 1 black cap not fitted	XB5RFB01
			Wireless and batteryless pushbutton + Ø 22 mm metal head + 1 black cap not fitted	XB4RFB01

Note:
This technology (radio-encoded message sent as a single pulse) cannot be used for safety or hoisting applications.
For these applications, it is recommended that Harmony XB4 and XB5 wired pushbuttons or the XAC range of pendant control stations be used.

Ø22 Harmony® XB5 Plastic & XB4 Metal
Wireless & Batteryless Pushbutton


ZBR RA


ZB5 RTA4


ZB5RTC2


ZBRP1


ZBRT2


XAWGR200EX


ZBRM22


ZBRA1


ZBRACS

Programmable Receivers

Description	Output Type	Receiver Voltage	Reference
Programmable receivers equipped with: - 2 buttons (learn, parameter setting) - 6 indicating LEDs (power ON, outputs, signal strength)	4 PNP outputs, 200 mA / 24 V	24 VDC	ZBRRC
	2 relay outputs type RT 3A (1)	24...240V AC/DC	ZBRRA

Wireless Batteryless Transmitters

Description	Type of head	Cap Colour	Reference
Wireless and batteryless pushbuttons including: - a transmitter - a spring return pushbutton/switch	Plastic Flush type	White	ZB5RTA1
		Black	ZB5RTA2
		Green	ZB5RTA3
		Red	ZB5RTA4
		Yellow	ZB5RTA5
		Blue	ZB5RTA6
	Plastic Mushroom head	Black	ZB5RTC2
	Metal flush type	White	ZB4RTA1
		Black	ZB4RTA2
		Green	ZB4RTA3
		Red	ZB4RTA4
		Yellow	ZB4RTA5
		Blue	ZB4RTA6
Wireless and batteryless Rope Pull Switch	Hollow rope/chain slot	Black	ZBRP1

Transmitter component without Head

Description	Type	Reference
Transmitter	1 radio frame sent at the push of the button	ZBRT1
	1 radio frame sent at the push of the button 1 radio frame sent at the release of the button	ZBRT2

XB5R and XB4R for Explosive Atmosphere (IEC Ex Certified)

Description	Includes	Reference
Spring return pushbutton	Flush (plastic) without cap	ZB5RTA0EX
	Flush (metal) without cap	ZB4RTA0EX
Rope pull switch	Plastic	ZBRP1EX
Mobile Handy box	1 spring return pushbutton with leather protection 1 set of 5 different colour caps	ZBRM01EX
Plastic control station	1 plastic spring return pushbutton	XAWGR100EX
	2 plastic spring return pushbuttons	XAWGR200EX
	3 plastic spring return pushbuttons	XAWGR300EX
Relay Antenna 24V...240VAC/DC	For Gas and Dust	ZBRA1EX

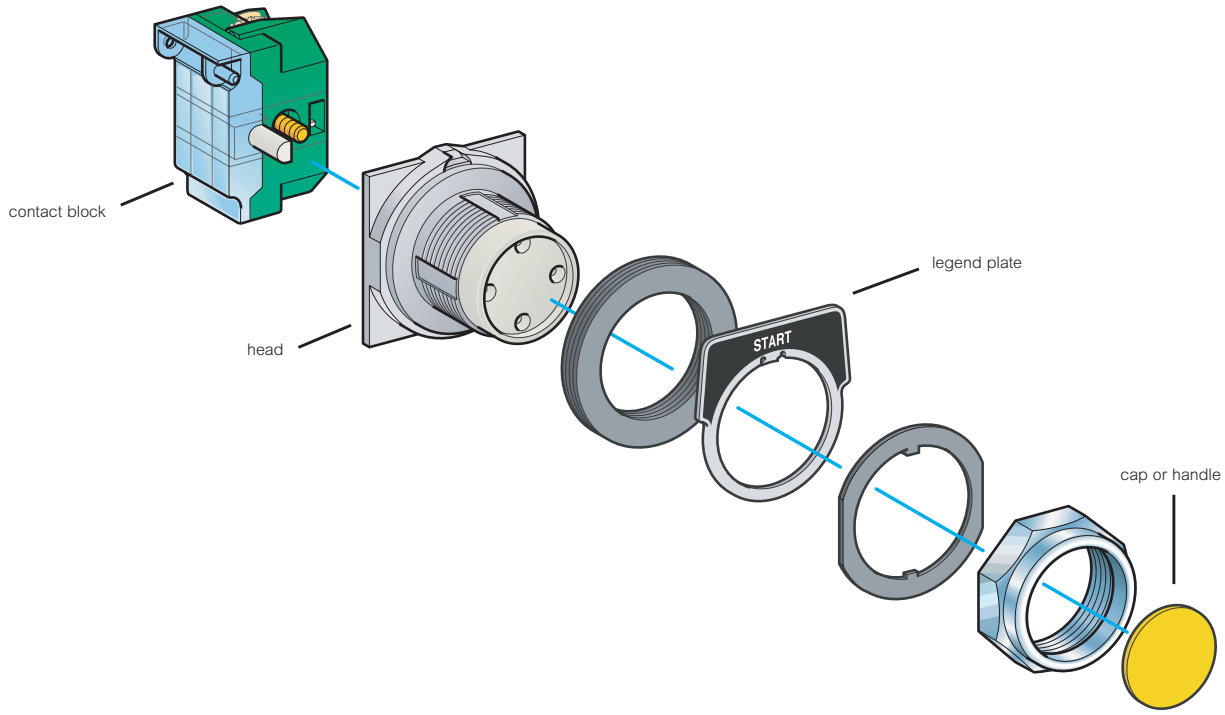
Accessories

Product	Application	Description	Reference
Relay Antenna	Boost signal on the transmitter to increase range/get around obstacles	24...240 VAC/DC include 5m cable	ZBRA1
Mobile box, plastic, empty	For mobile and fix application with wireless & batteryless pushbuttons	1 cut-out	ZBRM21
		2 cut-outs	ZBRM22
	support for Mobile box, wall fixing		ZBRACS

Note:
1) Supplied with output function set to monostable Outputs programmable to bistable and Start-Stop.
2) Non-programmable monostable output function.
3) Cannot be used for wired contacts (no cable gland outlet). Supplied with a magnet to be stuck on by the customer.
4) Type of Ex category: Mining Ex ib I Mb, Gas Ex ib IIC T6 Gb, Dust Ex ib IIIC T85°C Db IP65.

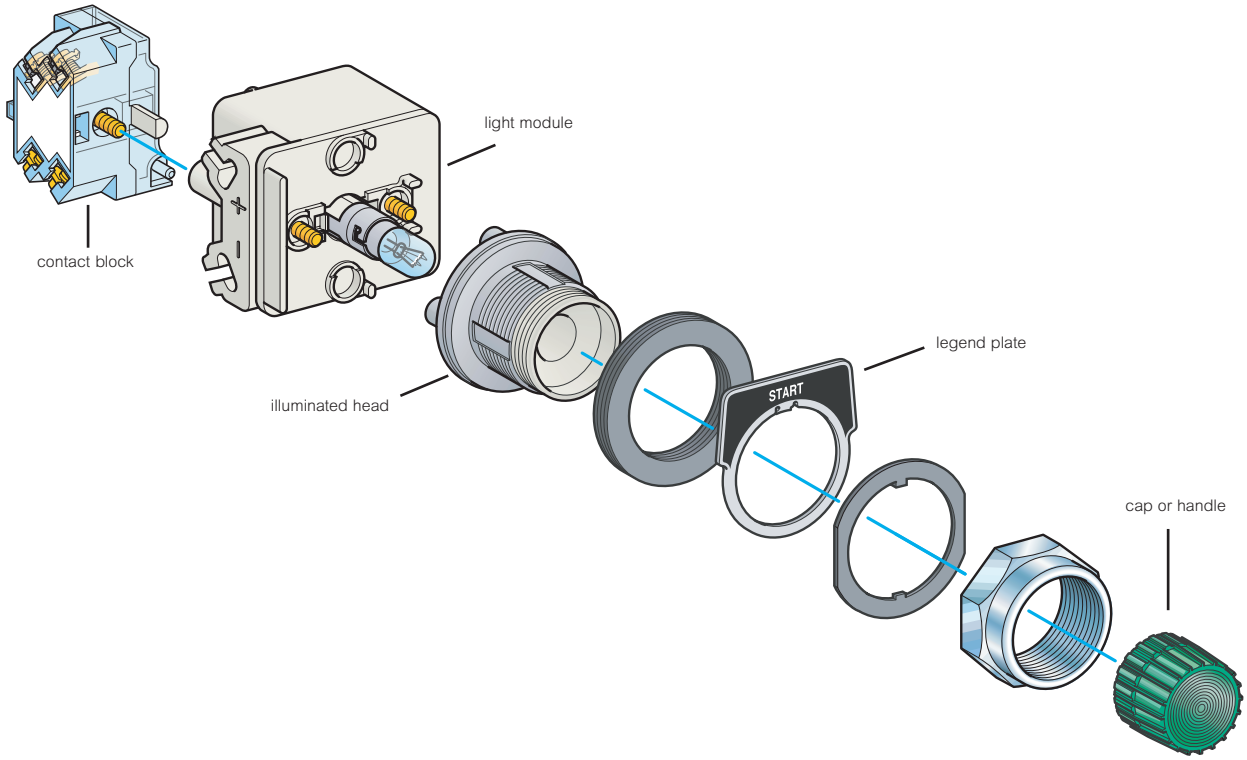
Ø30 9001K Metal – Harmony® Style 9 – IP66
Assembly of Components

Non-illuminated Pushbutton assembly, selector button & mushroom head



3.4

Illuminated Pushbuttons, selector switches. mushrooms heads & pilot light assembly



Ø30 9001K Chromium Plated Metal Bezel – Harmony® Style 9 Non- Illuminated Pushbutton & Selector Switch Heads – IP66, NEMA 4 & 13, AS 60947.5.1


9001KR1U


9001KR3U


9001KR20


9001KR9


9001K93R


9001KR9R


9001KR9M


9001KS11B

Heads for spring return pushbuttons (unmarked)

Description	Colour	Reference
Flush	Universal (1)	9001KR1U
Recessed (high guard)	Universal (1)	9001KR2U
Projecting	Universal (1)	9001KR3U

Mushroom heads for spring return pushbuttons (add cap)

Description	Reference
Spring return operator	9001KR20

Mushroom heads for latching pushbuttons (add cap)

Description	Reference
Push pull maintained operator	9001KR9

Caps for spring return & latching non-illuminated mushroom heads

Description	Colour	Reference
Ø35mm mushroom cap with locking screw	Red	9001K92R
	Green	9001K92G
	Black	9001K92B
	Yellow	9001K92Y
Ø57mm mushroom cap with locking screw	Red	9001K93R
	Green	9001K93G
	Black	9001K93B
	Yellow	9001K93Y

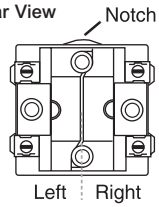
Mushroom heads for emergency stop pushbuttons (2)

Type	Diameter	Colour	Reference
Push-pull plastic head	41mm	Red	9001KR9R
Push-pull metal head	35mm	Red	9001KR9M
	57mm	Red	9001KR9ML

Heads for selector switches

Type of operator	No. of positions	Operation	Reference
Standard handle, black (3)	2	Stayput	9001KS11B
		Spring return right to left	9001KS34B
		Spring return left to right	9001KS25B
	3 (with CAM B)	Stayput	9001KS42B
		Spring return to centre	9001KS52B
		Spring return left to centre	9001KS62B
		Spring return right to centre	9001KS72B
	3 (with CAM C)	Stayput	9001KS43B
		Spring return to centre	9001KS53B
		Spring return left to centre	9001KS63B
		Spring return right to centre	9001KS73B
	4	Stayput	9001KS88B

Rear View



CAM B 3 Position selector switch			
↖	↑	↗	**Contact block mounting**
I	○	○	1 N/C (left)
○	I	I	1 N/O (left)
○	○	I	1 N/C (right)
I	I	○	1 N/O (right)

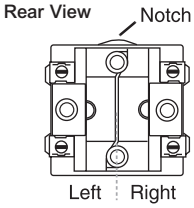
CAM C 3 Position selector switch			
↖	↑	↗	**Contact block mounting**
I	○	○	1 N/C (left)
○	○	I	1 N/O (left)
I	○	○	1 N/C (right)
○	○	I	1 N/O (right)

Note:
(1) Includes one of each of the following inserts; red, black, green, yellow, orange, blue & white.
(2) Complete with "Pull to Start Push to Stop" legend plate.
(3) Reference for long black handle is 9001B25.

Ø30 9001K Chromium Plated Metal Bezel - Harmony® Style 9 Key Selector Switch Heads & Illuminated Pushbutton Heads IP66, NEMA 4 & 13, AS 60947.5.1



9001KS42K4



CAM B 3 Position selector switch			
↖	↑	↗	**Contact block mounting**
|	○	○	1 N/C (left)
○	|	|	1 N/O (left)
○	○	|	1 N/C (right)
|	|	○	1 N/O (right)

Heads for key selector switches

Type of operator	No. of positions	Operation		Reference
E10 key	2	Stayput		9001KS11K1
				9001KS11K2
				9001KS11K3
		Spring return right to left		9001KS34K1
		Spring return left to right		9001KS25K2
	3 (with CAM B) (1)	Stayput		9001KS42K10
				9001KS42K5
				9001KS42K8
				9001KS42K4
				9001KS42K6
		Spring return left to centre		9001KS62K6
				9001KS62K5
		Spring return to centre		9001KS52K5
		Spring return right to centre		9001KS72K4
				9001KS72K5



9001K1L



9001G7



9001K2L



9001G20



9001R21

Heads for illuminated spring return pushbuttons (add cap)

Description	Reference
Flush, full guard in plastic	9001K1L
Projecting	9001K2L
Flush, full guard in metal	9001K3L

Caps for illuminated spring return pushbuttons

Description	Colour	Reference
Standard Illuminated Pushbutton cap	Red	9001R7
	Green	9001G7
	Amber	9001A7
	Blue	9001L7
	Clear	9001C7

Heads for Illuminated mushroom spring return pushbuttons (add cap)

Description	Reference
Operator without guard	9001K2L

Caps for illuminated mushroom spring return pushbuttons

Description	Colour	Reference
35mm Illuminated mushroom cap	Red	9001R20
	Green	9001G20
	Amber	9001A20
	Blue	9001L20
	Clear	9001C20
57mm Illuminated mushroom cap	Red	9001R21
	Green	9001G21
	Amber	9001A21
	Blue	9001L21
	Clear	9001C21

Note:
(1) Other version: (Please consult Schneider Electric on 1300 369 233) for 3 position key selector switch with CAM C.

Ø30 9001K Chromium Plated Metal Bezel – Harmony® Style 9 Illuminated Latching Mushroom & Selector Switch Heads IP66, NEMA 4 & 13, AS 60947.5.1



9001KR9

Heads for latching illuminated mushroom pushbuttons (add cap)

Description	Reference
Push pull maintained operator	9001KR9



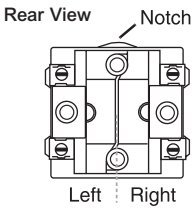
9001R2205

Caps for latching illuminated mushroom pushbuttons

Description	Colour	Reference
41mm mushroom cap with Emergency Stop printed	Red	9001R2205
41mm mushroom cap	Red	9001R22
	Green	9001G22
	Amber	9001A22
	Blue	9001L22



9001KS11



Heads for illuminated selector switches (add handle)

	No. of positions	Operation	Reference
	2	Stayput	9001KS11
		Spring return right to left	9001KS34
		Spring return left to right	9001KS25
	3 (with CAM B) (1)	Stayput	9001KS42
		Spring return to centre	9001KS52
		Spring return left to centre	9001KS62
		Spring return right to centre	9001KS72
	4	Stayput	9001KS88

CAM B 3 Position selector switch			
↖	↑	↗	**Contact block mounting**
I	○	○	1 N/C (left)
○	I	I	1 N/O (left)
○	○	I	1 N/C (right)
I	I	○	1 N/O (right)



9001A8



9001G24

Handles for illuminated selector switches

Description	Colour	Reference
Standard Handle	Red	9001R8
	Green	9001G8
	Yellow	9001Y8
	Amber	9001A8
	Blue	9001L8
	Clear	9001C8
Gloved hand knob	Red	9001R24
	Green	9001G24
	Yellow	9001Y24
	Amber	9001A24
	Blue	9001L24
	Clear	9001C24

Note:
(1) Other version: (Please consult Schneider Electric on 1300 369 233) for 3 position illuminated selector switch with CAM C.

Ø30 9001K Chromium Plated Metal Bezel – Harmony® Style 9
Push to Test Pilot Light, Contact Blocks & Pilot Lights
IP66, NEMA 4 & 13 AS 60947.5.1


9001KT40

Push to test pilot light (add cap)

Description	Light source	Supply Voltage	Reference
Direct supply	BA9s globe not included	–	9001KT40
Via transformer 6V secondary	BA9s incandescent bulb included	110-120V 50 hz	9001KT1
		220-240V 50 hz	9001KT7
		380-480V 50 hz	9001KT5


9001R6


9001G9


9001A31

Caps for pilot lights, pilot light heads and push to test pilot lights

Description	Colour	Reference
Glass lens	Red	9001R6
	Green	9001G6
	Amber	9001A6
	Blue	9001L6
	Clear	9001C6
Plastic domed lens	Red	9001R9
	Green	9001G9
	Amber	9001A9
	Blue	9001L9
	Clear	9001C9
Plastic fresnel lens	Red	9001R31
	Green	9001G31
	Amber	9001A31
	Blue	9001L31
	Clear	9001C31


9001KA1


9001KA2

Additional Contact Blocks Fingersafe®

Description	Contact Rating	Type of contact N/O	Type of contact N/C	Reference
Standard	3A, 240V AC 0.55A, 125V DC	1	1	9001KA1
		1	–	9001KA2
		–	1	9001KA3
Early make	3A, 240V AC 0.55A, 125V DC	1	–	9001KA4
Late break	3A, 240V AC 0.55A, 125V DC	–	1	9001KA5
Power Reed	0.5A 240V AC	1	1	9001KA51
Hermetically Sealed	0.5A 115V DC	1	–	9001KA52
		–	1	9001KA53


9001KP40

Pilot lights (add cap)

Description	Light source	Supply Voltage	Reference
Direct supply	BA9s globe not included (1)	–	9001KP40
	BA9s incandescent bulb included	120V AC/DC	9001KP38
Via transformer 6V secondary	BA9s incandescent bulb included	110-120V 50 hz	9001KP1
		220-240V 50 hz	9001KP7
		380-480V 50 hz	9001KP5
Direct through resistor	BA9s incandescent 130V bulb included	240V AC/DC	9001KP25

Note:
(1) Refer to page 3.4.36 for the selection of BA9 bulb.

Ø30 9001K Chromium Plated Metal Bezel – Harmony® Style 9 Pilot Light Heads, Light Modules, Globes – IP66, NEMA 4 & 13 AS 60947.5.1



9001KP

Pilot light heads (add cap)

Description	Reference
Pilot light operator	9001KP

Superbright LED light modules for pilot lights & illuminated Pushbuttons

Description	Light source	Supply Voltage	Reference
Direct through resistor	Superbright LED included select colour (1)	24V AC/DC	9001KM35L• (1)
		48V AC/DC	9001KM36L• (1)
		120V AC/DC	9001KM38L• (1)



9001KM40

Light modules for pilot lights & illuminated pushbuttons

Description	Light source	Supply Voltage	Reference
Direct supply	BA9s globe not included	–	9001KM40
Via transformer 6V secondary	BA9s incandescent bulb included	110-120V 50 hz	9001KM1
		220-240V 50 hz	9001KM7
		380-480V 50 hz	9001KM5
Direct through resistor	BA9s incandescent 130V bulb included	240V AC/DC	9001KM25



DL1CE•••



DL1CJUS•••

BA9s globes (incandescent & LED)

Description	Voltage		Colour	Reference
Incandescent filament lamp	6V AC/DC	1.2W	–	DL1CB006
	12V AC/DC	2W	–	DL1CE012
	24V AC/DC	2W	–	DL1CE024
	48V AC/DC	2.4W	–	DL1CE048
	130V AC/DC	2.6W	–	DL1CE130
LED lamp (bright)	9V AC/DC (2)		Green	DL1CJUS0093
			Red	DL1CJUS0094
			Amber	DL1CJUS0095
	24V AC/DC		Green	DL1CJUS0243
			Red	DL1CJUS0244
			Amber	DL1CJUS0245
	120V AC/DC		Green	DL1CJUS1203
			Red	DL1CJUS1204
			Amber	DL1CJUS1205
LED lamp (super bright) (12V) (3)	To suit 24/120V AC/DC Superbright light modules 9001KM3*L		White	6508805214
			Green	6508805212
			Red	6508805210
			Amber	6508805211
			Blue	6508805213

Note:
(1) Complete reference with desired colour; R=red, G=green, Y=yellow, W=white, L=blue.
(2) For use with 6V secondary transformer pilot light & illuminated Pushbutton bodies.
(3) For use with superbright LED light modules (ie. 9001KM3*L).
(4) For other voltage, please consult Schneider Electric on 1300 369 233.

Ø30 9001K Chromium Plated Metal Bezel – Harmony® Style 9 Joysticks & 9001K & SK Components & Accessories AS 60947.5.1



9001K71

Ø 30 Joystick operators (80mm long operating shaft) (add contact blocks) (1)

Description	Operation		Reference
2 direction	Momentary contact spring return to centre	"Dead man's"	9001K70
		Standard	9001K71
4 direction	Momentary contact spring return to centre	"Dead man's"	9001K34
		Standard	9001K35

Plastic legend plates – 57mm x 57mm

Description	Reference	Description	Reference
Blank (red) (2)	9001KN100RP	Start	9001KN101WP
Blank (white) (2)	9001KN100WP	Stop	9001KN102RP



9001KN201



9001KN302

Metal legend plates – 40 x 43mm

Description	Reference	Description	Reference
Blank (red) (2)	9001KN200R	In	9001KN217
Blank (black) (2)	9001KN200	Jog For	9001KN219
Start	9001KN201	Jog Rev.	9001KN220
Stop (red)	9001KN202	Reset	9001KN223
Emergency stop (red)	9001KN205	Run	9001KN224
Forward	9001KN206	Test	9001KN226
Reverse	9001KN207	Man-Auto	9001KN243
Down	9001KN210	Off-On	9001KN244
Up	9001KN211	On-Off	9001KN245
Slow	9001KN213	Up-Down	9001KN253
Inch	9001KN216		

Metal legend plates – 44mm x 50mm

Description	Reference	Description	Reference
Blank (red) (2)	9001KN300R	Start	9001KN301
Blank (white) (2)	9001KN300	Stop (red)	9001KN302



9001KU5

Boots for pushbuttons, selector switches, and pilot lights

Description	Colour	Reference
Non illuminated push buttons	Black	9001KU1
	Red	9001KU2
	Brown	9001KU4
	Green	9001KU5
	Yellow	9001KU6
	Clear	9001KU7
For standard handle selector switch	Clear	9001KU17
For gloved-hand knob selector switch	Clear	9001KU18
For pilot lights	Clear	9001KU27
For push to test pilot lights	Clear	9001KU37
For illuminated push button with guard	Clear	9001KU47



9001KU18

Padlock attachments

Description		Reference
For type K standard spring return Pushbutton	Lock in depressed position	9001K4
	Lock in normal position	9001K6
For types K & SK 35mm latching mushroom buttons & illuminated Pushbuttons	Lock in depressed position	9001K62
For types K & SK standard handle selector switches		9001K7



9001K62

Blanking plugs

Description	Reference
Metal - grey	9001K51
Metal - chrome plated	9001K52



9001K51

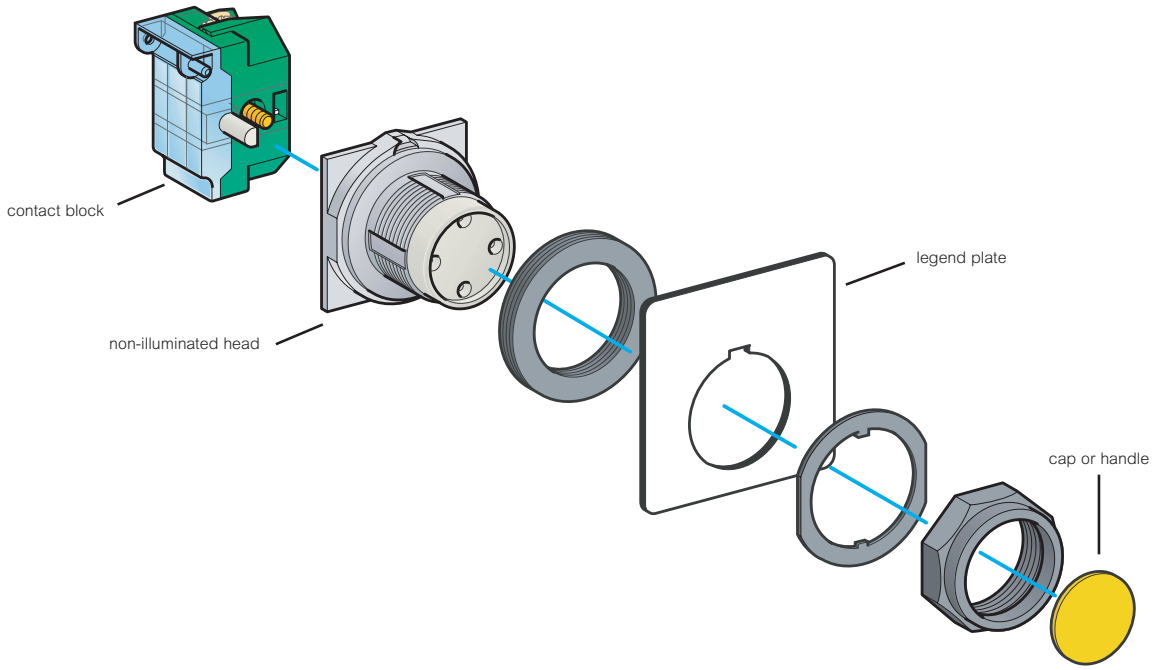
Pushbutton Tools

Description	Reference
Wrench for tightening ring nuts	9001K95

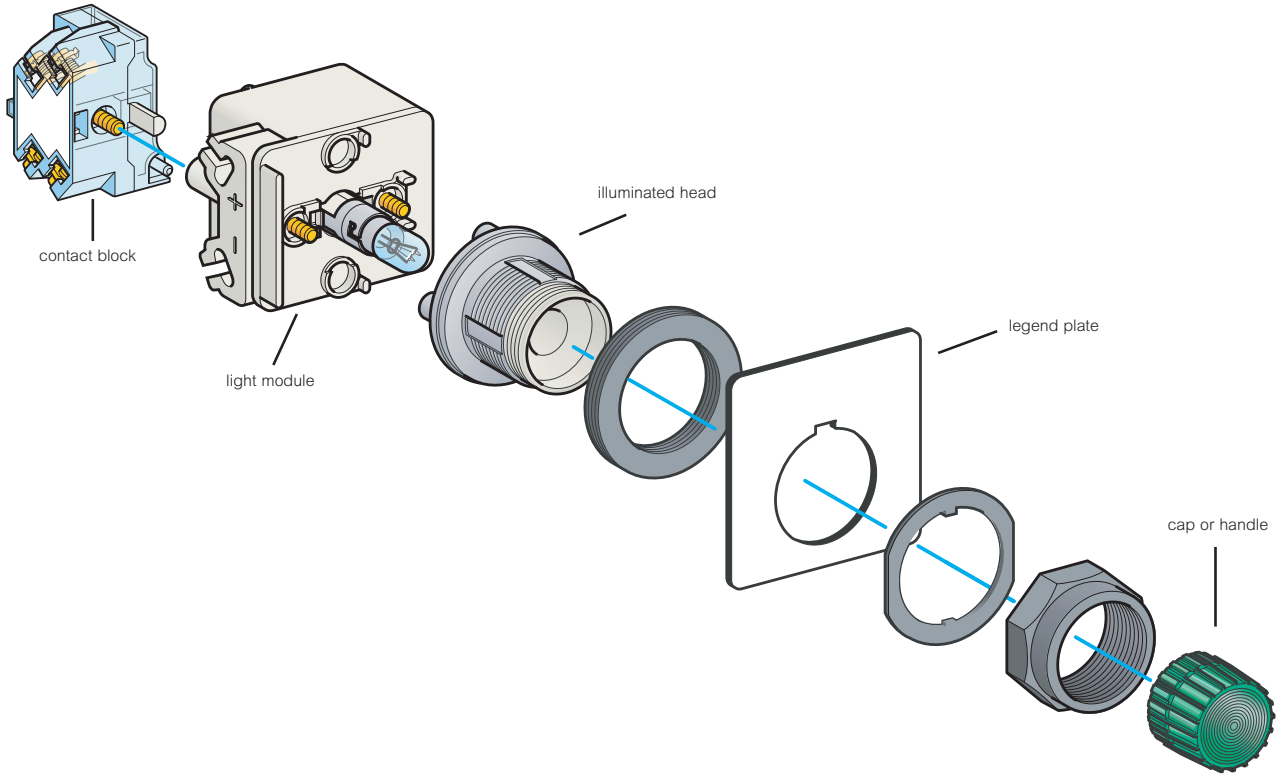
Note:
(1) To be used with 9001KA1 contact blocks only - maximum two.
(2) For custom engraved legends use order form on 3.4.60.

Ø30 9001SK Plastic – Harmony® Style 9 – IP66
Assembly of Components

Non-illuminated pushbuttons, selector switches & mushrooms heads assembly



Illuminated Pushbuttons, selector switches, mushroom heads & pilot light assembly



Ø30 9001SK Black Double Insulated Bezel - Harmony® Style 9 Non- Illuminated Pushbutton & Selector Switch Heads – IP66, NEMA 4X & 13, AS 60947.5.1



9001SKR1U

Heads for spring return pushbuttons

Description	Colour	Reference
Flush	Universal (1)	9001SKR1U
Recessed (high guard)	Universal (1)	9001SKR2U
Projecting	Universal (1)	9001SKR3U



9001SKR20

Mushroom heads for spring return pushbuttons

Description	Reference
Spring return operator	9001SKR20



9001SKR9R

Mushroom heads for latching pushbuttons (add cap)

Description	Reference
Push-pull maintained operator	9001SKR9

Caps for spring return & latching non-illuminated mushroom heads

Description	Colour	Reference
35mm mushroom cap with locking screw	Red	9001K92R
	Green	9001K92G
	Black	9001K92B
	Yellow	9001K92Y
57mm mushroom cap with locking screw	Red	9001K93R
	Green	9001K93G
	Black	9001K93B
	Yellow	9001K93Y



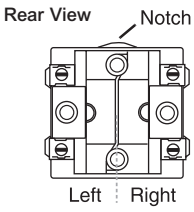
9001SKS11B

Mushroom heads for emergency stop pushbuttons (2)

Type	Diameter	Colour	Reference
Push-pull plastic head	41mm	Red	9001SKR9R

Heads for selector switches

Type of operator	No. of positions	Operation	Reference
Standard handle, black (3)	2	Stayput	9001SKS11B
		Spring return right to left	9001SKS34B
		Spring return left to right	9001SKS25B
	3 (with CAM B)	Stayput	9001SKS42B
		Spring return to centre	9001SKS52B
		Spring return left to centre	9001SKS62B
		Spring return right to centre	9001SKS72B
	3 (with CAM C)	Stayput	9001SKS43B
		Spring return to centre	9001SKS53B
		Spring return left to centre	9001SKS63B
		Spring return right to centre	9001SKS73B
	4	Stayput	9001SKS88B



CAM B 3 Position selector switch			
↖	↑	↗	**Contact block mounting**
I	O	O	1 N/C (left)
O	I	I	1 N/O (left)
O	O	I	1 N/C (right)
I	I	O	1 N/O (right)

CAM C 3 Position selector switch			
↖	↑	↗	**Contact block mounting**
I	O	O	1 N/C (left)
O	O	I	1 N/O (left)
I	O	O	1 N/C (right)
O	O	I	1 N/O (right)

Note:
(1) Includes one of each of the following inserts; red, black, green, yellow, orange, blue & white.
(2) Complete with "Pull to Start Push to Stop" legend plate.
(3) Reference for long black handle is 9001B25.

Ø30 9001SK Black Double Insulated Bezel - Harmony® Style 9 Mushroom Heads & Illuminated Pushbutton Heads IP66, NEMA 4X & 13 AS 60947.5.1



9001SK2L

Heads for illuminated spring return pushbuttons (add cap)

Description	Reference
Flush (full guard, plastic top)	9001SK1L
Projecting	9001SK2L



9001G7

Caps for illuminated spring return pushbuttons

Description	Colour	Reference
Standard Illuminated Pushbutton cap	Red	9001R7
	Green	9001G7
	Amber	9001A7
	Blue	9001L7
	Clear	9001C7



9001SK2L

Heads for illuminated mushroom spring return pushbuttons (add cap)

Description	Reference
Operator without guard	9001SK2L



9001G20



9001R21

Caps for illuminated mushroom spring return pushbuttons

Description	Colour	Reference
35mm Illuminated mushroom cap	Red	9001R20
	Green	9001G20
	Amber	9001A20
	Blue	9001L20
	Clear	9001C20
57mm Illuminated mushroom cap	Red	9001R21
	Green	9001G21
	Amber	9001A21
	Blue	9001L21
	Clear	9001C21



9001SKR9

Heads for latching illuminated mushroom Pushbuttons (add cap)

Description	Reference
Push pull maintained operator	9001SKR9

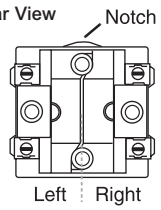
Caps for latching illuminated mushroom Pushbuttons

Description	Colour	Reference
41mm illuminated mushroom cap with Emergency Stop printed	Red	9001R2205
41mm illuminated mushroom cap	Red	9001R22
	Green	9001G22
	Amber	9001A22
	Blue	9001L22



9001R2205

Ø30 9001SK Black Double Insulated Bezel - Harmony® Style 9 Illuminated Selector Switch Head & Contact Blocks IP66, NEMA 4X & 13 AS 60947.5.1



CAM B 3 Position selector switch			
↖	↑	↗	**Contact block mounting**
I	○	○	1 N/C (left)
○	I	I	1 N/O (left)
○	○	I	1 N/C (right)
I	I	○	1 N/O (right)

Heads for illuminated selector switches (add handle)

No. of positions	Operation	Reference
2	Stayput	9001SKS11
	Spring return right to left	9001SKS34
	Spring return left to right	9001SKS25
3 (with CAM B) (1)	Stayput	9001SKS42
	Spring return to centre	9001SKS52
	Spring return left to centre	9001SKS62
	Spring return right to centre	9001SKS72
4	Stayput	9001SKS88


9001A8


9001G24

Handles for illuminated selector switches

Description	Colour	Reference
Standard Handle	Red	9001R8
	Green	9001G8
	Yellow	9001Y8
	Amber	9001A8
	Blue	9001L8
	Clear	9001C8
Long Handle	Red	9001R24
	Green	9001G24
	Yellow	9001Y24
	Amber	9001A24
	Blue	9001L24
	Clear	9001C24


9001KA1


9001KA2

Additional Contact Blocks Fingersafe®

Description	Contact Rating	Type of contact N/O	Type of contact N/C	Reference
Standard	3A, 240V AC 0.55A, 125V DC	1	1	9001KA1
		1	–	9001KA2
		–	1	9001KA3
Early make	3A, 240V AC 0.55A, 125V DC	1	–	9001KA4
Late break	3A, 240V AC 0.55A, 125V DC	–	1	9001KA5
Power Reed	0.5A 240V AC	1	1	9001KA51
Hermetically Sealed	0.5A 115V DC	1	–	9001KA52
		–	1	9001KA53

Note:
(1) Other version: (Please consult Schneider Electric on 1300 369 233) for 3 position illuminated selector switch with CAM C.

Ø30 9001SK Black Double Insulated Bezel - Harmony® Style 9 Pilot Light Heads & Accessories IP66, NEMA 4X & 13 AS 60947.5.1



9001SKT40

Push to test pilot light (add cap)

Description	Light source	Supply Voltage	Reference
Direct supply	BA9s globe not included	–	9001SKT40
Via transformer 6V secondary	BA9s incandescent bulb included	110-120V 50 hz	9001SKT1
		220-240V 50 hz	9001SKT7
		380-480V 50 hz	9001SKT5



9001R6



9001G9



9001A31

Caps for pilot lights, pilot light heads and push to test pilot lights

Description	Colour	Reference
Glass lens	Red	9001R6
	Green	9001G6
	Amber	9001A6
	Clear	9001C6
	Blue	9001L6
Plastic domed lens	Red	9001R9
	Green	9001G9
	Amber	9001A9
	Clear	9001C9
	Blue	9001L9
Plastic fresnel lens	Red	9001R31
	Green	9001G31
	Amber	9001A31
	Clear	9001C31
	Blue	9001L31



9001SKP40

Pilot lights (add cap)

Description	Light source	Supply Voltage	Reference
Direct supply	BA9s globe not included	–	9001SKP40
	BA9s incandescent bulb included	120V AC/DC	9001SKP38
Via transformer 6V secondary	BA9s incandescent bulb included	110-120V 50 hz	9001SKP1
		220-240V 50 hz	9001SKP7
		380-480V 50 hz	9001SKP5
Direct through resistor	BA9s incandescent 130V bulb included	240V AC/DC	9001SKP25

Ø30 9001SK Black Double Insulated Bezel - Harmony® Style 9 Pilot Light Heads, Light Modules & Globes - IP66, NEMA 4 & 13 AS 60947.5.1



9001SKP

Pilot light heads (add cap)

Description	Reference
Pilot light operator	9001SKP

Superbright -LED light modules for pilot lights & illuminated pushbuttons

Description	Light source	Supply Voltage	Reference
Direct through resistor	Superbright LED included select colour (1)	24V AC/DC	9001KM35L• (1)
		48V AC/DC	9001KM36L• (1)
		120V AC/DC	9001KM38L• (1)



9001KM40

Incandescent light modules for pilot lights & illuminated pushbuttons

Description	Light source	Supply Voltage	Reference
Direct supply	BA9s globe not included	–	9001KM40
Via transformer 6V secondary	BA9s incandescent bulb included	110-120V 50 hz	9001KM1
		220-240V 50 hz	9001KM7
		380-480V 50 hz	9001KM5
Direct through resistor	BA9s incandescent 130V bulb included	240V AC/DC	9001KM25



DL1CE•••

BA9s bulb (incandescent & LED)

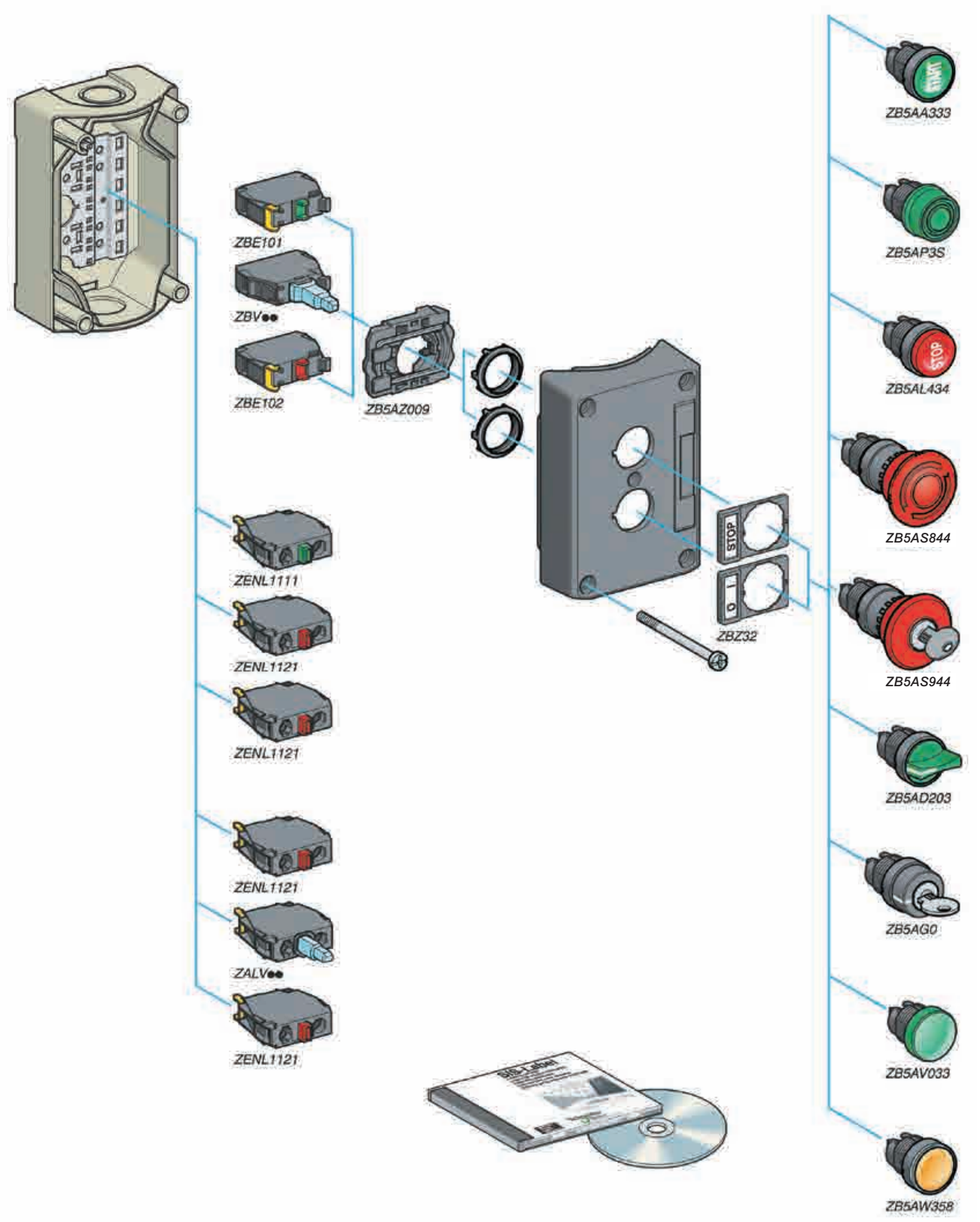
Description	Voltage		Colour	Reference
Incandescent filament lamp	6V AC/DC	1.2W	–	DL1CB006
	12V AC/DC	2W	–	DL1CE012
	24V AC/DC	2W	–	DL1CE024
	48V AC/DC	2.4W	–	DL1CE048
	130V AC/DC	2.6W	–	DL1CE130
LED lamp (bright)	9V AC/DC (2)		Green	DL1CJUS0093
			Red	DL1CJUS0094
			Amber	DL1CJUS0095
	24V AC/DC		Green	DL1CJUS0243
			Red	DL1CJUS0244
			Amber	DL1CJUS0245
	120V AC/DC		Green	DL1CJUS1203
			Red	DL1CJUS1204
			Amber	DL1CJUS1205
LED lamp (super bright) (3) 12V	To suit 24/120 AC/DC Superbright light modules 9001KM3*L		White	6508805214
			Green	6508805212
			Red	6508805210
			Amber	6508805211
			Blue	6508805213



DL1CJUS•••

Note:
(1) Complete reference with desired colour; R=red, G=green, Y=yellow, W=white, L=blue.
(2) For use with 6V secondary transformer pilot light & illuminated Pushbutton bodies.
(3) For use with superbright LED light modules (ie. 9001KM3*L).
(4) For other voltage, please consult Schneider Electric on 1300 369 233.

Double Insulated Control Stations XAL
To Suit Ø22 Harmony® Style 5 Control & Signalling Units
Assembly of Components – IP65, NEMA 4X & 13



Complete Double Insulated Control Stations XAL
With Ø22 Harmony® Style 5 Control & Signalling Units
Factory Assembled Units – IP65, NEMA 4X & 13



XALK178



XALK188

Ø 22mm – Emergency stop devices, trigger (2)

(Conform to standard IEC 60364-5-53 and EN/IEC 60947-5-5) (light grey base RAL7035, yellow lid RAL1012)

Double insulated – IP65

Description	Contact (1)	Marking	Reference
1 red mushroom head Pushbutton, Ø40mm latching, turn to release	1 N/C	-	XALK178
1 red mushroom head Pushbutton, Ø40mm latching, key to release (Ronis key no. 455)	1 N/C	-	XALK188
1 red mushroom head Pushbutton, Ø40mm latching, pull to reset	1 N/C	-	XALK198



XALD134



XALD144

Ø 22mm - Emergency stop Devices, trigger type (3) - (light grey base RAL7035, yellow lid RAL1012)

(Conform to standard EN/IEC 60204-1 and EN/ISO 13850: 2006, Machinery Directive 98/37/EC and standard EN/IEC 60947-5-5)

Double Insulated - IP65

Description	Contact (1)	Marking	Reference
1 red mushroom head pushbutton, Ø40mm latching, turn-to-release trigger action	2 N/C	-	XALK178F
1 red mushroom head pushbutton, Ø40mm latching, key-to-release trigger action (Ronis key 455)	2 N/C	-	XALK188F



XALD215



XALD363B

Ø 22mm Start or start/stop function (light grey base RAL7035, dark grey lid RAL7016)

Double insulated – IP65

Description	Contact	Marking	Pilot light supply	Reference
1 green flush push button spring return	1 N/O	Start		XALD103
1 selector switch 2 positions stay put	1 N/O	O-I		XALD134
1 key selector switch 2 positions (key 455) stay put Key withdrawal from left position	1 N/O	O-I		XALD144
2 flush Pushbuttons 1 green spring return 1 red spring return	1 N/O 1 N/C	Start Stop		XALD215
2 flush Pushbuttons 1 green spring 1 red spring return 1 pilot light with red "Protected LED"	1 N/O 1 N/C	I O	⎓ 24	XALD363B
			~ 120	XALD363G
			~ 240	XALD363M

Note:
(1) Suitable only for contact blocks ZENL1111 (N/O contacts) or ZENL1121 (N/C contacts).
(2) Per standard EN/IEC 60364-5-53.
(3) Per standard EN/IEC 60204-1 and for emergency stop equipment as per standard EN/ISO 13850.

Double Insulated Control Stations XAL
To Suit Ø22 Harmony® Style 5 Control & Signalling Units
Variable Composition – IP65, NEMA 4X & 13



XALD02



XALK01

Empty enclosures

Description	Number of ways	Reference
For normal environments (with stainless steel fixing screws) Light grey base "RAL7035" Dark grey lid "RAL7016"	1	XALD01
	2	XALD02
	3	XALD03
	4	XALD04
	5	XALD05
Light grey base "RAL7035" Yellow lid "RAL1012"	1	XALK01
	2	XALK02
	3	XALK03
	4	XALK04
	5	XALK05



ZB5AA5



ZB5AV01

Control & signalling unit heads

Description	Refer to page
Pushbuttons & selector switches	3.4.18 to 3.4.21
Illuminated Pushbuttons & selector switches	3.4.22 to 3.4.23
Pilot lights	3.4.28



ZENL1111



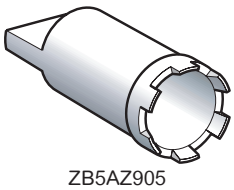
ZALV••

Electrical blocks (for mounting on metal plate at back of enclosure)

Description	Type	Colour	Reference
Electrical blocks with screw clamp terminal connections			
Standard contact blocks (1) (3)	N/O contact	–	ZENL1111
	N/C contact	–	ZENL1121
Light blocks with "Protected LED"	⎓ 24V	White	ZALVB1
		Green	ZALVB3
		Red	ZALVB4
		Yellow	ZALVB5
		Blue	ZALVB6
	∿ 48-120V	White	ZALVG1
		Green	ZALVG3
		Red	ZALVG4
		Yellow	ZALVG5
		Blue	ZALVG6
	∿ 230...240V	White	ZALVM1
		Green	ZALVM3
		Red	ZALVM4
		Yellow	ZALVM5
		Blue	ZALVM6



ZB5SZ3



ZB5AZ905

Accessories

Description	Application	Reference
Plastic blanking plug, round, black (2)	Ø 22 units	ZB5SZ3
Lock nut	Head fixing	ZB5AZ901
Volt free terminal	Commoning/earth	XALZ09
Bezel tightening tool	For tightening nut ZB5-AZ901	ZB5AZ905

Note:
(1) A maximum of 3 electrical blocks may be fitted per associated head.
(2) Lock nut included with blanking plug.
(3) With positive opening snap action ⊖.

Metal Control Stations XAP
To Suit Ø22 Control & Signalling Units
Empty Enclosures & Factory Assembled Units – IP65, NEMA 4 & 13



XAPM1321H29



XAPM1316H29

Ø 22mm – Die Cast Metal Complete Stations – IP65 (1)

Description	Contact	Marking	Reference
1 green flush push button spring return	1 N/O	Start	XAPM1310H29
2 flush Pushbuttons 1 green spring return 1 red spring return	1 N/O 1 N/C	Start Stop	XAPM1321H29
1 red mushroom head Pushbutton, Ø40mm latching, turn to release	1 N/C	Emergency Stop	XAPM1316H29



XAPA2100

Glass-reinforced Polyester Double Insulated Enclosures – IP65 (2)

Description	dimensions (mm)	Number of cutouts	No. of rows vertical	horizontal	Reference
Without hinges (usable depth: 83mm)	85 x 146	-	-	-	XAPA1100
	85 x 146	4 (Ø22)	2	2	XAPA1104
	85 x 226	-	-	-	XAPA2100
	85 x 226	8 (Ø22)	2	4	XAPA2108
	151 x 241	-	-	-	XAPA3100
	151 x 241	16 (Ø22)	4	4	XAPA3116



XAPM1202H29



XAPM2203H29

Die Cast Metal Enclosures – IP65 (1)

Description	Front face dimensions (mm)	Number of cutouts	No. of rows vertical	horizontal	Reference
With two threaded conduit entries (usable depth 49mm)	80 x 80	1 (Ø22)	1	1	XAPM1201H29
	80 x 80	2 (Ø22)	2	1	XAPM1202H29
	80 x 130	2 (Ø22)	1	2	XAPM2202H29
	80 x 130	3 (Ø22)	1	3	XAPM2203H29
	80 x 130	4 (Ø22)	2	2	XAPM2204H29
	80 x 175	4 (Ø22)	1	4	XAPM3204H29
	80 x 175	6 (Ø22)	2	3	XAPM3206H29
With two threaded conduit entries (usable depth 74.5mm)	80 x 80	1 (Ø22)	1	1	XAPM1501H29
	80 x 80	2 (Ø22)	2	1	XAPM1502H29
	80 x 130	3 (Ø22)	1	3	XAPM2503H29
	80 x 130	4 (Ø22)	2	2	XAPM2504H29
	80 x 175	4 (Ø22)	1	4	XAPM3504H29
	80 x 175	6 (Ø22)	2	3	XAPM3506H29
	80 x 220	6 (Ø22)	1	6	XAPM4506H29
	80 x 220	8 (Ø22)	2	4	XAPM4508H29

Note:
(1) Recommended for use with Harmony style 4 panel mounted control & signalling units.
(2) Recommended for use with Harmony style 5 panel mounted control & signalling units.

Metal & Double Insulated Control Stations 9001
For Ø30 Control & Signalling Units
Empty Enclosures & Factory Assembled Units – IP66, NEMA 1, 3, 4, 4X & 13



9001KYK126



9001KYK127

Ø 30mm - Complete Control Stations – Metal – IP66

Description	Contact	Marking on legend plate	Reference
1 black flush push button spring return	1 N/O + 1 N/C	Start	9001KYK127
2 Pushbuttons 1 black spring return (flush) 1 red spring return (no guard)	1 N/O + 1 N/C 1 N/O + 1 N/C	Start Stop	9001KYK227
1 red mushroom head Pushbutton latching, push/pull	1 N/O + 1 N/C	Emergency Stop	9001KYK126



9001KY2

Die Cast Metal Enclosures – IP66 (1)

Description	Front face dimensions (mm)	Number of cutouts	No. of rows vertical	horizontal	Reference
With one threaded conduit entry (usable depth 67 mm)	92 x 102	1 (Ø30)	1	1	9001KY1
	92 x 146	2 (Ø30)	1	2	9001KY2
	92 x 191	3 (Ø30)	1	3	9001KY3



9001KYSS3

Stainless Steel Enclosures – Grade 304 – IP66 (1)

Description	Front face dimensions (mm)	Number of cutouts	No. of rows vertical	horizontal	Reference
With one conduit entry (usable depth 87 mm)	106 x 106	1 (Ø30)	1	1	9001KYSS1
	106 x 197	2 (Ø30)	1	2	9001KYSS2
	106 x 260	3 (Ø30)	1	3	9001KYSS3



9001SKY2

Insulated Enclosures, Glass Polymeric – IP66 (2)

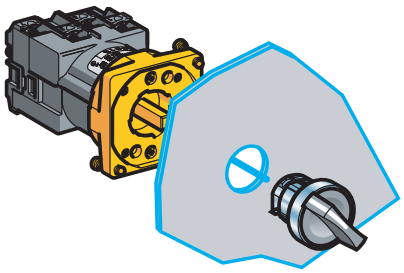
Description	Front face dimensions (mm)	Number of cutouts	No. of rows vertical	horizontal	Reference
With one conduit entry (usable depth 95 mm)	97 x 169	1 (Ø30)	1	1	9001SKY1
	97 x 169	2 (Ø30)	1	2	9001SKY2
	97 x 226	3 (Ø30)	1	3	9001SKY3

Note:
(1) Recommended for use with 9001K panel mounted control & signalling units.
(2) Recommended for use with 9001SK panel mounted control & signalling units.

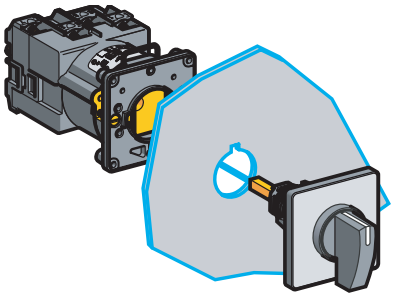
Complete Switches & Adaptable Sub-Assemblies
12 & 20A

Front mounting switches

By means of single Ø 22mm hole

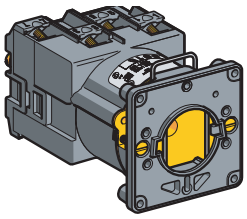


Ø 22.5mm cut-out.
Head attaches to plate using 1/4 turn bayonet locking and secured on panel by 2 needle screws.



Ø 22.5mm cut-out with anti-rotation notch.
Head clips into body and secured on panel by fixing nut.

Body sub-assembly



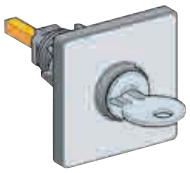
With Ø 22mm hole
K1• •••••, K2• •••••L

Head sub-assembly

With 45 x 45mm front plate

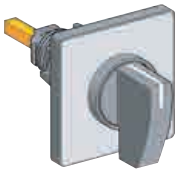


With blank legend and 35mm handle
K•C 1H

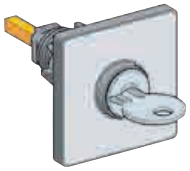


With blank legend and key operator
K•C 1•

With 60 x 66mm front plate



With blank legend and 42mm handle
K•D 1H

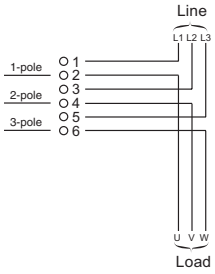
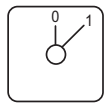
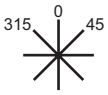
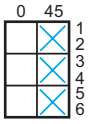


With blank legend and key operator
K•D 1•

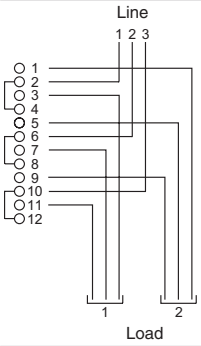
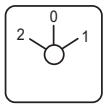
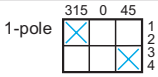
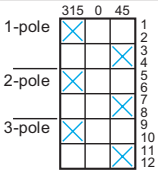
Complete Switches 20A
Ø22 Hole Mounting for Control Circuits – IP65
AS 60947.5.1



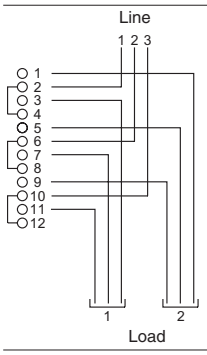
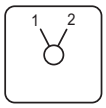
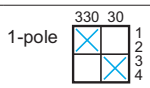
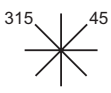
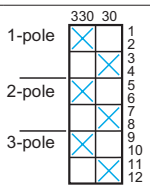
Off-On Switches with 45° switching angle

Wiring	Marking & switching position	Switching program	Poles	Thermal current (Ith)	Reference
			1	20A	K2A001ACH
			3	20A	K2C003ACH

Changeover / Auto-Off-Manual Switch

Wiring	Marking & switching position	Switching program	Poles	Thermal current (Ith)	Reference
			1	20A	K2B001UCH
			3	20A	K2F003UCH

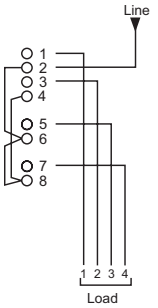
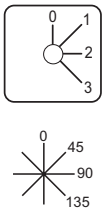
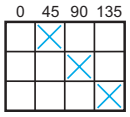
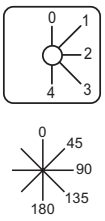
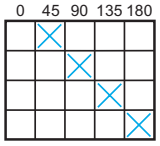
Changeover / Auto-Manual

Wiring	Marking & switching position	Switching program	Poles	Thermal current (Ith)	Reference
			1	20A	K2B011UCH
			3	20A	K2F013UCH

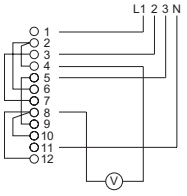
Complete Switches 12A & 20A
Ø22 Hole Mounting For Control Circuits – IP65
AS 60947.5.1



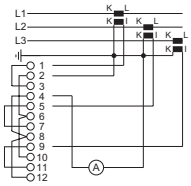
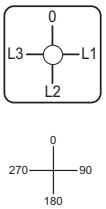
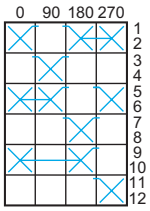
Multi-Step Switch single pole with “Off” Position

Wiring scheme	Marking & switching position	Switching program	Number of Steps	Thermal current (Ith)	Reference
			3 steps + “0”	20A	K2C003QCH
			4 steps + “0”	20A	K2D004QCH

Voltmeter Switch (Phase-Phase, Phase-Neutral, Off Position) (1)

Wiring scheme	Marking & switching position	Switching program	Thermal current (Ith)	Reference
	141.50 	155.65	12A	K1F027MCH

Ammeter Switch (3-Circuits, Off Position) (1)

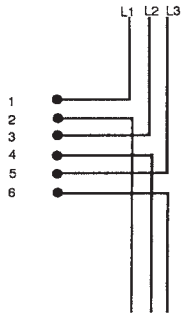
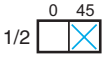
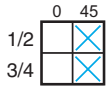
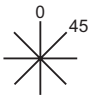
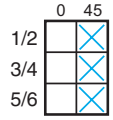
Wiring scheme	Marking & switching position	Switching program	Thermal current (Ith)	Reference
			12A	K1F003MCH

Note:
(1) Rated for control duty only (12A Ith, AC15 3A at 230V).

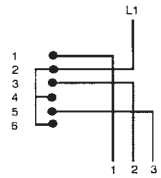
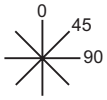
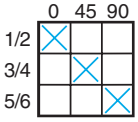
Contact Block Assemblies 20A
Mounting by Ø 22m Hole
AS 60947.5.1



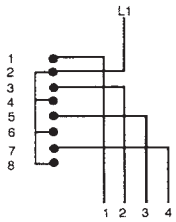
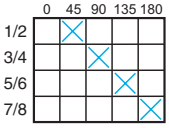
Off-On Switches (1)

Wiring diagram	Switching program	Switching position in degrees	Poles	Thermal current (Ith)	Reference
			1 Pole	20A	K2A001A
			2 Pole	20A	K2B002A
			3 Pole	20A	K2C003A

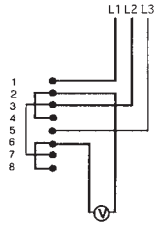
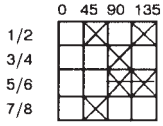
Stepping Switch, Single Pole, without “Off” Position (1)

Wiring diagram	Switching program	Switching position in degrees	Poles	Thermal current (Ith)	Reference
			3 step	20A	K2C003N

Stepping Switch, Single Pole, with “Off” Position (1)

Wiring diagram	Switching program	Switching position in degrees	Poles	Thermal current (Ith)	Reference
			4 Step + “Off	20A	K2D004Q

Voltmeter Switches (1)

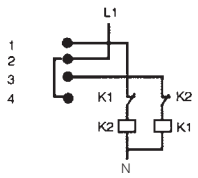
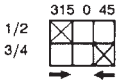
Wiring diagram	Switching program	Switching position in degrees	Poles	Thermal current (Ith)	Reference
			For measurements between 3 phases with “Off” position	20A	K2D024M

Note:
(1) Order contact block from above and heads with handles from page 3.4.54.

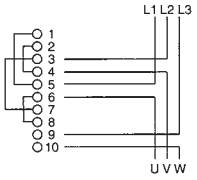
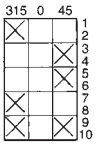
Contact Block Assemblies 20A
Mounting by Ø 22m Hole
AS 60947.5.1



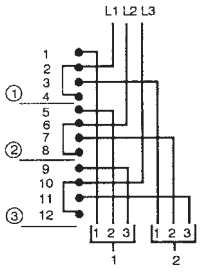
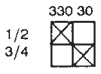
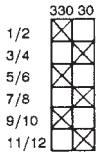
Reversing Switches with Spring Return from 315° & 45° to “Off” Position

Wiring diagram	Switching program	Switching position in degrees	Thermal current (Ith)	Reference
			20A	K2B006T

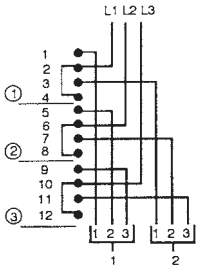
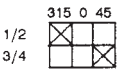
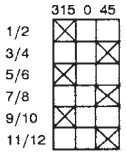
Reversing Switch with “Off” Position

Wiring diagram	Switching program	Switching position in degrees	Poles	Thermal current (Ith)	Reference
			3 Pole	20A	K2E003W

Changeover / Reversing Switch without “Off” Position

Wiring diagram	Switching program	Switching position in degrees	Poles	Thermal current (Ith)	Reference
			1 Pole	20A	K2B011U
			3 Pole	20A	K2F013U

Changeover / Reversing Switches with “Off” Position (Auto-Off-Manual)

Wiring diagram	Switching program	Switching position in degrees	Poles	Thermal current (Ith)	Reference
			1 Pole	20A	K2B001U
			3 Pole	20A	K2F003U

Operating Heads – IP65
AS 60947.5.1


KBE1H

Operator head, 45 x 45mm

Description	Length of handle	Background colour	Reference
Ø 22mm hole fixing with blank legend	35mm	silver	KBC1H
		black	KAC1H
4 hole fixing with blank legend	35mm	silver	KBE1H
		black	KAE1H


K•C1•

Key operated operating heads, 45 x 45mm (1)

Description	Switching angle & marking	Background colour	Reference
Ø 22mm hole fixing with blank legend Key removable all positions	45° and 90°	black	KAC1S
		silver	KBC1S


KAC1H

Operating heads, 60 x 60mm

Description	Length of handle	Background colour	Reference
Ø 22mm hole fixing with blank legend	42mm	black	KAD1H
		silver	KBD1H


KBD1H

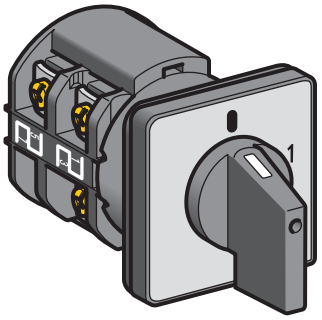
Key operated operating heads, 60 x 60mm

Description	Switching angle & marking	Background colour	Reference
4 hole fixing with blank legend Key removable all positions	45° and 90°	black	KAD1S
		silver	KBD1S

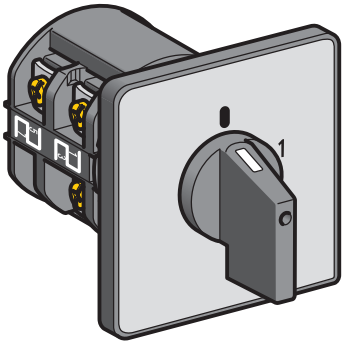
Note:
(1) Head supplied with Ronis key "8R1". To order a Ronis "455" key add suffix R to the references listed. (eg KAC1S becomes KAC1SR). To order a head with Ronis key "8R15", use suffix RI.
(2) For other types of available operators, consult Schneider Electric Help Centre on 1300 369 233.

Complete Switches
32 to 150A

Complete products - Front mounting



By 4 holes with 64 x 64mm front plate 32 to 63A ratings K30, K50 and K63



By 4 holes with 88 x 88mm front plate 115 to 150A ratings K30, K115 and K150

Complete Switches, 32 to 150A
With 64 x 64mm Front Plate (32 to 63A Ratings)
& 88 x 88mm Front Plate (115 & 150A Ratings)

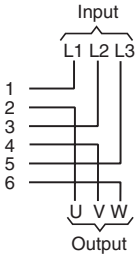
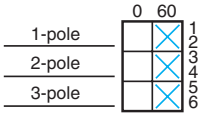
OFF-ON switches, front mounting



K30C003AP



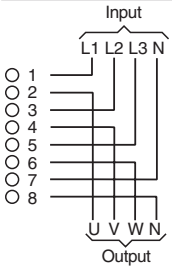
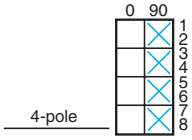
K50C003AP

Wiring scheme	Marking & switch position	Number of poles	Thermal current (Ith)	Reference
		1	32	K30A001AP
			50	K50A001AP
		3	32	K30C003AP
			50	K50C003AP
			63	K63C003AP
			115	K115C003AP
			150	K150C003AP

OFF-ON switches, front mounting



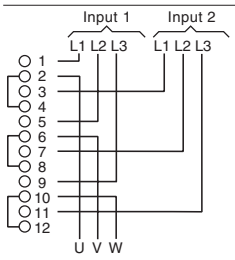
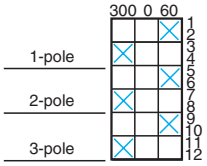
K150D004HP

Connection scheme	Marking & switch position	Number of poles	Thermal current (Ith)	Reference
		4	32	K30D004HP
			50	K50D004HP
			63	K63D004HP
			115	K115D004HP
			150	K150D004HP

Changeover switches with “O” position, front mounting



K50B001UP

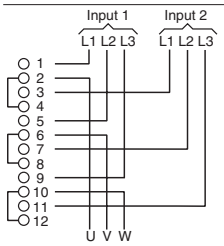
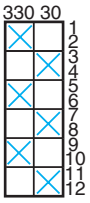
Connection scheme	Marking & switch position	Number of poles	Thermal current (Ith)	Reference
		1	32	K30B001UP
			50	K50B001UP
			150	K150B001UP
		3	32	K30F003UP
			50	K50F003UP
			63	K63F003UP
			115	K115F003UP
			150	K150F003UP
		4	32	K30H004UP
			50	K50H004UP
			63	K63H004UP
			115	K115H004UP
			150	K150H004UP

Complete Switches, 32 to 150A
With 64 x 64mm Front Plate (32 to 63A Ratings)
& 88 x 88mm Front Plate (115 & 150A Ratings)

Changeover switches without “O” position, front mounting



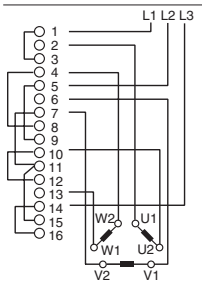
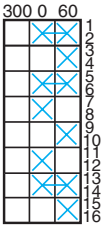
K63F013UP

Connection scheme	Marking & switch position	Number of poles	Thermal current (Ith)	Reference
		3	32	K30F013UP
			50	K50F013UP
			63	K63F013UP
			115	K115F013UP
			150	K150F013UP

Star-delta switches, front mounting



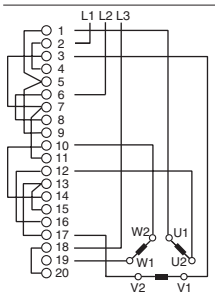
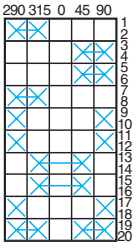
K50H001YP

Connection scheme	Marking & switch position	Number of poles	Thermal current (Ith)	Reference
		3	32	K30H001YP
			50	K50H001YP
			63	K63H001YP
			115	K115H001YP
			150	K150H001YP

Reversing star-delta switches, front mounting



K115K006YP

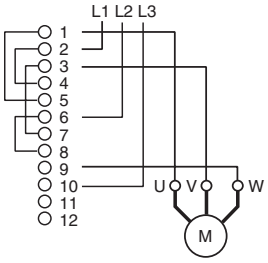
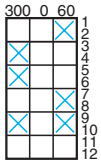
Connection scheme	Marking & switch position	Number of poles	Thermal current (Ith)	Reference
		3	32	K30K006YP
			50	K50K006YP
			63	K63K006YP
			115	K115K006YP
			150	K150K006YP

Complete Switches, 32 to 150A
With 64 x 64mm Front Plate (32 to 63A Ratings)
& 88 x 88mm Front Plate (115 & 150A Ratings)



K150E003WP

Reversing switches with “O” position, front mounting

Connection scheme	Marking & switch position	Number of poles	Thermal current (Ith)	Reference
		3	32	K30E003WP
			50	K50E003WP
			63	K63E003WP
			115	K115E003WP
			150	K150E003WP

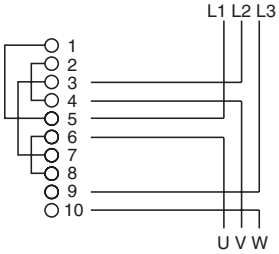
Legend holders with & without legend

Description	For use with	Reference
Legend holders, with blank legend	Square heads 64 x 64mm	KZN15
	Square heads 88 x 88mm	KZN103
Replacement blank Legend for legend holder	KZN-15	KZ77N
	KZN-103	KZ100N
Blank Legend for metallic finish front plate	64 x 64mm	KZN21
	88 x 88mm	KZN24

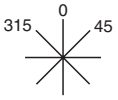
3.4

Contact functions: how to understand the conventions used for switching program representation

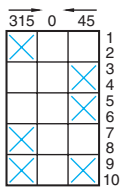
Link positions (factory mounted)



Angular position of switch



Graphic representation of switching positions and spring return to “O” position



Contact terminal reference number



Contact closed



Contact closed in 2 positions and maintained between the 2 positions



Sealed assembly for auto-maintain control



Overlapping contacts

Cam Switches Type K1 & K2
Legend Plates & Holders
AS 60947.5.1

60° angle 45mm x 45mm

Marking (1)	Colour	Reference
	Black	KZ18061L
	Silver	KZ18061
	Black	KZ18631L
	Silver	KZ18631
	Black	KZ18068L
	Silver	KZ18068

90° angle 45mm x 45mm

Marking (1)	Colour	Reference
	Black	KZ18091L
	Silver	KZ18091
	Black	KZ18093L
	Silver	KZ18093

Specially engraved 45mm x 45mm

(2)	Colour	Reference
	Black	KZ17EN
	Silver	KZ18EN

Specially engraved 60mm x 60mm

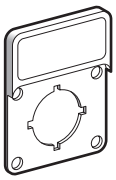
(2)	Colour	Reference
	Black	KZ20EN
	Silver	KZ21EN

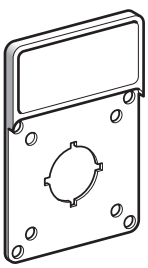
45° angle 45mm x 45mm

Marking (1)	Colour	Reference
	Black	KZ18041L
	Silver	KZ18041
	Black	KZ18042L
	Silver	KZ18042
	Black	KZ18044L
	Silver	KZ18044
	Black	KZ18047L
	Silver	KZ18047
	Black	KZ18048L
	Silver	KZ18048
	Black	KZ18415L
	Silver	KZ18415
	Black	KZ18416L
	Silver	KZ18416
	Black	KZ18421L
	Silver	KZ18421
	Black	KZ18423FL
	Silver	KZ18423F
	Black	KZ18434L
	Silver	KZ18434
	Black	KZ18451L
	Silver	KZ18451

Legend holders (4)

Description	For use with heads	Reference
Legend holder	With 45 x 45mm front plate (3)	KZ13 (2)
	With 60 x 60mm front plate (3)	KZ15 (2)





Blank legend (for engraving) for legend holders - Silver

Description	For use with heads	Reference
Legend for legend holder KZ14 Plastic with metallic finish Self-adhesive	With 45 x 45mm front plate (3)	KZ76EN
Legend for legend holder KZ16 Plastic with metallic finish Self-adhesive	With 60 x 60mm front plate (3)	KZ77EN

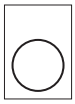
Note:
(1) Black background legends is suitable for multi-fixing heads.
Metallic background legend is suitable for Ø22mm Hole mounting heads with plastic bezel.
(2) Use legend order form on page 3.4.64.
(3) Operating heads for single Ø22mm hole or 4 hole mounting.
(4) Add blank legend for engraving.

Custom Engraved Legend Plates

To Suit Ø22mm & Ø30mm Control & Signalling Units & Cam Switches

Table 1

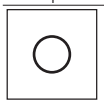
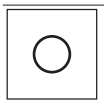
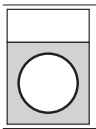
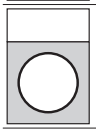
To suit Ø22mm

Description		Reference
	ZA2 ZB2 30 x 40mm	ZB2BY2101EN Red Black
	ZB5 ZB4 Suits ZBZ32 holder 8 x 27mm 1 or 2 lines	ZBY0101EN Red Black
	ZB5 ZB4 Suits ZBZ33 holder 18 x 27mm 1 to 3 lines	ZBY5101EN Red Black

To suit Ø30mm

Description		Reference
	41 x 44mm 1 line, 14 characters	9001KN200EN Black
	44 x 47mm 3 lines, 18 characters 1 or 2 lines	9001KN300EN Black
	57 x 57mm 2 lines, 16 characters	9001KN100WPEN White
	57 x 57mm 2 lines, 16 characters	9001KN100RPEN Red

To suit K2 - cam switches

Description		Reference
	Suits K•CIB K2 Cam switch 45 x 45mm	KZ17EN Black KZ18EN Silver
	Suits K•DIC K2 Cam switch 60 x 60mm	KZ20EN Black KZ21EN Silver
	Suits KZ13 legend 42 x 19mm 3 lines, 18 characters	KZ76EN Silver
	Suits KZ15 legend 56 x 21mm 3 lines, 17 characters	KZ77EN Silver

3.4

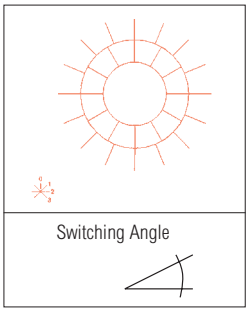
Ordering Instructions

1. Complete form by indicating desired legend Table 1 with a tick in applicable box.
2. Mark Table 1 legend plate with text position, i.e. 1, 2,...
3. State text, Table 2.
4. Fax to Schneider Help Centre on 1300 369 288.

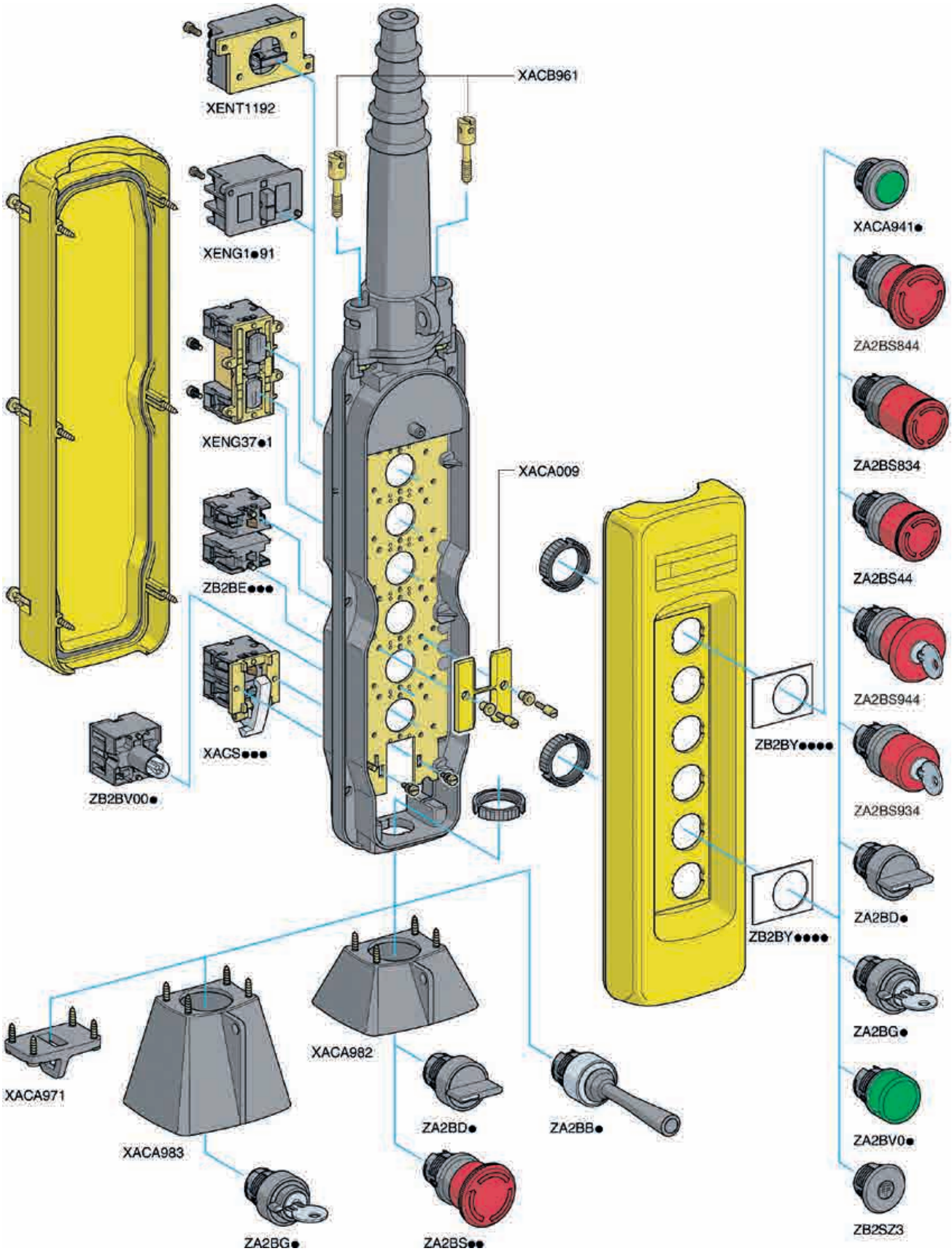
Customer Name:	Sales order:
Date required: / /	
Date ordered: / /	
Ordered by:	

Table 2

Qty	Text 1	Text 2	Text 3	Text 4	Text 5	Office Use Only Line No.
Qty	Text 6	Text 7	Text 8	Text 9	Text 10	



Double Insulated Pendant Stations XAC
For Ø22 Control & Signalling Units
Assembly of Components



Double Insulated Pendant Stations XAC & 9001BW
For Ø22 Control & Signalling Units Complete Stations
Factory Assembled Units – IP65



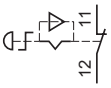
XACA205



9001BW72Y

"Small Hoist" Applications for control of single-speed monitors

(with 2 operators forming an integral part of the enclosure)

Number of operators	Functions	Contact blocks per operator	Scheme for each operator	Reference
2 mechanically interlocked	↕	1 N/C-+-1 N/O ZB2-BE102 + ZB2-BE101		XACA205
2 mechanically interlocked	Up Down	1 N/O-+-1 N/O		9001BW72Y
2 mechanically interlocked + 1 latching Emergency Stop dia 30mm operator ZA2BS44	↕	1 N/C ZB2-BE102		XACA2053
		1 N/C + 1 N/O ZB2-BE102 + ZB2-BE101		



XACA2053



XACA881

General Purpose

(with interchangeable booted operators for control of single-speed motors)

Number of operators	676.00	743.60	Scheme for each operator	Reference
2 mechanically interlocked	↕	1 N/C +1N/O ZB2BE102 + ZB2BE101		XACA281
Same as above with additional turn-to-release Ø30mm mushroom head red emergency stop latching Pushbutton c/w		1 N/C ZB2BE102		XACA2813
4 mechanically interlocked between pairs	↕ ↔	1 N/C +1N/O ZB2BE102 + ZB2BE101		XACA481
Same as above with additional turn-to-release Ø30mm mushroom head red emergency stop latching Pushbutton c/w		1 N/C ZB2BE102		XACA4813
6 mechanically interlocked between pairs	↕ ↔ ↗↙	1 N/C +1N/O ZB2BE102 + ZB2BE101		XACA681
8 mechanically interlocked between pairs	↕ ↔ ↗↙ O	1 N/C +1N/O ZB2BE102 + ZB2BE101		XACA881

Note:

■ Other stations:

- Use adaptable sub-assemblies : empty enclosures, contact blocks, signalling units, operators, legend plates.

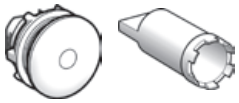
Double Insulated Pendant Stations XAC
For Ø22 Control & Signalling Units
Variable Composition Units – IP6



XACA02 XACA12

Empty Enclosures

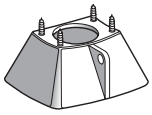
Description	Number of ways	Reference
Enclosure references comprising: - the enclosure - internal mounting plate - protective cable sleeve - internal cable clamp - suspension ring - cable tie (for tightening sleeve onto cable)	2	XACA02
	3 (1)	XACA03
	4	XACA04
	5 (1)	XACA05
	6	XACA06
	8	XACA08
	12	XACA12



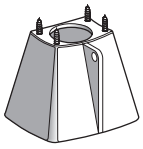
XACB961 XACA971

Tools and Accessories

Description		Reference
Adaptor for self-supporting cable type BBAP	Adapts to collar fitted with Ø-8 to 26mm cable sleeve	XACB961
Lower support ring	–	XACA971
Protective guards mounted in base of enclosure	For selector switch or Ø-40mm mushroom head Pushbutton	XACA982
	For key switch or key release, latching mushroom head pushbutton	XACA983



XACA982

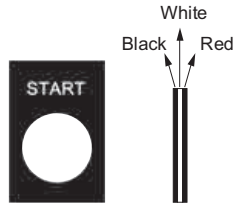


XACA983

Legend Plates 30-x40 mm

"Start" function : white letters, black background. "Stop" function: white letters, red background.

Description	Text	Reference
Blank legend plates	Black or red background	ZB2BY2101
Pre-engraved legend plates	For Pushbuttons	
	Start	ZB2BY2303
	Stop	ZB2BY2304
	Forward	ZB2BY2305
	Reverse	ZB2BY2306
	Up	ZB2BY2307
	Down	ZB2BY2308
	Right	ZB2BY2309
	Left	ZB2BY2310
	On	ZB2BY2311
	Off	ZB2BY2312
	Horn	ZB2BY2319
	Signal	ZB2BY2320
	Power on	ZB2BY2326
	Slow	ZB2BY2327
	Fast	ZB2BY2328
	North	ZB2BY23NO
	South	ZB2BY23SO
	East	ZB2BY23EA
	West	ZB2BY23WE
	Raise	ZB2BY23RA
	Lower	ZB2BY23LO
	For selector switches	
	O-I	ZB2BY2178
	I-O-II	ZB2BY2186



ZB2BY2303

Note:
(1) Enclosures with 3 cut-outs XACA03 and 5 cut-outs XACA05 cannot be fitted with a mounting adaptor for base mounted units.

Double Insulated Pendant Stations XAC
For Ø22 Control & Signalling Units
Variable Composition Units – IP65



XACA94•••

Operating Heads for Front Mounting

Description	Colour	Reference
Complete booted operators	White	XACA9411
	Black	XACA9412
	Green	XACA9413
	Red	XACA9414
	Yellow	XACA9415
	Blue	XACA9416
	Brown	XACA9419



ZA2BC4



ZA2BS844



ZA2BS944

Operating Heads for Front or Base Mounting

Description	Colour	Type	Reference
Mushroom head latching Turn to release (Emergency stop function)	Red	Ø 30mm	ZA2BS834
		Ø 40mm	ZA2BS844
Mushroom head latching Key release - Ronis no 455 (Emergency stop function)	Red	Ø 30mm	ZA2BS934
		Ø 40mm	ZA2BS944
Selector switches (Not to be used in conjunction with contact blocks XEN-G • • •)	Black	2 position stay put	ZA2BD2
		3 position stay put	ZA2BD3
Key switches (Ronis key no 455) Key withdrawal from left and right	–	2 position stay put	ZA2BG4
		3 position stay put	ZA2BG5



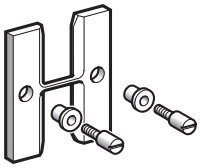
ZA2BD•



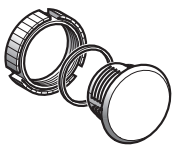
ZA2BG•

Accessories

Description		Reference
Mechanical interlock between 2 Pushbuttons	With fixing screws	XACA009
Blanking plug	Complete with seal and fixing nut	ZB2SZ3



XACA009



ZB2SZ3

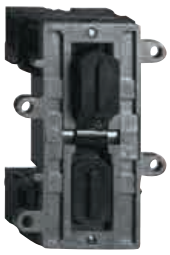
Note:

■ Other versions:
- Key release latching mushroom head Pushbuttons with other key numbers.
- Selector switches and key switches with other mechanical combinations or other key numbers. Please consult the Schneider Help Centre on 1300 369 233.

Double Insulated Pendant Stations XAC
For Ø22 Control & Signalling Units
Variable Composition Units – IP65


ZB2BE10•


XENG1191


XENG37•1


XACS10•

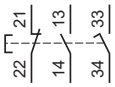
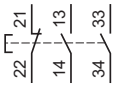
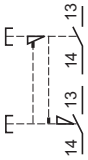
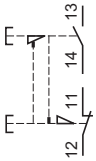

ZB2BV006


ZB2BV007


ZA2BV0•


DL1CE•••

Contact Blocks for Front Mounting

Description	Application	Contacts	Scheme	Reference
Single block spring return: slow break	single speed	1 N/O		ZB2BE101
	single speed	1 N/C		ZB2BE102
	2-speed	1 N/C + 1 N/O + 1N/O staggered (1)		XENG1191
	single speed	1 N/C + 2 N/O simultaneous (1)		XENG1491
Double block latching slow break-(2)	single speed	1 N/O 1 N/O		XENG3781
	single speed	1 N/O 1 N/C		XENG3791

Contact Blocks for Base Mounting

Description	Contacts	Reference
Spring return slow break-(3)	1 N/O	XACS101
	1 N/C	XACS102

Pilot Light Bodies for Front Mounting

Description	Scheme	Supply voltage	Reference
Direct supply Bulb not supplied (4)		400V max (5)	ZB2BV006
Direct through resistor Incandescent BA 9s base fitting, 130V bulb supplied		230V	ZB2BV007

Pilot Light Lenses IP66

Description	Colour	Reference
Lens cap with fixing bezel	Green	ZA2BV03
	Red	ZA2BV04
	Yellow	ZA2BV05
	Blue	ZA2BV06
	Clear	ZA2BV07

Incandescent Bulbs

Description	Voltage	Reference
BA 9s base fitting Max. power: 2.6 W Max. Ø: 11mm Max. length: 28mm	6V	DL1CB006
	12V	DL1CE012
	24V	DL1CE024
	48V	DL1CE048
	130V	DL1CE130

Note:
(1) For use only with XACA9••• Pushbuttons.
(2) Not suitable for use with operating heads ZA2BD, ZA2BG and ZA2BS.
(3) Not suitable for use with 3-position selector switch operating heads ZA2BD and ZA2BG.
(4) Bulb type for direct supply: BA-9s base fitting, incandescent bulb U-<-130V, max. power 2.6 W, LED types 24, 28, 48V DC and 6V AC max. Ø 11mm, max. length 28mm.
(5) Incandescent filament lamp may be used up to 130V only.

Wireless Remote Controller

Harmony eXL Hoist

The Harmony eXLhoist range of wireless remote control systems provide complete and innovative crane operator control solutions to: improve the machine and crane operator efficiency, enhance safety for people and equipment, and to reduce installation and maintenance downtime.

The remote control system XARS is a combination of remote control device (transmitter: XART) and base station (receiver: XARB), which transmits commands and information from the operator to the machine and vice versa by radio frequency of 2.4GHz. Automatic frequency hopping permits up to 50 systems working at the same time in an 100x100m area. The XARS system offers movement in 8 directions (for application example: hoist, bridge, and trolley) at 2 speed levels (low and high) for each movement.

Robust, Safe & Easy maintenance

- IP 65 base station and controller
- Instant alarm notification by vibration on the remote controller
- 30 hours of run time with only 15 minutes charging time
- SIL1 PL c compliant with built in protection against unintended operation
- Certified SIL3, PL e wireless emergency stop



ZART8L



ZART12D



ZART18W



XARSK8D18H

Remote Control Device

Display	Motion pushbuttons	Auxiliary pushbutton	Reference
LED only	6	2	ZART8L
LCD Screen	6	2	ZART8D
	6	6	ZART12D

Base Station

Connection Type	Outputs	Inputs	Power Supply	Reference
Wired connection with cable gland	12 relays + 2 safety relays	-	24V...240VAC/DC	ZARB12W
Industrial plug connection	12 relays + 2 safety relays	-	24V...48VAC/DC	ZARB12H
Wired connection with cable gland	18 relays + 2 safety relays	18 digital	24V...240VAC/DC	ZARB18W
Industrial plug connection	18 relays + 2 safety relays	18 digital	24V...48VAC/DC	ZARB18H

Remote Control Starter Kits

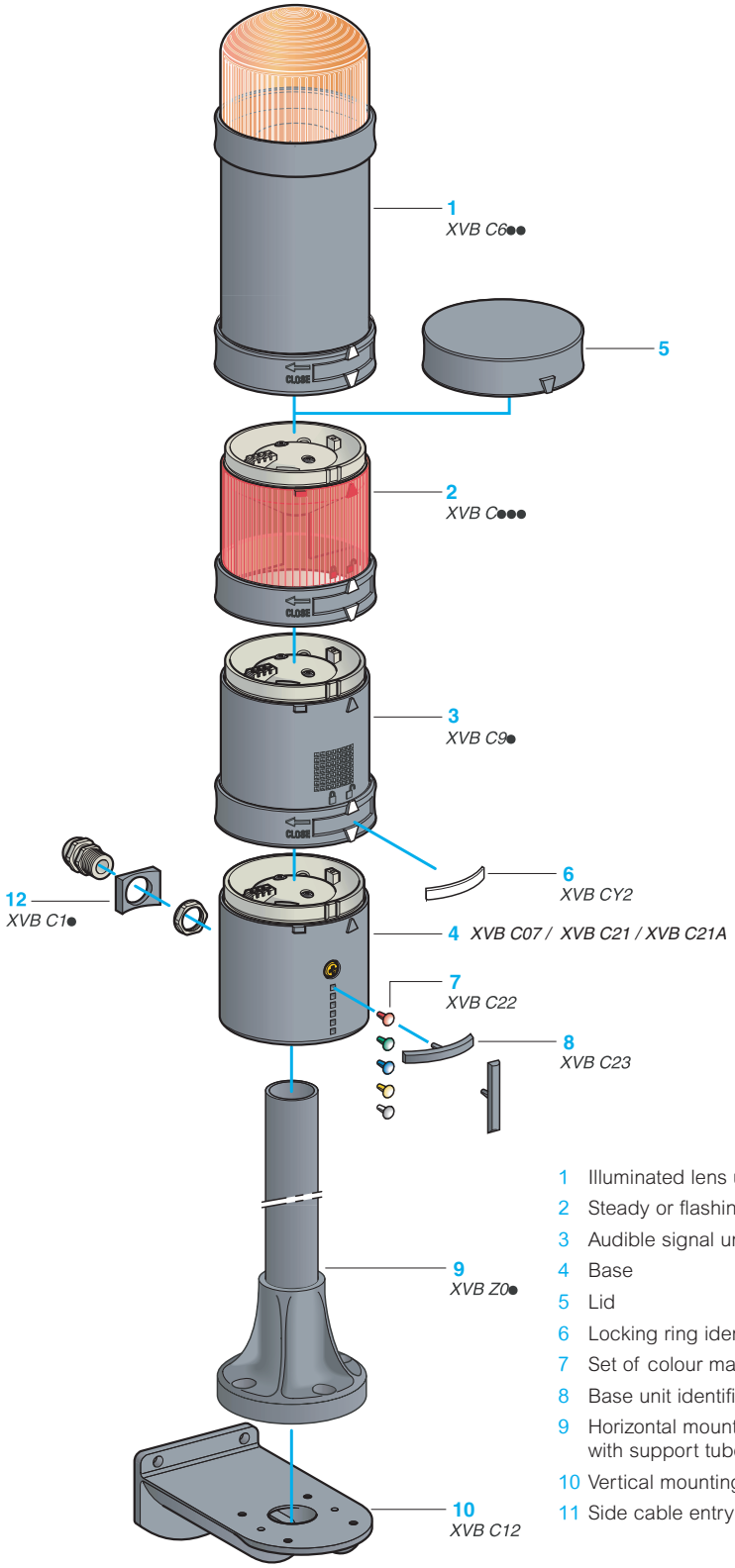
Description	Component	Reference
Starter kit comprising Remote controller + base station + Charger + shoulder belt + USB/RJ45 download cable	ZART8L + ZARB12W + ZARC01 + ZARC02 + TCSMCNAM3M002P	XARSK8L12W
	ZART8L + ZARB12H + ZARC01 + ZARC02 + TCSMCNAM3M002P	XARSK8L12H
	ZART8D + ZARB18W + ZARC01 + ZARC02 + TCSMCNAM3M002P	XARSK8L18W
	ZART8D + ZARB18H + ZARC01 + ZARC02 + TCSMCNAM3M002P	XARSK8L18H
	ZART12D + ZARB18H + ZARC01 + ZARC02 + TCSMCNAM3M002P	XARSK12D18W
	ZART12D + ZARB18H + ZARC01 + ZARC02 + TCSMCNAM3M002P	XARSK12D18H

Accessories

Descriptions	Characteristics	Reference
Charger for remote device	100V...240VAC power supply	ZARC01
Shoulder belt for remote device	2m in length	ZARC02
External antenna for base station	2m cable with bracket included	ZARC03
Download cable	USB to RJ45 connection	TCSMCNAM3M002P

* more accessories can be found in the catalogue DIA5ED2140103EN

XVB Indicator Beacons & Banks - Ø70mm IP65
Assembly of Components



1 Illuminated lens unit with flashing discharge tube
2 Steady or flashing lens unit
3 Audible signal unit
4 Base
5 Lid
6 Locking ring identification label
7 Set of colour markers
8 Base unit identification label
9 Horizontal mounting plate complete with support tube
10 Vertical mounting adaptor
11 Side cable entry adaptor & cable gland

Note:
(1) Combined maximum of five functional units (1-3) can be mounted on one base unit (4).
(2) Only one illuminated lens unit with discharge tube (1) can be mounted per stack and only at the top of stack.
(3) Base units XBVC21 and 21A are supplied complete with one lid (5).
(4) Base unit XVBC07 is supplied without lid (5) and used only when a illuminated lens unit (1) is mounted at the top of the stack.

XVB Indicator Beacons & Banks - Ø70mm IP65
Illuminated Lens Units for LED & Incandescent
Light Sources & Audible Units
Variable Composition Units


XVBC2B3


XVBC5B6


XVBC33


XVBC4B6


XVBC6M4

Integrated LED illuminated lens units

Description	Supply voltage	Colour	Reference
Steady integral LED	⎓ 24	Green	XVBC2B3
		Red	XVBC2B4
		Orange	XVBC2B5
		Blue	XVBC2B6
		Clear	XVBC2B7
		Yellow	XVBC2B8
	~ 230V	Green	XVBC2M3
		Red	XVBC2M4
		Orange	XVBC2M5
		Blue	XVBC2M6
		Clear	XVBC2M7
		Yellow	XVBC2M8
Flashing integral LED	⎓ 24V	Green	XVBC5B3
		Red	XVBC5B4
		Orange	XVBC5B5
		Blue	XVBC5B6
		Clear	XVBC5B7
		Yellow	XVBC5B8
	~ 230V	Green	XVBC5M3
		Red	XVBC5M4
		Orange	XVBC5M5
		Blue	XVBC5M6
		Clear	XVBC5M7
		Yellow	XVBC5M8

Incandescent illuminated lens units (1)

Description	Supply voltage	Colour	Reference
Steady	Up to 250V low globe max (not included)	Green	XVBC33
		Red	XVBC34
		Orange	XVBC35
		Blue	XVBC36
		Clear	XVBC37
		Yellow	XVBC38
Flashing	~ 24V or ⎓ 24…48V low globe max (not included)	Green	XVBC4B3
		Red	XVBC4B4
		Orange	XVBC4B5
		Blue	XVBC4B6
		Clear	XVBC4B7
		Yellow	XVBC4B8
	~ 48...230V low globe max (not included)	Green	XVBC4M3
		Red	XVBC4M4
		Orange	XVBC4M5
		Blue	XVBC4M6
		Clear	XVBC4M7
		Yellow	XVBC4M8

Illuminated lens units with 5 joule “flash” discharge tube (2)

Light source/signalling	Colour	Reference
⎓ 24V “flash” discharge tube	Green	XVBC6B3
	Red	XVBC6B4
	Orange	XVBC6B5
	Blue	XVBC6B6
	Clear	XVBC6B7
	Yellow	XVBC6B8
~ 230V “flash” discharge tube	Green	XVBC6M3
	Red	XVBC6M4
	Orange	XVBC6M5
	Blue	XVBC6M6
	Clear	XVBC6M7
	Yellow	XVBC6M8

Note:
(1) Light or incandescent bulb to be ordered separately, see page 3.4.72.
(2) Other version: (Please consult Schneider Electric on 1300 369 233) 10 joule version also available.

XVB Indicator Beacons & Banks - Ø70mm IP65
Audible Units Bases & Accessories
Variable Composition Units



XVBC9M

Audible signalling units

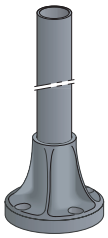
Description	Voltage supply	Reference
Buzzer unit; 90 dB at 1m	⎓ 12…48V	XVBC9B
Adjustable: - 70db or 90db - continuous or intermittent tone using microswitch	∿ 120…230V	XVBC9M



XVBC07

Base units

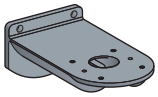
Description	For use with	Type	Reference
Base unit + lid with bottom or side cable entry	Banks without "flash" discharge tube	Standard	XVBC21
Base unit only with bottom or side cable entry	Banks with "flash" discharge tube	Standard	XVBC07
Base unit + cover with bottom or side cable entry	All types of banks	AS-i	XVBC21A



XVBZ0I

Accessories

Description	Height	Reference
Fixing plate for horizontal surface complete with support tube	80mm	XVBZ02
	380mm	XVBZ03
	780mm	XVBZ04
Fixing plate for vertical surface	For direct mounting on base unit or with plate XVBC11 + tube XVBC0i	XVBC12
Adaptors for side entry through base unit	With PG 13.5 or cable gland	XVBC14
Set of coloured markers	6 colours	XVBC22
Set of 5 legend holders	Identification of stacked units on base	XVBC23



XVBC12



DL1BL•



DL1BD••

BA 15d incandescent & LED globes

Description	Voltage supply	Colour	Reference
Incandescent bulbs BA 15d base fitting, 10 W	12V		DL1BLJ
	24V		DL1BLB
	48V		DL1BLE
	120V		DL1BLG
	230V		DL1BLM
Steady protected LED BA 15d base fitting	⎓ 24V	White	DL1BDB1
		Green	DL1BDB3
		Red	DL1BDB4
		Orange	DL1BDB5
		Blue	DL1BDB6
		Yellow	DL1BDB8
	∿ 230V	White	DL1BDM1
		Green	DL1BDM3
		Red	DL1BDM4
		Orange	DL1BDM5
		Blue	DL1BDM6
		Yellow	DL1BDM8
Flashing protected LED BA 15d base fitting	⎓ 24V	White	DL1BKB1
		Green	DL1BKB3
		Red	DL1BKB4
		Orange	DL1BKB5
		Blue	DL1BKB6
		Yellow	DL1BKB8
	∿ 230V	White	DL1BKM1
		Green	DL1BKM3
		Red	DL1BKM4
		Orange	DL1BKM5
		Blue	DL1BKM6
		Yellow	DL1BKM8

XVGU – Configurable USB Tower Lights
XVS - Siren, IP53
XVR - Rotating Beacon



Harmony XVGU Configurable USB Tower Lights

The Harmony XVGU range of configurable USB tower lights offer a monolithic solution that is powered, programmed and controlled by our Magelis series HMI (1).

You can now use a single device to represent the various operating states of your machine or process (standby, normal, operation, emergency stop, maintenance mode, etc) and assign unique signalling patterns to them including tone buzzer.

XVGU tower lights include:

1 Three multi-color LEDs in clear lenses

2 Base integrating the two tone buzzer

3a 100mm aluminium tube mounting or

3b Direct mounting base mounting

4 USB cable for HMI interfacing.



XVGU3SHAV

XVGU Configurable USB Tower Lights, IP54

Mounting	Light Source	Colours	Reference
100mm aluminium tube with fixing plate	Multi-colour LED	Red/Orange/Green/Blue	XVGU3SHAV
Direct base mount	Multi-colour LED	Red/Orange/Green/Blue	XVGU3SWV



XVS14BMW

XVS SIREN, IP53

Description	Supply Voltage	Reference
Multisound alarm siren With 8 inputs, 43 different melodies Sound level up to 105dB	24VAC/DC	XVS14BMW
	120VAC	XVS14GMW
	240VAC	XVS14MMW



XVR

XVR Rotating mirror beacon

Light Source	Supply Voltage	Dimension	Colour	Reference
LED	24VAC/DC	Ø 84mm	Green	XVR08B03
			Blue	XVR08B06
		Ø 120mm	Green	XVR12B03
			Blue	XVR12B06
		Ø 130mm	Red	XVR13B04L
			Orange	XVR13B05L
	120VAC	Ø 130mm	Red	XVR13G04L
			Orange	XVR13G05L
	230VAC	Ø 130mm	Red	XVR13M04L
			Orange	XVR13M05L



XVR3

Complete, pre-cabled motor-less rotating/flashing LED beacons

Dimension	Sound Option	IP degree (2)	Supply Voltage	Colour	Reference
Ø100mm	Without Buzzer(2)	IP65 (upright) IP23 (sideways/ inverted)	12V...24VDC	Green	XVR3B03
				Red	XVR3B04
				Orange	XVR3B05
				Blue	XVR3B06
			100V...230VAC	Green	XVR3M03
				Red	XVR3M04
				Orange	XVR3M05
				Blue	XVR3M06

Note:
(1) Refer to Section 3.8 for Magelis HMIs
(2) For beacons with built in buzzer options, add "S" at the back of the part number i.e XVR3B03S. Beacons with buzzer options is rated IP23.

XVU Tower Lights

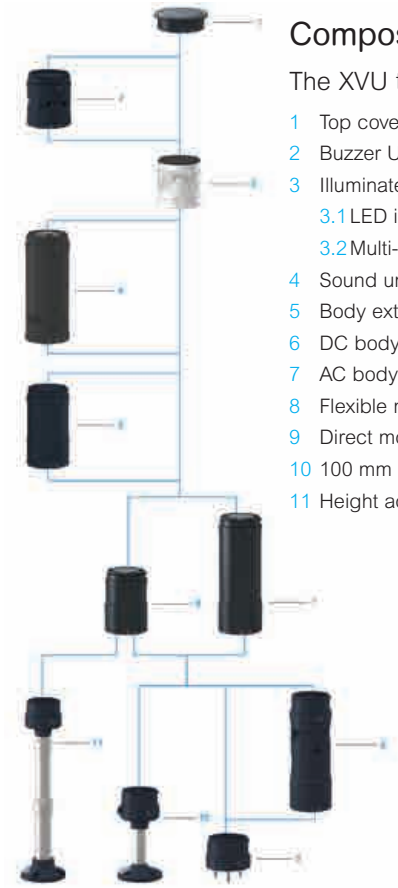
The Harmony® XVU modular range of tower lights are visual and audible signaling units indicating various states, operation sequence or installation of a machine. Their reduced diameter (Ø 60 mm) makes them suitable for use on small equipment and their aesthetic design distinguishes them from other tower lights.



XVU TOWER LIGHTS

Advantages of XVU:

- "Super bright" LED
- Easy installation and mounting without use of any tools
- Simple assembly due to the indicator marks on the modules
- Steady, blinking, flashing, or rotating multi-coloured LED module for energy efficient high priority signalling (colours and light patterns can be selected using 2 dip switches on top of the module)
- Height adjustable tube that solves the need to adjust height of the tower light
- Flexible mounting option with bendable "L" shape body supports various customer needs for installation
- High degree of protection against dust and water
- Configurable sound via SD Card



Composition of XVU:

The XVU tower lights are customer assembled products comprising:

1 Top cover (part of the body unit XVUC21B/M)
2 Buzzer Unit (1)
3 Illuminated units: (2)
  3.1 LED illuminated units (Colors: Green, Red, Orange, Blue, White or Yellow)
  3.2 Multi-color LED unit (Colors: Green, Red,Orange, Blue, White or Yellow)
4 Sound unit (3)(5)
5 Body extender (option)
6 DC body unit (XVUC21B)
7 AC body unit (XVUC21M)
8 Flexible mounting module
9 Direct mounting plate
10 100 mm pole mounting plate
11 Height adjustment pole from 210 to 385 mm mounting plate (4)

Note:
(1) Always mounted on top is use
(2) Up to 5 LED illumiated units or 4 LED illuminated unit with one sound module.
(3) Sound module can work without LED unit
(4) Only for DC body unit
(5) Sound module cannot combine with buzzer unit at the same time

XVU Tower Lights


XVUC29


XVUC25


XVUZ05


XVUZ01


XVUZ06

Illuminated High Brightness LED units, IP65

Signalling type	Supply Voltage	Power	Colour	Reference
Steady	24VDC	2.5W	Green	XVUC23
		2.0W	Red	XVUC24
		2.0W	Orange	XVUC25
		2.5W	Blue	XVUC26
		2.5W	White	XVUC27
		2.5W	Yellow	XVUC28
Steady/blinking flashing/rotation (configurable)	24VDC	1.5W	Multicolour (Green, Red, Orange, Blue, White and Yellow) Green	XVUC29

Audible Units, IP54

Signalling type	Supply Voltage	Power	Colour	Reference
Buzzer, adjustable 70...85dB at 1m (4 channels)	24VDC	1.7	Black (1)	XVU9S
Customised Sound (via SD Card) 0...86dB at 1m (4 channels)	24VDC	1.7	Black	XVU9V (4)

Body Units, IP54

Description	Supply Voltage	Colour	Reference
Body unit with top cover	24VAC/DC	Black (1)	XVUC21B
	100V...240VAC	Black (1)	XVUC21M (2)
			XVUC21MP (3)

Mounting Options

Description	Supply Voltage	Colour	Reference
Body Extender (100mm height)	24VAC/DC	Black (1)	XVUC020
Direct mounting plate		Black (1)	XVUZ01
100m pole fixing plate		Black (1)	XVUZ02
Adjustable height (210...385mm) fixing plate	24 VDC only	Black	XVUZ05
Flexible mounting body, IP55 (adjustable horizontal or vertical "L")		Black	XVUZ06

Note:
(1) Silver colour body available on request
(2) NPN type
(3) PNP type
(4) Download free software “Playlist Builder” from Schneider Electric website to save/record sound/music/voice on SD Card

Heavy Duty Joystick Controllers XK
Variable Composition Units

The XK range of heavy duty controllers are custom configured to customers applications. They can be supplied with various lever gating and movements including; notched or un-notched spring return and stay put types. All controllers are available with contacts and potentiometers.

Handle options are as follows:

- basic handle
- mechanical interlocked in the centre position - with electrical interlock contact
- “Dead mans” handle with contact normally open in the zero position
- handle with flush or projecting Pushbutton and normally open contact



XKB controllers for light duty lifting gear

- mechanical life of 1 million operating cycles
- maximum at 3 notches in each direction
- maximum of 4 contacts per direction
- slow break, positive opening contacts
- Ith = 10A



XKD controllers for medium duty lifting gear

- mechanical life of 3 million operating cycles
- maximum at 5 notches in each direction
- maximum of 16 contacts per direction
- slow break, positive opening contacts
- Ith = 10A



XKM controllers for heavy duty lifting gear

- Mechanical life of 4 million operating cycles
- Maximum at 6 notches in each direction
- Maximum of 24 contacts per direction
- Slow break, positive opening contacts
- Ith = 20A

Joystick Controllers

For “Light Hoisting” Applications, Type XKB IP54, Conforming to IEC 337-1, NFC 63-140, VDE 0660 Part 2



XKBE

Compact and lightweight units, designed to control “light hoisting” and materials handling equipment. Mainly for use in portable stations.

XKBE: controllers with variable composition schemes.

Control lever

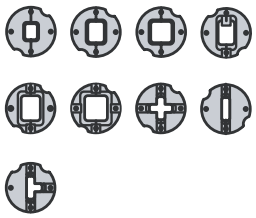
Length: 130mm. Travel in each direction: 28° maximum.

Lever gate

Universal and modifiable - 9 main combinations.

End stops

The total lever travel can be limited to 20° or 12° by using removable end stops for “cross (+) or I” lever gate movements.

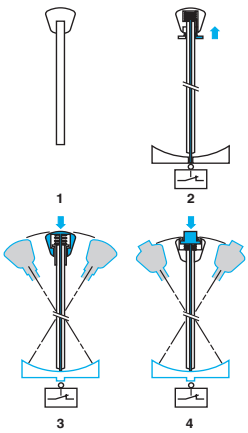


Lever Gates

Handles

- simple handle with zero (centre) position contact (closed at zero) (1)
- handle with zero (centre) position mechanical interlock + contact (closed at zero) (2)
- “Dead man’s” handle with contact (open when handle released) (3)
- handle with built-in flush or projecting Pushbutton and contact (open when Pushbutton or handle released) (4)

Note: It is important to decide which type of handle is required when selecting the controller, since modification cannot be done after installation.



Handles

Electrical positions

3 positions maximum in each direction.

Types of lever movement

- notched positions, with stayput operation: 3 notches maximum in each direction (12°, 20°, 28°)
- notched positions, with spring return to zero operation: 3 notches maximum in each direction (12°, 20°, 28°) only 1 contact can be used at each notch
- unnotched positions, with spring return to zero operation: 28° maximum travel in each direction. Only 1 contact can be used for each spring return to zero position.

Contacts and cam schemes

The contact blocks used for establishing the scheme are located in a monobloc assembly.
There are 2 types:

- block with 4 contacts per movement
- block with 4 contacts per movement + 1 zero (centre) position contact.
  For both types, an additional contact is available. Its function depends on the type of handle.
- special cam schemes can be created for each lever movement based on the type of contacts (overlapping contact operation is not possible).

Legend

One 100 x 100mm anodised aluminium legend plate with matt satin finish.

Standard “hoist-long travel” and “traverse-slew” symbols or text (to be stated on Order form, see page 6/73).

Potentiometer adaption

- 2 potentiometers maximum per movement when using block with 4 contacts per movement
- 1 potentiometer maximum per movement when using block with 4 contacts per movement + 1 zero (centre) position contact.

For “Light Hoisting” Applications, Types XKBE
Grid for Composing the Reference of a Controller

Reference of controller type XKBE

	Model	Contacts	Handle	Lever movement AB	Lever movement CD	Potentiometer adaptation
XKB						

Model

With variable composition scheme	E

Contact blocks

Block with 4 contacts per movement	Screw clamp terminal connections	1
	6.3 clip connections	2
Block with 4 contacts per movement + 1 zero (centre) position contact	Screw clamp terminal connections	3
	6.3 clip connections	4

Handle

Simple + zero (centre) position electrical interlocking (contact closed in rest position)	1
With zero (centre) position mechanical and electrical interlocking (contact closed in rest position)	2
“Dead man’s” type (contact open when released)	4
With built-in flush pushbutton (contact open in rest position)	5
With built-in projecting pushbutton (contact open in rest position)	6

Type of lever movement

On movement AB

Movement not required (blocked)	0
Notched positions, with stayput operation	1
Unnotched positions, with spring return to zero operation	2
Notched positions, with spring return to zero operation (1)	3

On movement CD

Movement not required (blocked)	0
Notched positions, with stayput operation	1
Unnotched positions, with spring return to zero operation	2
Notched positions, with spring return to zero operation (1)	3

Potentiometer adaptation

Without adaptation nor potentiometer		0
Adaptation only (without potentiometer)	On movement AB	4
	On movement CD	5
	On movements AB + CD	6
Adaptation + potentiometer (2)	On movement AB	7
	On movement CD	8
	On movements AB + CD	9

(1) Type of lever operation recommended when using a potentiometer.
(2) Potentiometer type and value to be stated on the Order form.

For “Light Hoisting” Applications, Types XKBE Order Form - Controllers XKBE with Variable & Modifiable Schemes, Factory Assembled

Customer		Schneider Electric Industries			
Company	Customer's reference	Sales office - Subsid. - Plant	Editor	Geographical zone	Order N°

Reference (use the grid for composing the reference of a controller)

			Model	Contacts	Handle	Lever movement AB	Lever movement CD	Potentiometer adaptation
Number of identical units		XKB	E					

For Schneider Electric Industries use only										
Order N°	Item N°		MOD	ETI	POI	GLV	CTS	MAB	MCD	PAB	PCD
		XKB									

Lever gate

In accordance with the half-gates available, sketch and crosshatch the lever's field of movement on the scheme grids below.
In the absence of this information, the controller will be supplied with a “universal” gate.

Potentiometer adaptation

Cross [X] the required position on the schemes below.

On movement AB	Type/size:
	Value:
On movement CD	Type/size:
	Value:

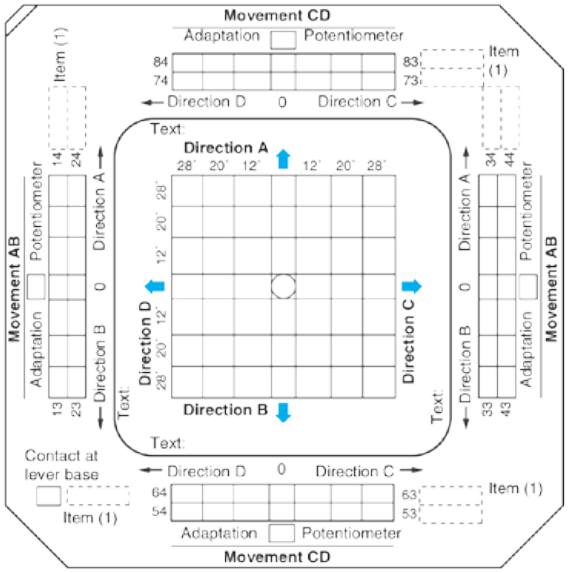
Legend

Without legend	
With blank legend, XKY1	
With “traverse-slew” symbols, XKY2	
With “hoist-long travel” symbols, XKY3	
With specific engraved text, XKBY1001 (clearly state the text on the scheme below)	
Left-hand operated unit	
Right-hand operated unit	

⚠ If the scheme is not defined, all XKBE controllers will be supplied with the standard scheme as used for XKBA.

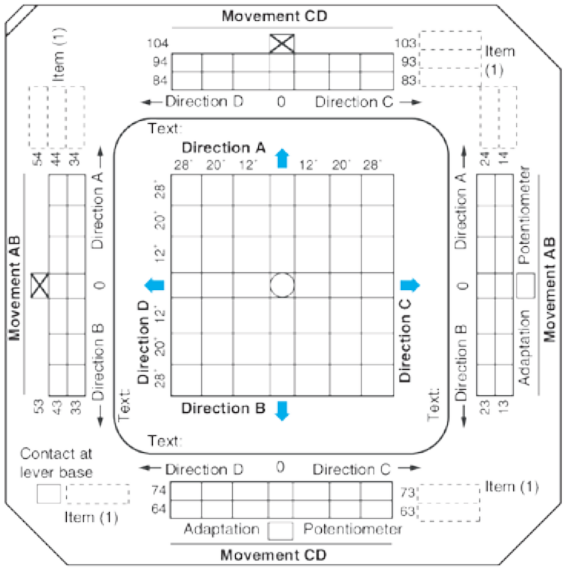
Scheme 1: 4 contacts per movement (viewed from above)

Orientation locater



Scheme 2: 4 contacts + 1 zero (centre) position contact per movement (viewed from above)

Orientation locater



(1) Reserved for contact identification in the automation system scheme. It is not possible to mark it on the controller.
Spring return operation: only 1 contact can be used with spring return at each notch.

For “Light Hoisting” Applications, Types XKBE
Ordering Form Completion Example

Requirement

A 2 movement controller:
“hoist-long travel”.
“Universal” lever gate, limited to 2 “lower” positions.

Composition of the reference

XKB	E	3	4	2	3	7

Model
With variable composition scheme (customised electrical scheme as shown below) — E

Contact blocks
Block with 4 contacts + 1 zero (centre) position contact per movement (screw clamp terminals). — 3

Handle
“Dead man’s” type — 4

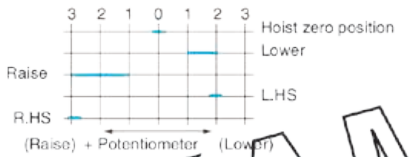
Type of lever operation on movement AB
Unnotched positions, with spring return to zero operation — 2

Type of lever operation on movement CD
Notched positions, with spring return to zero operation — 3

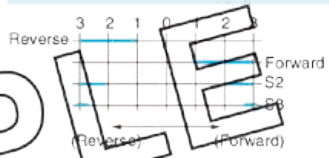
Potentiometer adaptation
With adaptation device + potentiometer on movement AB, standard 4700Ω, size 15, model — 7

EXAMPLE ONLY

Electrical scheme for movement AB “hoist”



Electrical scheme for movement CD “long travel”



Lever gate
In accordance with the half-gates available, sketch and crosshatch the lever’s field of movement on the scheme grids below.
In the absence of this information, the controller will be supplied with a “universal” gate.

Potentiometer adaptation
Cross [X] the required position on the schemes below.

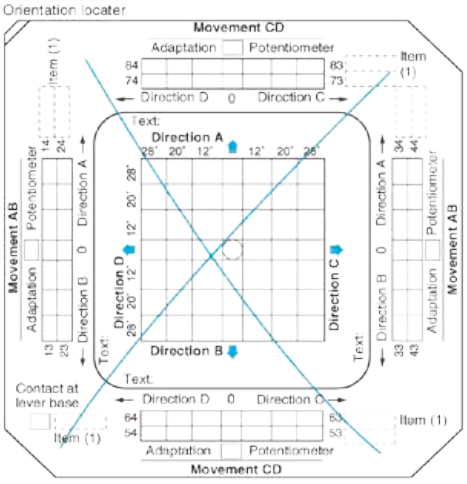
On movement AB	Type/size: XKZA15047
	Value: 4700 Ω
On movement CD	Type/size:
	Value:

Legend

Without legend		With specific engraved text, XKBY1001 (clearly state the text on the scheme below)	
With blank legend, XKBY1		Left-hand operated unit	
With “traverse-slew” symbols, XKBY2		Right-hand operated unit	X
With “hoist-long travel” symbols, XKBY3		⚠ If the scheme is not defined, all XKBE controllers will be supplied with the standard scheme	

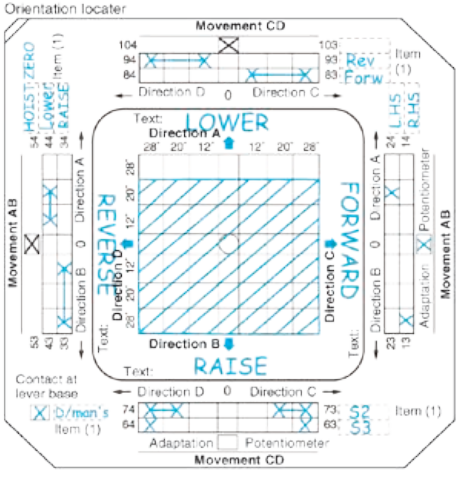
Scheme 1: 4 contacts per movement (viewed from above)

Orientation locater



Scheme 2: 4 contacts + 1 zero (centre) position contact per movement

Orientation locater



(1) Reserved for contact identification in the automation system scheme. It is not possible to mark it on the controller.
Spring return operation: only 1 contact can be used with spring return at each notch.

Joystick Controllers

For “Medium Hoisting” Applications, Type XKD IP54, Conforming to IEC 337-1, NFC 63-140, VDE 0660 Part 2



XKDF

Compact and fully configurable units designed to control “medium hoisting” equipment. Mainly for use on fixed control stations or seated controller desks type XJC.

1 model:

XKDF: controller with variable composition schemes.

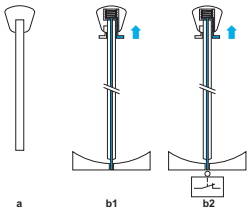
Control lever length: 200mm.

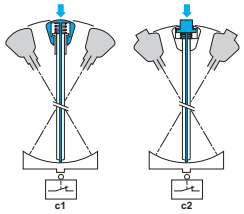
Travel in each direction: 36° maximum.

Lever gate: Integral, non removable, part of the mechanical block.

Must be specified on the Order form.

Handles





Handles

- simple handle (a)
- handle with zero (centre) position mechanical interlock (b1)
- handle with zero (centre) position mechanical interlock + 1 C/O snap action contact (b2)
- “Dead man’s” handle + slow break contact(s) (c1)
- handle with built-in flush or projecting Pushbutton + slow break contact(s) (c2)

Types of lever movement: notched positions, with stayput operation

2 versions:

- 5 notches maximum in each direction, at 12°, 18°, 24°, 30° and 36° (6° per notch), only when used with variable composition cam carriers comprising 4 or 8-contact blocks (1st notch at 6°)
- 3 notches maximum in each direction, at 12°, 24° and 36° (12° per notch), only when used with variable composition cam carriers comprising 2-contact blocks.

Note: It is possible to use, on the same movement, a “5 notch max.” cam carrier combined with a “3 notch max.” cam carrier. The lever operation is “5 notch” type.

- notched positions, with spring return to zero operation 3 or 5 notches maximum in each direction depending on the versions stated above. ⚠ 4 simultaneous contacts max.
- unnotched positions, with spring return to zero operation

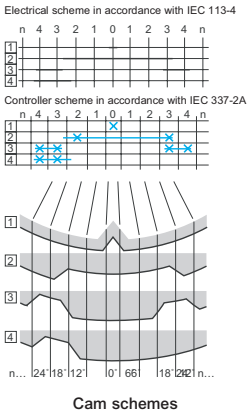
36° maximum travel in each direction.

⚠ 2 simultaneous contacts maximum with spring return can be used at 6° and then 4 contacts maximum at each subsequent 6° position.

Contacts: 16 contacts maximum per movement.

The contact blocks are mounted in pairs on a fixing plate.

Cam schemes



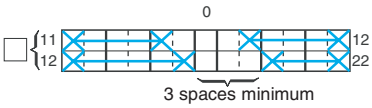
Cam schemes

2 versions:

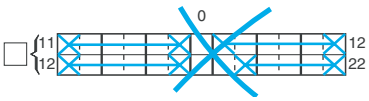
- variable composition cams, 6° per position; 4 or 8-contact cam carriers
- from 1 to 5 mechanical positions
- overlapping contact operation possible (see graphic representation) except between the 4th and last position
- variable composition cams, 12° per position; 2-contact cam carriers
- from 1 to 3 mechanical positions
- the contacts can be actuated 6° by 6° approx., except under the following conditions:

For technical reasons, it is essential to have at least 3 spaces on the electrical scheme for the same contact.

2 possible examples



2 impossible examples



The 2-contact cam carriers are compact and do not increase the size of the mechanical block base.

Legend

One 120 x 120mm anodised aluminium legend plate with matt satin finish. Text to be stated on order form.

Potentiometer adaption

2 potentiometers maximum per movement:

- mounted directly on the mechanical block when used with 2-contact variable composition cams,
- mounted at the extremity of the contact supports when used with 4 and 8-contact variable composition cams.

3.4

For “Medium Hoisting” Applications, Type XKDF
Grip for Composing the Reference of a Controller

Reference of controller type XKD

		Lever	Handle	Movement AB: No. of blocks	Movement AB: Lever movement	Movement AB: Potentiometer adaptation	Movement CD: No. of blocks	Movement CD: Lever movement	Movement CD: Potentiometer adaptation
XKDF		1							
Control lever									
Standard model, length 200 mm		1							
Handle									
Simple (standard model)			1						
With zero (centre) position mechanical interlocking			2						
With zero (centre) position mechanical & electrical interlocking (1 C/O contact)			3						
“Dead man’s” type	With N/C + N/O contact		4						
	With N/O + N/O contact		5						
With built-in flush pushbutton	With N/C + N/O contact		6						
	With N/O + N/O contact		7						
With built-in projecting pushbutton	With N/C + N/O contact		8						
	With N/O + N/O contact		9						
Movement AB									
Number of 2-contact blocks									
0 blocks				0					
1 block				1					
2 blocks				2					
3 blocks				3					
4 blocks				4					
5 blocks				5					
6 blocks				6					
8 blocks				8					
Type of lever movement									
Notched positions, with stayput operation	3 notches (1)				1				
	5 notches (starting from 12°) or 6 notches (from 6°) (2) (3)				2				
Notched positions, with spring return to zero operation	3 notches (1)				3				
	5 notches (starting from 12°) or 6 notches (from 6°) (2) (3)				4				
Unnotched positions, with spring return to zero operation (4)					5				
Potentiometer adaptation									
Without adaptation nor potentiometer						0			
With adaptation only (without potentiometer)						1			
With adaptation + potentiometer (5)						2			
Movement CD									
Number of 2-contact blocks									
0 blocks							0		
1 block							1		
2 blocks							2		
3 blocks							3		
4 blocks							4		
5 blocks							5		
6 blocks							6		
8 blocks							8		
Type of lever movement									
Notched positions, with stayput operation	3 notches (1)							1	
	5 notches (starting from 12°) or 6 notches (starting from 6°) (2) (3)							2	
Notched positions, with spring return to zero operation	3 notches (1)							3	
	5 notches (starting from 12°) or 6 notches (starting from 6°) (2) (3)							4	
Unnotched positions, with spring return to zero operation (4)								5	
Potentiometer adaptation									
Without adaptation nor potentiometer									0
With adaptation only (3) (without potentiometer)									1
With adaptation (3) + potentiometer (5)									2

(1) 3 notches: restricted to 2-contact variable composition cams only.
(2) 5 notches: by using 1 or 2 variable composition 4 or 8-contact cams. 1st mechanical notch at 12° (6 electrical positions in each direction).
(3) It is possible to obtain 6 mechanical notches, 1st mechanical notch at 6° (6 electrical positions in each direction). Please consult your Regional Sales office.
(4) Type of lever operation recommended when using a potentiometer.
(5) Potentiometer type and value to be stated on the Order form.

For “Medium Hoisting” Applications, Type XKDF
Order Form - Controllers with Variable Composition Schemes, Factory Assembled

Customer		Schneider Electric Industries			
Company	Customer's reference	Sales office - Subsid. - Plant	Editor	Geographical zone	Order N°

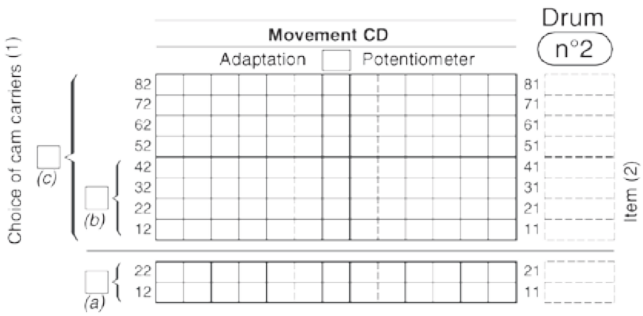
Reference (use the grid for composing the reference of a controller)

		Lever	Handle	Movement AB			Movement CD		
				No. of blocks	Lever movement	Potentiometer adaptation	No. of blocks	Lever movement	Potentiometer adaptation
Number of identical units		XKDF	1						

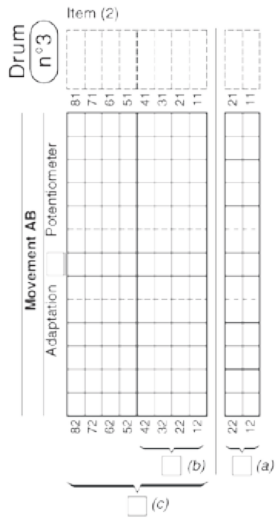
For Schneider Electric Industries use only

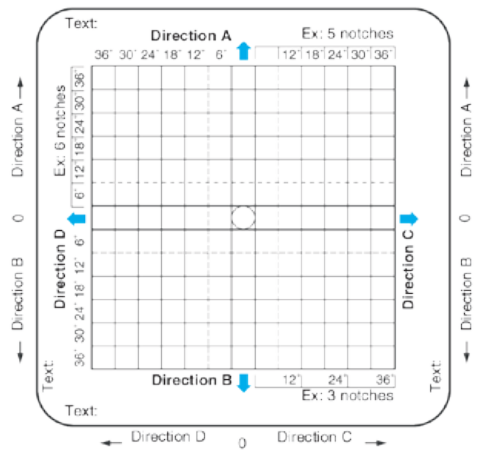
Order N°	Item N°		MOD	LEV	POI	GLV	CT1	CT3	MAB	P13	CT2	CT4	MCD	P24
		XKD												

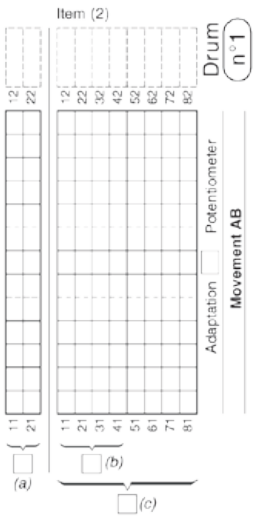
Lever gate
Sketch and crosshatch the lever's field of movement on the grid



Potentiometer adaptation
Cross [X] the position on the scheme
On movement AB
Type/size:
Value:
On movement CD
Type/size:
Value:

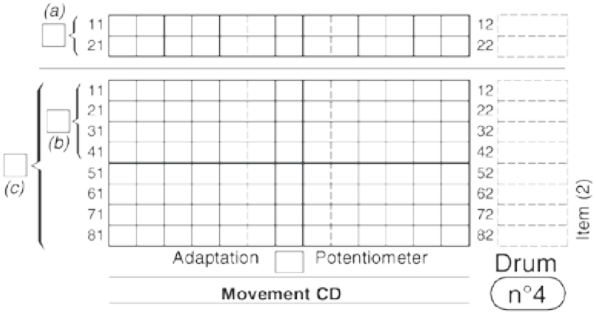






Choice of cam carriers
(1) Cross [X] the type of cam carrier required:
(a): 3 notch cam carrier, 2 contacts max.,
(b): 5 notch cam carrier, 4 contacts max.,
(c): 5 notch cam carrier, 8 contacts max.

(2) Reserved for contact identification in the automation system scheme. It is not possible to mark it on the controller.
Contact at lever base
Item (2)



Legend
Without legend
Blank legend XKBY1
Legend with specific engraving, XKDY1001 (clearly state text on this scheme)
Left-hand operated unit
Right-hand operated unit

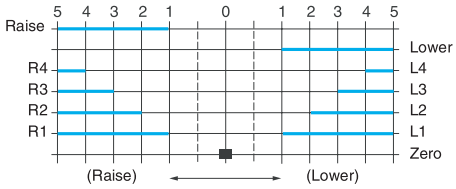
■ Electrical overlapping of contacts is not possible between the 5th and 6th notches.
■ Spring return operation: 2 simultaneous contacts maximum with spring return can be used at 6° and then 4 contacts at each subsequent 6° position.

For “Medium Hoisting” Applications, Type XKDF
Controller Selection Example

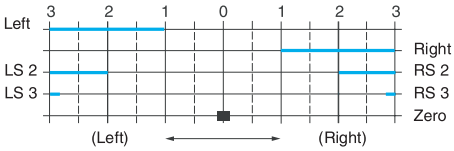
Requirement

A 2 movement controller: “hoist-traverse”.
“Cross” type lever gate. Controller conforming to NF E 52-070.
No potentiometer adaptation on movements AB or CD.

Scheme for movement AB “hoist”



Scheme for movement CD “traverse”



Note:

Movement AB

The scheme for movement AB requires 7 contacts, therefore, select 4 blocks of 2 contacts.
The only alternative is the selection of either drum n° 3 or n° 1, depending on the available space.

Movement CD

The space between each notch indicated on the 3 position scheme cannot be adhered to.
Effectively, to obtain 5 contacts, a 2-contact block can be selected (drum n° 2), which does not increase the size of the base, together with 2 x 2- contact blocks (drum n° 4).
The lever gate will limit the lever travel to 3 notches.

EXAMPLE ONLY

Composition of the reference

3.4

XKD F	1	2	4	4	0	3	4	0

Control lever
Standard, length 200 mm — 1

Handle
With zero (centre) position mechanical interlocking — 2

Movement AB “hoist”

Number of 2-contact blocks
4 blocks — 4

Type of lever movement
5 notched positions, with spring return to zero operation — 4

Potentiometer adaptation
Without adaptation nor potentiometer — 0

Movement CD “traverse”

Number of 2-contact blocks
3 blocks — 3

Type of lever movement
5 notched positions, with spring return to zero operation — 4

Potentiometer adaptation
Without adaptation nor potentiometer — 0

For “Medium Hoisting” Applications, Type XKDF
Ordering Form Completing Example

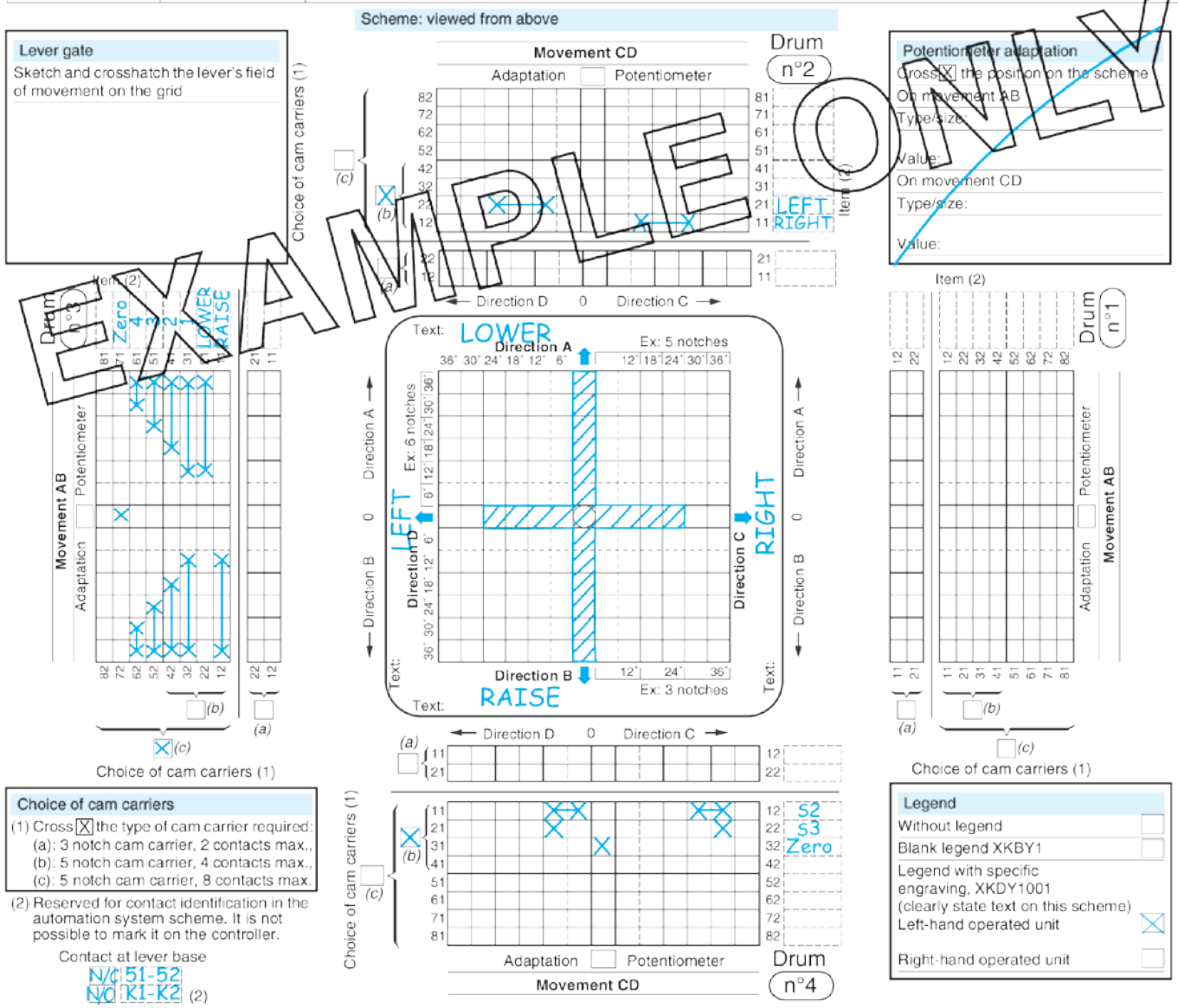
Customer		Schneider Electric Industries			
Company	Customer's reference	Sales office - Subsid. - Plant	Editor	Geographical zone	Order N°

Reference (use the grid for composing the reference of a controller)

			Lever	Handle	Movement AB No. of blocks	Movement AB Lever movement	Movement AB Potentiometer adaptation	Movement CD No. of blocks	Movement CD Lever movement	Movement CD Potentiometer adaptation
Number of identical units	1	XKDF	1	2	4	4	0	3	4	0

For Schneider Electric Industries use only

Order N°	Item N°		MOD	LEV	POI	GLV	CT1	CT3	MAB	P13	CT2	CT4	MCD	P24
		XKD												



EXAMPLE ONLY

- Electrical overlapping of contacts is not possible between the 5th and 6th notches.
- Spring return operation: 2 simultaneous contacts maximum with spring return can be used at 6° and then 4 contacts at each subsequent 6° position.

Pressure and Vacuum Switches

Pressure Switches for Power Circuits



Water Pump Pressure Switches
2-Pole with Adjustable Differential

Standard Action	FSG/FYG	Page 3.5.3
Standard Action with Low Pressure Cutout	FSG/FYG	Page 3.5.3
Reverse Action	FRG	Page 3.5.3
Reverse Action with Manual Cut-In Lever	FRG	Page 3.5.3

Air Compressor Pressure Switches
2-Pole with Fixed Differential

Standard Action	FHG	Page 3.5.3
Standard Action with Unloader Valve	XMP/FHG	Page 3.5.3

Water Pump or Air Compressor Pressure Switches
2 or 3-Pole with Adjustable Differential

Standard Action	XMP/GHG	Page 3.5.3
Standard Action with Unloader Valve	XMP/GHG	Page 3.5.3
Reverse Action	GHG	Page 3.5.3

Commercial & Industrial Pressure Switches for Control Circuits



Commercial Pressure Switches - Single Stage
Adjustable Differential

1 C/O Contact	XMAV	Page 3.5.4

Industrial Pressure Switches - Single Stage
Fixed Differential

Diaphragm Actuated	XMLA	Page 3.5.4
Piston Actuated	XMLA	Page 3.5.4

Adjustable Differential

Diaphragm Actuated	1 C/O contact	XMLB	Page 3.5.5
Piston Actuated	1 C/O contact	XMLB	Page 3.5.5
Diaphragm Actuated	2 C/O contacts	XMLC	Page 3.5.5
Piston Actuated	2 C/O contacts	XMLC	Page 3.5.5

Industrial Pressure Switches - Dual Stage
Fixed Differential

Diaphragm Actuated	2 C/O contacts	XMLD	Page 3.5.6
Piston Actuated	2 C/O contacts	XMLD	Page 3.5.6

Accessories

Page 3.5.6

Heavy Duty Industrial Pressure Switches



Class 9012 Pressure Switches
Single Stage with Adjustable Differential

Diaphragm Actuated	1N/O + 1N/C	9012G	Page 3.5.7
Diaphragm Actuated	2N/O + 2N/C	9012G	Page 3.5.7
Piston Actuated	1N/O + 1N/C	9012GCW	Page 3.5.7
Piston Actuated	2N/O + 2N/C	9012GCW	Page 3.5.7

Class 9012 Pressure Switches for Corrosive Environments
Single Stage with Adjustable Differential

Diaphragm Actuated	2N/O + 2N/C	9012GAW	Page 3.5.8

Class 9012 Differential Pressure Switches

Adjustable Pressure Difference & Differential	Page 3.5.9

Class 9016 Vacuum Switches

Adjustable Differential	Page 3.5.9

Replacement Parts & Accessories	Page 3.5.10

OsiSense® Pressure Sensors



XMLP, XMLK Pressure Sensors

Analogue 4..20mA & 0-10 V (stainless steel)	XMLP	Page 3.5.11
Analogue 4..20mA & 0-10 V	XMLK	Page 3.5.13

XMLR Pressure Switches

Analogue 4..20mA	XMLR	Page 3.5.15
Analogue 4..20mA + Digital Output	XMLR	Page 3.5.15
Accessories	ZMLP	Page 3.5.16

3.5

PUMPTROL® Pressure Switches



Proven, Long-Life Water and Air Control Switches

Designed to monitor and control electrically driven water pumps, Pumptrol® Pressure Switches are ideal for jet, submersible and reciprocating systems. These durable pressure switches monitor systems to start and stop a pump at preset pressures.

Applications

Rural customers usually rely on bores to supply their water. Pumps are used to bring up the water from the bore and to pressurise the water pipes in the home. Water is pumped into a storage tank to compress an air bladder that exerts pressure on the water in the home. When the desired pressure is reached, the pump must be stopped. This is where the pressure switch opens a set of electrical contacts to stop the pump.

As your customer uses water, the pressure in the storage tank falls. When the lowest desired pressure is reached, the switches close to start the pump and recharge the system pressure. The most common water pump pressure settings are 20 to 40 pounds per square inch (p.s.i.), 30 to 50 p.s.i. or 40 to 60 p.s.i. The low number is the cut-in pressure, and the high number is the cut-out pressure. Your customer will normally be looking for a replacement pressure switch for their system, so just match the low and high pressures with the new pressure switch.

Features

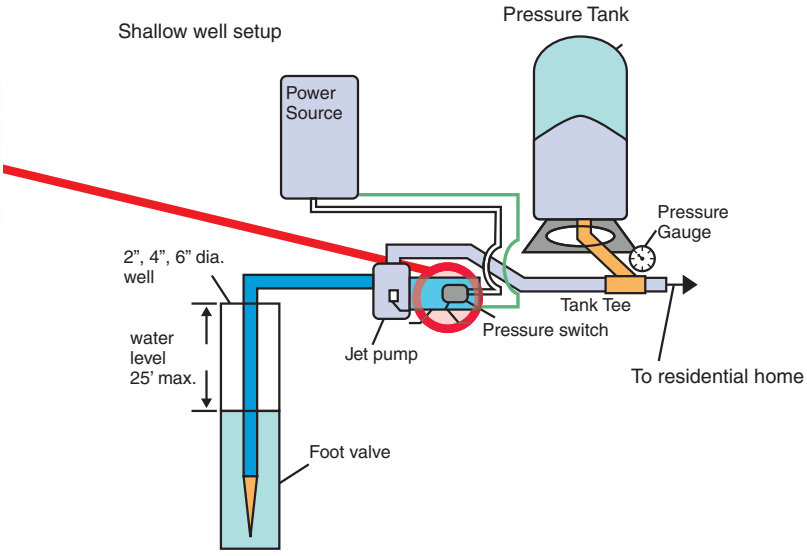
- Degree of protection IP20, NEMA Type 1
- Type FSG: 2-pole single-phase
  1.5kW(2HP)@230Vac
  3-phase 2.2kW(3HP)@230Vac
- Adjustable differential
- Maximum pressure 250 PSIG
- Diaphragm actuated
- UL, CSA Listed
- Mechanical life: 300,000 operations

Residential Water Jet Pump Systems



9013FSG Pressure Switch

control pressure usually
between 20 & 40 PSIG



3.5



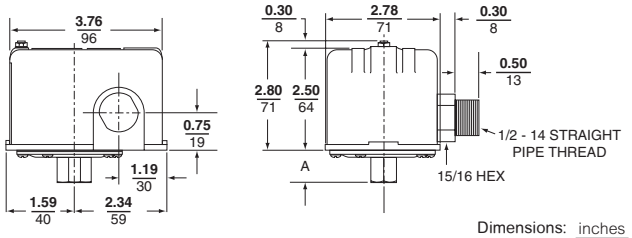
Type FSG, FYG, FRG - Pumptrol® Water Pump Pressure Switch

Application: FSG - suitable for all types of pumps, jet, submersible & reciprocating
FYG - meet higher pressure requirements
FRG - reverse acting contacts open on falling pressure

Operation: Diaphragm actuated
Adjustable differential
Contacts open on rising pressure, except type FRG

Fluid Characteristics: Fresh water, sea water (with Form Q)

Temperature: 0° to + 125°C



Dimensions: inches / mm

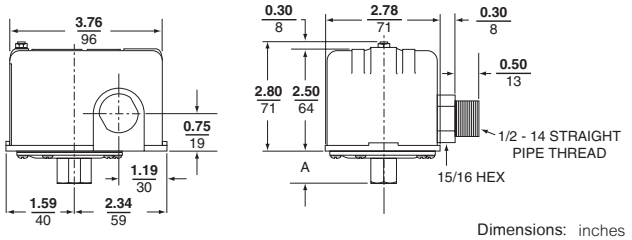


Type FHG - Pumptrol® Compressor Pressure Switch

Application: To control electrically driven air compressors

Operation: Diaphragm actuated
Fixed differential (non-adjustable)
Contacts open on rising pressure

Fluid Characteristics: Air



Dimensions: inches / mm



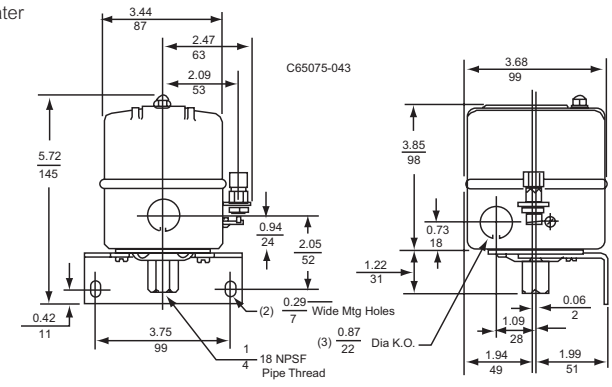
Type GHG - Pumptrol® Commercial / Light Industrial Pressure Switch

Application: To control electrically driven water pumps and air compressors. It has a higher electrical rating for direct control of motors in pump and compressor applications.

Operation: Diaphragm actuated
Adjustable differential
Contacts open on rising pressure

Fluid Characteristics: Air, fresh water, sea water

Temperature: 0° to + 125°C



Dimensions: inches / mm

3.5

For more info:

- Catalogue: 9013CT9701R6/06 (FSG, FYG, FRG, FHG, HG)
- Catalogues available at: www.tesensors.com
- Brochure: Square D Pressure Switches DIAD1070726AU
- Accessories: Page 3.5.10

Pressure Switches for Power Circuits

For the Direct Control of Single or Three Phase Motors (0.75 to 3.0kW)



FRG2J23B7P

Water Pump Pressure Switches 2-Pole with Adjustable Differential

Description	Motor rating 1-ph, 230VAC (kW)	Range (1) (PSIG)	Differential (PSIG)	Reference
Standard action	1.5	20-65 (6)	15-30	9013FSG2J20B7PU2
Standard action with low pressure cut-out (2)	1.5	20-65 (6)	15-30	FSG2J20B7M4PU2
Standard action	2.2	25-80 (7)	20-30	9013FYG2J21B7PU2
Standard action with low pressure cut-out (2)	2.2	25-80 (7)	20-30	9013FYG2J21B7M4PU2
Reverse action	0.75	23-65 (8)	15-30	FRG2J23B7P
Reverse action with manual cut-in lever	0.75	23-65 (8)	15-30	FRG2J23B7M3P
		(6)	(7)	(8)
Factory setting:	contacts close	20 PSIG	30 PSIG	40 PSIG
	contacts open	40 PSIG	50 PSIG	20 PSIG



FYG2J21B7M4PU2

Air Compressor Pressure Switches 2-Pole with Fixed Differential

Description	Motor rating 1-ph, 230VAC (kW)	Range (1) (PSIG)	Differential (PSIG)	Reference
Standard action	1.5	40-100 (9)	20	FHG2J27B7PU2
Standard action with two-way pressure release valve	1.5	40-100 (9)	20	FHG2J27B7PU2X
Standard action with two-way pressure release valve	1.1	19-174	12-61 (3)	XMPD12B2142
Standard action	1.5	70-150 (10)	30	9013FHG12J52B7PU2
Standard action with two-way pressure release valve	1.5	70-150 (10)	30	FHG12J52B7PU2X
Standard action	2.2	70-150 (11)	30	FHG32J55B7PU2
Standard action with two-way pressure release valve	2.2	70-150 (11)	30	FHG32J55B7PU2X
		(9)	(10)	(11)
Factory setting:	contacts close	80 PSIG	95 PSIG	120 PSIG
	contacts open	100 PSIG	125 PSIG	150 PSIG



FHG12J52B7PU2X

Water Pump or Air Compressor Pressure Switches 2 or 3-Pole with Adjustable Differential

Description	Motor rating 1-ph, 230VAC (kW)	Range (1) (PSIG)	Differential (PSIG)	Reference
Standard action	2.2 (1-phase)	60-200 (12)	20-40	GHG2J30P
Standard action with two-way pressure relief valve	2.2 (1-phase)	60-200 (13)	20-40	GHG2J25PX
Reverse action	2.2 (1-phase)	60-200 (14)	20-40	GHG2J51PR
Standard action	3.0 (3-phase)	19-174	12-61	XMPA12C2142
Standard action with two-way pressure relief valve	3.0 (3-phase)	19-174	12-61	XMPD12C2142
		(12)	(13)	(14)
Factory setting:	contacts close	80 PSIG	60 PSIG	100 PSIG
	contacts open	100 PSIG	80 PSIG	80 PSIG



GHG2J30P



XMPD12C2142

Note:

(1) Range for FSG, FYG, GHG represents falling pressure (PB). Range for XMP represents rising pressure (PH).
(2) Low pressure cut-out (AUTO-START-OFF) operates at approx. 10 PSIG below cut-in and will turn off the pump. Otherwise, known as loss of prime.
(3) Adjustable differential.
(4) FSG, FYG, FRG, FHG & GHG consist of 1/4" NPSF (internal) fluid entry.
(5) XMP consist of 1/4" BSP (internal) female fluid entry and 2 tapped Page 13.5 conduit entries.

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN
- → Accessories: Page 3.5.6

Pressure Switches for Control Circuits

Commercial Pressure Switch – Adjustable Differential OsiSense® type XMAV, Plastic Case – IP54
Industrial Pressure Switch – Fixed Differential OsiSense® Type XMLA, Metal Case – IP66



XMAV06L2135

Commercial Pressure Switches – 1 C/O Contact, Snap Action (3)

Air, freshwater, sea water, from 0° to +70°C

Operating range (1)				Adjustable differential (2)				Max. allowable pressure				Reference
min.		max.		Min. at low setting		Min. at high setting		per cycle		occasional surge		
PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	
14.5	100	87	600	11.6	80	17.4	120	108.7	750	195.7	1350	XMAV06L2135
18.8	130	174	1200	14.5	100	24.6	170	217.5	1500	391.5	2700	XMAV12L2135

Industrial Pressure Switches – 1 C/O Contact, Snap Action (4) (5)

Diaphragm Actuated

Hydraulic oils, freshwater, sea water, air: 0° to +70°C

Operating range (1)				Fixed differential (2)				Max. allowable pressure				Reference
min.		max.		low		high		per cycle		occasional surge		
PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	
5.8	40	58	400	5.1	35	5.1	35	73	500	131	900	XMLA004A2S12
10.2	70	290	2000	5.8	40	14.5	100	363	2500	653	4500	XMLA020A2S12



XMLA••••••S12

Piston Actuated

Hydraulic oils: 0° to + 160°C

Operating range (1)				Fixed differential (2)				Max. allowable pressure				Reference
min.		max.		low		high		per cycle		occasional surge		
PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	
73	500	1015	7000	44	300	109	750	1305	9000	2320	16000	XMLA070D2S12
145	1000	2320	16000	80	550	261	1800	2900	20000	5220	36000	XMLA160D2S12
290	2000	4350	30000	239	1650	508	3500	5439	37500	9788	67500	XMLA300D2S12
435	3000	7250	50000	290	2000	653	4500	9063	62500	16313	112500	XMLA500D2S12

Fresh water and sea water: 0° to +160°C

Operating range (1)				Fixed differential (2)				Max. allowable pressure				Reference
min.		max.		low		high		per cycle		occasional surge		
PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	
73	500	1015	7000	44	300	109	750	1305	9000	2320	16000	XMLA070E2S12
145	1000	2320	16000	80	550	261	1800	2900	20000	5220	36000	XMLA160E2S12
290	2000	4350	30000	239	1650	508	3500	5439	37500	9788	67500	XMLA300E2S12

Pressure Unit Conversion Information

BAR	PSI	kPA
1 bar = 14.5 psi	1 psi = 6.895 kPa	1 kPa =7.5188 mm Hg
1 bar = 100 kPa	1 psi = 51.71 mm Hg	1 kPa = 0.2953 in. of mercury
1 bar = 750 mm Hg	1 psi = 2.036 in. of mercury	1 kPa = 0.01 bar
1 bar = 29.53 in. of mercury	1 psi = 0.069 bar	1 kPa = 0.145 psi

Note:

(1) Range represents the rising pressure switching point (PH).

(2) Differential determines falling pressure switching point (PB), i.e. PB = PH – Differential.

(3) Fluid entry - G 1/4" BSP female.
Conduit entry - 2 tapped Pg 13.5.

(4) DIN connector versions available. Replace S12 with C11.
e.g. XMLA004A2S12 becomes XMLA004A2C11.

(5) Fluid entry - G 1/4" BSP female.
Conduit entry - 1 tapped ISO M20 x 1.5mm.

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN
- → Accessories: Page 3.5.6

Industrial Pressure Switches for Control Circuits

OsiSense® XML B & C Pressure Switches
Adjustable Differential
Metal Case IP66



XMLBL35R2S12

Diaphragm Actuated – 1 C/O Contact, Snap Action (3) (4)

Hydraulic oils, air: 0° to +160°C

Operating range (1)				Adjustable differential (2)				Max. allowable pressure				Reference
min.		max.		min. at low setting		max. at high setting		per cycle		occasional surge		
PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	
0.7	4.5	5.1	35	0.6	4.1	4.4	30	18.1	125	32.6	225	XMLBL35R2S12
Fresh water, sea water, corrosive fluids: 0° to +160°C												
0.7	4.5	5.1	35	0.6	4.1	4.4	30	18.1	125	32.6	225	XMLBL35S2S12
Hydraulic oils, fresh water, sea water, air: 0° to +70°C												
4.4	30	36	250	2.3	16	25	175	73	500	131	900	XMLB002A2S12
3.6	25	58	400	2.9	20	35	241	73	500	131	900	XMLB004A2S12
10	70	145	1000	8.3	57	109	750	181	1250	326	2250	XMLB010A2S12
19	130	290	2000	14	100	160	1100	363	2500	653	4500	XMLB020A2S12
51	350	508	3500	25	172	290	2000	653	4500	1160	8000	XMLB035A2S12



XMLB002A2S12

Piston Actuated – 1 C/O Contact, Snap Action (3) (4)

Hydraulic oils: 0° to +160°C

Operating range (1)				Adjustable differential (2)				Max. allowable pressure				Reference
min.		max.		min. at low setting		max. at high setting		per cycle		occasional surge		
PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	
102	700	1015	7000	68	470	725	5000	1305	9000	2320	16000	XMLB070D2S12
145	1000	2320	16000	135	930	1450	10000	2900	20000	5220	36000	XMLB160D2S12
319	2200	4350	30000	281	1940	2900	20000	5438	37500	9788	67500	XMLB300D2S12
435	3000	7250	50000	334	2300	4350	30000	9063	62500	16313	112500	XMLB500D2S12



XMLB035A2S12

Diaphragm Actuated – 2 C/O Contacts, Simultaneous, Snap Action (3) (4)

Hydraulic oils, air: 0° to +160°C

Operating range (1)				Adjustable differential (2)				Max. allowable pressure				Reference
min.		max.		min. at low setting		max. at high setting		per cycle		occasional surge		
PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	
0.7	4.5	5.1	35	0.3	2	4.4	30	18.1	125	32.6	225	XMLCL35R2S12(5)
Fresh water, sea water, corrosive fluids: 0° to +160°C												
0.7	4.5	5.1	35	0.3	2	4.4	30	18.1	125	32.6	225	XMLCL35S2S12(5)
Hydraulic oils, fresh water, sea water, air: 0° to +160°C												
4.4	30	36	250	1.9	13	29	200	73	500	131	900	XMLC002B2S12
4.4	30	58	400	2.2	15	36	250	73	500	131	900	XMLC004B2S12
10	70	145	1000	6.5	45	116	800	181	1250	326	2250	XMLC010B2S12
19	130	290	2000	10	70	160	1100	363	2500	653	450 0	XMLC020B2S12
51	350	508	3500	14.5	100	319	2200	653	4500	1160	8000	XMLC035B2S12



XMLC035B2S12

Piston Actuated – 2 C/O Contacts, Simultaneous, Snap Action (3) (4)

Hydraulic oils: 0° to +160°C

Operating range (1)				Adjustable differential (2)				Max. allowable pressure				Reference
min.		max.		min. at low setting		max. at high setting		per cycle		occasional surge		
PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	PSIG	kPa	
102	700	1015	7000	65	450	870	6000	1305	9000	2320	16000	XMLC070D2S12
174	1200	2320	16000	131	900	1590	11000	2900	20000	5220	36000	XMLC160D2S12
319	2200	4350	30000	232	1600	3480	24000	5438	37500	9788	67500	XMLC300D2S12
435	3000	7250	50000	276	1900	4930	34000	9063	62500	16313	112500	XMLC500D2S12

Note:

(1) Range represents the rising pressure switching point (PH).

(2) Differential determines falling pressure switching point (PB), ie PB = PH – Differential.

(3) Fluid entry - G 1/4" BSP female.
Conduit entry - 1 tapped ISO M20 x 1.5mm.

(4) DIN connector versions available. Replace S12 with C11.
eg. XML B002A2S12 becomes XML B002A2C11.

(5) Not available in DIN connector version.

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

Industrial Pressure Switches for Control Circuits

OsiSense® XML D Pressure Switches
Fixed Differential
Metal Case - IP66



XMLD002B1S12

Diaphragm Actuated Dual Stage – 2 C/O Contacts, Staggered Snap Action (1)

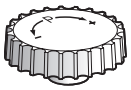
Operating range				Spread		Fixed differential		Max. allowable pressure		Reference
min. kPa	max. k Pa	min. kPa	max. kPa	min. kPa	max. kPa	low kPa	high kPa	cycle kPa	surge kPa	
Hydraulic oils, air: 0° to +160°C										
3.3	32.5	5.8	35	2.5	31	3	3	125	225	XMLDL35R1S12
Fresh water, sea water, corrosive fluids: 0° to +160°C										
3.3	32.5	5.8	35	2.5	31	3	3	125	225	XMLDL35S1S12
Hydraulic oils, fresh water, sea water, air: 0° to +160°C										
20	235	34	250	14	150	14	19	500	900	XMLD002B1S12
19	379	40	400	21	218	15	19	500	900	XMLD004B1S12
52	932	120	1000	68	580	45	60	1250	2250	XMLD010B1S12
90	1876	214	2000	124	955	70	130	2500	4500	XMLD020B1S12
190	3250	440	3500	250	2040	150	260	4500	8000	XMLD035B1S12



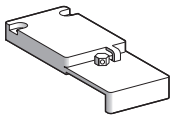
XMLD035B1S12

Piston Actuated Dual Stage – 2 C/O Contacts, Staggered Snap Action (1)

Operating range				Spread		Fixed differential		Max. allowable pressure		Reference
1st stage		2nd stage						per	occasional	
min. kPa	max. kPa	min. kPa	max. kPa	min. kPa	max. kPa	low kPa	high kPa	cycle kPa	surge kPa	
Hydraulic oils: 0° to +160°C										
660	6720	940	7000	280	4600	500	950	9000	16000	XMLD070D1S12
1050	15400	1650	16000	600	8300	880	2000	20000	36000	XMLD160D1S12
2500	28900	3600	30000	1100	18900	1700	4200	37500	67500	XMLD300D1S12
2500	48400	4100	50000	1600	24400	2100	6500	62500	112500	XMLD500D1S12



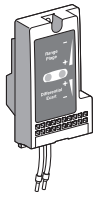
XMLZL003



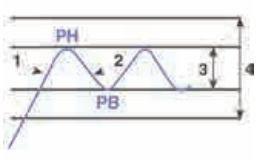
XMLZL001

Accessories

Description	Specific Characteristics	For use with	Reference
Lead sealable protective cover		XMLA / B	XMLZL001
Indicator modules with setting scale 2 LEDs (orange & green)	24 / 48V AC/DC	XMLA	XMLZA024
		XMLB	XMLZB024
	110 / 240V AC	XMLA	XMLZA120
		XMLB	XMLZB120
Knurled adjustment knob, Ø36mm		XMLA / B / C / D	XMLZL003



XMLZA•••
XMLZB•••



Pressure Switches

Description	Legend
A device used to monitor the change in pressure in a hydraulic or pneumatic system.	1 = Rising Pressure
	2 = Falling Pressure
	3 = Differential
Setting: Step 1 - Adjust range set point. Step 2 - Adjust differential.	4 = Adjustment Range
	PH = Rising Pressure Switching Point
	PB = Falling Pressure Switching Point
Note: For Telemecanique product, Range Set Point = PH For Square-D product, Range Set Point = PB For Telemecanique product, the Differential determines PB ie. PB = PH - Differential For Square-D product, the Differential determines PH, ie. PH = PB + Differentia	Differential = PH - PB

Note:
(1) Fluid entry - G 1/4" BSP female.
Conduit entry - 1 tapped ISO M20 x 1.5mm.

For more info:

- Catalogue: 9012CT9701
- Catalogue: DIAED1070726AU
- → Accessories: Page 3.5.10

Industrial Pressure Switches Heavy Duty

Class 9012 Pressure Switches
Single Stage with Adjustable Differential
Metal Case - IP66, NEMA 4, 4X & 13



9012GAW1

Diaphragm Actuated - 1N/O+1N/C (3)(4)

Nitrile (Buna-N) diaphragm, zinc-plated steel housing

Operating range (1)				Adjustable differential (2)				Max. allowable pressure		Reference
min.		max.		low		high				
psig	kPa	psig	kPa	psig	kPa	psig	kPa	psig	kPa	
0.2	1.4	10	69	0.6	4.1	2	13.8	100	689	9012GAW1
1	6.9	40	275	1.6	11	8	55	100	689	9012GAW2
1.5	10	75	517	3.5	24	15	103	240	1655	9012GAW4
3	21	150	1034	6	41	30	207	475	3275	9012GAW5
5	34	250	1724	10	69	49	338	750	5171	9012GAW6
13	90	425	2930	16	110	90	620	850	5860	9012GBW1
20	138	675	4654	27	186	130	896	2000	13790	9012GBW2



9012GAW24

Diaphragm Actuated - 2N/O+2N/C (3)(4)

Nitrile (Buna-N) diaphragm, zinc-plated steel housing

Operating range (1)				Adjustable differential (2)				Max. allowable pressure		Reference
min.		max.		low		high				
psig	kPa	psig	kPa	psig	kPa	psig	kPa	psig	kPa	
0.2	1.4	10	69	0.6	4.1	2	13.8	100	689	9012GAW21
1	6.9	40	275	1.6	11	8	55	100	689	9012GAW22
1.5	10	75	517	3.5	24	15	103	240	1655	9012GAW24
3	21	150	1034	6	41	30	207	475	3275	9012GAW25
5	34	250	1724	10	69	49	338	750	5171	9012GAW26
13	90	425	2930	16	110	90	620	850	5860	9012GBW21
20	138	675	4654	27	186	130	896	2000	13790	9012GBW22



9012GCW2

Piston Actuated - 1N/O+1N/C (3)(4)

SS440 piston, SS303 housing, Fluorocarbon (Viton) diaphragm and O-ring, Teflon retaining ring

Operating range (1)				Adjustable differential (2)				Max. allowable pressure		Reference
min.		max.		low		high				
psig	kPa	psig	kPa	psig	kPa	psig	kPa	psig	kPa	
20	138	1000	6895	59	407	200	1379	10000	68950	9012GCW1
90	620	2900	19995	170	1172	560	3861	15000	103425	9012GCW2
170	1172	5600	38612	289	1992	1260	8687	20000	137900	9012GCW3
270	1861	9000	62055	495	3413	1900	13100	25000	172375	9012GCW4

Piston Actuated - 2N/O+2N/C (3)(4)

SS440 piston, SS303 housing, Fluorocarbon (Viton) diaphragm and O-ring, Teflon retaining ring

Operating range (1)				Adjustable differential (2)				Max. allowable pressure		Reference
min.		max.		low		high				
psig	kPa	psig	kPa	psig	kPa	psig	kPa	psig	kPa	
20	138	1000	6895	59	407	200	1379	10000	68950	9012GCW21
90	620	2900	19995	170	1172	560	3861	15000	103425	9012GCW22
170	1172	5600	38612	289	1992	1260	8687	20000	137900	9012GCW23
270	1861	9000	62055	495	3413	1900	13100	25000	172375	9012GCW24

Note:

(1) Range represents the falling pressure switch point (PB).

(2) Differential determines rising pressure switching point (PH), i.e. PH = PB + Differential.

(3) Fluid entry 1/4" - 18NPTF. Conduit entry 1/2" NPTF.

(4) Class 9012 pressure switches supplied standard with 1/2 " NPT conduit entry.
For 20mm (ISO) female entry use 9007CT12 conduit adaptor (refer to page 3.5.10).

For more info:

- Catalogue: 9012CT9701
- Brochure: DIAED1070726AU
- → Accessories: Page 3.5.10

Industrial Pressure Switches Heavy Duty

Class 9012 Pressure Switches For Corrosive Environments Single Stage with Adjustable Differential Metal Case - IP66, NEMA 4, 4X & 13



9012GAW2Q4

Diaphragm Actuated - 1N/O+1N/C (3)(4)

Fluorocarbon (VITON) diaphragm and stainless steel 316 flange

Operating range (1)				Adjustable differential (2)				Max. allowable pressure		Reference
min.		max.		low		high				
psig	kPa	psig	kPa	psig	kPa	psig	kPa	psig	kPa	
1	6.9	40	275	1.6	11	8	55	100	689	9012GAW2Q4
1.5	10	75	517	3.5	24	15	103	240	1655	9012GAW4Q4
3	21	150	1034	6	41	30	207	475	3275	9012GAW5Q4
5	34	250	1724	10	69	49	338	750	5171	9012GAW6Q4
13	90	425	2930	16	110	90	620	850	5860	9012GBW1Q4
20	138	675	4654	27	186	130	896	2000	13790	9012GBW2Q4



9012GAW24Q4

Diaphragm Actuated - 2N/O+2N/C (3)(4)

Fluorocarbon (VITON) diaphragm and stainless steel 316 flange

Operating range (1)				Adjustable differential (2)				Max. allowable pressure		Reference
min.		max.		low		high				
psig	kPa	psig	kPa	psig	kPa	psig	kPa	psig	kPa	
1	6.9	40	275	1.6	11	8	55	100	689	9012GAW22Q4
1.5	10	75	517	3.5	24	15	103	240	1655	9012GAW24Q4
3	21	150	1034	6	41	30	207	475	3275	9012GAW25Q4
5	34	250	1724	10	69	49	338	750	5171	9012GAW26Q4
13	90	425	2930	16	110	90	620	850	5860	9012GBW21Q4
20	138	675	4654	27	186	130	896	2000	13790	9012GBW22Q4

Note:

(1) Range represents falling pressure switch point (PB).

(2) Differential determines rising pressure switching point (PH), i.e.. PH = PB + Differential.

(3) Fluid entry 1/4" - 18NPTF. Cable entry 1/2" NPTF.

(4) 9012 pressure switches supplied standard with 1/2 " NPT conduit entry.
For 20mm (ISO) female entry use 9007CT12 conduit adaptor (refer to page 3.5.10).

For more info:

- Catalogue: 9012CT9701
- Brochure: DIAED1070726AU
- → Accessories: Page 3.5.10

Industrial Pressure Switches
Heavy Duty

Class 9012 Differential Pressure Switches
Metal Case - IP66, NEMA 4, 4X & 13
Class 9016 Vacuum Switches
Metal Case - IP66, NEMA 4, 4X & 13



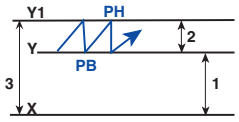
9012GGW1

Diaphragm Actuated - 1N/O+1N/C

Zinc-plated steel housing, Nitrile (Buna-N) diaphragm

Max. pressure X actuator	Adjustable pressure difference		Adjustable differential		Max. allowable pressure	Reference
max.	min.	max.	min.	max.		
kPa	kPa	kPa	kPa	kPa	kPa	
517	1.7	69	5.5	14	689	9012GGW1
1207	3.4	248	34	103	1655	9012GGW4
3447	21	1207	152	621	5861	9012GHW1
34475	103	5688	552	1379	51713	9012GJW1 (1)

Differential Pressure Switches



Description	Legend
A device used to monitor the change in pressure between 2 points, X and Y.	1 = Pressure Difference 2 = Pressure Differential 3 = Increasing Pressure Differential (1 + 2)
Setting: Step 1 - Adjust pressure difference (Determines PB). Step 2 - Adjust pressure differential (Determines PH).	X = Low Pressure Reference Y = High Pressure Reference Y1 = Max. Pressure Difference
Note: ■ PB = Pressure Difference ■ PH = Pressure Difference + Differential	PH = Actuation (Cut-Out) PB = Reset (Cut-In)



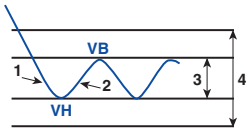
9016GAW21F

Diaphragm Actuated

Diaphragm: Oil resisting, nitrile butadiene rubber (Buna-N)

Operating range on decreasing vacuum		Adjustable differential (2)		Output Function	Reference
min.	max.	min.	max.		
Ins. of Hg	Ins. of Hg	Ins. of Hg	Ins. of Hg		
0	28.7	1.3	7.4	1N/O + 1N/C	9016GAW1
0	25	5	20	1N/O + 1N/C	9016GAW2
0	28.3	1.3	7.4	2N/O + 2N/C	9016GAW21F
0	25	5	20	2N/O + 2N/C	9016GAW22

Vacuum Switches



Description	Legend
A device used to monitor increasing and decreasing vacuum. (Measured in mm or inches of Mercury (Hg)).	1 = Increasing Vacuum 2 = Decreasing Vacuum 3 = Differential 4 = Adjustment Range
Setting: Step 1 - Adjust range set point. Step 2 - Adjust differential.	VH = Increasing Vacuum Switching Point VB = Decreasing Vacuum Switching Point Differential = VH - VB
Note: ■ For Square D product, Range Set Point = VB. ■ For Square D product, the differential determines VH, i.e. VH = VB + Differential.	

Note:
(1) 9012GJW1 is piston actuated.
Actuator: 303 stainless steel. Piston: Stainless steel 440.
Diaphragm: Viton (fluorocarbon). TEFLON retaining ring.
(2) Adjustable differential at mid-point of operating range.

Pressure Switch Accessories

Replacement Parts and Accessories
9012G Pressure Switches



9998PC267Q4

Replacement Parts Kit for Type 9012G Pressure Switches with Stainless Steel Actuators for Incompatible Media

Diaphragm actuators
316 stainless steel housing with viton diaphragm

Switch type	Description	Reference
Diaphragm assembly (1)	Suits 9012 GAW2 and 9012 GAW22	9998PC266Q4
Diaphragm assembly (1)	Suits 9012 GAW4 and 9012 GAW24	9998PC267Q4
Actuator assembly	Suits 9012 GAW5 and 9012 GAW25	9998PC268Q4
Actuator assembly	Suits 9012 GAW6 and 9012 GAW26	9998PC269Q4
Actuator assembly	Suits 9012 GBW1 and 9012 GBW21	9998PC177Q4
Actuator assembly	Suits 9012 GBW2 and 9012 GBW22	9998PC178Q4



9998PC271Q5

Replacement Parts Kit for Type 9012G Pressure Switches with Stainless Steel Actuators for Incompatible Media

Piston actuators
404 stainless steel housing with ethylene propylene diaphragm and O-ring

Switch type	Description	Reference
Piston assembly	Suits 9012 GCW2 and 9012 GCW22	9998PC271Q5



9998PC313

Snap Switches for 9012G Pressure Switches (2)

Description	Contacts	Reference
Single pole, double throw	1N/O+1N/C	9998PC313
Double pole, double throw	2N/O+2N/C	9998PC314



9007CT12

Accessories

Description	Reference
Conduit adaptor 1/2" NPT male to 20mm ISO female	9007CT12



9998PC208

Replacement Parts for GHG Pressure Switches

Description	Reference
Contact kit	9998PC207
Diaphragm assembly	9998PC208

Note:
(1) Kit does not include stainless steel fluid connection.
(2) The pressure switch will require recalibration after changing the snap switch.

Electronic Pressure Sensors

OsiSense® XMLP Pressure Sensors
Stainless Steel 304 - IP65 DIN, IP67 M12, Pressure Connection G1/4A (Male)

Analogue Pressure Sensors
12/24V DC, 4 – 20mA Output

0-8700 psig = (0 - 60000 kPa, 0 - 600 bar), G 1/4A (male)
Hydraulic oils, fresh water, air, gases, refrigerants: -20° to +120°C (0° to +120°C for fresh water)


XMLP010BD21V

Operating range min.		max.		Max. allowable pressure occasional surge		Reference M12 Connector
psig	kPa	psig	kPa	psig	kPa	
0	0	145	1000	290	2000	XMLP010BD21V
0	0	232	1600	464	3200	XMLP016BD21V
0	0	362.5	2500	725	5000	XMLP025BD21V
0	0	580	4000	1160	8000	XMLP040BD21V
0	0	870	6000	1740	12000	XMLP060BD21V
0	0	1450	10000	2900	20000	XMLP100BD22
0	0	2320	16000	4640	32000	XMLP160BD22
0	0	3625	25000	5437.5	37500	XMLP250BD22
0	0	5800	40000	8700	60000	XMLP400BD22
0	0	8700	60000	13050	90000	XMLP600BD22


XMLP010BC21V

Operating range min.		max.		Max. allowable pressure occasional surge		Reference DIN 43650
psig	kPa	psig	kPa	psig	kPa	
0	0	145	1000	290	2000	XMLP010BC21V
0	0	232	1600	464	3200	XMLP016BC21V
0	0	362.5	2500	725	5000	XMLP025BC21V
0	0	580	4000	1160	8000	XMLP040BC21V
0	0	870	6000	1740	12000	XMLP060BC21V
0	0	1450	10000	2900	20000	XMLP100BC22
0	0	2320	16000	4640	32000	XMLP160BC22
0	0	3625	25000	5437.5	37500	XMLP250BC22
0	0	5800	40000	8700	60000	XMLP400BC22
0	0	8700	60000	13050	90000	XMLP600BC22

Analogue Pressure Sensors
24V DC, 0 – 10V Output

0-8700 psig = (0 - 60000 kPa, 0 - 600 bar), G 1/4A (male)
Hydraulic oils, fresh water, air, gases, refrigerants: -20° to +120°C (0° to +120°C for fresh water)

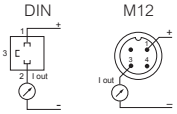

XMLP010BD71V

Operating range min.		max.		Max. allowable pressure occasional surge		Reference M12 Connector
psig	kPa	psig	kPa	psig	kPa	
0	0	145	1000	290	2000	XMLP010BD71V
0	0	232	1600	464	3200	XMLP016BD71V
0	0	362.5	2500	725	5000	XMLP025BD71V
0	0	580	4000	1160	8000	XMLP040BD71V
0	0	870	6000	1740	12000	XMLP060BD71V
0	0	1450	10000	2900	20000	XMLP100BD72
0	0	2320	16000	4640	32000	XMLP160BD72
0	0	3625	25000	5437.5	37500	XMLP250BD72
0	0	5800	40000	8700	60000	XMLP400BD72
0	0	8700	60000	13050	90000	XMLP600BD72

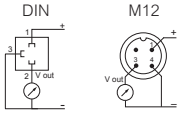

XMLP010BC71V

Operating range min.		max.		Max. allowable pressure occasional surge		Reference DIN 43650
psig	kPa	psig	kPa	psig	kPa	
0	0	145	1000	290	2000	XMLP010BC71V
0	0	232	1600	464	3200	XMLP016BC71V
0	0	362.5	2500	725	5000	XMLP025BC71V
0	0	580	4000	1160	8000	XMLP040BC71V
0	0	870	6000	1740	12000	XMLP060BC71V
0	0	1450	10000	2900	20000	XMLP100BC72
0	0	2320	16000	4640	32000	XMLP160BC72
0	0	3625	25000	5437.5	37500	XMLP250BC72
0	0	5800	40000	8700	60000	XMLP400BC72
0	0	8700	60000	13050	90000	XMLP600BC72

Wiring diagram, 2-wire (4-20 mA)



Wiring diagram, 3-wire (0-10 V or 0.5-4.5 V)



Electronic Pressure Sensors

OsiSense® XMLP Pressure Sensors
Stainless Steel 304 - IP65 DIN, IP67 M12,
Pressure Connection 7/16-20UNF-(2A Male & 2B Female)

Analogue Pressure Sensors
12/24V DC, 4 – 20mA Output

0-870 psig = (0 - 6000 kPa, 0 - 60 bar)
Hydraulic oils, fresh water, air, gases, refrigerants: -20° to +120°C (0° to +120°C for fresh water)


XMLP010BD27

Operating range				Max. allowable pressure occasional surge		Reference
min.		max.				M12 Connector
psig	kPa	psig	kPa	psig	kPa	7/16-20UNF-2A (Male)
0	0	145	1000	290	2000	XMLP010BD27
0	0	232	1600	464	3200	XMLP016BD27
0	0	362.5	2500	725	5000	XMLP025BD27
0	0	580	4000	1160	8000	XMLP040BD27
0	0	870	6000	1740	12000	XMLP060BD27
						7/16-20UNF-2B (Female)
0	0	145	1000	290	2000	XMLP010BD29
0	0	232	1600	464	3200	XMLP016BD29
0	0	362.5	2500	725	5000	XMLP025BD29
0	0	580	4000	1160	8000	XMLP040BD29
0	0	870	6000	1740	12000	XMLP060BD29


XMLP010BC27

Operating range				Max. allowable pressure occasional surge		Reference
min.		max.				DIN 43650
psig	kPa	psig	kPa	psig	kPa	7/16-20UNF-2A (Male)
0	0	145	1000	290	2000	XMLP010BC27
0	0	232	1600	464	3200	XMLP016BC27
0	0	362.5	2500	725	5000	XMLP025BC27
0	0	580	4000	1160	8000	XMLP040BC27
0	0	870	6000	1740	12000	XMLP060BC27
						7/16-20UNF-2B (Female)
0	0	145	1000	290	2000	XMLP010BC29
0	0	232	1600	464	3200	XMLP016BC29
0	0	362.5	2500	725	5000	XMLP025BC29
0	0	580	4000	1160	8000	XMLP040BC29
0	0	870	6000	1740	12000	XMLP060BC29

Analogue Pressure Sensors
24V DC, 0 – 10V Output

0-870 psig = (0 - 6000 kPa, 0 - 60 bar)
Hydraulic oils, fresh water, air, gases, refrigerants: -20° to +120°C (0° to +120°C for fresh water)


XMLP010BD79

Operating range				Max. allowable pressure occasional surge		Reference
min.		max.				M12 Connector
psig	kPa	psig	kPa	psig	kPa	7/16-20UNF-2B (Female)
0	0	145	1000	290	2000	XMLP010BD79
0	0	232	1600	464	3200	XMLP016BD79
0	0	362.5	2500	725	5000	XMLP025BD79
0	0	580	4000	1160	8000	XMLP040BD79
0	0	870	6000	1740	12000	XMLP060BD79


XMLP010BC79

Operating range				Max. allowable pressure occasional surge		Reference
min.		max.				DIN 43650
psig	kPa	psig	kPa	psig	kPa	7/16-20UNF-2B (Female)
0	0	145	1000	290	2000	XMLP010BC79

Electronic Pressure Sensors

OsiSense® XMLK Pressure Sensors, Pumping Applications - IP65 DIN, IP65 M12, Pressure Connection G1/4A (Male)



XMLK006B2D21



XMLK006B2C21

Analogue Pressure Sensors
24V DC, 4 – 20mA Output

Air, fresh water: -0° to +80°C 0-362 psig = (0 - 2500 kPa, 0 - 25 bar), G1/4A (male)

Operating range min.		max.		Max. allowable pressure occasional surge		Reference M12 Connector
psig	kPa	psig	kPa	psig	kPa	G1/4A (male)
0	0	87	600	174	1200	XMLK006B2D21
0	0	145	1000	290	2000	XMLK010B2D21
0	0	232	1600	464	3200	XMLK016B2D21
0	0	362.5	2500	725	5000	XMLK025B2D21

Operating range min.		max.		Max. allowable pressure occasional surge		Reference DIN 43650 A
psig	kPa	psig	kPa	psig	kPa	G1/4A (male)
0	0	87	600	174	1200	XMLK006B2C21
0	0	145	1000	290	2000	XMLK010B2C21
0	0	232	1600	464	3200	XMLK016B2C21
0	0	362.5	2500	725	5000	XMLK025B2C21

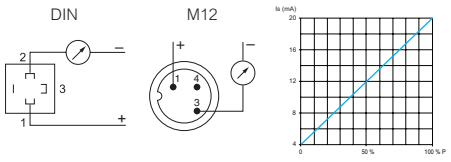
Analogue Pressure Sensors
24V DC, 0 – 10V Output

Air, fresh water: -0° to +80°C 0-362 psig = (0 - 2500 kPa, 0 - 25 bar), G1/4A (male)

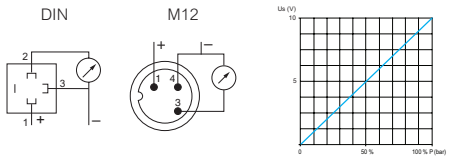
Operating range min.		max.		Max. allowable pressure occasional surge		Reference M12 Connector
psig	kPa	psig	kPa	psig	kPa	G1/4A (male)
0	0	87	600	174	1200	XMLK006B2D71
0	0	145	1000	290	2000	XMLK010B2D71
0	0	232	1600	464	3200	XMLK016B2D71
0	0	362.5	2500	725	5000	XMLK025B2D71

Operating range min.		max.		Max. allowable pressure occasional surge		Reference DIN 43650 A
psig	kPa	psig	kPa	psig	kPa	G1/4A (male)
0	0	87	600	174	1200	XMLK006B2C71
0	0	145	1000	290	2000	XMLK010B2C71
0	0	232	1600	464	3200	XMLK016B2C71
0	0	362.5	2500	725	5000	XMLK025B2C71

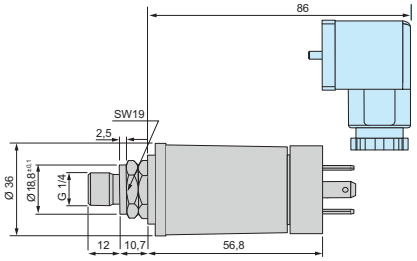
Wiring Diagram Connector XMLK•••B2•21 4-20mA
(Sensor connector pin view) Graph 1= 4 - 20mA



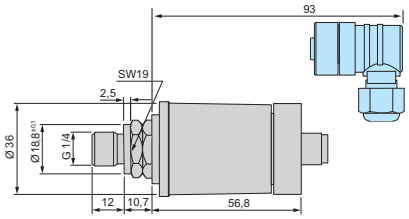
Wiring Diagram Connector XMLK•••B2•71 0-10V
(Sensor connector pin view) Graph 2 = 0 - 10V



Dimensions - XML K DIN Connector G1/4A Male



Dimensions - XML K DIN Connector G1/4A Male



3.5

Electronic Pressure Sensors

OsiSense® XMLK Pressure Sensors, Pumping Applications - IP65 DIN, IP65 M12, Fluid Connection 1/4"-18NPT (Male)



XMLK100P2D23



XMLK100P2D73

Analogue Pressure Sensors 24V DC, 4 – 20mA Output

Air, fresh water: -0° to +80°C 0-300 psig = (0 - 2069 kPa, 0 - 20.7 bar), 1/4" - 18NPT (male)

Operating range min.		max.		Max. allowable pressure occasional surge		Reference M12 Connector
psig	kPa	psig	kPa	psig	kPa	1/4" - 18NPT (male)
0	0	100	690	200	1379	XMLK100P2D23
0	0	150	1034	300	2069	XMLK150P2D23
0	0	200	1379	400	2759	XMLK200P2D23
0	0	300	2069	600	4138	XMLK300P2D23

Operating range min.		max.		Max. allowable pressure occasional surge		Reference DIN 43650 A
psig	kPa	psig	kPa	psig	kPa	1/4" - 18NPT (male)
0	0	100	690	200	1379	XMLK100P2C23
0	0	150	1034	300	2069	XMLK150P2C23
0	0	200	1379	400	2759	XMLK200P2C23
0	0	300	2069	600	4138	XMLK300P2C23

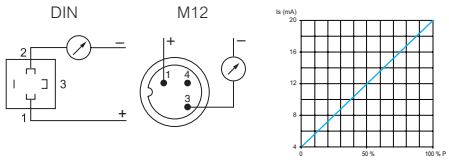
Analogue Pressure Sensors 24V DC, 0 – 10V Output

Air, fresh water: -0° to +80°C 0-300 psig = (0 - 2069 kPa, 0 - 20.7 bar), 1/4"- 18NPT (male)

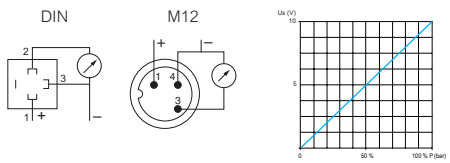
Operating range min.		max.		Max. allowable pressure occasional surge		Reference M12 Connector
psig	kPa	psig	kPa	psig	kPa	1/4" - 18NPT (male)
0	0	100	690	200	1379	XMLK100P2D73
0	0	150	1034	300	2069	XMLK150P2D73
0	0	200	1379	400	2759	XMLK200P2D73
0	0	300	2069	600	4138	XMLK300P2D73

Operating range min.		max.		Max. allowable pressure occasional surge		Reference DIN 43650 A
psig	kPa	psig	kPa	psig	kPa	1/4" - 18NPT (male)
0	0	100	690	200	1379	XMLK100P2C73
0	0	150	1034	300	2069	XMLK150P2C73
0	0	200	1379	400	2759	XMLK200P2C73
0	0	300	2069	600	4138	XMLK300P2C73

Wiring Diagram Connector XMLK•••P2•23 4-20mA
(Sensor connector pin view) Graph 1= 4 - 20mA



Wiring Diagram Connector XMLK•••P2•73 0-10V
(Sensor connector pin view) Graph 2 = 0 - 10V

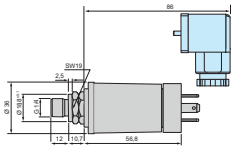


Accessories - XLMK & XMLP

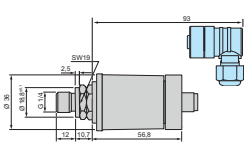
Female M12 Metal Clamp Ring	Connector Type	Number of Wires	Voltage	Reference
Connector	Straight	4	125 V AC/150V DC	XZCC12FDM40B
Pre-wired (2m)	Straight	4	250 V AC/300V DC	XZCP1141L2
Pre-wired (5m)	Straight	4	250 V AC/300V DC	XZCP1141L5
Pre-wired (10m)	Straight	4	250 V AC/300V DC	XZCP1141L10
Connector	Elbow 90 deg	4	125 V AC/150V DC	XZCC12FCM40B
Pre-wired (2m)	Elbow 90 deg	4	250 V AC/300V DC	XZCP1241L2
Pre-wired (5m)	Elbow 90 deg	4	250 V AC/300V DC	XZCP1241L5
Pre-wired (10m)	Elbow 90 deg	4	250 V AC/300V DC	XZCP1241L10

Din 43650A	XML K	Female Connector - Screw Terminal	XZCC43FCP40B
Din 43650	XML P	Female Connector - Screw Terminal	XZCC43FCP40B

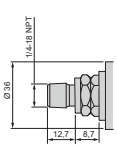
Dimensions
XML K DIN Connector G1/4A Male



Dimensions
XML K DIN Connector G1/4A Male



NPT



Electronic Pressure Sensors

OsiSense® XMLR Pressure Sensors
Polyacrylamide case with 316L S/S fitting - IP65 & IP67


XMLR010G0T25

Pressure Sensors with Display (1) (2) (3) (4)
24V DC - 4 - 20mA Analogue Output

Hydraulic oils, fresh water, air, refrigerant fluids: -20° to +80°C — -1 to 600 bar

Operating Range min.		max.		Max. allowable pressure occassional surge		Reference M12 Connector
psig	kpa	psig	kpa	psig	kpa	
-14.5	-100	0.0	0	43	300	XMLRM01G0T25
0.75	5	14.5	100	109	750	XMLR001G0T25
1.8	13	36.5	250	174	1200	XMLR2D5G0T25
7.25	50	145	1000	580	4000	XMLR010G0T25
11.5	80	232	1600	900	6200	XMLR016G0T25
18	125	362.5	2500	1450.5	10000	XMLR025G0T25
29	200	580	4000	2175.5	15000	XMLR040G0T25
72.5	500	1450.5	10000	4351	30000	XMLR100M0T25
116	800	2320.5	16000	6962	48000	XMLR160M0T25
181	1250	3626	25000	10878	75000	XMLR250M0T25
290	2000	5801.5	40000	17404.5	120000	XMLR400M0T25
435	3000	8702.5	60000	21755.5	150000	XMLR600M0T25


XMLRM01G1P26

Pressure Sensors with Display (1) (2) (3) (4)
24V DC - 4 - 20mA Analogue Output and PNP Digital Output

Hydraulic oils, fresh water, air, refrigerant fluids: -20° to +80°C — -1 to 600 bar

Operating Range min.		max.		Max. allowable pressure occassional surge		Reference M12 Connector
psig	kpa	psig	kpa	psig	kpa	
-14.5	-100	0.0	0	43	300	XMLRM01G1P25
0.75	5	14.5	100	109	750	XMLR001G1P25
1.8	13	36.5	250	174	1200	XMLR2D5G1P25
7.25	50	145	1000	580	4000	XMLR010G1P25
11.5	80	232	1600	900	6200	XMLR016G1P25
18	125	362.5	2500	1450.5	10000	XMLR025G1P25
29	200	580	4000	2175.5	15000	XMLR040G1P25
72.5	500	1450.5	10000	4351	30000	XMLR100M1P25
116	800	2320.5	16000	6962	48000	XMLR160M1P25
181	1250	3626	25000	10878	75000	XMLR250M1P25
290	2000	5801.5	40000	17404.5	120000	XMLR400M1P25
435	3000	8702.5	60000	21755.5	150000	XMLR600M1P25


XMLR400M2P05

Pressure Sensors with Display (1) (3) (4)
24V DC - 4 - 20mA Analogue Output and Two PNP Digital Outputs

Hydraulic oils, fresh water, air, refrigerant fluids: -20° to +80°C — -1 to 400 bar

Operating Range min.		max.		Max. allowable pressure occassional surge		Reference M12 Connector
psig	kpa	psig	kpa	psig	kpa	
-14.5	-100	0.0	0	43	300	XMLRM01G2P25
7.25	50	145	1000	580	4000	XMLR010G2P25
29	200	580	4000	2175.5	15000	XMLR040G2P25
181	1250	3626	25000	10878	75000	XMLR250M2P25
290	2000	5801.5	40000	17404.5	120000	XMLR400M2P25

Pressure Sensors with Display (1) (2) (3) (4)
24V DC - Two PNP Digital Outputs

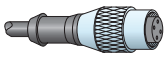
Hydraulic oils, fresh water, air, refrigerant fluids: -20° to +80°C — -1 to 600 bar

Operating Range min.		max.		Max. allowable pressure occassional surge		Reference M12 Connector
psig	kpa	psig	kpa	psig	kpa	
-14.5	-100	0.0	0	43	300	XMLRM01G2P05
5	0.75	14.5	100	109	750	XMLR001G2P05
7.25	50	145	1000	580	4000	XMLR010G2P05
11.5	80	232	1600	900	6200	XMLR016G2P05
29	200	580	4000	2175.5	15000	XMLR040G2P05
181	1250	3626	25000	10878	75000	XMLR250G2P05
290	2000	5801.5	40000	17404.5	120000	XMLR400M2P05
435	3000	8702.5	60000	21755.5	150000	XMLR600M2P05

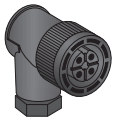
Notes:
(1) S/S 316L Fluid entry - G1/4"A Female. NO/NC programmable. Electrical connection - M12 male.
(2) For 0-10V output, replace "25" at the end of reference with "75". e.g. XMLR010G1P25 becomes XMLR010G1P75
(3) Also available with 1/4"-18NPT Female fluid entry
(4) Pressure UOM in bar, psi, kPa or Mpa

Electronic Pressure Sensors

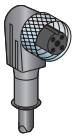
OsiSense® XMLR Pressure Sensors
Accessories



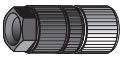
XZCP1141L2



XZCC12FCM40B



XZCP1241L2



XZCC12MDM40B



XZCB4L0•••

Accessories for XMLR Pressure Sensors

Female M12	Connector Type	Number of Wires	Voltage	Reference
Pre-wired (2m)	Straight	4	250V AC/300V DC	XZCP1141L2
Pre-wired (2m)	90 deg	4	250V AC/300V DC	XZCP1241L2
Connector	Straight	4	125 V AC/150V DC	XZCC12FDM40B
Connector	90 deg	4	125 V AC/150V DC	XZCC12FCM40B

Cable

Cable	Length	Voltage	Reference
Cable Roll	25m	60V AC/60V DC	XZCB4L0025
Cable Roll	100m	60V AC/60V DC	XZCB4L0100

Electronic Pressure Sensors

OsiSense® ZMLP Pressure display, switch and accessories



ZMLPA1P2SH

ZMLP switch with 4-digit display
24V DC - 4 - 20mA Analogue Out and 1 Digital Out

NO/NC programmable - IP67 and IP69K degree of protection. 4 pin M12 connectors
4-20mA analogue output only in conjunction with pressure switch - I.E XMLK/P unit

Description	Type of switching mode	Output Function	Reference M12 Connector
Pressure Switch and Display	Hysteresis Mode	PNP NO/NC Progr.	ZMLPA1P2SH
		NPN NO/NC Progr.	ZMLPA1N2SH
	Windows Mode	PNP NO/NC Progr.	ZMLPA1P2SW
		NPN NO/NC Progr.	ZMLPA1N2SW

24V DC - Two Digital Outputs

NO/NC programmable - IP67 and IP69K degree of protection. 4 pin M12 connectors
4-20mA analogue output only in conjunction with pressure switch - I.E XMLK/P unit

Description	Type of switching mode	Output Function	Reference M12 Connector
Pressure Switch and Display	Hysteresis Mode	2 PNP NO/NC Progr.	ZMLPA2P0SH
		2 NPN NO/NC Progr.	ZMLPA2N0SH

Hysteresis Mode: Contact states changed once pressure reaches the high setting point and release once achieves low setting point
Windows Mode: Contact states changed when pressure is outside the pressure windows



ZMLPA2P0SH



ZMLP E.G DIRECT CONNECT IMAGE

Cabling Accessories

Description	Connector Type	Length (m)	Number of wires	Reference
Pre wired M12 connector	Straight	2	4	XZCP1141L2
		5	4	XZCP1141L5
		10	4	XZCP1141L10
	Elbowed	2	4	XZCP1241L2
		5	4	XZCP1241L5
		10	4	XZCP1241L10
Jumper M12 connector between your ZMLP and your transmitter sensor (optional)	Straight male and female connectors	1	3	XZCR1511040A1
		2	3	XZCR1511040A2
	Straight male and elbowed female connector	1	3	XZCR1512040A1
		2	3	XZCR1512040A2



E.G: Remote mounting (jumper cable & fixing bracket).

Mounting brackets for ZMLP Pressure Switch

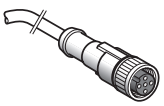
Description	Reference
Horizontal metal bracket for ZMLP	XMLPZLH01
Vertical metal bracket for ZMLP	XMLPZLV01



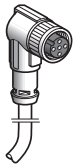
XMLPZLH01



XMLPZLV01



XZCP1164L



XZCP1264L

Electronic Pressure Sensors

OsiSense® XM Pressure Sensors: Function for control circuits



XMLP SERIES
PRESSURE SENSORS

Electronic pressure sensors

The function of electronic pressure sensors is the control and measurement of pressure or vacuum levels in hydraulic or pneumatic systems. Being electronic, the sensors have no mechanical moving parts.

Pressure transmitters

Pressure transmitters convert the pressure into an electrical signal which is proportional to the applied pressure. Their high precision makes them suitable for all industrial applications requiring pressure/vacuum display, control or regulation. Being very robust, they are equally suitable for applications involving high operating rates.



XMLK SERIES
PRESSURE SENSOR

Pressure and vacuum switches

Electronic pressure switches and vacuum switches convert a change in pressure into a digital electrical signal when the switching points which have been set are reached.

They are distinguished from electromechanical pressure switches and vacuum switches by their very wide switching adjustment ranges. Their durability, together with their excellent adherence to the set values over a period of time, make them ideal for applications involving high operating rates. In addition, the high repeat accuracy and fast response time of these sensors make them equally suitable for applications requiring accurate pressure regulation and monitoring.



XMLR SERIES
PRESSURE SENSOR

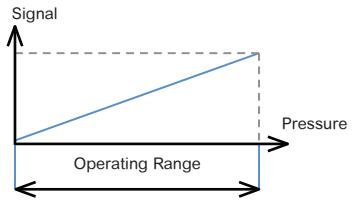
Operating principle
Pressure transmitters

These devices provide an analogue output which has a signal proportional to the pressure applied to the sensor. Depending on the model, this signal can be 4…20 mA, 0…10 V or ratiometric (0.5…4.5 V).

4…20 mA

or 0…10 V

or 0.5…4.5 V





ZMLP SERIES
ACCESSORY

Pressure and vacuum switches

These devices have one or two digital outputs depending on the model. The status of these outputs is defined by high (SP) and low (rP) switching points which can usually be independently adjusted.

Pressure switches and vacuum switches can have 2 different switching modes:
- Hysteresis mode, particularly suited to pumping applications (filling/emptying).
- Window mode, more suitable for applications where the pressure is regulated.

The switching outputs can usually be configured as normally open (NO) or normally closed (NC).

In addition, for the OsiSense XMLR range (1), output switching can be delayed for between 1 and 50 seconds, both on the pressure rising edge and falling edge.

Note:
Some sensors in the OsiSense XM ranges have both one analogue output and one or two digital outputs
(1) See users guide for more information.

For more info:

Catalogue:
DIA4ED2141202EN

OsiSense Sensors

Telemecanique Sensors

Founded over 90 years ago, Telemecanique Sensors is specialised in sensors and sensor-related technology.

As a global leader in the sensors business, we help our customers select the right technology to get the best performance and reliability from their machines.

Focused on 3 core values – Simplicity, Proximity and Expertise – we have become experts in factory automation sensors as well as specialists in demanding applications, making our customers' lives "simply easy!"



Simply easy!™

Telemecanique Sensors

Connect with the experts - Visit our website and discover our full offer on www.tesensors.com/au

OsiSense™ - Position Sensors

Limit Switches



European style

OsiSense™ Universal

Miniature - metal	XCM D	Page 3.6.5
Compact - metal, EN 50047	XCK D	Page 3.6.6
Compact - double insulated, EN 50047	XCK P	Page 3.6.7



Medium duty - metal	XCKM/ML	Page 3.6.11
Heavy duty - metal, EN 50041	XCKJ	Page 3.6.14
Medium duty - double insulated, EN 50041	XCKS	Page 3.6.18
Wireless & Batteryless Limits	XCKW	Page 3.6.20



Japanese style

Light duty - double insulated	XCJ	Page 3.6.20
Medium duty - metal	XCE	Page 3.6.21



American style

Industrial snap switches	9007A/C	Page 3.6.22
Heavy duty - metal	9007C	Page 3.6.23
Heavy duty precision switches - metal	9007AW/AO	Page 3.6.26
Extra heavy duty - metal	9007T	Page 3.6.28
Foundry duty - metal	9007FT	Page 3.6.28



Application

Hoisting applications	XCKMR	Page 3.6.30
Whole current limit switches	XF9	Page 3.6.30
Conveyor belt shift monitoring	XCRT	Page 3.6.31
Machine guard interlocks	XCS	Section 3.7

Photo-electric Sensors



Cylindrical - Ø18mm	XUB	Page 3.6.33
Miniature	XUM	Page 3.6.35
Compact 50 x 50	XUK	Page 3.6.36
Compact	XUX	Page 3.6.38
Fibre optics	XUD	Page 3.6.41
Application sensors		Page 3.6.42

Inductive Proximity Sensors



Universal

Cylindrical (“self-teach”)	XS6	Page 3.6.49
Ultra Flat (“self-teach”)	XS8	Page 3.6.49
Cylindrical (universal)	XS6	Page 3.6.50
Cylindrical (universal short body)	XS1	Page 3.6.53
Cylindrical (short body)	XS5	Page 3.6.54
Ultra Flat	XS7 & XSD	Page 3.6.57

Universal - Classic

Cylindrical	XS1/XS2	Page 3.6.56
Cubic	XS7/8	Page 3.6.58
Analogue Cubic	XS9	Page 3.6.60

Application

Cylindrical - plastic	XS4	Page 3.6.61
Food & Beverage	XS9	Page 3.6.62
Analogue	XS1/XS4/XS9	Page 3.6.66
Ferrous and Non Ferrous	XS1	Page 3.6.67
Underspeed	XS9/XSAV	Page 3.6.68

3.6

Ultrasonic Sensors



Cylindrical - plastic	XX	Page 3.6.70
Flat - plastic	XX	Page 3.6.72
Analogue	XX	Page 3.6.73

Rotary Encoders



Incremental	XCC	Page 3.6.77
Absolute	XCC	Page 3.6.79

Sensor Installation Accessories



Mounting and standard accessories	Page 3.6.81
Reflectors	Page 3.6.82
Cabling accessories	Page 3.6.83
Connectors	Page 3.6.84

Limit Switches
European Style

OsiSense™: Offering Simplicity Through Innovation

Principle

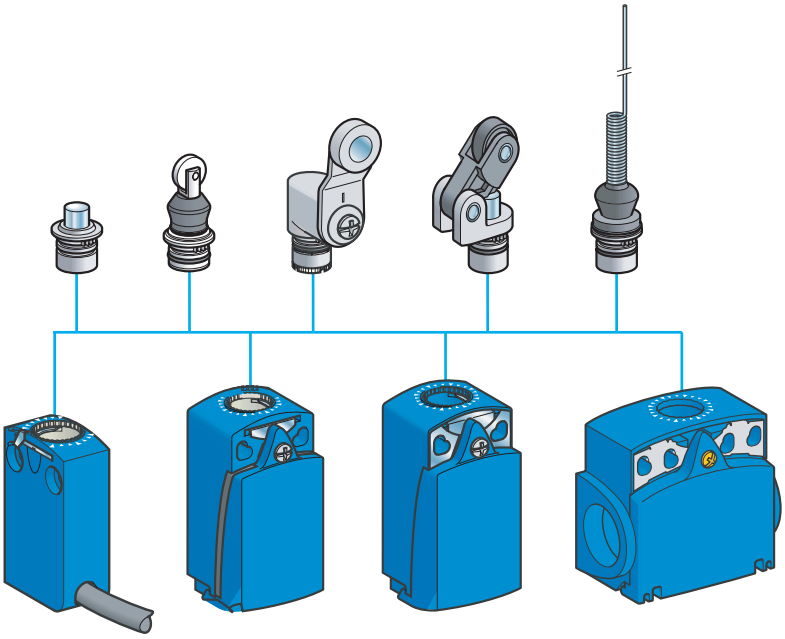
- The Miniature design XCM D and Compact design XCK D, XCK P and XCK T product ranges benefit from Osiconcept®: Offering simplicity through innovation.
- A worldwide detection first for improving productivity.

A complete offer for resolving the most commonly encountered detection problems:

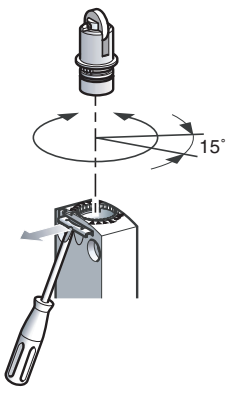
- ☐ product selection simplified
- ☐ product availability simplified
- ☐ installation and setting-up simplified
- ☐ maintenance simplified.

Operating Heads

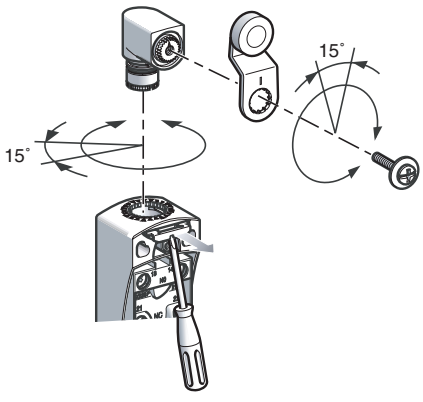
- A single range of metal operating heads for the Miniature design XCM D and Compact design XCK D, XCK P and XCK T ranges.



- Interchanging of heads achieved by simple operation of forked metal latch.
- Adjustable in 3 planes:

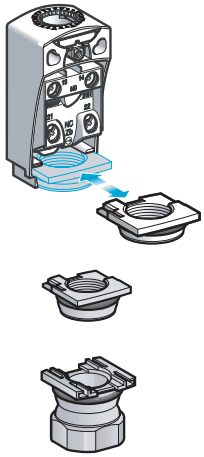


All the heads can be adjusted in 15˚ steps throughout 360˚, in relation to the body.



All the levers can be adjusted in 15˚ steps throughout 360˚, in relation to the horizontal axis of the head.

OsiSense™: Offering Simplicity Through Innovation



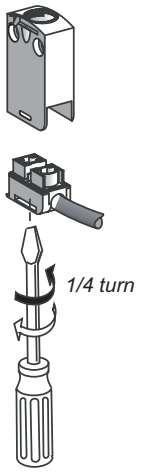
Cable entries

- ■ The cable entries for Compact design XCK D and XCK P switches enable:
- ☐ simple cabling due to unrestricted access to contacts.
- ☐ simple adaptation to the various worldwide standard conduit threads:

6 models are available:

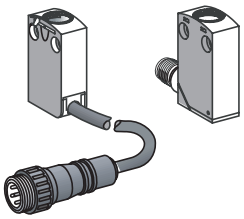
- ☐ ISO M16 x 1.5
- ☐ Pg 11
- ☐ ISO M20 x 1.5
- ☐ Pg 13
- ☐ 1/2” NPT
- ☐ PF 1/2 (G 1/2)

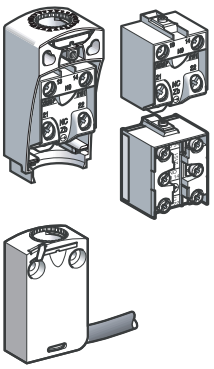
Each model is available in metal or plastic, respectively suited for Compact design XCK D and XCK P.



Connection components

- ■ The miniature XCM D range allows inter-changeability of these pre-cabled connection components:
- ☐ A 1/4 of a turn is all that is required for removing the connection component on XCM D bodies with 2 and 3 pole contacts.
- ☐ 6 alternative cable lengths are available as standard.
- ■ The miniature XCM D range also includes an integral or remote connector solution.





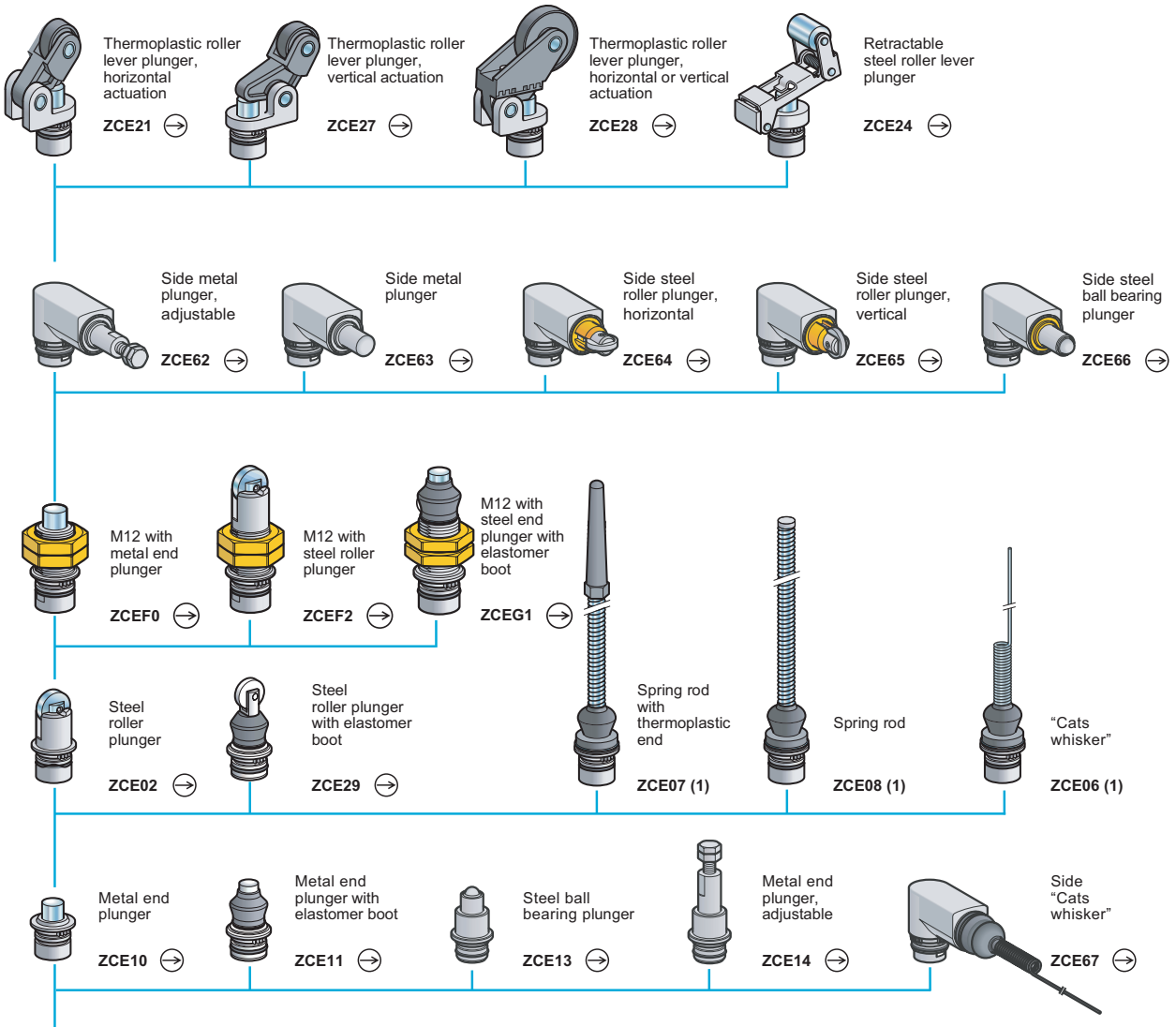
Contact block or body with contacts

- ■ 2 and 3 pole snap action and slow break contact blocks, with positive opening operation, are interchangeable between the Compact design XCK D and XCK P and Classic XCK J, XCK S, and XCK M ranges.
- ■ For the Miniature design XCM D range, the contacts are an integral part of the body:
- ☐ 2 and 3 pole snap action and slow break contacts, with positive opening operation, and interchangeable connection component.
- ☐ 4 pole snap action contacts, with positive opening operation, with monolithic body and connection components.

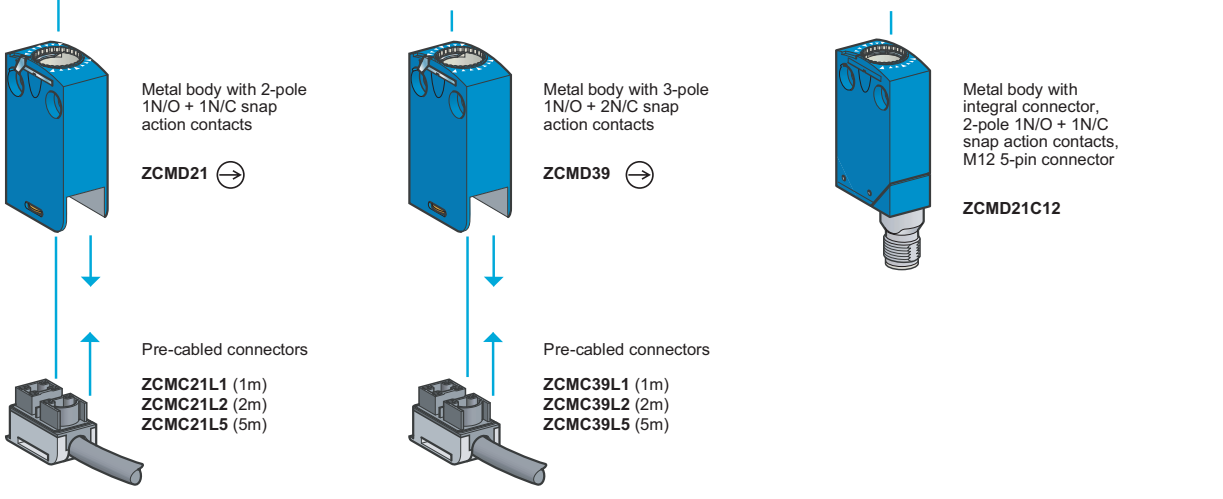
Limit Switches
European Style

OsiSense™ Universal Series
Miniature & Compact Designs

Common range of metal operating heads



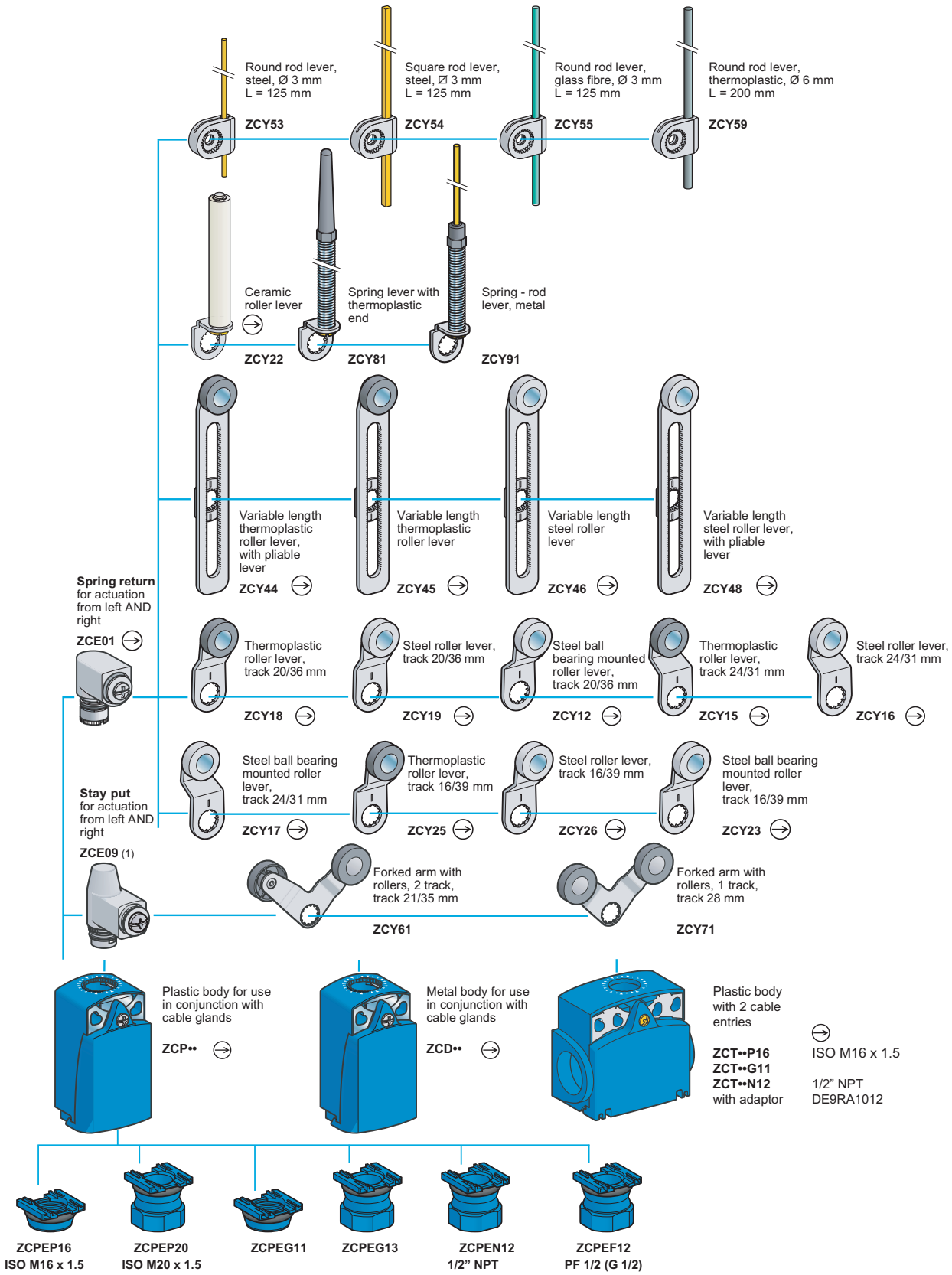
Miniature range XCM D



Note:
(1) Silicon boots for outdoor use.

Limit Switches
European Style

OsiSense™ Universal Series
Miniature & Compact Designs



Compact ranges
XCK D & XCK P

3.6

Note:
(1) Cannot be used on ZCMD21, ZCMD39 or ZCMD21C12 bodies.
(2) Cable gland entries for compact XCKD & XCKP available in metal or plastic.

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

Limit Switches
European Style

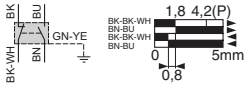
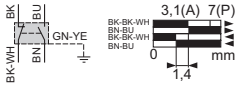
OsiSense™ Universal Series
Miniature Design, Type XCM D
Medium Duty, Metal Body Switches - IP67



XCMD2110L1

XCMD2102L1

Plunger head, pre-wired 1m cable (5)

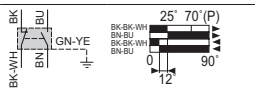
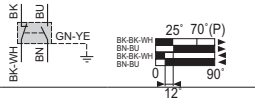
Description	Contact operation		Reference
Metal end plunger (1)	2-pole 1N/O + 1N/C Snap action		XCMD2110L1
Steel roller plunger (2)	2-pole 1N/O + 1N/C Snap action		XCMD2102L1



XCMD2115L1

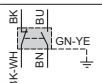
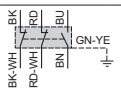
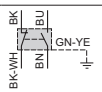
XCMD2145L1

Rotary head, pre-wired 1m cable

Description	Contact operation		Reference
Roller lever (thermoplastic) (3)	2-pole 1N/O + 1N/C Snap action		XCMD2115L1
Variable length roller lever (3)	2-pole 1N/O + 1N/C Snap action		XCMD2145L1

Body / contact sub-assembly for XCM D (4) (5)

(operating heads & levers - refer page 3.6.9)

Description	Contact operation		Reference
Pre-wired type	2-pole 1N/O + 1N/C Snap action		ZCMD21
	3-pole 1N/O + 2N/C Snap action		ZCMD39
M12 connector type	2-pole 1N/O + 1N/C Snap action		ZCMD21C12



ZCMD••



ZCMD21C12



ZCMC••L•



XZCP1164L2

Pre-cabled connection accessories

To suit body type	Body reference	Cable length (metres)		Reference
2-pole 1N/O + 1N/C Snap action	ZCMD21	1		ZCMC21L1
		2		ZCMC21L2
		5		ZCMC21L5
3-pole 1N/O + 2N/C Snap action	ZCMD39	1		ZCMC39L1
		2		ZCMC39L2
		5		ZCMC39L5
2-pole 1N/O + 1N/C Snap action	ZCMD21C12	2	Female M12 straight, 5-pin	XZCP1164L2

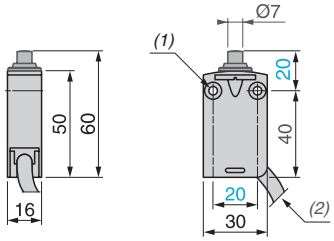
Contact block characteristics:

Switches with 2 contacts:
- ~ 4 AC-15; Ue=240V, Ie=1.5A

Switches with 3 contacts:
- ~ AC-15; Ue=240V, Ie=0.75A

Switches with 5-pin M12 connector:
- ~ Ui=60V, Ie=4A max, Ithe=4A

Mounting Dimensions (mm)



(1) 2 fixing holes Ø 4.2mm, counterbored Ø 8mm by 4mm deep
(2) Overall diameter of cable 7.5mm.

Note:
(1) Actuation on end. Maximum speed : 0.5m/s.
(2) Actuation by 30° cam. Maximum speed : 0.5m/s.
(3) Actuation by 30° cam. Maximum speed : 1.5m/s.
(4) For XCMD range, the contacts are an integral part of the body.
(5) Body dimensions (mm) : 30W x 50H x 16D

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

Limit Switches
European Style

OsiSense™ Universal Series
Compact Design, EN 50047, type XCK D
Medium Duty, Metal Body Switches - IP67

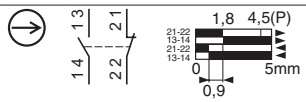
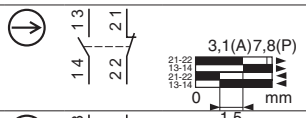
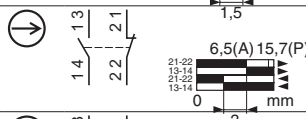
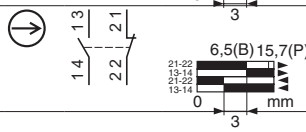


XCKD2110P16



XCKD2102P16

Plunger head, ISO M16 x 1.5 cable entry (6)

Description	Contact operation			Reference
Metal end plunger (1)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)			XCKD2110P16
Steel roller plunger (2)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)			XCKD2102P16
Thermoplastic roller lever Horizontal actuation (3)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)			XCKD2121P16
Thermoplastic roller lever Vertical actuation (3)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)			XCKD2127P16

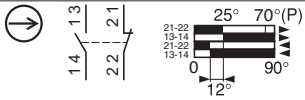
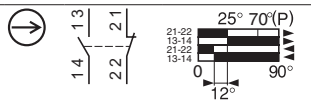


XCKD2121P16



XCKD2127P16

Rotary head, ISO M16 x 1.5 cable entry (6)

Description	Contact operation			Reference
Roller lever (thermoplastic) (4)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)			XCKD2118P16
Variable length roller lever (thermoplastic) (4)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)			XCKD2145P16

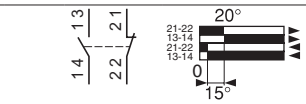


XCKD2118P16



XCKD2145P16

Multi-directional head, ISO M16 x 1.5 cable entry (6)

Description	Contact operation			Reference
Cat's whisker (5)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)			XCKD2106P16

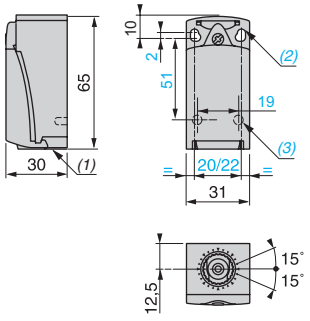


XCKD2106P16

Contact block characteristics:
XE2•P ~ AC-15; Ue=240V, Ie=3A, Ithe=10A
XE3•P ~ AC-15; Ue=240V, Ie=1.5A, Ithe=6A

Note:
(1) Actuation on end. Maximum speed : 0.5 m/s.
(2) Actuation by 30° cam. Maximum speed : 0.5 m/s.
(3) Actuation by 30° cam. Maximum speed : 1 m/s.
(4) Actuation by 30° cam. Maximum speed : 1.5 m/s.
(5) Actuation by any moving part.
Maximum speed : 1m/s.
Flexible operators are not suitable for positive opening applications
(6) Body dimensions (mm) : 31W x 65H x 30D

Mounting Dimensions (mm)



(1) Tapped entry for ISO M16 x 1.5.
(2) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres
2 holes 4.3 on 20 mm centres
(3) 2 x Ø 3 holes for support studs, depth 4 mm.

3.6

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

Limit Switches
European Style

OsiSense™ Universal Series
Compact Design, EN 50047, Type XCK P
Light Duty, Double Insulated Body Switches - IP67


XCKP2110P16

XCKP2102P16


XCKP2121P16

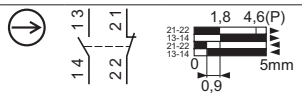
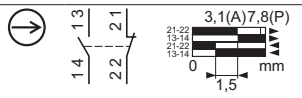
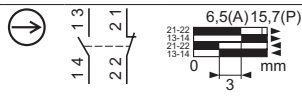
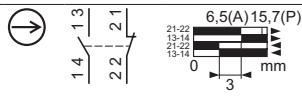
XCKP2127P16


XCKP2118P16

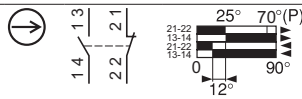
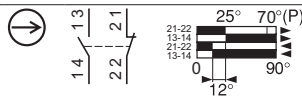
XCKP2145P16


XCKP2106P16

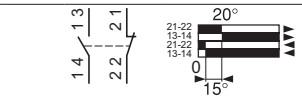
Plunger head, ISO M16 x 1.5 cable entry (6)

Description	Contact operation		Reference
Metal end plunger (1)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)		XCKP2110P16
Steel roller plunger (2)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)		XCKP2102P16
Thermoplastic roller lever Horizontal actuation (3)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)		XCKP2121P16
Thermoplastic roller lever Vertical actuation (3)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)		XCKP2127P16

Rotary head, ISO M16 x 1.5 cable entry (6)

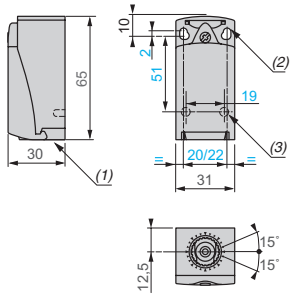
Description	Contact operation		Reference
Roller lever (thermoplastic) (4)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)		XCKP2118P16
Variable length roller lever (4)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)		XCKP2145P16

Multi-directional head, ISO M16 x 1.5 cable entry (6)

Description	Contact operation		Reference
"Cat's whisker" (5)	2-pole 1N/O + 1N/C Snap action (XE2SP2151)		XCKP2106P16

Contact block characteristics:
XE2•P ~ AC-15; Ue=240V, Ie=3A, Ithe=10A
XE3•P ~ AC-15; Ue=240V, Ie=1.5A, Ithe=6A

Mounting Dimensions (mm)



Note:
(1) Actuation on end. Maximum speed : 0.5 m/s.
(2) Actuation by 30° cam. Maximum speed : 0.5 m/s.
(3) Actuation by 30° cam. Maximum speed : 1 m/s.
(4) Actuation by 30° cam. Maximum speed : 1.5 m/s.
(5) Actuation by any moving part. Maximum speed : 1m/s. Flexible operators are not suitable for positive opening applications
(6) Body dimensions (mm) : 31W x 65H x 30D

(1) Tapped entry for ISO M16 x 1.5.
(2) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres 2 holes 4.3 on 20 mm centres
(3) 2 x Ø 3 holes for support studs, depth 4 mm.

3.6

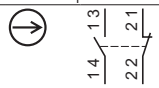
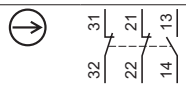
Limit Switches
European Style

OsiSense™ Universal Series
Compact Design, EN 50047, types XCK D & XCK P
Metal & Double Insulated Body Switches - IP67


ZCD••


ZCP••

Body / contact sub-assembly for XCK D & XCK P - conduit entry type
(operating heads & levers - refer page 3.6.9)

Description	Contact operation	Body material	Reference
2-pole 1N/O + 1N/C Snap action (XE2SP2151)		Metal	ZCD21
		Plastic	ZCP21
3-pole 1N/O + 2N/C Snap action (XE3SP2141)		Metal	ZCD39
		Plastic	ZCP39


ZCDEP16


ZCPEP16


ZCDEP20


ZCPEP20

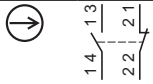
Threaded cable glands for XCK D & XCK P - conduit entry type (1)

Description	Body material	Reference
ISO M16 x 1.5	Metal	ZCDEP16
	Plastic	ZCPEP16
ISO M20 x 1.5	Metal	ZCDEP20
	Plastic	ZCPEP20
Pg 13.5	Metal	ZCDEG13
	Plastic	ZCPEG13


ZCD••M12


ZCP••M12

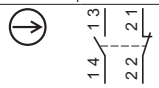
Body / contact sub-assembly for XCK D & XCK P - M12 connector type (2)
(operating heads - refer page 3.6.9)

Description	Contact operation	Body material	Reference
2-pole 1N/O + 1N/C Snap action (XE2SP2151)		Metal	ZCD21M12
		Plastic	ZCP21M12


ZCP21D44


ZCPED44

Components for connection using DEUTSCH connector

Description	Contact operation	Body material	Reference
2-pole 1N/O + 1N/C Snap action (XE2SP2151) Body with DEUTSCH connector		Plastic	ZCP21D44
DEUTSCH connector only for connection to body DT02-4P			ZCPED44

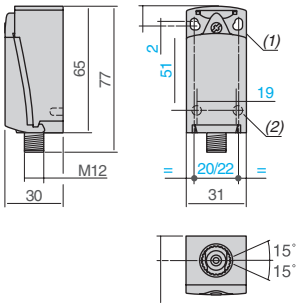

XZCP1164L2

Integral M12 connector



XE2S P2151
1-2: N/C
3-4: N/O
5: ⏚

Mounting Dimensions (mm)



Note:
(1) Other threaded cable glands available in metal and plastic - Pg 11, ½" NPT, PF ½ (G½).
Metal cable glands not suitable for plastic body/contact sub-assembly and vice versa.
(2) Require female M12 5-pin connector to suit ZC•21M12 bodies.
Refer page 3.6.5

(1) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres 2 holes 4.3 on 20 mm centres.
(2) 2 x Ø 3 holes for support studs, depth 4 mm.

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

Limit Switches
European Style

OsiSense™ Universal Series
Miniature Type XCM D & Compact Types XCK D & XCK P
Operating Heads & Levers


ZCE10 ZCE11

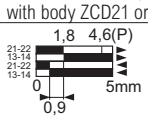
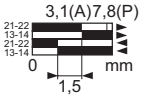
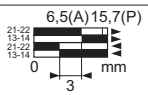
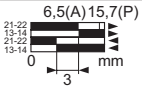
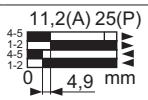

ZCEF0 ZCEH0


ZCE02 ZCEF2 ZCEH2

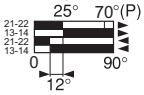

ZCE21 ZCE27 ZCE24


ZCE01

Plunger heads (2)

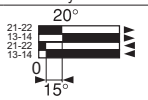
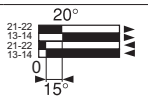
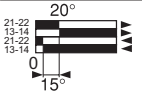
Description	Contact operation (1) with body ZCD21 or ZCP21		Reference
Metal end plunger Metal end plunger with elastomer boot M12 with metal end plunger (3) M18 with end plunger (4)		→	ZCE10 ZCE11 ZCEF0 ZCEH0
Steel roller plunger M12 with steel roller plunger (3) M18 with steel roller plunger (4)		→	ZCE02 ZCEF2 ZCEH2
Thermoplastic roller lever plunger horizontal actuation (1 direction)		→	ZCE21
Thermoplastic roller lever plunger vertical actuation (1 direction)		→	ZCE27
Retractable steel roller lever		→	ZCE24

Rotary head (2)

Description	Contact operation (1) with body ZCD21 or ZCP21		Reference
Actuation from left AND right hand side spring return		→	ZCE01


ZCE08 ZCE07 ZCE06

Multi-directional heads (5)

Description	Contact operation (1) with body ZCD21 or ZCP21	Reference
Spring lever		ZCE08
Spring lever with thermoplastic end		ZCE07
"Cat's whisker"		ZCE06

Note:
(1) Contact operation diagram when used with body ZCMD21.
(2) All heads can be adjusted in 15° increments throughout 360° in relation to the body.
(3) Recommended for use with miniature type ZCMD••.
(4) Recommended for use with compact types ZCP•• and ZCD••.
(5) Flexible operators are not suitable for positive opening applications.

Limit Switches
European Style

OsiSense™ Universal Series
Miniature Type XCM D & Compact Types XCK D & XCK P
Operating Heads & Levers


ZCY15 ZCY16


ZCY25 ZCY26


ZCY18 ZCY19


ZCY45 ZCY22 ZCY55 ZCY91


ZCY39 ZCY49

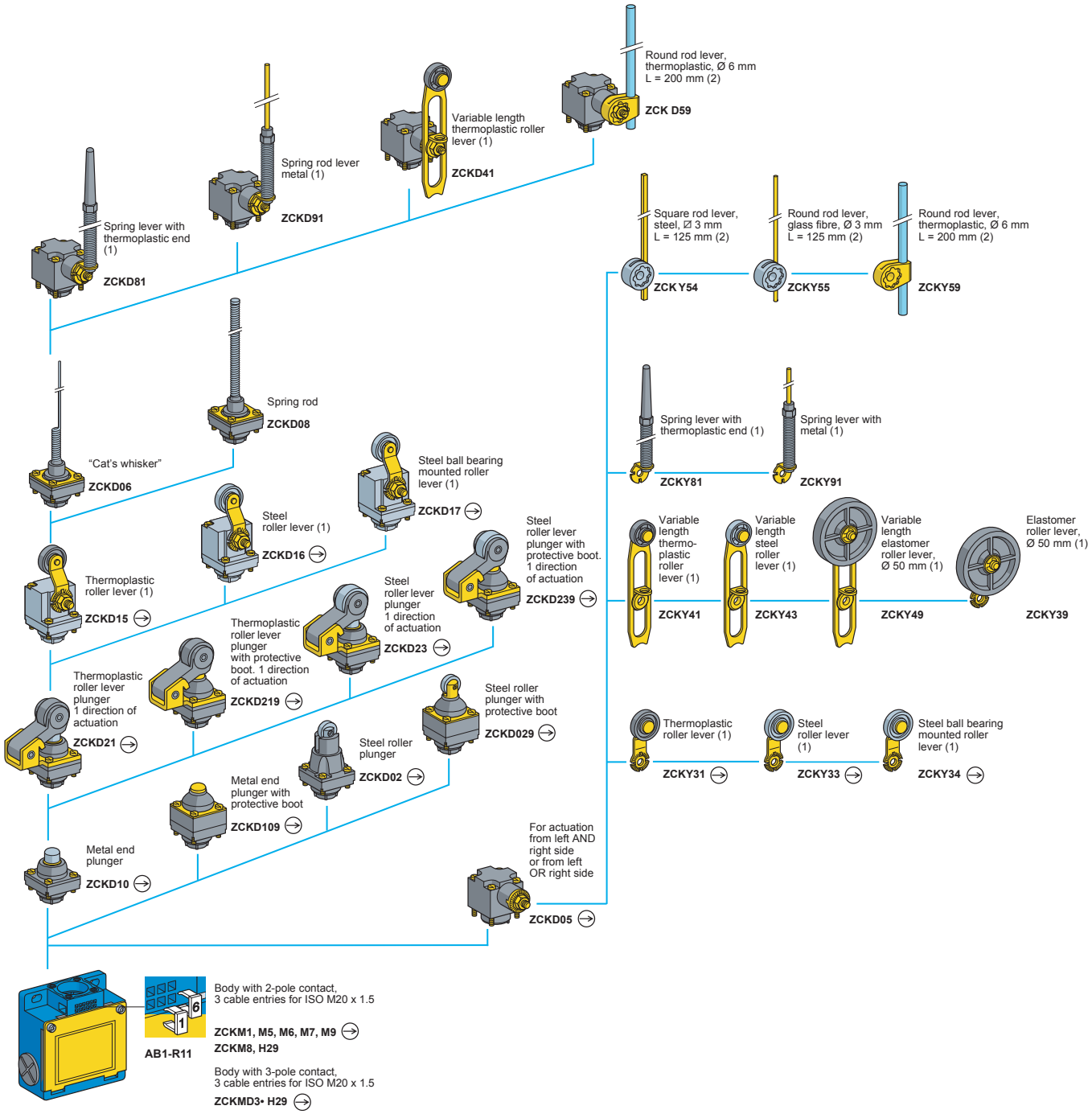
Levers for rotary heads

Description			Reference
Thermoplastic roller lever (3)	→	Track: 24/31mm ZCMD & 29/36mm ZCD/P	ZCY15
Steel roller lever (3)	→	Track: 24/31mm ZCMD & 29/36mm ZCD/P	ZCY16
Thermoplastic roller lever (3)	→	Track: 16/39mm ZCMD & 21/44mm ZCD/P	ZCY25
Steel roller lever (3)	→	Track: 16/39mm ZCMD & 21/44mm ZCD/P	ZCY26
Thermoplastic roller lever (3)	→	Track: 20/36mm ZCM D & 24/40mm ZCD/P	ZCY18
Steel roller lever (3)	→	Track: 20/36mm ZCM D & 24/40mm ZCD/P	ZCY19
Ceramic roller lever	→		ZCY22
Variable length thermoplastic roller lever	→		ZCY45
Round glass fibre rod lever Ø3mm Length = 125mm (4)	→		ZCY55
Metal spring lever (4)	→		ZCY91
Thermoplastic roller lever Ø50mm (5)	→		ZCY39
Adjustable thermoplastic roller lever Ø50mm (5)	→		ZCY49

Note:
(1) Recommended for use with compact types XCKD & XCKP.
(2) Recommended for use with miniature type XCMD.
(3) Track distance is measured from the back of the switch to the centre of the roller.
(4) Flexible operators are not suitable for positive opening applications.
(5) For use only with compact types XCKD & XCKP.
(6) All levers are adjustable in 15° increments throughout 360° in relation to the horizontal axis of the head.

Limit Switches
European Style

OsiSense™ Classic
Types XCK M & XCK ML



Note:
(1) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.
(2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.

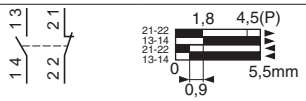
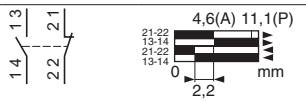
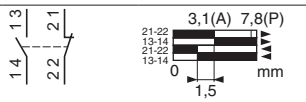
For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

Limit Switches
European Style

OsiSense™ Classic
Types XCK M & XCK ML
Medium Duty, Metal Body Switches - IP66

Plunger head, 3 ISO M20 x 1.5 cable entries

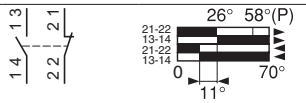
Description	Contact operation		Reference
Metal end plunger (1)	2-pole 1N/O + N/C snap action (XE2SP2151)		XCKM110H29
Steel roller plunger (2)	2-pole 1N/O + 1N/C snap action (XE2SP2151)		XCKM102H29
Thermoplastic roller lever Horizontal actuation (3)	2-pole 1N/O + 1N/C snap action (XE2SP2151)		XCKM121H29


XCKM110H29

XCKM102H29

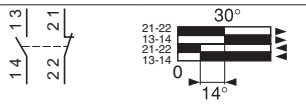

XCKM121H29

Rotary head, 3 ISO M20 x 1.5 cable entries

Description	Contact operation		Reference
Thermoplastic roller lever (3)	2-pole 1N/O + 1N/C snap action (XE2SP2151)		XCKM115H29

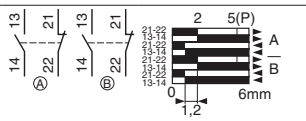
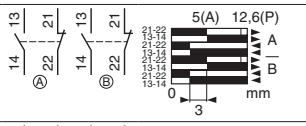
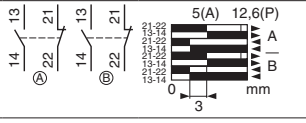

XCKM115H29

Multi-directional head, 3 ISO M20 x 1.5 cable entries

Description	Contact operation		Reference
"Cat's whisker" (4)	2-pole 1N/O + 1N/C snap action (XE2SP2151)		XCKM106H29


XCKM106H29

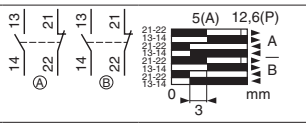
Plunger heads, 3 ISO M20 x 1.5 cable entries

Description	Contact operation		Reference
Metal end plunger (1)	Two 2-pole N/O + N/C snap action (XESP2151L)		XCKML110H29
Steel roller plunger (2)	Two 2-pole N/O + N/C snap action (XESP2151L)		XCKML102H29
Thermoplastic roller lever Horizontal actuation (3)	Two 2-pole N/O + N/C snap action (XESP2151L)		XCKML121H29


XCKML102H29


XCKML121H29

Rotary head, 3 ISO M20 x 1.5 cable entries

Description	Contact operation		Reference
Thermoplastic roller lever (3)	Two 2-pole N/O + N/C snap action		XCKML115H29


XCKML115H29

Note:
(1) Actuation on end. Maximum speed : 0.5 m/s.
(2) Actuation by 30° cam. Maximum speed : 0.5 m/s.
(3) Actuation by 30° cam. Maximum speed : 1.5 m/s.
(4) Actuation by any moving part. Maximum speed : 1 m/s.
Flexible operators are not suited for positive opening applications.

Contact block characteristics:
XE2-P ~ AC-15; Ue = 240V, Ie = 3A, Ithe = 10A
XE3-P ~ AC-15; Ue = 240V, Ie = 1.5A, Ithe = 6A

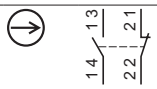
Limit Switches
European Style

OsiSense™ Classic
Types XCK M & XCK ML
Medium Duty, Metal Body Switches - IP66



ZCKM1H29

Body / contact sub-assembly for XCK M

Description	Contact operation	Reference
Without mechanical indicator (contact state)	2-pole 1N/O + 1N/C snap action (XE2SP2151) 	ZCKM1H29

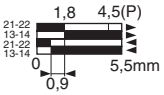
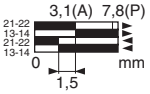
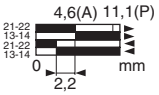


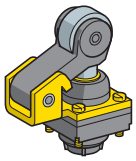
ZCKD10



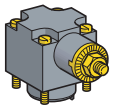
ZCKD02

Plunger heads

Description	Contact operation with body ZCK M	Reference
Metal end plunger		ZCKD10
Steel roller plunger		ZCKD02
Thermoplastic roller lever plunger Horizontal actuation (1 direction)		ZCKD21



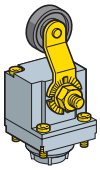
ZCKD21



ZCKD05

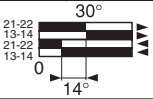
Rotary heads

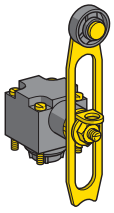
Description	Reference
Without operator	ZCKD05
Thermoplastic roller lever	ZCKD15
Thermoplastic roller lever (variable length)	ZCKD41



ZCKD15

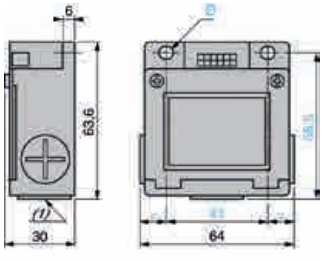
Multi-directional head

Description	Contact operation with body ZCK M	Reference
"Cat's whisker"		ZCKD06

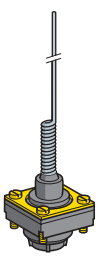


ZCKD41

Mounting Dimensions (mm)



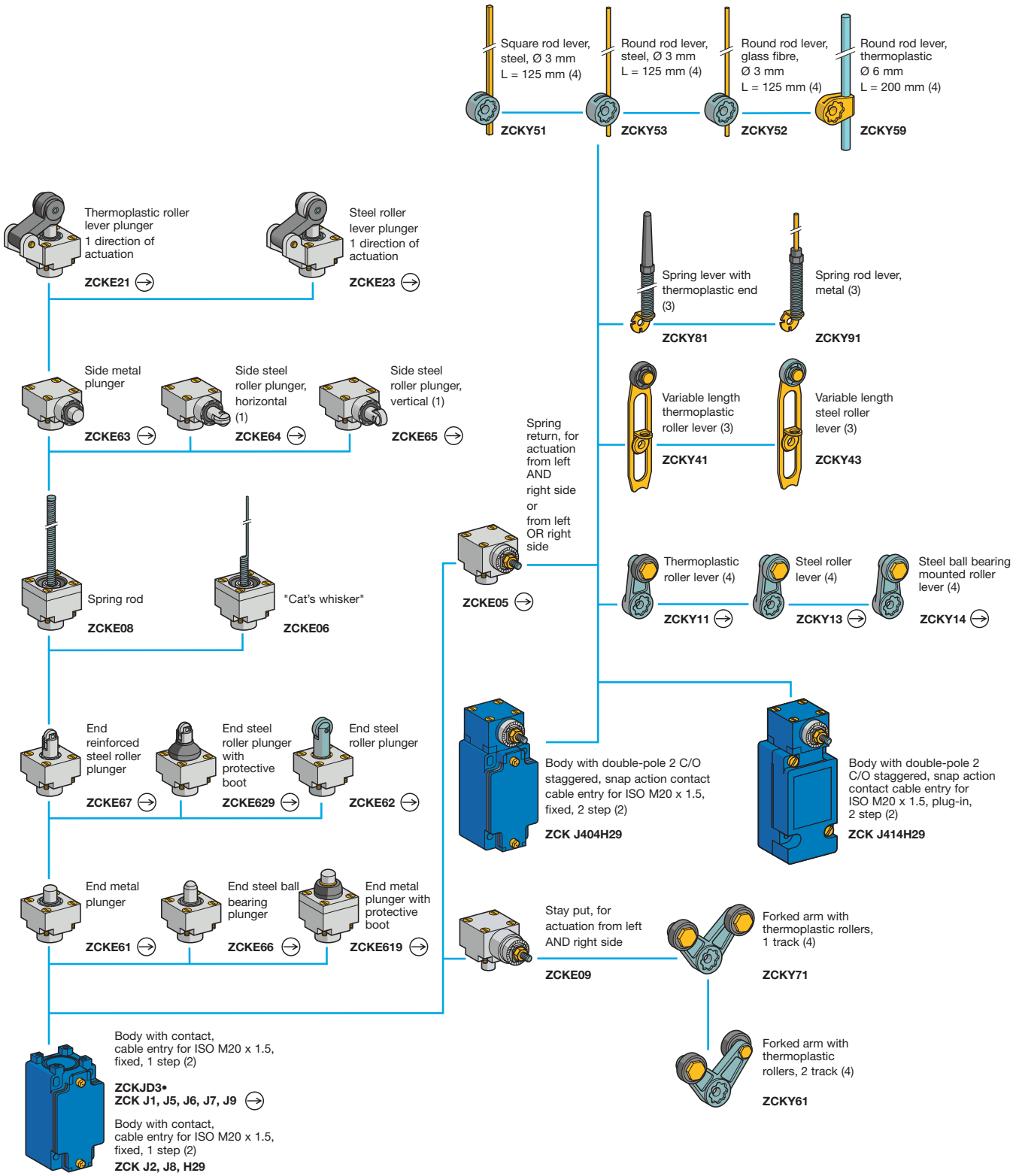
(1) 3 tapped entries for ISO M20 x 1.5.
Ø: 2 elongated holes Ø5.2 x 6.2



ZCKD06

Limit Switches
European Style

OsiSense™ Classic
EN 50041, Type XCK J
Heavy Duty, Metal Body Switches - IP66



Note:
(1) Cannot be used on ZCKJ4 and ZCKJ41 bodies.
(2) For cable entry ISO M20 x 1.5, add suffix H29 to the end of the reference
Example: ZCKJ1 becomes ZCKJ1H29.
(3) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.
(4) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.

For more info:

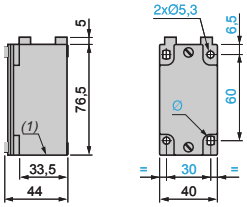
- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

Limit Switches
European Style

OsiSense™ Classic
EN 50041, Type XCK J
Heavy Duty, Metal Body Switches - IP66

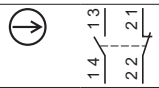
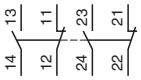
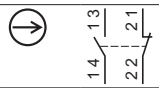
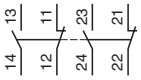


ZCKJ1H29

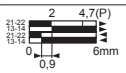
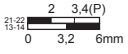
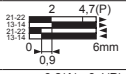
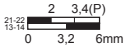
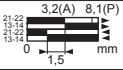
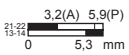
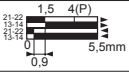
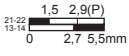
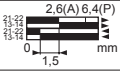
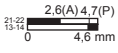
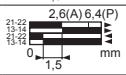
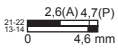


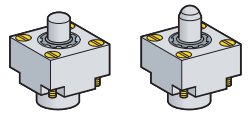
(1) 1 tapped entry for ISO M20 x 1.5
: 2 elongated holes 5.3 x 7.3.

Body / contact sub-assembly for XCK J

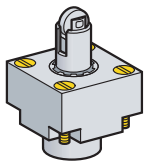
Description	Contact operation	Reference
1 step		
2-pole 1N/O + 1N/C snap action (XE2SP2151)		ZCKJ1H29
2-pole 2C/O snap action, simultaneous (XESP2021)		ZCKJ2H29
2-pole 1N/O + 1N/C break before make (slow break) (XE2NP2151)		ZCKJ5H29
2 step		
2-pole 1C/O + 1C/O snap action, staggered (XESP2031)		ZCKJ4H29

Plunger heads

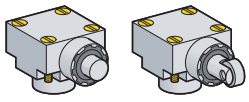
Description		Contact operation with ZCKJ1H29 ZCKJ2H29	ZCKJ5H29	Reference
1 step				
Metal end plunger spring return (1)	(6)			ZCKE61
End steel ball bearing plunger, spring return (2)	(6)			ZCKE66
End reinforced steel roller plunger, spring return (3)	(6)			ZCKE67
Side metal plunger, spring return (1)	(6)			ZCKE63
Side steel roller plunger Horizontal, spring return (4)	(6)			ZCKE64
Side steel roller plunger Vertical, spring return (4)	(6)			ZCKE65
Thermoplastic roller lever, 1 direction of actuation (5)				ZCKE21
Steel roller lever plunger, 1 direction of actuation (5)				ZCKE23



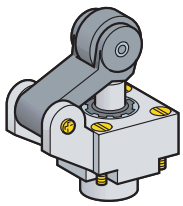
ZCKE61 ZCKE66



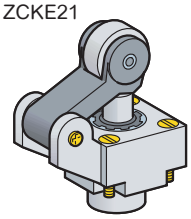
ZCKE67



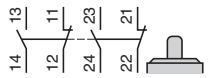
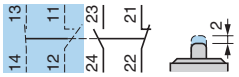
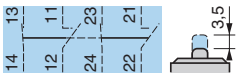
ZCKE63 ZCKE65



ZCKE21



ZCKE23

Description	Contact operation with ZCKJ4H29	Reference
2 step		
Metal end plunger, spring return (1)		ZCKE61
End steel ball bearing plunger, spring return (2)		ZCKE66
End reinforced steel roller plunger, spring return (3)		ZCKE67

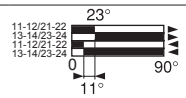
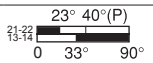
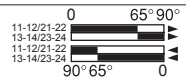
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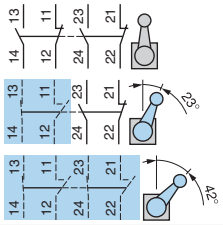
(1) Actuation on end. Maximum speed : 0.5 m/s.
(2) Actuation by 30° cam. Maximum speed : 0.1 m/s.
(3) Actuation by 30° cam. Maximum speed : 1 m/s.
(4) Actuation by 30° cam. Maximum speed : 0.6 m/s.
(5) Actuation by 30° cam. Maximum speed 1.5 m/s.
(6) Positive opening N/C contact when used with the ZCKJ1J29 or ZCKJ5H29 body/contact sub-assembly.
(7) Operating heads fitted to ZCKJ2H29 bodies (2-pole contact, type XESP2021) have the same tripping and reset points as with ZCKJ1H29 bodies (single pole contact, type XESP2151).

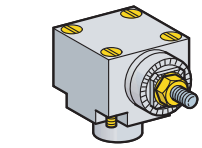
Limit Switches
European Style

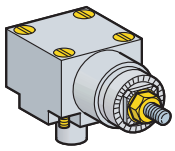
OsiSense™ Classic
EN 50041, Type XCK J
Heavy Duty, Metal Body Switches - IP66

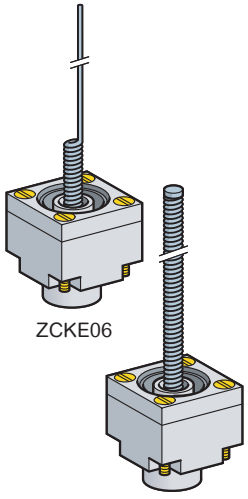
Rotary heads with nut and lock washer (without operator)

Description	Contact operation ZCKJ1H29 ZCKJ2H29	ZCKJ5H29	Reference
1 step			
Actuation from right AND left, spring return (1) OR actuation from right OR left, spring return (1)			ZCKE05
Actuation from right AND left, stay put (2)		Note: Not to be used with slow break contacts.	ZCKE09

Description	Contact operation ZCKJ4H29	Reference
2 step		
2 step from right AND left, spring return (1) OR 2 step from right OR left, spring return (1)		ZCKE05

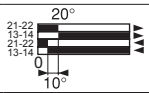
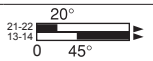
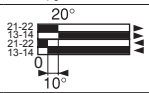
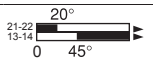

ZCKE05


ZCKE09

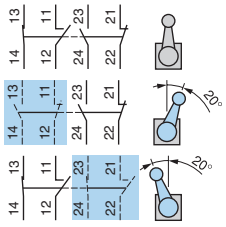

ZCKE06

ZCKE08

Multi-direction heads (Flexible operators are not suitable for positive opening operation applications)

Description	Contact operation with ZCKJ1H29 ZCKJ2H29	ZCKJ5H29	Reference
1 step			
"Cat's whisker" (3)			ZCKE06
Spring rod lever (4)			ZCKE08

Body / contact sub-assembly with rotary head fitted

Description	Contact operation	Reference
2 step		
1st contact actuated from the left, spring return (1) AND 2nd contact actuated from the right, spring return (1) (operator to be ordered separately)		ZCKJ404H29 (5)


ZCKJ404H29

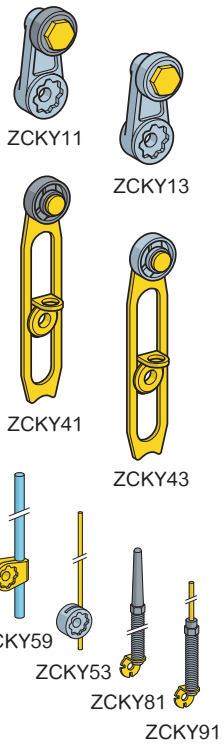
Note:
(1) Actuation by 30° cam or cylindrical finger, depending on type of operator. Maximum speed : 1.5 m/s.
(2) Actuation by 30° cam. Maximum speed : 0.5 m/s.
(3) Actuation of contacts from any direction by cylindrical finger. Maximum speed : 1 m/s.
(4) Actuation of contacts from any direction by cylindrical finger. Maximum speed : 0.5 m/s.
(5) Operating heads fitted to ZCKJ2H29 bodies (2-pole contact, type XESP2021) have the same tripping and reset points as with ZCKJ1H29 bodies (single pole contact, type XESP2051).
(6) Other versions (Please consult Schneider Electric on 1300 369 233.)
Limit switches with 1N/O+1N/O 2 step, 1N/C+1N/C simultaneous and 1N/O+1N/C make before break (slow break) with positive opening operation.
Limit switches for use in corrosive atmospheres and high (+120°C) or low (-40°C) ambient air temperatures.
Limit switches fitted with pilot lights.
Limit switches with snap action gold flashed contacts, for low power switching.
Limit switches fitted with "M12" plug connectors.

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

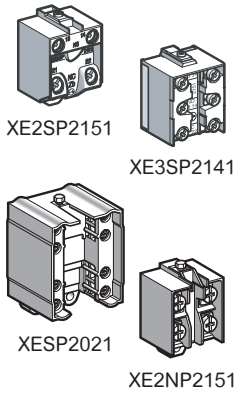
Limit Switches
European style

OsiSense™ Classic
EN 50041, Type XCK J
Heavy Duty, Metal Body Switches - IP66

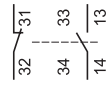
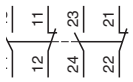


Operators

Description		Reference
Thermoplastic roller lever	Adjustable throughout 360° in 5° or 45° steps	ZCKY11
Steel roller lever	Adjustable throughout 360° in 5° or 45° steps	ZCKY13
Steel ball bearing mounted roller lever	Adjustable throughout 360° in 5° or 45° steps	ZCKY14
Variable length thermoplastic roller lever	Adjustable throughout 360° in 5° or 90° steps	ZCKY41
Variable length steel roller lever	Adjustable throughout 360° in 5° or 90° steps	ZCKY43
Thermoplastic rod lever Ø6 mm Length = 200 mm	Adjustable throughout 360° in 5° or 45° steps	ZCKY59
Glass fibre rod lever u3 mm Length = 125 mm	Adjustable throughout 360° in 5° or 45° steps	ZCKY52
Steel round rod lever Ø3 mm Length = 125 mm	Adjustable throughout 360° in 5° or 45° steps	ZCKY53
Steel square rod lever u3 mm Length = 125 mm	Adjustable throughout 360° in 5° or 45° steps	ZCKY51
Spring lever with thermoplastic end	Adjustable throughout 360° in 5° or 90° steps	ZCKY81
Spring metal rod lever	Adjustable throughout 360° in 5° or 90° steps	ZCKY91
Forked arm, double track, thermoplastic roller lever (only for use with head ZCKE09)	Adjustable throughout 360° in 5° or 45° steps	ZCKY61
Forked arm, single track, thermoplastic roller lever (only for use with head ZCKE09)	Adjustable throughout 360° in 5° or 45° steps	ZCKY71



Replacement Contact Blocks

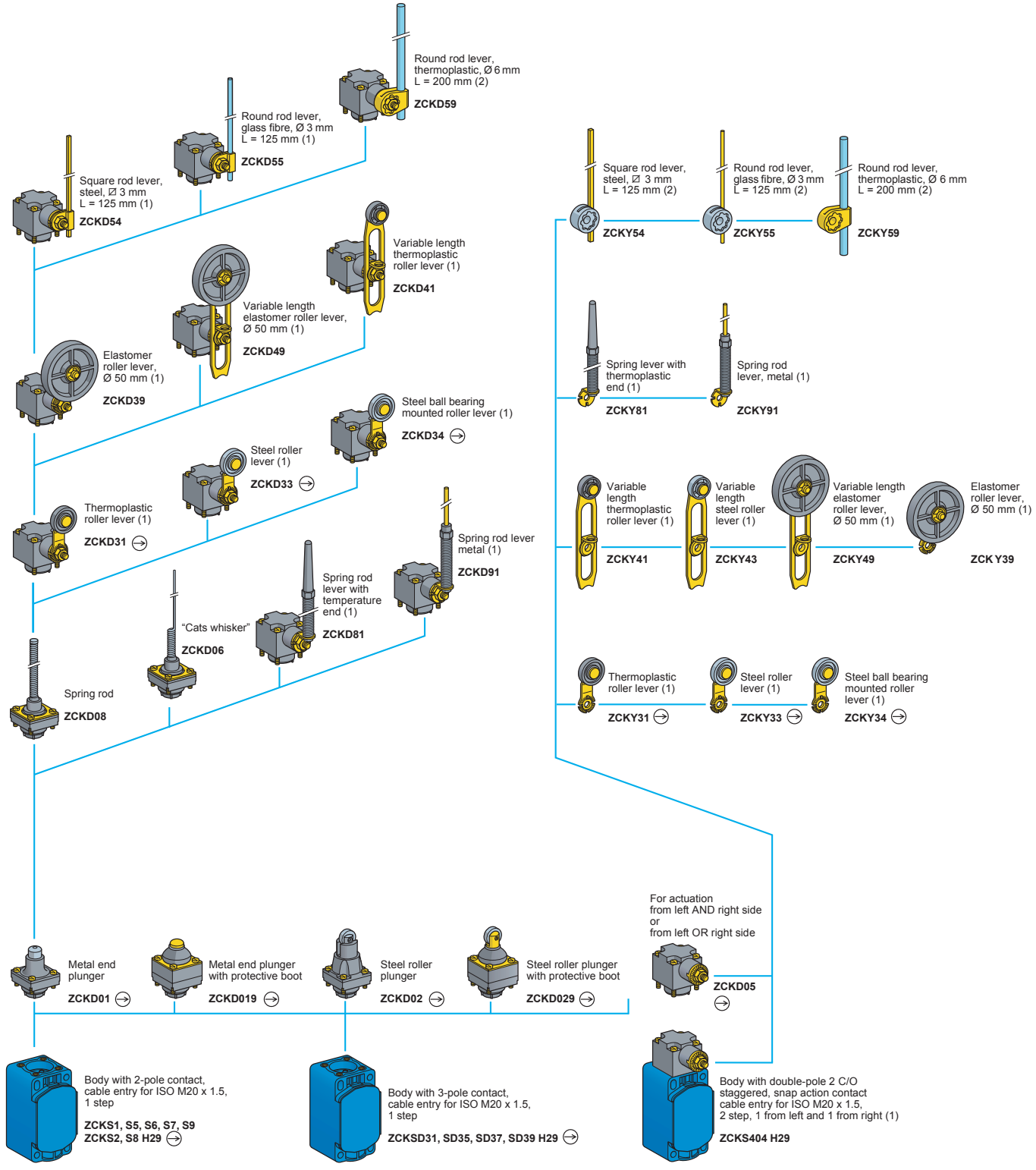
Description	For bodies	Scheme	Reference
2-pole 1N/O+1N/C snap action	ZCD21 & P21 ZCKJ1H29 ZCKM1H29 ZCKS1H29		XE2SP2151
3-pole 1N/O+2N/C snap action	ZCD39 & P39		XE3SP2141
3-pole 1N/C + 2N/O snap action	ZCD39 & P39		XE3SP2151
2-pole 2C/O snap action	ZCKJ2H29		XESP2021
2-pole 1N/O+1N/C, (slow break), break before make	ZCD25 & P25 ZCKJ5H29 ZCKM5H29 ZCKS5H29		XE2NP2151

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

Limit Switches
European Style

OsiSense™ Classic
EN 50041, type XCK S
Medium Duty, Double Insulated Body Switches - IP65



Note:
(1) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.
(2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

Limit Switches
European Style

OsiSense™ Classic
EN 50041, Type XCK S
Medium Duty, Double Insulated Body Switches - IP65

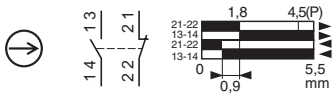
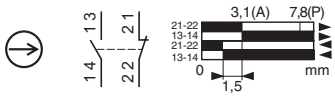


XCKS101H29



XCKS102H29

Plunger Head, ISO M20 x 1.5 cable entry

Description	Contact operation		Reference
Metal end plunger (1)	2-pole 1N/O+1N/C snap action (XE2SP2151)		XCKS101H29
Steel roller plunger (2)	2-pole 1N/O+1N/C snap action (XE2SP2151)		XCKS102H29

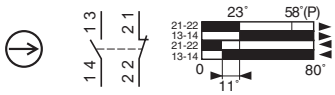
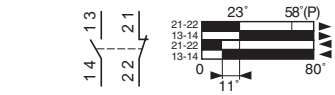
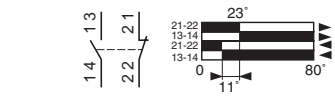


XCKS131H29



XCKS141H29

Rotary head switches supplied for actuation from right AND left (6)
ISO M20 x 1.5 cable entry

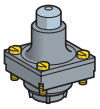
Description	Contact operation		Reference
Thermoplastic roller lever (3)	2-pole 1N/O+1N/C snap action (XE2SP2151)		XCKS131H29
Variable length roller lever (4)	2-pole 1N/O+1N/C snap action (XE2SP2151)		XCKS141H29
Thermoplastic rod lever Ø 6mm, Length = 200 mm (5)	2-pole 1N/O+1N/C snap action (XE2SP2151)		XCKS159H29



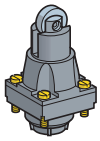
XCKS159H29

Spare operating heads

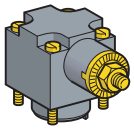
Type of operator	Maximum speed	Reference
Metal end plunger	0.5m/s	ZCKD01
Steel roller plunger	0.5m/s	ZCKD02
Rotary head (without lever)	1.5m/s	ZCKD05



ZCKD01



ZCKD02



ZCKD05

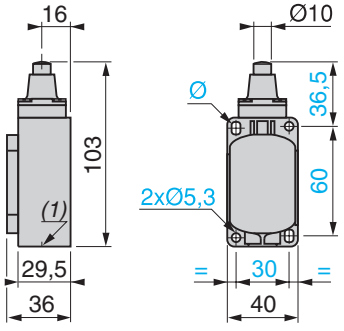
Note:

(1) Actuation on end. Maximum speed : 0.5 m/s.
(2) Actuation by 30° cam. Maximum speed : 0.5 m/s.
(3) Lever adjustable throughout 360° in 5° steps or in 90° steps by reversing the lever mounting.
Actuation by 30° cam. Maximum speed : 1.5 m/s (1 m/s for XCKS•39H29).
(4) Lever adjustable throughout 360° in 5° steps, or in 90° steps by reversing the lever mounting.
Actuation by 30° cam. Maximum speed : 1.5 m/s.
(5) Rod adjustable throughout 360° in 5° steps or in 45° steps by reversing the notched washer.
Actuation by any moving part. Maximum speed : 1.5 m/s.
(6) The operating head may also be programmed to give actuation from the right OR left.
(7) Other versions: (Please consult the Schneider Electric Customer Service Centre on 1300 369 233.)
Limit switches with 2-pole slow break contact blocks, 1N/C+1N/C simultaneous contacts, (positive opening operation), 2N/O+2N/C or 1N/O+1N/O simultaneous contacts.

Contact block characteristics:

XE2•P ~ AC-15; A300 (Ue = 240V, Ie = 3A); Ithe = 10A
XE3•P ~ AC-15; B300 (Ue = 240V, Ie = 1.5A); Ithe = 6A

Mounting Dimensions (mm)



(1) 1 tapped entry for ISO M20 x 1.5.
(2) Ø 6 rod, length 200 mm.
Ø: 2 elongated holes Ø 5.3 x 7.3.

Limit Switches
European Style – Wireless Technology

OsiSense - Wireless & Battery-less limit switches.
IP66 & IP67 Conformity



New wireless and battery-less OsiSense™ XCKW limit switch

The OsiSense™ XCKW wireless limit switch is a breakthrough device serving a vast number of applications, using ZigBee® Green Power technology at 2.4 GHz (IEEE 802.15.4) Up to 100m distance in open field, extendable with relay antenna.

Wireless

Simplify machine communication where cabling is difficult, expensive, or unwanted. It's also the perfect way to give mobile machines more freedom of movement.



XCKWD31

Ready to use Limit switch transmitter & receiver packs *(NB)*

Description	Output Type	Reciever Voltage	Reference
1 limit switch with steel roller plunger XCKW102 1 receiver with 2 relay outputs ZBRRD	2 relay outputs	24…240 V AC/DC	XCKWD02
1 limit switch with thermoplastic roller lever XCKW131 1 receiver with 2 relay outputs ZBRRD	2 relay outputs	24…240 V AC/DC	XCKWD31

NB: The transmitter (limit switch) and receiver are factory-paired



XCKW102



XCKW133

Wireless Battery-less Limit Switch Transmitters

Description	Reference
Metal end plunger	XCKW101
Steel roller plunger	XCKW102
Thermoplastic roller lever	XCKW131
Steel roller lever	XCKW133
Variable length thermoplastic roller lever (1)	XCKW141
Variable length steel roller lever (1)	XCKW143
Elastomer roller lever, Ø 50 mm	XCKW139
Variable length elastomer roller lever, Ø 50 mm (1)	XCKW149
Round thermoplastic rod lever, Ø 6 mm (2)	XCKW159

(1) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.
(2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.



XCKW141



XCKW159

Recievers

Description	Output Type	Reciever Voltage	Reference
Configurable receivers are equipped with: * 2 buttons (teach and parameter setting). * 6 LED indicators (power ON, output status, signal strength).	4 PNP outputs, 200 mA/24 V (Up to 32 Transmitters connected) (3)	24 VDC	ZBRRC
	2 relay outputs type C/O 3A (Up to 32 Transmitters connected) (3)	24..240 V AC/DC	ZBRRD



ZBRA1

Accessories

Product	Application	Description	Reference
Relay-antenna	Between transmitter & receiver, used to increase transmit range	24..240 VAC/DC, 5m cable, 1 power on LED & 2 LED's for Rec/Trans indication	ZBRA1

(3) Also compatible with ZB•RTA• wireless pushbuttons (with a software version above or equal to V2.0).

Note:
(1) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.
(2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.
(3) Also compatible with ZB•RTA• wireless pushbuttons (with a software version above or equal to V2.0).

Limit Switches
Japanese Style

Type XCJ
Light Duty, Plastic Body Switches - IP54


XCJ102


XCJ103


XCJ110


XCJ125


XCJ126


XCJ127


XCJ128


XCJ121

Plunger heads (fixing by head or body) (4)

Description	Contact operation (1)	Reference
Steel roller plunger for lateral cam approach (3)	Single pole 1C/O snap action form C	XCJ102
Steel roller plunger for traverse cam approach (3)	Single pole 1C/O snap action form C	XCJ103
Steel end plunger (2)	Single pole 1C/O snap action form C	XCJ110

Plunger heads (fixing by body) (4)

Description	Contact operation (1)	Reference
Short lever (2)	Single pole 1C/O snap action form C	XCJ125
Long lever (2)	Single pole 1C/O snap action form C	XCJ126
Short roller lever (3)	Single pole 1C/O snap action form C	XCJ127
Long roller lever (3)	Single pole 1C/O snap action form C	XCJ128
Short roller lever 1 direction of actuation (3)	Single pole 1C/O snap action form C	XCJ121

Note:
(1) Contacts are not replaceable.
(2) Actuation on end. Maximum speed : 0.5m/s.
(3) Actuation by 30° cam. Maximum speed : 0.5m/s.
(4) Cable entry suitable for Ø6-Ø9mm cable.

Contact block characteristics:
~ AC-15; A300 (Ue = 240V, Ie = 3A)

Limit Switches
Japanese Style

Type XCE
Medium Duty, Metal Body Switches - IP65


XCE102


XCE103


XCE110


XCE118

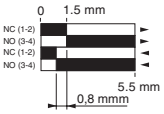
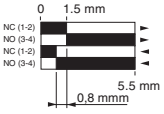
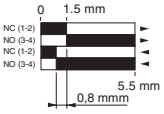

XCE145


XCE154

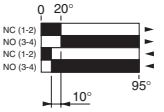
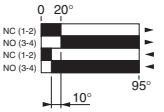
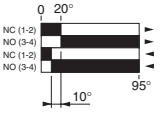

XCE106


XCE181

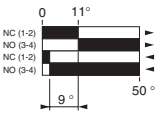
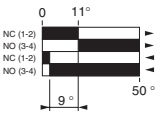
Plunger heads

Description	Contact operation (1) (6)		Reference
Steel roller plunger for lateral cam approach (3)	Single pole 1C/O snap action form Za	 	XCE102
Steel roller plunger for traverse cam approach (3)	Single pole 1C/O snap action form Za	 	XCE103
Steel end plunger (2)	Single pole 1C/O snap action form Za	 	XCE110

Rotary heads

Description	Contact operation (1) (6)		Reference
Roller lever (thermoplastic) (4)	Single pole 1C/O snap action form Za	 	XCE118
Variable length roller lever (4)	Single pole 1C/O snap action form Za	 	XCE145
Variable length rod lever Ø3 mm (5)	Single pole 1C/O snap action form Za	 	XCE154

Multi-directional heads

Description	Contact operation (1) (6)		Reference
"Cat's Whisker" (5)	Single pole 1C/O snap action form Za	 	XCE106
Spring rod lever (5)	Single pole 1C/O snap action form Za	 	XCE181

Note:
(1) Contacts are not replaceable.
(2) Actuation on end. Maximum speed : 0.25m/s.
(3) Actuation by 30° cam. Maximum speed : 0.25m/s.
(4) Actuation by 30° cam. Maximum speed : 1.3m/s.
(5) Actuation by any moving part. Maximum speed : 1.3m/s.
Flexible operators are not suitable for positive opening applications.
(6) Same polarity & voltage must be used on both N/O & N/C contacts.

For more info:

Catalogues available at:
www.tesensors.com

Limit Switches
American Style

Industrial Snap Switches, Types 9007A & 9007C
Type 9007 MS / ML
Medium Duty, Metal Body Switches - IP67



9007AO1

Basic snap switch

Description	Contacts		Reference
Non plug in	1N/O + 1N/C		9007AO1
	2N/O + 2N/C		9007CO3
High DC ratings	2N/O	(plug in)	9007CO6
	1N/O + 1N/C	(non plug in)	9007AO2
Plug in	1N/O + 1N/C		9007AO6



9007AB21

Rigid roller, lever type

Description	Contacts	Reference
Right hand 6mm wide roller	1N/O + 1N/C	9007AB21
	2N/O + 2N/C	9007CB31
Left hand 6mm wide roller	1N/O + 1N/C	9007AB22
	2N/O + 2N/C	9007CB32
Right hand 12mm wide roller	1N/O + 1N/C	9007AB23
	2N/O + 2N/C	9007CB33
One way roller	1N/O + 1N/C	9007AB26
	2N/O + 2N/C	9007CB36

Cabinet door type

	Contacts	Reference
	1N/O + 1N/C	9007AC1
	2N/O + 2N/C	9007CC1

Roller plunger type, panel mounting

Description	Contacts	Reference
Non oiltight	1N/O + 1N/C	9007AP321
	2N/O + 2N/C	9007CP321
Oiltight	1N/O + 1N/C	9007AP323
	2N/O + 2N/C	9007CP323

Plunger type, panel mounting

Description	Contacts	Reference
Non oiltight	1N/O + 1N/C	9007AP221
	2N/O + 2N/C	9007CP221

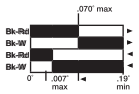
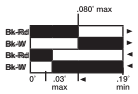
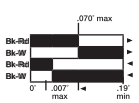
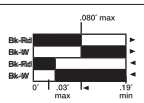
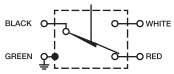
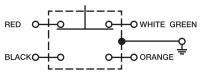


9007MS01S0100



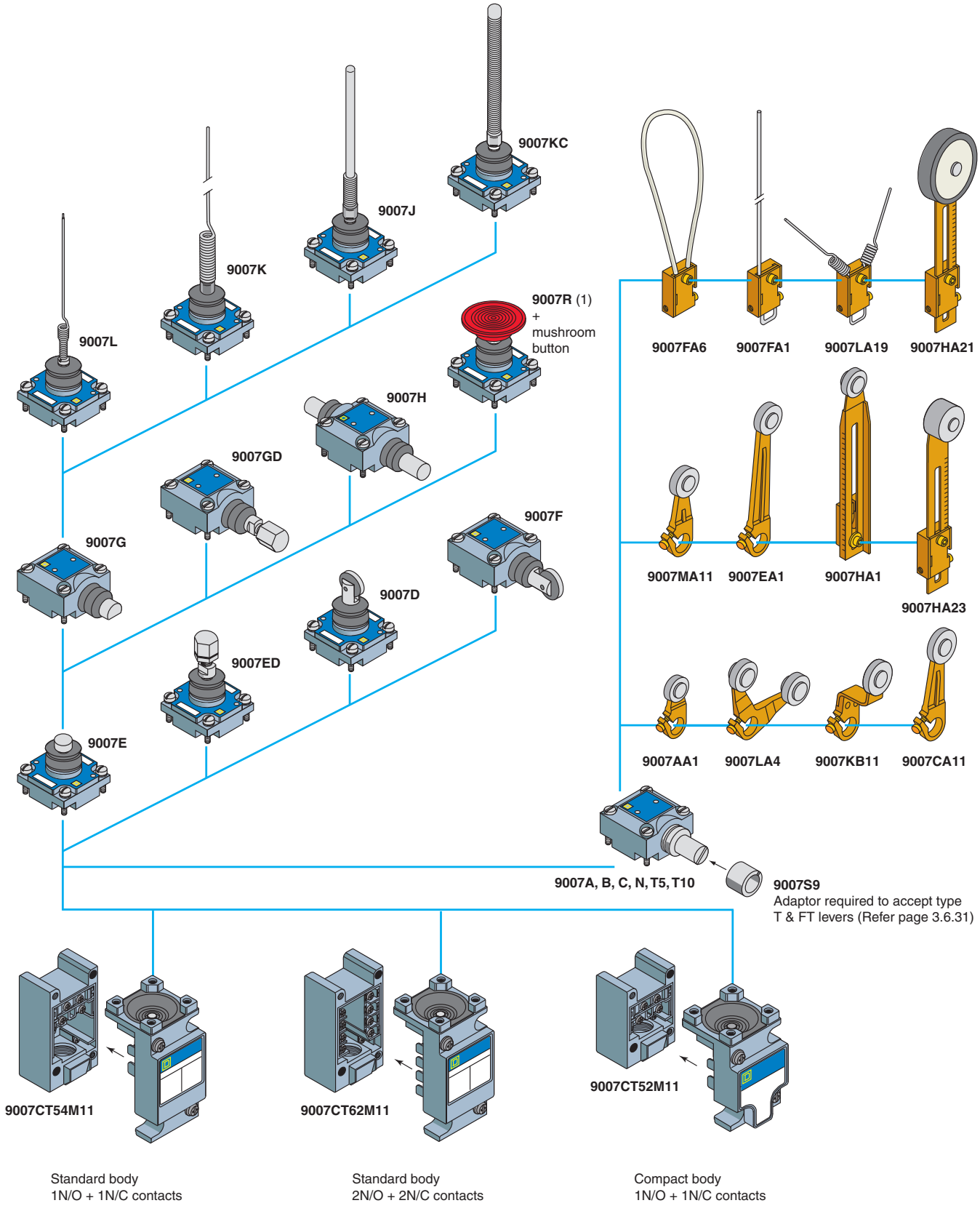
9007ML10S0100

Medium duty plunger head switches, pre-wired 1m cable

Description	Contact operation MS	ML	Reference
Steel end plunger			9007MS01S0100
			9007ML01S0100
Steel end plunger with rubber boot			9007MS10S0100
			9007ML10S0100
Steel roller plunger for lateral cam approach			9007MS02S0100
			9007ML02S0100
Steel roller plunger for traverse cam approach	 1 C/O Form C 9007MS	 1 C/O Form Za 9007ML	9007MS03S0100
			9007ML03S0100

Limit Switches
American Style

Type 9007 C
Heavy Duty, Metal Body Switches - IP66



Standard body
1N/O + 1N/C contacts

Standard body
2N/O + 2N/C contacts

Compact body
1N/O + 1N/C contacts

Note:
(1) Not positive opening contacts and hence not suitable as an emergency stop pushbutton.

Limit Switches
American Style

Type 9007 C
Heavy Duty, Metal Body Switches - IP66


9007C54B2


9007C52B2


9007C54EM11


9007C54K

Rotary heads, ISO M20 x 1.5 cable entry

Description		Contacts	Reference
Standard pre-travel (1)		1N/O + 1N/C	9007C54B2M11
spring return		2N/O + 2N/C	9007C62B2M11
	(compact body)	1N/O + 1N/C	9007C52B2M11
Low differential (1)		1N/O + 1N/C	9007C54A2M11
spring return		2N/O + 2N/C	9007C62A2M11
	(compact body)	1N/O + 1N/C	9007C52A2M11
Standard pre-travel		2N/O + 2N/C	9007C68T10M11
Neutral position spring return			
Maintained contact		1N/O + 1N/C	9007C54CM11
(CW – trip, CCW – reset)		2N/O + 2N/C	9007C62CM11
Extra light operating torque (1)		1N/O + 1N/C	9007C54N2M11
spring return	(compact body)	1N/O + 1N/C	9007C52N2M11

Plunger heads, ISO M20 x 1.5 cable entry

Description		Contacts	Reference
Top roller plunger		1N/O + 1N/C	9007C54DM11
spring return		2N/O + 2N/C	9007C62DM11
	(compact body)	1N/O + 1N/C	9007C52DM11
Top push rod plunger		1N/O + 1N/C	9007C54EM11
spring return		2N/O + 2N/C	9007C62EM11
Side roller plunger – vertical (2)		1N/O + 1N/C	9007C54FM11
spring return		2N/O + 2N/C	9007C62FM11
	(compact body)	1N/O + 1N/C	9007C52FM11
Side push rod plunger		1N/O + 1N/C	9007C54GM11
spring return		2N/O + 2N/C	9007C62GM11

Multi-directional heads, ISO M20 x 1.5 cable entry

Description		Contacts	Reference
Wobble stick		1N/O + 1N/C	9007C54JM11
Delrin extension		2N/O + 2N/C	9007C62JM11
		1N/O + 1N/C	9007C52JM11
		1N/O + 1N/C	9007C54JS3M11
	(compact body)	2N/O + 2N/C	9007C62JS3M11
Wobble stick		1N/O + 1N/C	9007C54KM11
Wire extension		2N/O + 2N/C	9007C62KM11
Wobble stick		1N/O + 1N/C	9007C54KCM11
Coil spring extension		2N/O + 2N/C	9007C62KCM11
Wobble stick		1N/O + 1N/C	9007C54LM11
"Cat's whisker"			

Note:
(1) Programmable for cw, ccw and cw/ccw operation. CW = clockwise, CCW = counter clockwise
(2) Can be converted to horizontal roller type in the field.
(3) A larger variety of devices can be purchased by selecting sub assemblies.

Limit Switches
American Style

Type 9007 C
Heavy Duty, Metal Head - IP66


9007B

Rotary heads

Description	Contacts	Reference
Standard pre travel, spring return	CW + CCW (1)	9007B
Low differential, spring return	CW + CCW (1)	9007A
Standard pre travel, spring return (4)	CW + CCW	9007T10
Low differential, spring return (4)	CW + CCW	9007T5
Extra light operating torque, spring return	CW + CCW (1)	9007N
Maintained contact	CW-trip + CCW-reset	9007C


9007E

Plunger heads

Description	Reference
Side roller plunger – spring return, vertical roller (2)	9007F
Side push rod plunger – spring return	9007G
Side push rod plunger – adjustable spring return	9007GD
Top roller plunger – spring return	9007D
Top push rod plunger – spring return	9007E
Top push rod plunger – adjustable, spring return	9007ED


9007K

Multi-directional heads

Description	Reference
Universal (requires extension)	9007JKC
Delrin extension	9007J
	9007JS3
Wire extension	9007K
Coil spring extension	9007KC
Cat whisker	9007L

Note:
(1) Programmable for CW, CCW and CW/CCW operation, (CW = clockwise, CCW = counter clockwise)
(2) Can be converted to horizontal roller type in the field.

Limit Switches
American Style

Types 9007 AO & AW
Heavy Duty, Metal Body Precision Switches - IP66


9007AW12M11

Rotary heads, spring return (without arm) (1) CCW operation (2)

Description	Contacts	Reference
Standard box, non plug in	1N/O + 1N/C	9007AW12M11
Deep box, non plug in	1N/O + 1N/C	9007AW14M11
	2N/O + 2N/C	9007AW18M11
Standard box, plug in	1N/O + 1N/C	9007AW16M11

Steel roller plungers, spring return

Description	Contacts	Reference
Standard box, non plug in	1N/O + 1N/C	9007AW32M11
Deep box, non plug in	1N/O + 1N/C	9007AW34M11
	2N/O + 2N/C	9007AW38M11
Standard box, plug in	1N/O + 1N/C	9007AW36M11

Steel end plungers, spring return

Description	Contacts	Reference
Standard box, non plug in	1N/O + 1N/C	9007AW42M11
Deep box, non plug in	1N/O + 1N/C	9007AW44M11
	2N/O + 2N/C	9007AW48M11
Standard box, plug in	1N/O + 1N/C	9007AW46M11

Note:
(1) For lever arms refer to page 3.6.27
(2) Field convertible to CW operation CW = clockwise, CCW = Counter clockwise
(3) The 9007AO.... open style devices may be used as replacements for the contact assemblies for the enclosed 9007AW.... devices. eg. 9007AO12M11 is the replacement for 9007AW12M11.

Limit Switches
American Style

Types 9007 C, CR, AO & AW
Levers for Rotary Heads

Die cast roller levers

Description	Length (1)	Reference
Metal Roller 16mm dia. 6mm wide	22mm	9007AA1
	33mm	9007BA1
	38mm	9007MA1
	51mm	9007CA1
	64mm	9007DA1
	76mm	9007EA1
Nylon roller 16mm dia. 6mm wide	51mm	9007CA8
Metal Roller 16mm dia. 16mm wide	35mm	9007BA2
Metal Roller 19mm dia. 6mm wide	35mm	9007BA11
	38mm	9007MA11
	51mm	9007CA11
	64mm	9007DA11
	76mm	9007EA11
Metal Roller 19mm dia. 16mm wide	38mm	9007MA12



9007BA1

Offset roller levers

Description	Roller	Reference
51mm length (1), 11mm offset	Metal	
	16mm dia. 6mm width	9007KA1
	16mm dia. 16mm width	9007KA2
	19mm dia. 6mm width	9007KA11
	19mm dia. 16mm width	9007KA12



9007KA1

Adjustable roller levers

Description	Roller	Reference
From 22mm to 102mm (1)	Metal	
	16mm dia. 6mm width	9007HA1
	16mm dia. 16mm width	9007HA2
	16mm dia. 6mm width bendable	9007HA5
	Nylon	
	16mm dia. 6mm width	9007HA4
	25mm dia. 16mm width	9007HA22
	25mm dia. 16mm width bendable	9007HA23



9007HA1



9007HA5

Rod levers

Description	Rod length (2)	Reference
Steel rod	250mm max.	9007FA1
Spring rod, steel	300mm max.	9007FA3
Spring rod, delrin	300mm max.	9007FA5
Looped rod	140mm approx.	9007FA6



9007LA1

90° forked roller lever

Description	Roller	Reference
Rollers on same side 38mm length	16mm dia. 6mm width	9007LA1
	19mm dia. 6mm width	9007LA4



9007CA1M

360° angular adjustable roller lever

Description	Roller	Reference
51mm length	Metal – 16mm dia. 6mm width	9007CA1M

Note:
(1) Length of lever refers to the dimension from centre of the switches operating shaft to the centre of the roller.
(2) Length of adjustable lever refers to the dimension from centre of the switches operating shaft to the end of the rod.
(3) Additional lever arms can be located on page 3.6.29, 9007S9 Hub must be used to adapt the shaft of the type C or CR to accept type T or FT levers.

Limit Switches
American Style

Types 9007 T & FT Extra Heavy & Foundry Duty, Metal Body Switches - IP66

closed
open

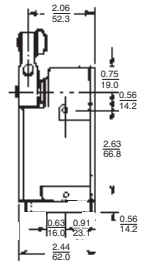


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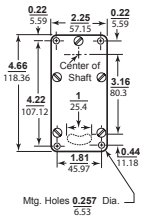


9007FTUB4M11

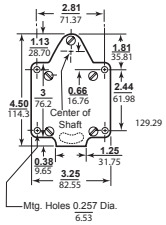
Base Plates



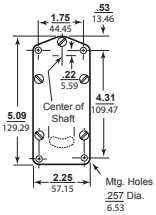
Style A



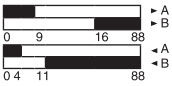
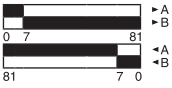
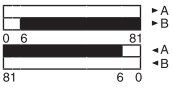
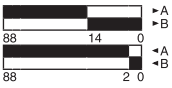
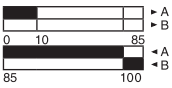
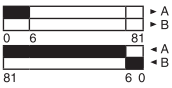
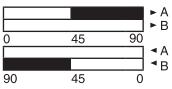
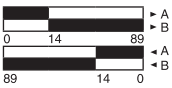
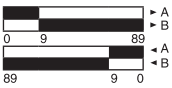
Style B



Style C



Style D

Description (4)	Contact operation	Reference
Spring return CW only Differential 12°		9007TUB1M11
Spring return CW only Intermediate position Differential 5°		9007TUB2M11
Maintained contact CCW + CW (1) Differential 7°		9007TUB3M11
Spring return CW + CCW Neutral position Differential 5°		9007TUB4M11
Spring return CCW only Differential 12°		9007TUB5M11
Maintained CW + CCW Differential 12°		9007TUB7M11
Maintained CW + CCW Neutral position Differential 10°		9007TUB8M11
Maintained CW + CCW Long pre travel Differential 0°		9007TUB12M11
Spring return CW + CCW Differential 12°		9007TSB1M11
Spring return CW + CCW Slow make, slow break Differential 5°		9007TSB3M11

Separate Base Plates

Description	Contact operation	Reference
Style A	without mounting holes	2934D32G1
Style B	mounting holes on each end	2934D14G1
Style C	mounting holes on each side	2934D33G1
Style D	mounting hole on each end	2934D34G1

Note:
(1) Spring return of arm to initial position, contact position maintained until operated in reverse direction.
(2) The 9007TUB12 should be used instead of 9007TUB7 + 9007TUB8 if a high speed cam or snap back is present.
(3) To order the foundry style limit switch, insert a "F" at the beginning of the type number eg: 9007FTUB3.
(4) CW = Clockwise operation. CCW = Counter-clockwise operation.

Limit Switches
American Style

Types 9007 T & FT (9007 C, CR AO & AW with Adaptor*) Levers for Rotary Heads


9007B1

Straight roller levers

Description	Roller	Length (1)	Reference
Roller 19mm dia.	6mm width	38mm	9007B1
		64mm	9007B7
	13mm width	64mm	9007B22
Roller 25mm dia.	6mm width	38mm	9007B2
		64mm	9007B8
	13mm width	64mm	9007B23
Roller 35mm dia.	6mm width	38mm	9007B3
		64mm	9007B9
	13mm width	64mm	9007B24
Adjustable roller (2)	19mm dia. 6mm width	adjustable	9007R18
	25mm dia. 6mm width	adjustable	9007R19
	35mm dia. 6mm width	adjustable	9007R20
Extra long roller	19mm dia. 6mm width	127mm	9007B19
Cable operated (eyebolt instead of roller)		64mm	9007B27


9007C1

Offset roller levers

Description		Roller	Length (1)	Reference
Inside offset	10mm	19mm dia. 6mm width	38mm	9007C1
	21mm	19mm dia. 6mm width	48mm	9007F4
Inside offset	10mm	25mm dia. 6mm width	38mm	9007C2
	21mm	25mm dia. 6mm width	48mm	9007F5
Inside offset	10mm	35mm dia. 6mm width	38mm	9007C3
	21mm	35mm dia. 6mm width	48mm	9007F6
Outside offset	10mm	19mm dia. 6mm width	38mm	9007D1
	21mm	19mm dia. 6mm width	48mm	9007E4
Outside offset	10mm	25mm dia. 6mm width	38mm	9007D2
	21mm	25mm dia. 6mm width	48mm	9007E5
Outside offset	10mm	35mm dia. 6mm width	38mm	9007D3
	21mm	35mm dia. 6mm width	48mm	9007E6


9007X1

90° forked roller levers

Description	Roller	Length	Reference
Roller	19mm dia. 6mm width	38mm	9007X1
	25mm dia. 6mm width	38mm	9007X2


9007R17

Lever mounting support (for connection of lever to limit switches)

Description	Rod diameter (3)	Reference
Lever support bracket (Does not include rod)	5mm circular	9007R16
	6mm square	9007R17


9007R21

Conveyor side guides (Delrin roller)

Description	Roller	Length	Reference
White roller lever	38mm dia. 95mm width	212mm	9007R21
White roller lever	22mm dia. 95mm width	212mm	9007R22
Black roller U.V. resistant	38mm dia. 95mm width	(without lever)	9998AS3
Black roller U.V. resistant	22mm dia. 95mm width	(without lever)	9998AS4


9998AS3

*Hub

Description	Reference
Converts type C and CR shafts to accept type T levers	9007S9

Note:
(1) Length of lever refers to the dimension from centre of the switches operating shaft to the centre of the roller.
(2) Adjustable rollers must be used with the 9007R17 and a 6mm diameter steel rod (not supplied).
(3) Rod is not included & should be sourced separately.

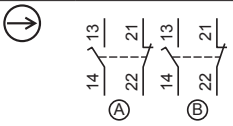
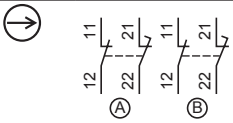
Limit Switches
Specific Application

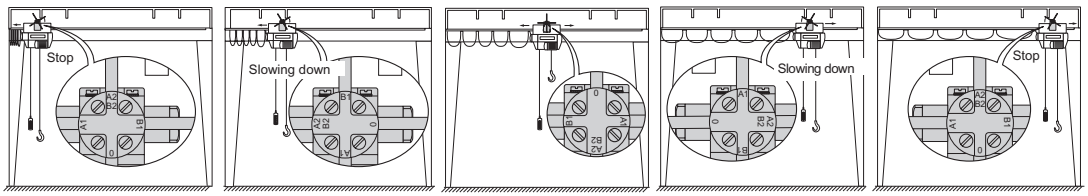
OsiSense™ Classic
Heavy Duty Limit Switches for Hoisting & Handling Applications Types XCK MR, XF9 & XCR T



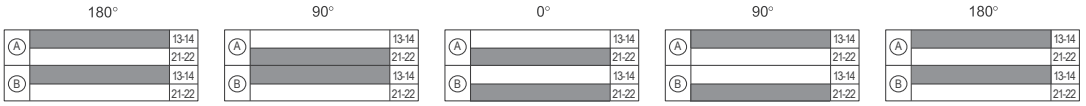
XCKMR54D1H29

Hoisting applications over travel switches for control circuits – IP66

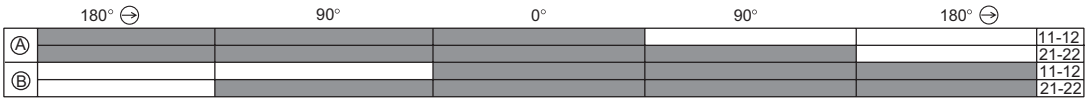
Description	Contact operation		Reference
Rotary head with cruciform lever Single speed without stop	2 x (N/C + N/O) Slow-break, break before make contacts		XCKMR44D1H29
Rotary head with cruciform lever Double speed without stop	2 x 2 pole N/C + N/C break before make contacts		XCKMR54D1H29



XCKMR44D1H29



XCKMR54D1H29



Hoisting applications over travel switches for power circuits (1) – IP54/43

Description	Rated Thermal (Current)	Disconnection	Reference
Manual latching and resetting restricted by a padlock device Snap action opening mechanism	40 amps or 80 amps	3 or 4 pole 2 pole	XF9D251H29
0° 13° 75°	80 amps or 160 amps	3 or 4 pole 2 pole	XF9D651H29
Manual latching and resetting Horizontal or vertical operating	200 amps	3 pole	XF9F1151
Snap action opening mechanism 6° 30°	275 amps	3 pole	XF9F1851



XF9D651H29



XF9F1151

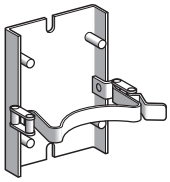
Note:
(1) Over travel limit switches for power circuit switching are specifically designed to ensure the safety of hoisting equipment. They directly break the power supply to the hoist motor is the load being handled accidentally exceeds the operating limits of the equipment.

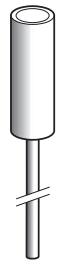
Limit Switches
Specific Application

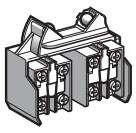
OsiSense™ Classic
Heavy Duty Limit Switches for Hoisting & Handling Applications Types XCK MR, XF9 & XCR T


XCRT115

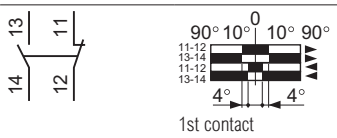
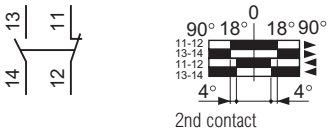

XCRT315


XCRZ09


XCRZ901


XCRZ42

Material handling applications – conveyor belt shift monitoring – IP65

Description	Contact operation	Reference
Standard model: zinc alloy enclosure zinc plated steel lever spring return to off position Max displacement 90°	 1st contact	XCRT115
Corrosion resistant model: Glass reinforced polyester enclosure Stainless steel lever spring return to off position Max displacement 70°	 2nd contact	XCRT315

Normal position



Fault signalling



Stopping of the conveyor belt



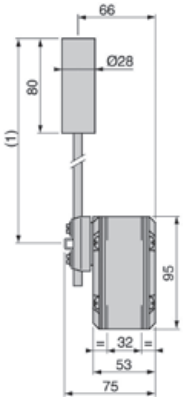
Maximum rotation

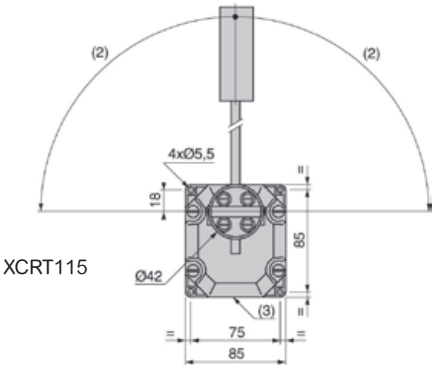


Accessories and spare parts

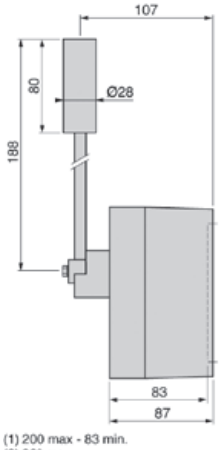
Description		For switch	Reference
Mounting bracket - quick release		XCRT115	XCRZ09
Roller with lever	Zinc plated steel	XCRT115	XCRZ901
	Stainless steel	XCRT315	XCRZ903
Contact blocks (2 contacts) with mounting plate	Single-pole C/O snap action	all XCRT	XCRZ42

Dimensions (mm):

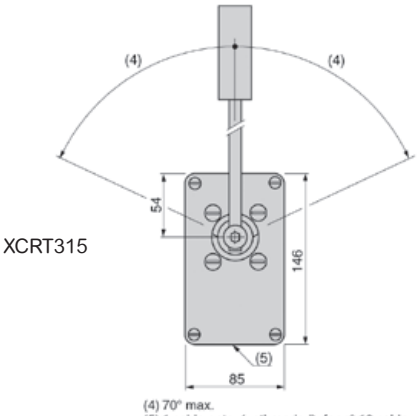




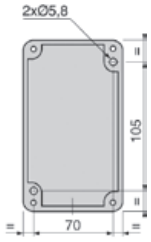
XCRT115



(1) 200 max - 83 min.
(2) 90° max.
(3) 1 cable entry, tapped for n° 13 cable gland.



XCRT315



(4) 70° max.
(5) 1 cable entry (unthreaded), for n° 13 cable gland.

OsiSense™ Photo-Electric Sensors

Offering Simplicity Through Innovation

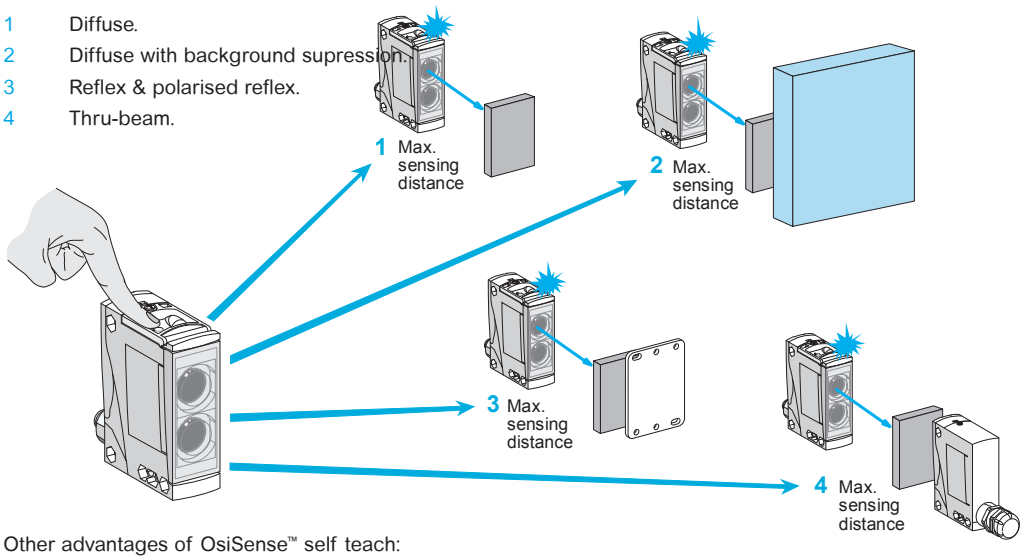
Operating Principle

In proposing the OsiSense™ self teach technology, Schneider Electric offers simplicity through innovation.

■ With OsiSense™ self teach, a single product that performs all 5 conventional sensing modes; diffuse, diffuse with background supression, reflex, polarised reflex and thru-beam.

Automatic configuration of the product is achieved simply by pressing a “self-teach” button.

1 Diffuse.
2 Diffuse with background supression.
3 Reflex & polarised reflex.
4 Thru-beam.



■ Other advantages of OsiSense™ self teach:

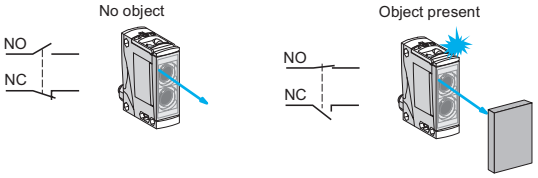
☐ Increased performance:
- sensing distance guaranteed and optimised for each application.

☐ Simplified use:
- intuitive setting-up and reduced, simpler maintenance.

☐ Lower costs:
- the number of references has been divided by 10 to simplify selection and procurement and significantly decrease storage costs
- guaranteed maximum productivity.

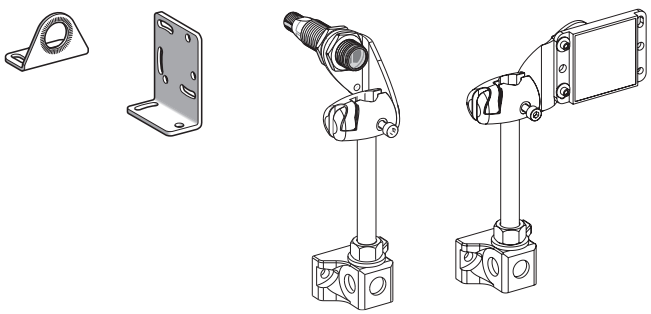
N/O or N/C output

■ Irrespective of the detection mode used (diffuse, reflex, thru-beam, etc), the output signals become either N/O or N/C. The product is delivered in N/O configuration. N/O or N/C is selected by simply pressing the “self-teach” button.



Mounting accessories

Schneider Electric proposes a complete, inexpensive range of mounting and protection accessories (conventional or 3D brackets and clamps) providing solutions to all setting-up and adjustment problems.



For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Photo-Electric Sensors

Universal self-teach & dedicated Cylindrical Ø18mm, Plastic - IP 67



XUB0APSNL2



XUB0APSNM12

"Self-teach", Cylindrical Ø18, plastic, 3 wire 12-24V DC

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse with BS	0.12 / 0.12m	Pre-wired (2m)	PNP N/O or N/C	XUB0APSNL2
Diffuse	0.4 / 0.3m		NPN N/O or N/C	XUB0ANSNL2
Polarised Reflex	3 / 2m	M12 connector	PNP N/O or N/C	XUB0APSNM12
Thru- Beam	20 / 15m		NPN N/O or N/C	XUB0ANSNM12

Accessories

Description	Connection	Reference
Thru-beam accessory for "self-teach" Ø18 plastic	Pre-wired (2m)	XUB0AKSNL2T
	M12 connector	XUB0AKSNM12T
Reflector 50 x 50 mm		XUZC50

Wiring diagrams

M12 connector

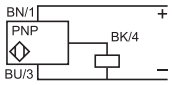


3 (-)
1 (+)
4 OUT/Output
2 Beam break input (3)

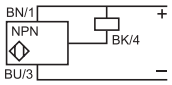
Pre-cabled

(-) BU (Blue)
(+) BN (Brown)
OUT/Output BK (Black)
Beam break input (3)
VI (Violet)

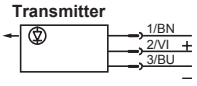
PNP



NPN



Thru-beam accessory



2/VI input:
- not connected: *beam made*
- connected to –: *beam broken*



XUB•APANL2



XUB•APANM12

"Dedicated", Cylindrical Ø18, plastic, 3 wire 12-24V DC (2)

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse adjustable	0.8 / 0.6m	Pre-wired (2m)	PNP N/O	XUB5APANL2
Polarised Reflex	3 / 2m	Pre-wired (2m)	PNP N/O	XUB9APANL2
Reflex	5.5 / 4m	Pre-wired (2m)	PNP N/O	XUB1APANL2
Thru- Beam	20 / 15m	Pre-wired (2m)	PNP N/O	XUB2APANL2R

Accessories

Description	Connection	Reference
Thru-beam accessory for "dedicated" Ø18 plastic	Pre-wired (2m)	XUB2AKSNL2T
Reflector 50 x 50mm		XUZC50

Wiring diagrams

M12 connector

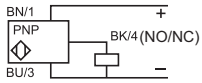


3 (-)
1 (+)
4 OUT/Output
2 Beam break input (3)

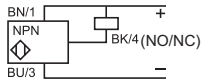
Pre-cabled

(-) BU (Blue)
(+) BN (Brown)
OUT/Output BK (Black)
Beam break input (3)
VI (Violet)

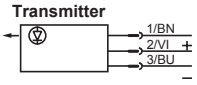
PNP



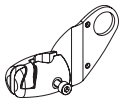
NPN



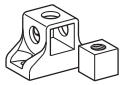
Thru-beam accessory



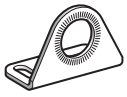
2/VI input:
- not connected: *beam made*
- connected to –: *beam broken*



XUZB2003



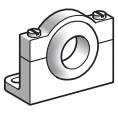
XUZ2003



XUZA118



XUZ2001



XUZA218

Mounting accessories

Description	Reference
3D fixing kit for use on M12 rod for XUB or XUZC50	XUZB2003
M12 rod	XUZ2001
Support for M12 rod	XUZ2003
Metal bracket for XUB	XUZA118
Mounting bracket adjustable with ball joint for XUB	XUZA218

Note:
(1) Maximum based on an excess gain of 1 and Usable based on an excess gain of 2.
(2) For N/C output, replace AN with BN in the middle reference.
For NPN output replace AP with AN in the middle of the reference.
For M12 connector version replace L2 with M12 at the end of the reference.
(3) Beam break input on thru-beam transmitter only.

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Photo-Electric Sensors

Universal self-teach & dedicated Cylindrical Ø18mm, Metal - IP67 / Stainless Steel - IP69K



XUB0BPSNL2



XUB0BPSNM12

"Self-teach", Cylindrical Ø18, metal, 3 wire 12-24V DC

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse with BS	0.12 / 0.12m	Pre-wired (2m)	PNP N/O or N/C	XUB0BPSNL2
Diffuse	0.4 / 0.3m		NPN N/O or N/C	XUB0BNSNL2
Polarised Reflex	3 / 2m	M12 connector	PNP N/O or N/C	XUB0BPSNM12
Thru- Beam	20 / 15m		NPN N/O or N/C	XUB0BNSNM12

Accessories

Description	Connection	Reference
Thru-beam accessory for "Self-teach" Ø18	Pre-wired (2m)	XUB0BKSNL2T
	M12 connector	XUB0BKSNM12T
Reflector 50 x 50 mm		XUZC50

"Self-teach", Cylindrical Ø18, stainless steel SS304, IP69K, 3 wire 12-24V DC (4)

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse with BS	0.12 / 0.12m	Pre-wired (2m)	PNP N/O or N/C	XUB0SPSNL2
Diffuse	0.4 / 0.3m		NPN N/O or N/C	XUB0SNSNL2
Polarised Reflex	3 / 2m	M12 connector	PNP N/O or N/C	XUB0SPSNM12
Thru-Beam	20 / 15m		NPN N/O or N/C	XUB0SNSNM12

Accessories

Description	Connection	Reference
Thru-beam accessory for "Self-teach" Ø18	Pre-wired (2m)	XUB0SKSNL2T
	M12 connector	XUB0SKSNM12T
Reflector 50 x 50 mm		XUZC50



XUB•BPANL2



XUB•BPANM12

"Dedicated", Cylindrical Ø18, metal, 3 wire 12-24V DC (2)

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse adjustable	0.8 / 0.6m	Pre-wired (2m)	PNP N/O	XUB5BPANL2
Polarised Reflex	3 / 2m	Pre-wired (2m)	PNP N/O	XUB9BPANL2
Reflex	5.5 / 4m	Pre-wired (2m)	PNP N/O	XUB1BPANL2
Thru- Beam	20 / 15m	Pre-wired (2m)	PNP N/O	XUB2BPANL2R

Accessories

Description	Connection	Reference
Thru-beam accessory for "Dedicated" Ø18 metal	Pre-wired (2m)	XUB2BKSNL2T
Reflector 50 x 50mm		XUZC50

Wiring diagrams

M12 connector

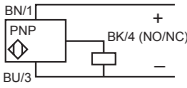


3 (-)
1 (+)
4 OUT/Output
2 Beam break input *(3)*

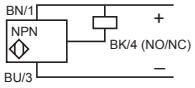
Pre-cabled

(-) BU (Blue)
(+) BN (Brown)
(OUT/Output) BK (Black)
Beam break input *(3)*
VI (Violet)

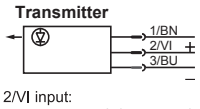
PNP



NPN



Thru-beam accessory



2/VI input:
- not connected: *beam made*
- connected to –: *beam broken*

Note:

(1) Maximum based on an excess gain of 1 and Usable based on an excess gain of 2.
(2) For N/C output, replace AN with BN in the middle of the reference.
For NPN output replace BP with BN in the middle of the reference.
For M12 connector version replace L2 with M12 at the end of the reference.
(3) Beam break input on thru-beam transmitter only.
(4) IP69K conforming to DIN40050 part 9 (i.e. spraying of product with high pressure water jet)
Pressure: 90bar
Temperature: +80deg C
Duration of test: 3 minutes
Solution: pure water

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Photo-Electric Sensors

Universal self-teach & dedicated Miniature, Plastic - IP 67



XUM0A•••L2



XUM0A•••M8



XUM•APCNL2



XUM•APCNM8

"Self-teach", Miniature, 3 wire 12-24V DC

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse with BS	0.10 / 0.10m	Pre-wired (2m)	PNP N/O or N/C	XUM0APSAL2
Diffuse	0.55 / 0.4m		NPN N/O or N/C	XUM0ANSAL2
Polarised Reflex	4 / 3m	M8 connector	PNP N/O or N/C	XUM0APSAM8
Thru- Beam	14 / 10m		NPN N/O or N/C	XUM0ANSAM8

Accessories

Description	Connection	Reference
Thru-beam accessory for "self-teach" XUM	Pre-wired (2m)	XUM0AKSAL2T
	M8 connector	XUM0AKSAM8T
Reflector 50 x 50mm		XUZC50

Wiring diagrams

M12 connector

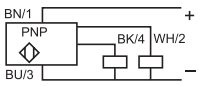


3 ( )
1 (+)
4 OUT/Output
2 alarm or beam break input (3)

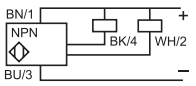
Pre-cabled

( ) BU (Blue)
(+) BN (Brown)
OUT/Output BK (Black)
Alarm/WH (White)
Beam break input
VI (Violet) (3)

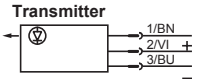
PNP



NPN



Thru-beam accessory



2/VI input:
- not connected: *beam made*
- connected to –: *beam broken*

"Dedicated", Miniature, 3 wire 12-24V DC (2)

Sensing Mode	Sensing Distance usable Sn (1)	Connection	Output Function	Reference
Diffuse with BS	0.3m	Pre-wired 2 (m)	PNP NO/NC	XUM8APCNL2
Diffuse adjustable	1m	Pre-wired (2m)	PNP NO/NC	XUM5APCNL2
Polarised Reflex	5m	Pre-wired (2m)	PNP NO/NC	XUM9APCNL2
Thru- Beam (3)	15m	Pre-wired (2m)	PNP NO/NC	XUM2APCNL2

Accessories

Description	Reference
Reflector 50 x 50mm	XUZC50
XUM Snap on Snout adaptor	XUZASM001



XUZASM001

Wiring diagrams

M12 connector

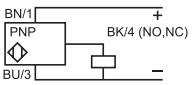


3 (-)
1 (+)
4 OUT/Output

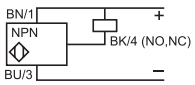
Pre-cabled

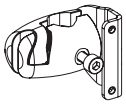
(-) BU (Blue)
(+) BN (Brown)
OUT/Output BK (Black)

PNP

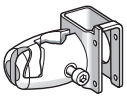


NPN

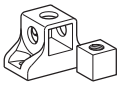




XUZM2003



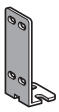
XUZM2004



XUZ2003



XUZ2001



XUZA50

Mounting accessories

Description	Reference
3D fixing kit for use on M12 rod for XUM or XUZC50	XUZM2003
3D fixing kit for use on M12 rod with protective cover for XUM	XUZM2004
M12 rod	XUZ2001
Support for M12 rod	XUZ2003
Mounting bracket for XUM "self-teach"	XUZA50
Mounting bracket for XUM "dedicated"	XUZAM01

Note:
(1) Usable Sn based on an excess gain of 2.
(2) For NPN output replace AP with AN in themiddle of the reference.
For M8 connector version, replace L2 with M8 at the end of the reference.
(3) Thru beam model supplied with Transmitter & Receiver.

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Photo-Electric Sensors

Universal
self-teach & dedicated
Compact 50 x 50, Plastic - IP 67



XUK•A•••L2



XUK•A•••M12

"Self-teach", Compact 50x50, 3 wire 12-24V DC

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse with BS	0.3 / 0.3 m	Pre-wired (2m)	PNP/NPN	XUK0AKSAL2
Diffuse	1.2 / 0.8 m		N/O or N/C	
Polarised Reflex	5.7 / 4 m	M12 connector	PNP/NPN	XUK0AKSAM12
Thru- Beam	35 / 30 m		N/O or N/C	

Accessories

Description	Connection	Reference
Thru-beam accessory for "self-teach" XUK	Pre-wired (2m)	XUK0AKSAL2T
	M12 connector	XUK0AKSAM12T
Reflector 50 x 50 mm		XUZC50

Wiring diagrams

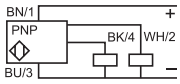
M12 connector



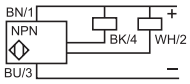
Pre-cabled

( ) BU (Blue)
(+) BN (Brown)
OUT/Output BK (Black)
Alarm/WH (White)
Beam break input
VI (Violet) (3)

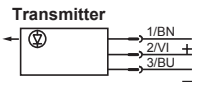
PNP



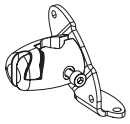
NPN



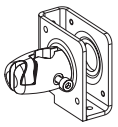
Thru-beam accessory



2/VI input:
- not connected: *beam made*
- connected to –: *beam broken*



XUZK2003



XUZK2004

"Dedicated", Compact 50x50, 3 wire 12-24V DC (2)

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse adjustable	1.5 / 1 m	Pre-wired (2m)	PNP N/O	XUK5APANL2
Polarised Reflex	7.5 / 5 m	Pre-wired (2m)	PNP N/O	XUK9APANL2
Reflex	15 / 9 m	Pre-wired (2m)	PNP N/O	XUK1APANL2
Thru- Beam	45 / 30 m	Pre-wired (2m)	PNP N/O	XUK2APANL2R

Accessories

Description	Connection	Reference
Thru-beam accessory for "dedicated" XUK	Pre-wired (2m)	XUK2AKSNL2T
Reflector 50 x 50 mm		XUZC50

Wiring diagrams

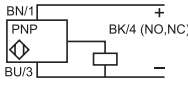
M12 connector



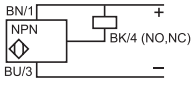
Pre-cabled

(-) BU (Blue)
(+) BN (Brown)
OUT/Output BK (Black)
Beam break input (3)
VI (Violet)

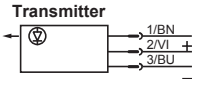
PNP



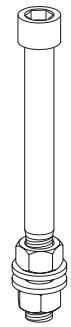
NPN



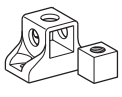
Thru-beam accessory



2/VI input:
- not connected: *beam made*
- connected to –: *beam broken*



XUZ2001



XUZ2003



XUZA51

Mounting accessories

Description	Reference
3D fixing kit for use on M12 rod for XUK or XUZC50	XUZK2003
3D fixing kit for use on M12 rod with protective cover for XUK	XUZK2004
M12 rod	XUZ2001
Support for M12 rod	XUZ2003
Mounting bracket for XUK	XUZA51

Note:
(1) Maximum based on an excess gain of 1 and Usable based on an excess gain of 2.
(2) For N/C output, replace AN with BN in the middle of the reference.
For NPN output replace AP with AN in the middle of the reference.
For M12 connector replace L2 with M12 at the end of the reference.
(3) Beam break input on thru-beam transmitter only.

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Photo-Electric Sensors

Universal
self-teach & dedicated
Compact 50 x 50, Plastic - IP 65



XUK•A•••M12

"Self-teach", Compact 50x50, 5 wire 24-240V AC/DC

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse with BS Diffuse Polarised Reflex Thru- Beam	0.3 / 0.3 m 1.2 / 0.8 m 5.7 / 4 m 35 / 30 m	Pre-wired (2m)	Time delay relay N/O or N/C	XUK0ARCTL2



XUK•A•••L2

Accessories

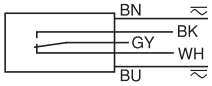
Description	Connection	Reference
Thru-beam accessory for "self-teach" XUK	Pre-wired (2m)	XUK0ARCTL2T
Reflector 50 x 50 mm		XUZC50

Wiring diagrams

Pre-cabled, relay output

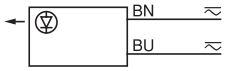
(≂) BU (Blue)
(≂) BN (Brown)
Relay common/GY (Grey)
N/O BK (Black)
N/C WH (White)

Relay output



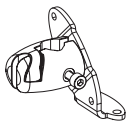
Thru-beam accessory ≂

Transmitter

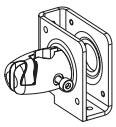


"Dedicated", Compact 50x50, 5 wire 24-240V AC/DC

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse adjustable	1.5 m / 1 m	Pre-wired (2m)	C/O	XUK5ARCNL2
Polarised Reflex	6 / 4 m	Pre-wired (2m)	C/O	XUK9ARCNL2
Reflex	10 / 7 m	Pre-wired (2m)	C/O	XUK1ARCNL2
Thru- Beam	30 / 20 m	Pre-wired (2m)	C/O	XUK2ARCNL2R



XUZK2003



XUZK2004

Accessories

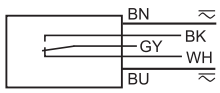
Description	Connection	Reference
Thru-beam accessory for "dedicated" XUK	Pre-wired (2m)	XUK2ARCNL2T
Reflector 50 x 50 mm		XUZC50

Wiring diagrams

Pre-cabled, relay output

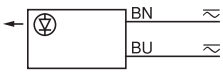
(≂) BU (Blue),
(≂) BN (Brown)
Relay common/GY (Grey)
N/O BK (Black)
N/C WH (White)

Relay output



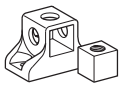
Thru-beam accessory ≂

Transmitter





XUZ2001



XUZ2003



XUZA51

Mounting accessories

Description	Reference
3D fixing kit for use on M12 rod for XUK or XUZC50	XUZK2003
3D fixing kit for use on M12 rod with protective cover for XUK	XUZK2004
M12 rod	XUZ2001
Support for M12 rod	XUZ2003
Mounting bracket for XUK	XUZA51

Note:
(1) Maximum based on an excess gain of 1 and Usable based on an excess gain of 2.
(2) For N/C output, replace AN with BN in the middle of the reference.
For NPN output replace AP with AN in the middle of the reference.
For M12 connector, version for the XUK range replace L2 with M12 at the end of the reference.

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Photo-Electric Sensors

Universal self-teach & dedicated Compact, Plastic - IP 67



XUX•A•••M12



XUX•A••• T16

"Self-teach", Compact, 3 wire 12-24V DC

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse with BS Diffuse	1.3 / 1.3 m 3 / 2 m	Screw terminals ISO 16 cable gland	PNP/NPN N/O or N/C	XUX0AKSAT16
Polarised Reflex Thru- Beam	15 / 11 m 60 / 40 m	M12 connector	PNP/NPN N/O or N/C	XUX0AKSAM12

Accessories

Description	Connection	Reference
Thru-beam accessory for "self-teach" XUX	Screw terminals, ISO 16 cable gland	XUX0AKSAT16T
	M12 connector	XUX0AKSAM12T
Reflector 50 x 50 mm		XUZC50

Wiring diagrams

M12 connector



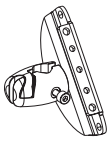
PNP/NPN ⎓

M12		Terminals	
1	•	1	+
3	•	2	–
4	•	3	Output
2	•	4	Alarm

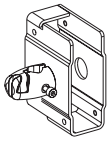
Transmitter ⎓

M12		Terminals	
1	•	1	+
3	•	2	–
2	•	3	Beam broken input (4)

(4) *Input not connected: beam made. Input connected to –: beam broken*



XUZX2003



XUZX2004

"Dedicated", Compact, 3 wire 12-24V DC, ISO 16 cable gland (3)

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse adjustable	3 / 2.1 m	Screw terminals	PNP N/O	XUX5APANT16
Polarised Reflex	15 / 11 m	Screw terminals	PNP N/O	XUX9APANT16
Reflex	20 / 14 m	Screw terminals	PNP N/O	XUX1APANT16
Thru- Beam	60 / 40 m	Screw terminals	PNP N/O	XUX2APANT16R

Accessories

Description	Connection	Reference
Thru-beam accessory for "dedicated" XUX	Screw terminals ISO 16 cable gland	XUX0AKSAT16T
Reflector 50 x 50 mm		XUZC50

Wiring diagrams

M12 connector



PNP/NPN ⎓

M12		Terminals	
1	•	1	+
3	•	2	–
4	•	3	Output

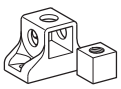
Transmitter ⎓

M12		Terminals	
1	•	1	+
3	•	2	–
2	•	3	Beam break input (4)

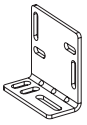
(4) *Input not connected: beam made. Input connected to – : beam broken.*



XUZ2001



XUZ2003



XUZX2000

Mounting accessories

Description	Reference
3D fixing kit for use on M12 rod for XUX or XUZC50	XUZX2003
3D fixing kit for use on M12 rod with protective cover for XUX	XUZX2004
M12 rod	XUZ2001
Support for M12 rod	XUZ2003
Mounting bracket for XUX	XUZX2000

Note:

(1) Maximum based on an excess gain of 1 and Usable based on an excess gain of 2.

(2) For N/C output, replace AN with BN in the reference.
For NPN output replace AP with AN in the middle of the reference.
For M12 connector, replace T16 with M12 at the end of the reference.

(3) ISO 16 cable gland, capacity Ø7 to Ø10mm cable.

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Photo-Electric Sensors

Universal
self-teach & dedicated
Compact, Plastic - IP 67



XUX•A•••T16

"Self-teach", Compact, 5 wire 24-240V AC/DC

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse with BS Diffuse Polarised Reflex Thru- Beam	1.3 / 1.3 m 3 / 2 m 15 / 11 m 60 / 40 m	Screw terminals ISO 16 cable gland	Time delay relay N/O or N/C	XUX0ARCTT16

Accessories

Description	Connection	Reference
Thru-beam accessory for "self-teach" XUX	Screw terminals ISO 16 cable gland	XUX0ARCTT16T
Reflector 50 x 50 mm		XUZC50

Wiring diagrams

Relay output ≂

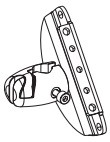
Terminals

1 ⊘ ≂
2 ⊘ ≂
3 ⊘ N/O
4 ⊘ Relay common
5 ⊘ N/C

Transmitter ≂

Terminals

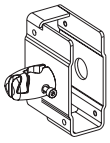
1 ⊘ ≂
2 ⊘ ≂



XUZX2003

"Dedicated", Compact, 5 wire 24-240V AC/DC, ISO 16 cable gland

Sensing Mode	Sensing Distance max/usable (1)	Connection	Output Function	Reference
Diffuse adjustable	3 / 2.1 m	Screw terminals	C/O	XUX5ARCNT16
Polarised Reflex	15 / 11 m	Screw terminals	C/O	XUX9ARCNT16
Reflex	20 / 14 m	Screw terminals	C/O	XUX1ARCNT16
Thru- Beam	60 / 40 m	Screw terminals	C/O	XUX2ARCNT16R



XUZX2004

Accessories

Description	Connection	Reference
Thru-beam accessory for "dedicated" XUX	Screw terminals ISO 16 cable gland	XUX0ARCTT16T
Reflector 50 x 50 mm		XUZC50

Wiring diagrams

Relay output ≂

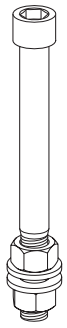
Terminals

1 ⊘ ≂
2 ⊘ ≂
3 ⊘ NO
4 ⊘ Relay common
5 ⊘ NC

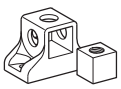
Transmitter ≂

Terminals

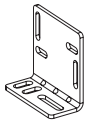
1 ⊘ ≂
2 ⊘ ≂



XUZ2001



XUZ2003



XUZX2000

Mounting accessories

Description	Reference
3D fixing kit for use on M12 rod for XUX or XUZC50	XUZX2003
3D fixing kit for use on M12 rod with protective cover for XUX	XUZX2004
M12 rod	XUZ2001
Support for M12 rod	XUZ2003
Mounting bracket for XUX	XUZX2000
Adaptor for ISO 16 - ½" NPT	XUZX2001
Adaptor for ISO 16 - ISO 20	XUZX2002

Note:
(1) Maximum based on an excess gain of 1 and Usable based on an excess gain of 2.

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Photo-Electric Sensors

Universal – Classic
Cylindrical, Metal - IP67
OsiSense™ Application
Compact, Plastic - IP 67



XU2M18MA230

Cylindrical, Ø18 metal, 2 wire 24-240V AC/DC (1) (2)

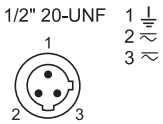
Sensing mode	Sensing Distance	Connection	Output function	Reference
Diffuse adjustable	0.08 - 0.12m	Pre-wired (2m)	N/O Light	XU8M18MA230
Diffuse	0.4m	Pre-wired (2m)	N/O Light	XU5M18MA230
Polarised reflex	2m	Pre-wired (2m)	N/O Dark	XU9M18MA230 (3)
Thru-Beam	15m	Pre-wired (2m)	N/O Dark	XU2M18MA230 (4)

Accessories

Description		Reference
Fixing clamp for XU•	Ø18 (M18x1)	XSZB118

Wiring diagrams

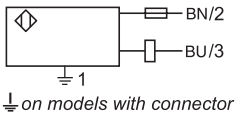
Connector



Pre-cabled

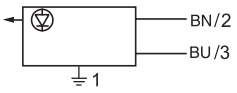
(≂) BU (Blue)
(≂) BN (Brown)

2 wire ∼ or ⎓



on models with connector

Transmitter



on models with connector

Note:
(1) For short circuit protection, connect a 0.8A “quick blow” fuse in series with the load.
Fuse 0.8A “quick blow” 5x20 cartridge v XUZE08
Fuse holder v AB1FU101354U
(2) For 1/2” 20UNF connector, add K at the end of the reference
(3) Supplied with XUZC50 (50 x 50mm) reflector.
(4) Supplied with transmitter & receiver.

OsiSense™ Photo-Electric Sensors

Universal
Fibre-Optic with Teach Mode, Plastic - IP 65



XUDA2•••L2



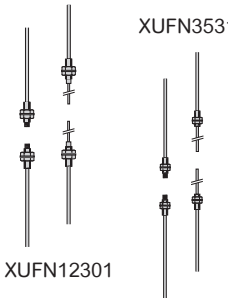
XUDA2•••M8

Fibre-Optic with teach mode, 3 wire 12-24V DC

Sensing Mode	Connection	Output Function	Reference
Depends on fibre used	Pre-wired (2m)	PNP NO/NC programmable	XUDA2PSML2
		NPN NO/NC programmabe	XUDA2NSML2
	M8 connector	PNP NO/NC programmable	XUDA2PSMM8
		NPN NO/NC programmable	XUDA2NSMM8

XUFN12311

XUFN35311



XUFN12301

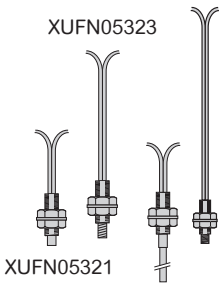
XUFN35301

Plastic Fibre-Optic Light Guides (3) (4) (5)
Thru-Beam (Pair)

Description		Sensing Range (mm)	Reference
2.2mm DIA	Straight fibre	200 (1) 1500 (2)	XUFN12301
2.2mm DIA	Straight fibre with flexible sensing end	180	XUFN12311
2.2mm DIA	Coiled fibre	150 (1) 1000 (2)	XUFN10302
1mm DIA	Straight fibre	50 (1) 1000 (2)	XUFN35301
1mm DIA	Straight fibre with flexible sensing end	30	XUFN35311

XUFN02323

XUFN05323



XUFN05321

XUFN05331

Diffuse

Description		Sensing Range (mm)	Reference
2.2mm DIA	Straight fibre	70	XUFN05321
2.2mm DIA	Straight fibre with flexible sensing end	60	XUFN05331
2.2mm DIA	Coiled fibre	20	XUFN15322
2.2mm DIA	Coiled fibre with flexible sensing end	20	XUFN15332
2.2mm DIA	Straight fibre M6/M4 end	60	XUFN05323
1mm DIA	Straight fibre	18	XUFN01321
1mm DIA	Straight fibre with flexible Sensing end (1.5mm DIA)	18	XUFN01331
1mm DIA	Straight fibre with flexible Sensing end (0.8mm DIA)	6	XUFN04331
1mm DIA	Straight fibre M6/M4 end	15	XUFN02323

3.6



XUFZ02

XUFZ01



XUFZ11

Accessories

Sensing Mode		Connection	Reference
Lens to increase sensing distance	(set of 2)	Fibre Optics	XUFZ01
Lens to turn beam through 90 degrees	(set of 2)	Fibre Optics	XUFZ02
Fibre trimming tool (supplied with all fibres)		Fibre Optics	XUFZ11

Note:
(1) Sensing distance with 90˚ lens (XUFZ02) and without lens.
(2) Sensing distance with lens (XUFZ01).
(3) Standard fibre length = 2m. For other lengths contact Schneider Electric on 1300 369 233.
(4) Glass fibre-optic light guides available for high operating temperatures up to + 180°C.
(5) IP 65 with dia. 2mm fibre; IP 64 with dia. 1mm fibre

OsiSense™ Photo-Electric Sensors

Application,
Material handling series
Time of flight (TOF) technology – Distance measurement



XUK8TAKSMM12



XUK9TAH2MM12



XUZASW002



XUZASK004 XUZA51S



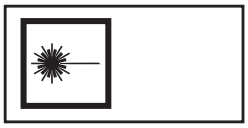
XUZASK001 XUZASW001



XZCPV11V12L*



XZCP29P12L*



Material Handling - TOF Compact Laser Distance Sensor, 18-30 VDC (1)

Sensing Mode	Measuring Distance	Connection	Output Function	Reference
Diffuse With background suppression Ecolab Certified IP67 & IP69K (2)	0.1…5 m on white 90% 0.1…3 m on black 60%	M12, 5-pin Connector	PNP/NPN 0…10 V 1 x Auto detect	XUK8TAKSMM12
			PNP/NPN 4…20mA 1 x Auto detect	XUK8TAKDMM12
		M12, 4-pin Connector	PNP/NPN 1 x Auto detect	XUK8TAE2MM12
		M12, 5-pin Connector	PNP/NPN 2 x Auto detect	XUK8TAE1MM12

Hoist & Mobile Lift - TOF Compact Laser Distance Sensor, 18-30 VDC (1)

Sensing Mode	Measuring Distance	Connection	Output Function	Reference
Reflex with XUZC250 reflector IP67 & IP69K (2)	0.3…70 m	M12, 8-pin Connector	PNP or NPN 4….20mA	XUK9TAH2MM12

Accessories

Description	Dimensions	Reference
Simple Metal fixing bracket	-	XUZASWK002
Precision bracket	-	XUZASK004
Mounting bracket - On Dove Tail	-	XUZASW001
Fixing bracket - 316 Stainless steel	-	XUZA51S
Protective fixing bracket for the sensor	-	XUZASK001
Reflector - Adhesive microprism	250 x 250 mm	XUZC250

Pre-wired connectors with PVC cable for XUK8T

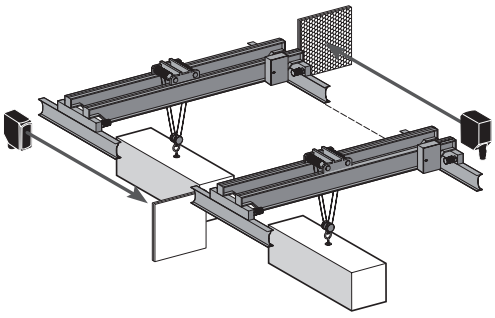
Straight Pre-wired	2 Mtr	M12, 5 Pin female	XZCPV11V12L2
	5 Mtr		XZCPV11V12L5
Elbow Pre-wired	2 Mtr	M12, 5 Pin female	XZCPV12V12L2
	5 Mtr		XZCPV12V12L5

Pre-wired connectors with PUR cable for XUK9T

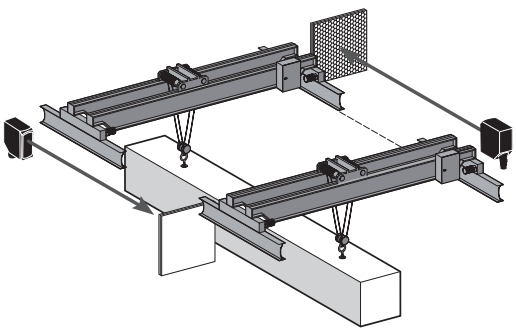
Straight Pre-wired	2 Mtr	M12, 8 Pin female	XZCP29P12L2
	5 Mtr	M12, 8 Pin female	XZCP29P12L5
	10 Mtr	M12, 8 Pin female	XZCP29P12L10

The XUK9TOF offer both Anti-collision and Tandem lifting modes for overhead crane applications

XUK9TOF
Anti-collision mode



XUK9TOF
Tandem mode



Notes:
(1) Laser Class 1, conforming to IEC 60825-1 Visible laser radiation: do not stare into beam.
(2) Depending on connector

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED1110305EN

OsiSense™ Photo-Electric Sensors

Application, Material Handling Series With Solid-State & Analogue Output Signal 4…20 mA, Laser Transmission



XUE5AA2M12

"Self-teach", 5 wire, 18 - 30V DC - Laser Distance Sensor 90 x 90mm

1304.00	1434.40	Connection	Output function	Reference
Object distance sensor	0.2...6m (on white 90%)	M12 5 Pin	PNP x 2 4...20mA x1	XUE5AA2NM12
Reflector distance sensor	0.2...30m reflector (XUZ C250)	M12 5 Pin	PNP x 2 4...20mA x1	XUE1AA2NM12

Accessories

Description	Reference	Reference
Fixing Bracket	-	XUZA618
Reflector	250 x 250mm	XUZC250
Straight Pre-wired	M12, 5 Pin female	XZCP1164L2
Straight Connector	M12, 5 Pin female	XZCC12FDM50B
Elbow Connector	M12, 5 Pin female	XZCC12FCM50B



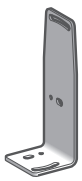
XUK8LAPPNM12

Dedicated - Compact Laser Distance Sensor, 4 wire, 10-30 VDC (1)

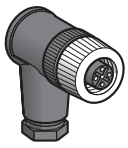
Sensing Mode	Measuring Distance	Connection	Output Function	Reference
Diffuse with background suppression	5…800 mm on white 90% (2)	M12, 4-pin	PNP NO/NC	XUK8LAPPNM12
Diffuse	5…1200 mm on white 90%	M12, 4-pin	PNP NO/NC	XUK5LAPSMM12
Polarised Reflex	0.3…12/14 m reflector XUZC50HP	M12, 4-pin	PNP NO/NC	XUK9LAPSMM12
Thru - Beam Receiver	0…25/30 m	M12, 4-pin	PNP NO/NC	XUK2LAPSMM12R
Thru - Beam Transmitter		M12, 4-pin	PNP NO/NC	XUK2LAKSMM12T

Accessories

Description	Dimensions	Reference
Mounting bracket On Dove Tail	-	XUZASK002
Fixing bracket 304 Stainless steel	-	XUZA51S
Protection bracket 304 Stainless steel	-	XUZASK001
Reflector - Rigid microprism	50 x 50 mm	XUZC50HP
Pre-wired connectors with PVC cable for food and beverage applications (S/S 316L)		
Straight Pre-wired	5 Mtr	M12, 4 Pin female	XZCPA1141L5
Elbow Pre-wired	5 Mtr	M12, 4 Pin female	XZCPA1241L5
Pre-wired connectors with PUR cable for industrial applications		
Straight Pre-wired	5 Mtr	M12, 4 Pin female	XZCP1141L5
Elbow Connector	5 Mtr	M12, 4 Pin female	XZCP1241L5



XUZ A618



XZ CC12FCM50B

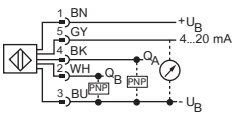
Wiring Schemes

M12 connector

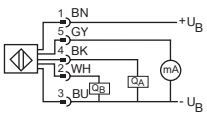


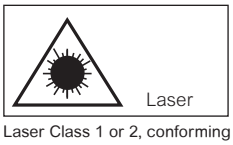
Pin n°/colour
1 BN: Brown
2 WH: White
3 BU: Blue
4 BK: Black
5 GY: Grey

XUE5AA2NM12



XUE1AA2NM12





Laser Class 1 or 2, conforming to IEC 600825-1

Note:
(1) 12-30VDC for Diffuse with Background suppression & 10-30VDC for other sensing models
(2) On the minimum setting, the background suppression distance (white) is 70 mm.
Visible laser radiation: do not stare into beam.
For XUE In operation mode the red laser pointer can be stopped in infrared transmission.

OsiSense™ Photo-Electric Sensors

Application
Packaging Series

Detection of transparent materials, plastic, 3 wire, IP67, 12-24V DC

Sensing Mode	Sensing Distance	Connection	Output Function	Reference
Reflex	0.8…2m (1)	Pre-wired (2m)	PNP NO/NC	XUMTAPCNL2
		M8	PNP NO/NC	XUMTAPCNM8



XUMTAPCNL2

Accessories

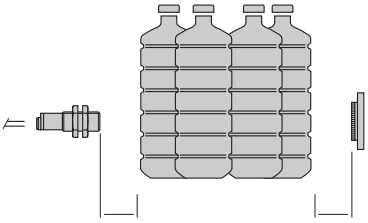
Description	Size/Length	No of Wires	Reference
Standard reflector	50 x 50 mm	-	XUZC50
M8 Cable Straight	2 (M)	3	XZCP0566L2
M8 Cable Elbow	2 (M)	3	XZCP0666L2



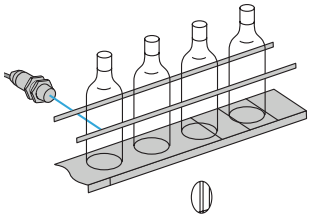
XUMTAPCNM8

Detection of transparent materials, SS304, 3 wire, 12-24V DC (1) (2)

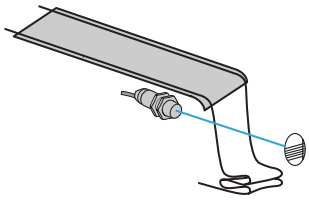
Description	Sensing Distance Sn	Connection	Output Function	Reference
Coaxial polarised reflex	0 to 1.4m (3)	Pre-wired (2m)	PNP N/O or N/C	XUBTSPSNL2
with teach mode			NPN N/O or N/C	XUBTSNSNL2
Cylindrical Ø18		M12 connector	PNP N/O or N/C	XUBTSPSNM12
			NPN N/O or N/C	XUBTSNSNM12



No blind zone.



Detection of transparent bottles.



Detection of plastic film.



XUK8AKSNL2

Note:
(1) For products 90° to case axis, replace SN with SW in the middle of the reference.
(2) For 5m long cable, replace L2 with L5 at the end of the reference.
(3) Line of sight along case axis: Sn = 0 to 1.4m with reflector XUZC50.
(4) Maximum switching frequency of 1000Hz.
(5) Dynamic correction of dust.

Detection of objects on a conveyor, 3 wire 12-24V DC (2)

Sensing mode	Sensing Distance	Connection	Output Function (1)	Reference
Diffuse with BS	1 m	M12 connector	PNP or NPN	XUK8AKSNM12
		Pre-wired (2m)	PNP or NPN	XUK8AKSNL2

Note:
(1) Programmable N/O or N/C output function.
(2) Long sensing distance with high accuracy.



XUVU06M3PSNM8

Detection of special transparent labels 4 wire, 12-24 VDC

Sensing Mode	Measuring Distance	Connection	Output Function	Reference
Thru - Beam	3 mm	M8, 4-pin	PNP NO/NC	XUVU06M3PSNM8
Ultrasonic				

Detection of other opaque labels 4 wire, 12-24 VDC

Sensing Mode	Measuring Distance	Connection	Output Function	Reference
Thru - Beam	3 mm	M8, 4-pin	PNP NO/NC	XUVE04M3PSNM8
Infrared				



XUVE04M3PSNM8

Detection of opaque labels, 3 wire 12-24V DC

Sensing mode	Sensing Distance	Connection	Output Function (1)	Reference
Thru-beam (2)	2 mm	M8 connector	PNP or NPN	XUVK0252S

Note:
(1) Programmable light or dark switching.



XUVK0252S

OsiSense™ Photo-Electric Sensors

Application
Packaging Series



XURK1KSMM12

Colour mark reader, 3 wire 12-24V DC

Description	Sensing Distance (1)	Connection	Output Function	Reference
Diffuse with teach mode	9mm to 18mm	M12 connector	PNP or NPN light or dark programmable	XURK1KSMM12

Applications include:
- detection of contrasting colours on matt, reflective or embossed surfaces
- colour mark reading used in conjunction with automatic packaging
- batching or tube fitting machines
- labelling machines.

Note:
(1) Lenses for reduction or magnification of spots:

Lens	Sensing distance	Spot size
XURZ01	Sn = 18mm	7 x 2mm
XURZ02	Sn = 7mm	4 x 1mm
Standard	Sn = 9mm	5 x 1.5mm



XU5M18U1D

Luminescence sensor, 3 wire 12-24V DC (with 20ms “OFF” time delay)

Description	Sensing Distance (1)	Connection	Output Function	Reference
Diffuse				
E/R Cylindrical	20mm	M12 connector	PNP	XU5M18U1D

Applications include:
- detection of invisible index marks, colour marks, glues or varnish containing azurine agents.

Note:
(1) Lenses for reduction or magnification of spots:

Lens	**Sensing distance**	**Spot size**
XURZ01	Sn = 18mm	7 x 2mm
XURZ02	Sn = 7mm	4 x 1mm
Standard	Sn = 9mm	5 x 1.5mm



XURC3•PML2

Full Colour sensor, 3 wire 12-24V DC

Description	Sensing Range	Connection	Output Light switching	Reference
Compact	40-60mm	Pre-wired (2m)	3 x PNP 3 wire	XURC3PPML2
Compact	40-60mm	Pre-wired (2m)	3 x NPN 3 wire	XURC3NPML2
Fibre optic (1)	4-250mm	Pre-wired (2m)	3 x PNP 3 wire	XURC4PPML2
Fibre optic (1)	4-250mm	Pre-wired (2m)	3 x NPN 3 wire	XURC4NPML2

Applications include:
- for detection of up to 3 colours. It can be used to sort objects by colour or to monitor colours, and is insensitive to matt or gloss surface finishes, as well as ambient lighting.



XURC4•PML2

Detection of water and aqueous liquids, 3 wire 12-24V DC

Description	Sensing Distance	Connection	Output Function (1)	Reference
Thru-beam	0.2 m	Pre-wired (2m)	PNP or NPN	XUMW1KSNL2

Note:
(1) Programmable N/O or N/C output function.
(2) Reference XUMW1KSNL2 is for both transmitter and receiver.



XUMW1KSNL2

Note:
(1) Fibres not supplied. Refer page 3.6.41

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

OsiSense™ Photo-Electric Sensors



Application, Conveying & Material handling series
Roller conveyor fully integrated photo-electric sensor

XUY Roller Sensor - The first fully integrated roller conveyer sensor

Using a multi-beam photo-electric sensor across the width of the conveyor, this fully integrated roller sensor is a breakthrough in sensor technology for roller conveyor applications.

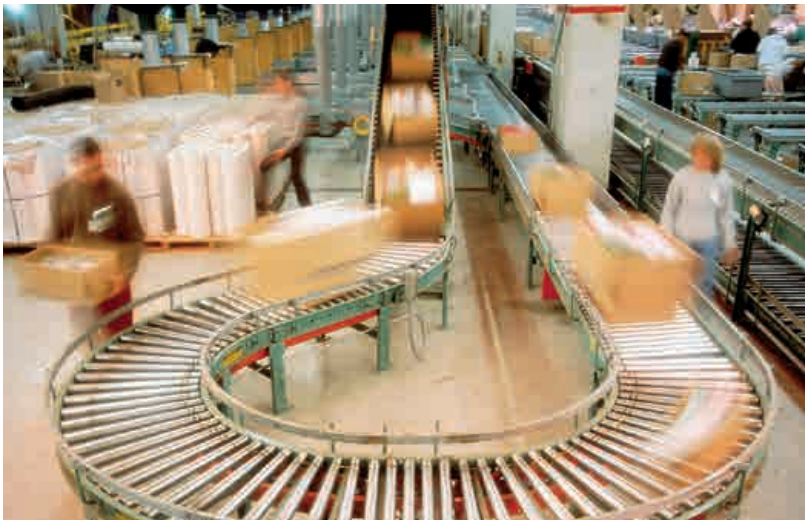
The XUY is easily installed between the roller conveyors and detects all objects passing over the rollers - no matter their shape, colour or position. Featuring an innovative new design that eliminates the time consuming, and more costly traditional mounting styles, the XUY can be installed and moved without the need for tools.

Encased in an Ø12mm aluminium tube, the XUY roller sensor can be ordered to suit roller conveyor widths from 200mm to 900mm and, depending on the conveyor width, will accommodate from one to six sensors across the tube.

To see the roller conveyor sensor in full operation use your smart phone to click on the QR code above to see our YouTube video link or visit http://www.youtube.com/watch?v=xNkPWIo0WdQ

Benefits

- Fast and simple installation
- No tools needed
- Easy mounting from the top
- Gain of 50% in installation and adjustment
- 3 mounting solutions (Hexagonal 7/16”, Ø 8 mm, or adhesive supports)



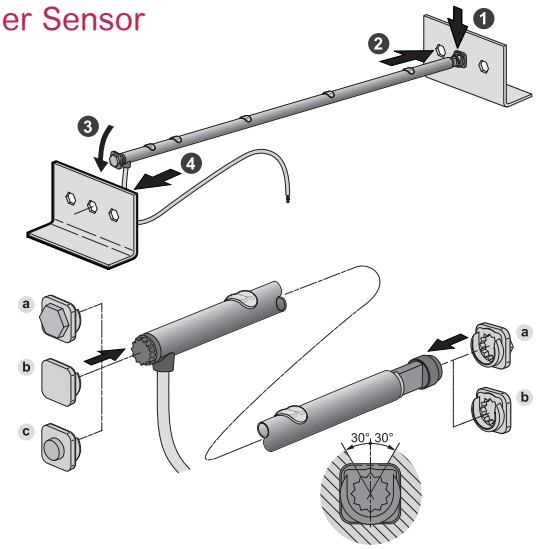
Full detection

- No package colour effecting sensor performance due to reliable infra-red sensing technology
- Easy direction adjustment, every 30°
- Full length detection from multiple sensors embedded within the sensor housing
- Convex lens to avoid dust accumulation

3.6

Characteristics - OsiSense™ XUY Roller Sensor

- Number of sensors: from 1 to 6 alongside the tube
- Detection mode: diffuse infrared
- Sensing distance up to 100 mm
- Dimension: Ø 12 mm, from 200 to 900 mm
- Material case / lens: aluminium / PMMA
- 3 mounting solutions with spring effect:
- Hexagonal 7/16”, Ø 8 mm & Adhesive part
- Supply voltage: 24 V DC
- Connection: M12, 4 pins connector or cable
- Output: PNP/NPN, NO/NC programmable
- Switching frequency: 500 Hz
- Operating temperature: -10°C to to 50°C
- Degree of protection: IP 50 (IP 65 on request)



Please contact Schneider electric for additional information and pricing for roller conveyor lengths (200 to 900mm)

OsiSense™ Photo-Electric Sensors

Application
Mechanical Handling & Assembly Series



XUK1ARCNL2H60

Access control kit, 24-240V AC/DC

Sensing Mode	Sensing Distance	Connection	Output Function	Reference
Reflex	6m	Pre-wired (2m)	C/O Light	XUK1ARCNL2H60

complete with 50x50mm reflector, mounting bracket and installation instructions



XUJB06031H60

Access monitoring kit with integral buzzer 24-240V AC, 24-48V DC

Sensing Mode	Sensing Distance	Connection	Output Function	Reference
Reflex	6m	Screw terminals	N/O Dark	XUJB06031H60

complete with Ø80 mm reflector, mounting bracket and installation instructions



XU5M18AB20D

Analogue output, 4-20mA, 3 wire 12-24V DC

Sensing mode	Sensing Range	Output Function	Reference
Diffuse	0.05 - 0.4m	PNP	XU5M18AB20D
Diffuse	0.2 - 0.8m	PNP	XUJK803538 (1)



XUJK803538

Note:
(1) Output function can be either 4..20mA or 0..10V.

Laser sensors, 3 wire 12-24V DC

Description	Sensing Range	Output Function	Reference
Thru-Beam	100m	PNP	XUBLAPCNM12
		NPN	XUBLANCNM12

Note:
(1) Reference includes transmitter and receiver.
(2) Programmable light or dark switching
(3) Class II laser, conforming to IEC 825-1. Do not stare into laser beam
(4) For metal housing change A to B (Example: XUBLAPCNM12 to XUBLBPCNL2).



XU2M18AP20D

High excess gain, 4..20mA, 3 wire 12-24V DC (1)

Sensing Mode	Sensing Distance max / usable	Connection	Output Function	Reference
Thru-Beam	70 / 50m	M12 connector	PNP N/C	XU2M18AP20D

Note:
(1) Suitable for the detection of objects in a harsh environment (smoke, dust, mist etc.) Example: detection of a number of white sheets of paper inside packaging.

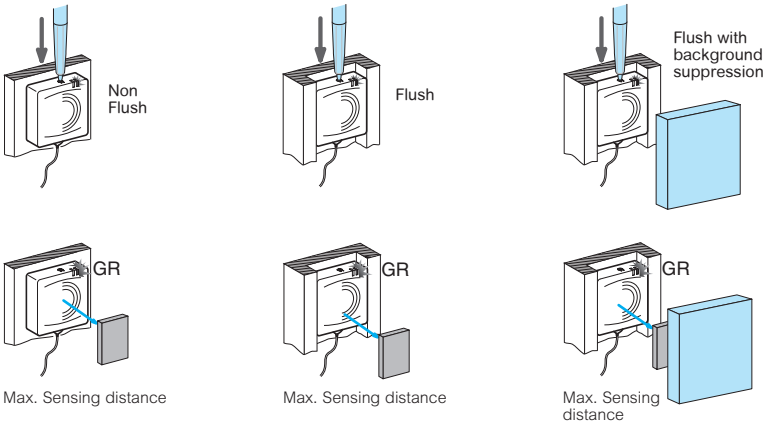
OsiSense™
Inductive Proximity Sensors

Offering Simplicity Through Innovation

Operating principle

In proposing the OsiSense™ technology, Schneider Electric offers simplicity through innovation.

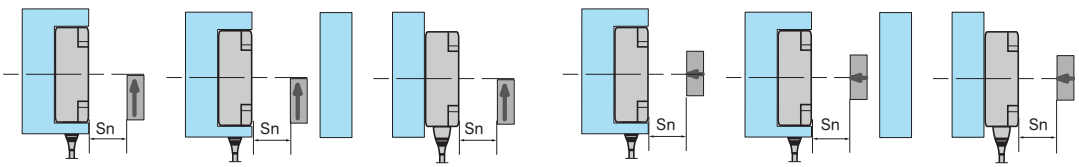
- With OsiSense™, a single product that automatically adapts to any installation environment; flush or non-flush mountable. Automatic configuration of the product is achieved simply by pressing a "self - teach" button.
- Other advantages of OsiSense™:
- Increased performance:
  - sensing distance guaranteed and optimized irrespective of the mounting configuration, the object, the environment or the background
  - suitable for all metal environments.
- Simplified use provided by:
  - the OsiSense™ technology associated with the availability of the flattest, most compact sensors on the market ensuring that the sensor is fully built into the machine, thereby limiting risks of mechanical damage
  - mechanical adjustments being eliminated through the use of the teach mode.
- Lower costs due to:
  - adjustment times and complex supports being eliminated,
  - the elimination of flush mountable and non flush mountable versions which halves the number of references
  - much easier and much quicker product selection.



Precise position detection

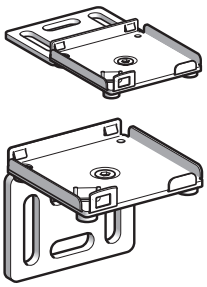
All OsiSense™ inductive proximity sensors benefit from ultra precise adjustment which is very quick irrespective of the metal environment.

- Precision side approach detection makes it possible to accurately define the position at which the object will be detected as it passes the sensor. Due to the OsiSense™ technology, the desired detection position can be stored in memory by simply pressing the teach button.
- Precision frontal approach detection makes it possible to accurately define the position at which the object will be detected as it approaches the sensor. Due to the OsiSense™ technology, the desired detection position can be stored in memory by simply pressing the teach button.



Precision side approach detection

Precision frontal approach detection



Mounting accessories

Schneider Electric proposes a complete, inexpensive range of mounting accessories (clamps, plates, brackets, etc.) providing solutions to all setting-up problems.

- Fixing kits enable quick installation or replacement of OsiSense™ sensors.
- No adjustment is required. Simple clipping-in enables the sensor to be fixed in position and ready for operation.

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Inductive Proximity Sensors

Universal ("self-teach")
Cylindrical, Metal - IP67
Ultra Flat, Plastic - IP67/68



XS612B2PAL01M12



XS630B2PAL01M12

"Self-teach" Cylindrical, 3 wire, 12 - 24V DC (1) (2)

Sensing distance (mm)			Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa					
	Flush	Non-Flush				
5	2.7	4	Ø12	M12 connector	PNP N/O	XS612B2PAL01M12
					NPN N/O	XS612B2NAL01M12
9	4.8	7.2	Ø18	M12 connector	PNP N/O	XS618B2PAL01M12
					NPN N/O	XS618B2NAL01M12
18	8.8	14.4	Ø30	M12 connector	PNP N/O	XS630B2PAL01M12
					NPN N/O	XS630B2NAL01M12

Mounting accessories

Description		Reference
Fixing clamp for remote control		XSZBPM12
Fixing clamps for XS6•	Ø12 (M12 x 1)	XSZB112
	Ø18 (M18 x 1)	XSZB118
	Ø30 (M30 x 1.5)	XSZB130



XS8E1A1PAM8



XS8C1A1••L2



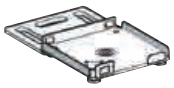
XS8D1A1PAM12

"Self-teach" Ultra Flat, 3 wire, 12 - 24V DC (2)

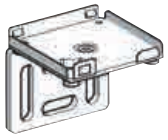
Sensing distance (mm)			Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa					
	Flush	Non-Flush				
15	8	12	26x26x13 Form E	M8 connector	PNP N/O	XS8E1A1PAM8
					NPN N/O	XS8E1A1NAM8
				Pre-wired(2m)	PNP N/O	XS8E1A1PAL2
					NPN N/O	XS8E1A1NAL2
25	12	20	40x40x15 Form C	M8 connector	PNP N/O	XS8C1A1PAM8
					NPN N/O	XS8C1A1NAM8
				Pre-wired(2m)	PNP N/O	XS8C1A1PAL2
					NPN N/O	XS8C1A1NAL2
60	32	48	80x80x26 Form D	M12 connector	PNP N/O	XS8D1A1PAM12
					NPN N/O	XS8D1A1NAM12
				Pre-wired(2m)	PNP N/O	XS8D1A1PAL2
					NPN N/O	XS8D1A1NAL2

"Self-teach" Ultra Flat, 2 wire, 24 - 240V AC/DC (3)

Sensing distance (mm)			Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa					
	Flush	Non-Flush				
15	8	12	26x26x13 Form E	1/2" 20 UNF Connector	N/O	XS8E1A1MAL01U20
					N/C	XS8E1A1MBL01U20
				Pre-wired(2m)	N/O	XS8E1A1MAL2
					N/C	XS8E1A1MBL2
25	12	20	40x40x15 Form C	1/2" 20 UNF Connector	N/O	XS8C1A1MAL01U20
					N/C	XS8C1A1MBL01U20
				Pre-wired(2m)	N/O	XS8C1A1MAL2
					N/C	XS8C1A1MBL2
60	32	48	80x80x26 Form D	1/2" 20 UNF Connector	N/O	XS8D1A1MAU20
					N/C	XS8D1A1MBU20
				Pre-wired(2m)	N/O	XS8D1A1MAL2
					N/C	XS8D1A1MBL2



XSZB•00



XSZB•90

Mounting accessories

Description		Reference
"Clip" mounting plate	XS• E	XSZBE00
	XS• C	XSZBC00
"Clip" 90° mounting bracket	XS• E	XSZBE90
	XS• C	XSZBC90
Replacement bracket	XS• E	XSZBE10
	XS• C	XSZBC10
	XS• D	XSZBD10

Note:
(1) M12 connectors with 0.15m flying lead
(2) For N/C versions replace PA with PB or NA with NB in the middle of the reference.
(3) For short circuit protection connect a 0.4A "quick blow" fuse in series with the load.
Fuse 0.4A "quick blow" 5 x 20 cartridge ➡XUZE04
Fuse holder ➡AB1FU10135U

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Inductive Proximity Sensors

Universal
Cylindrical, Metal - IP67/68 & IP69K



XS608B1PAM12



XS618B1PAM12



XS618B1PAL2



XS630B1PAM12

Cylindrical, Flush, 3 wire, 12 - 48V DC (1) (2)

Sensing distance (mm)		Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
2.5	2	Ø8	M12 connector	PNP N/O	XS608B1PAM12
				NPN N/O	XS608B1NAM12
			Pre-wired (2m)	PNP N/O	XS608B1PAL2
				NPN N/O	XS608B1NAL2
4	3.2	Ø12	M12 connector	PNP N/O	XS612B1PAM12
				NPN N/O	XS612B1NAM12
			Pre-wired (2m)	PNP N/O	XS612B1PAL2
				NPN N/O	XS612B1NAL2
8	6.4	Ø18	M12 connector	PNP N/O	XS618B1PAM12
				NPN N/O	XS618B1NAM12
			Pre-wired (2m)	PNP N/O	XS618B1PAL2
				NPN N/O	XS618B1NAL2
15	12	Ø30	M12 connector	PNP N/O	XS630B1PAM12
				NPN N/O	XS630B1NAM12
			Pre-wired (2m)	PNP N/O	XS630B1PAL2
				NPN N/O	XS630B1NAL2

Wiring diagrams

Connector

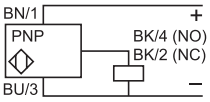
M12



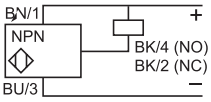
Pre-cabled

BU: Blue
BN: Brown
BK: Black

PNP



NPN



Cylindrical, Flush, 2 wire, 24 - 240V AC/DC (2)

Sensing distance (mm)		Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
1.5	1.2	Ø8	Pre-wired (2m)	N/O	XS1M08MA230
				N/C	XS1M08MB230
4	3.2	Ø12	1/2" 20 UNF Connector	N/O	XS612B1MAU20
				N/C	XS612B1MBU20
			Pre-wired (2m)	N/O	XS612B1MAL2
				N/C	XS612B1MBL2
8	6.4	Ø18	1/2" 20 UNF Connector	N/O	XS618B1MAU20
				N/C	XS618B1MBU20
			Pre-wired (2m)	N/O	XS618B1MAL2
				N/C	XS618B1MBL2
15	12	Ø30	1/2" 20 UNF Connector	N/O	XS630B1MAU20
				N/C	XS630B1MBU20
			Pre-wired (2m)	N/O	XS630B1MAL2
				N/C	XS630B1MBL2

Wiring diagrams

Connector

1/2" - 20 UNF



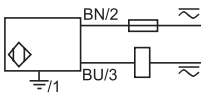
+/ : 2
⏚ : 1
+/ : 3

Pre-cabled

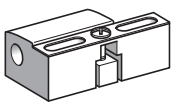
BU: Blue
BN: Brown

2 wire ∿ or ⎓

N/O or N/C output



⏚: on connector models only



XSZB1••

Mounting accessories

Description		Reference
Fixing clamps for XS1 •	Ø8 (M8 x 1)	XSZB108
Fixing clamps for XS6 •	Ø8 (M8 x 1)	XSZB108
	Ø12 (M12 x 1)	XSZB112
	Ø18 (M18 x 1)	XSZB118
	Ø30 (M30 x 1.5)	XSZB130

Note:
(1) For N/C versions replace A with B in the middle of the reference.
(2) It is essential to connect a 0.4A "quick blow" fuse in series with the load.
Fuse 0.4A "quick blow" 5 x 20 cartridge ➡XUZE04
Fuse holder ➡AB1FU10135U

OsiSense™ Inductive Proximity Sensors

Universal
Cylindrical, Metal - IP67/68 & IP69K


XS608B3CAL2


XS612B3DAL2


XS618B3DAL2


XS630B3DAL2

Cylindrical Flush, 2 wire, 12 - 24V DC, Short body with increased range (1)

Sensing distance (mm) Nominal Sn	Usable Sa	Body style	Connection	Output Function	Reference
2.5	2	Ø8	Remote M12 Connector	N/O	XS608B3CAL01M12
				N/C	XS608B3CBL01M12
			Pre-wired (2m)	N/O	XS608B3CAL2
				N/C	XS608B3CBL2
4	3.2	Ø12	M12 Connector	N/O	XS612B3DAM12
				N/C	XS612B3DBM12
			Pre-wired (2m)	N/O	XS612B3DAL2
				N/C	XS612B3DBL2
8	6.4	Ø18	M12 Connector	N/O	XS618B3DAM12
				N/C	XS618B3DBM12
			Pre-wired (2m)	N/O	XS618B3DAL2
				N/C	XS618B3DBL2
15	12	Ø30	M12 Connector	N/O	XS630B3DAM12
				N/C	XS630B3DBM12
			Pre-wired (2m)	N/O	XS630B3DAL2
				N/C	XS630B3DBL2

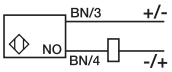
Cylindrical Flush, 2 wire, 12 - 48V DC, Long body with increased range

Sensing distance (mm) Nominal Sn	Usable Sa	Body style	Connection	Output Function	Reference
2.5	2	Ø8	M12 Connector	N/O	XS608B1DAM12
				N/C	XS608B1DBM12
			Pre-wired (2m)	N/O	XS608B1DAL2
				N/C	XS608B1DBL2
4	3.2	Ø12	M12 Connector	N/O	XS612B1DAM12
				N/C	XS612B1DBM12
			Pre-wired (2m)	N/O	XS612B1DAL2
				N/C	XS612B1DBL2
8	6.4	Ø18	M12 Connector	N/O	XS618B1DAM12
				N/C	XS618B1DBM12
			Pre-wired (2m)	N/O	XS618B1DAL2
				N/C	XS618B1DBL2
15	12	Ø30	M12 Connector	N/O	XS630B1DAM12
				N/C	XS630B1DBM12
			Pre-wired (2m)	N/O	XS630B1DAL2
				N/C	XS630B1DBL2

Wiring

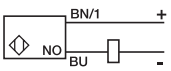
N/O Output

2-wire DC non polarised

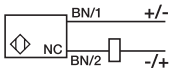


2-wire DC polarised

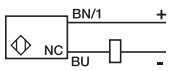
XS608B3CAL



N/C Output



XS608B3CBL



Pre-wired

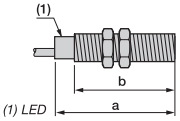
BU: Blue
BN: Brown

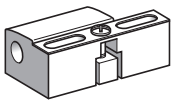


Short Body		Pre-wired (mm) a	Pre-wired (mm) b	M12 connector (mm) a	M12 connector (mm) b
XS608B3C	Ø8	33	25	-	24
XS612B3D	Ø12	35	25	50	30
XS618B3D	Ø18	39	28	50	28
XS630B3D	Ø30	43	32	55	32

Long Body		Pre-wired (mm) a	Pre-wired (mm) b	M12 connector (mm) a	M12 connector (mm) b
XS608B1D	Ø8	51	42	62	42
XS612B1D	Ø12	53	42	62	42
XS618B1D	Ø18	62	52	74	52
XS630B1D	Ø30	62	52	74	52

Dimensions




XSZB1••

Mounting accessories

Description		Reference
Fixing Clamps XS1	Ø8 (M8 x 1)	XSZB108
	Ø12 (M12 x 1)	XSZB112
	Ø18 (M18 x 1)	XSZB118
	Ø30 (M30 x 1.5)	XSZB130

Note:
(1) For a 5m cable, replace L2 with L5.

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Inductive Proximity Sensors

Universal
Cylindrical, Metal - IP67/68



XS612B4PAL2



XS618B4PAL2



XS630B4PAL2



XS618B4MAL2



XS630B4MAL2

Cylindrical Non Flush, 3 wire, 12 - 48V DC, Long body with increased range (1)

Sensing distance (mm)		Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
7	5.6	Ø12	M12 Connector	PNP N/O	XS612B4PAM12
				NPN N/O	XS612B4NAM12
			Pre-wired (2m)	PNP N/O	XS612B4PAL2
				NPN N/O	XS612B4NAL2
			M12 Connector	PNP N/C	XS612B4PBM12
				NPN N/C	XS612B4NBM12
			Pre-wired (2m)	PNP N/C	XS612B4PBL2
				NPN N/C	XS612B4NBL2
12	9.6	Ø18	M12 Connector	PNP N/O	XS618B4PAM12
				NPN N/O	XS618B4NAM12
			Pre-wired (2m)	PNP N/O	XS618B4PAL2
				NPN N/O	XS618B4NAL2
			M12 Connector	PNP N/C	XS618B4PBM12
				NPN N/C	XS618B4NBM12
			Pre-wired (2m)	PNP N/C	XS618B4PBL2
				NPN N/C	XS618B4NBL2
22	17.6	Ø30	M12 Connector	PNP N/O	XS630B4PAM12
				NPN N/O	XS630B4NAM12
			Pre-wired (2m)	PNP N/O	XS630B4PAL2
				NPN N/O	XS630B4NAL2
			M12 Connector	PNP N/C	XS630B4PBM12
				NPN N/C	XS630B4NBM12
			Pre-wired (2m)	PNP N/C	XS630B4PBL2
				NPN N/C	XS630B4NBL2

Wiring diagrams

Connector

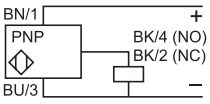
M12



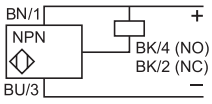
Pre-wired

BU: Blue
BN: Brown
BK: Black

PNP



NPN



Cylindrical Non Flush, 2 wire, 24 - 240V AC/DC, Long body with increased range (1) (2)

Sensing distance (mm)		Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
12	9.6	Ø18	1/2"-20UNF Connector	N/O	XS618B4MAU20
				N/C	XS618B4MBU20
			Pre-wired (2m) (1)	N/O	XS618B4MAL2
				N/C	XS618B4MBL2
22	17.6	Ø30	1/2"-20UNF Connector	N/O	XS630B4MAU20
				N/C	XS630B4MBU20
			Pre-wired (2m) (1)	N/O	XS630B4MAL2
				N/C	XS630B4MBL2

Wiring

Connector

1/2" - 20 UNF

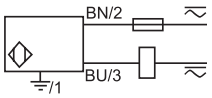


+/ : 2
⏚ : 1
+/ : 3

Pre-wired

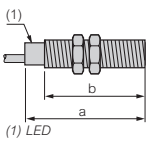
BU: Blue
BN: Brown

N/O or N/C output, 2 - wire AC or DC



⏚: *on connector models only*

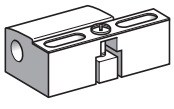
Dimensions



(1) LED

		Pre-wired (mm)		M12 connector (mm)		
Long Body		a	b	a	b	c
XS612B4	Ø12	55	42	66	42	5
XS618B4	Ø18	60	44	72	44	8
XS630B4	Ø30	63	41	74	41	13

Mounting accessories



XSZB1••

Description		Reference
Fixing Clamps XS6	Ø12 (M12 x 1)	XSZB112
	Ø18 (M18 x 1)	XSZB118
	Ø30 (M30 x 1.5)	XSZB130

Note:
(1) For a 5m cable, replace L2 with L5; for a 10m cable, replace L2 with L10.
(2) It is essential to connect a 0.4A "quick blow" fuse in series with the load.

OsiSense™ Inductive Proximity Sensors

Universal
Cylindrical, Metal - IP67/68


XS108B3PAL2


XS112B3PAL2


XS118B3PAL2


XS130B3PAL2

Cylindrical Flush, 3 wire, 12 - 24V DC, Short body with increased range (1)

Sensing distance (mm)		Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
2.5	2	Ø8	M12 Connector	PNP N/O	XS108B3PAM12
				NPN N/O	XS108B3NAM12
			Pre-wired (2m)	PNP N/O	XS108B3PAL2
				NPN N/O	XS108B3NAL2
			M12 Connector	PNP N/C	XS108B3PBM12
				NPN N/C	XS108B3NBM12
			Pre-wired (2m)	PNP N/C	XS108B3PBL2
				NPN N/C	XS108B3NBL2
4	3.2	Ø12	M12 Connector	PNP N/O	XS112B3PAM12
				NPN N/O	XS112B3NAM12
			Pre-wired (2m)	PNP N/O	XS112B3PAL2
				NPN N/O	XS112B3NAL2
			M12 Connector	PNP N/C	XS112B3PBM12
				NPN N/C	XS112B3NBM12
			Pre-wired (2m)	PNP N/C	XS112B3PBL2
				NPN N/C	XS112B3NBL2
8	6.4	Ø18	M12 Connector	PNP N/O	XS118B3PAM12
				NPN N/O	XS118B3NAM12
			Pre-wired (2m)	PNP N/O	XS118B3PAL2
				NPN N/O	XS118B3NAL2
			M12 Connector	PNP N/C	XS118B3PBM12
				NPN N/C	XS118B3NBM12
			Pre-wired (2m)	PNP N/C	XS118B3PBL2
				NPN N/C	XS118B3NBL2
15	12	Ø30	M12 Connector	PNP N/O	XS130B3PAM12
				NPN N/O	XS130B3NAM12
			Pre-wired (2m)	PNP N/O	XS130B3PAL2
				NPN N/O	XS130B3NAL2
			M12 Connector	PNP N/C	XS130B3PBM12
				NPN N/C	XS130B3NBM12
			Pre-wired (2m)	PNP N/C	XS130B3PBL2
				NPN N/C	XS130B3NBL2

Wiring

Connector

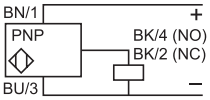
M12



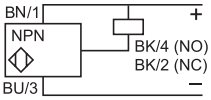
Pre-wired

BU: Blue
BN: Brown
BK: Black

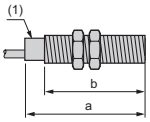
PNP



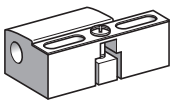
NPN



Dimensions



		Pre-wired (mm)		M12 connector (mm)	
Short Body		a	b	a	b
XS108B3	Ø8	33	25	45	24
XS112B3	Ø12	35	25	50	30
XS118B3	Ø18	39	28	50	28
XS130B3	Ø30	43	32	55	32


XSZB1••

Mounting accessories

Description		Reference
Fixing Clamps XS1	Ø8 (M8 x 1)	XSZB108
	Ø12 (M12 x 1)	XSZB112
	Ø18 (M18 x 1)	XSZB118
	Ø30 (M30 x 1.5)	XSZB130

Note:
(1) For a 5m cable, replace L2 with L5.

OsiSense™ Inductive Proximity Sensors

Cylindrical, Metal - IP67/68


XS512BLPAM12


XS518BLPAM12


XS530BLPAM12


XS512BLPAL2


XS518BLPAL2


XS5330BLPAL2

Cylindrical Flush, 3 wire,12 - 48V DC, Long body with standard range (1)

Sensing distance (mm) Nominal Sn	Usable Sa	Body style	Connection	Output Function	Reference
1.5	1.2	Ø8	M12 Connector	PNP N/O	XS508BLPAM12
				NPN N/O	XS508BLNAM12
			Pre-wired (2m)	PNP N/O	XS508BLPAL2
				NPN N/O	XS508BLNAL2
			M12 Connector	PNP N/C	XS508BLPBM12
				NPN N/C	XS508BLNBM12
			Pre-wired (2m)	PNP N/C	XS508BLPBL2
				NPN N/C	XS508BLNBL2
2	1.6	Ø12	M12 Connector	PNP N/O	XS512BLPAM12
				NPN N/O	XS512BLNAM12
			Pre-wired (2m)	PNP N/O	XS512BLPAL2
				NPN N/O	XS512BLNAL2
			M12 Connector	PNP N/C	XS512BLPBM12
				NPN N/C	XS512BLNBM12
			Pre-wired (2m)	PNP N/C	XS512BLPBL2
				NPN N/C	XS512BLNBL2
5	4	Ø18	M12 Connector	PNP N/O	XS518BLPAM12
				NPN N/O	XS518BLNAM12
			Pre-wired (2m)	PNP N/O	XS518BLPAL2
				NPN N/O	XS518BLNAL2
			M12 Connector	PNP N/C	XS518BLPBM12
				NPN N/C	XS518BLNBM12
			Pre-wired (2m)	PNP N/C	XS518BLPBL2
				NPN N/C	XS518BLNBL2
10	8	Ø30	M12 Connector	PNP N/O	XS530BLPAM12
				NPN N/O	XS530BLNAM12
			Pre-wired (2m)	PNP N/O	XS530BLPAL2
				NPN N/O	XS530BLNAL2
			M12 Connector	PNP N/C	XS530BLPBM12
				NPN N/C	XS530BLNBM12
			Pre-wired (2m)	PNP N/C	XS530BLPBL2
				NPN N/C	XS530BLNBL2

Wiring

Connector

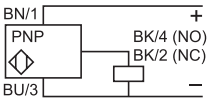
M12



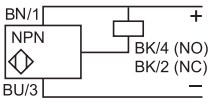
Pre-wired

BU: Blue
BN: Brown
BK: Black

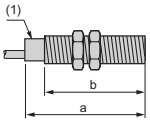
PNP



NPN

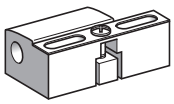


Dimensions



Long Body		Pre-wired (mm) a	Pre-wired (mm) b	M12 connector (mm) a	M12 connector (mm) b
XS508BL	Ø8	51	42	62	40
XS512BL	Ø12	53	42	62	42
XS518BL	Ø18	62	52	74	52
XS530BL	Ø30	63	52	74	52

Mounting accessories


XSZB1••

Description		Reference
Fixing Clamps XS1	Ø8 (M8 x 1)	XSZB108
	Ø12 (M12 x 1)	XSZB112
	Ø18 (M18 x 1)	XSZB118
	Ø30 (M30 x 1.5)	XSZB130

Note:
(1) For a 5m cable, replace L2 with L5; for a 10m cable, replace L2 with L10.

OsiSense™ Inductive Proximity Sensors

Cylindrical, Metal - IP67/68


XS508B1PAL2


XS512B1PAL2


XS518B1PAL2


XS530B1PAL2

Cylindrical Flush, 3 wire, 12 - 24V DC, Short body with standard range (1)

Sensing distance (mm) Nominal Sn	Usable Sa	Body style	Connection	Output Function	Reference
1.5	1.2	Ø8	M12 Connector	PNP N/O	XS508B1PAM12
				NPN N/O	XS508B1NAM12
			Pre-wired (2m)	PNP N/O	XS508B1PAL2
				NPN N/O	XS508B1NAL2
			M12 Connector	PNP N/C	XS508B1PBM12
				NPN N/C	XS508B1NBM12
			Pre-wired (2m)	PNP N/C	XS508B1PBL2
				NPN N/C	XS508B1NBL2
2	1.6	Ø12	M12 Connector	PNP N/O	XS512B1PAM12
				NPN N/O	XS512B1NAM12
			Pre-wired (2m)	PNP N/O	XS512B1PAL2
				NPN N/O	XS512B1NAL2
			M12 Connector	PNP N/C	XS512B1PBM12
				NPN N/C	XS512B1NBM12
			Pre-wired (2m)	PNP N/C	XS512B1PBL2
				NPN N/C	XS512B1NBL2
5	4	Ø18	M12 Connector	PNP N/O	XS518B1PAM12
				NPN N/O	XS518B1NAM12
			Pre-wired (2m)	PNP N/O	XS518B1PAL2
				NPN N/O	XS518B1NAL2
			M12 Connector	PNP N/C	XS518B1PBM12
				NPN N/C	XS518B1NBM12
			Pre-wired (2m)	PNP N/C	XS518B1PBL2
				NPN N/C	XS518B1NBL2
10	8	Ø30	M12 Connector	PNP N/O	XS530B1PAM12
				NPN N/O	XS530B1NAM12
			Pre-wired (2m)	PNP N/O	XS530B1PAL2
				NPN N/O	XS530B1NAL2
			M12 Connector	PNP N/C	XS530B1PBM12
				NPN N/C	XS530B1NBM12
			Pre-wired (2m)	PNP N/C	XS530B1PBL2
				NPN N/C	XS530B1NBL2

Wiring

Connector

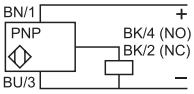
M12



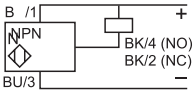
Pre-wired

BU: Blue
BN: Brown
BK: Black

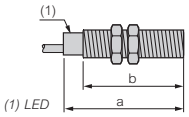
PNP



NPN



Dimensions



Short Body		Pre-wired (mm) a	Pre-wired (mm) b	M12 connector (mm) a	M12 connector (mm) b
XS508B1	Ø8	33	25	45	24
XS512B1	Ø12	35	25	50	30
XS518B1	Ø18	39	28	50	28
XS530B1	Ø30	43	32	55	32


XS512B1MAL2


XS518B1MAL2

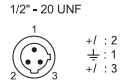

XS530B1MAL2

Cylindrical Flush, 2 wire, 24 - 240V AC/DC, Long body with standard range (1) (2)

Sensing distance (mm) Nominal Sn	Usable Sa	Body style	Connection	Output Function	Reference
2	1.6	Ø12	1/2" - 20 UNF Connector	N/O	XS512B1MAU20
				N/C	XS512B1MBU20
			Pre-wired (2m)	N/O	XS512B1MAL2
				N/C	XS512B1MBL2
5	4	Ø18	1/2" - 20 UNF Connector	N/O	XS518B1MAU20
				N/C	XS518B1MBU20
			Pre-wired (2m)	N/O	XS518B1MAL2
				N/C	XS518B1MBL2
10	8	Ø30	1/2" - 20 UNF Connector	N/O	XS530B1MAU20
				N/C	XS530B1MBU20
			Pre-wired (2m)	N/O	XS530B1MAL2
				N/C	XS530B1MBL2

Wiring

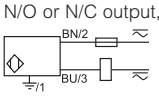
Connector



Pre-wired

BU: Blue
BN: Brown

N/O or N/C output, 2 - wire AC or DC



⏚: on connector models only

Note:
(1) For a 5m cable, replace L2 with L5; for a 10m cable, replace L2 with L10.
(2) It is essential to connect a 0.4A "quick blow" fuse in series with the load.

OsiSense™ Inductive Proximity Sensors

Universal - Classic
Cylindrical, Metal - IP68


XS1M30KP340

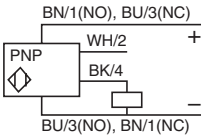

XS1M18KP340D

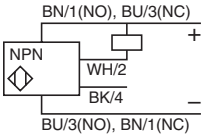
Cylindrical, Flush, 4 wire, 12 - 24V DC

Sensing distance (mm) Nominal Sn	Body style	Connection	Output Function (1)	Reference
2	Ø12	Pre-wired (2m)	Selectable (4 wire)	XS1M12KP340
		M12 connector	Selectable (4 wire)	XS1M12KP340D
5	Ø18	Pre-wired (2m)	Selectable (4 wire)	XS1M18KP340
		M12 connector	Selectable (4 wire)	XS1M18KP340D
10	Ø30	Pre-wired (2m)	Selectable (4 wire)	XS1M30KP340
		M12 connector	Selectable (4 wire)	XS1M30KP340D

Wiring diagrams

XS -M KP340/KPM40






XS2M18KP340

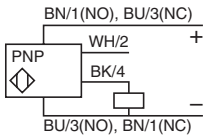

XS2M30KP340

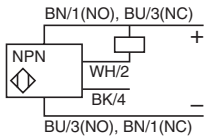
Cylindrical, Non-Flush, 4 wire, 12 - 24V DC

Sensing distance (mm) Nominal Sn	Body style	Connection	Output Function (1)	Reference
4	Ø12	Pre-wired (2m)	Selectable (4 wire)	XS2M12KP340
		M12 connector	Selectable (4 wire)	XS2M12KP340D
8	Ø18	Pre-wired (2m)	Selectable (4 wire)	XS2M18KP340
		M12 connector	Selectable (4 wire)	XS2M18KP340D
15	Ø30	Pre-wired (2m)	Selectable (4 wire)	XS2M30KP340
		M12 connector	Selectable (4 wire)	XS2M30KP340D

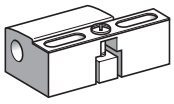
Wiring diagrams

XS -M KP340/KPM40





Mounting accessories


XSZB1••

Description		Reference
Fixing clamps for XS1• / XS2•	Ø12 (M12 x 1)	XSZB112
	Ø18 (M18 x 1)	XSZB118
	Ø30 (M30 x 1.5)	XSZB130

Note:
(1) Output function: programmable PNP/NPN, N/O or N/C

OsiSense™ Inductive Proximity Sensors

Ultra Flat, Plastic - IP67/68


XS7J1A1PAL2 XS7F1A1PAL2

"Dedicated", Ultra Flat, Flush, 3 wire, 12 - 24V DC (1)

Sensing Distance (mm) Nominal Sn	Usable sa	Body style	Connection	Output Function	Reference
2.5	2	Form J (2) (3) 8x22x8	M8 connector	PNP N/O	XS7J1A1PAL01M8
				NPN N/O	XS7J1A1NAL01M8
			Pre-wired (2m)	PNP N/O	XS7J1A1PAL2
				NPN N/O	XS7J1A1NAL2
5	4	Form F (2) 15x32x8	M8 connector	PNP N/O	XS7F1A1PAL01M8
				NPN N/O	XS7F1A1NAL01M8
			Pre-wired (2m)	PNP N/O	XS7F1A1PAL2
				NPN N/O	XS7F1A1NAL2
10	8	Form E 26x26x13	M8 connector	PNP N/O	XS7E1A1PAM8
				NPN N/O	XS7E1A1NAM8
			Pre-wired (2m)	PNP N/O	XS7E1A1PAL2
				NPN N/O	XS7E1A1NAL2
15	12	Form C 40x40x15	M8 connector	PNP N/O	XS7C1A1PAM8
				NPN N/O	XS7C1A1NAM8
			Pre-wired (2m)	PNP N/O	XS7C1A1PAL2
				NPN N/O	XS7C1A1NAL2
40	32	Form D 80x80x26	M12 connector	PNP N/O	XS7D1A1PAM12
				NPN N/O	XS7D1A1NAM12
			Pre-wired (2m)	PNP N/O	XS7D1A1PAL2
				NPN N/O	XS7D1A1NAL2


XS7E1A1PAM8

XS7C1A1PAM8


XS7D1A1PAM1

Wiring diagrams

Connector

M12



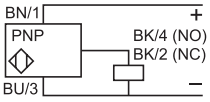
M8



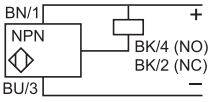
Pre-cabled

BU: Blue
BN: Brown
BK: Black

PNP/M12 or M6

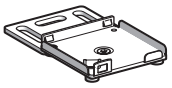


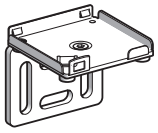
NPN/M12 or M8

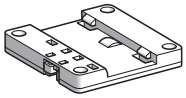


Mounting accessories

Description		Reference
"Clip" mounting plate	XS•J	XSZBJ00
	XS•F	XSZBF00
	XS•E	XSZBE00
	XS•C	XSZBC00
"Clip" 90° mounting bracket	XS•J	XSZBJ90
	XS•F	XSZBF90
	XS•E	XSZBE90
	XS•C	XSZBC90
Replacement bracket	XS•E	XSZBE10
	XS•C	XSZBC10
	XS•D	XSZBD10


XSZB•00



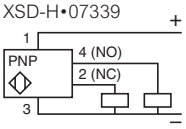

XSZBD10

"Block style", (Form D), Non-Flush, 4 wire, 12 - 48V DC (4) (5)

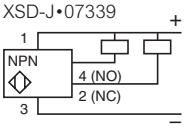
Nominal Sensing Distance (mm)	Function	Output function	Reference
30...60	Adjustable sensing distance	PNP N/O+N/C	XSDH607339
30...60	Adjustable sensing distance	NPN N/O+N/C	XSDJ607339

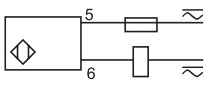
Wiring diagrams

XSD-H•07339



XSD-J•07339





"Block style", Flush & Non-Flush, 2 wire, 24 - 240V AC/DC (4) (5) (6)

Nominal Sensing Distance (mm)	Casing type	Mounting	Output function	Reference
30...60	Form D, plug-in	Non-Flush	N/O or N/C	XSDM600539


XSDM600539

Note:
(1) For N/C versions replace PA with PB, NA with NB in the middle of the reference.
(2) Form J and Form F, M8 connectors with 0.15m flying lead.
(3) Form J sensors include a basic fitting clamp with screw.
(4) XSD• sensors come complete with CM12 / Pg 13.5 cable gland
(5) XSD•60• sensors incorporate a sensing distance adjustment potentiometer. This enables adjustment to suit the following requirements:
- limiting the effect of surrounding objects (by decreasing the sensing distance)
- increasing the sensing distance up to 48mm. Settings above 48mm are not recommended.

(6) For short circuit protection connect a 0.8A "quick blow" fuse in series with the load. Fuse 0.8A "quick blow" 5 x 20 cartridge ➡ XUZE08 Fuse holder ➡ AB1FU10135U

OsiSense™ Inductive Proximity Sensors

General Purpose
Cubic Style, - Plastic - IP65, IP67 & IP69K

Cubic Style (40x40x70mm) 2 wire, 12 - 48V DC, M12 Connector

Nominal Sensing Distance (mm)	Function	Mounting	Output Function	Reference
15	5 Position Turret head	Flush	N/O	XS7C2A1DAM12
			N/C	XS7C2A1DBM12
20	5 Position Turret head	Flush	N/O	XS8C2A1DAM12
			N/C	XS8C2A1DBM12
40	5 Position Turret head	Non Flush	N/O	XS8C2A4DAM12
			N/C	XS8C2A4DBM12



XS8C2A4PCM12

Cubic Style (40x40x70mm) 3 wire, 12 - 48V DC, M12 Connector

Nominal Sensing Distance (mm)	Function	Mounting	Output Function	Reference
15	5 Position Turret head	Flush	PNP N/O	XS7C2A1PAM12
			NPN N/O	XS7C2A1NAM12
			PNP N/C	XS7C2A1PBM12
			NPN N/C	XS7C2A1NBM12

Cubic Style (40x40x70mm) 4 wire, 12 - 48V DC, M12 Connector - SIL2 Certified (1)

Nominal Sensing Distance (mm)	Function	Mounting	Output Function	Reference
20	5 Position Turret head	Flush	PNP N/O N/C	XS8C2A1PCM12
			NPN N/O N/C	XS8C2A1NCM12
40	5 Position Turret head	Non Flush	PNP N/O N/C	XS8C2A4PCM12
			NPN N/O N/C	XS8C2A4NCM12



CLICK



Cubic Style (40x40x70mm) 2 wire, 24 - 240V AC/DC, 1/2" 20 UNF Connector (2)

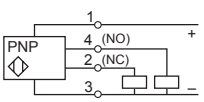
Nominal Sensing Distance (mm)	Function	Flush	Output Function	Reference
15	5 Position Turret head	Flush	N/O	XS7C2A1MAU20
			N/C	XS7C2A1MBU20
20	5 Position Turret head	Flush	N/O	XS8C2A1MAU20
			N/C	XS8C2A1MBU20
40	5 Position Turret head	Non Flush	N/O	XS8C2A4MAU20
			N/C	XS8C2A4MBU20

Accessory Cables

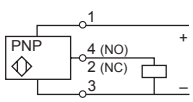
Description	Type	Length (M)	Reference
Pre-wired M12 connectors Female, 4-pin, zinc die-cast, nickel plated clamping ring	Straight	2	XZCP1141L2
		5	XZCP1141L5
		10	XZCP1141L10
	Elbow	2	XZCP1241L2
		5	XZCP1241L5
		10	XZCP1241L10
Pre-wired 1/2"-20UNF connectors Female, 3-pin, zinc die-cast, nickel plated clamping ring	Straight	5	XZCP1865L5
		10	XZCP1865L10
	Elbow	5	XZCP1965L5
		10	XZCP1965L10

Wiring schemes

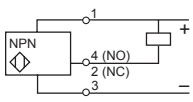
4-wire DC, NO + NC outputs



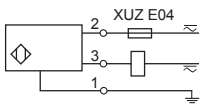
3-wire, PNP



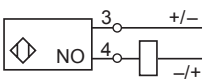
3-wire, NPN



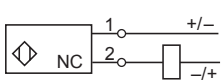
2-wire, 1/2"- 20UNF



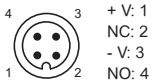
2-wire DC, NO output (M12 connector)



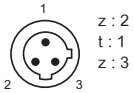
2-wire DC, NC output (M12 connector)



M12 connector



1/2"-20UNF connector



Note:
(1) SIL 2 protection can only be obtained by connecting both outputs to a safety PLC. Please refer to the "Safety solutions using Preventa" catalogue.
(2) Sensor must be protected by a 0.4 A quick-blow fuse (reference XUZ E04) connected in series with the load.

OsiSense™ Inductive Proximity Sensors

General Purpose
Cubic Style (Form C), - Plastic - IP65, IP67 & IP69K

Cubic Style (40x40x117mm) 2 wire, 12 - 48V DC, M20 Electrical entry

Nominal Sensing Distance (mm)	Function	Mounting	Output Function	Reference
15	5 Position Turret head	Flush	N/O or N/C	XS7C4A1DPP20
20	5 Position Turret head	Flush	N/O or N/C	XS8C4A1DPP20
40	5 Position Turret head	Non Flush	N/O or N/C	XS8C4A4DPP20


XS8C4A1PCP20

Cubic Style (40x40x117mm) 4 wire, 12 - 48V DC, M20 Electrical entry - SIL2 Certified (1)

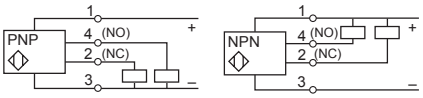
Nominal Sensing Distance (mm)	Function	Mounting	Output Function	Reference
20	5 Position Turret head	Flush	PNP N/O N/C	XS8C4A1PCP20
			NPN N/O N/C	XS8C4A1NCP20
40	5 Position Turret head	Non Flush	PNP N/O N/C	XS8C4A4PCP20
			NPN N/O N/C	XS8C4A4NCP20

Cubic Style (40x40x117mm) 2 wire, 24 - 240V AC/DC, M20 Electrical entry (2)

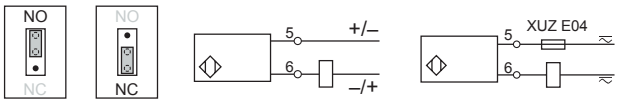
Nominal Sensing Distance (mm)	Function	Flush	Output Function	Reference
15	5 Position Turret head	Flush	N/O or N/C	XS7C4A1MPP20
20	5 Position Turret head	Flush	N/O or N/C	XS8C4A1MPP20
40	5 Position Turret head	Non Flush	N/O or N/C	XS8C4A4MPP20

Wiring schemes

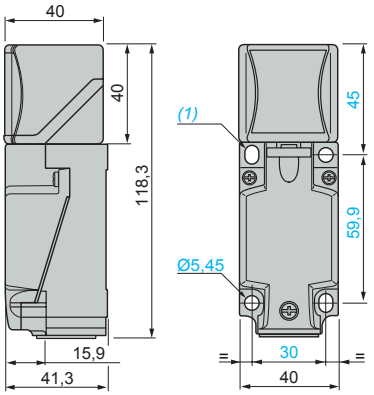
4-wire DC, NO + NC outputs



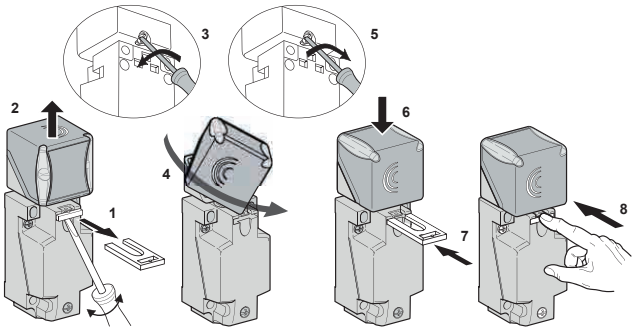
NO/NC Selector, 2-wire DC, (non polarised), 2-wire AC/DC (programmable)



Dimensions



Head positions



(1) 2 elongated holes Ø 5.3 x 7 mm.
Tightening torque of cover fixing screws and clamp screws: < 1.2 N.m

Note:
(1) SIL 2 protection can only be obtained by connecting both outputs to a safety PLC. Please refer to the "Safety solutions using Preventa" catalogue.
(2) Sensor must be protected by a 0.4 A quick-blow fuse (reference XUZ E04) connected in series with the load.

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

OsiSense™ Inductive Proximity Sensors

Analogue output Signal 0...10V & 0...4mA
Cubic Style, - Plastic - IP65, IP67 & IP69K

Cubic Style (40x40x70mm) Analogue output, M12 Connector

Nominal Sensing Distance (mm)	Function	Connection	Mounting	Output Function	Reference
15	5 Position Turret head	3 Wire	Non Flush	0…10V (1)	XS9C2A2A1M12
		2 Wire	Non Flush	4…20mA	XS9C2A2A2M12



XS9C2A2A1M12

Cubic Style (40x40x117mm) Analogue Output, M20 Electrical entry

Nominal Sensing Distance (mm)	Function	Connection	Mounting	Output Function	Reference
25	5 Position Turret head	3 Wire	Non Flush	0…10V (1)	XS9C4A2A1P20
		2 Wire	Non Flush	4…20mA	XS9C4A2A2P20



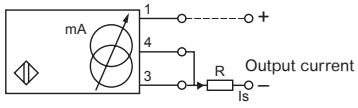
XS9C4A2A1P20

Accessory Cables

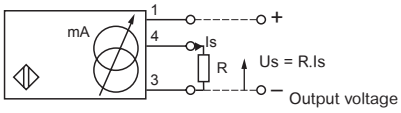
Description	Type	Length (M)	Reference
Pre-wired M12 connectors Female, 4-pin, zinc die-cast, nickel plated clamping ring	Straight	2	XZCP1141L2
		5	XZCP1141L5
		10	XZCP1141L10
	Elbow	2	XZCP1241L2
		5	XZCP1241L5
		10	XZCP1241L10
Pre-wired 1/2"-20UNF connectors Female, 3-pin, zinc die-cast, nickel plated clamping ring	Straight	5	XZCP1865L5
		10	XZCP1865L10
	Elbow	5	XZCP1965L5
		10	XZCP1965L10

Wiring schemes

2-wire

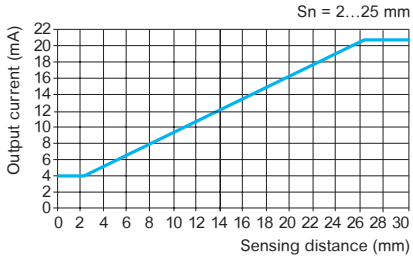


3-wire

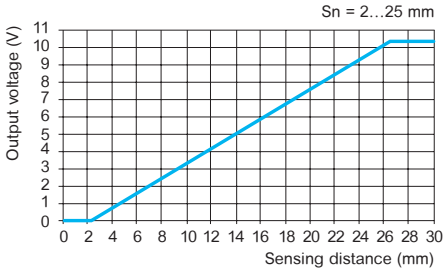


Analogue outputs 4-20 mA and 0-10 V

XS9C2A2A2M12 and XS9C4A2A2P20



XS9C2A2A1M12 and XS9C4A2A1P20



Note:
(1) Voltage range only obtained with a load impedance of 1000 Ω.

OsiSense™ Inductive Proximity Sensors

Application
Cylindrical, Plastic - IP67/68


XS4P08NA340S

XS4P08PA340


XS4P12PA340D

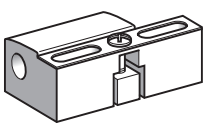

XS4P12PA340


XS4P18PA340D


XS4P18PA340


XS4P30NA340D


XS4P30PA340


XSZB1••

Cylindrical, Plastic, Non-Flush, 3 wire, 12 - 24V DC (1)

Sensing distance (mm)		Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
2.5	2	Ø8	M8 connector	PNP N/O	XS4P08PA340S
				NPN N/O	XS4P08NA340S
			Pre-wired (2m)	PNP N/O	XS4P08PA340
				NPN N/O	XS4P08NA340
4	3.2	Ø12	M12 connector	PNP N/O	XS4P12PA340D
				NPN N/O	XS4P12NA340D
			Pre-wired (2m)	PNP N/O	XS4P12PA340
				NPN N/O	XS4P12NA340
8	6.4	Ø18	M12 connector	PNP N/O	XS4P18PA340D
				NPN N/O	XS4P18NA340D
			Pre-wired (2m)	PNP N/O	XS4P18PA340
				NPN N/O	XS4P18NA340
15	12	Ø30	M12 connector	PNP N/O	XS4P30PA340D
				NPN N/O	XS4P30NA340D
			Pre-wired (2m)	PNP N/O	XS4P30PA340
				NPN N/O	XS4P30NA340

Wiring diagrams

Connector

M8



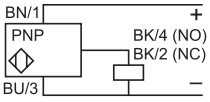
M12



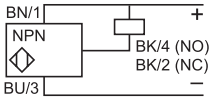
Pre-cabled

BU: Blue
BN: Brown
BK: Black

PNP



NPN



For M8 connector, NO and NC outputs on terminal 4

Cylindrical, Plastic, Non-Flush, 2 wire, 24 - 240V AC/DC (1) (2)

Sensing distance (mm)		Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
2.5	2	Ø8	½" 20UNF connector	N/O	XS4P08MA230K
			Pre-wired (2m)	N/O	XS4P08MA230
4	3.2	Ø12	½" 20UNF connector	N/O	XS4P12MA230K
			Pre-wired (2m)	N/O	XS4P12MA230
8	6.4	Ø18	½" 20UNF connector	N/O	XS4P18MA230K
			Pre-wired (2m)	N/O	XS4P18MA230
15	12	Ø30	½" 20UNF connector	N/O	XS4P30MA230K
			Pre-wired (2m)	N/O	XS4P30MA230

Wiring diagrams

Connector

1/2"-20UNF

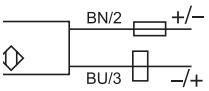


≂ : 2
≂ : 3

Pre-cabled

BU: Blue
BN: Brown
BK: Black

2 wire ≂ or ⎓



Mounting accessories

Description		Reference
Fixing clamps for XS4 •	Ø8 (M8 x 1)	XSZB108
	Ø12 (M12 x 1)	XSZB112
	Ø18 (M18 x 1)	XSZB118
	Ø30 (M30 x 1.5)	XSZB130
Fixing nuts (set of 2, plastic)	Ø8 (M8 x 1)	XSZE208
	Ø12 (M12 x 1)	XSZE212
	Ø18 (M18 x 1)	XSZE218
	Ø30 (M30 x 1.5)	XSZE230

Note:
(1) For N/C versions replace PA with PB, NA with NB or MA with MB in the middle of the reference.
(2) For short circuit protection connect a 0.8A "quick blow" fuse in series with the load.
Fuse 0.8A "quick blow" 5 x 20 cartridge ➡XUZE08
Fuse holder ➡AB1FU10135U

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Inductive Proximity Sensors

Application - Harsh Environments, Food & Beverage & Weld Field Immune (WFI) Cylindrical, One Piece Stainless Steel 316L ECOLAB Certified & 303 WFI - IP68 & IP69K

Cylindrical Flush, 3 wire 12 - 24V DC, S/S 316L (Factor 1)

Sensing Distance (mm)		Body Style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
6	4.8	Ø12	M12 Connector	PNP N/O	XS912S1PAM12
10	8	Ø18	M12 Connector	PNP N/O	XS918S1PAM12
20	16	Ø30	M12 Connector	PNP N/O	XS930S1PAM12



XS912S1PAM12

Cylindrical Non Flush, 3 wire 12 - 24V DC, S/S 316L (Factor 1)

Sensing Distance (mm)		Body Style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
10	8	Ø12	M12 Connector	PNP N/O	XS912S4PAM12
20	16	Ø18	M12 Connector	PNP N/O	XS918S4PAM12
40	32	Ø30	M12 Connector	PNP N/O	XS930S4PAM12



XS918S1PAM12

Cylindrical Flush, 3 wire 12 - 24V DC, Weld Field Immune (Factor 1)

Sensing Distance (mm)		Body Style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
6	4.8	Ø12	M12 Connector	PNP N/O	XS912RWPAM12
10	8	Ø18	M12 Connector	PNP N/O	XS918RWPAM12



XS930S4PAM12

Cable Accessories

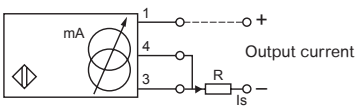
Description	Type	Length (M)	Reference
Pre-wired M12 connectors Female, 4-pin, zinc die-cast, nickel plated clamping ring	Straight	2	XZCP1141L2
		5	XZCP1141L5
		10	XZCP1141L10
	Elbow	2	XZCP1241L2
		5	XZCP1241L5
		10	XZCP1241L10
Pre-wired M12 connectors Female, 4-pin, zinc die-cast, nickel plated clamping ring	Straight	2	XZCPA1141L2
		5	XZCPA1141L5
		10	XZCPA1141L10
	Elbow (90 deg)	2	XZCPA1241L2
		5	XZCPA1241L5
		10	XZCPA1241L10

Mounting Accessories

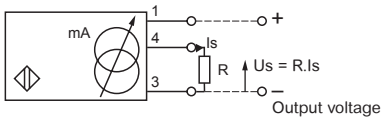
Description	For use with	Reference
Stainless steel mounting bracket	Ø12 Sensor	XSZBS12
	Ø18 Sensor	XUZA118
	Ø30 Sensor	XSZBS30

Wiring diagrams

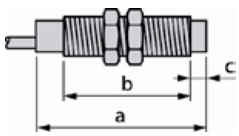
Connector



PNP



Dimensions



Lengths (mm):
a= Overall
b= Threaded
c= for non flush mountable sensors

	Flush			Non-Flush		
XS • Ø	M12	M18	M30	M12	M18	M30
a (mm)	60	63.5	63.5	60	63.5	63.5
b (mm)	41	42	42	36	35	32
c (mm)	0	0	0	5	7	10

OsiSense™ Inductive Proximity Sensors

Application - Food & Beverage
Cylindrical, Stainless Steel 316L - IP67/68 & IP69K



XS212SAPAL2

XS212SAPAM12



XS218SAPAL2

XS218SAPAM12



XS2L2SAPAL2

XS2L2SAPAM12



XS218SAMAU20

Cylindrical, Non-Flush, 3 wire, 12 - 24V DC

Sensing distance (mm)		Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
7	5.6	Ø12 threaded M12 x 1	M12 connector	PNP N/O	XS212SAPAM12
				NPN N/O	XS212SANAM12
			Pre-wired (2m) (1)	PNP N/O	XS212SAPAL2
				NPN N/O	XS212SANAL2
12	9.6	Ø18 threaded M18 x 1	M12 connector	PNP N/O	XS218SAPAM12
				NPN N/O	XS218SANAM12
			Pre-wired (2m) (1)	PNP N/O	XS218SAPAL2
				NPN N/O	XS218SANAL2
12	9.6	Ø18 plain	M12 connector	PNP N/O	XS2L2SAPAM12
				NPN N/O	XS2L2SANAM12
			Pre-wired (2m) (1)	PNP N/O	XS2L2SAPAL2
				NPN N/O	XS2L2SANAL2
22	17.6	Ø30 threaded M30 x 1.5	M12 connector	PNP N/O	XS230SAPAM12
				NPN N/O	XS230SANAM12
			Pre-wired (2m) (1)	PNP N/O	XS230SAPAL2
				NPN N/O	XS230SANAL2

Cylindrical, Non-Flush, 2 wire, 24 - 240V AC/DC

Sensing distance (mm)		Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
12	9.6	Ø18 threaded M18 x 1	1/2" 20 UNF connector	N/O	XS218SAMAU20
			Pre-wired (2m) (1)	N/O	XS218SAMAL2
22	17.6	Ø30 threaded M30 x 1.5	1/2" 20 UNF connector	N/O	XS230SAMAU20
			Pre-wired (2m) (1)	N/O	XS230SAMAL2

Wiring Diagrams

Connector

1/2" - 20UNF

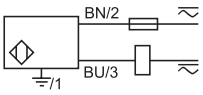


AC/DC : 2
⏚ : 1
AC/DC : 3

Pre-cabled

BU: Blue
BN: Brown

2-wire ∼ or ⎓



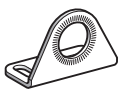
⏚ : *on connector models only*



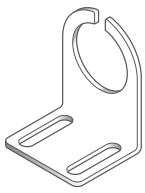
XUZB2005



XSZBS12



XUZA118



XSZBS30

Mounting accessories

Description	For use with	Reference
Plastic fixing clamps, 24.1 mm centres with locking screw	Ø18 sensor, plain case	XUZB2005
Stainless steel fixing brackets (SS304)	Ø 12 sensor	XSZB112
	Ø 18 sensor	XUZA118
	Ø 30 sensor	XSZBS30

Cabling accessories

Description	Type	Cable Length (m)	Reference
Pre-wired M12 connector Female, 4 pin Stainless Steel 316L clamping ring	Straight	2	XZCPA1141L2
		5	XZCPA1141L5
		10	XZCPA1141L10
	90 deg	2	XZCPA1241L2
		5	XZCPA1241L5
		10	XZCPA1241L10
Pre-wired 1/2" 20 UNF connector Female, 3 pin Stainless Steel 316L clamping ring	Straight	5	XZCPA1865L5
		10	XZCPA1865L10
	90 deg	5	XZCPA1965L5
		10	XZCPA1965L10

Note:
(1) For a 5m cable, replace L2 with L5; for a 10m cable, replace L2 with L10.
(2) Operating temperature: -25°C to +85°C (resistance at +100°C during cleaning and sterilisation phases)
(3) IP69K conforming to DIN40050 part 9 (ie. spraying of product with high pressure water jet)
Pressure: 90bar,
Temperature: +80°C,
Duration of test: 3 minutes,
Solution: pure water

OsiSense™ Inductive Proximity Sensors

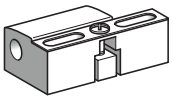
Application - Food & Beverage
Cylindrical, Plastic - IP67/68 & IP69K


XS212AAPAL2


XS230AAPAL2


XS218AAPAM12


XS230AAPAM12


XSZB1••

Cylindrical, Non-Flush, 3 wire, 12 - 24V DC

Sensing distance (mm)		Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
7	5.6	Ø12 threaded M12 x 1	M12 connector	PNP N/O	XS212AAPAM12
				NPN N/O	XS212AANAM12
			Pre-wired (2m) (1)	PNP N/O	XS212AAPAL2
				NPN N/O	XS212AANAL2
12	9.6	Ø18 threaded M18 x 1	M12 connector	PNP N/O	XS218AAPAM12
				NPN N/O	XS218AANAM12
			Pre-wired (2m) (1)	PNP N/O	XS218AAPAL2
				NPN N/O	XS218AANAL2
22	17.6	Ø30 threaded M30 x 1.5	M12 connector	PNP N/O	XS230AAPAM12
				NPN N/O	XS230AANAM12
			Pre-wired (2m) (1)	PNP N/O	XS230AAPAL2
				NPN N/O	XS230AANAL2

Wiring diagrams

Connector

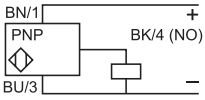
M12



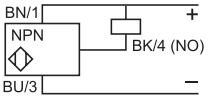
Pre-cabled

BU: Blue
BN: Brown
BK: Black

PNP



NPN



Mounting accessories

Description	For use with	Reference
Fixing clamps	Ø12 sensor	XSZB112
	Ø18 sensor	XSZB118
	Ø30 sensor	XSZB130

Cabling accessories

Description	Type	Cable Length (m)	Reference
Pre-wired M12 connector Female, 4 pin Stainless Steel 316L clamping ring	Straight	2	XZCPA1141L2
		5	XZCPA1141L5
		10	XZCPA1141L10
	90 deg	2	XZCPA1241L2
		5	XZCPA1241L5
		10	XZCPA1241L10

Note:
(1) For a 5m cable, replace L2 with L5; for a 10m cable, replace L2 with L10.
(2) Operating temperature: -25°C to +85°C (resistance at +100°C during cleaning and sterilisation phases).
(3) IP69K conforming to DIN40050 part 9 (ie. spraying of product with high pressure water jet)
Pressure: 90bar,
Temperature: +80°C,
Duration of test: 3 minutes,
Solution: pure water.

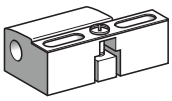
OsiSense™ Inductive Proximity Sensors

Application - Food & Beverage
Cylindrical, Plastic - IP67/68 & IP69K


XS218AAMAL2


XS230AAMAU20


XS230AAMAL2


XSZB1••

Cylindrical, Non-Flush, 2 wire, 24 - 240V AC/DC

254.65		Body style	Connection	Output Function	Reference
Nominal Sn	Usable Sa				
12	9.6	Ø18 threaded M18 x 1	1/2" 20 UNF connector	N/O	XS218AAMAU20
			Pre-wired (2m) (1)	N/O	XS218AAMAL2
22	17.6	Ø30 threaded M30 x 1.5	1/2" 20 UNF connector	N/O	XS230AAMAU20
			Pre-wired (2m) (1)	N/O	XS230AAMAL2

Wiring diagrams

Connector

1/2" - 20UNF

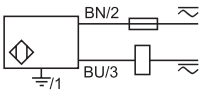


AC/DC : 2
⏚ : 1
AC/DC : 3

Pre-cabled

BU: Blue
BN: Brown

2 wire ∿ or ⎓



⏚ : *on connector models only*

Mounting accessories

Description	For use with	Reference
Fixing Clamps	Ø18 sensor	XSZB118
	Ø30 sensor	XSZB130

Cabling accessories

Description	Type	Cable Length (m)	Reference
Pre-wired 1/2" 20 UNF connector Female, 3 pin Stainless Steel 316L clamping ring	Straight	5	XZCPA1865L5
		10	XZCPA1865L10
	90 deg	5	XZCPA1965L5
		10	XZCPA1965L10

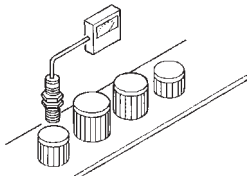
Note:
(1) For a 5m cable, replace L2 with L5; for a 10m cable, replace L2 with L10.
(2) Operating temperature: -25°C to +85°C (resistance at +100°C during cleaning and sterilisation phases)
(3) IP69K conforming to DIN40050 part 9 (ie. spraying of product with high pressure water jet)
Pressure: 90bar,
Temperature: +80°C,
Duration of test: 3 minutes,
Solution: pure water
(4) It is essential to connect a 0.4A "quick blow" fuse in series with the load.
Fuse 0.4A "quick blow" 5 x 20 cartridge ➡XUZE04
Fuse holder ➡AB1FU10135U

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Inductive Proximity Sensors

Application
Analogue (Position Control)
Ultra Flat & Cylindrical - IP67/68



Analogue output proximity sensors are solid state sensors designed for a wide range of applications;

- displacement monitoring
- vibration amplitude and frequency monitoring
- control of dimensional tolerance
- position control.



XS9F111A2L2



XS9E111A2L2



XS9D111A2M12

Analogue - Ultra Flat, Flush, 2 wire, 12 - 24V DC (1)

Sensing distance (mm)		Body style	Connection Function	Output	Reference
Nominal Sn	Operating zone				
5	1..5	Form F	M8 connector (2)	4-20 mA	XS9F111A2L01M8
		15x32x8	Pre-wired (2m)	4-20 mA	XS9F111A2L2
10	1..10	Form E	M12 connector (2)	4-20 mA	XS9E111A2L01M12
		26x26x13	Pre-wired (2m)	4-20 mA	XS9E111A2L2
15	2..15	Form C	M12 connector (2)	4-20 mA	XS9C111A2L01M12
		40x40x15	Pre-wired (2m)	4-20 mA	XS9C111A2L2
40	5..40	Form D	M12 connector	4-20 mA	XS9D111A2M12
		80x80x26	Pre-wired (2m)	4-20 mA	XS9D111A2L2

Wiring diagrams

Connector

M8



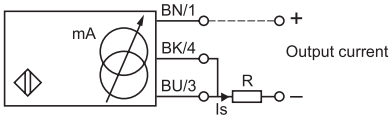
M12



Pre-cabled

BN: Brown
BU: Blue
BK: Black

2 wire connection



	Output current	Load impedance value
12 V	4…20 mA	R ⩽ 8.2 Ω
24 V	4…20 mA	R ⩽ 470 Ω

Note: *ensure a minimum of 10 V between the + (terminal 1) and - (terminal 3) of the sensor.*

Analogue - Cylindrical plastic, Non-Flush, 2 wire, 12 - 24V DC (1)

Sensing distance (mm)		Body style	Connection Function	Output	Reference
Nominal Sn	Operating zone				
4	0.4.. 4	Ø12	Pre-wired (2m)	4-20 mA	XS4P12AB120
8	0.8.. 8	Ø18	Pre-wired (2m)	4-20 mA	XS4P18AB120
15	1.5.. 15	Ø30	Pre-wired (2m)	4-20 mA	XS4P30AB120



XS1M12AB120

Analogue - Cylindrical metal, Flush, 2 wire, 12 - 24V DC

Sensing distance (mm)		Body style	Connection	Output Function	Reference
Nominal Sn	Operating zone				
2	0.2.. 2	Ø12	Pre-wired (2m)	4-20 mA	XS1M12AB120
5	0.5.. 5	Ø18	Pre-wired (2m)	4-20 mA	XS1M18AB120
10	1.. 10	Ø30	Pre-wired (2m)	4-20 mA	XS1M30AB120



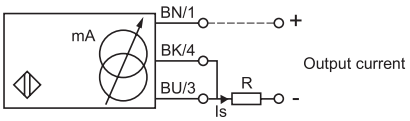
XS1M18AB120



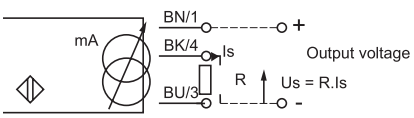
XS1M130AB120

Wiring diagrams

2 wire connector



3 wire connection



	Output current	Load impedance value
12 V	4…20 mA	R ⩽ 8.2 Ω
24 V	4…20 mA	R ⩽ 470 Ω

Ensure a minimum of 10 V between the + and the - (terminal 3) of the sensor.

	Output current	Load impedance value	Output voltage	Load impedance value
24 V	0…10 mA	R ⩽ 1500 Ω	0…10 V	R = 1000 Ω
48 V	0…10 mA	R ⩽ 3300 Ω	0…10 V	R = 1000 Ω

Ensure a minimum of 5 V between the + and the sensor output (terminal 4).

(1) Voltage range only obtained with a load impedance of 1000 Ω

Note:

(1) For 3 wire 12 - 24V DC 0-10V versions replace A2 with A1 in the middle of the reference or 120 with 110 at the end of the reference.

(2) M8 and M12 connectors with 0.15m flying lead. XS9D111A2M12 consists of M12 connector only.

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Inductive Proximity Sensors

Application
Miniature, Cylindrical - IP67
Ferrous & Non-Ferrous Sensors
“Block style” & Cylindrical Body Style - IP67



XS1L04PA310



XS1N05PA310



XS1L06PA340



XS1M18KPM40



XS1M30KPM40

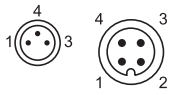
Miniature Cylindrical, Flush, 3 wire, 12 - 24V DC

Sensing distance (mm) Nominal Sn	Operating zone	Body style	Connection	Output Function	Reference
1	0.. 0.8	Ø4	Pre-wired (2m)	PNP N/O	XS1L04PA310
1	0.. 0.8	Ø5	Pre-wired (2m)	PNP N/O	XS1N05PA310
1.5	0.. 1.2	Ø6.5	Pre-wired (2m)	PNP N/O	XS1L06PA340

Wiring diagrams

Connector

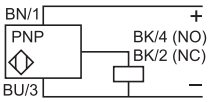
M8 M12



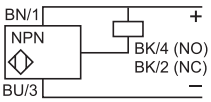
Pre-cabled

BU : Blue
BN : Brown
BK : Black
WH : White

PNP



NPN



For M8 connector, NO and NC outputs on terminal 4

Detection of ferrous or non ferrous metals Cylindrical, Flush, 4 wire,12 - 24V DC (3)

Sensing distance (mm) Nominal Sn	Body style	Output Function (1)	Reference
5	Ø18	Selectable (4 wire)	XS1M18KPM40
10	Ø30	Selectable (4 wire)	XS1M30KPM40

Wiring diagrams

Connector



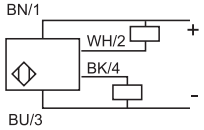
Pre-cabled

BN : Brown
BU : Blue
BK : Black
WH : White

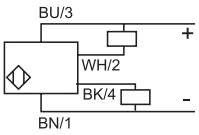
PNP/NPN

4-wire ⎓ programmable, N/O or N/C output

NO



NC



Detection of ferrous or non ferrous metals “Block style”, Flush, 3 wire,12 - 24V DC (2)

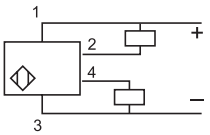
Sensing distance (mm) Nominal Sn	Function	Output Function (1)	Reference
5	Sensing in 1 of 5 directions	Selectable (4 wire)	XS7C40KPM40H29

Wiring diagrams

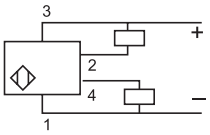
PNP/NPN

4-wire ⎓ programmable, N/O or N/C output

NO output



NC output



Detection of ferrous metals only Cylindrical, Flush, 3 wire, 12 - 24V DC (3)

Sensing distance (mm) Nominal Sn	Body Style	Output Function	Reference
5	Ø18	PNP N/O	XS1M18PAS40

Detection of non-ferrous metals only Cylindrical, Flush, 3 wire, 12 - 24V DC (3)

Sensing distance (mm) Nominal Sn	Body Style	Output Function	Reference
5	Ø18	PNP N/O	XS1M18PAS20

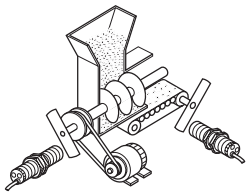
Note:
(1) Output function: programmable PNP/NPN N/O or N/C.
(2) XS7 sensors consist of ISO M20 conduit entry.
(3) Pre-wired (2m).

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Inductive Proximity Sensors

Application
Rotation Control
Ultra Flat & Cylindrical Body Style - IP67



Rotational Control

These inductive proximity sensors are designed for monitoring rotational speed or the speed of the flow of objects to be monitored or protected. They operate on the principle of comparing a speed threshold preset by the operator against the instantaneous measurement of the speed of the moving object to be protected. They provide a simple, economical solution to the problems of detecting slip, belt breakage, coupling and overloading, etc. and are commonly used in grinder/crusher, mixer, pump, centrifugal driver, conveyor belucket elevator, Archimedian screw, type applications.

Underspeed, Flush, 3 wire, 12 - 24V DC (1)

Sensing distance (mm)		Body style	Connection	Output Function	Reference
Nominal Sn	Sensing range				
10	6.. 6000 impulses/min	Form E 26x26x13	M12 connector	PNP N/C	XS9E11RPBL01M12
15	6.. 6000 impulses/min	Form C 40x40x15	M12 connector	PNP N/C	XS9C11RPBL01M12
10	6.. 150 impulses/min	Ø30 metal	Pre-wired (2m)	PNP N/C	XSAV11373
10	120.. 3000 impulses/min	Ø30 metal	Pre-wired (2m)	PNP N/C	XSAV12373



XS9E11RPBL01M12

Underspeed, Flush, 2 wire, 24 - 240V AC/DC (1) (2)

Sensing distance (mm)		Body style	Connection	Output Function	Reference
Nominal Sn	Sensing range				
10	6.. 6000 impulses/min	Form E 26x26x13	1/2" 20 UNF connector	N/C	XS9E11RMBL01U20
15	6.. 6000 impulses/min	Form C 40x40x15	1/2" 20 UNF connector	N/C	XS9C11RMBL01U20
10	6.. 150 impulses/min	Ø30 metal	Pre-wired (2m)	N/C	XSAV11801
10	120.. 3000 impulses/min	Ø30 metal	Pre-wired (2m)	N/C	XSAV12801



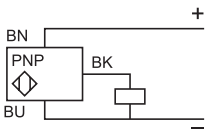
XS9C11RPBL01M12



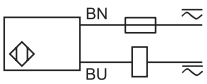
XSAV11373

Wiring diagrams

3-wire ⎓
XSA V1●373



2-wire ∿ or ⎓
XSA V1●801



Wiring diagrams

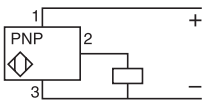
Connector
M12



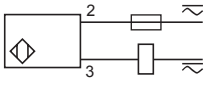
1/2" UNF



3-wire ⎓
XS9 ●11RPBL01M12



2-wire ∿ or ⎓
XS9 ●11RMBL01U20



Note:
(1) M12 and 1/2" 20 UNF connectors with 0.15m flying lead.
(2) For short circuit protection connect a 0.4A "quick blow" fuse in series with the load.
Fuse 0.4A "quick blow" 5 x 20 cartridge ➡XUZE04
Fuse holder ➡AB1FU10135U.

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Ultrasonic Sensors

Offering Simplicity Through Innovation

Presentation



Ultrasonic sensors enable detection, without contact, of any object irrespective of its:

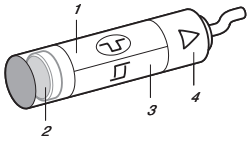
- material (metal, plastic, wood, cardboard, etc.)
- nature (solid, liquid, powder, etc.)
- colour
- degree of transparency.

They are used in industrial applications for detecting, for example:

- the position of machine parts
- the presence of the windscreen during automobile assembly
- the flow of objects on a conveyor system: glass bottles, cardboard packages, cakes, etc.
- the level
  - of different colour paints in pots
  - of plastic pellets in injection moulding machine feeders.

Ultrasonic sensors are simple to install due to their integral connector and availability of cabling and fixing accessories.

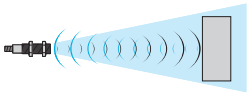
Operating principle



The principle of ultrasonic detection is based on measuring the time taken between transmission of an ultrasonic wave (pressure wave) and reception of its echo (return of transmitted wave).

OsiSense™ ultrasonic sensors are of the cylindrical type. They comprise:

1 high voltage generator
2 piezoelectric transducer (transmitter and receiver)
3 signal processing stage
4 output stage



Excited by the high voltage generator 1, the transducer (transmitter-receiver) 2 generates a pulsed ultrasonic wave (200 to 500 kHz depending on the product) which travels through the ambient air at the speed of sound. When the wave strikes an object, it reflects (echo) and travels back towards the transducer. A micro controller 3 analyses the signal received and measures the time interval between the transmitted signal and the echo. By comparison with the preset
or learnt times, it determines and controls the output states 4.

The output stage 4 controls a solid-state switch (PNP or NPN transistor) corresponding to a N/O or N/C contact (detection of object).

Advantages of ultrasonic detection

- No physical contact with the object to be detected, therefore, no wear and detection possible of fragile or freshly painted objects, etc.
- Detection of any material, irrespective of colour, at the same distance, without adjustment or correction factor.
- Teach mode function, by simply pressing a button, for defining the effective sensing range. Teach of the minimum and maximum sensing distances (very precise foreground and background suppression, ± 6 mm).
- Very good resistance to industrial environments (robust products entirely encapsulated in resin).
- Solid-state units: no moving parts in the sensor, therefore, service life independent of the number of operating cycles.

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Ultrasonic Sensors

Cylindrical, Metal, Plastic & Stainless Steel Universal & Application





XX512A2PAM8

XX6V3A1PAM12



XX518A1KAM12

XX630A1KAM12



XX630A3PCM12



XX630S1PCM12





XXB REFLEX RANGE

Cylindrical, Metal, 3-wire, 10 - 36V DC, IP67 & IP69K

Sensing distance Nominal Sn (mm)	Operating zone (mm)	Body style	Output Function	Connection	Reference
50	2…50	M18	PNP N/O	M12	XXV18B1PAM12
			PNP N/C	M12	XXV18B1PBM12
			NPN N/O	M12	XXV18B1NAM12
			NPN N/C	M12	XXV18B1NBM12

Cylindrical, plastic, 3-wire, 12 - 24V DC

Sensing distance Nominal Sn (cm)	Operating zone (cm)	Body style	Output Function	Connection	Reference
10	0.64.. 10.2	M12	PNP	M8 connector	XX512A2PAM8
			NPN	M8 connector	XX512A2NAM8
50	5.1.. 50.8	M18	PNP	M12 connector	XX518A3PAM12
			NPN	M12 connector	XX518A3NAM12
			PNP	Pre-cabled (2m)	XX518A3PAL2
			NPN	Pre-cabled (2m)	XX518A3NAL2
100	10.. 100	M30	PNP	M12 connector	XX6V3A1PAM12
			NPN	M12 connector	XX6V3A1NAM12

Cylindrical, plastic, 4-wire, 12 - 24V DC

Sensing distance Nominal Sn (cm)	Operating zone (cm)	Body style	Output Function	Connection	Reference
5	0.64.. 5.1	M12	PNP/NPN	M8 connector	XX512A1KAM8
15	1.9.. 15.2	M18	PNP/NPN	M12 connector	XX518A1KAM12
100	5.1.. 99.1	M30	PNP/NPN	M12 connector	XX630A1KAM12
			PNP	M12 connector	XX630A1PCM12
			NPN	M12 connector	XX630A1NCM12
800	20.3.. 800	M30	PNP	M12 connector	XX630A3PCM12
			NPN	M12 connector	XX630A3NCM12

Reflex Mode, plastic, 3-wire, 10 - 28V DC, IP67

Sensing distance Nominal Sn (mm)	Operating zone (mm)	Body style	Output Function	Connection	Reference
500	0…500	M18	PNP N/O	M12	XXB18A3PAM12
		Dual Mount	PNP N/O	M12	XXBV1A1PAM12
1000	0…1000	M30	PNP N/O	M12	XXBV3A1PAM12
		80 x 80 mm	PNP N/O	M12	XXBD1A1PAM12

Cylindrical, stainless steel 303, 4-wire, 12 - 24V DC

Sensing distance Nominal Sn (cm)	Operating zone (cm)	Body style	Output Function	Connection	Reference
100	5.1.. 99.1	M30	PNP	M12 connector	XX630S1PCM12
			NPN	M12 connector	XX630S1NCM12

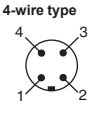
Accessories

Description		Dimensions	Reference
Mounting bracket		-	XUZA118
Pre-wired connectors with PUR cable for industrial applications			
Straight Pre-wired	5 Mtr	M12, 4 Pin female	XZCP1141L5
Elbow Pre-wired	5 Mtr	M12, 4 Pin female	XZCP1241L5

M12 connector

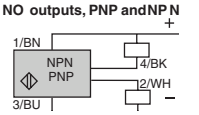
XX5 18A1KAM12

4-wire type



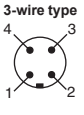
1 (+) 2 PNP output
3 (-) 4 NPN output

NO outputs, PNP and NPN



(-) WH BU (Blue) (White) (+) BN (Brown) BK (Black)

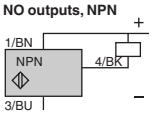
3-wire type



1 (+) 2 Teach input
3 (-) 4 NPN or PNP output

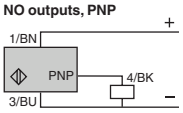
XX5 18A23•, XX6 V3•

NO outputs, NPN



(-) BU (Blue) (+) BN (Brown) BK (Black)

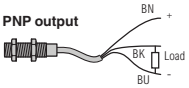
NO outputs, PNP



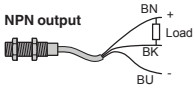
Pre-cabled

XX5 18A3••L2

PNP output

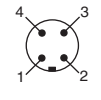


NPN output



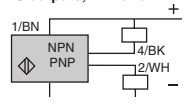
XX6 30A1KAM12

4-wire type



1 (+) 2 PNP output
3 (-) 4 NPN output

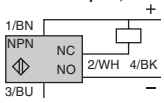
NO outputs, PNP and NPN



(-) BU (Blue) (+) BN (Brown) WH (White) BK (Black)

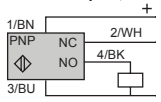
XX6 30A••CM12, XX6 V3A1••M12

NO + NC outputs, NPN



(-) BU (Blue) (+) BN (Brown) WH (White) BK (Black)

NO + NC outputs, PNP



3.6

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Ultrasonic Sensors

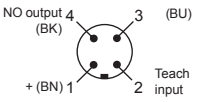
Cylindrical, Plastic & Stainless Steel Universal & Application

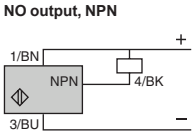
Cylindrical, plastic, application, 4-wire, 12 - 24V DC, M12 connector

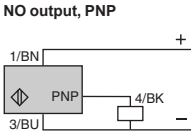
Sensing distance Nominal Sn (cm)	Operating zone (cm)	Body style	Output Function		Reference
50	5.1.. 50.8	M18	2 emptying levels	PNP	XX218A3PHM12
			2 filling levels	PNP	XX218A3PFM12
100	5.1.. 99.1	M30	2 emptying levels	PNP	XX230A10PA00M12
			2 filling levels	PNP	XX230A11PA00M12
200	12.. 200	M30	2 emptying levels	PNP	XX230A20PA00M12
			2 filling levels	PNP	XX230A21PA00M12

M12 connector

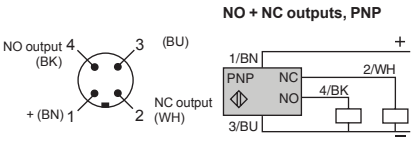
XX2 18A3••M12





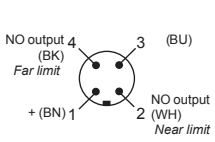


XX2 30A•0•/XX2 30A•1•

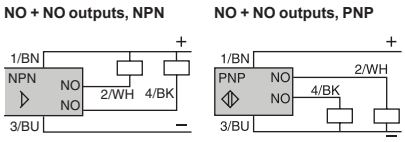


BN (Brown) WH (White) BU (Blue)

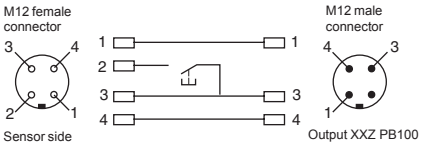
XXZ PB100 (teach pushbutton for XX2 18A3•AM12)

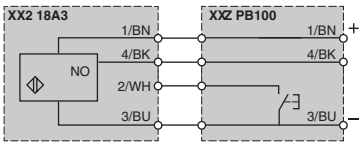


BK (Black)



XX2 30A•2•





Accessories

Description	Reference
Remote control - Selection of detection window	XXZPB100

Cabling Accessories

Connectors	For use with sensor	Type of connection		Reference
M8	M12	In-line IDC	Straight	XZCC8FDM40V
			Elbowed	XZCC8FCM40V
M12	M18, M30	"Screw terminals, metal clamping ring"	Straight	XZCC12FDM40B
			Elbowed	XZCC12FCM40B
		"Screw terminals, plastic clamping ring"	Straight	XZCC12FDP40B
			Elbowed	XZCC12FCP40B



XUZB2003

Cabling Accessories (4-wire output)

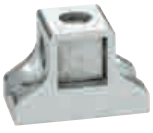
Pre-wired connectors	For use with sensor	Type	Cable length m	Reference
M8	M12	Straight	5	XZCP0941L5
		Elbowed	5	XZCP1041L5
M12	M18, M30	Straight	5	XZCP1141L5
		Elbowed	5	XZCP1241L5



XUZ2001

Mounting Accessories

Description		For use with sensor	Reference
3D fixing kit	"Ball-joint mounted fixing bracket"	M12	XUZB2012
		M18	XUZB2003
		M30	XUZB2030
	M12 rod	M12, M18 and M30	XUZ2001
	Support for M12 rod	M12, M18 and M30	XUZ2003
90° fixing bracket		M12	XXZ12
		M18	XUZA118
		M30	XXZ30



XUZ2003

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Ultrasonic Sensors

Flat Form, Plastic Universal



XX7F1A2PAL01M12



XX7K1A2PAM12



XX8D1A1PAM12



XX7V1A1PAM12



XXZPB100



XXZ3074F



XXZ3074S

Flat, plastic, 3-wire, 12 - 24V DC, IP67

Sensing distance Nominal Sn (cm)	Operating zone (cm)	Body style	Connection	Output Function	Reference
10	0.62.. 10.2	Mini flat	M12 on 0.15m flying lead	PNP NO	XX7F1A2PAL01M12
				NPN NO	XX7F1A2NAL01M12
25	5.1.. 25.4	Flat	M12 connector	PNP NO	XX7K1A2PAM12
				NPN NO	XX7K1A2NAM12
100	10.. 100	Flat 80 x 80	M12 connector	PNP NO	XX8D1A1PAM12
				NPN NO	XX8D1A1NAM12

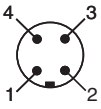
Combined Multi-fixing, plastic, 3-wire, 12 - 24V DC, IP67

Sensing distance Nominal Sn (cm)	Operating zone (cm)	Connection	Output Function	Reference
50	5.1.. 50.8	M12 connector	PNP NO	XX7V1A1PAM12
			NPN NO	XX7V1A1NAM12

Wiring Schemes

M12 connector

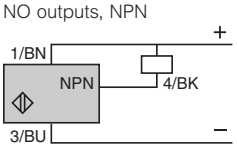
3-wire type



1 (+)
2 On sensors XX7 V1A1PAM12, terminal 2 is reserved for the teach pushbutton.
3 (-)
4 NPN or PNP output

XX7 F1A2NAL01M12 (1), XX7 K1A2NAM12, XX7 V1A1NAM12, XX8 D1A1NAM12

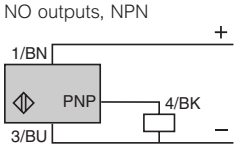
NO outputs, NPN



(-) BU (Blue)
(+) BN (Brown)
BK (Black)

XX7 F1A2PAL01M12 (1), XX7 K1A2PAM12, XX7 V1A1PAM12, XX8 D1A1PAM12

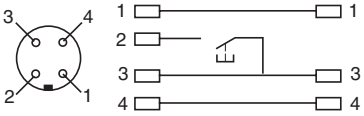
NO outputs, NPN



(1) Remote connector on flying lead approximately 15 cm long.

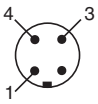
XXZ PB100 (teach pushbutton for XX7 V1A1•AM12 and XX8 D1A1•AM12)

M12 female connector

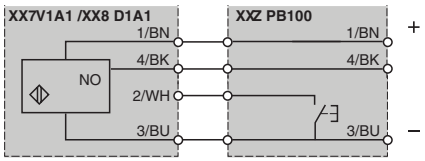


Sensor side

M12 male connector



Output XXZ PB100



1 (+) BN (Brown)
2 WH (White)
3 (-) BU (Blue)
4 BK (Black)

Accessories

Description	Reference
Remote control - Selection of detection window	XXZPB100

Cabling Accessories

Connectors	For use with sensor	Type of connection		Reference
M12	M18, M30	"Screw terminals, metal clamping ring"	Straight	XZCC12FDM40B
			Elbowed	XZCC12FCM40B
		"Screw terminals, plastic clamping ring"	Straight	XZCC12FDP40B
			Elbowed	XZCC12FCP40B

Mounting Accessories

Description	For use with sensor	Form	Reference
Mounting plates	XX75	Flat	XXZ3074F
		Cranked	XXZ3074S

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Ultrasonic Sensors

Cylindrical & Flat Form, Plastic Sensors with Analogue Output Signal 0-10 V or 4-20 mA



XX918A3F1M12 XX9V3A1F1M12

Cylinrical, plastic, analogue output, 24V DC, M12 connector

Sensing distance Nominal Sn (cm)	Operating zone (cm)	Body style	Protection	Output Function	Reference
50	5.1.. 50.8	M18	IP67	0… 10 V	XX918A3F1M12
				4… 20 mA	XX918A3C2M12
100	10.. 100	M30	IP67	0… 10 V	XX9V3A1F1M12
				4… 20 mA	XX9V3A1C2M12
	5.1.. 99.1	M30	IP65	0… 10 V	XX930A1A1M12
				4… 20 mA	XX930A1A2M12
800	20.3.. 800	M30	IP65	0… 10 V	XX930A3A1M12
				4… 20 mA	XX930A3A2M12



XX930A1A1M12 XX930A3A1M12

Flat, plastic, analogue output, 12 - 24V DC, IP67

Sensing distance Nominal Sn (cm)	Operating zone (cm)	Body style	Connection	Output Function	Reference
100	10.. 100	Flat 80 x 80	M12 connector	0… 10 V	XX9D1A1F1M12
				4… 20 mA	XX9D1A1C2M12

Combined Multi-fixing, plastic, analogue output, 12 - 24V DC, IP67

Sensing distance Nominal Sn (cm)	Operating zone (cm)	Connection	Output Function	Reference
50	5.1.. 50.8	M12 connector	0… 10 V	XX9V1A1F1M12
			4… 20 mA	XX9V1A1C2M12

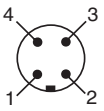


XX9D1A1F1M12 XX9V12AF1M12

Wiring Schemes

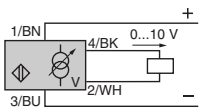
M12 connector

4-wire type

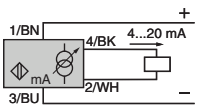


1 (+)
2 Signal return
3 (-)
4 Output signal

XX9 30A•/XX9 30S•

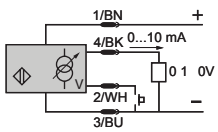


(-) BU (Blue)
(+) BN (Brown)
WH (White)
BK (Black)

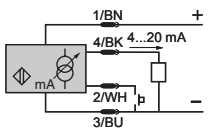


(-) BU (Blue)
(+) BN (Brown)
WH (White)
BK (Black)

XX9 18A•/XX9 V1A•/XX9 V3A•XX9 D1



(-) BU (Blue)
(+) BN (Brown)
WH (White)
BK (Black)

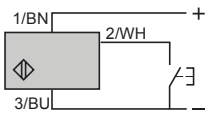


(-) BU (Blue)
(+) BN (Brown)
WH (White)
BK (Black)

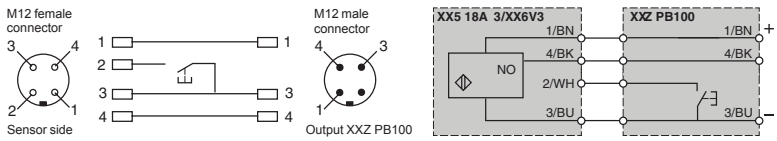
Wiring for teaching of detection window

Using external contact

XX9 18A•/XX9 V3A•/XX9 D1A•



Using XXZ PB100





XXZPB100

Accessories

Description	Reference
Remote control - Selection of detection window	XXZPB100



XUZB2003 XUZ2001 XUZ2003

Mounting Accessories

Description		For use with sensor	Reference
3D fixing kit	"Ball-joint mounted fixing bracket"	M18	XUZB2003
		M30	XUZB2030
	M12 rod	M12, M18 and M30	XUZ2001
	Support for M12 rod	M12, M18 and M30	XUZ2003
90° fixing bracket		M12	XXZ12
		M18	XUZA118
		M30	XXZ30

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

OsiSense™ Radio Frequency Identification



Application, OsiSense™ RFID 13.56MHz – offers a fully open system

RFID is a term used for radio frequency identification systems. The frequencies range between 50 kHz and 2.5 GHz. The most widely used is 13.56 MHz. The OsiSense™ XG radio frequency identification system allows object traceability, object tracking, and access control functions to be performed.

Information is stored in an accessible memory bank using a simple radio frequency link. This memory bank is in the form of an electronic tag, which contains an antenna and an integrated circuit. The tag contains the information associated with the object to which the tag is attached. When a tag passes through the field generated by the smart antenna, it detects the signal and exchanges the read or write data between its memory and the smart antenna.

The applications are numerous and include the following:

- Logistics: dispatch, receipt, transit
- Tracking and sorting of baggage systems
- Auto assembly lines and parts management
- Access control in buildings

The OsiSense™ XG radio frequency identification system is also suited to difficult environments (humidity, temperature, mechanical shock, vibration, dust, etc.).

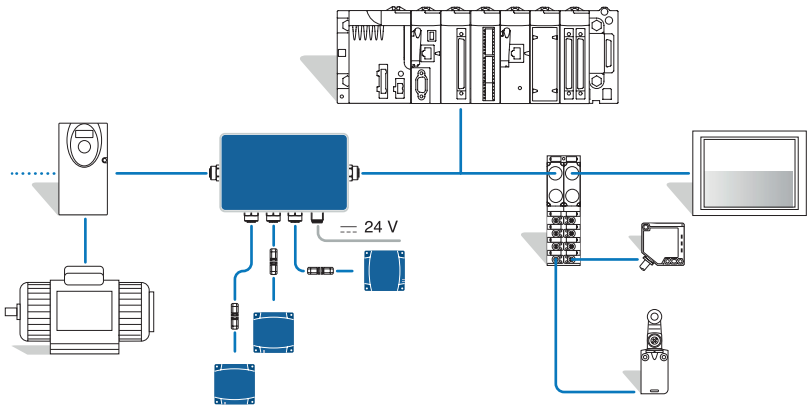


Automatic integration into your architecture

- The OsiSense™ XG RFID system simplifies access to the tag data.
- No specific programming required, and the system automatically adapts to the protocol and speed of the network used (Modbus® TCP/IP, Modbus® RTU, Uni-Telway™, PROFIBUS-DP & Ethernet I/P)
- 100% compatible for simplifying selection
- 100% compatible for inclusion in architectures

Fully open RFID

OsiSense™ XG Radio Frequency Identification System allows you the freedom to choose the tag you wish, and enjoy automatic adaptation to your network protocol.



Please contact Schneider Electric for additional information and pricing for RFID parts and systems

OsiSense™ Rotary Encoders

Offering Simplicity Through Innovation

Applications

The increase in the power of processing systems, coupled with the requirements for high productivity, has created the need for continuous information in all areas of production regarding:

counting, positioning by counting,

absolute positioning,

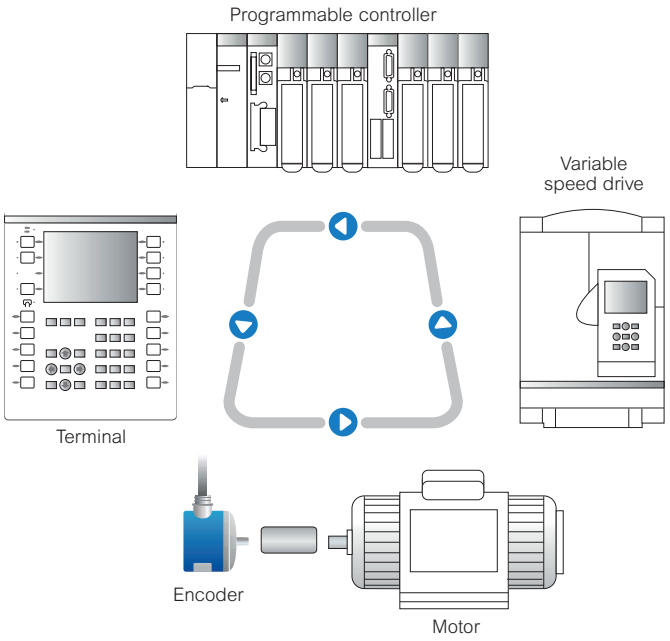
speed control.

Example

The positioning of a moving part is fully controlled by the processing system via the encoder.

Processing units
please refer to our “Premium automation platform” catalogue.

Variable speed drives
please refer to our “Variable speed drives and starters” catalogue.



Principle of the opto-electronic rotary encoder

The opto-electronic rotary encoder is an angular position sensor.

Mechanically coupled to a driving spindle of a machine, the shaft of the encoder rotates a disc that comprises a succession of opaque and transparent sectors.

Light from light emitting diodes (LEDs) passes through the transparent sectors of the disc as they appear and is detected by photosensitive diodes.

The photosensitive diodes, in turn, generate an electrical signal which is amplified and converted into a digital signal before being transmitted to a processing system or an electronic variable speed drive.

The electrical output of the encoder therefore represents, in digital form, the angular position of the input shaft.

Types of opto-electronic rotary encoder

- Incremental encoders:
  Counting, positioning by counting, speed.
- Parameterable incremental encoders:
  Multiplication of the basic resolution of the disc using dip switches (the factory setting being that of the lowest value).
- Single turn and multiturn absolute encoders:
  Absolute positioning.
- Fieldbus multiturn absolute encoders:
  CANopen and PROFIBUS-DP.

OsiSense™ Rotary Encoders

Incremental encoder Principle

The disc of an incremental encoder comprises 2 types of track:

- one or several outside tracks (channels A and B), comprising “n” equal angular steps that are alternately opaque and transparent, with “n” being the resolution or number of periods of the encoder,
- an inside track comprising a single window, which serves as the reference point and enables reinitialisation at each revolution (top 0).

Schemes and settings

The operation of the photosensitive elements (LEDs + photosensitive diodes) is based on the real-time differential optical reading principle:

- the photosensitive elements of tracks A and B are offset so that each will simultaneously read only its respective slot (channels A and B are 90° electrically offset),
- the electronics operate following the principle of real-time differential measurement

Channel B (rising edge) arriving before A in the clockwise direction viewed from base side.

Period: 360° electrical.

Cyclic ratio: 180° electrical ± 10%.

Phase displacement: 90° electrical ± 25%.

Advantages of real-time differential optical reading

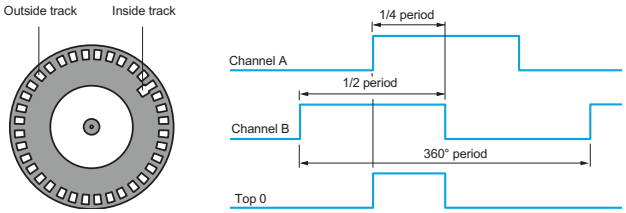
Reading by offset photosensitive elements

- Radial play of encoder shaft greater than 30%, which is higher than traditional optical reading encoders.
- Maintains a phase displacement of channels A and B within the tolerance limits of the unit.

Triple light source emission

- Maintains cyclic ratio, even in the event of:
  - failure of one of the 3 light sources,
  - diminishing efficiency of the light sources (up to 30%),
  - fine dust deposit on the optical components, reducing signal strength of the photosensitive elements (up to 30%).

These advantages are the reliability factors of the XCC encoders.



Absolute encoder Principle

The disc of an absolute encoder comprises “n” concentric tracks, equally divided into alternate opaque and transparent segments, and each track has its own transmitter and receiver.

The inside track is half opaque and half transparent. Reading of this MSB (Most Significant Bit) track determines in which half-turn the encoder is situated.

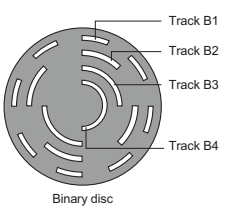
The next track is divided into 4 quarters, alternately opaque and transparent. The reading of this track, in conjunction with the previous track, determines in which quarter-turn the encoder is situated.

The following tracks enable successive determination of which eighth-turn, sixteenth-turn, etc. the encoder is situated.

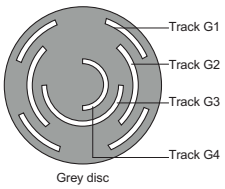
The outside track corresponds to the LSB (Least Significant Bit) and provides the final accuracy. It has 2 to the power “n” points corresponding to the resolution of the encoder. Therefore, for each angular position of the shaft, the disc provides a code. This code can either be binary or Gray.

Following one complete revolution of the encoder, the same coded values are repeated.

The multiturn absolute encoder, in addition to providing the digital position within the revolution, also provides the total number of revolutions.



Binary disc



Grey disc

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Rotary Encoders

Incremental Encoders Ø40 & Ø58mm



XCC1406PR10R

Incremental encoders - Ø40, solid shaft Ø6, IP54

Connection method	"Resolution (Points)"	Output stage	Supply voltage	Reference
Pre-cabled (2m), radial	100	5V, RS422	4.5.. 5.5V	XCC1406PR01R
		Push-pull	11.. 30V	XCC1406PR01K
	360	5V, RS422	4.5.. 5.5V	XCC1406PR03R
		Push-pull	11.. 30V	XCC1406PR03K
	500	5V, RS422	4.5.. 5.5V	XCC1406PR05R
		Push-pull	11.. 30V	XCC1406PR05K
	1000	5V, RS422	4.5.. 5.5V	XCC1406PR10R
		Push-pull	11.. 30V	XCC1406PR10K
	1024	5V, RS422	4.5.. 5.5V	XCC1406PR11R
		Push-pull	11.. 30V	XCC1406PR11K



XCC1406TR10R

Incremental encoders - Ø40, through shaft Ø6, IP52

Connection method	"Resolution (Points)"	Output stage	Supply voltage	Reference
Pre-cabled (2m), radial	100	5V, RS422	4.5.. 5.5V	XCC1406TR01R
		Push-pull	11.. 30V	XCC1406TR01K
	360	5V, RS422	4.5.. 5.5V	XCC1406TR03R
		Push-pull	11.. 30V	XCC1406TR03K
	500	5V, RS422	4.5.. 5.5V	XCC1406TR05R
		Push-pull	11.. 30V	XCC1406TR05K
	1000	5V, RS422	4.5.. 5.5V	XCC1406TR10R
		Push-pull	11.. 30V	XCC1406TR10K
	1024	5V, RS422	4.5.. 5.5V	XCC1406TR11R
		Push-pull	11.. 30V	XCC1406TR11K



XCC1506PS11Y

Incremental encoders - Ø58, solid shaft Ø6, IP65

Connection method	"Resolution (Points)"	Output stage	Supply voltage	Reference
M23 male connector, radial	100	5V, RS422	4.75.. 30V	XCC1506PS01X
		Push-pull	5.. 30V	XCC1506PS01Y
	360	5V, RS422	4.75.. 30V	XCC1506PS03X
		Push-pull	5.. 30V	XCC1506PS03Y
	500	5V, RS422	4.75.. 30V	XCC1506PS05X
		Push-pull	5.. 30V	XCC1506PS05Y
	1000	5V, RS422	4.75.. 30V	XCC1506PS10X
		Push-pull	5.. 30V	XCC1506PS10Y
	1024	5V, RS422	4.75.. 30V	XCC1506PS11X
		Push-pull	5.. 30V	XCC1506PS11Y
	2500	5V, RS422	4.75.. 30V	XCC1506PS25X
		Push-pull	5.. 30V	XCC1506PS25Y
	5000	5V, RS422	4.75.. 30V	XCC1506PS50X
		Push-pull	5.. 30V	XCC1506PS50Y



XCC1510PS11Y

Incremental encoders - Ø58, solid shaft Ø,10 IP65

Connection method	"Resolution (Points)"	Output stage	Supply voltage	Reference
M23 male connector, radial	100	5V, RS422	4.75.. 30V	XCC1510PS01X
		Push-pull	5.. 30V	XCC1510PS01Y
	360	5V, RS422	4.75.. 30V	XCC1510PS03X
		Push-pull	5.. 30V	XCC1510PS03Y
	500	5V, RS422	4.75.. 30V	XCC1510PS05X
		Push-pull	5.. 30V	XCC1510PS05Y
	1000	5V, RS422	4.75.. 30V	XCC1510PS10X
		Push-pull	5.. 30V	XCC1510PS10Y
	1024	5V, RS422	4.75.. 30V	XCC1510PS11X
		Push-pull	5.. 30V	XCC1510PS11Y
	2500	5V, RS422	4.75.. 30V	XCC1510PS25X
		Push-pull	5.. 30V	XCC1510PS25Y
	5000	5V, RS422	4.75.. 30V	XCC1510PS50X
		Push-pull	5.. 30V	XCC1510PS50Y

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Rotary Encoders

Incremental Encoders Ø58 & Ø90mm



XCC1514TS11Y

Incremental encoders - Ø58, through shaft Ø,14 IP65

Connection method	Resolution (Points)	Output stage	Supply voltage	Reference
M23 male connector, radial	100	5V, RS422	4.75.. 30V	XCC1514TS01X
		Push-pull	5.. 30V	XCC1514TS01Y
	360	5V, RS422	4.75.. 30V	XCC1514TS03X
		Push-pull	5.. 30V	XCC1514TS03Y
	500	5V, RS422	4.75.. 30V	XCC1514TS05X
		Push-pull	5.. 30V	XCC1514TS05Y
	1000	5V, RS422	4.75.. 30V	XCC1514TS10X
		Push-pull	5.. 30V	XCC1514TS10Y
	1024	5V, RS422	4.75.. 30V	XCC1514TS11X
		Push-pull	5.. 30V	XCC1514TS11Y
	2500	5V, RS422	4.75.. 30V	XCC1514TS25X
		Push-pull	5.. 30V	XCC1514TS25Y
	5000	5V, RS422	4.75.. 30V	XCC1514TS50X
		Push-pull	5.. 30V	XCC1514TS50Y

Incremental encoders - Ø58 Parametrable, through shaft Ø14, IP65

Connection method	Resolution (Points)	Output stage	Supply voltage	Reference
M23 male connector, radial	256.. 4096	5V, RS422	4.75.. 30V	XCC1514TSM02X
		Push-pull	5.. 30V	XCC1514TSM02Y
	360.. 5760	5V, RS422	4.75.. 30V	XCC1514TSM03X
		Push-pull	5.. 30V	XCC1514TSM03Y
	500.. 8000	5V, RS422	4.75.. 30V	XCC1514TSM05X
		Push-pull	5.. 30V	XCC1514TSM05Y
	1024.. 16384	5V, RS422	4.75.. 30V	XCC1514TSM11X
		Push-pull	5.. 30V	XCC1514TSM11Y
	5000.. 80000	5V, RS422	4.75.. 30V	XCC1514TSM50X
		Push-pull	5.. 30V	XCC1514TSM50Y



XCC1912PS11KN

Incremental encoders - Ø90, solid shaft Ø12, IP66

Connection method	Resolution (Points)	Output stage	Supply voltage	Reference
		Push-pull	11.. 30V	XCC1912PS03KN
		Push-pull	11.. 30V	XCC1912PS05KN
		Push-pull	11.. 30V	XCC1912PS10KN
		Push-pull	11.. 30V	XCC1912PS11KN
		Push-pull	11.. 30V	XCC1912PS25KN
		Push-pull	11.. 30V	XCC1912PS36KN
		Push-pull	11.. 30V	XCC1912PS50KN
		Push-pull	11.. 30V	XCC1912PS00KN



XCCRAR

Accessories - Shaft couplings

Description	Bore diameter (encoder side)	Bore diameter (machine side)	Reference
With sping	6 mm	6 mm	XCCRAR0606
		8 mm	XCCRAR0608
		10 mm	XCCRAR0610
	10 mm	10 mm	XCCRAR1010
		12 mm	XCCRAR1012
Elastic	6 mm	6 mm	XCCRAE0606



XCCRE

Accessories - Fixing brackets

Description		Reference
Plain bracket	for Ø58	XCCRE5SN
	for Ø90	XCCRE9SN
Bracket with pay compensator	for Ø58	XCCRE5RN
	for Ø90	XCCRE9RN

For more info:

- Catalogues available at: www.tesensors.com
- → Cabling accessories: Refer page: 3.6.83
- Brochure: DIA4ED2041203EN

OsiSense™ Rotary Encoders

Single Turn Absolute Encoders
Multiturn Absolute Encoders
Multiturn Absolute Encoders - CANopen + Profibus-DP
Ø58 & Ø90mm



XCC2506PS81KB

Single turn absolute encoders - Ø58, solid shaft Ø6, IP65

Connection method	Supply voltage	Resolution (Points)	Output stage	Code	Reference
M23 male connector, radial	11.. 30V	.. 8192	Push-pull	Binary	XCC2506PS81KB
				Gray	XCC2506PS81KGN
			SSI, 13-bit	Binary	XCC2506PS81SBN
				Gray	XCC2506PS81SGN



XCC2912PS81KGN

Single turn absolute encoders - Ø90, solid shaft Ø12, IP66

Connection method	Supply voltage	Resolution (Points)	Output stage	Code	Reference
M23 male connector, radial	11.. 30V	.. 8192	Push-pull	Binary	XCC2912PS81KBN
				Gray	XCC2912PS81KGN
			SSI, 13-bit	Binary	XCC2912PS81SBN
				Gray	XCC2912PS81SGN



XCC3510PS84SGN

Multiturn absolute encoders - Ø58, solid shaft Ø10, IP65

Connection method	Supply voltage	Resolution	Output stage	Code	Reference
M23 male connector, radial	11.. 30V	4096 points / 8192 turns	SSI, 25-bit	Gray	XCC3510PS48SGN
		8192 points / 4096 turns	SSI, 25-bit	Binary	XCC3510PS84SBN
				Gray	XCC3510PS84SGN



XCC3912PS84SGN

Multiturn absolute encoders - Ø90, solid shaft Ø12, IP66

Connection method	Supply voltage	Resolution (Points)	Output stage	Code	Reference
M23 male connector, radial	11.. 30V	8192 points / 4096 turns	SSI, 25-bit	Binary	XCC3912PS84SBN
				Gray	XCC3912PS84SGN



XCC3510PS84CB

Communicating multiturn absolute encoders - Ø58, solid shaft Ø10, IP64

Connection method	Supply voltage	Resolution (Points)	Output stage	Code	Reference
2 x M12 + 1 x Pg9	11.. 30V	8192 points / 4096 turns	"CANopen, 25-bit"	Binary	XCC3510PS84CBN
3 x Pg9	11.. 30V	8192 points / 4096 turns	Profibus-DP/ 25-bit	Binary	XCC3510PV84FBN



XCC3510PV84FB

Accessories - Reduction collars

Description		Reference
For Ø58 incremental encoders with through shaft	Ø14 to Ø6	XCCR158RDA06
	Ø14 to Ø8	XCCR158RDA08
	Ø14 to Ø10	XCCR158RDA10
	Ø14 to Ø12	XCCR158RDA12
"IP67 sealed collar for encoders XCC1510, 2510, 3510"	Ø58	XCCRB3



XCCR158RDA



XCCPM



XCC3510PV

Accessories - Pre-wired connectors and jumper cables (L = 5m)

Description		Reference
Pre-wired M23 female connectors	8-wire for SSI encoders	XCCPM23122L5
	10-wire for incremental encoders	XCCPM23121L5
	16-wire for parallel single turn absolute encoders	XCCPM23161L5
Deserialisation jumper cables (M23 F - SUB-D37 M)	SSI Gray - // Gray PNP	XCCRM23SUB37PG
	SSI binary - // binary NPN	XCCRM23SUB37PB

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

OsiSense™ Rotary Encoders

Application - Food & Beverage IP65, 67 & IP69K Incremental, Absolute single turn & Absolute multi turn Encoders - Ø58



Incremental encoders - Ø58, solid shaft Ø10

Connection method	Resolution (Points)	Output stage	Supply voltage	Reference
Pre-cabled 2 (m)	360	Push-pull	5…30 V	XCC1510SPA03Y
	1024	Push-pull	5…30 V	XCC1510SPA11Y
	4096	Push-pull	5…30 V	XCC1510SPA50Y

Absolute single turn encoders - Ø58, solid shaft Ø10

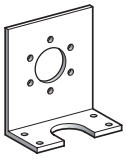
Connection method	Resolution (Points)	Output stage	Supply voltage	Reference
Pre-cabled 2 (m)	8192	Push-pull - Grey	5…30 V	XCC2510SPA81KGN
		SSI-13bit - Grey	5…30 V	XCC2510SPA81SGN

Absolute multi turns encoders - Ø58, solid shaft Ø10

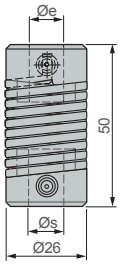
Connection method	Resolution (Points)	Output stage	Supply voltage	Reference
Pre-cabled 2 (m)	4096	SSI-25bit - Grey	5…30 V	XCC3510SPA48SGN

Accessories

Description	Type	Reference
Bracket		XCCRE5SN
Shaft Coupling S/S 10mm to 10mm	Flexible	XCCRAS1010S
Shaft Coupling S/S 10mm to 12mm	Flexible	XCCRAS1012S

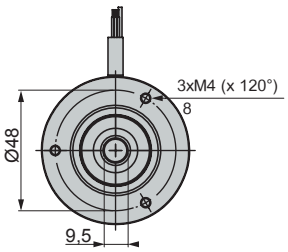


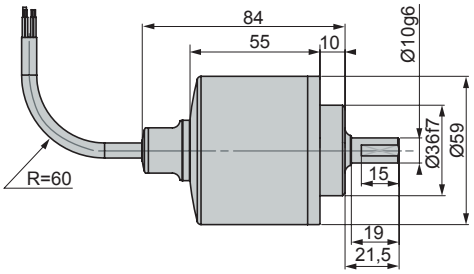
Bracket

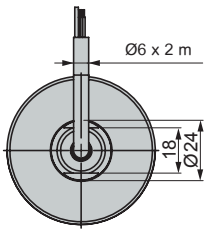


Shaft Coupling

Dimensions





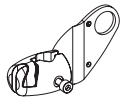


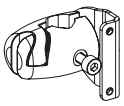
R: minimum bend radius = 60 mm.

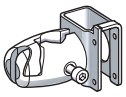
3.6

Sensor Installation Accessories

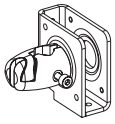
OsiSense™
3D Mounting Accessories
Standard Mounting Accessories & Reflectors

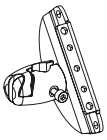

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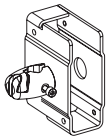

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XUZM2004


XUZK2003

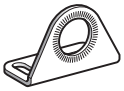

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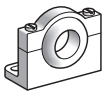

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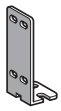

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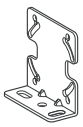

XUZ2001

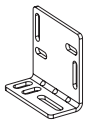

XUZ2003


XUZA118


XUZA218

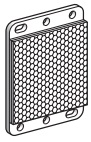

XUZA50

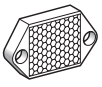

XUZA51


XUZX2000


XSAZ118


XUZC80


XUZC50


XUZC24

3D Mounting Accessories

Description	Reference
3D Fixing kit for use on XUB or XUZC50	XUZB2003
3D Fixing kit for use on M12 rod for XUM or XUZC50	XUZM2003
3D Fixing kit for use on M12 rod with protective cover for XUM	XUZM2004
3D Fixing kit for use on M12 rod for XUK or XUZC50	XUZK2003
3D Fixing kit for use on M12 rod with protective cover for XUK	XUZK2004
3D Fixing kit for use on M12 rod for XUX or XUZC50	XUZX2003
3D Fixing kit for use on M12 rod with protective cover for XUX	XUZX2004
M12 Rod	XUZ2001
Support for M12 Rod	XUZ2003

Standard Mounting Accessories

Description	Reference
Metal Bracket for XUB	XUZA118
Mounting Bracket adjustable with ball-joint for XUB	XUZA218
Mounting Bracket for XUM	XUZA50
Mounting Bracket for XUK	XUZA51
Mounting Bracket for XUX	XUZX2000
Adaptor for ISO 16 - ISO 20	XUZX2002
Fixing bracket - indented type for ø18mm sensors	XSZB118
Fixing bracket - saddle type for ø18mm sensors	XSAZ118

Reflectors

Description		Reference
Reflector	Ø 16mm	XUZC16
	Ø 21mm	XUZC21
	Ø 31mm	XUZC31
	Ø 39mm	XUZC39
	Ø 80mm	XUZC80
	100mm x 100mm	XUZC100
Reflectors (Suitable for very close distances)	24mm x 21mm	XUZC24
	50mm x 50mm	XUZC50
Reflective tape	25mm x 1m	XUZB01
	25mm x 5m	XUZB05

For more info:

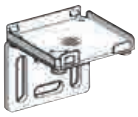
- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

Sensor Installation Accessories

OsiSense™
Mounting & Fixing Accessories
Protection Accessories & Fuses



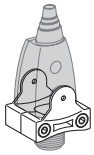
XSZB•00



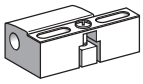
XSZB•90



XSZBD10



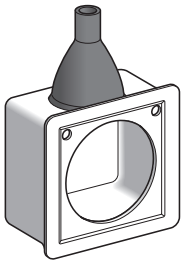
XSZBPM12



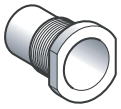
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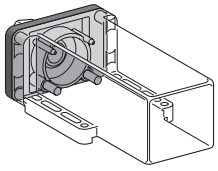
XSAZ118



XSZE•10



XTAZ30



XSCZ01

Mounting and Fixing Accessories

Description	For use with sensors Type	Diameter (mm)	Reference
"Clip" mounting plate Mounting possible without "clip" on tapped holes	XS• J	–	XSZBJ00
	XS• F	–	XSZBF00
	XS• E	–	XSZBE00
	XS• C	–	XSZBC00
"Clip" 90° mounting bracket Mounting possible without "clip" on tapped holes	XS• J	–	XSZBJ90
	XS• F	–	XSZBF90
	XS• E	–	XSZBE90
	XS• C	–	XSZBC90
Replacement bracket	XS• D (for XSD)	–	XSZBD10
Fixing clamp for remote control	XS9, XS6•••B2	–	XSZBPM12
Fixing clamps	XS1	4 (smooth)	XSZB104
		5 (M5 x 0.5)	XSZB105
	XS1, XS2	6.5 (smooth)	XSZB165
	XS1, XS2, XS4, XS5, XS6	8 (M8 x 1)	XSZB108
	XS1, XS2, XS4, XS5, XS6	12 (M12 x 1)	XSZB112
		18 (M18 x 1)	XSZB118
		18 (M18 x 1)	XSAZ118
		30 (M30 x 1.5)	XSZB130
Set of 2 fixing nuts, stainless steel	XS1, XS2, XS5, XS6	8 (M8 x 1)	XSZE308
	XS1, XS2, XS5, XS6	12 (M12 x 1)	XSZE312
		18 (M18 x 1)	XSZE318
		30 (M30 x 1.5)	XSZE330
Set of 2 fixing nuts, plastic	XS4	8 (M8 x 1)	XSZE208
		12 (M12 x 1)	XSZE212
	XS4	18 (M18 x 1)	XSZE218
		30 (M30 x 1.5)	XSZE230

Protection Accessories

Description	For use with sensors Type	Diameter (mm)	Reference
Outer cover made of silicon (reinforced resistance to chemical)	XS• E	–	XSZEE10
	XS• C	–	XSZEC10
	XS• D	–	XSZED10
Outer cover (IP 68)	XT7 C	–	XSCZ01
Thread adaptor	XS•	30 (M30 x 1.5)	XTAZ30

Fuses (for unprotected 2-wire AC/DC sensors)

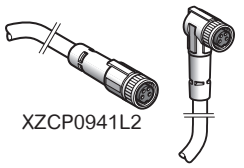
Description	Type	Reference
Cartridge fuses 5 x 20	0.4 A "quick-blow"	XUZE04
	0.8 A "quick-blow"	XUZE08
Fuse terminal block for XUZ E0•		AB1FU10135U

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

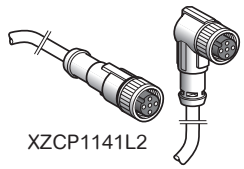
Sensor Installation Accessories

OsiSense™ Cabling accessories



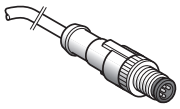
Female M8 – Pre-wired (2m)

Connector Type	Number of Wires	Voltage	LED	Reference
Straight	3	60V AC/75V DC	–	XZCP0566L2
90 deg	3	60V AC/75V DC	–	XZCP0666L2
90 deg	3	10-30V DC	2 x PNP	XZCP0766L2
90 deg	3	10-30V DC	2 x NPN	XZCP0866L2
Straight	4	60V AC/75V DC	–	XZCP0941L2
90 deg	4	60V AC/75V DC	–	XZCP1041L2



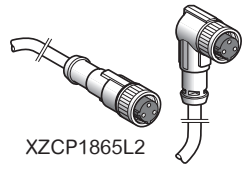
Female M12 – Pre-wired (2m)

Connector Type	Number of Wires	Voltage	LED	Reference
Straight	4	250V AC/300V DC	–	XZCP1141L2
90 deg	4	250V AC/300V DC	–	XZCP1241L2
90 deg	3	10-30V DC	2 x PNP	XZCP1340L2
90 deg	3	10-30V DC	2 x NPN	XZCP1440L2
Straight	4 with earth	250V AC/300V DC	–	XZCP1169L2
Straight	5	30V AC/36V DC	–	XZCP1164L2



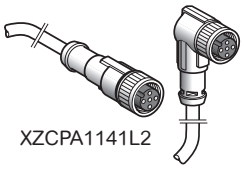
Male M12 – Pre-wired (2m)

Connector Type	Number of Wires	Voltage	LED	Reference
Straight	5	30V AC/36V DC	–	XZCP1564L2
Straight	4	250V AC/300V DC	–	XZCP1541L2



Female ½" 20 UNF – Pre-wired (2m)

Connector Type	Number of Wires	Voltage	LED	Reference
Straight	3	250V AC/300V DC	–	XZCP1865L2
90 deg	3	250V AC/300V DC	–	XZCP1965L2



Female M12 – Pre-wired (Stainless Steel 316 clamping ring)

Description	Type	Cable Length (m)	Reference
Pre-wired M12 connector Female, 4 pin Stainless Steel 316L clamping ring	Straight	2	XZCPA1141L2
		5	XZCPA1141L5
		10	XZCPA1141L10
	90 deg	2	XZCPA1241L2
		5	XZCPA1241L5
		10	XZCPA1241L10



Female M12 – Pre-wired (PVC) (2M, 5M & 10M lengths) (1)(2)

Description	Type	Cable Length (M)	Reference
Pre-wired M12 connector Female, 4 pin (4 Wire) Metal clamping ring	Straight	2	XZCPV1141L2
		5	XZCPV1141L5
		10	XZCPV1141L10
	90 Degree (Elbow)	2	XZCPV1241L2
		5	XZCPV1241L5
		10	XZCPV1241L10

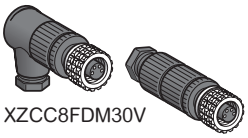
Notes:
(1) Other lengths, male and M8 connector options also available
(2) Selected 90 degree options available with LED indication
Please contact Schneider Electric or visit www.schneider-electric.com/au for additional information

For more info:

- Catalogues available at: www.tesensors.com
- Brochure: DIA4ED2041203EN

Sensor Installation Accessories

OsiSense™ Cabling accessories

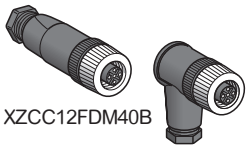


XZCC8FDM30V

XZCC8FCM30V

Female M8 – Connectors

Connector Type	Number of Wires	Voltage	LED	Reference
Straight	3	60 V AC/75V DC	–	XZCC8FDM30V
90 deg	3	60 V AC/75V DC	–	XZCC8FCM30V
Straight	4	60 V AC/75V DC	–	XZCC8FDM40V
90 deg	4	60 V AC/75V DC	–	XZCC8FCM40V

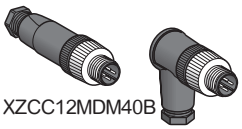


XZCC12FDM40B

XZCC12FCM40B

Female M12 – Connectors

Connector Type	Number of Wires	Voltage	LED	Reference
Straight	4	125 V AC/150V DC	–	XZCC12FDM40B
90 deg	4	125 V AC/150V DC	–	XZCC12FCM40B

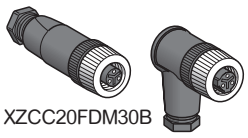


XZCC12MDM40B

XZCC12MCM40B

Male M12 – Connectors

Connector Type	Number of Wires	Voltage	LED	Reference
Straight	4	125 V AC/150V DC	–	XZCC12MDM40B
90 deg	4	125 V AC/150V DC	–	XZCC12MCM40B



XZCC20FDM30B

XZCC20FCM40B

Female ½” 20UNF – Connectors

Connector Type	Number of Wires	Voltage	LED	Reference
Straight	3	250V AC	–	XZCC20FDM30B
90 deg	3	250V AC	–	XZCC20FCM30B



XZCC12MDM40B



XZCB4L0•••

Cable

Cable	Length	Voltage	Reference
Cable Roll	25m	60V AC/60V DC	XZCB4L0025
Cable Roll	100m	60V AC/60V DC	XZCB4L0100

3.6

Components for Machine Safety

Safety Sensing



Tangible Guarding - Machine Guard Interlocks

Plastic Body - with Electro-Magnet	XCSLE	Page 3.7.1
Metal Body - with Electro-Magnet	XCSLF	Page 3.7.1
Metal Body - Standard	XCSA/B/C	Page 3.7.2
Plastic Body - Standard	XCSP	Page 3.7.3
Plastic Body - Spindle Type	XCSPR/TR	Page 3.7.3
Plastic Body - Lever Operated	XCSPL/TL	Page 3.7.4
Coded Magnetic Safety Switches	XCSDM	Page 3.7.5
Compact Metal Body - Plunger or Roller	XCSD	Page 3.7.5
Compact Plastic Body - Plunger or Roller	XCSP	Page 3.7.6
Miniature Metal Body - Plunger or Roller	XCSM	Page 3.7.6

Intangible Guarding

Type 2 Safety Light Barriers	XUSL2	Page 3.7.7
Type 4 Safety Light Curtains	XUSL4	Page 3.7.8

Safety HMI



Emergency Stop Controls

Ø22 Harmony Style 4 & 5 Emergency Stop Buttons & Control Stations	Section 3.4
Ø30 9001K & SK Emergency Stop Buttons & Control Stations	Section 3.4
Emergency Safety Rope Pull Switches	Page 3.7.13

Operator Interface Devices

Two Hand Control Units	Page 3.7.14
Double Insulated Foot Switches	Page 3.7.14
Standard Duty Metal Foot Switches	Page 3.7.14
Heavy Duty Metal Foot Switches	Page 3.7.14
Illuminated Beacons, Banks & Sirens	Section 3.4
Validation Control - Enabling Switches	Page 3.7.15

Safety Logic







Safety Modules

Selection Guide — Page 3.7.16

Up to Category 4 Applications

Programmable Safety PLC — Page 3.7.17
Configurable Safety Controller — Page 3.7.18
Multi Function Safety Module — Page 3.7.19
Modular Safety Controller — Page 3.7.20

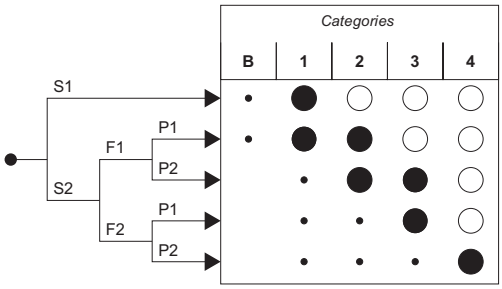
Category 3 Application

Emergency Stop & Limit Switch Monitoring — Page 3.7.21
Safety Timer With Delay on Energisation — Page 3.7.21
Safety Timer With Impluse On — Page 3.7.21
Zero Speed Detection Using Back EMF — Page 3.7.21

Category 4 Application

Emergency Stop & Limit Switch Monitoring — Page 3.7.22
Emergency Stop, Limit Switch & Light Curtain — Page 3.7.22
E-Stop, Limit Switch, Light Curtain & Safety Mats — Page 3.7.22
Dual Limit Switch Monitoring — Page 3.7.22
Enabling Switch Monitoring — Page 3.7.22
Two Hand Control (Type IIIC) Monitoring — Page 3.7.22
Coded Magnetic Switch Monitoring — Page 3.7.22
Muting of Type 4 Light Curtains — Page 3.7.22

Technical Information



Risk Assessment — Page 3.7.23
Control System Categories & Safety Circuit Requirements — Page 3.7.23
Safety Techniques — Page 3.7.24

For more info:

- Catalogues available at: www.tesensors.com
- Sales Brochure: DIA4ED2041204EN
- Dimensions: Refer Catalogue

Safety Sensing
Tangible Guards

Preventa Machine Guard Interlocks (Safety Solenoid Interlock Switches) Metal Body Heavy Duty & Plastic Body Light Duty IP66 & IP67 - ISO M20 Cable Entry



XCSLF3737312



XCSLF3737612



XCSLE3737312



XCSZ01



XCSZ02



XCSZ03



XCSZ05

Electroslim Safety Interlock Switches (Metal - XCSLF & Plastic XCSLE)

Safety Contacts With Key Inserted	Solenoid Auxiliary Contact	Solenoid Voltage cable entries	Reference

Metal (XCSLF) - Solenoid release resistance force of 3000N maximum ⊖

(Key provided for manual override on all metal models)

Unlocking on energisation - for high inertia machines, extended run down period (4 Contacts) ⊖			
1 N/C + 1 N/O	1 N/C + 1 N/O	24V AC/DC	XCSLF2525312
1 N/C + 1 N/O	1 N/C + 1 N/O	220 240V AC	XCSLF2525342
2 N/C	2 N/C	24V AC/DC	XCSLF2727312
2 N/C	2 N/C	220 240V AC	XCSLF2727342
2 N/C	1 N/C + 1 N/O	24V AC/DC	XCSLF2725312
2 N/C	1 N/C + 1 N/O	220 240V AC	XCSLF2725342
Unlocking on energisation - for high inertia machines, extended run down period (6 Contacts) ⊖			
1 N/C + 2 N/O	1 N/C + 2 N/O	24V AC/DC	XCSLF3535312
1 N/C + 2 N/O	1 N/C + 2 N/O	220 240V AC	XCSLF3535342
2 N/C + 1 N/O	2 N/C + 1 N/O	24V AC/DC	XCSLF3737312
2 N/C + 1 N/O	2 N/C + 1 N/O	220 240V AC	XCSLF3737342
3 N/C	3 N/C	24V AC/DC	XCSLF3838312
Unlocking on de-energisation - for fast run down period (6 Contacts) ⊖			
1 N/C + 2 N/O	1 N/C + 2 N/O	24V AC/DC	XCSLF3535512
2 N/C + 1 N/O	2 N/C + 1 N/O	24V AC/DC	XCSLF3737512
3 N/C	2 N/C + 1 N/O	24V AC/DC	XCSLF3837512
Metal - with Push to release button (6 Contacts) ⊖			
Turn to release			
1 N/C + 2 N/O	1 N/C + 2 N/O	24V AC/DC	XCSLF3535412
2 N/C + 1 N/O	2 N/C + 1 N/O	24V AC/DC	XCSLF3737412
Key to release			
1 N/C + 2 N/O	1 N/C + 2 N/O	24V AC/DC	XCSLF3535612
2 N/C + 1 N/O	2 N/C + 1 N/O	24V AC/DC	XCSLF3737612

Plastic (XCSLE) - Solenoid release resistance force of 1400N maximum

(Tool type Key provided for manual override on all plastic models)

Unlocking on energisation - for high inertia machines, extended run down period (4 Contacts) ⊖			
1 N/C + 1 N/O	1 N/C + 1 N/O	24V AC/DC	XCSLE2525312
1 N/C + 1 N/O	1 N/C + 1 N/O	220 240V AC	XCSLE2525342
2 N/C	2 N/C	24V AC/DC	XCSLE2727312
Unlocking on energisation - for high inertia machines, extended run down period (6 Contacts) ⊖			
1 N/C + 2 N/O	1 N/C + 2 N/O	24V AC/DC	XCSLE3535312
1 N/C + 2 N/O	1 N/C + 2 N/O	220 240V AC	XCSLE3535342
2 N/C + 1 N/O	2 N/C + 1 N/O	24V AC/DC	XCSLE3737312
2 N/C + 1 N/O	2 N/C + 1 N/O	220 240V AC	XCSLE3737342
3 N/C	3 N/C	24V AC/DC	XCSLE3838312
3 N/C	3 N/C	220 240V AC	XCSLE3838342
Unlocking on de-energisation - for fast run down period (4 Contacts) ⊖			
1 N/C + 1 N/O	1 N/C + 1 N/O	24V AC/DC	XCSLE2525512
1 N/C + 1 N/O	1 N/C + 1 N/O	220 240V AC	XCSLE2525542

Note:
XCSLF/LE - - - - - - "2" = ISO M20 electrical entry. Other entry types : "3" for 1/2" NPT and "M2" for M23 (16 Pin plug) or "M3" for M23 (19 Pin plug) types are available on Indent. All N/O contacts on both the metal and plastic versions are make before break. Unlocking = Release of key actuator

Accessories

Type		Reference
XCSLE & XCSLF	Blanking plugs for operating head slot	XCSZ30
XCSLE & XCSLF	Padlocking device (up to 3 padlocks)	XCSZ90

Operating Keys Electroslim Metal & Plastic

Type	Reference	Type	Reference
Direct	XCSZ01	Large	XCSZ02
Flexible	XCSZ03	Sliding door latch	XCSZ05

Safety Sensing
Tangible Guards

Preventa
Machine Guard Interlocks (Safety Interlock Switches)
Metal Body Heavy Duty - IP67 – ISO M20 Cable Entry


XCSA512


XCSB502


XCSC502


XCSZ01


XCSZ02


XCSZ03


XCSZ05

For Guard Monitoring on Machines with Fast Run Down Time

Without Locking of the operating key ⊖

Contact arrangement when key inserted	Contact status LED indication	Reference
2 N/O + 1 N/C (break before make)	None	XCSA502
	24/48V AC/DC	XCSA512
	110/240V AC	XCSA522
1 N/O + 2 N/C (break before make)	None	XCSA702
	24/48V AC/DC	XCSA712
	110/240V AC	XCSA722
3 N/C (break before make)	None	XCSA802

With Locking of the operating key, manual release using a push-button ⊖

Contact arrangement when key inserted	Contact status LED indication	Reference
2 N/O + 1 N/C (break before make)	None	XCSB502
	24/48V AC/DC	XCSB512
	110/240V AC	XCSB522
1 N/O + 2 N/C (break before make)	None	XCSB702
	24/48V AC/DC	XCSB712
	110/240V AC	XCSB722

With Locking of the operating key and manual release using a key ⊖

Contact arrangement when key inserted	Contact status LED indication	Reference
2 N/O + 1 N/C (break before make)	None	XCSC502
	24/48V AC/DC	XCSC512
	110/240V AC	XCSC522
1 N/O + 2 N/C (break before make)	None	XCSC702
	24/48V AC/DC	XCSC712
	110/240V AC	XCSC722

Operating Keys Standard Metal Body

Type	Reference	Type	Reference
Direct	XCSZ01	Large	XCSZ02
Flexible	XCSZ03	Sliding door latch	XCSZ05

Accessories

Type	Reference
Padlocking device for up to 3 padlocks (Padlocks not supplied – insertion does not change contact status)	XCSZ90

For more info:

- Catalogues available at: www.tesensors.com
- Sales Brochure: DIA4ED2041204EN
- Dimensions: Refer Catalogue

Safety Sensing
Tangible Guards

Preventa
Machine Guard Interlocks (Safety Interlock Switches)
Plastic Body Light Duty – IP67 – ISO M20 Cable Entry



XCSPA592



XCSTA792



XCSTR



XCSZ11



XCSZ12



XCSZ13



XCSZ14

For Guard Monitoring on Machines with Fast Run Down Time

Without Locking of the operating key ⊖

Contact arrangement	Number of cable entries	Reference
1 N/O + 1 N/C (break before make)	1	XCSPA592
1 N/O + 1 N/C (snap action)	1	XCSPA192
1 N/O + 1 N/C (make before break)	1	XCSPA692
2 N/C	1	XCSPA792
2 N/C (snap action)	1	XCSPA292
2 N/O + 1 N/C (2 N/O staggered)	1	XCSPA892
1 N/O + 2 N/C (N/O staggered)	1	XCSPA992
1 N/O + 2 N/C (snap action)	1	XCSPA492
2 N/O + 1 N/C (break before make)	2	XCSTA592
1 N/O + 2 N/C (break before make)	2	XCSTA792

Rotary Spindle Operated Safety Switches ⊖

Contact arrangement	Number of cable entries	Reference
1 N/O + 1 N/C (break before make)	1	XCSPR552
2 N/C (slow break)	1	XCSPR752
2 N/O + 1 N/C (break before make)	2	XCSTR552
1 N/O + 2 N/C (break before make)	2	XCSTR752

Operating Keys Standard Plastic Body

Type	Reference
Direct	XCSZ11
Large	XCSZ12
Flexible (+ 10° flexibility)	XCSZ13
Angled	XCSZ14

Accessories

Type	Reference
Padlocking device for up to 3 padlocks (Padlocks not supplied – insertion does not change contact status)	XCSZ91

For more info:

- Catalogues available at: www.tesensors.com
- Sales Brochure: DIA4ED2041204EN
- Dimensions: Refer Catalogue

Safety Sensing
Tangible Guards

Preventa
Machine Guard Interlocks (Safety Interlock Switches)
Plastic body light duty – IP67 – ISO M16 x 1.5 Cable Entry
Plastic Body Light Duty Manual Reset – IP67



XCSPL



XCSTL

Rotary Lever Operating Head (1)
2 Output Contacts ⊖, Tripping angle ± 5°

Lever position	Contact Arrangement	Reference	
		Elbowed lever (2)	Straight lever
To left	1 N/O + 1 N/C (break before make)	XCSPL592	XCSPL562
	2 N/C	XCSPL792	XCSPL762
Centred	1 N/O + 1 N/C (break before make)	XCSPL582	XCSPL552
	2 N/C	XCSPL782	XCSPL752
To right	1 N/O + 1 N/C (break before make)	XCSPL572	XCSPL562
	2 N/C	XCSPL772	XCSPL762

3 Output Contacts ⊖, Tripping angle ± 5°

Lever position	Contact Arrangement	Reference	
		Elbowed lever (2)	Straight lever
To left	2 N/O + 1 N/C (break before make)	XCSTL592	XCSTL562
	1 N/O + 2 N/C (break before make)	XCSTL792	XCSTL762
Centred	2 N/O + 1 N/C (break before make)	XCSTL582	XCSTL552
	1 N/O + 2 N/C (break before make)	XCSTL782	XCSTL752
To right	2 N/O + 1 N/C (break before make)	XCSTL572	XCSTL562
	1 N/O + 2 N/C (break before make)	XCSTL772	XCSTL762

Note:
(1) Lever is made of stainless steel.
(2) Elbowed lever is flush with rear of switch.

For more info:

- Catalogues available at: www.tesensors.com
- Sales Brochure: DIA4ED2041204EN
- Dimensions: Refer Catalogue

Safety Sensing
Tangible Guards

Preventa
Machine Guard Interlocks, Coded Magnetic
Safety Switches – IP67 Safety Limit Switches
Compact Design Metal Body – IP67 – ISO M20



XCSDMC5912



XCSDMP5012



XCSDMR5912

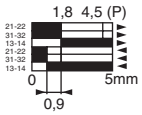
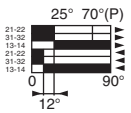
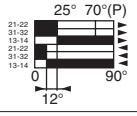
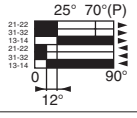
Coded Magnetic Safety Switches, 24V DC supply voltage

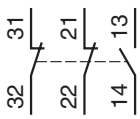
Description	Cable Length (1)	Contact Arrangement	Reference
Minature (51x16x7) Rectangular	2m	1N/O + 1N/C	XCSDMC5902
		2 N/C	XCSDMC7902
	5m	2 N/C	XCSDMC7905
	M8 Connector w/ flying lead	1 N/O + 1 N/C	XCSDMC590L01M8
		2 N/C	XCSDMC790L01M8
Minature (51x16x7) with integral LED	2m	1 N/O + 1 N/C	XCSDMC5912
		2 N/C	XCSDMC7912
	10m	2 N/C	XCSDMC79110
	M8 Connector w/ flying lead	1 N/O + 1 N/C	XCSDMC591L01M8
		2 N/C	XCSDMC791L01M8
Standard (88x25x13) Rectangular	2m	1 N/O + 1 N/C	XCSDMP5902
		1 N/C + 2 N/O	XCSDMP5002
		2 N/C + 1 N/O	XCSDMP7002
	M12 Connector w/ flying lead	1 N/O + 1 N/C	XCSDMP590L01M12
		2 N/O	XCSDMP790L01M12
		1 N/C + 2 N/O	XCSDMP500L01M12
		2 N/C + 1 N/O	XCSDMP700L01M12
Standard (88x25x13) with integral LED	2m	1 N/O + 1 N/C	XCSDMP5912
		2 N/C	XCSDMP7912
		1 N/C + 2 N/O	XCSDMP5012
		2 N/C + 1 N/O	XCSDMP7012
	M12 Connector w/ flying lead	1 N/O + 1 N/C	XCSDMP591L01M12
		2 N/C	XCSDMP791L01M12
		1 N/C + 2 N/O	XCSDMP501L01M12
		2 N/C + 1 N/O	XCSDMP701L01M12
Cylindrical (M30x40)	2m	1 N/O + 1 N/C	XCSDMR5902
		2 N/C	XCSDMR7902
	10m	2 N/C	XCSDMR79010
	M12 Connector w/ flying lead	1 N/O + 1 N/C	XCSDMR590L01M12
		2 N/C	XCSDMR790L01M12
Cylindrical (M30x40) with integral LED	2m	1 N/O + 1 N/C	XCSDMR5912
		2 N/C	XCSDMR7912
	5m	2 N/C	XCSDMR7915
	M12 Connector w/ flying lead	1 N/O + 1 N/C	XCSDMR591L01M12
		2 N/C	XCSDMR791L01M12



XCSD3918P20

Safety Limit Switches with plunger or rotary head
Compact design, metal EN50047, ISO M20 cable entry (2)

Type of operator	Description	Contact operator (3)	Reference
3-pole N/C+N/C+N/O snap action contact	Metal end plunger		XCSD3910P20
	Steel roller plunger		XCSD3902P20
	Thermoplastic roller lever		XCSD3918P20
	Steel Roller lever		XCSD3919P20



Note:

(1) For 5m cable replace last digit of reference with '5' and for 10m cable replace last digit of the reference with '10' eg. XCSDMP7005 becomes XCSDMP70010.

(2) For a PG13.5 cable entry, replace P20 in the reference with G13. For a ½ UNPT cable entry, replace P20 in the reference with N12.

(3) The letter (P) indicates point of positive operation, for e.g. XCSD3910P20 positive operation is at 4.5mm.

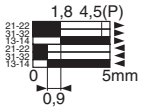
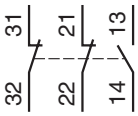
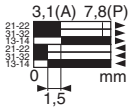
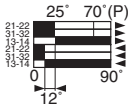
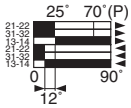
For more info:

- Catalogues available at: www.tesensors.com
- Sales Brochure: DIA4ED2041204EN
- Dimensions: Refer Catalogue

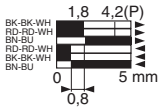
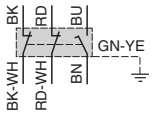
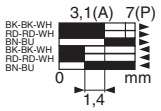
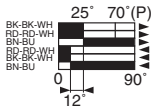
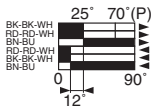
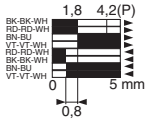
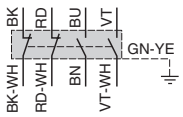
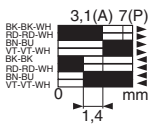
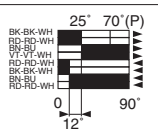
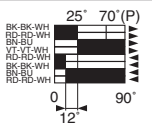
Safety Sensing
Tangible Guards

Preventa
Machine Guard Interlocks (Safety Limit Switches)
Compact Design Plastic Body – IP67 – ISO M20
Miniature Design Metal Body – IP68 – Pre-wired 1m Cable

Compact design, plastic EN50047, ISO M20 cable entry (1)

Type of operator	Description	Contact operator (3)	Reference
3-pole N/C+N/C+N/O snap action contact	Metal end plunger		XCSP3910P20
	Steel roller plunger		XCSP3902P20
	Thermoplastic roller lever		XCSP3918P20
	Steel Roller lever		XCSP3919P20

Miniature design, metal, pre-wired 1m (2)

Type of operator	Description	Contact operator (3)	Reference
3-pole N/C+N/C+N/O snap action contact	Metal end plunger		XCSM3910L1
	Roller plunger		XCSM3902L1
	Thermoplastic roller lever		XCSM3915L1
	Steel Roller lever		XCSM3916L1
4-pole N/C+N/C+N/O+N/O snap action contact	Metal End plunger		XCSM4110L1
	Roller plunger		XCSM4102L1
	Thermoplastic roller lever		XCSM4115L1
	Steel Roller lever		XCSM4116L1



XCSM**02L1

Note:

(1) For a PG13.5 cable entry, replace P20 in the reference with G13. For a ½ UNPT cable entry, replace P20 in the reference with N12.

(2) For a 2m long cable, replace L1 in the reference with L2. For a 5m long cable, replace L1 in the reference with L5.

(3) The letter (P) indicates point of positive operation, for e.g. XCSP3910P20 positive operation is at 4.5mm.

For more info:

- Catalogues available at: www.tesensors.com
- Sales Brochure: DIA4ED2041204EN
- Dimensions: Refer Catalogue

Safety Sensing
Intangible Guards

Preventa
Safety Light Curtains - General Information
Type 2 Single Beam Light Barriers – IP67

Safety Light Curtains

Safety light curtains are electro-sensitive protection equipment (ESPE) designed for the protection of persons operating or working in the vicinity of machinery, by stopping the dangerous movement of parts as soon as one of the light beams is broken.

In particular, they provide protection to ensure the safety of personnel operating dangerous machinery (annex IV of 98/37/EC) but they are equally suitable for use with many other types of machines. They make it possible to protect personnel whilst allowing free access to machines.

The absence of a door or guard reduces the time required for loading, inspection or adjustment operations as well as making access easier.

These light curtains UL, CSA and TÜV certified and conform to:

- European Machinery Safety Directive 98/37/EC and European Health and Safety Directive 89/655/EEC,
- Low Voltage Directives 73/23/EEC and 93/68/EEC and also, the Electromagnetic Compatibility Directive 89/336/EEC,
- Standard IEC 61496-1, IEC 61496-2 (electro-sensitive protection equipment: ESPE),
- Standard EN 60825 (emission power),
- Standard EN 999 (installation positioning).

Installation Rules

These are defined in standard EN 999. In particular:

- the safety distance between the light curtain and the hazardous zone
- the body approach speed
- multiple single-beam devices
- multi-beam light curtains.

Calculation of minimum safety distance S between the light curtain and the hazardous zone

S = K (t1 + t2) + C (general formula)

S = minimum distance in mm

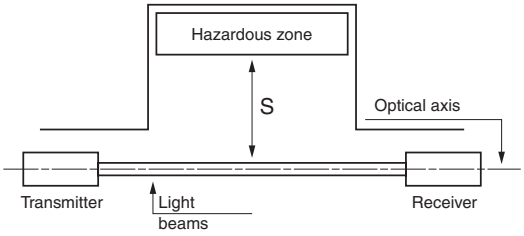
K = body approach speed (or of part of the body) in mm/s

t1 = response time of protection device in s

t2 = stopping time of machine (dangerous movements) in s

C = additional distance in mm

- For single-beam light curtains:
  K = 1600 mm/s
  C = 1200 mm for a single beam
  C = 850 mm for several beams



The heights protected are as follows:

Number of beams	Heights protected (mm)
4	300, 600, 900, 1200
3	300, 700, 1100
2	400, 900
1	750

- For multi-beam light curtains:
  K = 200 mm/s
  C = 8 (d - 14) d = detection capacity of the light curtain Note: in all cases: S y 500 mm

Type 2 Single Beam Light Barrier

Safety modules (1)				
Number of N/O safety outputs	Number of N/C additional outputs	Number of PLC signalling outputs	Supply voltage	Reference
2	–	4	24VDC	XPSCM1144
Thru-beam type 2 safety sensors (2)				
Pre-cabled, L=5m				XU2S18PP340L5
MI2 connector				XU2S18PP340D



XPSCM1144



XU2S18PP340D

Single-beam photo-electric sensor with a test input

Description	Transmission type	Line of sight	Connection	Reference
PNP thru-beam pair (transmitter + receiver)	Infrared Sensing distance: 8m	Along case axis	Pre-cabled L = 5m	XU2S18PP340L5
			M12 connector	XU2S18PP340D
		90° to case axis	Pre-cabled L = 5m	XU2S18PP340WL5
			M12 connector	XU2S18PP340WD
Thru-beam transmitter alone	Infrared	Along case axis	Pre-cabled L = 5m	XU2S18KP340L5T
			M12 connector	XU2S18KP340DT
		90° to case axis	Pre-cabled L = 5m	XU2S18KP340WL5T
			M12 connector	XU2S18KP340WDT
PNP thru-beam receiver alone	Infrared	Along case axis	Pre-cabled L = 5m	XU2S18PP340L5R
			M12 connector	XU2S18PP340DR
		90° to case axis	Pre-cabled L = 5m	XU2S18PP340WL5R
			M12 connector	XU2S18PP340WDR

Note:

(1) Monitor up to 4 type 2 safety sensors to give a protected height of up to 1200mm (using 4 sensors) conforming to AS4024.2-1998. The module also has muting capabilities.

(2) Nominal sensing distance (Sn) of 8m.

Safety Sensing
Intangible Guards

Preventa
Safety Light Curtains and Accessories
Type 2 conforming to IEC 61496-1 & IEC 61496-2



XUSL2E30H031N

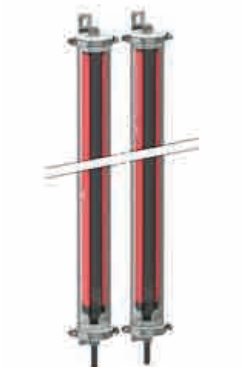
Type 2 Safety Light Curtains – XUSL2E Standard Sensing Distance

Main features:

- Automatic start or Manual Start/Restart
- External Device Monitoring (EDM)
- IP65 and IP67 Degree of protection
- Test function (beam blocked state simulation)
- Muting possible with dedicated Safety module

Transmitter-receiver pairs for HAND protection

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Hand protection 30mm detection Sensing distance: 0 to 12m	2 Solid State PNP	8	4.5	160	XUSL2E30H016N
		13	5.5	260	XUSL2E30H026N
		16	6	310	XUSL2E30H031N
		23	8	460	XUSL2E30H046N
		31	10	610	XUSL2E30H061N
		38	11	760	XUSL2E30H076N
		46	13	910	XUSL2E30H091N
		53	14.5	1060	XUSL2E30H106N
		61	16	1210	XUSL2E30H121N
		68	17.5	1360	XUSL2E30H136N
		76	19.5	1510	XUSL2E30H151N
		83	21	1660	XUSL2E30H166N
		91	22.5	1810	XUSL2E30H181N



XUSL2E30H046NWC

Transmitter-receiver pairs for BODY protection

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Body protection Sensing distance: 0 to 12m	2 Solid State PNP	2	3	510	XUSL2E2BB051N
		3	3.5	810	XUSL2E3BB081N
		4	3.5	910	XUSL2E4BB091N

Type 2 Safety Light Curtains – XUSL2E IP69K Degree of protection

Transmitter-receiver pairs for HAND protection without heating system

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Hand protection 30mm detection Sensing distance: up to 10m	2 Solid State PNP	23	8	460	XUSL2E30H046NWC
		31	10	610	XUSL2E30H061NWC
		38	11	760	XUSL2E30H076NWC
		46	13	910	XUSL2E30H091NWC
		53	14.5	1060	XUSL2E30H106NWC

Transmitter-receiver pairs for HAND protection with heating system

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Hand protection 30mm detection Sensing distance: up to 10m	2 Solid State PNP	23	8	460	XUSL2E30H046NWH
		31	10	610	XUSL2E30H061NWH
		38	11	760	XUSL2E30H076NWH
		46	13	910	XUSL2E30H091NWH
		53	14.5	1060	XUSL2E30H106NWH

Safety Sensing
Intangible Guards

Preventa
Safety Light Curtains and Accessories
Type 4 conforming to IEC 61496-1 & IEC 61496-2

Type 4 Safety Light Curtains – XUSL4E Standard Sensing Distance

Main features:

- Automatic start or Manual Start/Restart
- External Device Monitoring (EDM)
- IP65 and IP67 Degree of protection
- Test function (beam blocked state simulation)
- Muting possible with dedicated Safety module



XUSL4E14F016N

Transmitter-receiver pairs for FINGER protection

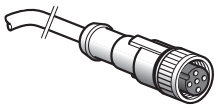
Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Finger protection 14mm detection Sensing distance: 0 to 6m	2 Solid State PNP	15	4	160	XUSL4E14F016N
		30	5.5	310	XUSL4E14F031N
		45	7.5	460	XUSL4E14F046N
		60	9	610	XUSL4E14F061N
		75	11	760	XUSL4E14F076N
		90	13	910	XUSL4E14F091N
		105	14.5	1060	XUSL4E14F106N
		120	16.5	1210	XUSL4E14F121N
		135	18	1360	XUSL4E14F136N
		150	20	1510	XUSL4E14F151N
		165	22	1660	XUSL4E14F166N
		180	23.5	1810	XUSL4E14F181N



XUSZBSC4

Transmitter-receiver pairs for HAND protection

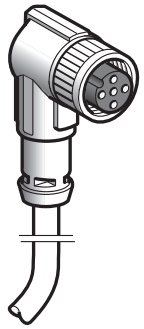
Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Hand protection 30mm detection Sensing distance: 0 to 12m	2 Solid State PNP	8	4	160	XUSL4E30H016N
		13	5	260	XUSL4E30H026N
		16	5.5	310	XUSL4E30H031N
		23	7.5	460	XUSL4E30H046N
		31	9	610	XUSL4E30H061N
		38	10.5	760	XUSL4E30H076N
		46	12.5	910	XUSL4E30H091N
		53	14	1060	XUSL4E30H106N
		61	15.5	1210	XUSL4E30H121N
		68	17	1360	XUSL4E30H136N
		76	19	1510	XUSL4E30H151N
		83	20.5	1660	XUSL4E30H166N
		91	22	1810	XUSL4E30H181N



XZCP1164

Transmitter-receiver pairs for BODY protection

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Body protection Sensing distance: 0 to 12m	2 Solid State PNP	2	2.5	510	XUSL4E2BB051N
		3	3	810	XUSL4E3BB081N
		4	3	910	XUSL4E4BB091N



XZCP1264L

Mounting accessories - for XUSL4E

Description	Length (m)	Height Protected (mm)	Set of	Reference
Fixing parts	Curved	160…1,060	4 brackets	XUSZBSC4
		160…1,810	6 brackets	XUSZBSC6
	Swivel	160…1,810	4 brackets	XUSZBSS4

Cabling accessories - for XUSL4E

Description	Length (m)	Number of Wires	Connector Type	Reference
PUR Pre wired M12 connector Female for transmitter	2	5	Straight (1)	XZCP1164L2
	5	5	Straight (1)	XZCP1164L5
	10	5	Straight (1)	XZCP1164L10
	15	5	Straight (1)	XZCP1164L15
	25	5	Straight (1)	XZCP1164L25
PUR Pre wired M12 connector Female for receiver	2	8	Straight (2)	XZCP29P11L2
	5	8	Straight (2)	XZCP29P11L5
	10	8	Straight (2)	XZCP29P11L10
	15	8	Straight (2)	XZCP29P11L15
	25	8	Straight (2)	XZCP29P11L25

(1) For elbowed version, replace 1164 by 1264 in the middle of the reference
(2) For elbowed version, replace 29P by 53P in the middle of the reference

Safety Sensing
Intangible Guards

Preventa
Safety Light Curtains and Accessories
Type 4 conforming to IEC 61496-1 & IEC 61496-2


XUSL4E30H031L

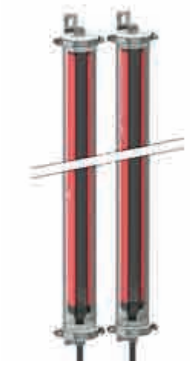
Type 4 Safety Light Curtains – XUSL4E Long Sensing Distance

Main features

- Automatic start or Manual Start/Restart
- External Device Monitoring (EDM)
- IP65 and IP67 Degree of protection
- Test function (beam blocked state simulation)
- Muting possible with dedicated Safety module

Transmitter-receiver pairs for HAND protection

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Hand protection 30mm detection Sensing distance: 0 to 20m	2 Solid State PNP	8	3	160	XUSL4E30H016L
		16	4	310	XUSL4E30H031L
		23	5	460	XUSL4E30H046L
		31	6	610	XUSL4E30H061L
		38	6.5	760	XUSL4E30H076L
		46	7.5	910	XUSL4E30H091L
		53	8.5	1060	XUSL4E30H106L
		61	9.5	1210	XUSL4E30H121L
		68	10	1360	XUSL4E30H136L
		76	11	1510	XUSL4E30H151L
		83	12	1660	XUSL4E30H166L
		91	13	1810	XUSL4E30H181L


XUSL4E30H046LWH

Transmitter-receiver pairs for BODY protection

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Body protection Sensing distance: 0 to 20m	2 Solid State PNP	2	2.5	510	XUSL4E2BB051L
		3	2.5	810	XUSL4E3BB081L
		4	2.5	910	XUSL4E4BB091L

Type 4 Safety Light Curtains – XUSL4E IP69K Degree of protection

Transmitter-receiver pairs for FINGER protection without heating system (1)

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Finger protection 14mm detection Sensing distance: up to 5m	2 Solid State PNP	30	5.5	310	XUSL4E14F031NWC
		45	7.5	460	XUSL4E14F046NWC
		60	9	610	XUSL4E14F061NWC
		75	11	760	XUSL4E14F076NWC

Transmitter-receiver pairs for FINGER protection with heating system (1)

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Finger protection 14mm detection Sensing distance: up to 5m	2 Solid State PNP	30	5.5	310	XUSL4E14F031NWH
		45	7.5	460	XUSL4E14F046NWH
		60	9	610	XUSL4E14F061NWH
		75	11	760	XUSL4E14F076NWH

Transmitter-receiver pairs for HAND protection without heating system (1)

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Hand protection 30mm detection Sensing distance: up to 17m	2 Solid State PNP	23	7.5	460	XUSL4E30H046LWC
		31	9	610	XUSL4E30H061LWC
		38	10.5	760	XUSL4E30H076LWC
		46	12.5	910	XUSL4E30H091LWC
		53	14	1060	XUSL4E30H106LWC

Transmitter-receiver pairs for HAND protection with heating system (1)

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Hand protection 30mm detection Sensing distance: up to 17m	2 Solid State PNP	23	7.5	460	XUSL4E30H046LWH
		31	9	610	XUSL4E30H061LWH
		38	10.5	760	XUSL4E30H076LWH
		46	12.5	910	XUSL4E30H091LWH
		53	14	1060	XUSL4E30H106LWH

Note:
(1) These safety light curtains are supplied mounted in a sealed protection tube and pre-wired (10 m PVC cable).

Safety Sensing
Intangible Guards

Preventa
Safety Light Curtains and Accessories
Type 4 conforming to IEC 61496-1 & IEC 61496-2

Type 4 Safety Light Curtains – XUSL4E Cascadable version

Main features:

- Automatic start or Manual Start/Restart
- External Device Monitoring (EDM)
- IP65 and IP67 Degree of protection
- Test function (beam blocked state simulation)
- Muting possible with dedicated Safety module



XUSL4E••••••NM
XUSL4E••••••NS2

Transmitter-receiver pairs for FINGER protection (MASTER)

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Finger protection 14mm detection Sensing distance: up to 6m	2 Solid State PNP	30	5.5	310	XUSL4E14F031NM
		45	7.5	460	XUSL4E14F046NM
		60	9	610	XUSL4E14F061NM
		75	11	760	XUSL4E14F076NM

Transmitter-receiver pairs for HAND protection (MASTER)

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Hand protection 30mm detection Sensing distance: up to 12m	2 Solid State PNP	16	7.5	460	XUSL4E30H046NM
		23	9	610	XUSL4E30H061NM
		31	10.5	760	XUSL4E30H076NM
		38	12.5	910	XUSL4E30H091NM
		46	14	1060	XUSL4E30H106NM

Transmitter-receiver pairs for FINGER protection (SLAVE 2 / MIDDLE DAISY CHAIN)

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Finger protection 14mm detection Sensing up to 6m	2 Solid State PNP	45	7.5	460	XUSL4E14F046NS2
		60	9	610	XUSL4E14F061NS2
		75	11	760	XUSL4E14F076NS2



Example of daisy-chained function
1 Master (transmitter)
2 Master (receiver)
3 Slave 2 (transmitter)
4 Slave 2 (receiver)
5 Slave 1 (transmitter)
6 Slave 1 (receiver)

Transmitter-receiver pairs for HAND protection (SLAVE 2 / MIDDLE DAISY CHAIN)

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Hand protection 30mm detection Sensing distance up to 12m	2 Solid State PNP	23	7.5	460	XUSL4E30H046NS2
		31	9	610	XUSL4E30H061NS2
		38	10.5	760	XUSL4E30H076NS2
		46	12.5	910	XUSL4E30H091NS2
		53	14	1060	XUSL4E30H106NS2

Transmitter-receiver pairs for FINGER protection (SLAVE 1 / END DAISY CHAIN)

Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Finger protection 14mm detection Sensing distance: up to 6m	2 Solid State PNP	30	5.5	310	XUSL4E14F031NS1
		45	7.5	460	XUSL4E14F046NS1
		60	9	610	XUSL4E14F061NS1
		75	11	760	XUSL4E14F076NS1

Transmitter-receiver pairs for HAND protection (SLAVE 1 / END DAISY CHAIN)

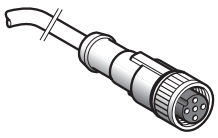
Description	Auxiliary Output	Number of Light Beams	Response Time (ms)	Height Protected (mm)	Reference
Hand protection 30mm detection Sensing distance: up to 12m	2 Solid State PNP	23	7.5	460	XUSL4E30H046NS1
		31	9	610	XUSL4E30H061NS1
		38	10.5	760	XUSL4E30H076NS1
		46	12.5	910	XUSL4E30H091NS1
		53	14	1060	XUSL4E30H106NS1

Note:
Type 4 Safety Light Curtains – XUSL4E Cascadable version BODY detection available on request
Accessories: page 3.5.16

Safety Sensing
Intangible Guards

Preventa
Safety Light Curtains and Accessories
Cabling accessories

Safety Light Curtains and Accessories



XZCP29P11L••

Pre wired cable for XUSL4E and XUSL2E

Description	Length (m)	Number of wires	Connector Type	Reference
Pre wired M12 connector Female 5 pin for transmitter	2	5	Straight (1)	XZCP1164L2
	5	5	Straight (1)	XZCP1164L5
	10	5	Straight (1)	XZCP1164L10
	15	5	Straight (1)	XZCP1164L15
	25	5	Straight (1)	XZCP1164L25
Pre wired M12 connector Female 8 pin for receiver	2	8	Straight (2)	XZCP29P11L2
	5	8	Straight (2)	XZCP29P11L5
	10	8	Straight (2)	XZCP29P11L10
	15	8	Straight (2)	XZCP29P11L15
	25	8	Straight (2)	XZCP29P11L25
M12 Jumper for cascadable slave (transmitter and receiver)	3	5	Straight	XZCR1111064D3
	5	5	Straight	XZCR1111064D5
	10	5	Straight	XZCR1111064D10

(1) For elbowed version, replace 1164 by 1264 in the middle of the reference
(2) For elbowed version, replace 29P by 53P in the middle of the reference



XUSZWPE•••
+
XUSZWPEFC

Protective cover

Description	Height (mm)	Suitable for	Reference
Polycarbonate protective covers (sold in lots of 4)	195	XUSL.E...016	XUSZWPE015
	345	XUSL.E...031	XUSZWPE030
	495	XUSL.E...046	XUSZWPE045
Mounting not included	795	XUSL.E...076	XUSZWPE075
	945	XUSL.E...091	XUSZWPE090
	1,095	XUSL.E...106	XUSZWPE105
	1,245	XUSL.E...121	XUSZWPE120
	1,395	XUSL.E...136	XUSZWPE1350
	1,545	XUSL.E...151	XUSZWPE150
	1,845	XUSL.E...181	XUSZWPE180



XUSZBSC•

Mounting clamps for protective covers (for transmitter and receiver)

Description		Reference
Stainless steel clamps	4 end clamps + 4 retaining clamps	XUSZWPEFC



XUSZBSS4

Mounting and anti vibrations accessories

Description		Height Protected (mm)	Set of	Reference
Brackets sets	Curved	160…1,060	4 brackets	XUSZBSC4
		160…1,810	6 brackets	XUSZBSC6
	Swivel	160…1,810	4 brackets	XUSZBSS4
Anti-vibration kits		160	4 shock absorbers	XUSZVA4
		160…1,060	8 shock absorbers	XUSZVA8
		160…1,810	12 shock absorbers	XUSZVA12
Aluminum mounting rail		1210		XUSZSS125

Laser alignment tool

Description	Reference
For aligning transmitters and receivers	XUSZLPE



XUSZLPE

Power Supplies

Description	Intput Voltage	Output Voltage	Nominal Power	Nominal current	Reference
Single phase	100..120V 200..500V 50/60Hz	24..28.8V	72W	3A	ABL8RPS24030
			120W	5A	ABL8RPS24050
			240W	10A	ABL8RPS24100

Note:
More accessories such as mirrors, brackets, columns are available on request or consult te.sensors.com/au

Safety HMI

Preventa
Latching Emergency Stop Trip Wire Switches
IP65 ISO M20 Cable Entry
Comply with the Requirements of AS 1755


XY2CJL19H29

XY2CJ Emergency Stop Pull Rope Switch ≤ 20 mtr RH/LH & ≤ 30 mtr RH or LH (3)

Reset Signalling	Contacts/Description Slow-break	Mounting	Reference
Pull Button	2N/C - ISO M20 - ≤ 20 Mtr	RH/LH sides	XY2CJS17H29
Pull Button	1NO/2N/C - ISO M20 - ≤ 20 Mtr	RH/LH sides	XY2CJS19H29
Pull Button	1NO/2N/C - ISO M20 - ≤ 30 Mtr	LH side	XY2CJL19H29
Pull Button	1NO/2N/C - ISO M20 - ≤ 30 Mtr	RH side	XY2CJR19H29
Accessories XY2CJ	Cable Simple kit 30.5M Dia 3.2mm		XY2CZ9320
	Tensioner for XY2CJ		XY2CZ210


XY2CJS17H29

XY2CH Emergency Stop Rope Switch ≤ 30 mtrs

Reset/Signalling	Contacts	Mounting	Reference
Reset by booted push-button	1N/O + 1N/C (slow break)	Either direction	XY2CH13250H29 (1)
Reset by booted push-button	1N/O + 2N/C (slow break)	Either direction	XY2CH13290H29 (1)
Reset by Mushroom head push-button	1N/0 + 2N/C (slow break)	Either direction	XY2CH13390H29 (1)
Reset by 30mm diameter key operated push-button	1N/O + 1 N/C (slow break)	Either direction	XY2CH13450H29 (1)


XY2CH13290H29

XY2CH Emergency Stop Rope Switch ≤ 30 mtrs

Reset/Signalling	Contacts	Mounting	Reference
Reset by booted push-button	1N/O + 2N/C (slow break)	Either direction	XY2CH13290H29 (1)
Reset by Mushroom head push-button	1N/0 + 2N/C (slow break)	Either direction	XY2CH13390H29 (1)
Reset by 30mm diameter key operated push-button	1N/O + 1 N/C (slow break)	Either direction	XY2CH13450H29 (1)


XY2CE1A250

XY2CE Emergency Stop Rope Switch ≤ 70 mtrs (3)

Reset/Signalling	Contacts	Mounting	Reference
Reset by booted push-button	1N/O + 1 N/C (slow break)	RHS	XY2CE1A250 (2)
		LHS	XY2CE2A250 (2)
Reset by booted push-button	2N/C (slow break)	RHS	XY2CE1A270 (2)
		LHS	XY2CE2A270 (2)
Reset by booted push-button c/w indicator light 240V (trip indicator), (bulb not supplied)	2N/O + 2 N/C (slow break)	RHS	XY2CE1A297 (2)
		LHS	XY2CE2A297 (2)
Reset by booted push-button c/w indicator light 130V (trip indicator), (bulb not supplied)	2N/O + 2 N/C (slow break)	RHS	XY2CE1A296 (2)
		LHS	XY2CE2A296 (2)


XY2CED290

XY2CED Dual Emergency Stop Pull Rope Switch ≤ 200 mtr (max 100m/side) (6)

Reset/Signalling	Contacts/Description Slow-Break	Mounting	Reference
Flush push-button	2NO/2N/C - Std Belows - w/o pilot light	RH & LH sides	XY2CEDA190 (1)
Booted Flush push-button	2NO/2N/C - Std Belows - w/o pilot light	RH & LH sides	XY2CEDA290 (1)
Key-release push-button	2NO/2N/C - Std Belows - w/o pilot light	RH & LH sides	XY2CEDA590 (1)
Flush push-button	2NO/2N/C - Silicone Belows - w/o pilot light	RH & LH sides	XY2CEDC190 (1)
Booted Flush push-button	2NO/2N/C - Silicone Belows - w/o pilot light	RH & LH sides	XY2CEDC290 (1)
Key-release push-button	2NO/2N/C - Silicone Belows - w/o pilot light	RH & LH sides	XY2CEDC590 (1)


XY2CH13290H29 + XY2CZ9330


XY2CE1A250+XY2CZ9570

Note:
(1) Other versions with pilot light unit for trip indication also available.
(2) Other versions with cable tension indicator also available.
(3) Recommended distance between cable support: 5 metres.
(4) AS4024.1-1996 “Safeguarding of machinery. Part 1: General Principles” stipulates that an end spring must be used on every installation.
(5) Emergency stop trip wire switches XY2CE13... and XY2CH14... incorporate a cable tension as standard. Therefore, there is no need to order a turnbuckle.
(6) Up to 70 mtr each side using XY2CZ611 cable supports & up to 100 mtr each side using XY2CZ715 supports and XY2CZ718 pulleys.

Preventa
Latching Emergency Stop Trip Wire Switches
Accessories - XY2C



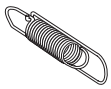
XY2CZ402



XY2CZ701



XY2CZ601



XY2CZ702



XY2CZ210



XY2CZ705



XY2CZ718



XY2CZ96200

Accessories - XY2CH & XY2CE

Description	Diameter (mm)	Type	Length	Reference
Galvanised cable with red sheath	Ø 3.2 mm		15.5m long	XY2CZ3015
			25.5m long	XY2CZ302
			30.5m long	XY2CZ303
			100.5m long	XY2CZ310
	Ø 5.0 mm		50.5m long	XY2CZ105
			70.5m long	XY2CZ107
			100.5m long	XY2CZ110
Turnbuckle (5)	M6 + locknut			XY2CZ402
	M8 + locknut			XY2CZ404
Cable grip	clamp	clamp	Ø 3.2mm	XY2CZ523
			Ø 5.0mm	XY2CZ524
Fixed cable support (3)			M8 hole 9mm deep	XY2CZ601
Cable end protector			Suits 3.2mm cable	XY2CZ701
			Suits 5.0mm cable	XY2CZ704
End spring (4)			Suits XY2-CE	XY2CZ702
			Suits XY2-CH	XY2CZ703

Accessories - XY2CED

Description	Reference
XY2CED Turnbuckle for cable	XY2CZ403
XY2CED End Spring	XY2CZ712
XY2CED Adjustment shim	XY2CZ713
XY2CED Pulleys	XY2CZ718
XY2CED Pulley Supports	XY2CZ715
XY2CED Cable Supports	XY2CZ611
XY2CED & XY2CE Tensioner	XY2CZ213

Accessories - Cable Kit

Description		Reference
Cable Kit - Suits XY2-CH trip wire switch		XY2CZ9330
Includes:	30m Ø3.2mm red sheathed galvanised cable	XY2CZ303
	1 cable grip	XY2CZ523
	1 end spring	XY2CZ703
Cable Kit - Suits XY2-CE trip wire switch		XY2CZ9570
Includes:	1 fixed cable support	XY2CZ601
	4 cable grip	XY2CZ524
	1 turnbuckle	XY2CZ404
	70m Ø5.0mm red sheathed galvanised cable	XY2CZ107
	1 end spring	XY2CZ702
	3 cable end protectors	XY2CZ704
XY2CED Mounting Kit Accessories & Cable D=5mm L=2x70m		XY2CZ96140
Includes:	2 Tensioners	XY2CZ213
	2 Cable grip	XY2CZ424
	2 x 70.5 m lengths of 5 mm red sheathed galvanised cable	XY2CZ107
XY2CED Mounting Kit Accessories & Cable D=5mm L=2x100m		XY2CZ96200
Includes:	2 Tensioners	XY2CZ213
	2 Cable grip	XY2CZ424
	2 x 70.5 m lengths of 5 mm red sheathed galvanised cable	XY2CZ107

For more info:

- Catalogue: MKTED211042EN
- Sales Brochure: DIA4ED2041204EN
- Dimensions: Refer Catalogue

Safety HMI

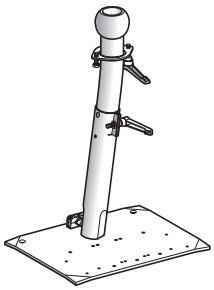
Preventa
Two Hand Control Station - IP65
Double Insulated Plastic Foot Switches – IP43 & IP65
Standard Duty Metal Foot Switches – IP66
Heavy Duty, Oil Tight Metal Foot Switches – IP66



XY2SB71

XY2CJ Emergency Stop Pull Rope Switch ≤ 20 mtr RH/LH & ≤ 30 mtr RH or LH (3)

Reset/Signalling	Contacts/Description Slow-break	Mounting	Reference
Pull Button	2N/C - ISO M20 - ≤ 20 Mtr	RH/LH sides	XY2CJS17H29
Pull Button	1NO/2N/C - ISO M20 - ≤ 20 Mtr	RH/LH sides	XY2CJS19H29
Pull Button	1NO/2N/C - ISO M20 - ≤ 30 Mtr	LH side	XY2CJL19H29
Pull Button	1NO/2N/C - ISO M20 - ≤ 30 Mtr	RH side	XY2CJR19H29
Accessories XY2CJ	Cable Simple kit 30.5M Dia 3.2mm		XY2CZ9320
	Tensioner for XY2CJ		XY2CZ210



XY2SB90

Two Hand Control Stations

Description	Contacts	Reference
2 control push-buttons and 1 Emergency Stop mushroom head push-button	2 N/C slow break	XY2SB71
2 control push-buttons and 1 Emergency Stop mushroom head push-button pre-wired to a terminal block	2 N/C slow break	XY2SB72

Accessories

Description	Colour	Reference
Metal pedestal adjustable height	orange	XY2SB90



XPEA110

Double Insulated Foot Switches, ISOM20 & M16 Cable Entry

Description	Operation	Contacts	Reference
IP43-unguarded without trigger	1 Step	1N/C + 1N/O	XPEA110



XPEM711

Standard Duty, Metal Foot Switches, PG16 Cable Entry

Description	Operation	Contacts	Reference
Ung uarded without trigger	1 Step	1N/C + 1N/O	XPEM110
	2 Step (1)	2N/C + 2N/O	XPEM211
Guarded with trigger	1 Step	1N/C + 1N/O	XPEM510
		2N/C + 2N/O	XPEM511
	2 Step (1)	2N/C + 2N/O	XPEM711

Heavy Duty, Oil Tight, Metal Foot Switches, ISOM20 Cable Entry

Description	Operation	Contacts	Reference
Unguarded without latch 1N/O+1N/C per step	1 Step	1N/O+1N/C	9002AW1M11
		2N/O+2N/C	9002AW13M11
	2 Step (1)	2N/O+2N/C	9002AW5M11
Spring return	4 Step (1)	4N/O+4N/C	9002AW21M11
Unguarded, maintained (push on/push off)	1 Step	1N/O	9002AW11M11
Guarded without latch	1 Step	1N/O+1N/C	9002AW2M11
		2N/O+2N/C	9002AW14M11
	2 Step (1)	2N/O+2N/C	9002AW6M11
Spring return	4 Step (1)	4N/O+4N/C	9002AW22M11
Guarded maintained (push on/push off)	1 Step	1N/O	9002AW12M11
Guarded with latch	1 Step	1N/O+1N/C	9002AW7M11
		2N/O+2N/C	9002AW15M11
Latches in first stage only	2 Step (1)	2N/O+2N/C	9002AW9M11
Latches in second stage only	2 Step (1)	2N/O+2N/C	9002AW10M11



9002AW1M11



9002AW2M11

Spare Parts Foot Switches

Description	Operation	Reference
Contact block	XPE	XE2SP4151
	AW11/12	2620202030
	AW1/2/5/6/7/9/10	9007AO2
	AW13/14/15	9007CO3
	AW21/22	9007CO7
Pedal spring		2502D8X1
Cover		9002AC8

Note:
(1) 1 N/O + 1 N/C per step.

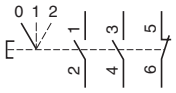
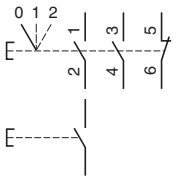
Safety HMI & Logic

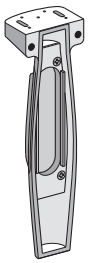
Preventa
Validation Control – Enabling Switches
Safety Modules Selection Guide



XY2AU•

Validation Control – Enabling Switches (1)

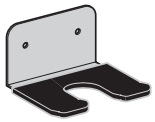
Number of contacts	Contact type	Contact blocks and scheme	Reference
3	2 validations 3 positions + 1 "N/C"		XY2AU1
	2 validations 3 positions + 1 "NC + NO"		XY2AU2



XY2AZ3

Accessories & Spare Parts

Number	Reference
Stainless steel handle support brackets	XY2AZ1
Cover kit for key actuator XCS-Z01 or XCS-Z11 (2)	XY2AZ2
Cover	XY2AZ3



XY2AZ1



XY2AZ2

Safety Modules Selection Guide

	Category	Safety Modules	E-Stops/ Tripwire	Limit Switches	Light Curtains	Safety Mats	Coded Magnetic Switches	Enabling Switch	Two Hand Control	Time Delay	Zero Speed Detection
General Purpose	3	XPSAC	x	x							
	3	XPSAFL	x	x	x (Cat 4)						
	4	XPSAF	x	x							
	4	XPSAV	x	x						x	
	4	XPSATE	x	x							
	4	XPSAR	x	x	x						
	4	XPSAK	x	x	x	x					
	4	XPSMP	x	x	x	x	x	x			
	4	XPSMC	x	x	x	x	x	x	x	x	x
Dedicated Device Modules	2	XPSCM			x						
	4	XPSVC						x			
	4	XPSBCE							x		
	4	XPSBF							x		
	4	XPSLCM			x						
	4	XPSDMB					x				
	4	XPSDME					x				
Special Applications	3	XPSTSA								x	
	3	XPSTSW								x	
	3	XPSVNE									x

Note:
(1) To be used with XPS-VC safety module.
(2) To be used only with XY2AU1.

3.7

Safety Logic

Preventa
Compact and Modular
Communication on Ethernet Network

Programmable Safety PLC with SafeEthernet

Preventa safety PLCs type XPS MF offer an automated line control solution in conjunction with the monitoring of safety functions that are required for the protection of personnel and the safety of machines. They are designed to meet SIL 3 requirements of standard EN 954.1 (AS 4024.1) and category 4 requirements conforming to EN 954.1 (AS 4024.1) /ISO 13849-1.

In order to comply with safety requirements, the Safety PLC integrates two essential functions conforming to category 4 of EN 954.1 (AS 4024.1) ISO 13849-1 in addition to the SafeEthernet safe communication function between the safety PLCs and the decentralised I/O modules (Special Switch).

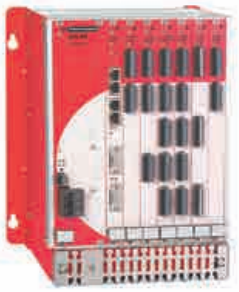
- Redundancy: the dual processor integrated in the compact safety PLCs analyses and compares the information received from the safety inputs and outputs. The incoming and outgoing information (programmed values and received values) are received in parallel by the two processors and compared in real-time.
- "Watchdog" or self-monitoring: the compact safety PLCs continuously monitor the information processing cycle and the execution of tasks, and intervene if the time of a cycle does not conform to the predefined value.
- The integrated switch (Special Switch) stores for a very short time and sends at very high speed the information provided by the inputs and outputs on the Ethernet safety network, whilst avoiding signal collisions and excessive amounts of data on the network.

Decentralised inputs/outputs

In addition to the inputs/outputs integrated as standard, Schneider Electric safety PLCs can accept supporting decentralised input modules type XPS MF1 and/or decentralised output modules type XPS MF2 and/or mixed decentralised I/O modules type XPS MF3. These decentralised input, output and I/O modules are located in the vicinity of hazardous zones of machines to be monitored and increase the I/O capacity of the compact safety PLC.

Safety communication on Ethernet network

Communication between the safety PLCs and decentralised input, output and I/O modules is performed on the SafeEthernet network, via the RJ45 communication ports. Communication between the PC, Magelis graphic terminal or automation platform (Premium) and the compact safety PLCs is achieved by Ethernet connection, via the RJ45 communication ports of the compact PLC. Connection on the Ethernet network enables integration of the safety PLCs within a type A10 Transparent Ready system.



XPS MF60

Preventa Modular Safety PLC

Description		Reference
Metal Rack fitted with: • Back Plane Bus • Terminating Plate for shielded cables	• cooling fans • backup battery	XPSMFGEH01
24V Power Supply Module		XPSMFPS01
CPU • with 4 x RJ45 SafeEthernet ports	• with 1 x FB2 Modbus Port	XPSMFCPU22

Description	Functions		
	Inputs	Outputs	
In Rack I/O Modules	Analogue: 8 Single Pole	-	XPSMFAI801
	-	8 analogue	XPSMFAO801
	2 counting	4 digital	XPSMFCIO2401
	24 digital	-	XPSMFDI2401
	32 digital	-	XPSMFDI3201
	24 digital	16 digital	XPSMFDIO241601
	-	8 relay	XPSMFDO801



XPS MF31222

Preventa Compact Safety PLC's

Inputs			Outputs	Communication			Reference
Digital	Analogue	Counting	Digital	Ethernet	Modbus	Profibus	
20	-	-	8	Yes	-	-	XPSMF31222
					Yes Slave	-	XPSMF3022
24	8	2	8	Yes	-	-	XPSMF3502
					Yes Slave	-	XPSMF3522
					-	Yes Slave	XPSMF3542
24			8	Yes	-	-	XPSMF4000
					Yes Server	-	XPSMF4002
					Yes Slave	-	XPSMF4020
					Yes Both	-	XPSMF4022
					-	Yes Slave	XPSMF4040
					Yes Server	Yes Slave	XPSMF4042



XPS MF40

Safety Logic

Preventa
Compact and Modular
Communication on Ethernet Network



XPS MF3AIO8401

Preventa Safety Remote I/O

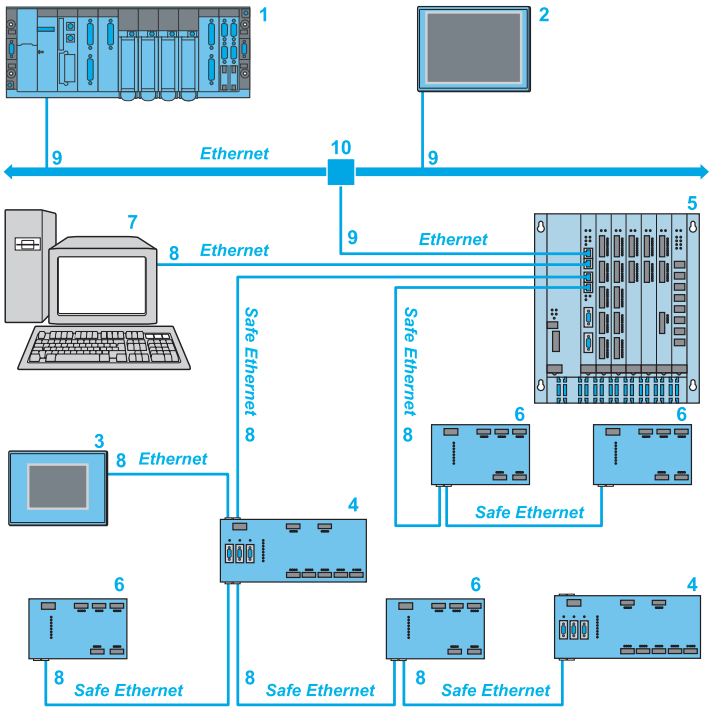
Decentralised Input/Output Modules
- 2 x RJ45 ports for SafeEthernet.
- Can be used with XPS MF60 Modular Safety PLC; XPS MF31/30/35 Compact Safety PLC; XPS MF1/2/3 Remote I/O Modules.

Description	Functions Inputs	Outputs	Reference
Remote I/O Modules	16 digital	4 pulse	XPSMF1DI1601
	-	4 digital	XPSMF2DO401
	-	16 digital	XPSMF2DO1601
	-	8 relay	XPSMF2DO801
	-	16 relay	XPSMF2DO1602
	8 digital	8 digital	XPSMF3DIO8801
	-	4 pulsed	
	16 digital	8 2-pole or 16 single pole	XPSMF3DIO16801
		2 pulsed	
	20 digital	8 digital	XPSMF3DIO20802
	8 analogue	4 non-safety analogue	XPSMF3AIO8401

Preventa Configuration software (CD-ROM + user manual)

Description	Reference
Configuration software XPSMFWIN for programming compact safety PLCs	SSV1XPSMFWIN

Connection on Ethernet network, via RJ45 ports



1 Premium processor **TSX P57 634M/ 623M** or module **TSX ETY 4103** on Premium automation platform, master on Ethernet network.
2 Graphic supervision terminal **XBT GT5230**.
3 Graphic supervision terminal **XBT GT2130**.
4 Compact safety PLCs type **XPS MF31/30/35.**
5 Modular safety PLC **XPS MF60**.
6 Decentralised I/O modules type **XPS MF1/2/3**.
7 Programming PC.
8 Straight through, shielded twisted pair cables **490 NTC 000** lengths 2…80 m.
9 Crossed wire, shielded twisted pair cables **490 NTW 000** lengths 5…80 m.
10 Hubs **499 NEH 10410**.

Safety Logic

Preventa
Modular Safety Controller
Up to Category 4, PI e, SIL3

Powered by Preventa

The Preventa modular safety controller - XPSMCM is a modular configurable safety controller able to monitor multiple safety functions on and around a machine to minimise the risk of people accessing the dangerous moving parts of the machine.

This modular safety controller is designed for monitoring safety functions such as:

- Emergency Stop
- Guard Monitoring
- Perimeter Guarding
- Position Monitoring
- Speed Monitoring
- Enabling Movement

with input devices such as emergency stop pushbuttons, safety guard and limit switches, safety foot switches, safety light curtains and laser scanners, safety mats, safety encoders and proximity sensors, two-hand control stations and enabling switches. The XPSMCM system is certified by TüV SÜD meeting the industrial safety standards of Category 4, PL e according to EN/ISO 13849-1 and SILCL 3 according to IEC/EN 61508 and IEC/EN 60261

The modular safety controller XPSMCM is supported by a completely intuitive software: SoSafe Configurable.

The software follows a simple drag and drop function block approach to configuration and is completed with a library of configurable safety functions and logical functions as well as easy to use tools.



XPSMCMCP0802



XPSMCMDI0800



XPSMCMRO0004



XPSMCMCN0000SG

XPSMCM Modular Safety controller

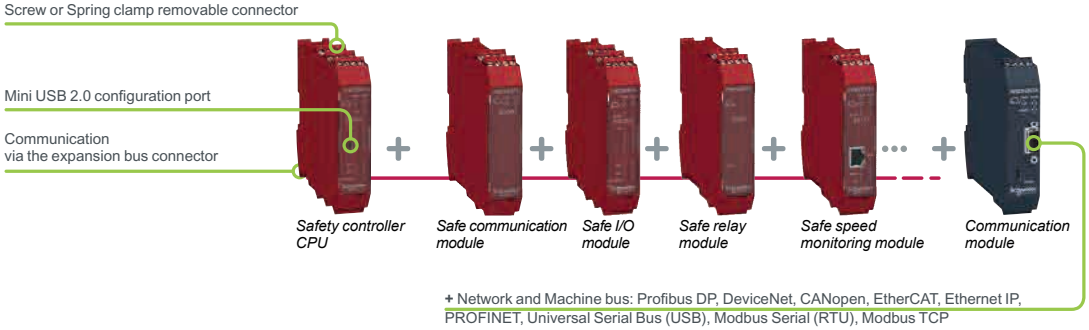
CPU I/O		Description	Reference
10		Controller 8 input 2 output spring term	XPSMCMCP0802

I/O Modules

Inputs I/O	Outputs	Description	Reference
8	-	8 Input expansion spring term	XPSMCMDI0800
12	-	12 input exp. for safety mat spring term	XPSMCMDI1200MT
16	-	16 Input expansion spring term	XPSMCMDI1600
-	2	2 DO pairs expansion spring term	XPSMCMDO0002
-	4	4 DO pairs expansion spring term	XPSMCMDO0004
1 Sin/Cos Encoder	-	Speed mon. 1 Sin/Cos exp. spring term	XPSMCMEN0100SC
2 Sin/Cos Encoder	-	Speed mon. 2 Sin/Cos exp. spring term	XPSMCMEN0200SC
-	2	2 safety relay outputs exp. spring term	XPSMCMER0002
-	4	4 safety relay outputs exp. spring term	XPSMCMER0004
8	8	8 inputs 2 outputs exp. spring term	XPSMCMMX0802
-	4	4 safety relay outputs exp. spring term	XPSMCMRO0004
-	4	4 safety relay outputs exp. spring term	XPSMCMRO0004DA
2 Proximity	-	Speed mon. 2 Prox. exp. screw term	XPSMCMEN0200

Communication Modules & Accessories

Connection I/O	Description	Reference
1 x RJ45	Ethernet/IP diagnostic expansion	XPSMCMCO0000EI
1 x RJ45	Modbus TCPIP diagnostic expansion	XPSMCMCO0000EM
1 x Screw Terminal	Safe communications exp. 1 w spring term	XPSMCMCO0000S2
2 x Screw Terminal	Safe communications exp. 2 w spring term	XPSMCMCO0000S1
	Single Backplane Expansion Connector	XPSMCMCN0000SG
1 x USB	USB diagnostics exp. screw term	XPSMCMCO0000UB
	Memory card	XPSMCMME0000
	Programming USB Cable	BMXXCAUSBH018
	SoSafe Software - Free Download - www.schneider-electric.com/au	
Cable Accessories	RS485 Cable 10 Metres	TSXCMCN010
Other Lengths available	Encoder splitter cable PacDrive M 3 metre	TSXESPPM003



+ Network and Machine bus: Profibus DP, DeviceNet, CANopen, EtherCAT, Ethernet IP, PROFINET, Universal Serial Bus (USB), Modbus Serial (RTU), Modbus TCP

Safety Logic

Preventa
Configurable Safety Controller
Up to Category 4 Applications



XPS MC16X WITH SCREW CONNECTORXPSMCTS16

Configurable Safety Controller

Safety controllers XPS MC*** are designed to meet the requirements of safety applications requiring conformity to category 4 of standard EN 954.1 (AS 4024.1).

- They are available in 2 versions:
  - XPS MC16X with 16 inputs and 8 independent safety outputs
  - XPS MC32X with 32 inputs and 8 independent safety outputs
  - The 8 safety outputs comprise of 2x2 category 4 contact guided relay outputs and 6 category 3 solid-state outputs as per EN 954.1 (AS 4024.1)
- Status of inputs, outputs, errors and mode displayed on the controller. Enhanced diagnostics can be communicated to a PC, PLC or an operator dialogue terminal direct via the RJ45 integrated modbus interface on the front face.
- Configuration of the safety functions is carried out using the windows based software XPSMCWIN. 22 predefined and certified safety functions are available and they are easily assignable to the safety outputs using drag and drop methodology. Multiple safety function combinations and various starting conditions are possible.



XPS MC32X WITH SCREW CONNECTORXPSMCTS32

Safety functions

The safety functions are certified in accordance with category 4 of standard EN 954.1 (AS 4024.1) and configurable in the XPS MC controller using software XPS MCWIN. Main safety functions are:

- Two hand control (type III-C conforming to EN 574-1)
- Guard monitoring for injector presses and blowing machines
- Sensing mat monitoring
- Dynamic monitoring of hydraulic valves on linear presses
- Monitoring safety stop at top dead centre on eccentric press
- Enabling switch monitoring, 2 or 3 contact
- Emergency stop monitoring, with or without time delay, 1 or 2-channel wiring
- Light curtain (type 4 conforming to EN 61496, relay or solid state output) monitoring.
- Guard monitoring with 1 or 2 limit switches
- Magnetic switch monitoring
- Zero speed detection
- Safety time delays
- "Muting" function of light curtains

Safety controllers (connector not included) (1) (2)

Number of Inputs	Number of Outputs Relay	Solid state	Communications (Link and bus)	Reference
16	4 (2x2)	6	Modbus	XPSMC16Z
			Modbus, CANopen	XPSMC16ZC
			Modbus, Profibus	XPSMC16ZP
32	4 (2x2)	6	Modbus	XPSMC32Z
			Modbus, CANopen	XPSMC32ZC
			Modbus, Profibus	XPSMC32ZP

Connector (to be ordered separately)

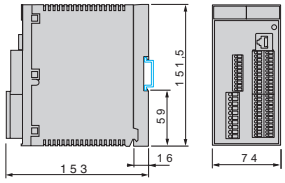


Description	For use with	Reference
Screw Connectors	XPS MC16Z / ZC / ZP	XPSMCTS16
	XPS MC32Z / ZC / ZP	XPSMCTS32
Spring clip connectors	XPS MC16Z / ZC / ZP	XPSMCTC16
	XPS MC32Z / ZC / ZP	XPSMCTC32

Accessories (to be ordered separately)

Description	Usage From	Usage To	Length (m)	Reference
Connecting cables	XPS MC••	Magelis operator dialogue terminal	2.5	XBTZ968
		PC	1	TCSMCNAM3M002P
Configuration software CD-ROM				XPSMCWIN

Dimensions



Note:
(1) Use ABL7RP* style power supply.
(2) For a complete system, select controller, connectors, adaptor and PC connecting cables plus configuration software.

Safety Logic

Preventa
Safety Relay Modules
Category 3 & Category 4 Applications



XPSMP



XPSAC XPSAFL



XPSTSA



XPSTSW



XPSECPE

Up to Category 4 Applications

Monitor 2 of 15 predefined functions simultaneously (1)

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	Supply voltage	Reference (3)
3 per function	–	3	24VDC	XPSMP11123

Category 3 Applications

Emergency stop & limit switch monitoring

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	Supply voltage	Reference (3)
3	–	1	24VACDC	XPSAC5121
			230VAC	XPSAC3721

Emergency stop, limit switch & light curtain monitoring (2)

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	Supply voltage	Reference (3)
3	–	–	24VACDC	XPSAFL5130

Safety timer with delay on energisation

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	Supply voltage	Reference
1 delay	2	2	24VACDC	XPSTSA5142P
			230VAC	XPSTSA3742P

Safety timer with impulse on

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	Supply voltage	Reference
1 pulse	2	2	24VACDC	XPSTSW5142P
			230VAC	XPSTSW3742P

Zero speed detection

No. of N/O safety outputs	No. of PLC signalling outputs	Suppy voltage	Frequency of motor power supply	Reference
2	2	24VACDC	≤ 60 Hz	XPSVNE1142P
		24VACDC	> 60 Hz	XPSVNE1142HSP
		230VAC	≤ 60 Hz	XPSVNE3742P
		230VAC	> 60 Hz	XPSVNE3742HSP

Additional safety outputs for category 3 + 4 modules

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	Suppy voltage	Reference
4	1	1	24VACDC	XPSECME5131P
8	1	1	24VACDC	XPSECPE5131P
			230VAC	XPSECPE3910P

Cage clamp option available

Note:

(1) Predefined functions include; single contact e-stop (category 2), double contact e-stop, limit switch, coded magnetic switches, safety mat (category 3), light curtain.

(2) If used for monitoring light curtains with solid state outputs, the XPSAFL5130 conforms to category 4 of AS4024.1.

(3) For versions with removable terminal block, add the letter P at the end of the reference (example XPSMP11123 becomes XPSMP11123P.

Safety Logic

Preventa
Safety Relay Modules
Category 4 Applications









Category 4 Applications

Emergency stop & limit switch monitoring

No. of N/O safety outputs	No. of PLC signalling outputs	No. of time delay outputs	Suppy voltage	Reference (3)
3	-	-	24VACDC	XPSAF5130
	3	3	24VACDC	XPSAV11113
2	4	3 (cat 3)	24VACDC	XPSATE5110
			230VAC	XPSATE3710

Emergency stop, limit switch & light curtain monitoring (1)

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	Supply voltage	Reference (3)
7	2	4	24VACDC	XPSAR311144
			230VAC	XPSAR371144

Emergency stop, limit switch, light curtain & safety mats & edges (2)

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	Supply voltage	Reference (3)
3	1	4	24VACDC	XPSAK311144
			230VAC	XPSAK371144

Dual limit switches monitoring

No. of N/O safety outputs	No. of additional outputs	No. of PLC signalling outputs	Supply voltage	Reference
2 x 3 N/O per function	3 solid state	-	24VDC	XPSMP11123

Enabling switch monitoring

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	Supply voltage	Reference (3)
2	–	2	24VDC	XPSVC1132

Two-hand control (type 111C) monitoring

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	Supply voltage	Reference
2	1	-	24VDC	XPSBCE3110P
			230VAC	XPSBCE3710P
	-	2	24VDC	XPSBF1132 (3)

Coded magnetic switch monitoring

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	No. of mag switch inputs	Supply voltage	Reference (3)
2	–	2	2	24VDC	XPSDMB1132
			6	24VDC	XPSDME1132

Muting of type 4 light curtains (1)

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	Supply voltage	Reference
2 PNP	1 PNP + 1 NPN	-	24VDC	XPSLCM1150

Note:
(1) Light curtains with solid state outputs.
(2) Category 3 for safety mats & edges.
(3) For version with removable terminal block, add the letter P at the end of the reference (example: XPSMP1123 becomes XPSMP1123P).

For more info:

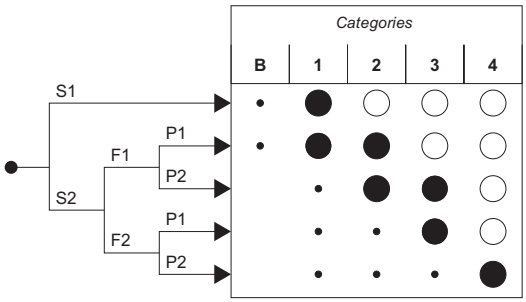
- Catalogue: MKTED211042EN
- Sales Brochure: DIA4ED2041204EN
- Dimensions: Refer Catalogue

Technical Information

Preventa
Safety Techniques
Risk Assessment
Control System Categories And Safety Circuit Requirements

Risk Assessment

Machines pose various risks to both operators and service personnel. Risk assessment (conforming to the requirements of AS4024) involves the logical steps to systematically identify the hazards associated with machinery. Based on the main elements of risk assessment as explained in the adjacent figure, the Australian machine safety standard AS4024 provides guidance for selection of control system categories.



● *Preferred category*

○ *Measures exceeding min. requirements for risk involved*

• *Possible category requiring additional measures*

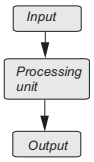
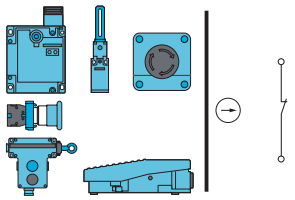
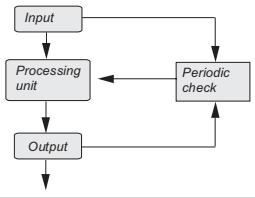
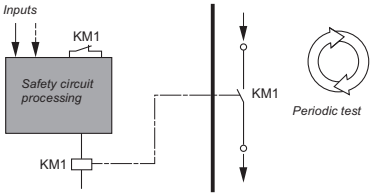
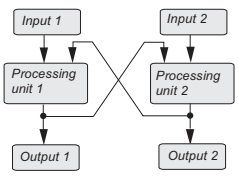
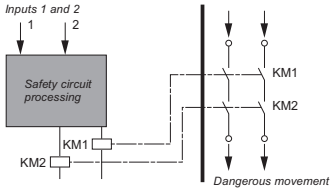
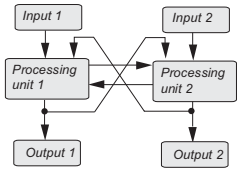
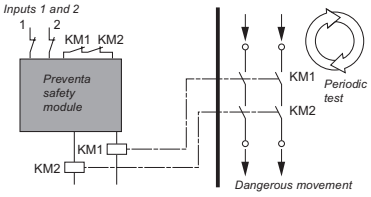
S Result of the accident
S1 Slight injury
S2 Serious & permanent injury to or death of person
F Presence in the danger zone
F1 Rare to fairly frequent
F2 frequent to permanent
P Possibility of preventing the accident
P1 Possible in certain circumstances
P2 Virtually impossible

Control System categories & Safety Circuit requirements based on AS4024

The main aim of the designer is to ensure that a dangerous situation cannot be created on the machine by the failure of parts of a control system relating to safety or external factors.

The chart below makes it possible to determine the categories of parts of control systems. The more the components relating to safety in a control system are required to reduce the risk, the higher the level of safety of these components must be. Comments:

- Self monitoring is one of the methods which can be used to create a category 2 control system.
- Redundancy is one of the methods which can be used to create a category 3 control system.
- The combination of redundancy & self monitoring is one of the methods which can be used to create a category 4 control system.
- It is recommended that the N/C auxiliary contacts 21-22, present on K & D range contactors, be used in the feedback loop of the safety modules. These auxiliary contacts are in fact mechanically linked with the power contacts & consistency of state is guaranteed in the event of welding of the power poles following a short circuit.

Cat	Basic safety principle	Control system requirements	Behaviour in the event of a fault	Typical structure of a safety circuit in the event of a fault	Practical examples of safety circuits	Comments
B	Selection of components that conform to relevant standards	Control in accordance with good correct practice.	Possible loss of safety function.	–	–	–
1	Selection of components and basic safety principles.	Use of tried and tested components and proven safety principles.	Possible loss of safety function, but with less probability of this than with B.			• No redundancy on the input (control). • No internal redundancy provided by the relay with mechanically linked contacts. • No redundancy on the output.
2	Selection of components and basic safety principles.	Cycle testing. The test intervals must be suited to the machine and its applications.	Fault detected at each test.			• Redundancy or no redundancy on inputs. • The feedback loop allows a cyclic test to be carried out on the output (interval to be determined according to the application).
3	Structure of the safety circuits.	A single fault must not cause the loss of the safety function. This single fault must be detected if reasonably practicable.	Safety function ensured, except ensured, except an accumulation of faults.			• Redundancy on the inputs. • Redundancy on the outputs.
4	Structure of the safety circuits.	A single fault must not cause the loss of the safety function. This fault must detected at or before the next call on the safety function. An accumulation of faults must not cause loss of safety the function.	Safety function always ensured.			• Redundancy on the inputs. • Redundancy on the outputs. • The feedback loop allows a cyclic test to be carried out on the outputs.

3.7

Technical Information

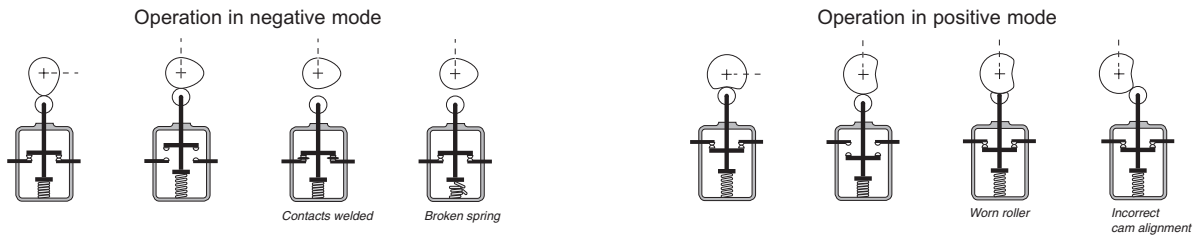
Preventa
Safety Techniques
Negative and Positive Modes
Mechanically Linked Electrical Auxiliary Contacts

Operation in negative mode and in positive mode

The mechanical system for machine protection must be properly designed.

For this, it is recommended that the protection system should work in positive mode, as described below.

The dangerous faults represented in positive mode can be cleared by preventative maintenance; this is not the case with those represented in negative mode (the negative mode faults are internal and therefore difficult to detect).



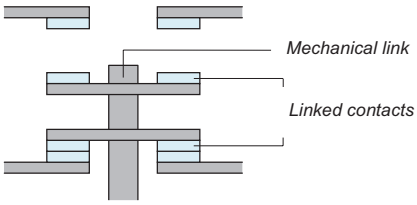
Machine operating	Machine stopped	Dangerous faults: the stopped machine continues to operate	Machine operating	Machine stopped	Dangerous faults: the machine continues to operate

Mechanically linked electrical auxiliary contacts

Mechanically linked contacts are contacts which have:

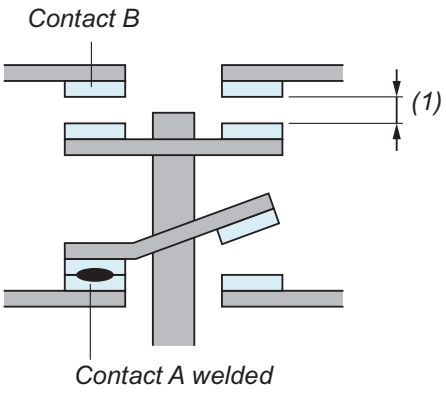
- A mechanical link between contacts.
- A minimum distance between the points of a normally closed contact in the event of a normally open contact being welded and vice versa.
- Control relays CA•K and CAD meet these requirements and their use is particularly recommended in all safety applications.

Linked contacts are contacts which are mechanically linked in such a way as to ensure that normally closed and normally open contacts can never be closed at the same time.



If a normally closed contact becomes welded, it must be impossible for the normally open contacts to close when the coil is energised.

If a normally open contact becomes welded, it must be impossible for the normally closed contacts to close when the coil is de-energised.



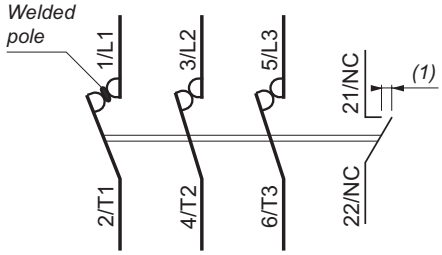
Mechanical guiding (forced guiding) makes it impossible to close the normally closed and normally open contacts simultaneously.

If failure occurs: contact A welded; then contact B stays open.

Electrical auxiliary contact, mechanically linked to the power poles

An electrical auxiliary contact mechanically linked to the power poles is an N/C auxiliary contact which can never be closed at the same time as the power poles.

If one of the power pole contacts becomes welded, the mechanical link prevents the N/C auxiliary contact from closing when the coil is de-energised.



(1) Distance required to ensure isolation of the circuit.

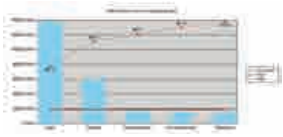
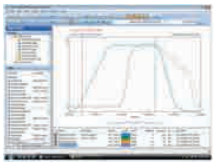
The N/C auxiliary contact present in K and D range contactors meets this definition.

Automation & Control

Automation Software, HMI, SCADA, Industrial Software

Automation Software










Vijeo Citect & Citect SCADA

The high performance, reliable supervisory control and data acquisition (SCADA) system to reduce operating costs, improve productivity and product quality Page 3.8.1

StruxureWare SCADA Expert Clear SCADA

Open, reliable supervisory control and data acquisition software for management of critical infrastructure Page 3.8.2

Wonderware System Platform

Acts as your “Industrial Operating System” by providing common services such as; configuration, deployment, communication, security, data connectivity, people collaboration, and more Page 3.8.3

Vijeo Historian

Open, reliable supervisory control and data acquisition software for management of critical infrastructure Page 3.8.4

Wonderware Historian

A high-performance process historian, capable of storing huge volumes of data generated from today’s industrial facilities Page 3.8.5

Wonderware SmartGlance

Open, reliable supervisory control and data acquisition software for management of critical infrastructure Page 3.8.6

Wonderware Alarm Adviser

Wonderware Alarm Adviser is web-based Alarm Adviser software that helps you discover nuisance alarms in the process system through interactive visual analysis Page 3.8.7

Wonderware Recipe Manager Plus

Wonderware Recipe Manager Plus software, for formula or recipe management and execution of batch-oriented production and packaging processes. This modern software is the foundation for standardization, reducing engineering and implementation costs by up to 40% compared to custom made solutions; and decreasing the time for new product market introduction by 20% or more. Page 3.8.8

MDT AutoSave

A change control management solution providing a suite of tools to protect, save, restore, discover and track changes for industrial programming devices and documents Page 3.8.9

Unity Application Generator

Unity Application Generator (UAG) automatically generates Unity Pro code and SCADA visualization from one application helping to save engineering time and maintain standards Page 3.8.10

Unity Pro software for Modicon Quantum, Premium, M580, M340 and Momentum

Unity Pro programming software to increase productivity specialist tools Page 3.8.11

Industrial Software



Ampla – For Mining, Metals & Mineral Industries

StruxureWare™ Plant Operation Ampla™ operations management software drives results by improving visibility into daily production. Capturing delays, improve up time, improving control and monitoring of bulk materials to get the most out of your operation. Complemented by our full range of professional services, you can improve productivity by up to 25%

Page 3.8.13



Wonderware MES – For Food, Beverage & Manufacturing

Wonderware's MES Software provide benefits that extend far beyond reducing the cost of manufacturing — achieve increased operational performance, more agile supply chains, on-demand, real-time information, more responsive manufacturing and cross functional collaboration. Ensuring benefits that reduce your cost-of-goods-sold, improve perfect-order performance and raise responsiveness to customers.

Page 3.8.14



Wonderware Intelligence EMI (Enterprise Manufacturing Intelligence)

Wonderware Intelligence software provides performance management information by capturing data directly from your multiple process/production/manufacturing data sources and turning it into valuable real-time information in the appropriate context of your overall production processes.

Page 3.8.15



StruxureWare™ Supply Demand Operation

StruxureWare Supply Chain Operation offers a suite of software solutions designed to dynamically optimize your value chain and deliver up to 20% performance improvement. The complex and demanding field of supply and demand optimization requires a proven, intelligent and self-validating solution. That solution is the StruxureWare Supply Chain Operation suite.

Page 3.8.16



Integrated Planning & Optimization Solution – (IPOS)

The Integrated Planning and Optimization Solution is a powerful solution that utilizes StruxureWare software for Mining, Minerals, and Metals to reach operational excellence. Increase your mining productivity by up to 20% Integrated Planning and Optimization Solution realizes your resource-to-market potential

Page 3.8.17

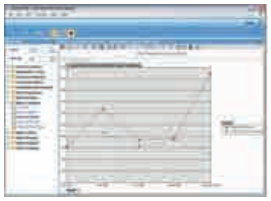


Avantis Pro

Schneider Electric Asset Management Solutions span enterprise asset management, mobile workforce, reporting and analysis, workflow and condition management.

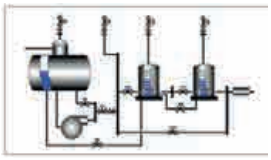
Page 3.8.18

Industrial Software









Wonderware Skelta

Wonderware Skelta BPM software offers advanced workflow solutions and a complete set of tools for creating, executing, and optimizing business processes. A fully embeddable web-based architecture and strong integration capabilities with plant systems ensures collaboration throughout the enterprise.

Page 3.8.19

Wonderware IntelaTrac

Wonderware IntelaTrac enables manufacturers and processors to achieve reliable, safe and profitable operations through consistent execution of best practices by the field workforce — accelerating and sustaining mainstream process improvements.

Page 3.8.20

SimSci

SimSci simulation software is the first step to designing, operating and optimizing a company's processes and thereby improving performance and profitability.

Page 3.8.21

Programmable Controllers









Modicon Quantum Platform

For Process Control

Page 3.8.22

Modicon Premium Platform

For Discrete Control

Page 3.8.26

Modicon M580

For integrated automation architecture

Page 3.8.31

Modicon M340

For Medium Size Machine Control

Page 3.8.33

Distribution I/O





Modicon X80 Modules
Page 3.8.34

Modicon STB (Advantys)
Integrating I/O with Motor Control and VSDs
Page 3.8.41

Modicon Momentum Distributed I/O
Distributed I/O with IEC 61131-3
Page 3.8.44

Electronic HMI







Small Panel
Magelis Text and Colour Touch Screen
Page 3.8.46

Magelis Touch Panel
Magelis Optimum and Smart HMI Screen
Page 3.8.47
USB Accessories for HMI
Page 3.8.50

Industrial PC
Magelis range of Industrial BOX PCs and Touch Panel PCs
Page 3.8.51

Vijeo Designer Software
HMI Configuration Software for the Magelis Range
Page 3.8.54

Intelligent Web Gateways & ConneXium™



Factory Cast Web Enabled
Bringing Internet Technology to Automation
Page 3.8.56

ConneXium™
Ethernet diagnostics and infrastructure components for industrial automation
Page 3.8.57

Training Services

For Process Management Systems and Machine Control
Providing comprehensive knowledge of our products, systems and solutions through high quality interactive education
Page 3.8.59

Vijeo Citect & Citect SCADA

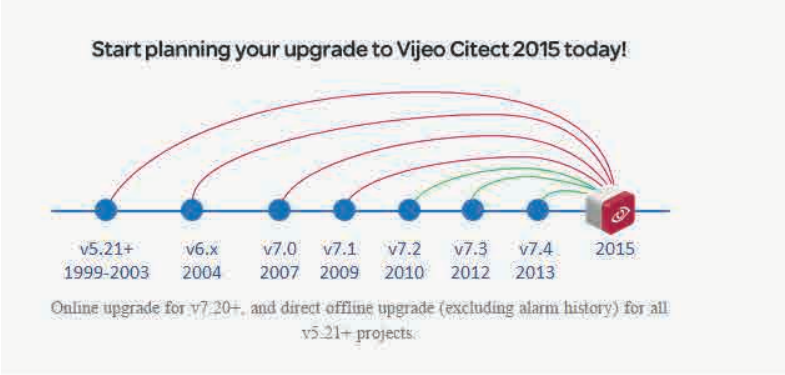
Vijeo Citect & Citect SCADA is a world-leading industrial automation software product that provides proven reliability, maximum flexibility and high scalability. Unlike other PC-based industrial control systems, Vijeo Citect is designed to cater for the needs of both small and large industrial enterprises using a single, integrated system while maintaining high performance and reliability.

Easy-to-use configuration tools and powerful features, such as Process Analyst, enable end users to quickly develop and deploy solutions for any size application. Unique features like true redundancy, scalability and unrivalled flexibility such as client server architecture differentiate Vijeo Citect from its competitors.

Vijeo Citect & CitectSCADA 2015 Blistering performance | New functionality | Many enhancements | Scalable as ever!

With across-the-board performance improvements, new functionality, as well as enhancements to the upgrade process from previous versions, Vijeo Citect 2015 is our most scalable & robust release in years! Check out the information below to see why you should start planning your upgrade to Vijeo Citect 2015 today!

For our Vijeo Citect & CitectSCADA customers, Schneider Electric is focused on three guiding principles: Investment Protection: Schneider Electric is focused on maximizing the investment that customers have made in our products. We have a strong ongoing roadmap and expect acceleration in the delivery of value through our combined R&D capabilities. We are committed to solving your challenges and addressing the changing requirements of the market by building upon our existing product capabilities. Extending Operational Value: The Wonderware software suite complements and extends the value of Vijeo Citect, and ClearSCADA, through connectivity to market leading Information Analysis products. With the recent releases of ClearSCADA 2015 R1 and Vijeo Citect 2015, we have provided connectivity to Wonderware Historian, Wonderware SmartGlance, Wonderware Alarm Adviser and Wonderware System Platform. The ability to connect to these products will substantially increase the value of your SCADA investment by unlocking the value of your process data. Commitment to Product Support: Schneider Electric is committed to providing customers with industry-leading service and product support. Over the coming months we will be working to combine the existing Vijeo Citect and ClearSCADA support offers into a single global support program known as Customer FIRST, covering the entire software portfolio, and ensuring continuity & consistency, no matter which products you own.





Highly visual displays for monitoring and control.



Process Analyst. Performance analysis with trends and alarms.

Vijeo Citect standard components

Description	Reference
Full Server, 75 points	VJC101110 / CT101110
Full Server, 150 points	VJC101111 / CT101111
Full Server, 500 points	VJC101112 / CT101112
Full Server, 1500 points	VJC101113 / CT101113
Full Server, 5000 points	VJC101114 / CT101114
Full Server, 15000 points	VJC101115 / CT101115
Full Server, Unlimited points	VJC101199 / CT101199
Control Client, 75 points	VJC102010 / CT102010
Control Client, 150 points	VJC102011 / CT102011
Control Client, 500 points	VJC102012 / CT102012
Control Client, 1500 points	VJC102013 / CT102013
Control Client, 5000 points	VJC102014 / CT102014
Control Client, 15000 points	VJC102015 / CT102015
Control Client, Unlimited points	VJC102099 / CT102099

StruxureWare SCADA Expert ClearSCADA

StruxureWare SCADA Expert ClearSCADA is an open SCADA software platform that provides powerful features for the management of critical infrastructure; scalable for large enterprise environments and equally effective for small systems. Distributed system architectures provide high performance and availability as well as disaster recovery capabilities, while the integrated historian facility and open standard interfaces allow long term storage and analysis of data for even the largest systems.

SCADA Expert ClearSCADA 2015 R1 – What's New



SCADA Expert ClearSCADA™ 2015 R1 is a Major release including enhancements and functionality aligned around key themes of Engineering Efficiency to reduce engineering cost, Empowerment to increase operational efficiency, Lifecycle Management to increase offer value over time, and Extending Operational Value by strategic alignment with other operational applications.

Engineering Efficiency

Template expressions save engineers time during implementation, alarm summaries help pinpoint maintenance issues faster, and the seamless integration with a tier-2 historian facilitates data accessibility across the entire enterprise.
These functionalities are part of a software platform that is designed to lower the overall operating costs of remote assets at the same time as it provides a complete, comprehensive overview of site operations.

Lifecycle Management

Whether providing remote configuration capabilities or collecting data from multiple ClearSCADA systems into a central enterprise repository, ClearSCADA host software helps reduce costs while providing crucial, business-relevant data across all operational levels.
The combination of templated configuration and object-based architecture make the continual expansions and changes of O&G and W&WW installations attainable while establishing a relevant system for the entire system life-cycle.
With the increasing government compliance, ClearSCADA helps provide continued operations and uses integrated tools that establish the reliability of data records, even in the event of interrupted field communications.

Operational Empowerment

A new WebX User Interface has been developed, delivering enhanced functionality and increased efficiency for web-based operators.
Process information is available anytime, anywhere through any device with HTML5 cross-browser support for trends, alarm lists, event lists, and queries.

Extending Operational Value

SCADA Expert ClearSCADA 2015 R1 includes seamless connectivity to Wonderware™ Historian, providing a Teir-2 historian solution for aggregation of multiple independent ClearSCADA systems into a central enterprise data repository. This new version includes also a dedicated interface, allowing connectivity with Wonderware System Platform to leverage:

- Centralized operations using advanced alarm management and situational awareness libraries
- Operator simulation, training and knowledge management solutions
- Enhanced asset performance through asset management solutions
- Improved standardization and regulatory compliance
- Better decision-making through consolidated and insightful information

Benefits at a Glance

- Engineering Efficiency
  Reduced engineering time, effort and cost
- Operational Empowerment
  Meaningful process information available to you anywhere, anytime, from any device
- Lifecycle Management
  Increased value or your software investment
- Extending Operational value
  Better decision-making and proved operational performance

Features at a Glance

- New WebX User Interface leveraging HTML5
- Template Expressions & Simplified Property Management
- Connection to Wonderware Historian & Wonderware System Platform
- Enhanced EFM connectivity via a native Oil & Gas Driver Suite
- Tighter integration with Schneider Electric™ telemetry hardware offers
- Enhanced system security via Client Access Control Lists, improved auditing of Security Events, and enhancements to User Account security

SCADA Expert ClearSCADA helps to reduce costs across the entire system with a comprehensive feature set including object based configuration for rapid deployment, online system changes for reduced downtime and enhanced integration with Schneider products, providing out of the box industry solutions.



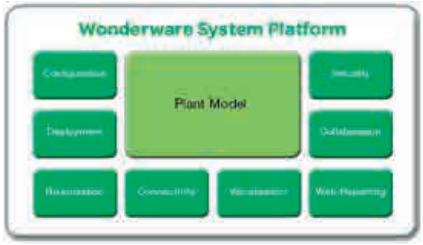
Standard components

Description	Reference
Full Server, 250 pts	TBUCSRV-0250PT
Full Server, 500 pts	TBUCSRV-0500PT
Full Server, 1500 pts	TBUCSRV-1500PT
Full Server, 5000 pts	TBUCSRV-5000PT
Full Server, 25000 pts	TBUCSRV-025KPT
Full Server, 50000 pts	TBUCSRV-050KPT
Full Server, 100000 pts	TBUCSRV-100KPT
Full Server, 250000 pts	TBUCSRV-250KPT
Full ViewX Client	TBUCVWX-0001CLL
Web Server and web clients	-

Wonderware System Platform

Wonderware® System Platform provides configuration, deployment, communication, security, data connectivity and other services. Why struggle with multiple “point solutions” when you can build and deploy the same capabilities from a single, integrated software development environment or “platform”?

Wonderware System Platform acts as your “Industrial Operating System” by providing common services such as; configuration, deployment, communication, security, data connectivity, people collaboration, and many others. These services allow you to build a single, unified “Plant Model” that logically represents your processes, physical equipment and industrial systems, even legacy systems, making the design and maintenance of these systems more efficient, more flexible and with less risk.





Development Advantages:

Object-based development allows engineers to create specific application functions and save them as application templates. Once a template is developed and tested, it can be used by any engineer to add functionality to any of your applications throughout your entire site.

Deployment Advantages:

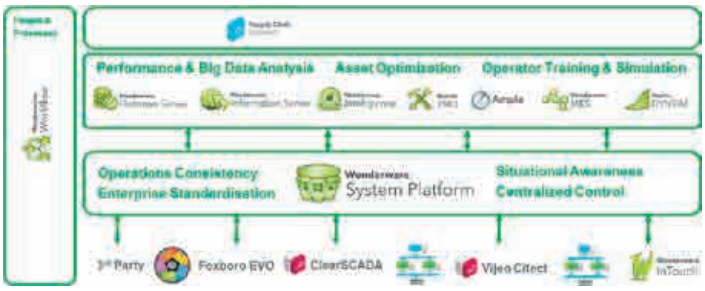
Centralized deployment allows your engineering team to deploy entire systems or just small changes any time without negative impact to your production or operations. And they can do these deployments from their offices.

Maintenance Advantages:

Wonderware System Platform’s object-based approach simplifies and reduces maintenance activities. If new functionality is to be implemented, it can be done from a central location.

Security Advantages:

Cyber security has never been more important than it is today. Wonderware System Platform is a highly secure development and deployment environment that can be configured to control system access and user rights, along with tracking system changes by user. Wonderware System Platform supports Microsoft Integrated Security, SmartCard and other security protocols and methods.



Vijeo Historian

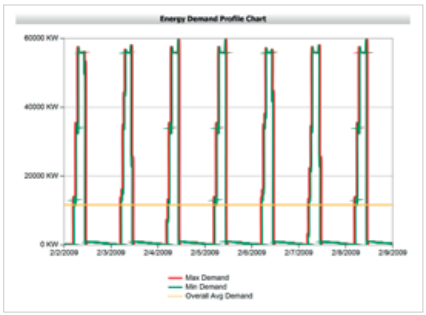
Vijeo Historian is a powerful MS SQL Server Historian with an effective plant-wide reporting tool that seamlessly collects, historises and reports data from multiple disparate systems throughout the plant. This allows better production reporting to improve the decision-making process with default reports providing EEMUA alarm and energy standard reports.

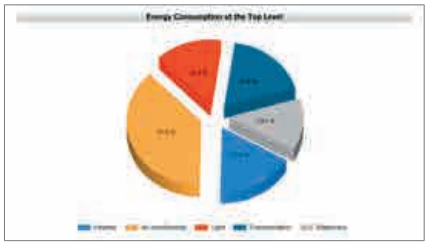
Vijeo Historian is easy to configure and maintain, and leverages familiar, supported Microsoft technologies.
By visualising and prioritising process improvements, such as production times, reducing errors and waste and increasing quality, you can improve your return on assets and profit margin.

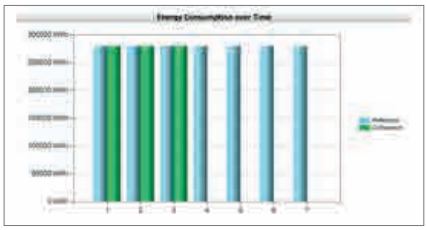
Vijeo Historian, enabling you to accurately store data while connecting your production and business systems through its active data transfers and simple, easy-to-use reporting.

- **Business systems integration:** Vijeo Historian reduces the complexity and cost of bridging the divide between senior management and plant operations through its simple, easy-to-use interface and its active data transfers that push data from the control systems up to the business systems.
- **An open data store:** Vijeo Historian utilises 100% Microsoft SQL Server 2008 R2 as its embedded historical data store. Its open, industry-standard technology and trusted security integrate effortlessly into your business in a way that lowers your total cost of ownership.
- **Enterprise-wide reporting:** Vijeo Historian comes with a standard set of pre-configured reports, simplifying basic alarm and tag reporting. The combination of a powerful reporting tool and Process Analyst makes it easier for you to make sense of the huge volumes of process data.
- **Alarm management:** Vijeo Historian provides preconfigured alarm rationalization reports based on the EEMUA (Engineering Equipment & Materials Users Association) 191 alarm management guidelines. It helps ensure your plant's alarm system is effective throughout the life of the plant.
- **Going 'green' with the energy reports:** Vijeo Historian provides energy reports that help you perform a comprehensive energy assessment of your plant to determine how much energy is being consumed and how much could potentially be saved.

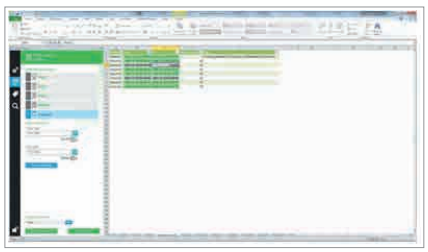
Energy comparison reports









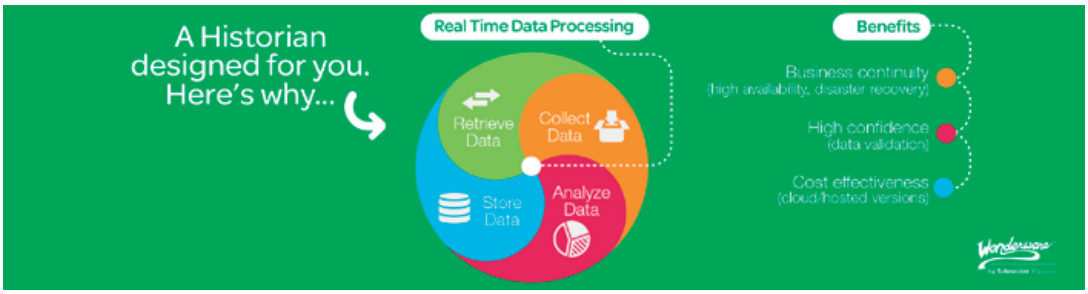


Vijeo Historian Standard components

Description	Reference	Description	Reference
150 pt & Data Transfers	VJH211011 / CT211011	User/Device CAL-Historian & Portal	VJH212400 / CT212400
500 pt & Data Transfers	VJH211012 / CT211012	User/Device CAL-Portal only	VJH212200 / CT212200
1500 pt & Data Transfers	VJH211013 / CT211013	User/Device CAL-Historian only	VJH212000 / CT212000
5000 pt & Data Transfers	VJH211014 / CT211014	Server CPU CAL-Historian & Portal	VJH212500 / CT212500
15000 pt & Data Transfers	VJH211015 / CT211015	Server CPU CAL-Portal only	VJH212300 / CT212300
50000 pt & Data Transfers	VJH211016 / CT211016	Server CPU CAL-Historian only	VJH212100 / CT212100

Wonderware Historian

Wonderware Historian is a high-performance process historian, capable of storing huge volumes of data generated from today's industrial facilities. Historian easily retrieves and securely delivers information to desktop or mobile devices, enabling organizations to analyze processes anywhere at any time.



Highly scalable and flexible, Wonderware Historian can be applied to a single process or grown, over time, to a large multi-tiered information management solution serving dozens of sites and hundreds of users worldwide. Its multi-tiered architecture allows cost-effective isolation of the control and business networks and broader, safer data access by more users and thereby increasing the system's Return On Investment (ROI).

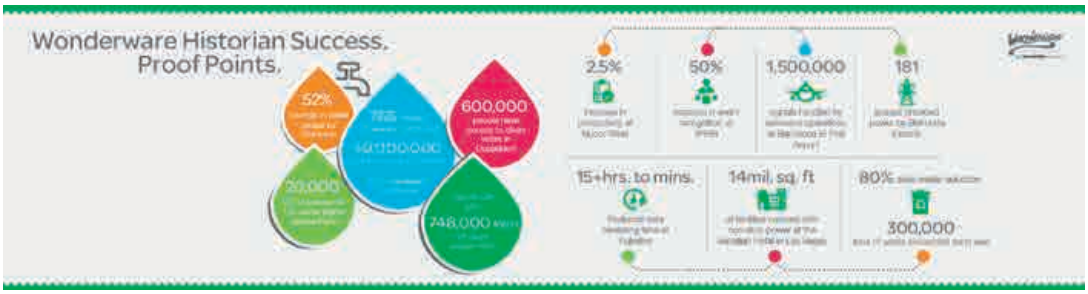
Wonderware Historian Client's analysis and reporting capabilities help maximize the value of information stored in Wonderware Historian. Plant knowledge workers can quickly address problems, study potential process inefficiencies and eliminate the time-consuming process of locating the data using Historian Client. This makes the delivery and visualization of information easy to implement and deploy.

Wonderware Historian Standard Edition

Wonderware Historian 2014R2 Standard, 500 Tag	17-1407
Wonderware Historian 2014R2 Standard, 5,000 Tag	17-1408
Wonderware Historian 2014R2 Standard, 25,000 Tag	17-1409
Wonderware Historian 2014R2 Standard, 50,000 Tag	17-1422

Wonderware Historian Enterprise Edition

Wonderware Historian 2014R2 Enterprise, 50,000 Tag	17-1424
Wonderware Historian 2014R2 Enterprise, 100,000 Tag	17-1414
WW Historian 2014R2 Enterprise, 300,000 Tag	17-1443
WW Historian 2014R2 Enterprise, 500,000 Tag	17-1445
WW Historian 2014R2 Enterprise, 750,000 Tag	17-1446
WW Historian 2014R2 Enterprise, 1,000,000 Tag	17-1447
WW Historian 2014R2 Enterprise, 2,000,000 Tag	17-1449



Wonderware SmartGlance

Smart Decisions, Anywhere, Anytime, Any Device

Imagine having access to your most important plant floor data from anywhere, at any time, using your mobile smart phone or tablet. Not browser based reports with their inherent delays and viewing problems, but a native phone application that presents your data in a format you can easily read and manipulate using your phone or tablet's native screen and touch navigation features.

Wonderware® SmartGlance is comprised of the SmartGlance Mobile Reporting Connector (MRC), the SmartGlance Server and the SmartGlanceMobile Apps.

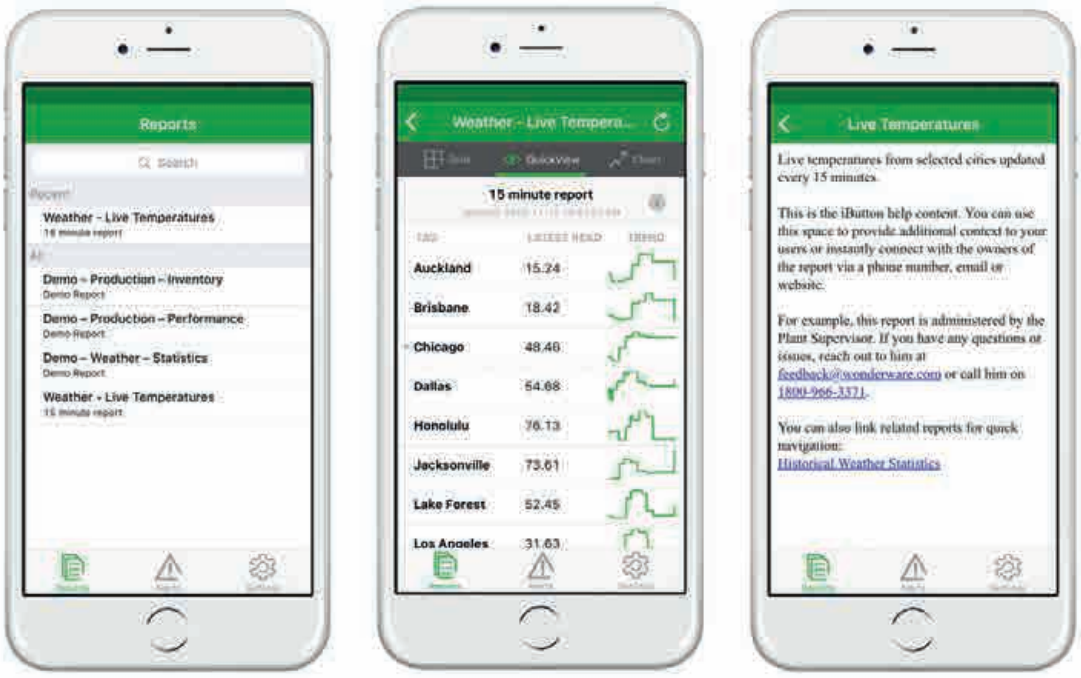
SmartGlance connects to many data sources including the Wonderware Historian and any SQL Database, any software product that supports the industry standard protocol of OPC HDA and Microsoft® Excel® time series data via the Fast Load of the Wonderware Historian or tabular data via the Microsoft SQL Server Integration Services (SSIS) feature.

SmartGlance proactively notifies you of report updates automatically so that you can stay up to- date with real-time information. SmartGlance supports all major mobile platforms including Apple®, Android®, Windows® Phone 8 and Windows 8.

Mobile Reporting

Two of today's hottest technologies drive our mobile reporting solution — smart phone apps and cloud computing. Just about everyone has a smart phone today and the SmartGlance phone app leverages this technology so your plant data is always available on your phone and in a form that is easy for you to view and manipulate.

Many of today's top companies are using cloud computing to provide their workers with important company information in a highly cost effective and secure manner. SmartGlance provides the option of leveraging this hosted model to provide you with critical plant performance data at the lowest possible cost in less than one day, or the option of an on-premises deployment for maximum control and security.



Key Capabilities – Mobile Reporting

Critical Data at Your Fingertips SmartGlance connects your mobile phone with any corporate or production system data source. Virtually any electronic data that is delivered to your desktop can be transformed into dynamic graphical reports for real-time viewing on your mobile smart phone or device.

- View real-time or historical data reports
- View Key Performance Indicators (KPIs), track changes, take action, and collaborate with others even outside of SmartGlance
- Arrange, sort and filter reports based on your priority

Wonderware Alarm Adviser

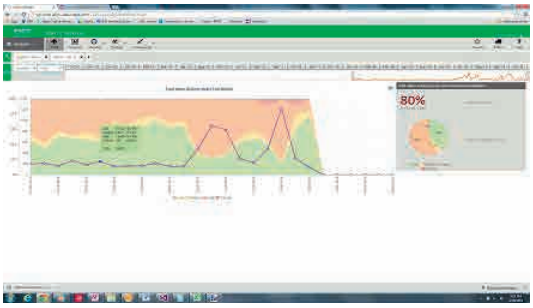
Wonderware Alarm Adviser is web-based alarm analysis software that helps you discover nuisance alarms in the process system through interactive visual analysis. Based on industry recommended standard alarm management practices, Alarm Adviser provides a dashboard for instant diagnosis of alarms, causes and consequences. It provides a single means of identifying frequent, standing, fleeting and consequential alarms, which can help analyze plant upsets and optimize system performance.

Alarm Adviser delivers the following business value:

- Greater insight into alarm data
- Improved operator awareness and efficiency
- Reduced risks of unscheduled downtime
- Improved plant performance and reliability

Wonderware Alarm Adviser enables engineers to identify trends within historic data, assess alarm system performance and discover the root cause(s) of abnormal situations in the plant. It gives engineers a complete overview of the plant and allows them to monitor the health of the plant on a regular basis.





Alarm Adviser leverages the advantages of being part of both the Wonderware and Schneider Electric ecosystems. It is the perfect complement for organizations who already own Wonderware InTouch, Wonderware System Platform and Vijeo Citect, and are specifically looking for a compact, cost-effective and easy-to-use tool for managing their system alarms.

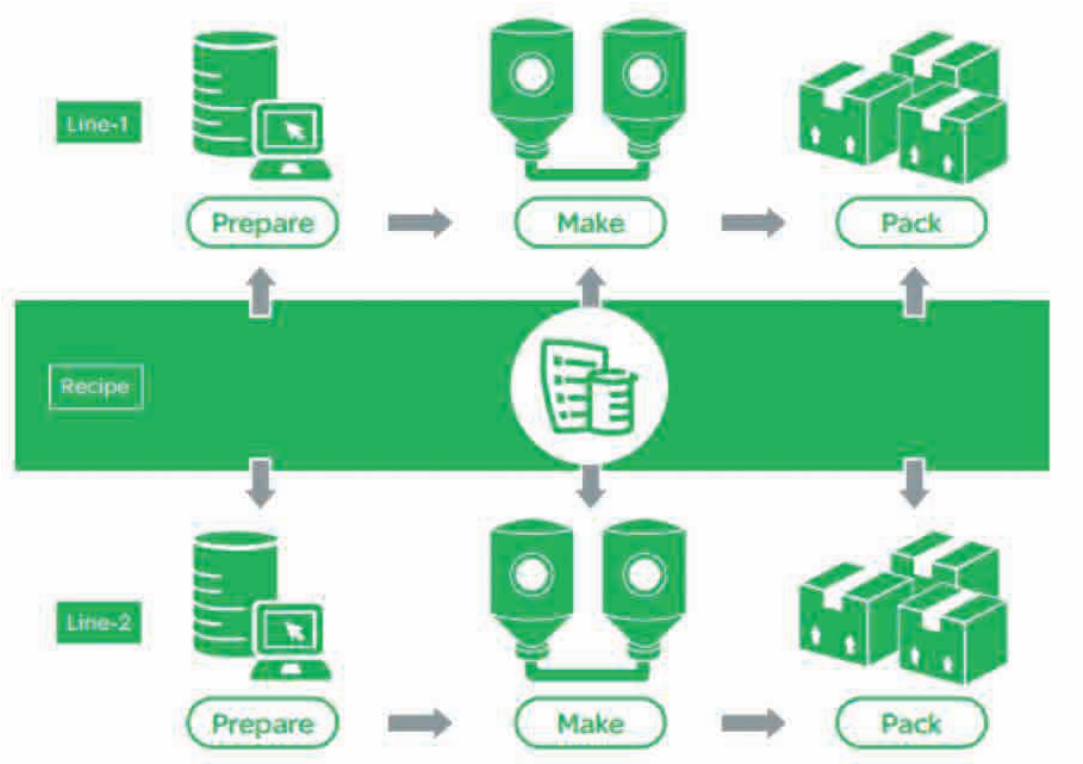
Alarm Adviser

Alarm Adviser 2014R2 Standard	AlmAdv-11-N-14R2
Alarm Adviser 2014R2 Professional	AlmAdv-22-N-14R2
Alarm Adviser 2014R2 Premier	AlmAdv-33-N-14R2

Wonderware Recipe Manager Plus

Wonderware® Recipe Manager Plus software reduces the effort to manage your product formulations, set up specifications and equipment procedures on automated production equipment and machines. Powerful, ready to use recipe management functionality, deep governance (role-based security, item versioning and approval) and electronic history records offer fast time to value and empower your operational teams to improve productivity and quality.

Wonderware Recipe Manager Plus is designed for the standardization of recipe management across your business, and to simplify and speed up the process of new product introduction to the shop floor and its automated production equipment.



Wonderware Recipe Manager Plus is scalable commercial off-the-shelf Recipe Management software for:

- Formula management and download, enabling quick and consistent set up parameter changes for equipment and systems – which in many cases, is the flexibility required for packaging or production machines or lines in CPG and F&B
- Recipe management and execution (procedure and formula management), providing automation and repeatability of production processes to recipe specifications on production units, work cells or line equipment for batch-oriented and hybrid manufacturing processes

Recipe Manager Plus

Description	Reference
Recipe Manager Plus 2014R2 Standard, 5 Connections	RMPlus-22-N-14R2
Recipe Manager Plus 2014R2 Standard, 10 Connections	RMPlus-33-N-14R2
Recipe Manager Plus 2014R2 Standard, 20 Connections	RMPlus-44-N-14R2
Recipe Manager Plus 2014R2 Professional, 5 Connections	RMPlus-66-N-14R2
Recipe Manager Plus 2014R2 Professional, 10 Connections	RMPlus-77-N-14R2
Recipe Manager Plus 2014R2 Professional, 20 Connections	RMPlus-88-N-14R2

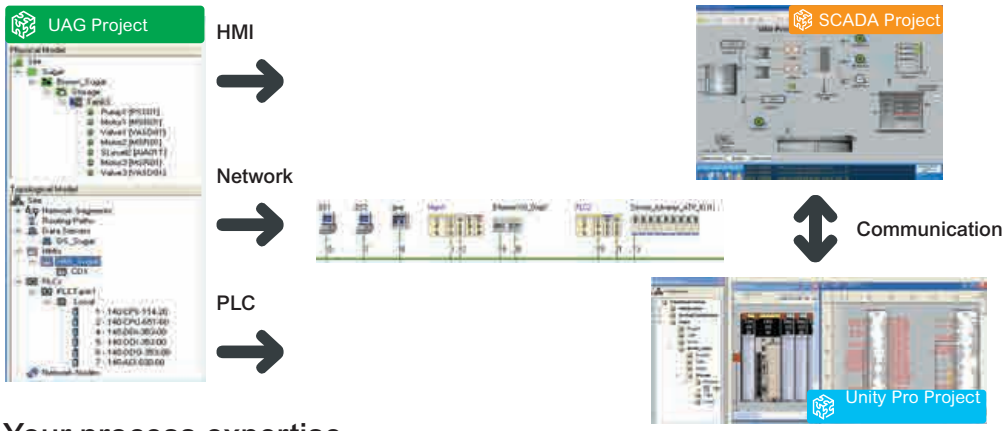
MDT AutoSave

AutoSave, by MDT Software, is a change control management solution providing a comprehensive suite of tools to protect, save, restore, discover and track changes for industrial programmable devices and documents. Autosave unifies plant automation software under one common user interface. Use of AutoSave results in a secure, well documented, controlled environment which dramatically reduces coordination constraints, wasted effort and safety concerns. Typical issues AutoSave addresses are:

- Protection of Assets and Intellectual Property
  – Where is the latest version of each program?
- Reduced Downtime
  – What program is in the device?
- Provide Audit trails for investigation
  – Who made the last changes, and why were they made?
- Increase in Safety
  – What was last changed, and when was it changed?
- Disaster Recovery
  – Hardware failure, security, sabotage
  – am I prepared?
- Regulatory Compliance
  – Are we in compliance? (i.e. Sarbanes-Oxley, CFR21 Part 11)
- Archival Backups
- Change Detection
- Change Documentation
- Historical Tracking
- Secured User and Workstation
- Disaster Recovery
- Controlled Editor Operations
- Automatic Change Notification

Unity Application Generator (UAG)

UAG automatically generates Unity Pro code and SCADA visualisation from one application helping to save engineering time and maintain standards. UAG tracks and documents every modification made, supports compliance with FDA 21 CFR 11 and ensures simple validation.



Your process expertise

UAG offers a flexible process methodology, capable of keeping pace with your installation's development and complying with ISA-88. UAG updates the control, monitoring and supervision data for your process, according to the centralised configuration. It automatically handles:

- Consistency of the topological layout
- Management of all Modicon PAC resources
- Inter device communication
- Operating modes
- Process device configuration
- Process interlocks
- Consistency of the controller and HMI applications.

Generate your applications automatically

With the process design information, UAG generates the Modicon PAC application including:

- Hardware configuration
- Application structure
- Communication configuration
- Control Devices and corresponding interlocks.

As for supervisory applications, UAG generates:

- The tag database including properties like alarms, archiving, access rights
- The graphics with control mimics and genies
- The communication driver configuration

The controller and SCADA applications remain synchronised acting like a single database.

UAG standard components

Description	Reference
UAG Single License	UAGSEWLFUCD
UAG Site License	UAGSEWLFFCD

Unity Pro
a SoCollaborative Software

Unity Pro is the common programming, debugging and operating software for the Modicon M340, M580, Premium and Quantum programmable automation controllers

Easy to use

Unity Pro makes best use of graphic and context-sensitive interfaces compatible with Microsoft Windows 7(32, 64 bits), Windows 8.1 (32, 64 bits) and Windows Server 2012.

- Direct access to tools and data
- 100% graphic configuration
- New Trending Tool
- Customisable toolbar and icons
- Extended drag-and-drop and zoom functions
- Integrated diagnostics window
- Easy FDT/DTM management
- Customised Function block Library (DFB) integrated.

Off-line simulation

The simulation function built into the system enables engineers to replicate the functionality of the application in a PC environment. This helps to identify any errors in the application programming and decreases testing and commissioning time.

Five IEC61131-3 languages to mix as you wish

Each section of code can be programmed in the language of your choice, best adapted to each processing operation. All edit, debugging and operation tools are accessible whatever the language used.

New LL984 Editor

With the inclusion of LL984 editor as a sixth language, the user can quickly import the existing Concept or ProWorx 32 (LL984 applications) with all of the benefits of a modern programming package.

Update the applications, using open-networking standards, such as Ethernet I/P, embedded web-based services, and open connectivity with enterprise-wide visualization and business systems.

This LL984 Editor is available for Quantum and M340.

Unity Pro Small (S)

Description	Software License Information	Reference
Complete packages	Unity Pro Small complete package for one user	UNYSPUSFUV1X
	Unity Pro Small complete package for 3 users	UNYSPUSFGV1X
	Unity Pro Small complete package for 10 users	UNYSPUSFTV1X
Upgrade package from PL7 Junior, Concept medium	Legacy to Unity Pro Small one user	UNYSPUSZUV1X
	Legacy to Unity Pro Small 3 users	UNYSPUSZGV1X
	Legacy to Unity Pro Small 10 users	UNYSPUSZTV1X
Upgrade package	Unity Pro Small One user to 3 users	UNYSPUSZUGV1X
	Unity Pro Small 3 users to 10 users	UNYSPUSZGTV1X

Unity Pro

Unity Pro Large (L)

Description	Software License Information	Reference
Complete packages	Unity Pro Large complete package for one user	UNYSPULFUV1X
	Unity Pro Large complete package for 3 users	UNYSPULFGV1X
	Unity Pro Large complete package for 10 users	UNYSPULFTV1X
	Unity Pro Large complete package for a geographical site (100 users)	UNYSPULFFV1X
Upgrade package from PL7, Concept, ProWORX Nxt or ProWORX 32	Legacy to Unity Pro Large for one user	UNYSPULZUV1X
	Legacy to Unity Pro Large for 3 users	UNYSPULZGV1X
	Legacy to Unity Pro Large for 10 users	UNYSPULZTV1X
	Legacy to Unity Pro Large for a geographical site (100 users max.)	UNYSPULZFV1X
Upgrade package	Unity Pro Large one user to 3 users	UNYSPULZUGV1X
	Unity Pro Large 3 users to 10 users	UNYSPULZGTV1X
	Unity Pro Medium one user to Unity Pro Large one user	UNYSPULZMUV1X
	Unity Pro Medium 3 users to Unity Pro Large for 3 users	UNYSPULZMGV1X
	Unity Pro Medium 10 users to Unity Pro Large for 10 users	UNYSPULZMTV1X

Unity Pro Extra Large (XL)

Description	Software License Information	Reference
Complete packages	Unity Pro Extra Large complete package for one user	UNYSPUEFUV1X
	Unity Pro Extra Large complete package for 3 users	UNYSPUEFGV1X
	Unity Pro Extra Large complete package for 10 users	UNYSPUEFTV1X
	Unity Pro Extra Large complete package for geographical site	UNYSPUEFFV1X
Upgrade package from PL7, Concept, ProWORX Nxt or ProWORX 32	Legacy to Unity Pro Extra Large for one user	UNYSPUEZUV1X
	Legacy to Unity Pro Extra Large for 3 users	UNYSPUEZGV1X
	Legacy to Unity Pro Extra Large for 10 users	UNYSPUEZTV1X
	Legacy to Unity Pro Extra Large for a geographical site (100 users)	UNYSPUEZFV1X
Upgrade package	Unity Pro Extra Large one user to 3 users	UNYSPUEZUGV1X
	Unity Pro Extra Large for 3 users to 10 users	UNYSPUEZGTV1X
	Unity Pro Large one user to Unity Pro Extra Large one user	UNYSPUEZLUV1X
	Unity Pro Large for 3 users to Unity Pro Extra Large for 3 users	UNYSPUEZLGV1X
	Unity Pro Large for 10 users to Unity Pro Extra Large for 10 users	UNYSPUEZLTV1X

Unity Pro Extra Large Safety (XLS)

Description	Software License Information	Reference
Complete packages	Unity Pro XL Safety complete package for one user	UNYSPUXFUCD70
	Unity Pro XL Safety complete package for 3 users	UNYSPUXFGCD70
	Unity Pro XL Safety complete package for 10 users	UNYSPUXFTCD70
	Unity Pro XL Safety complete package for geographical site(100 users)	UNYSPUXFFCD70
Upgrade package from PL7, Concept, ProWORX Nxt or ProWORX 32	Legacy to Unity Pro XLS for one user	UNYSPUXZUCD70
	Legacy to Unity Pro XLS for 3 users	UNYSPUXZGCD70
	Legacy to Unity Pro XLS for 10 users	UNYSPUXZTCD70
	Legacy to Unity Pro XLS for geographical site (100 users max.)	UNYSPUXZTCD70
Update package from previous versions of Unity Pro XLS	Unity Pro XLS for one user update package	UNYUPDSPUXUU
	Unity Pro XLS for 3 users update package	UNYUPDSPUXUG
	Unity Pro XLS for 10 users update package	UNYUPDSPUXUT
	Unity Pro XLS for geographical site (100 users) update package	UNYUPDSPUXUF

Unity Pro Trial and Educational Software

	Software license information	Reference
	Unity Pro XL Trial 10 P	UNYSPUETUV1X
	Unity Pro XL Educ Facility Lic	UNYSPUEEFV1X

Unity Software

Description	Compatibility
Unity Pro Small (S)	M340
Unity Pro Large (L)	M340, Premium, Quantum, M580
Unity Pro X Large (XL)	M340, Premium, Quantum, M580
Unity Pro XLS	Quantum SIL2

Unity Dif Application Comparison Software

Unity Dif application comparison software for Modicon M340/M580/Premium/Quantum platforms is an optional software which complements the Unity Pro programming software.

It is used to compare two Unity applications generated by Unity Pro and automatically provide an exhaustive list of all the differences between them in a textual format. A true companion software to Unity Pro, enabling user to effectively manage and track their PLC program changes.

The Unity Dif program increases productivity in the main life phases of a control system based on M340/M580/Premium/Quantum platforms:

- Application development and debugging
- Starting up installations and processes
- Operation and maintenance of installations and processes

Unity Dif software is an efficient tool for handling Unity applications for:

- Control system design offices
- Operation and maintenance managers
- Installers and systems integrators

What's new in Unity Dif V7.0:

- LL984 Program Comparison
  - Compares the LL984 programs and displays the differences
  - Generates Report
- DTM Comparison
  - Compares the DTM configuration of two programs
  - Enabling comparison of ZEF project format
  - Generates Report
- Supports Windows 7 (32 & 64 bit)
- Synchronized to Unity Pro V7.0

Unity Dif

Description	Software Licence Information
Complete packages	UNITY DIF SINGLE LIC (by Web-download)

OPC Factory Server (OFS)

OFS enables simple, open and transparent communication between software applications and Modicon devices.

OPC Factory Server Software

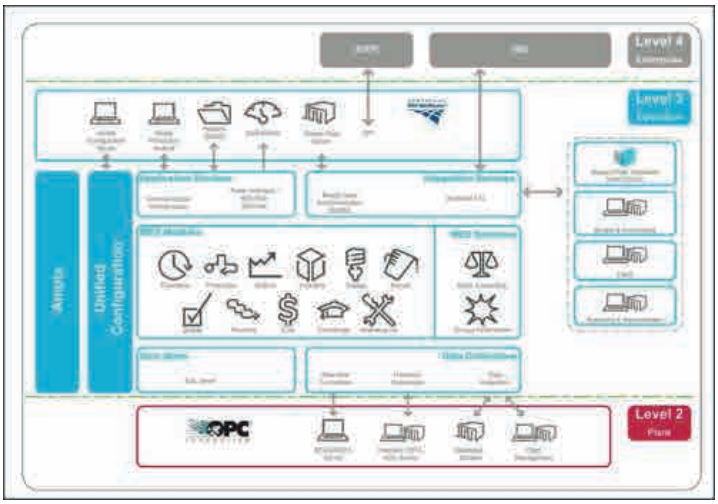
Description	Software Licence Information	Reference
Complete packages	SMALL OFS Data Server Software Version, Single station	TLXCDSUOFS36
	SMALL OFS Data Server Software Version, 10 stations	TLXCDSTOFS36
	LARGE OFS Data Server Software Version, 1 stations	TLXCDLUOFS36
	LARGE OFS Data Server Software Version, 10 stations	TLXCDLTOFS36
	LARGE OFS Data Server Software Version, 200 stations	TLXCDLFOFS36
Notes: SMALL version is limited to 1000 items and does not support OPC XML protocol		

Ampla – Manufacturing Execution System

Suited for Mining and Bulk Material Handling Solution

In today's dynamic business environment, you need reliable software solutions that deliver operational agility. Plant Operation Ampla software is designed to meet the needs of complex and continually evolving IT systems. Combining leading-edge technologies, a sustainable architecture, and strong web services capabilities, Plant Operation Ampla software also supports easy integration with major ERP systems, making it highly configurable, flexible, and easy to integrate.

Designed and built for Mining and Bulk Material Handling processes is recognized as the best Information Management System by Industry with 9 of the top 10 mining companies using the product.



Plant Operation Ampla software connects to multiple plant and business systems, capturing relevant data as easy-to-understand real-time intelligence for analysis. You can readily identify performance issues, view real production costs, and automatically calculate your business KPIs – without needing a database or business intelligence expert on staff.

Key features:

- Highly configurable and flexible system
- Single unified configuration environment with support for online changes
- Easy to integrate using WS-I compatible Web Services
- Connects to major brand SCADA and Historian systems
- Open standards using Web Services, OPC Foundation, and ISA-95/B2MML



Plant Operation Ampla software intelligently captures data on process events, helping you quantify impact and diagnose root causes. You can then make informed decisions in near real-time to improve your plants performance and reduce waste. With a modular approach, functionality can be added incrementally to support continuous improvement programs without upsetting existing operations.

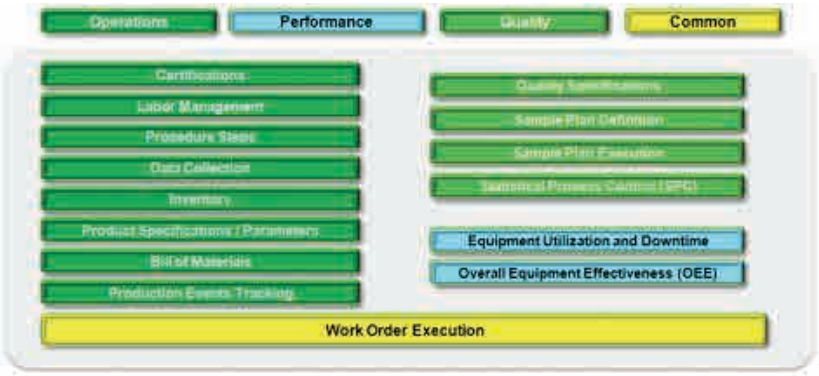
Modules include:



Wonderware MES (Manufacturing Execution System)

Suited for Food, Beverage, Manufacturing and Consumer Packaged Goods.

Transform Your Business Objectives into Operational Commands Wonderware offers Manufacturing Execution Systems (MES) software, for managing production information flow, disseminating production management data from your business system or disparate operations systems to the plant floor or production facility. MES software transforms your production schedule into operational commands within the physical resources and delivers feedback to your business system in real-time.



Wonderware MES Performance

- Equipment Utilization
  - Monitor and Record Equipment State
  - Capture Equipment Utilization (uptime/downtime) Events
  - Automatically or Manually Assign Reason Codes
  - View Equipment Events
- Equipment Performance
  - Capture production and scrap counts (manual or automated)
  - Monitor OEE information
- Line Management
  - Determine Bottleneck position within the line
  - Manage work orders/jobs for the line
  - Display Line summary information such as Line OEE, production counts, utilization, state of bottleneck position, and work order status







Wonderware MES/Operations

- Product Definition
- Order Management
  - Including Consumption and Production
- WIP & Inventory Management
- Step Execution
- Setpoint Management
- Work Instructions



Wonderware MES/Quality

- Specification Management
- Sample Plan Definition Mgt.
- Sample Plan Execution Mgt.
- Statistical Process Control (SPC)

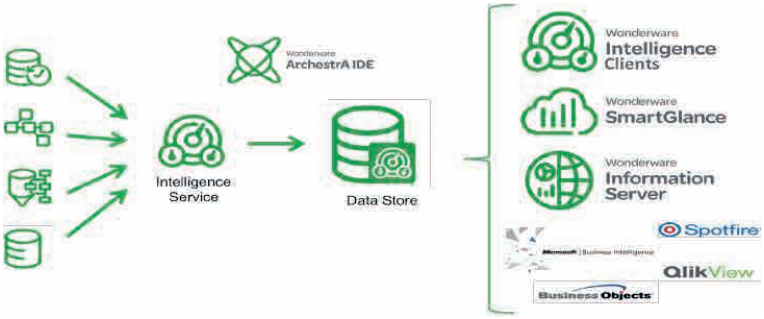




Wonderware Intelligence EMI (Enterprise Manufacturing Intelligence)

Understand How Your Operations Impact Your Business Wonderware Intelligence software provides performance management information by capturing data directly from your multiple process/production/manufacturing data sources and turning it into valuable real-time information in the appropriate context of your overall production processes.

Ease of use visualization tools empower your employees to explore all of the available data to leverage their process and business expertise in analyzing the information. Interactive, intuitive dashboards make information instantly available to people across your organization.



Wonderware Intelligence software facilitates collaboration, enables improved decision making and provides the necessary drilldown capabilities to uncover hidden profits, costs and production improvements. Pre-aggregated and contextualized production data increases the value and information resolution of your corporate business intelligence systems.

Wonderware Intelligence EMI capabilities include:

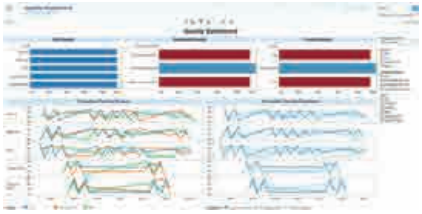
- Connectivity to Industrial data sources and aggregation methods for plant historians
- Automatic real-time data collection, aggregation, normalization and contextualization (relationships)
- Operational KPIs (Key Performance Indicators) and performance metrics in near real-time resolution to take action within actual running production
- Analysis and visualization of collected data and calculated metrics in chart, graph, or custom formats
- Publishing of web based dashboards for KPI monitoring, including filtering and drilldown analysis

Strengths

- Best in class & ease of use analytics and dashboard functionality with OEM software provider, Tableau. Includes support for Mobile devices (Tablets)
- Configurable and sustainable server software.
- Leverages Ecosystem experience
- Connectivity to multiple sources
- Aggregation and Contextualization into common, persistent Data Store and Information model with near real-time updates through server services
- Complements WW Software, OSI PI and third party sources as for data sources and reporting capabilities
- Out of the box data models and dashboard content for Invensys products (MES/Batch/Alarms/ROMeo/CEM)







The right device, for the right people



StruxureWare™ Supply Demand Operation

Optimize your supply chain

StruxureWare Supply Chain Operation software is an Advanced Planning and Scheduling (APS) system that empowers strategic and operational forecasting, by optimizing planning and scheduling across the entire enterprise.

Production bottlenecks, under-utilized assets and inaccurate forecasts can weigh heavily upon the bottom line. That's why we offer enterprise software applications for supply and demand optimization and predictive modelling that can help your organization make more profitable decisions in a dynamic operating environment. With a 'one-version-of-the truth' philosophy, our StruxureWare Supply Chain Operation software solutions deliver global, cross-silo optimization so you benefit from the most efficient and effective production and supply chain possible.



Supply Chain Operation consists of 11 specialized modules for end-to-end planning, and to deliver an integrated and optimized environment.

Demand Planning and Replenishment

Based on multiple prediction algorithms and techniques, Demand Planner can be applied to a variety of demand forecasting and replenishment activities, including vendor managed inventory and price, promotion, and product optimization.

Predictive Modelling

Tuned to your unique business requirements, our Predictive Models unlock the value in your corporate data and add consistency and clarity to business decisions. Utilizing leading-edge optimization science, our Predictive Models can be applied to a wide range of forecasting and prediction activities.

Logistics Planning and Scheduling

Integrate and synchronize your logistics planning and scheduling activities with other production and distribution activities. Automate the distribution of products within your production enterprise, while planning and scheduling logistics to customers and distribution centres.

Capacity Planning

Configure operational capacities (e.g. production, warehouse, distribution, etc.) and determine the impact of increasing/decreasing existing capacities or creating new operations/processes. Use this information to validate and drive strategic business decisions, generate plans based on system data, KPIs, business rules and constraints.

End-to-End KPI Reporting

Generate integrated, 'whole-of-supply chain' key performance indicator reports, such as revenue objectives, cost minimization, profit maximization, workforce utilization or throughput. For ease of analysis, results can be integrated with smart devices and displayed as dashboards, charts or downloadable reports.

Maintenance Planning

Minimize disruption to your supply chain by optimizing maintenance 'windows'. Proactively plan and manage outages for maintenance, refurbishment and capital works across your network. Configure maintenance plans directly in APS or synchronize with existing enterprise asset management and resource planning systems. Calendar allows for easy 'drill-down' to long and short term plans.

Workforce Planning and Management

Integrate workforce decision support functionality seamlessly with our supply chain optimization applications. Plan and forecast for short, medium and long-term requirements, including rostering, 'what if' scenarios and performance variability, while managing complexities such as workforce contracts, training, leave entitlements and safe work practices.

Production Planning

Aggregate production planning in monthly, quarterly and yearly buckets over multiple years, with continuous updating as forecasts and actual demand changes. Plan across different time horizons, including by day or by shift. Dynamically optimize blending to fulfil customer orders efficiently and react to changing market requirements. Synchronize demand, replenishment, production and distribution across multiple facilities and regions for global value chain planning and optimization.

Process Plant Scheduling

Optimize plant activities on a minute-by-minute basis, using detailed business rules and constraints. Factory schedules, work orders, etc. can be viewed by plant/region, sorted by dates and published for distribution.



Integrated Planning & Optimization Solution – (IPOS)

With StruxureWare software, achieve an efficient infrastructure from resource to market

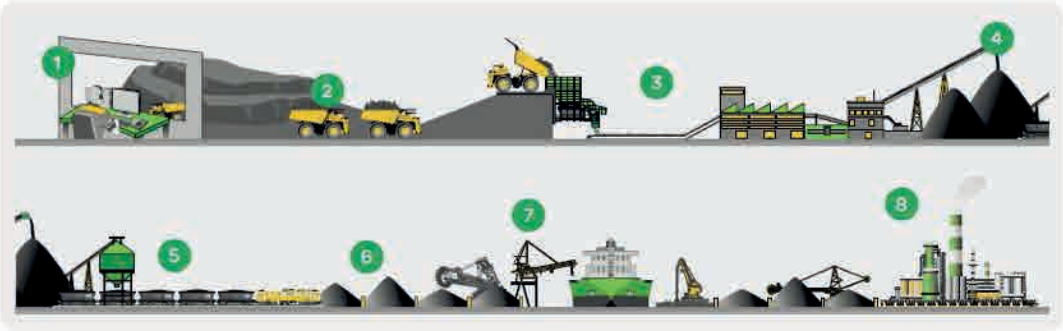


The Integrated Planning and Optimization Solution is a powerful solution that utilizes StruxureWare software for Mining, Minerals, and Metals to reach operational excellence.

- Enterprise level: Co-ordination of energy resources including, Procurement, Management Dashboards and, reporting and tracking of improvement initiatives.
- Operations level: Production Management, Supply Chain Management and Energy Management solutions for total operations management from resource to market
- Control level: SCADA, Control and Security solutions for real time control and process execution

Main benefits

- Ease of integration: Enables standard integration to support Mining, Minerals and Metals applications including Enterprise Asset Management, Laboratory Information Systems and Weather Services
- Consistent user experience: Users can quickly learn new elements of the software suite, making return on investment faster
- Scalable platform: StruxureWare for Mining, Minerals and Metals includes solutions for Integrated Planning and Optimization, Energy Management and Asset Performance Management. Starting with any solution provides the foundation to add new functionality as required

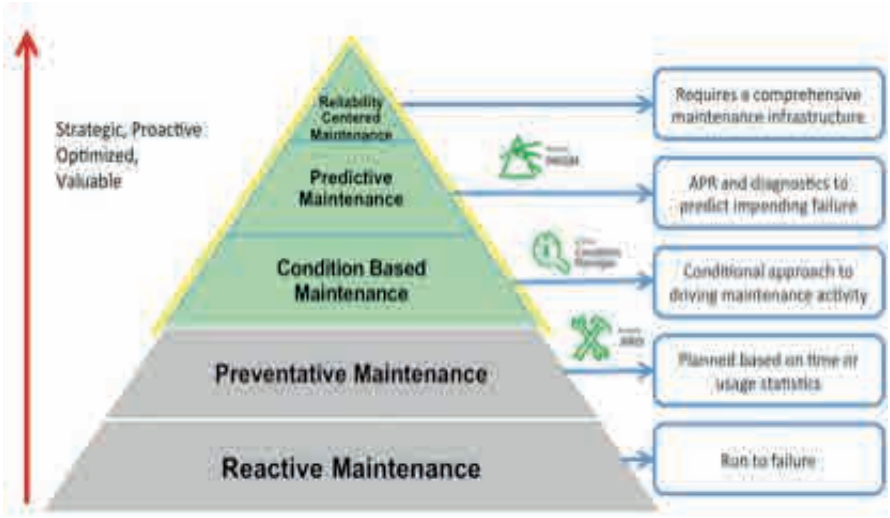


1.	Mine planning	> optimize mine planning considering both mining and processing constraints
2.	Mine Operations	> ensure operations plans are coordinated with shipping and mining plans
		> identify and correct performance issues before they have an impact
3.	Plant Operations	> optimize throughput quality and recovery, whilst minimizing energy consumption
4.	Stockpile blending	> optimize blending opportunities to maximize profit and customer service through real-time, reliable inventory data
5.	Rail logistic	> eliminate rail penalties and optimize throughput through the rail network
6.	Port stockpile	> ensure materials handling is as efficient as possible, maximizing opportunities for direct train-to-ship loading
7.	Port logistics	> minimize demurrage penalties and maximize port throughput
8.	Customers	> opportunity to extend the supply chain to unloading ports and end customers to truly optimize from mine to blast furnace

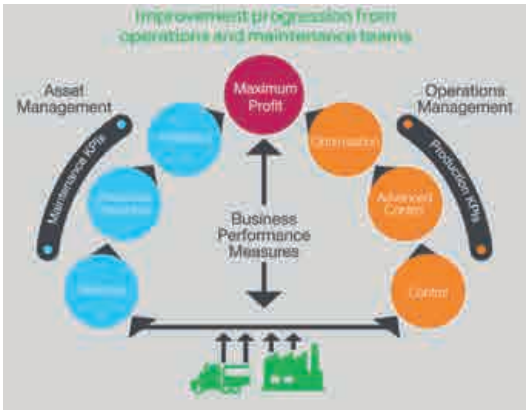
Avantis

Asset Performance Management solutions from Schneider Electric deliver focused, real-time equipment performance, reliability, maintenance and decision support for effective resource management.

Operations and maintenance teams are empowered with real-time decision support information, providing the right information to the right people at the right time and in the right context, improving operational performance, increasing asset availability and utilization and ultimately driving business value and real financial returns.

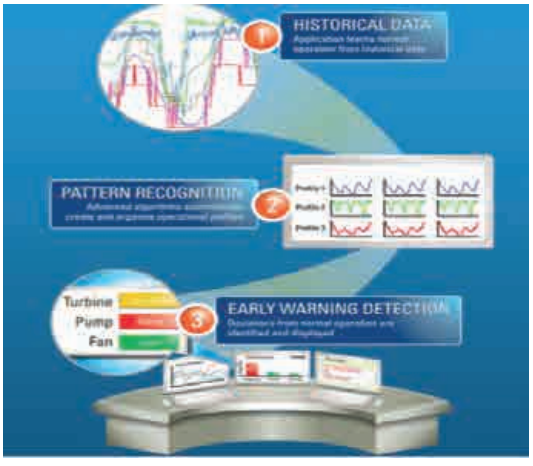


- Avantis.PRO is a set of integrated modules designed to provide immediate access to information to manage the Maintenance and Supply Chain operations in asset intensive organizations. It is used as the foundation to drive any type of maintenance strategy.



- Avantis Condition Manager automates the maintenance process through the monitoring of user defined rules that initiate necessary maintenance activities.

- Avantis Prism provides predictive monitoring for early warning identifications of equipment health and performance problems. It provides advanced pattern recognition based on machine learning, diagnostics and fault identification.



Wonderware Skelta BPM

Industrial organizations execute complex workflows involving people and systems on a daily basis. Consistency leads to better performance, yet many lack clear indication of correct execution and accountability.

Wonderware Skelta BPM helps organizations get work done intelligently, effectively and in a governed manner. Through its powerful functionality and model driven framework, Wonderware Skelta BPM offers a strong platform for effective process modeling across the Enterprise. The software documents all workflows including task sequencing, dependencies and outcomes, and measures process performance for analyses and process optimization.

Wonderware Skelta BPM software offers advanced workflow solutions and a complete set of tools for creating, executing, and optimizing business processes. A fully embeddable web-based architecture and strong integration capabilities with plant systems ensures collaboration throughout the enterprise.



Key Capabilities

- Uses an intuitive, visual process and forms modelling environment
- Includes an adaptive forms editor to quickly configure composite business scenarios
- Multi-channel task delivery (web browser, mobile devices, email and voice)
- Integrates with Wonderware System Platform, MES, InBatch, IntelaTrac and Avantis EAM
- Native integration with Microsoft SharePoint, Microsoft Outlook and Microsoft Office
- Enterprise-wide BPM solution scalability with load balancing and high availability

Key Benefits

- Improves operational consistency, supports best practices and enhances worker productivity and accountability
- Proliferates best practices by measuring and improving critical work processes
- Enforces company policies and regulatory compliance and maintains comprehensive process audit trails

Wonderware IntelaTrac

Wonderware IntelaTrac is the industry-leading mobile workforce and decision support system. IntelaTrac includes configurable software and ruggedized mobile hardware solutions that enable workflow, data collection and general task management for plant operations, maintenance management, production tracking and compliance applications.

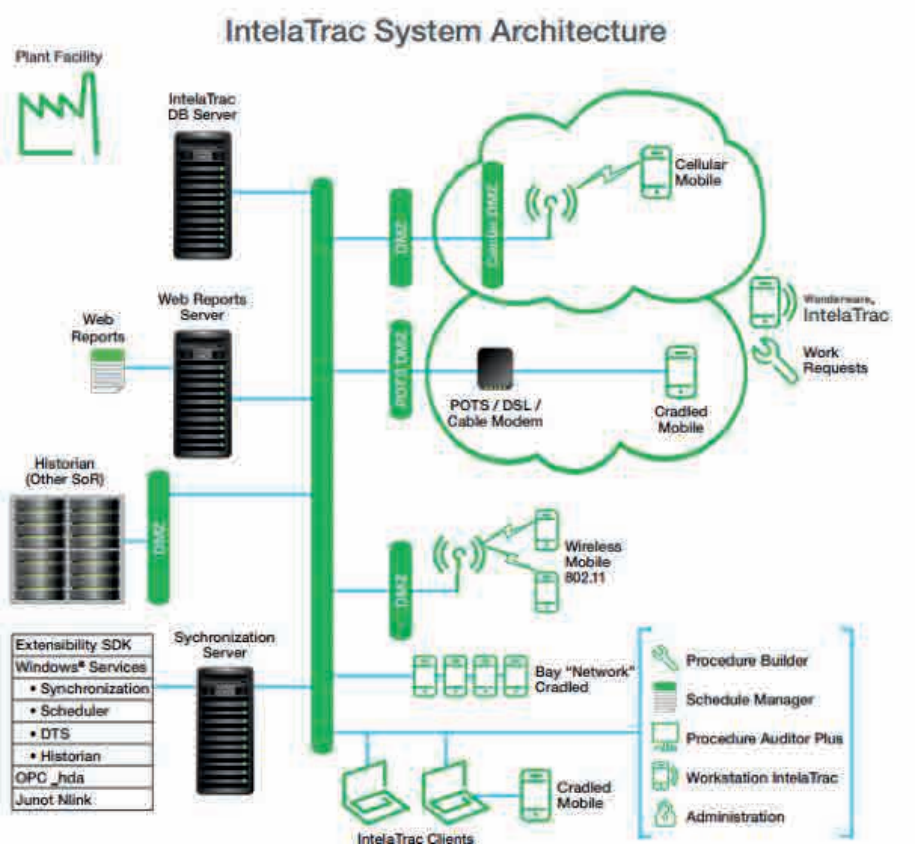
Key Benefits

- Improved operational discipline and reliability
- Improved safety and compliance
- Increased workforce productivity
- Higher asset availability
- Improved process visibility

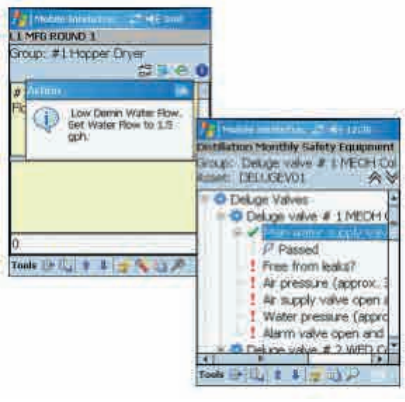


Key Capabilities

- Advanced workflow creation and scheduling
- Dynamic procedures triggered on asset condition
- Comprehensive analysis and reporting
- Integrated with Wonderware System Platform and Historian
- Easily extended for custom applications or integrations
- Connectivity with many popular back-end systems

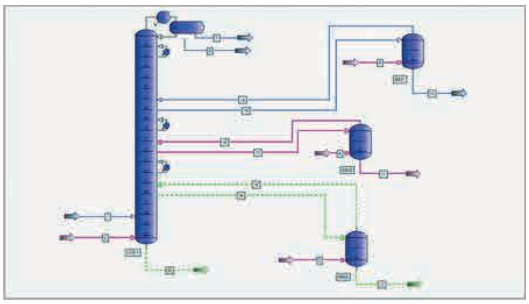






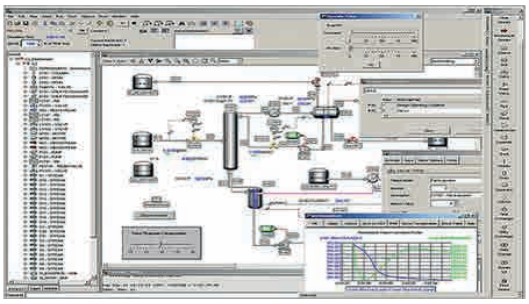
SimSci

The only way to be successful in any business is to completely understand everything about it. Whether a company is trying to analyze fixed costs, variable costs, or product sale prices, the details need to be properly understood so that an organization can make the decisions necessary to run a profitable business. Understanding processes with SimSci simulation software is the first step to designing, operating and optimizing a company's processes and thereby improving performance and profitability.



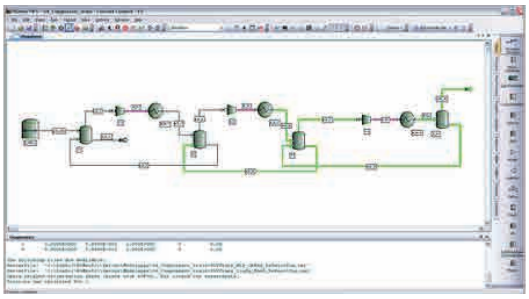
SimSci Design

SimSci process design tools allow engineers to consider important design implications such as regulatory compliance, profitability and safety, while weighing standard design practices. SimSci simulations use accurate thermodynamic methods, physical property data, component information and rigorous equipment models to create superior designs.



SimSci Operate

Operator Training Simulators (OTS) allow operators to train on a computer in an identical environment to the control room. SimSci simulation and training tools provide in-depth process understanding through accurate simulation models of the plant that aid in process analysis and operator training. This provides safe and efficient operations that benefit the plant, the workers, the surrounding community and the overall profitability of the company.



SimSci Optimize

Optimization solutions are used to determine the optimal operating parameters for a process to deliver the targeted operational results while subject to feed, safety, environmental and other constraints. Optimization solutions monitor performance, control and obtain peak performance to deliver the maximum benefit in large and complex process plants where the scale and complexity requires formal solutions.

Programmable Automation Controllers

Modicon Quantum

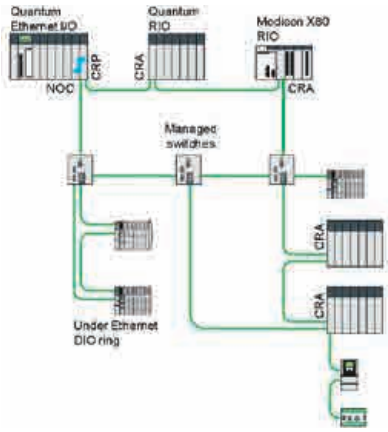


QUANTUM

Modicon Quantum

Quantum provides well-balanced CPUs able to provide leading performance from boolean to floating-point instruction.

- 5 IEC languages as standard: LD, ST, FBD, SFC, IL, the Modicon LL984 language to facilitate installed base migration
- High-level multitasking system
- Memory capacity up to 7 Mb using PCMCIA extensions
- Specially shaped for process control applications with conformal coated modules, and an extensive catalogue of partner modules
- Safety processors and I/O modules to manage safety integrated systems
- Plug & Play high-performance Hot-Standby solutions with LCD keypad for local monitoring
- Numerous built-in ports (USB port, Ethernet TCP/IP port with Web server, Modbus Plus and at least one Modbus serial port) on the front panel
- In-rack connectivity to Profibus-DP, embedded Ethernet router
- Increase the availability of your architecture with the CRA and CRP Quantum Ethernet I/O modules (QEIO)
- Thanks to the Modicon X80 drops, expand your architecture and integrate your distributed devices easily in the same network (such as HMI, variable speed drives & I/O islands)



Typical Modicon Quantum architecture including the Modicon X80 drop



140CPU67160S

Processors

Type of processor	Memory capacity Integrated	Memory capacity With PCMCIA extension	Reference
Simple applications	2MB	-	140CPU31110
Simple and medium complexity applications	2MB	-	140CPU43412U
Complex applications	512KB	7MB	140CPU65150
	1MB	7MB	140CPU65160
	3MB	7MB	140CPU65260
	11MB	-	140CPU65860
Hot Standby Processor	512KB	7MB	140CPU67060
	1MB	7MB	140CPU67160
	3MB	7MB	140CPU67260
	11MB	-	140CPU67861
SIL2/SIL3 - Stand alone			140CPU65160S
SIL2/SIL3 - Hot Standby			140CPU67160S



140CPU65•••



140CPU67261

Processors

For applications with distance between 2 Hot Standby CPU's is up to 10 km

Type of processor	Memory capacity integrated	L2 Cache	Reference Unity Pro
QUANTUM Hot Stand by Processor Long distance	3MB	8MB	140CPU67261
QUANTUM Hot Stand by Processor Long distance, coated version	3MB	8MB	140CPU67261C

This Processor supports a single mode fibre optic transceiver



140CPS21100

Power Supply Modules

Description	Input voltage	Output current	Reference
Standalone	24 VDC	8 A/3 A	140CPS21100
	100…150 VDC	3 A	140CPS51100
	120…240 VAC	8 A/3 A	140CPS11100
Summable	24 VDC	8 A/3 A	140CPS21400
	48…60 VDC	8 A	140CPS41400
	115/240 VAC	11 A	140CPS11420
Redundant	24 VDC	8 A/3 A	140CPS22400
	48…60 VDC	8 A	140CPS42400
	100…150 VDC	8 A/3 A	140CPS52400
	115/240 VAC	11 A	140CPS12420

Programmable Automation Controllers

Modicon Quantum



140XBP01000

PCMCIA Memory Extension

Description	Technology	Memory size	Reference
Application	SRAM	1 MB	TSXMRPC001M
		1.7 MB	TSXMRPC01M7
		2 MB	TSXMRPC002M
		3 MB	TSXMRPC003M
		7 MB	TSXMRPC007M
	Flash EPROM	512 KB/512 KB	TSXMCPC512K
		2 MB/1 MB	TSXMCPC002M
Additional data	SRAM	4 MB	TSXMRPF004M
		4 MB	TSXMFPP004M
		8 MB	TSXMRPF008M



140DAI55300

140DDOI35300

Racks

Description	Numbers of slots	Reference
Racks	3 slots	140XBP00300
	4 slots	140XBP00400
	6 slots	140XBP00600
	10 slots	140XBP01000
	16 slots	140XBP01600
Rack extension module	-	140XBE10000

Connection Accessories

Description	Type	Reference
Cable for extension racks (main and secondary)	L = 1 m	140XCA71703
	L = 2 m	140XCA71706
	L = 3 m	140XCA71709



140DAO84010

140DDOI5310

Discrete I/O Modules

Description	Connection	Number of isolated channels	Input voltage	Reference
Discrete inputs	By screw terminals 140XTS00200 (to be ordered separately)	16	24 VAC	140DAI34000
			115 VAC	140DAI54000
			230 VAC	140DAI74000
		4 groups of 8	5 VDC TTL (negative logic)	140DDI15310
			24 VDC	140DDI35300
			10…60 VDC	140DDI85300
			20…30 VDC	140DSI35300
			24 VAC	140DAI35300
			48 VAC	140DAI45300
			115 VAC	140DAI55300
			230 VAC	140DAI75300
		3 groups of 8	125 VDC	140DDI67300
		2 groups of 8	115 VAC	140DAI54300
		6 groups of 16	24 VDC	140DDI36400
		8 groups of 2	10…60 VDC	140DDI84100

Description	Connection	Number of isolated channels	Input voltage	Reference
Discrete outputs Solid state	By screw terminals 140XTS00200 (to be ordered separately)	16	24…115 VAC/4 A	140DAO84010
			24…230 VAC/ 4-3 A	140DAO84000
		4 groups of 8	5 VDC TTL/0.075 A	140DDO15310
			24 VDC/0.5 A	140DDO35300
			10…30 VDC/0.5 A	140DVO85300
			24…230 VAC/ 4-3 A	140DAO85300
		4 groups of 4	24…48 VAC/4 A	140DAO84220
			100...230 VAC/4-3 A	140DAO84210
		2 groups of 8	10…60 VDC/2 A	140DDO84300
		6 groups of 16	19.2…30 VDC/0.5 A	140DDO36400
		2 groups of 6	24...125 VDC/0.75 A	140DDO88500



140DAM59000

140DDM39000

Description	Connection	Number of I/O	Input voltage	Output voltage/ current	Reference
Discrete I/O Solid state	By screw terminals 140XTS00200 (to be ordered separately)	2 groups of 8/ 2 groups of 4	24 VDC	30 VDC/15 A	140DDM39000
			125 VAC	125 VAC/4 A	140DAM59000
		1 group of 4/ 4 isolated	125 VDC	125 VDC/4 A	140DDM69000
Relay		16 NO	-	150 VDC or 250 VAC/2 A	140DRA84000
		8 NO/NC	-	150 VDC or 250 VAC/5 A	140DRC83000

For full product details - refer to the product catalogue.

Programmable Automation Controllers

Modicon Quantum



140ACI03000



140ACI02000



140AMM09000

Safety I/O Modules

Number of Channels	Input voltage	Reference
8 analogue inputs	4…20mA	140SAI94000S
16 discrete inputs	24 VCD	140SDI95300S
16 discrete outputs	24 VCD	140SDO95300S

Analogue I/O Modules

Description	Connection	Number of channels	Input signal	Resolution	Reference
Analogue inputs	By screw terminals 140XTS00200 (to be ordered separately)	8	4…20 mA 1…5 V	12 bits	140ACI03000
		16	0…25/20 mA 4…20 mA	0…25000 points	140ACI04000
		8		16 bits	140AVI03000
		8	Thermal probe Pt, Ni	12 bits + sign	140ARI03010
		8	Thermocouple	16 bits	140ATI03000

Description	Connection	Number of channels	Input signal	Resolution	Reference
Analogue output	By screw terminals 140XTS00200 (to be ordered separately)	4	4…20 mA	12 bits	140ACO02000
		8	0…25/20 mA 4…20 mA	0…25000 points	140ACO13000
		4	0…10 V, ± 10 V 0…5 V, ± 5 V	12 bits	140AVO02000

Description	Connection	Number of inputs	Number of outputs	Input signal	Resolution	Reference
Analogue I/O	By screw terminals 140XTS00200 (to be ordered separately)	4	2	0…20 mA, ± 20 mA, 4…20 mA, 0…10 V, ± 10 V, 0…5 V, ± 5 V, 1…5 V.	Inputs 16 bits, outputs 12 bits	140AMM09000



140HLI34000



140EHC10500

Counter and Special Purpose Modules

Description	Type of inputs for	Counting frequency	Number of channels	Reference
High-speed counter	Incremental encoders	100 kHz	5	140EHC10500
		500 kHz	2	140EHC20200
High-speed inputs with interrupt	Discrete 24 VDC	–	16	140HLI34000
Time tag module	24 - 125 VDC	–	32	140ERT85420

For full product details - refer to the product catalogue.

Programmable Automation Controllers

Modicon Quantum



140CPU65000

140NOE77111

Communication Modules

Description	Speed	Standard services	Transparent Ready	Web server	Reference
Ethernet TCP/IP	10/100 Mbps	TCP/IP (Modbus)	Global Data I/O Scanning FDR server SNMP protocol	Standard services	140CPU65••••
			Global Data I/O Scanning FDR server SNMP protocol	Standard services	140NOE77101
			Global Data I/O Scanning FDR server SNMP protocol	Standard services FactoryCast services	140NOE77111
			SNMP protocol	Standard services FactoryCast services FactoryCast HMI services	140NWM10000



140EIA92100

140ESI06210

Description	Type of Module	Name	Speed	Reference
Sensor bus	AS Interface	In-rack	167Kbps	140EIA92100
Fieldbus	Profibus DP V1	In-rack	9.6K... 12 Mbps	PTQPDPMV1
	Interbus	In-rack	500 Kbps	140NOA62200
	Modbus Plus	Integrated Link	1Mbps	140CPU•••••
		In-rack	1Mbps	140NOM2••••
Other fieldbus protocols supported include: Ethernet I/P, Hart, DNP#, Landis & Gyr				
Serial link	Modbus	Integrated link	19.2 Kbps	140CPU•••••
		In-rack	19.2 Kbps	140NOM2••••
	ASCII	In-rack	19.2 Kbps	140ESI06210
Profibus remote Master (1)				TCSEGPA23F14F
Profibus remote Master conformal coating (1)				TCSEGPA23F14FK

(1) Device is external to the rack and requires Ethernet Communications



TCSEGPA23F14F

EtherNet/IP and Modbus TCP Converged Communication Modules

TSX Quantum Converged Ethernet Module	140NOC77101
TSX Quantum Ethernet DIO Head	140NOC78000
TSX Quantum Ethernet DIO Head conformal coating	140NOC78000C
TSX Quantum Ethernet Control Module	140NOC78100
TSX Quantum Ethernet Control Module conformal coating	140NOC78100C

S908 Fiber Optic Repeater

Remote I/O S908 fibre optic repeater	140NRP95400
Coated RIO S908 fibre optic repeater	140NRP95400C



140NOC77101

Quantum Ethernet IO

Ethernet Head adaptor installed in Quantum Rack	140CRP31200
Ethernet drop adaptor installed in each Ethernet RIO drop	140CRA31200
Ethernet Interlink Cable to be connected between the Ethernet 140NOE771*1 communication module and the 140CRP31200 head adaptor. Length 1m UL version	TCSECN3M3M1S4U

For full product details - refer to the product catalogue.

Programmable Automation Controllers

Modicon Premium



PREMIUM

Modicon Premium

With the new Premium processors in the Unity range, there is no need to worry about restrictions.

- 5 IEC languages as standard: LD, ST, FBD, SFC, IL.
- High performance CPUs with 37 ns per instruction and up to 7 Mb of programme
- High-level multitasking system
- A compact system (very high density modules) particularly at ease in extended architectures (distribution of 16 racks in real time without repeater)
- An extensive catalogue of application-specific modules (safety, reflex processing, counter, position control, motion, weighing, data storage)
- New High End processors
- All Ethernet TCP/IP Transparent Ready services: IO scanning, Global Data, Web server, e-mail messaging, direct access to databases, TCP Open, Network Time Protocol, etc.
- Numerous built-in ports: USB port, Ethernet TCP/IP port with Web server, CANopen or FIP master port, Modbus serial port
- The widest connectivity offer on the market:AS-Interface, Modbus Plus, INTERBUS or PROFIBUS DP



TSXP57104M



TSXP575634M



TSXPSY•••



TSXPSY5520M

Unity Pro Processors

Type of processor	Memory Integrated	Memory PCMCIA	Reference Integrated Ethernet
TSX 5710	96KB data/prog	96KB data/224KB prog.	TSXP571634M
TSX 5720	160KB data/prog	160KB data/768KB prog.	TSXP572634M
TSX 5730	192KB/208KB data/prog.	192KB data/1792KB prog	TSXP573634M
TSX 5740	320/440KB data/prog.	440KB data/2048KB prog.	TSXP574634M
TSX 5750	640/896KB data/prog.	896KB data/7168KB prog.	TSXP575634M
TSX 5760			TSXP576634M
Hot Standby	192KB	768KB	TSXH5724M (1)
	440KB	2048KB	TSXH5744M (1)

(1) Ethernet port dedicated to Hot Standby.

Power Supply Modules

Description	Input Voltage	Output voltage	Total useful power	Format	Reference
Premium	24 VDC	5 VDC/24 VDC	30 W	Standard	TSXPSY1610M
			50 W	Double	TSXPSY3610M
	24/48VDC	5 VDC/24 VDC	50 W	Double	TSXPSY5520M
	110…240 VAC	5 VDC/24 VDC	26 W	Standard	TSXPSY2600M
	100…120	5 VDC/24 VDC	50 W	Double	TSXPSY5500M
	200…240 VAC		77 W	Double	TSXPSY8500M

For full product details - refer to the product catalogue.

Programmable Automation Controllers

Modicon Premium



TSXP57563M

Memory Extension for Unity Pro Processors

Type of PCMCIA card	Technology	Memory size	Reference
Application	SRAM	128 KB	TSXMRPP128K
		224 KB	TSXMRPP224K
		384 KB	TSXMRPP384K
		448 KB	TSXMRPC448K
		768 KB	TSXMRPC768K
		1 MB	TSXMRPC001M
		1.7 MB	TSXMRPC01M7
		2 MB	TSXMRPC002M
		3 MB	TSXMRPC003M
		7 MB	TSXMRPC007M
	Flash EPROM	128 KB	TSXMFPP128K
		224 KB	TSXMFPP224K
		384 KB	TSXMFPP384K
		512 KB	TSXMFPP512K
		1 MB	TSXMFPP001M
		2 MB	TSXMCPC002M
		4 MB	TSXMFPP004M
	Flash EPROM / SRAM	224 KB	TSXMCPC224K
		512 KB	TSXMCPC512K
		2 MB	TSXMCPC002M
Additional data	SRAM	4 MB	TSXMRPF004M
		8 MB	TSXMRPF008M



TSXM•••

Memory Extension for Non Unity Processors

Type of PCMCIA card	Technology	Memory size	Reference
Application	SRAM	32 K words	TSXMRPP128K
		32 K words/128 K words	TSXMRPP384K
		64 K words	TSXMRPP224K
		64 K words/128 K words	TSXMRPP384K
		128 K words	TSXMRPC448K
		128 K words/128 K words	TSXMRPC768K
		256 K words	TSXMRPC001M
		256 K words/640 K words	TSXMRPC01M7
		384 K words/640 K words	TSXMRPC002M
		512 K words	TSXMRPC003M
	Flash EPROM	32 K words	TSXMFPP128K
		32 K words/128 K words	TSXMCPC224K
		64 K words	TSXMFPP224K
		64 K words/128 K words	TSXMCPC224K
		128 K words	TSXMFPP384K
Additional data	SRAM	2048 K words	TSXMRPF004M



TSXRKY6

Racks

Description	For configuration	Reference
Non extendable 1 rack	6 positions	TSXRKY6
	8 positions	TSXRKY8
	12 positions	TSXRKY12
Extendable Multi-rack (16 max.)	4 positions	TSXRKY4EX
	6 positions	TSXRKY6EX
	8 positions	TSXRKY8EX
	12 positions	TSXRKY12EX

Note: TSXTLYEX must be fitted on each TSXRKY*EX end rack.

Connection Accessories

Description	Type	Reference
Bus x daisy chaining cable for extendable racks	•• = length in m	
	•• = 28, 30, 50, 72	TSXCBY••0KT
	Bus Extension Cable 100m Kit	TSXCBY1000KT
Line terminators (Set of 2)		TSXTLYEX
2 Bus x Voltage Suppressor		TSXTVSY100

For full product details - refer to the product catalogue.

Programmable Automation Controllers

Modicon Premium


TSXDEY•••

TSXDEY16FK


TSXDSY•••

TSXDSY64T2K


TSXDSY•••

TSXDSY16T2


TSXAEY1600

TSXAEY810


TSXASY410

TSXASY800

Discrete I/O Modules

Description	Connection	Number of isolated channels	Input voltage	Reference
Discrete inputs	By screw terminals TSXBLY01	8	24 VDC	TSXDEY08D2
		16	24 VDC	TSXDEY16D2
			48 VDC	TSXDEY16D3
			24 VAC	TSXDEY16A2
			48 VAC	TSXDEY16A3
			100…120 VAC	TSXDEY16A4
			200…240 VAC	TSXDEY16A5
	By HE 10 connector	16	24 VDC	TSXDEY16FK
		32	24 VDC	TSXDEY32D2K
			48 VDC	TSXDEY32D3K
		64	24 VDC	TSXDEY64D2K

Description	Connection	Number of protected channels	Output voltage/current	Reference
Discrete outputs Solid state	By screw terminals TSXBLY01	8	24 VDC/0.5 A	TSXDSY08T2
			24 VDC/2 A	TSXDSY08T22
			48 VDC/1 A	TSXDSY08T31
		16	24 VDC/0.5 A	TSXDSY16T2
			48 VDC/0.25 A	TSXDSY16T3
	By HE10 conn.	32	24 VDC/0.1 A	TSXDSY32T2K
		64	24 VDC/0.1 A	TSXDSY64T2K
Relay	By screw terminals TSXBLY01	8	24…48 VDC- 24…240 VAC/5A	TSXDSY08R5A
			24…120 VDC/5 A	TSXDSY08R4D
Triac		8	48…40 VAC/2 A per channel	TSXDSY08S5
		16	48…240 VAC/1 A per channel	TSXDSY16S5

Description	Connection	Number of inputs	Number of protected outputs	Output voltage/current	Reference
Discrete I/O	By HE 10 connector	16 high-speed	12 solid state	24 VDC/0.5 A	TSXDMY28FK
			12 reflex or timed		TSXDMY28RFK

Analogue I/O Modules

Description	Connection	Number of channels	Resolution	Type	Reference
Analogue input High level with common point	By 25-way SUB-D connector	4 high-speed	16 bits	High level input	TSXAEY420
		8	12 bits	High level input	TSXAEY800
		16	12 bits	High level input	TSXAEY1600
High level isolated	By 25-way SUB-D connector	8	16 bits	High level input	TSXAEY810
Low level isolated	By 25-way SUB-D connector	16	16 bits	Multi-range	TSXAEY1614
	By terminal block	4	16 bits	Multi-range	TSXAEY414

Description	Connection	Number of channels	Resolution	Type	Reference
Analogue output Isolated	By screw terminals TSXBLY01	4	11 bits + sign	Output signal	TSXASY410
With common point	By 25-way SUB-D connector	8	13 bits + sign	Output signal	TSXASY800

For full product details - refer to the product catalogue.

Programmable Automation Controllers

Modicon Premium


TSXCTY•••


TSXCCY1128

Counter Modules

Description	Type of inputs for	Counting	Cycle time	Number of channels	Number of axes	Reference
Counter	Sensors Incremental encoders	40 kHz	5 ms	2	–	TSXCTY2A
			10 ms	4	–	TSXCTY4A
Counter/ measurement	Sensors Encoders	500 kHz/ 200 kHz	1 ms	2	–	TSXCTY2C
Electronic cam	Incremental encoders Absolute encoders	500 kHz/ 200 kHz	–	128 cams	1	TSXCCY1128


TSXISPY1••

Weighing Modules

Description	Type of module	Load cell inputs	Outputs	Reference
ISP Plus	supplied uncalibrated	50 measurements (for 1 to 8 load cells)	2 discrete and 1 RS 485 for display unit	TSXISPY101


TSXETY4103


TSXETY1100S

Communication Modules

Description	Speed	Standard services	Transparent ready	Web server	Reference
Ethernet TCP/IP	10 Mbps	Ethway, TCP/IP (Uni-TE, Modbus)	TCP Open	Standard services FactoryCast services	TSXETY110WS
	10/100 Mbps	TCP/IP (Uni-TE, Modbus)	Global Data I/O Scanning	Standard services	TSXP57•6••M TSXP57•823M
			Global Data I/O Scanning	Standard services	TSXETY4103
			Global Data I/O Scanning TCP Open	Standard services FactoryCast services	TSXETY5103
			–	Standard services FactoryCast HMI services	TSXWMY100

Description	Type of module	Name	Speed	Reference
Sensor bus and fieldbuses	AS-Interface	In-rack	167 Kbps	TSXSAY1000
	CANopen	PCMCIA	20 K…1 Mbps	TSXCPP110
	Fipio	Integrated port	1 Mbps	TSXP57•5•M TSXP57•823M
	interbus	In-rack	0.5 Mbps	TSXIBY100
	Profibus DP	In-rack	9.6 K…12 Mbps	TSXPBY100
	Modbus Plus	PCMCIA card	1 Mbps	TSXMBP100
	Fipway	PCMCIA card	1 Mbps	TSXFPP20


TSXSAY100


TSXFPP20

Description	Type of module	Name	Speed	With interface	Reference
Serial links	Uni-Telway	Integrated port	19.2 Kbps	RS 485	TSXP57••••
		In-rack	19.2 Kbps	RS 485	TSXSCY21601
		PCMCIA	1.2...19.2 Kbps	RS 485	TSXSCP114
				RS 232D	TSXSCP111
				20mA CL	TSXSCP112
	Modbus	In-rack	19.2 Kbps	RS 485	TSXSCY11601 TSXSCY21601
		PCMCIA	1.2...19.2 Kbps	RS 485	TSXSCP114
				RS 232D	TSXSCP111
				20mA CL	TSXSCP112
	ASCII	PCMCIA	1.2...19.2 Kbps	RS 485	TSXSCP114
				RS 232D	TSXSCP111
				20mA CL	TSXSCP112
Profibus remote Master (1)					TCSEGPA23F14F
Profibus remote Master conformal coating (1)					TCSEGPA23F14FK

(1) Device is external to the rack and requires Ethernet Communications.


TSXETC101

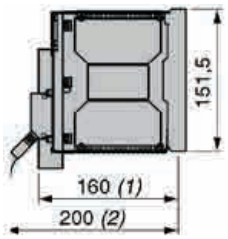
EtherNet/IP and Modbus TCP Converged Communication Modules

Premium Converged	Ethernet Module	TSXETC101

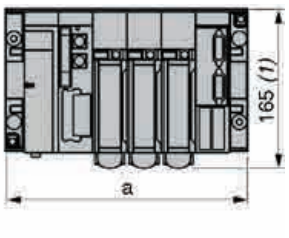
For full product details - refer to the product catalogue.

Dimensions and Mounting

Common side view



Front view: TSX RKY 6EX example

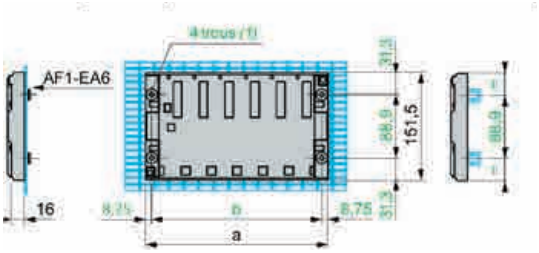


Reference		a
TSXRKY4EX		187.9
TSXRKY6	TSXRKY6EX	261.6
TSXRKY8	TSXRKY8EX	335.3
TSXRKY12	TSXRKY12EX	482.6

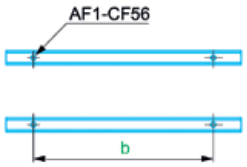
(1) With screw terminal bloc
(2) With HE10 or SUB-D type connectors

Mounting of Racks

on AM1 PA perforated plate



on AM1 ED profiles

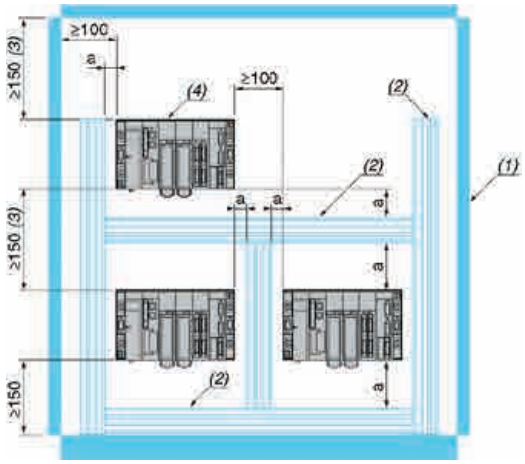


Reference	a	b
TSXRKY4EX	187.9	170.4
TSXRKY6EX	261.6	244.1
TSXRKY8EX	335.3	317.8
TSXRKY12EX	482.6	465.1

(1) For mounting on panel: the diameter of the fixing holes must be sufficient for an M6 screw

Installation Rules

a≥50mm



(1)	Equipment or enclosure
(2)	Cable ducting or clip
(3)	≥ 130mm with TSX FAN ..P fan module
(4)	TSX RKY 4EX/6EX: 1 fan module per rack
	TSX RKY 8EX: 2 fan module per rack
	TSX RKY 12EX: 3 fan module per rack

For more info:

- Catalogue: DIA6ED2151012EN
- Brochure: 998-1228459_GMA-GB

Programmable Automation Controllers

Modicon M580

Modicon M580 is the world's first ePAC – with Ethernet built right into its core. Its gives you the power to design your automation architecture without constraint, by allowing to mix your remote and distributed I/O on the same network. You capitalise on X80 modules to reduce your maintenance and training costs and benefit from the latest technology and standards.

Modicon M580 – ePAC is the controller of choice for our collaborative and integrated automation architecture, PlantStruxure.

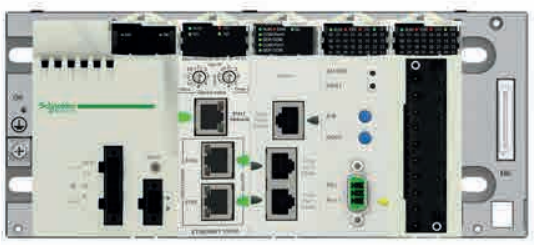
Develop, implement, and operate a process with all the benefits of open networking:

MORE visibility of key process data and events

MORE transparency and consistency of information

MORE capacity for data traffic







Processor Modules

Description	I/O capacity	Memory capacity	Max. network modules	Integrated Comms ports	RIO drops	Local racks (main + extension rack)	Reference
Ethernet Programmable Automation Controllers ePAC	1024 discreet I/O 256 analogue I/O	4MB	2 Ethernet	3 ports DIO	-	4	BMEP581020 BMEP58102H
	2048 discreet I/O 512 analogue I/O	8MB	2 Ethernet	3 ports DIO	-	4	BMEP582020 BMEP582020H
				1 port DIO 2 ports RIO	8	4	BMEP582040 BMEP582040H
	3072 discreet I/O 768 analogue I/O	12MB	3 Ethernet	3 ports DIO	-	8	BMEP583020
				1 port DIO 2 ports RIO	16	8	BMEP583040
	4096 discreet I/O 1024 analogue I/O	16MB	4 Ethernet	3 ports DIO	-	8	BMEP584020
				1 port DIO 2 ports RIO	16	8	BMEP584040
	5120 discreet I/O 1280 analogue I/O	24MB	8 Max 6 Ethernet	1 port DIO 2 ports RIO	31	8	BMEP585040
	6144 discreet I/O 1536 analogue I/O	65MB	8 Max 6 Ethernet	1 port DIO 2 ports RIO	31	8	BMEP586040

Programmable Automation Controllers

Modicon M580


BMEH582040

Processor Modules

Description	I/O capacity	Memory capacity	Max. network modules	Integrated Comms ports	RIO drops	Local racks (main + extension rack)	Reference
Hot Standby		4MB	2 Ethernet	1 port DIO 2 ports RIO 1 port interlink	8	1	BMEH582040
		16MB	4 Ethernet	1 port DIO 2 ports RIO 1 port interlink	16	1	BMEH584040
		65MB	8 Max 6 Ethernet 3 RTU	1 port DIO 2 ports RIO 1 port interlink	31	1	BMEH586040


490NAC0100

HSBY Accessory

Description	Connection	Distance	Reference
Hot Standby Link	RJ45 copper	100m	490NAC0100
	SM fibre-optic	15km	490NZC0201


BMEH582040K

Processor HSBY Kits

Description	I/O capacity	Memory capacity	Max. network modules	Integrated Comms ports	RIO drops	Local racks (main + extension rack)	Reference
Hot Standby Kits		4MB	2 Ethernet	1 port DIO 2 ports RIO 1 port interlink	8	1	BMEH582040
		16MB	4 Ethernet	1 port DIO 2 ports RIO 1 port interlink	16	1	BMEH584040

Each kit contains 2x HSBY CPU + 2x RJ45 SFP dongle

Memory Card Accessory

Description	Connection	Distance	Reference
SD Memory Card	All processors	4GB	BMXRM5004GPF

Racks

Description	Ethernet connectors	X-bus connectors	Reference
Ethernet Racks	4	4	BMEXBP0400
	8	8	BMEXBP0800
	8	12	BMEXBP1200


BMEXBP1002

Racks

Description	Ethernet connectors	X-bus connectors	Reference
Dual Power Supply Racks	4	6	BMEXBP0602
	8	10	BMEXBP1002


BMXCPS4002

Redundant Power Supply

Line Supply	Available Power 3.3V DC	24V DC Rack	24V DC Sensor	Total	Reference
220V AC	15W	40W	-	40W	BMXCPS4002

Communication Modules

Description	Reference
3-port Ethernet Communication Module	BMENOC0301
3-port FactoryCast Ethernet Comm. Module	BMENOC0311
M580 X80 RIO Drop E/IP Perf on Ethernet	BMECRA31210


BMEAHI0812

Analogue HART Modules

Description	Input Signal Range	Resolution	Connection by (to be ordered separately)	Number of Channels	Reference
Isolated HART	4 - 20 mA	15 bits + sign	20-way removable terminal block	8 channels	BMEAHI0812
				4 channels	BMEAHO0412

For more info:

- Catalogue: DIA6ED2110104EN
- Brochure: DIA3ED2070411EN

Programmable Automation Controllers

Modicon M340



The natural choice

Far more than a PLC, our Modicon Programmable Automation Controllers (PACs) are built to suit the needs of the process industry and a wide range of demanding automation applications. Modicon M340 can be used individually but is also the perfect companion of Modicon Premium and Modicon Quantum, increasing the performance, the quality and the profitability of your industrial process, facilities or of your machines.

“All-in-one CPU”

- 7 Kinst/ms
- Multitasking system for guaranteed reflex time
- USB port for programming and HMI
- 2 additional ports as required: Ethernet, CANopen, Modbus.

Comfortable memory

- Programming code up to 70 Kinst.
- Application back-up in supplied memory card
- Additional file storage up to 128 MB with FTP access.



New in rack module with built-in RTU protocols (IEC 101/104,DNP3) for the M340 PLC platform offering a cost effective modular RTU solution

Specific applications

- Integrated RTU solution for Water, O&G, Power and Infrastructures
- Process control (Integrated Process Control library)
- High density analogue I/O modules (New)
- Counting PTO module

And more…

- No battery required
- Extended temperature (-25°C +70°C)
- Protection of SI and OEM’s know-how by the SD card technology



Backup and storage on an SD card



BMXP341000/2000



BMXP342010/2030



BMXP342020

Processor Modules

Description	I/O capacity	Memory Capacity	Max. network modules	Integrated Communication ports	Reference
Standard	512 discrete I/O 128 analogue I/O 20 application - specific channels	2,048 Kb integrated	1 Ethernet TCP/IP network	Modbus serial link	BMXP341000
Performance	1,024 discrete I/O 256 analogue I/O 36 application - specific channels	4,096 Kb integrated	2 Ethernet TCP/IP network	Modbus serial link	BMXP342000
				Modbus serial link Ethernet TCP/IP network	BMXP342020
				Modbus serial link CANopen bus 2	BMXP3420102
				Ethernet network CANopen bus 2	BMXP3420302

Programmable Automation Controllers

Modicon X80


BMXCPS•••0

Power Supply Modules

Line Supply	Available power 3.3 V ⎓	24 V rack ⎓	24 V sensor ⎓	Total	Reference
24 V ⎓ isolated	8.3 W	16.5 W	-	16.5 W	BMXCPS2010
24...48 V ⎓ isolated	15 W	31.2 W	-	31.2 W	BMXCPS3020
100...240 V ∿	8.3 W	16.5 W	10.8	20 W	BMXCPS2000
	15 W	31.2 W	21.6 W	36 W	BMXCPS3500
125VCD ⎓				36W	BMXCPS3540T


BMXNOC0401

Communication Modules

Description	Data rate	Transparent Ready Reference class	Reference
Ethernet TCP/IP network module	10/100 Mbit/s	B30	BMXNOE0100
		C30	BMXNOE0110
Serial communication modules with dual RS485/232 port			BMXNOM0200
AS-I V3 communication module			BMXEIA0100
Modbus Plus Proxy (1)			TCSEGDB23F24FA
Profibus remote Master (1)			TCSEGPA23F14F
Profibus remote Master conformal coating (1)			TCSEGPA23F14FK
Harsh RTU, 1 ETH/1 Serial ports			BMXNOR0200H
M340 Converged Ethernet Module (EtherNet/IP and Modbus TCP)			BMXNOC0401
M340 Ethernet RIO drop standard adaptor digital and analogue I/O			BMXCRA31200
M340 Ethernet RIO drop advance adaptor I/O and counting time stamp and serial communication module			BMXCRA31210
M340 Ethernet RIO drop advance adaptor I/O and counting time stamp and serial communication module conformal coating			BMXCRA31210C

(1) Device is external to the rack and requires Ethernet Communications.


BMXNRP0200

Media Converter Modules

Description	Port information	Reference
Multi-mode fibre optic media converter module	2 channels of FO to Ethernet converter Multi-mode converter, LC connectors Up to 2Km	BMXNRP0200
Single mode fibre optic media converter module	2 channels of FO to Ethernet converter Single-mode converter, LC connectors Up to 15Km	BMXNRP0201

Memory

Description	Use	Processor Capability	Reference
Application Mem card	Supplied with CPU Backup Application Activation of class B10	BMXP341000/2• • •	BMXRMS008MP
File storage & application	Backup Application & 16MB file storage Activation of class B10	BMXP342• • •	BMXRMS008MPF
Standard web pages	Supplied, Class B30 8MB	BMXNOE0100	BMXRWSB000M
User defined web pages	Class C30 16 MB	BMXNOE0101	BMXRWSC016M
Flash memory card	8MB and 128Mb files	All CPU's except BMXP342000	BMXRMS128MPF

Programmable Automation Controllers

Modicon X80


BMXDXI160X


BMXDDX3202K


BMXDDX6402K


BMX DDO 160•2


BMXDRA0805/1605


BMXDDM1602•

Discrete Input Modules

Type of current	Input voltage	Connection by (to be ordered separately)	Channels	Reference
⎓	24 V (positive logic)	20-way removable terminal block	16 isolated inputs	BMXDDI1602
		40-way connector	32 isolated inputs	BMXDDI3202K
		40-way connector (require 2)	64 isolated inputs	BMXDDI6402K
	24 V (negative logic)	20-way removable terminal block	16 isolated inputs	BMXDAI1602
	48 V (positive logic)	20-way removable terminal block	16 isolated inputs	BMXDDI1603
~	24 V	20-way removable terminal block	16 isolated inputs	BMXDAI1602
	48 V	20-way removable terminal block	16 isolated inputs	BMXDAI1603
	100...120 V	20-way removable terminal block	16 isolated inputs	BMXDAI1604
⎓	125 VCD Sink	20-way removable terminal block	16 Inputs	BMXDDI1604T
~	200-240 VAC	20-way removable terminal block	8 Isolated inputs	BMXDAI0805

Discrete Output Modules

Type of current	Output voltage	Connection by (to be ordered separately)	Channels	Reference
⎓ solid state	24 V/0.5 A (positive logic)	20-way removable terminal block	16 protected outputs	BMXDDO1602
	24 V/0.5 A (negative logic)	20-way removable terminal block	16 protected outputs	BMXDDO1612
	24 V/0.1 A (positive logic)	40-way connector	32 protected outputs	BMXDDO3202K
		40-way connector (require 2)	64 isolated outputs	BMXDDO6402K
~ triac	100...240	20-way removable terminal block	16 outputs	BMXDAO1605
⎓ or ~ relay	12...24 V⎓ /3 A, 24...240 V~ /3 A	20-way removable terminal block	8 non-protected outputs	BMXDRA0805
	24 V⎓ /2 A, 240 V~ 2 A	20-way removable terminal block	16 non-protected outputs	BMXDRA1605
⎓	125 VCD 0.3 A	20-way removable terminal block	8 Output Relay	BMXDRA0804T

Discrete Mixed I/O Modules

Number of I/O	Connection by (to be ordered separately)	No. and type of inputs	No. and type of outputs	Reference
16	20-way removable terminal block	8 (positive logic)	8, solid state ⎓ 24 V ⎓ /.05 A	BMXDDM16022
			8, relay 24 V or 24...240 V	BMXDDM16025
32	40-way connector	16 (positive logic)	16, solid state ⎓ 24 V ~ /0,1 A	BMXDDM3202K

Programmable Automation Controllers

Modicon X80



BMXDDM3202K

Counter and Pulse Train Output Modules

Description	No. of Channels	Characteristics	Reference
Up/Down Counting Freq meter & generator axis	2ch / 6 inputs per channel	60 kHz	BMXEHC0200
		Order separately BMXXRSHSC20 connector kit for BMXEHC0200 module	
Up/Down Counting Interfacing	8ch / 2 inputs per channel	10 kHz	BMXEHC0800 (1)
Pulse Train Output module	2	200 kHz	BMXMSP0200
		Order separately BMXFTB2820 removable terminal for BMXMSP0200 module	



BMXFTB•20•0

High speed counter

Description	Connection by (to be ordered separately)	Reference
SSI High speed encoder interface 3 channel	28-way removable terminal block	BMXEAE0300

Time Stamp Module

Number of I/O	Connection by (to be ordered separately)	No. and type of inputs	Reference
16	40-way connector	16 channelS 1ms time stamp 24-125VDC or 12 channels of simple counter inputs	BMXERT1604T



BMXFTW•01

20-way Removable Terminal Block

Description		Terminal block with	Reference
SSI High speed encoder interface 3 channel	28-way removable terminal block		BMXEAE0300
20-way removable terminal blocks	Cage clamp	3mm diameter screws	BMXFTB2000
	Screw clamp	5mm diameter screws	BMXFTB2010
	Spring-type	3mm pin perssed buttons	BMXFTB2020



BMXFCW•03

20-way Removable Terminal Block with Flying Leads

Description	Composition	Length	Reference
Preformed cordsets with one end with flying leads	One 20-way terminal block. One end with colour-coded flying leads	3 metres	BMXFTW301
		5 metres	BMXFTW501
		10 metres	BMXFTW1001

Shielded cordset - 28 ways terminal - one end flying leads

Description	Reference
28-wire preformed shielded FTB cable 3m	BMXFTW308S

*Applicable for modules BMXAMI0800, BMXAMI0810

40-way Connector

Description	No. of sheaths	Composition	Cross-section	Length	Reference
Preformed cordsets for Telefast Advantys ABE 7 sub-bases (2)	2 x 20 wires (32 channels)	One 40-way connector Two HE 10 connector	0.324 mm²	0.5 metres	BMXFCC053
				1 metre	BMXFCC103
				2 metres	BMXFCC203
				3 metres	BMXFCC303
				5 metres	BMXFCC503
				10 metres	BMXFCC1003

Note:
(1) Use 20-way removable terminal block.
(2) Please consult Modicon M340 catalogue for suitable and range of Telefast Advantys sub-bases.

Programmable Automation Controllers

Modicon X80



BM•AM•0••0

Analogue Input Modules

Description	Input Signal Range	Resolution	Connection by (to be ordered separately)	Number of Channels	Reference
Isolated high-level inputs	± 10V, 0...10V, 0...5 V, 1...5V, ±5V 0...20mA, 4...20mA, ±20mA	16 bits	20-way removable terminal block	4 fast channels	BMXAMI0410
Isolated low-level inputs	Temperature probe, thermocouple ±40mV, ±80mV, ±160mV, ±320mV, ±640mV, ±1.28V 0...400Ω 0...4000Ω	15 bits + Sign	40-way connector	4 channels	BMXART0414
				8 channels	BMXART0814
High density isolated high level analogue input	High Level Voltage: +/- 10V, 0-10V, 0-5V, 1-5V, +/-5V High Level current : 0-20mA, 4-20mA, +/- 20 mA	15 Bits + Sign	FTB2820 terminal Block (Spring) *	8 channels	BMXAMI0810
High density non-isolated high level analogue input	High Level Voltage: +/- 10V, 0-10V, 0-5V, 1-5V, +/-5V High Level current : 0-20mA, 4-20mA, +/- 20 mA	15 Bits + Sign	FTB2820 terminal Block (Spring) *	8 channels	BMXAMI0800

* New Cords BMXFTA150 & FTA300 to connect with existing Telefast



BMXART0414

Analogue Output Module

Description	Output Signal Range	Resolution	Connection by (to be ordered separately)	Number of Channels	Reference
Isolated high-level outputs	± 10V, 0...20mA 4...20mA	16 bits	20-way removable terminal block	2 channels	BMXAMO0210
High density non-isolated high level analogue output	0-20mA, 4-20 mA	16 Bits	20-way removable terminal block	4 channels	BMXAMO0410
High level isolated analogue output	0-20mA, 4-20 mA	15 Bits + Sign	20-way removable terminal block	8 channels	BMXAMO0802

* Existing cords BMXFCA150/300/500 to connect with existing Telefast interface ABE7CPA21New Cords BMXFTA150 & FTA300 to connect with existing Telefast



BMXFTB20•0

Mixed Analogue I/O Module

Description	Signal Range	Resolution	Connection by (to be ordered separately)	Number of Channels	Reference
Mixed I/O, non-isolated	± 10V, 0...10V, 0...5V, 1...5V, 0....20mA, 4...20mA	14 bits or 12 bits depending on the range	20-way removable terminal block	I; 4 channels Q:2 channels	BMXAMM0600



BMXFTW•01S

20-way Removable Terminal Blocks for Analogue Modules

Description	For use with modules	Type, composition	Length	Reference
20-way removable terminal blocks	BMXAMI0410 BMXAMO0210 BMXAMM0600	Cage clamp	-	BMXFTB2000
		Screw clamp	-	BMXFTB2010
		Spring type	-	BMXFTB2020
20-way removable terminal blocks with flying leads	BMXAMI0410 BMXAMO0210 BMXAMM0600	One 20-way removable terminal block One end with colour-coded flying leads	3m	BMXFTW301S
			5m	BMXFTW501S
	BMXART0414 BMXART0814	One 40-way connector One end with colour-coded flying leads	3m	BMXFCW301S
			5m	BMXFCW501S



ABE7CPA41•



BMXFCA•01



BMXFCA•01

Connector for Analogue Module

Description	Reference
Screw type connector 28 std. points (check availability)	BMXFTB2800

*Applicable for modules AMI08xx-8 channel analogue, BMXEAE0300-SSI, BMXMSP0200-PTO

Advantys Telefast ABE 7 Pre-wired System

Description	For use with modules	Type, composition	Length	Reference
Advantys Telefast ABE 7 sub-bases	BMXAMI0410	Distribution of isolated power supplies Delivers 4 protected isolated power supplies for 4...20mA inputs Direct connection of 4 inputs	-	ABE7CPA410
	BMXART0414	Connection and provision of cold junction compensation for thermocouples		ABE7CPA412
	BMXART0814	Direct connection of 4 inputs		ABE7CPA412 (1)
Pre-formed cordsets for ABE7CPA41• sub-bases	BMXAMI0410	One 20-way connector and one 25-way SUB-D connector for ABE7CPA410 sub-base	1.5m	BMXFCA150
			3m	BMXFCA300
			5m	BMXFCA500
	BMXART0414 BMXART0814	One 40-way connector and one 25-way SUB-D connector for ABE7CPA412 sub-base	1.5m	BMXFCA152
			3m	BMXFCA302
			5m	BMXFCA502

(1) The BMXART0814 8-channel module requires two ABE7CPA412 sub-bases and two BMXFCA• •2 cordsets.

20 and 28 way Connector for high density analogue modules

Type of Current	For use with modules	Composition	Length	Reference
Preformed cordsets for Telefast Advantys ABE7 sub bases	BMXAMI0800 BMXAMI0810	One 28-way connector	1.5 metres	BMXFTA150
			3 metres	BMXFTA300
	BMXAMO0802	One 20-way connector	1.5 metres	BMXFTA152
			3 metres	BMXFTA302

Programmable Automation Controllers

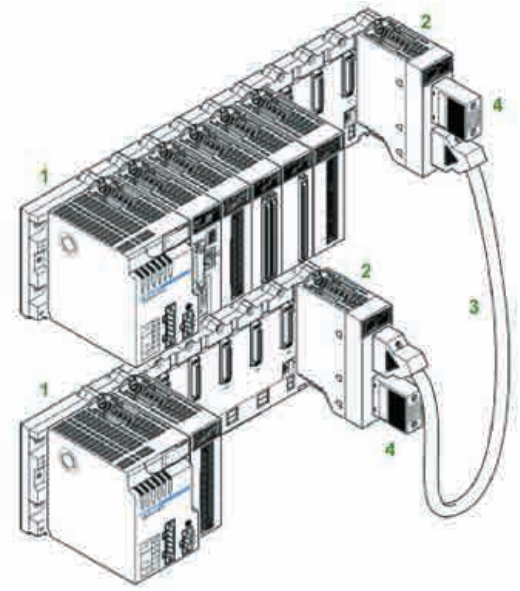
Single-rack Configuration
Modicon X80

Racks

Description	Type of Module to be inserted	No. of Slots	Reference
Racks	BMX CPS power supply, BMX P34 processor, I/O modules and application specific modules (counter, communication)	4	BMXXBP0400
		6	BMXXBP0600
		8	BMXXBP0800
		12	BMXXBP1200

X80 Expansion

Description	Type of Module to be inserted	Reference
Expansion Module	Standard expansion module to inter-connect 2 BMXXBPxx00 racks	BMXXBE1000
Expansion rack Kit	Rack expansion kit including : two expansion modules BMXXBE1000, one 0.8m expansion cable BMXXBC008K, one set of 2 line terminators TSXTTLYEX	BMXXBE2005
Expansion Cables	0.8m expansion rack cable	BMXXBC008K
	1.5m expansion rack cable	BMXXBC015K
	3m expansion rack cable	BMXXBC030K
	5m expansion rack cable	BMXXBC050K
	12m expansion rack cable	BMXXBC120K
Terminator	1 set of 2 line terminators	TSXTLYEX



Each expansion rack requires:
1. Power Supply BMX CPS ...0
2. Expansion Module BMX XBE 1000
3. Expansion Cable BMX XBC ...K
4. Line Terminators TSX TLY EX

Quick wiring adapters for Modicon X80

These connectors simplify the replacement of a legacy Modicon Compact with our latest offer, the M340

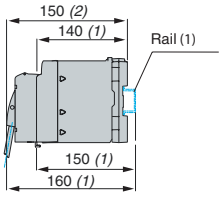
Description	Reference
ADU205 to AMM0600 QWA	990XSM00209
ADU205 to AMI0410 QWA	990XSM00208
ADU206/256/210 to AMI0410 QWA	990XSM00210
ADU206/256/210 to AMM0600 QWA	990XSM00211
Multi Module QWA	990XSM00206
DAP-204 to DRA0804/805 QWA	990XSM00203
DAP209/210 to DAO1605 QWA	990XSM00204
DAP212/252/253 to DDM16025 QWA	990XSM00205
DAP-218 to DAO1605 QWA	990XSM00202
DAP220/250/250C to DDM16022 QWA	990XSM00207
DAP212/252/253 to DDM16025 QWA	990XSM00205
ADU202/252/252C to AMM0210 QWA	990XSM00212
DEP209/210 to DAI1604 QWA	990XSM00213
ADU205 to AMI0410 QWA	990XSM00208
DAU204 to AMO0410 QWA	990XSM00214

Accessories

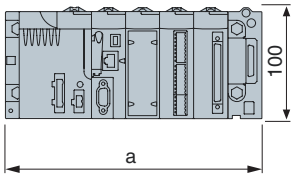
Description	For use with	Reference
Shielding connection kits comprising: ■ a metal bar ■ two sub-bases	BMX XBP 0400 rack	BMXXSP0400
	BMX XBP 0600 rack	BMXXSP0600
	BMX XBP 0800 rack	BMXXSP0800
	BMX XBP 1200 rack	BMXXSP1200
Spring clamping rings (pack of 5)	Cables with 1.5...6mm² cross-section	STBXSP3010
	Cables with 5...11mm² cross-section	STBXSP3020
Protective covers (pack of 5)	Unoccupied slots on BMX XBP • •00 rack	BMXXEM010

Dimensions, mounting - BMX XBP

Common side view



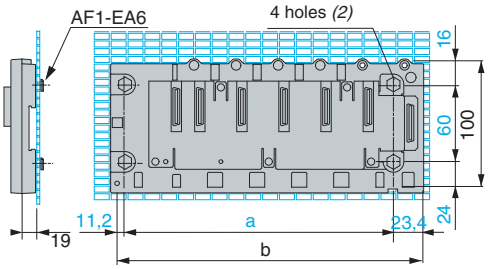
Front view
BMX XBP example



	a
BMX XBP 0400	242.4
BMX XBP 0600	307.6
BMX XBP 0800	372.8
BMX XBP 1200	503.2

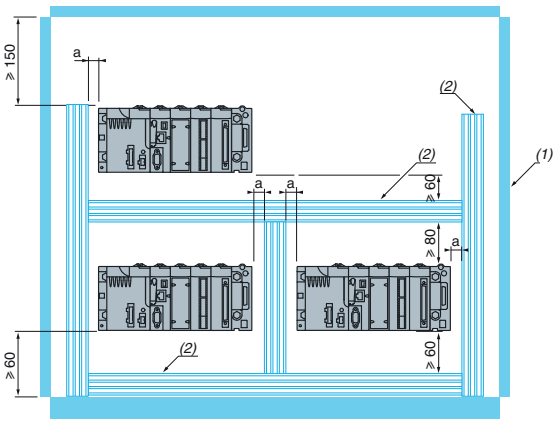
(1) With removable terminal block (cage, screw or spring)
(2) With FCN connector.

Mounting the racks
On AM1 PA and AM3 PA
Pre-slotted Plate



BMX XBP 0400
BMX XBP 0600
BMX XBP 0800
BMX XBP 1200

Installation Rules



a 63mm
(1) Equipment or enclosure
(2) Cable ducting or clip.

Modicon STB Distributed I/O

Advantys



Adaptable to your network. Compatible with most major fieldbus networks: Modbus, Ethernet, CANopen, Devicenet, Profibus, and Interbus.

Modular I/Os: STB

- Allows a total of 32 modules to be connected in a single system, whether in a single island or split between several extensions



STBN••2212

Network Interface Modules

Description		Reference
NIM (1)	Profibus DP	STBNDP2212
	Ethernet/IP	STBNIC2212
	DeviceNet (3)	STBNDN2212
	FIP IO	STBNFP2212
	CANopen	STBNCO2212
	Modbus Plus	STBNMP2212
	Modbus Ethernet TCP/IP (Dual Port)	STBNIP2311



STBPDT3100

Accessories

Description	Type	Reference
NIM Memory Card		STBXMP4440
DeviceNet Connector	Screw	STBXTS1111
Programming Cable		STBXCA4002

Advantys STB Configuration software (1)

Description	Reference
Configuration software, including RS232 programming cable, included in Unity Pro	STBSPU1000

(1) Software bundled with Unity Pro.



STBPDT2100

Power Distribution/Power Supply

Description	Voltage	Type	Reference
Power Distribution Module (2)	24V DC	Kit	STBPDT3100K
	115/230V AC	Kit	STBPDT2100K
Aux logic power supply (2)		Kit	STBCPS2111K

Bus Extension Modules

Description	Type	Reference
End of Segment (2)	Kit	STBXBE1100K
Beginning of Segment (2)	Kit	STBXBE1300K
Bus Extension Cables	0.3m	STBXCA1001
	1.0m	STBXCA1002
	4.5m	STBXCA1003
	10m	STBXCA1004
	15m	STBXCA1006
CanOpen Extension (ATV31, ATV61, ATV71, Tesys U, etc...) (2)	Kit	STBXBE2100K

Note:
(1) NIM's supplied with Power terminals (Screw & Spring), also Termination plate for end of Advanty's Island and STBXMP1100 bus terminator
(2) Units supplied with base and terminals (Screw & Spring).
(3) Order separately STBXTS1111 DeviceNet connector.



STBDDI3610



STBDA15230

Discrete I/O Modules

Description	Connection by	Number of channels	Input voltage	Type	Reference
Discrete inputs (1)		4	24 VDC Basic	Kit	STBDDI3420K
				Kit	STBDDI3425K
		6	24 VDC Basic	Kit	STBDDI3610K
				Kit	STBDDI3615K
	Module supplied with base & screw terminals	16	24 VDC	Kit	STBDDI3725KS
	Module supplied with base & spring terminals	16	24 VDC	Kit	STBDDI3725KC
		2	115 Vac Isolated	Kit	STBDAI5230K
				Kit	STBDAI5260K



STBDDO3230

Description	Connection by	Number of channels	Output voltage	Output current	Type	Reference
Discrete solid state outputs (1)	Module supplied with base & screw terminals	6	24 VDC	0.5 A	Kit	STBDDO3600K
					Kit	STBDDO3605K
		16	24 VDC	0.5 A	Kit	STBDDO3705KS
	Module supplied with base & spring terminals.	16	24 VDC	0.5 A	Kit	STBDDO3705KC



STBDRC3210



STBDRA3290

Description	Connection by	Number of channels	Output voltage	Output current	Type	Reference
Discrete outputs Triac (1)			115 Vac	2 A at 30°C, 1 A at 60°C	Kit	STBDAO5260K
Relay (1)		2 NC/NO	24 VDC or 115…230 VAC	2 A per contact	Kit	STBDRC3210K
		2 NC+NO	24 VDC or 115…230 VAC	7 A per contact	Kit	STBDRA3290K

For full product details - refer to the product catalogue.

Note:
(1) Part numbers ending with K include base and set of screw and spring terminals.


STBAV1255


STBACI1230

Analogue Input Modules

Description	Number of channels	Input signal	Resolution	Type	Reference
Analogue inputs (1)	2	0…20 mA	12 bits	Kit	STBACI1230K
		- 10…+10V	11 bits + sign	Kit	STBAVI1270K
		4…20 mA	10 bits	Kit	STBACI1225K
		RTD, TC	16 bits + sign	Kit	STBART0200K
	4	Multi-range Voltage	15 bits + sign	Kit	STBAVI0300K
		0…20 or 4…20 mA	15 bits + sign	Kit	STBACI0320K
		Hart tolerant, 0…20 or 4…20 mA	15 bits + sign	Kit	STBACI8320K
	8	Multi-range Voltage	15 bits + sign	Kit	STBAVI1400K
		0…20 or 4…20 mA	15 bits + sign	Kit	STBACI1400K


STBAVO1250


STBACO1225

Analogue Input Module

Description	Reference
Analogue two-channel voltage basic input module kit spring clamp and screw connectors and size 1 base	STBAVI1255K

Analogue Output Modules

Description	Number of channels	Output signal	Resolution	Type	Reference
Analogue outputs	2	- 0…+10 V	10 bits	Kit	STBAVO1255K
		- 10…+10 V	9 bits + sign	Kit	STBAVO1265K
		Multi-range voltage	15 bits + sign	Kit	STBAVO0200K
	2	4…20 mA	15 bits + sign	Kit	STBACO0220K
		4…20 mA	10 bits	Kit	STBACO1225K
		0…20 mA	12 bits	Kit	STBACO1210K


STBEPI1245


STBEPI1145

Special

Description	Connection by connector	Number of inputs	Number of outputs	Input voltage	Number of channels	Type	Reference
TeSys model U	4 RJ45	12	8	24 VDC	–	Kit	STBEPI2145K (1)
Counter		4	2	24 VDC	1 counter channel 40 kHz	Kit	STBEHC3020KC (2)

Hart Modules

Description	Reference
HART modem module	STBAHI8321KC
HART tolerant analogue output module	STBACO8220K

For full product details - refer to the product catalogue.

Note:
(1) Part numbers ending with K include base and set of screw and spring connectors.
(2) Counter module supplied with base and spring type connectors.



Modicon Momentum

Momentum for Unity offers a simple, low cost, low risk, hardware migration path to Unity for Momentum customers moving from Concept or Proworx as an Ethernet PLC ideal for small applications.

Modicon Momentum Unity CPU

Description	Serial 232/485	Serial 485	USB Port	I/O Bus and RTC	Ethernet I/O Scanner	Ethernet Global Data	Reference
M1	1	1	1	Y			171CBU78090
M1E	1		1	Y	Y		171CBU98090
	1		1	Y	Y	Y	171CBU98091



170ADI35000

Discrete I/O Modules

Description	Connection	Input voltage	Number of channels	Reference
Multibus discrete inputs	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)	24 VDC	1 x 16 In	170ADI34000
			2 x 16 In	170ADI35000
		120 VAC	2 x 8 In	170ADI54050
		230 VAC	2 x 8 In	170ADI74050

Description	Connection	Output voltage	Number of protected channels	Reference
Multibus discrete outputs Solid state	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)	24 VDC	2 x 8 Out	170ADO34000
			2 x 16 Out	170ADO35000
Triac	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)	120 VAC	2 x 4 Out	170ADO53050
			2 x 8 Out	170ADO54050
		230 VAC	2 x 8 Out	170ADO74050



170ADM39030

Description	Connection	Input voltage	Output voltage	Number of channels	Reference
Multibus discrete I/O Solid state	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)	24 VDC	24 VDC	1 x 16 In / 2 x 8 Out	170ADM35010
					170ADM35015
				1 x 16 In / 2 x 4 Out	170ADM37010
				1 x 16 In / 1 x 8 Out / 1 x 4 Out	170ADM39010
Relay	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)	24 VDC	24…230 VAC/20… 115 VDC	1 x 10 In / 2 x 4 Out	170ADM39030
		24 VDC	24…230 VAC/20… 115 VDC		170ARM37030
Triac	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)	120 VAC	120 VAC	1 x 10 In / 1 x 8 Out	170ADM69051

For full product details - refer to the product catalogue.

I/Os for Distributed Control Architecture



170AAI03000

Analogue I/O Modules

Description	Connection	Number of channels	Input signal	Resolution	Reference
Multibus Analogue inputs	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)	8 isolated	"± 5 V, ± 10 V, ± 20 mA, 1…5 V, 4…20 mA"	14 bits + sign, 15 bits unipolar	170AAI03000
		16 with common point	± 5 V, ± 10 V, 4...20 mA	12 bits + sign	170AAI14000
		4 isolated	Multi-range ± 25 mV, ± 10 mV (1)	15 bits + sign	170AAI52040

Description	Connection	Input signal	Output signal	Number of Channels	Resolution	Reference
Multibus Analogue outputs	By screw terminals 140XTS00200 (to be ordered separately)		± 10 V, 0...20 mA	4 Out	12 bits + sign	170AAO12000
Analogue I/O and multibus discrete I/O	By screw terminals 140XTS00200 (to be ordered separately)		– ± 10 V, 4...20 mA	4 Out	12 bits + sign	170AAO92100
		± 5 V, ± 10 V, ± 20 mA, 1…5 V, 4…20 mA	± 10 V, 4...20 mA	4 In / 2 Out Analogue 4 in / 2 Out Discreet	12...14 bits dep. on signal	170AMM09000
		0…10 V	0…10 V	6 In / 4 Out Analogue 8 In / 8 Out Discreet	14 bits	170ANR12090
		± 10 V	± 10 V	6 In / 4 Out Analogue 8 In / 8 Out Discreet	14 bits	170ANR12091



170AEC92000

Application-specific I/O Modules

Description	Type of inputs for	Operating voltage	Counting frequency	Number of channels	Number of discrete I/O	Reference
High-speed counter	Incremental or absolute encoders	24 VDC	200 kHz	2 independent	2 x 3 inputs/ 2 x 2 outputs	170AEC92000
Discrete I/O with Modbus port	RS 485 Modbus port	120 VAC	–	–	6 inputs/3 outputs	170ADM54080



170AEC92000

Communication Modules

Description	Speed	Manager PLC	Redundancy	Standard services	Reference
Ethernet TCP/IP	10/100 Mbps	–	No	Modbus TCP/IP	170ENT11002
Sensor bus, machine bus and fieldbus Fipio	1 Mbps	Premium	No	–	170FNT11001
Interbus (1)	0.5 Mbps	–	No	–	170INT11000
Profibus DP	9.6 K…12 Mbps	–	No	–	170DNT11000



170DNT11000

Description	Speed	Manager PLC	Redundancy	Standard services	Reference
Other networks Modbus Plus	1 Mbps	Premium or Quantum	No	–	170PNT11020
		Quantum	Yes	–	170PNT16020
DeviceNet	0.5 Mbps	–	No	–	170LNT71000

Connection Accessories

Description	Length	Reference
RS 232C communication cable	1 m	110XCA28201
	3 m	110XCA28202
	6 m	110XCA28203

Electronic HMI

Small Panel



XBTN400

Magelis Text Panel

Data Entry	Display Capacity	Display Type	Supply Voltage	Comms Protocol	Reference
8 keys	2 x 20 Matrix	Back-lid LCD: green	5VDC*	Uni-TE, Modbus	XBTN400
20 keys	4 x 20 Matrix	Back-lid LCD: 3 colours - green / yellow / red	5VDC*	Uni-TE, Modbus	XBTR400
			24VDC	Uni-TE, Modbus	XBTR411

*Note: 5VDC supplied from PLC (M221, M340, and Premium)

Magelis STO and STU

The Magelis STO and STU terminals adapt to your needs by integrating the latest technology innovations to enhance the productivity of your machines:

- 24 VDC power supply
- Supports USB printer, bar code scanner, USB memory stick for application download
- No batteries required meaning no maintenance
- Tool free mounting and maintenance free LED screen



Magelis STO Monochrome Touch Screen (1)

Screen size	Backlighting	Serial Port	Ethernet	USB Ports	Reference
3.4"	LED Monochrome (G/O/R)	1	-	1	HMISTO511
	LED Monochrome (W/P/R)	1	-	1	HMISTO512
	LED Monochrome (G/O/R)	1	-	1	HMISTO501*
Accessories	Spring clips for STO				XBTZ3002
	Screen protector for STO (set of 5)				HMIZS60
	Communication cable for Zelio with HMISTO501				SR2CBL09

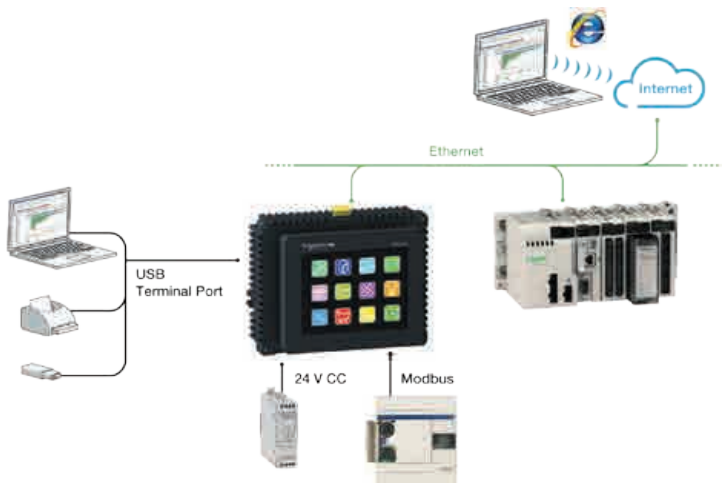
*Note: HMISTO501 ZelioLink STO can only use with Zelio Logic SR2/SR3 (section 3.3)
(1) Magelis STO colour screen available on request. Please contact Schneider Electric for more information.



Magelis STU with 22.5Ø Mounting Touch Screen

Screen size	Backlighting	Serial Port	Ethernet	USB Ports	Reference
3.5"	LED QVGA 65k colours	1	1	2	HMISTU655
5.7"	LED QVGA 65k colours	1	1	2	HMISTU855
Spares	STU 3.5" front module				HMIS65
	STU 5.7" front module				HMIS85
	STU rear module				HMIS5T





HMI Touch Panel

Magelis Optimum Panel

Magelis Optimum Panel HMI GTO

The Magelis Optimum Panel HMI GTO comes with TFT 65k colours for all screen sizes. They have low power consumption with an energy saving LED backlight and complete dimming functionality – suitable for specific applications such as Marine Bridge and Deck installation.



Easy connectivity

- 2 x USB 2.0 for application download, printer, barcode scanner interface and USB accessories
- 4 Gb SD card option allows large log files capability

Easy Installation

- Same cut-out with the legacy Magelis XBTGT range
- Addition al function keys on 3"5 and 7" wide displays allow space saving for more graphics and simultaneous actions on buttons for Safety.



Environment adaptation

- IP65 with operating temperature up to 55°C for hot environment.
- Stainless Steel panels comes with conformal coating, IP66k (NEMA4X) rated with resistance to high-pressure cleaning (conforming to DIN 40050-9): up to 10 bar, suitable for installation in Food & Beverage and Pharmaceutical industry
- Smart environmental covers to protects against chemical and oil substances in machine tools environment.







Magelis Optimum Panel HMI GTO

Screen Size	Application memory	SD card slot	Serial	Ethernet	USB port	Reference
3.5" with 6 function keys	64 MB	No	COM1 (RS232C) COM2 (RS485)	-	2	HMIGTO1300
			COM1 (RS232C/485)	Yes	2	HMIGTO1310
5.7"	64 MB	No	COM1 (RS232C) COM2 (RS485)	-	2	HMIGTO2300
	96 MB	Yes (1)	COM1 (RS232C) COM2 (RS485)	Yes	2	HMIGTO2310
7.0" Wide with 8 function keys	96 MB	Yes (1)	COM1 (RS232C) COM2 (RS485)	Yes	2	HMIGTO3510
7.5"	96 MB	Yes (1)	COM1 (RS232C) COM2 (RS485)	Yes	2	HMIGTO4310
10.4"	96 MB	Yes (1)	COM1 (RS232C) COM2 (RS485)	Yes	2	HMIGTO5310
12.1"	96 MB	Yes (1)	COM1 (RS232C) COM2 (RS485)	Yes	2	HMIGTO6310

(1) Memory expansion possible with 4GB SD card HMI ZSD4G

Magelis HMI GTO Stainless Steel

Screen Size	Application memory	SD card slot	Serial	Ethernet	USB port	Reference
5.7"	96 MB	Yes	COM1 (RS232C) COM2 (RS485)	Yes	2	HMIGTO2315
10.4"	96 MB	Yes	COM1 (RS232C) COM2 (RS485)	Yes	2	HMIGTO5315
12.1"	96 MB	Yes	COM1 (RS232C) COM2 (RS485)	Yes	2	HMIGTO6315

* Magelis Stainless Steel iPC available at page 3.8.38

Environmental Chemical Resistance Cover

Description	Compatible with	Reference
Rubber covers for harsh environments (Improves to IP66 protection)	HMI GTO1300 / HMI GTO1310	HMIZECOV1
	HMI GTO2300 / HMI GTO2310	HMIZECOV2
	HMI GTO3510 / HMI GTO4310	HMIZECOV4
	HMI GTO5310 / HMI GTO5315	HMIZECOV5
	HMI GTO6310 /HMI GTO6315	HMIZECOV6

Universal Touch Panel

Magelis HMI GTU

Magelis Magelis GTU is a high-end HMI range designed with the uniqueness of modularity that allows you to select and assemble the best combination of display unit and processing box as per application requirements.

Magelis Universal panels feature operator efficiency, simplified installation, and flexibility that fit all industry architecture. This range comprises display modules (Smart Display or Wide Display) and box modules (Premium box or Open box).

Modular

- Comes in separate Box and Display module for flexibility
- Easy maintenance with removable storage unit
- Supports USB Accessories i.e USB Tower Light, Biometric switch etc

Harsh Environment

- Up to 60°C operating temperature
- Degree of protection front face IP 66/67 (according to IEC 60529)
- Extended power supply voltage 12…24 V ⎓
- Easy installation with anti-drop and retractable embedded fasteners
- Hazardous Certified IEC Ex tc IIIC T135°C Dc (Zone 22)

Flexible Visualisation & Communication

- 2 x Gigabit Ethernet to separate process network and plant network
- Built in brightness sensor in Smart Display with 100 levels of dimming
- Multi-screen option available on Open box unit where a second Magelis iDisplay or Monitor display can be connected via a DVI link



HMIG3U



HMIG5U



HMIDT642



HMIDT651

Magelis HMI GTU Box Module (not include Display)

Description	Operating System	Storage Units	USB Ports	Communications	Multimedia Interface	Reference
Premium Box	Real Time OS for Vijeo Designer	2 SD Cards	2 Type A 1 mini-B	2 Serial 2 Ethernet	Sound O/P	HMIG3U
Open Box	Windows® 7 Embedded with Vijeo Designer Runtime	2 CFast Cards 1 SD Card	3 Type A 1 mini-B	2 Serial 2 Ethernet	Sound O/P Microphone I/P External Display Output (DVI)	HMIG5U

Magelis HMI GTU Display

Description	Screen Size	Resolution (Pixels)	Colours	Front USB	Reference
Smart Display 4:3 ratio Multi touch resistive Brightness sensor	10.4"	800 x 600	16M	1 Type A + 1 mini-B	HMIDT542
	12.1"	1024 x 768	16M	1 Type A + 1 mini-B	HMIDT642
	15"	1024 x 768	16M	1 Type A + 1 mini-B	HMIDT732
Wide Display 16:9 ratio Single touch resistive	7"	800 x 480	262k	No	HMIDT351
	10"	1280 x 800	262k	No	HMIDT551
	12"	1280 x 800	262k	No	HMIDT651

Programming Cables

Target Model	Application	Type of connector	Reference
XBTN/R/RT (must order 2 parts)	PC to HMI	USB / USB USB / RJ485	XBTZ925 TSXCUSB485
STO/STU XBTGT HMIGTO/GTU	PC to HMI	USB / USB mini	BMXXCAUSBH018

For more info:

Catalogue:
MKTED2121101EN

Magelis XBT GK, GH



Magelis HMIGK graphic terminals share their technical characteristics with Magelis HMIGTOs. Ultra-flexible, they can be configured and controlled to precisely match your requirements. Particularly designed to operate in severe environments, they offer the reassurance of optimum control on keypad as well as touch screen! They are programmed by single HMI software for all Magelis range, Vijeo Designer.

Ultra-flexible user interface

- Touch screen and keypad keys configurable. simultaneously or separately.
- Function keys customisable with labels (Fi keys) or associated screen pictograms (Ri keys).

Ingenious

- Industrial pointer to execute precise commands on-screen.
- Alphanumeric keypad using mobile phone keypad principle.
- Improved key sensitivity for visual machine control.

Communication capacity



- Serial ports, USB ports, Fast Ethernet ports.
- Compatible with USB Accessories i.e Tower Light, Biometric Switch, Illuminated Pushbuttons
- SD Card for project back up and data logging.

Keypad Touch Screen Terminals*

Screen Size	Display Type	Serial Ports	Ethernet	USB Ports	Video Input	Reference
5.7"	Back-lit TFT 65K Colour	2	Yes	2	-	HMIGK2310
10.4"	Back-lit TFT 65K Colour	2	Yes	2	-	HMIGK5310

*HMIGK range replaces the XBTGK range from August 2016



XBTGH Portable Touch Screen with Emergency Stop

The Magelis XBT GH2460 (1) is a portable graphic display terminal with a 5.7” touch screen.

1 serial port, 1 USB, CF card , 1 audio output, comply to IEC60947-5-1 for safety level up to SIL3.

It enables connection on the Ethernet or Modbus network at any point where an XBT ZGJBOX junction box (3) is installed.

The connection between the terminal and junction box is established using an XBT ZGHL3 or XBT ZGHL10 cable (2).

Connection Cable

Type	Description	Reference
5.7" Display Terminal	VGA TFT 65k colour, drop resistance, IP65 body with E-stop	XBTGH2460
Junction Box	Ethernet or Modbus connection	XBTZGJBOX
Connection Cable between Junction Box and Terminal	3m length	XBTZGHL3
	10m length	XBTZGHL10

HMI Accessories

USB Accessories for Magelis HMI



Harmony XVGU Configurable USB Tower Light, powered by Magelis HMI

Unique design

The Harmony XVGU tower light is a unique, one-piece LED tower design, Ø 60 mm, with a built-in USB cable to connect to the Magelis HMI. Fully transparent, the tower is constructed of three colour signalling layers and a buzzer unit.

Easy to configure

- User configuration is done through Vijeo Designer or on Magelis™ HMI screen
- 64 colour combinations based on red, orange, green, and blue thanks to multi-color LEDs
- Flash patterns and buzzer tones is adjustable by through HMI

Simple installation

- Comes with a pre-assembled USB cable that connects directly to the HMI.
- Two mounting techniques are available – 100mm pole mounting, or direct mounting .

XVGU Configurable Tower Lights, IP42

Mounting	Light Source	Colours	Reference
100mm aluminium tube with fixing plate	Multi-color LED	Red/Orange/Green/Blue	XVGU3SHAV
Direct base mount	Multi-color LED	Red/Orange/Green/Blue	XVGU3SWV

Note: Only compatible with HMIGTO, HMIGTU, XBTGT/GK



Biometric USB switch & Illuminated USB push button for Magelis HMI

Innovative USB interface

- Ø22mm button tool free mounting
- IP65 easy to clean surface

Biometric USB Switch

- Enhanced security through user database management with Vijeo Designer
- Up to 200 fingerprints with different level of security profile, replace login password that is easily accessible
- Traceability of operators and actions

Illuminated USB Pushbutton

- Visualization and acknowledge of HMI alarming
- 5 Function keys with LED backlit to display alarm and support acknowledgement by push button
- Can be use as function keys for repetitive actions



Biometric USB Switch

Technology	Supply Voltage	Functions	Reference
Fingerprint recognition	24VDC	Gives access to HMI according to user profile	XB5S5B2L2
Accessories		Translucent protective cover	ZB5SZ70
		Fixing Nut	ZB5SZ71
		Tightening wrench	ZB5AZ905

Note: Not supported by HMI STO models



Illuminated USB Pushbutton

Description	Supply Voltage	Functions	Reference
Pushbutton LED back-lit	5VDC by USB	5 LED backlit pushbutton for alarm & acknowledgement	HMIZRA1
Accessories		Customised overlay	HMIZLYRA1
		Fixing kit	HMIZKITRA1
		Install plate	ZB5AZ905

Note: Only compatible with HMIGTO, HMIGTU, XBTGT/GK

Industrial iPC

Magelis S-Panel PC and Rack PC

Magelis S-Panel PC

- Wide multi-touch screens with IP 66, 7H hardness and anti-scratch front panels
- High Performance iCore CPU without fan
- Smart phone like navigation - tap, scroll, pinch and drag with 5 point multi-touch gestures
- Ready-to-run Schneider Electric and third-party softwares

Magelis Rack PC

- Easily installed in 19" cabinet as a Server or work station
- Hot swappable front trays for easy replacement of storage devices
- Ready to be configured for redundant RAID HDDs with internal Intel software
- Low noise for control room with embedded fan speed control
- Connect to the Magelis iDisplay range for Touch screen display



HMIPSPS752D1801

Magelis Wide Screen iPC

Scren Size	RAM	Communications	Ports	Storage	Operating System	Reference
15" 24VDC 1 mini PCIe slot	8GB	2 Serial 2 Ethernet	2 USB 1 HDMI 1 Audio O/P	80GB SSD*	Windows 8.1 64bit Industry SP1	HMIPSPS752D1801
				-	-	HMIPSP0752D1001
19" 24VDC 1 mini PCIe slot	8GB	2 Serial 2 Ethernet	2 USB 1 HDMI 1 Audio O/P	80GB SSD*	Windows 8.1 64bit Industry SP1	HMIPSPS952D1801
				-	-	HMIPSP0952D1001

* SSD recommended for running Vijeo Citect SCADA. HDD version available on request.

Mini PCI Express Interface Option*

Description	Reference
Mini PCIe with 2 x RS-422/485, isolated external interface with connectors	HMIYMINSL24851
Mini PCIe with 4 x	HMIYMINSL44851
Mini PCIe with 2 x RS-232, isolated external interface with connectors	HMIYMINSL22321
Mini PCIe with 4 x RS-232, external interface with connectors	HMIYMINSL42321
Mini PCIe with 1 x Profibus DP Master, non-volatile RAM, external interface with connectors	HMIYMINPRO1
Mini PCIe with 2 x Can fieldbus, external interface with connectors, drivers for CanOpen and CanBus	HMIYMINCAN1
Mini PCIe with 16DI/8DO external interface with connectors	HMIYMINIO1
Mini PCIe with non-volatile RAM, without external connectors (to use with Vijeo Designer Runtine)	HMIYMINNVRAM1

* Only 1 mini PCIe slot available for each iPC



HMIRSUS3A3701



HMIRSPHXA67P1

Magelis Rack PC

19" mount	Expansion Slot	Operating System	RAM*	Storage Slot and Drives	Power Supply	Reference
2U	1PCI 2PCIe	Windows 7 64-bit (Ultimate MUI)	4GB DDR3	500GB HDD Enterprise 24/7, in first of 4 trays for hot swapping	Single AC 500W	HMIRSUH3A3701
				80GB SSD, in first of 4 trays for hot swapping	Single AC 500W	HMIRSUS3A3701
4U	3PCI 4PCIe	Windows 7 64-bit (Ultimate MUI)	8GB DDR3	500GB HDD Enterprise 24/7 internal + 4 free trays	Single AC 500W	HMIRSPHXA67P1
			4GB DDR3	80GB SSD internal + 4 free trays for hot swapping	Single AC 500W	HMIRSPFXA6701
				80GB SSD internal + 4 free trays for hot swapping	Redundant AC 500W	HMIRSPFXR6702
		Windows Server 2008 standard R2 including 5 clients	8GB ECC	2 x 500GB HDD Enterprise 24/7 + 2 hot swap trays + 1 free internal SATA slot	Redundant AC 500W	HMIRSPSXR6S01
		Windows Server 2012 standard R2 including 5 clients	8GB ECC	2 x 500GB HDD Enterprise 24/7 + 2 hot swap trays + 1 free internal SATA slot	Redundant AC 500W	HMIRSPSXR6T01

Industrial PC

Magelis Box PC & Panel PC

The Magelis Industrial Box PC and Panel PC are available in 3 versions:

- Robust and industrial certified Magelis Panel PC and Box PC for plants and performance machines. Magelis Panel PC have an optional stainless steel bezel for demanding applications.
- Magelis Rack PC for 19" rack enclosures in control rooms and labs.
- Magelis iDisplay as industrial remote monitors for Magelis iPC or third-party PCs.



Certified for automation applications

- cULus, Industrial Control Equipment, IP65 (IP66K for Stainless Steel model)
- cULus Haz Loc Class I Div 2 and ATEX Zone 22 (dust) in explosive atmosphere
- GL and DNV Marine certification available for Marine application and installation depending on the models.
- C-Tick, GOST, CE



Magelis Panel PC 12" Screen

Operating System	RAM	Communications	Ports	Storage	Supply	Reference
Windows 7 64bit	2 GB *expandable to 16GB	2 Serial 2 Ethernet	4 USB 1 DVI 1 Audio O/P	60GB SSD*	24VDC No PCI slot	HMIPUF6D0701
					240VAC No PCI slot	HMIPUF6A0701
	4 GB *expandable to 16GB	2 Serial 2 Ethernet	4 USB 1 DVI 1 Audio O/P	60GB SSD*	240VAC 2 PCI/PCIe slot	HMIPPF6A2701

* SSD recommended for running Vijeo Citect SCADA. HDD version available on request.

Magelis iDisplay

Magelis iDisplay screens are resistive multi-touch industrial remote monitors for Magelis iPC or third-party PCs. It comes with 5m DVI-D and USB cables and up to 60°C operation temperature. The new iDisplay provides ease of installation with VESA or Panel mounting options, and smooth migration with same cut-out and screen definition with legacy Magelis iDisplay terminals.

Magelis iDisplay

Description	Screen Size	Power Supply	Video Interface	Reference
IP66f, 67f XGA resisitve multitouch panel	12"	24VDC	DVI	HMIDID64DTD1
	15"	24VDC	DVI	HMIDID73DTD1

Industrial PC

Magelis BOX PC and Display



Magelis HMID for BOX PC HMIBM

Image
Mounted on the back of display


Magelis HMIB BOX PC

Magelis Performance Modular BOX PC


HMIBMPSI74D2801

Processor	Communications	RAM	PCI Slot	Storage	Operating System	Reference
iCore i7 4650U 1.7GHz Fanless	2 Ethernet 1 RS232/432/485 isolated 4 x USB 2 x Display port	8GB DDR3	2 mini PCIe 2 optional interface	80GB SSD*	Windows 8.1 64bit Industry SP1	HMIBMPSI74D2801
			2 mini PCIe 2 optional interface 1 x PCI 1 x PCIex4	80GB SSD*	Windows 8.1 64bit Industry SP1	HMIBMPSI74D4801
				-	-	HMIBMP0I74D4001
		16GB DDR3	2 mini PCIe 2 optional interface	-	-	HMIBMP0I74D200A**

* SSD recommended for running Vijeo Citect SCADA. HDD version available on request.
**Conformal Coated

Touch Screen Displays for Magelis Performance Modular BOX PC
(Only to be used with HMIBMxx)


HMIDM7521

Type	Touch Function	Screen Size	Reference
IP66 front XGA 4:3 ratio	Single Touch Resistive	15"	HMIDM7421
IP66 front High Definition Flat Widescreen XGA 16:9 ratio	Multitouch Anti-scratch Capacitive 7H Hardness	15"Wide	HMIDM7521
		19"Wide	HMIDM9521
		22"Wide	HMIDMA521

* SSD recommended for running Vijeo Citect SCADA. HDD version available on request.

Magelis Enclosed Widescreen 19" iPC with VESA Mounting


HMIPEPS952D1801

Processor	Communications	RAM	PCI Slot	Storage	Operating System	Reference
Core i3 4010U 1.7GHz Fanless	2 Ethernet 1 RS232 1 x USB 1 x HDMI (all in M12 connector)	8GB DDR3	1 mini PCIe	80GB SSD	Windows 8.1 64bit Industry SP1	HMIPEPS952D1801
			1 mini PCIe	-	-	HMIPEP0952D1001

Accessories for BOX PCs

Description	Reference
Slide-in adaptor for mounting 2.5" storage slot for HDD/SSD in HMIBM	HMIYMADSDD1
Modular AC power adaptor for HMIBM	HMIYMMAC1
Connectors M12 for HMIPEP	HMIYEM1211
DP to DVI cable 3m	HMIYCABDPDVI31
DP to DVI adaptor (to enable HMIDP to be used as a standard Display)	HMIYADDPDVI11
Interface 1xGPRS module for iPC	HMIYMINGPRS1
Maintenance kit for HMIBM + HMIDIM	HMIYBMKTBM1

Note:
(1) All Hardware runs on 24VDC Supply, for AC external power adapter, order HMIYPSPMAC1
(2) Windows 8.1 requires customer activation / registration
(3) For iPCs without Storage Disk and Operating Systems, customer can purchase Storage Disk from the Accessories but Operating System needs to be sourced externally

HMI Software

Vijeo Designer Software

Vijeo Designer for Magelis Touchscreen Terminal HMISTO, HMISTU, HMIGTO, HMIGTU and iPC

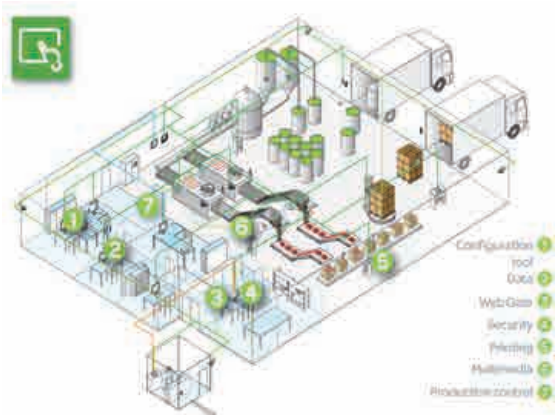
With its ability to adapt to your exact display and control requirements, Vijeo Designer handles all your HMI applications quickly and easily across the range, from the smallest application Magelis STO terminals to the most complex applications for Magelis iPC with 19" iDisplay.

Flexibles

- View, record, playback live video in MP4
- Supports JPEG, Word, Excel, PPT and PDF
- Multiprotocol
- Multilingual - 15 languages simultaneously!

Open

- Remote access with Web Gate
- Local and remote data storage (CF card, SQL database)
- Share up to 300 variables between terminals



Innovative

- Intelligent Data Service let you trace the key values of the process and of the operator's actions
- Compliant with the traceability requirements of the FDA 21 CFR part 11

Smart

- Printing of reports, screenshots, alarms.
- Easy navigation with image library, objects and PC simulation
- Security user profile management



Vijeo Designer for Magelis Touch Terminals

Description	License Type	No. of Stations	Reference
Vijeo Designer	Single (no cable)	1	VJDSNDTGSV••M
	Single (with USB cable)	1	VJDSUDTGAV••M
	Group (no cable)	3 (without cable)	VJDGNDTGSV••M
	Team (no cable)	10 (without cable)	VJDTNDTGSV••M
	Facility (no cable)	Unlimited number of stations on one site	VJDFNDTGSV••M

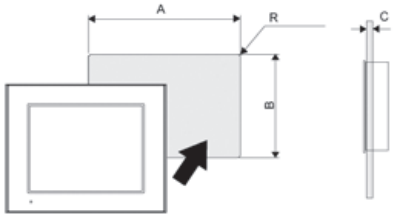
Note: Please refer to Schneider Electric for latest Vijeo Designer version number. Magelis HMI can now be accessed from mobile devices, Vijeo Design'Air App is available for download in iTunes and Google Play stores.

For more info:

Catalogue:
MKTED2121101EN

Dimensions

Dimensions for Magelis HMI and iPC



Magelis HMI Model		A	B	C	R
HMIGTU	HMIGTO	mm	mm	mm	mm
	1300/1310	118.5	92.5	1.6...5	3 max.
XBTGT 2930	2300/2310	156	123.5	1.6...5	3 max.
	2315	195	162.5	1.6...5	3 max.
	3510	204.5	159.5	1.6...5	3 max.
	4310	204.5	159.5	1.6...5	3 max.
HMIDT542	5310	259	201	1.6...5	3 max.
	5315	298	240	1.6...5	3 max.
HMIDT642	6310	301.5	227.5	1.6...5	3 max.
	6315	340.5	266.5	1.6...5	3 max.
HMIDT742		383.5	282.5	1.6…10	3 max.

HMI with Keypad	A	B	C	R
	mm	mm	mm	mm
HMIGK2310	209	243	1.6 ... 10	3 max.
HMIGK5310	285	309	1.6 ...10	3 max.

Magelis iPC	A	B	C
15" screen	383.5	283	1.6...10
19" screen	459.5	360	1.6...10
15" wide screen	412.4	261.7	2...6
19" wide screen	479.3	300.3	2...6

Magelis Small Panel	A	B	C	R
	mm	mm	mm	mm
XBTN400	119.6	63	1.5 …6	1.5
XBTR400	119.4	105.2	1.5 …6	1.5
XBTR411	119.6	105.2	1.5 …6	1.5
XBTRT500	119.6	105.2	1.5 …6	1.5
HMISTO	105	66	1.5 …6	3 max.

Human-Machine Interface/Web Enabled
FactoryCast Embedded Web Servers

FactoryCast

Remote diagnostic functions using simple Internet browser:

- Secure access to the diagnostics system and application
- Numerical or graphical display and adjustment of data
- Open to customisation and creation of Web pages for diagnostics suited to your needs.



TSXETY•••

FactoryCast Web Server Modules

Automation platform	Data rate	Ethernet services			FactoryCast HMI web services	Reference
		Modbus TCP/IP Protocol	Global Data	I/O Scanning		
M340	10/100 Mbit/s	Yes	Yes	Yes	Yes	BMXNOE0110
Premium	10/100 Mbit/s	Yes	Yes	Yes	–	TSXETY5103
			–	–	Yes	TSXWMY100
Quantum	10/100 Mbit/s	Yes	Yes	Yes	–	140NOE77111
			–	–	Yes	140NWM10000

Includes Standard web and FactoryCast web services

FactoryCast Gateway

FactoryCast Gateway combines the benefits of the Internet technologies and Telemecanique values. It provides an "all in one" cost effective solution by integrating in a compact device all the required network interfaces, a RAS/Router function and a customisable Web server.

Transparent Gateway

Connect your Modbus or Uni-Telway devices to the TCP/IP infrastructure and make them accessed directly from information system applications.

RAS - Remote access

Monitor and program your Modbus or Uni-Telway devices remotely by modem connection (RTC, GSM, Radio modem...) or by intranet (VPN) and internet, all in total security.

Configurable web portal

Benefit from a fully customisable Web interface and Email notification for an advanced remote control, remote diagnostic and maintenance.



TSXETG3010



TSXETG3000

FactoryCast Gateway

Description	Model Type	Reference
FactoryCast Gateway Module	Ethernet TCP/IP gateway to Modbus, modem to Modbus and modem to Ethernet TCP/IP with IP routing	TSXETG1000
	Ethernet TCP/IP gateway to Uni-Telway, modem to Uni-Telway and modem to Ethernet TCP/IP with IP routing	TSXETG1010
Single slot (no modem)		TSXETG3000
Double slot with embedded PSTN modem		TSXETG3010
Double slot with embedded GSM modem		TSXETG3021

For full product details - refer to the product catalogue.

ConneXium™ Network Manager

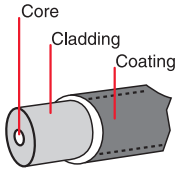
Description	Number of Nodes	Reference
Licensed nodes for ConneXium Network Manager	25 node	TCSEAZ03P002FM2
	100 node	TCSEAZ03P010FM2
	500 node	TCSEAZ03P050FM2
	1000 node	TCSEAZ03P100FM2
	4000 node	TCSEAZ03P400FM2
Upgrade licenses for ConneXium Network Manager	25 to 100 node	TCSEAZ03P012UM2
	25 to 500 node	TCSEAZ03P052UM2
	25 to 1000 node	TCSEAZ03P102UM2
	25 to 4000 node	TCSEAZ03P402UM2
	100 to 500 node	TCSEAZ03P051UM2
	100 to 1000 node	TCSEAZ03P101UM2
	100 to 4000 node	TCSEAZ03P401UM2
	500 to 1000 node	TCSEAZ03P105UM2
	500 to 4000 node	TCSEAZ03P405UM2
	1000 to 4000 node	TCSEAZ03P410UM2



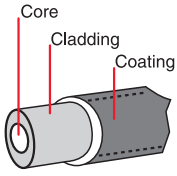
TCSESM083F23F0

ConneXium™ - Ethernet Switches

Ports	Description	Reference
ConneXium Lite Managed Switch – 4TX		TCSESL043F23F0
Managed Switches		
4	4 10/100 BASE-TX ports	TCSESM043F23F0
	3 10/100 BASE-TX 1 100 BASE-FX multi-mode fibre ports	TCSESM043F1CU0
	2 10/100 BASE-TX 2 100 BASE-FX multi-mode fibre ports	TCSESM043F2CU0
	3 10/100 BASE-TX 1 100 BASE-FX single-mode fibre ports	TCSESM043F1CS0
	2 10/100 BASE-TX 2 100 BASE-FX single-mode fibre ports	TCSESM043F2CS0
8	8 10/100 BASE-TX ports	TCSESM083F23F0
	7 10/100 BASE-TX 1 100 BASE-FX multi-mode fibre ports	TCSESM083F1CU0
	7 10/100 BASE-TX 1 100 BASE-FX single-mode fibre ports	TCSESM083F1CS0
	6 10/100 BASE-TX 2 100 BASE-FX single-mode fibre ports	TCSESM083F2CS0
	6 10/100 BASE-TX 1 100 BASE-FX single-mode and 1 100 BASE-FX multi-mode fibre ports	TCSESM083F2CX0
16	16 10/100 BASE-TX ports	TCSESM163F23F0
	14 10/100 BASE-TX 2 100 BASE-FX multi-mode fibre ports	TCSESM163F2CU0
24	22 10/100 BASE-TX 2 100 BASE-FX multi-mode fibre ports	TCSESM243F2CU0
Single mode SC dual connectors can drive up to 15km Multi mode use SC dual connectors can drive up to 2 km between drops		
Gigabit Managed Switches		
10	8 10/100 BASE-TX ports 2 10/100/1000 BASE-TX ports	TCSESM103F23G0
	8 10/100 BASE TX ports 2 1000 SFP socket Use any of the following for either socket:	TCSESM103F2LG0
SFP Modules	Fibre module SFP-SX/LC up to 550m	TCSEAAF1LFU00
	Fibre module SFP-LX/LC Multi up to 550m or Single mode up to 20km	TCSEAAF1LFS00
	Fibre module SFP-LH/LC up to 72km.	TCSEAAF1LFH00
Any two ports either copper, fibre or both of any ConneXium managed switch can be used to build a redundant ring structure. All 10/100 BASE TX or 10/100/1000 BASE TX use RJ45 copper connectors.		
Unmanaged Switches		
8	ConneXium 8TX 10/100 Unmanaged Switch	499NES18100



Single-Mode Fibre (SM)



Multi-Mode Fibre (MM)

ConneXium™ Low cost Unmanaged Switch

Description	Reference
ConneXium 3TX Unmanaged Switch	TCSESU033FN0
ConneXium 5TX Unmanaged Switch	TCSESU053FN0
ConneXium 4TX/1FXMM Unmanaged Switch	TCSESU043F1N0
ConneXium 8TX Unmanaged Switch	TCSESU083FN0
ConneXium Unmanaged Switch – 8TX/2FX- MM	TCSESU103F2CU0
ConneXium Unmanaged Switch – 8TX/2FX- SM	TCSESU103F2CS0

ConneXium™ Dual Redundant Switch (DRS)

Description	Reference
ConneXium Extended Switch 8TX (DRS)	TCSESM083F23F1
ConneXium Extended Switch 6TX/2FX-MM (DRS)	TCSESM063F2CU1
ConneXium Extended Switch 6TX/2FX-SM (DRS)	TCSESM063F2CS1

Basic Managed Switch

Description	Reference
ConneXium Basic Managed Switch 8TX	TCSESB083F23F0
Basic Managed Switch 6TX/2FX - Multi Mode	TCSESB083F2CU0
Basic Managed Switch 6TX/3FX - Multi Mode	TCSESB093F2CU0
Managed Switch 14TX/2FX - Single Mode	TCSESM163F2CS0
Basic Switch Memory Backup Adapter	TCSEAM0200

Ethernet Infrastructure Products

Bluetooth Interface

Description	Reference
Universal Bluetooth Interface (Premium and M340)	TCSWAAC13FB



TCSEFEC23F3F20

ConneXium Industrial Ethernet Firewalls

Description	Firewall Connectivity	Reference
Connexium industrial firewall	ConneXium Industrial Ethernet Firewall with 2TX Copper cable ports for the Internal and External Network connections - TX/TX	TCSEFEC23F3F20
	ConneXium Industrial Ethernet Firewall with 1-TX Copper cable port for the Internal Network connection and 1- FX-Multi Mode Fiber Optic port for the External Network connections - TX/MM	TCSEFEC23FCF20
	ConneXium Industrial Ethernet Firewall with 1- FX-Multi Mode Fiber Optic port for the Internal Network connection and 1-TX Copper cable port for the External Network connections - MM/TX	TCSEFEC2CF3F20
Connexium Tofino firewall	ConneXium Tofino Industrial Ethernet Firewall with 2TX Copper cable ports for the Internal and External Network connections.	TCSEFEA23F3F22
	ConneXium Tofino OPC-LSM, which is the OPC Enforcer deep packet engine	TCSEFM0000
	ConneXium Tofino EIP-LSM, which is the EtherNet/IP Enforcer deep packet engine	TCSEFM0001

Connexium Ethernet Cables with Rugged Connectors

Description	Length/Quantity	Category	Connectors	Reference
Ethernet cable	1m	5E	2 RJ45	TCSECU3M3M1S4
	2m	5E	2 RJ45	TCSECU3M3M2S4
	3m	5E	2 RJ45	TCSECU3M3M3S4
	5m	5E	2 RJ45	TCSECU3M3M5S4
	10m	5E	2 RJ45	TCSECU3M3M10S4
Shield ethernet communication cable	300m	5E	4 pair conductors	TCSECU300R2
Rugged RJ 45 connectors	2 per pack	field assembled	8 conductor	TCSEK3MR2
	10 per pack	field assembled	8 conductor	TCSEK3MR10

Training Services

Process Management Systems and Machine Control



Today, automation expertise is usually gained over years of experience on the job, with a significant lag time from hire date to useful productivity. However, acquiring the necessary technical skills through training ensures self-sufficiency; with many flow-on benefits, including: reduced downtime, increased safety and productivity, and improved bottom line.

Improving and educating our future workforce is everyone's responsibility. At Schneider Electric we are committed to providing you with comprehensive knowledge of our products through high quality, interactive education that can immediately be applied in your workplace or institution.

Schneider Electric's instructor-led courses are designed to empower your engineering and technical workforce with new skills. Automation Training courses and programs provide hands-on experience, leaving students feeling confident enough to design and configure their own systems and applications using Schneider Electric products and solutions.

Schneider Electric's educational methodology has been proven effective through thousands of hours of instruction. Feedback received from customers confirms our success and drives continuous development of our training curriculum. With a team of qualified in-house trainers in each state, backed up by technical and solution specialists with domain knowledge expertise, Schneider Electric's educational program delivers the training solutions required in your business.

Our training services include on-line, standard in-class and customised training sessions. Schneider Electric courses are designed to teach fundamental, theoretical and practical knowledge about our products, systems and the application of technology. There is a strong emphasis on increasing your productivity and helping you better manage your lifecycle costs, enabling you to maintain your competitive advantage.

We offer a broad curriculum that can be tailored to meet your specific requirements. This allows us to adapt training according to your existing projects and create manuals specific to your needs. Whether its alignment with your shift requirements, expansion projects or legacy migration strategies, Schneider Electric has the educational services you require.

For more information on Automation Training courses or schedules call 1300 369 233 or visit:
www.schneider-electric.com.au/training

Networking and Communication Courses

Name	Description	Duration	Part number
CitectSCADA/Vijeo Citect Architecture and Redundancy	Recommended for engineers, technical staff, network administrators or designers wanting to learn how to implement the networking features in SCADA. Including clustering, file servers, redundancy, the web and global clients.	2 days	SAUTR1109
Industrial Communication with Unity Pro	Suitable for Project, Design, Commissioning or Maintenance Engineers or anyone who needs to implement industrial communication networks.	3 days	SAUTR1102
Introduction to Instrumentation and Process Control (HART)	Suitable for technicians, electricians and electrical, mechanical and process engineers involved in plant maintenance.	3 days	SAUTR1104
Introduction to Ethernet and TCP/IP	This course introduces computer networking cabling systems, ethernet protocols and how they are implemented, and TCP/IP addressing schemes to demonstrate how every computer on a network has a unique address.	1 day	SAUTR1111
Principles of Industrial Networking	Using the Introductory course as its first day, this course takes a broad look at the major industrial communications protocols and investigates resiliency & multi-network routing, network security and auditing plus an introduction to troubleshooting using freely available diagnostic tools.	2 days	SAUTR1112
Configuration of Connexium Switches	This course guides students through the simple configuration of multiple Schneider Electric Connexium switches units from a single management computer. Students will learn how to manage switching, to configure VLANs, to create time services and to configure security and redundancy.	2 days	SAUTR1113

* Prices are for scheduled metro courses only. Custom and regional courses P.O.A.

Process Management Systems and Machine Control

Software and Visualisation Courses

Name	Description	Duration	Part number
Ampla Performance	Recommended for Ampla users who want to learn the basic concepts and methods involved in configuring and using Ampla Studio and Production Analyst to model performance and energy consumption.	2 days	SAUTR1208
Programming with Cicode	Suitable for programmers and non programmers who want to become familiar the Cicode language, CitectSCADA System Integrators and Designers.	2 days	SAUTR1203
CitectHistorian/Vijeo Historian Configuration	Suitable for people who want detailed knowledge on how to set up and use CitectHistorian/Vijeo Historian.	3 days	SAUTR1207
CitectSCADA/Vijeo Citect Configuration	Suitable for CitectSCADA users, including engineering staff, maintenance staff and plant supervisors requiring familiarisation with CitectSCADA project development techniques.	3 days	SAUTR1201
CitectSCADA/Vijeo Citect Customisation and Design	Suitable for key SCADA site personnel, Integrators and Designers wanting to save time on multiple projects and learn more advanced features of SCADA.	2 days	SAUTR1214
CitectSCADA/Vijeo Citect Upgrade	Suitable for those who need to know about new product features in the latest version of CitectSCADA including technical users, System Integrators and Designers.	1 day	SAUTR1213
ClearSCADA Configuration	Suitable for technicians, electricians and electrical, mechanical and process engineers involved in Telemetry based SCADA Systems.	4 Days	SAUTR1216
MDT Autosave Administrator Training	Suitable for system administrators responsible for the implementation and management of MDT AutoSave.	2 days	SAUTR1210
Vijeo Designer Software(HMI) - An Introduction to Human Machine Interface	Suitable for trades personnel, technicians and engineers who require a working knowledge of the Vijeo Designer programming environment.	1 day	SAUTR1401
Vijeo Designer Software(HMI) - Advanced Human Machine Interface	Suitable for engineers and technicians who require an in-depth knowledge of the Vijeo Designer programming environment especially advanced functions.	1 day	SAUTR1405

Safety and System Tools Courses

Name	Description	Duration	Part number
Machine Safety Essentials	Suitable for systems integrators, OEMs or anyone who needs to design, implement or maintain safety in and around plant and machinery.	2 days	SAUTR1011
Quantum SIL3 Safety Implementation	Suitable for end-users or system integrator project technical teams responsible for implementing Quantum SIL3 projects.	2 days	SAUTR1010

* Prices are for scheduled metro courses only. Custom and regional courses P.O.A.

Process Management Systems and Machine Control

Control Courses

Name	Description	Duration	Part number
Advantys Configurator STB Distributed I/O	Suitable for Engineers and Technical service engineers maintaining Advantys on-site, and Automation Technical support engineers supporting Advantys STB & PLCs.	1 day	SAUTR1404
Altivar 61/71 IMC Applications	Suitable for Systems Integrators, OEMs or anyone who needs to implement advanced command and control of one or more VSDs for an application.	2 days	SAUTR1403
Low End Control (LEC) Configuration - Twido and Zelio	Suitable for non-advanced users of PLCs, including trades personnel, technicians, electricians and plant engineers who require a working knowledge of PLCs.	3 days	SAUTR1407
Pratical Aspects to Motor Control and Drives	Suitable for Engineering and Maintenance personnel and all students wishing to enrol in the Controller Inside (CI) course.	2 days	SAUTR1009
SoMachine Configuration	Suitable for OEM engineers and technicians responsible for configuring and programming automation equipment using the SoMachine software.	4 days	SAUTR1406
Unity Pro Programming (including hardware)	Suitable for project/design engineers who design, configure and install Modicon Quantum, Premium or M340 PLC hardware and write commission and document Unity Pro user application programs.	4 days	SAUTR1003

Note: Training courses for control software including Concept, PL7 and 984LL are available on demand. Most PLCs programmed with these control softwares can be modernised to a PlantStruxure platform, please contact your local Schneider Electric office to help assess your training and modernisation requirements.

Telemetry Courses

Name	Description	Duration	Part number
Complete Trio Radio Training	This is the complete hands on Trio Radio Training, The content covered is Basic Radio Communications and design including both Licensed and License Free bands on both serial and ethernet technologies.	3 Days	SAUTR1116
Trio Licensed Radio Training	This training course is the common first day Basic Radio Communications and Design with the second day of Licensed radio frequencies using both serial and ethernet technologies. (Day 1 & 2 of complete course).	2 Days	SAUTR1118
Trio License-Free Radio Training	This training course is the common first day Basic Radio Communications and Design with the third day of License Free radio frequencies using both serial and ethernet technologies. (Day 1 & 3 of complete course).	2 Days	SAUTR1119
ClearSCADA Configuration	Suitable for technicians, electricians and electrical, mechanical and process engineers involved in Telemetry based SCADA Systems.	4 Days	SAUTR1216
E series RTU Configuration & Programming	Suitable for technicians, electricians and electrical, mechanical and process engineers involved in Telemetry using RTU Systems with ISaGRAF.	3 Days	SAUTR1016
Understanding DNP3 Protocol	Suitable for Project, Design, Commissioning or Maintenance Engineers or anyone who needs to implement DNP3 protocol.	2 Days	SAUTR1115
Crystal Reports for ClearSCADA	Designed to provide an introduction to the creation and configuration of Crystal Reports and the interaction between the Crystal Reports development environment and ClearSCADA software.	2 Days	SAUTR1217

* Prices are for scheduled metro courses only. Custom and regional courses P.O.A.





Full-color HMI.

Full of possibilities.



3.8

Magelis STO HMIs

Using a compact, entry-level HMI for simple machines doesn't mean you have to compromise on display quality. Magelis™ STO HMIs have a high-resolution color touch screen and can be deployed in a wide range of applications.
A revolutionary adapter frame makes replacing legacy HMIs quick and easy.

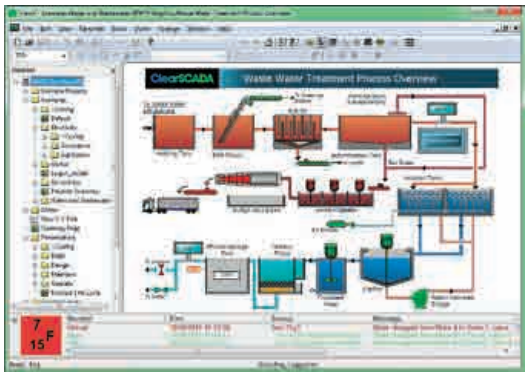
schneider-electric.com/hmi

Life Is On | Schneider Electric

Automation & Control

Telemetry & Remote SCADA

Software



StruxureWare SCADA Expert ClearSCADA

Open, reliable supervisory control and data acquisition software for remote management of critical infrastructure Page 3.9.1

Remote Terminal Units (RTU)



SCADAPack Smart RTU

Water/Waste Water Solutions Page 3.9.2
Oil & Gas Applications Page 3.9.3

Wireless Instrumentation



Accutech

Self-powered Wireless Instrumentation Page 3.9.4
Range Overview Page 3.9.5

Wireless Communication



Trio Data Radios

Wireless Communication for Telemetry and Remote SCADA Solutions Page 3.9.6
Product Selection Guide Page 3.9.8

Telemetry & Remote SCADA

Make the Most of Your Remote Assets

Telemetry and SCADA systems allow you to monitor and control field operations across a widely dispersed infrastructure. From simple reservoir level measurement to well pad optimisation integrated with ERP, these systems are constantly challenged by emerging regulations, rapid technology change and industrial trends.

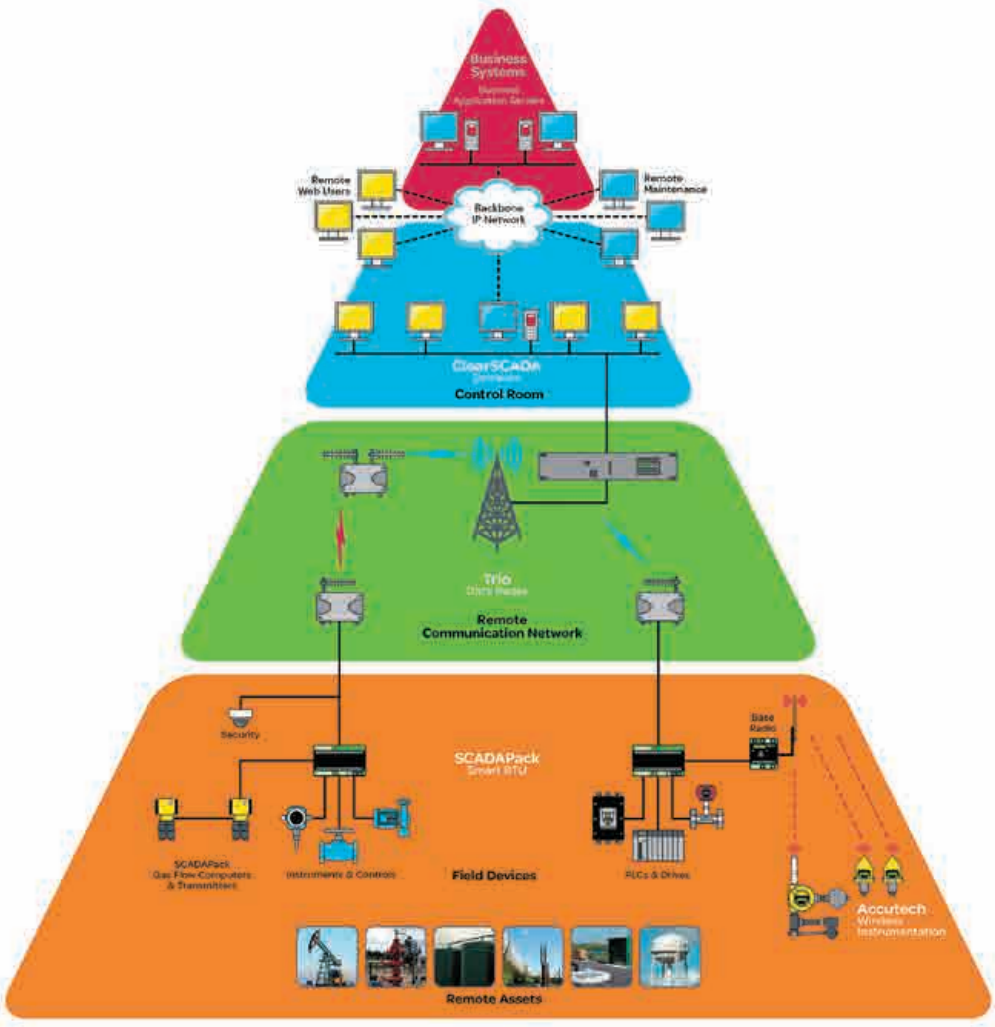
Example Applications

Oil & Gas

- Wellhead automation & management
- Production optimisation & well life extension
- Gas flow measurement
- Tank battery management
- Salt water disposal wells
- Pipeline monitoring of compressor station control
- Wireless sensors and communication
- Flare monitoring
- Safety pressure monitoring
- Corrosion & leakage monitoring

Water & Waste water

- Wireless communications
- Well monitoring & control
- Water quality monitoring & data logging
- SCADA software
- Pumping station controller
- Pressure distribution system
- Irrigation monitoring
- Storm water monitoring
- Lift station controller



Schneider Electric helps you face remote operation challenges with integrated, secure and reliable end-to-end Telemetry and Remote SCADA Solutions. Leveraging a proven track record in a wide range of industries and expertise in the areas of instrumentation, control and data acquisition, wireless communication and IT, Schneider Electric Telemetry and Remote SCADA Solutions can help make the most of your remote operations and assets.

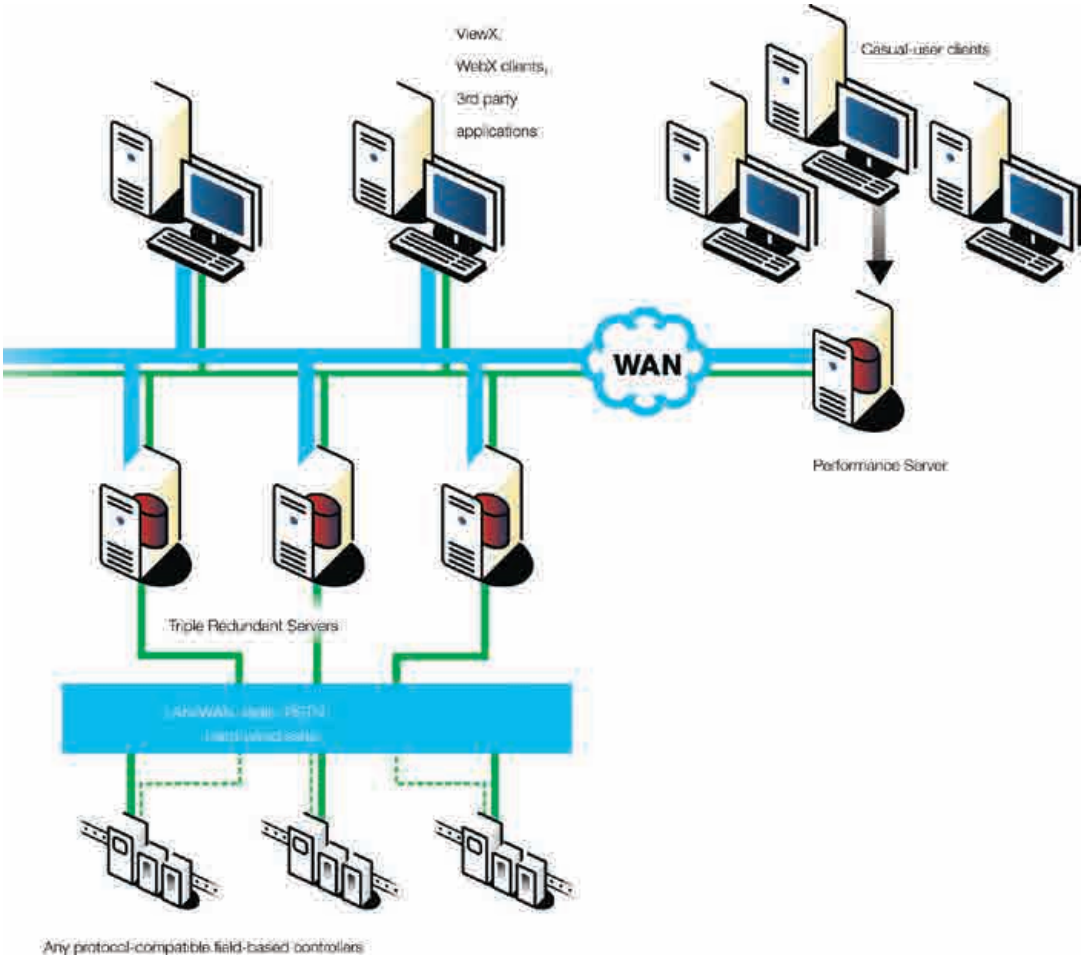
StruxureWare SCADA Expert ClearSCADA

StruxureWare SCADA Expert ClearSCADA is an open SCADA software platform that provides powerful features for the management of critical infrastructure; scalable for large enterprise environments and equally effective for small systems. Distributed system architectures provide high performance and availability as well as disaster recovery capabilities, while the integrated historian facility and open standard interfaces allow long term storage and analysis of data for even the largest systems.

SCADA Expert ClearSCADA excels at measuring, controlling, monitoring and collecting data across geographically dispersed field operations. SCADA Expert ClearSCADA provides an all-in-one solution for wide area networks, non-continuous communications and “at the source” time stamping and data quality monitoring, ensuring that data collected from your field operations translates into information you can use to drive business decisions.

Tight integration with SCADAPack RTUs and Trio data radios reduce site visits via centralised configuration and network diagnostic features. Fully integrated Realflo EFM objects provide configuration and data collection directly from SCADAPack flow computers.

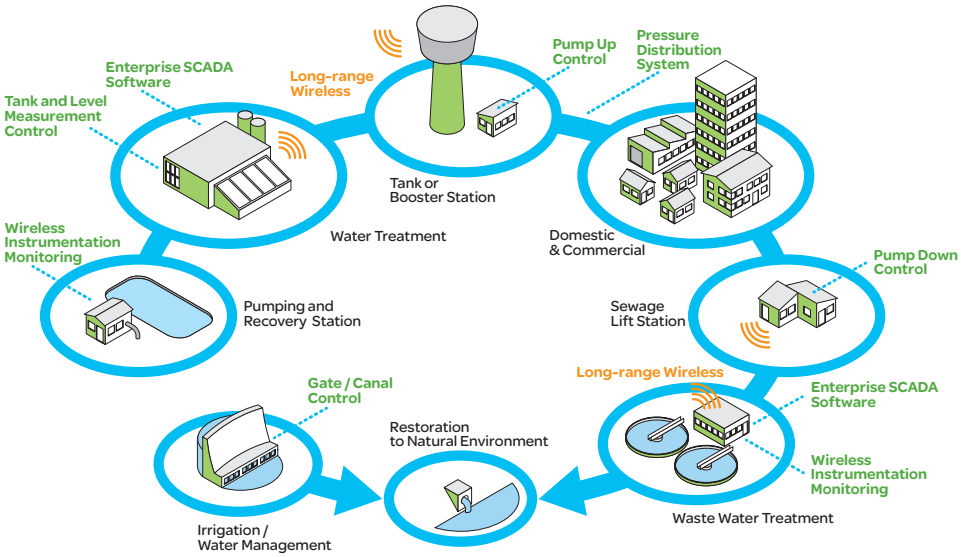
For more information on SCADA Expert ClearSCADA, please refer to section 3.8.2 in the catalogue.



SCADAPack Smart RTU - E Series

SCADAPack controllers combine the monitoring and communications capabilities of remote terminal units (RTUs) with the processing and data-logging power of programmable logic controllers (PLCs), providing superior functionality wherever remote processes require automatic supervision and autonomous control.

The product line is designed for use in environments with extreme temperatures and humidity, and can operate under low or restricted power conditions. Programmed using industry standard IEC 61131-3 languages, and offering an array of flexible connectivity and programming features. Providing real time communications using industry standard protocols and seamless integration with the complete Schneider Telemetry offer. All SCADAPacks offer Class 1, Division 2 hazardous area rating.



Water/Waste Water Solutions

Optimised for remote pumping networks

SCADAPack E Series RTUs offer all the features and benefits of the Standard SCADAPack with the added capabilities of DNP3 Level 4 core database and IEC 60870-5. They have an embedded historian allowing time-stamped event logging and data sampling for extended periods of time.

With advanced features such as peer-to-peer communication, remote diagnostics, point object alarm handling, time profiles and point quality reporting, SCADAPack E Smart RTUs are ideally suited for a wide range of demanding water and wastewater applications such as pumping station active overflow mitigation, energy optimisation and asset management. Offering an enhanced security suite of IEEE1711 (AGA12) encryption & IEC62351 (DNP3 Secure) Authentication for maximum system security, ensuring data confidentiality and integrity.

Distributed Network Protocol (DNP3) provides flexible, secure communications between devices. Ensuring that there are never holes in the data even when communication links go down, DNP3 reduces the number of costly and time-consuming maintenance trips to the field.

SCADAPack E Series, Optimised for Water/Waste Water Applications





Series	Inputs		Counters		Outputs		Communication Ports			
	Analog	Digital	Freq	Turbine	Analog	Digital	Ethernet	USB	Serial	Part Ref
SP330E	n/a	n/a	1	2	n/a	n/a	1	1	3	TBUP330-E•••-AA00
SP312E	4	12	1	2	0	6	0	1	2	TBUP312-E•••-AB••
SP333E	4	16	1	2	2'	10	1	1	3	TBUP333-E•••-AB••
SP334E	8	16	1	2	2'	10	1	1	3	TBUP334-E•••-AB••
SP337E	8	32	1	2	2'	16	1	1	3	TBUP337-E•••-AB••
SP350E	6	8*	1	2	2'	8#	1	1	3	TBUP350-E•••-AA••
SP357E	14	40*	1	2	2or4'	24#	1	1	3	TBUP357-E••-AB••
SP530E	n/a	2	0	n/a	0	1	3	1+1	4	TBUP530-E••6-AA0S
SP535E	6	16+2	8^	n/a	2'	8	3	1+1	4	TBUP535-E••6-AB•0S

Notes:
* 8 Dry Contact Digital Inputs shared with output points
# 8 Open drain Digital outputs shared with input points
^ 4 shared with digital inputs
' Optional

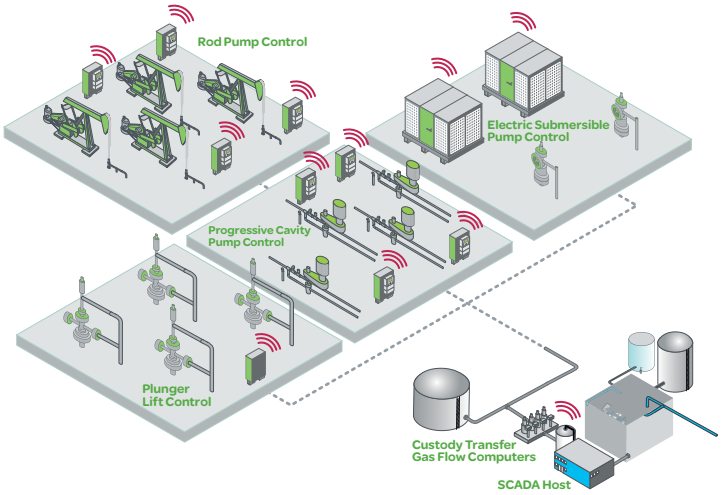
SCADAPack Smart RTU

Standard SCADApack, Built for Oil & Gas Applications

Electronic Flow Measurement

Schneider Electric offers a flexible Electronic Flow Measurement (EFM) solution that tightly integrates Smart RTU, multi-variable sensor and gas flow computer algorithm and configuration GUI. With the Realflo gas flow measurement software, SCADAPack Smart RTUs can become a fully functional gas flow computer with up to 10 gas flow runs available on select models. EFM functionality works concurrently with the Smart RTU's logic code for maximum flexibility.

A wide range of expansion IO and communication modules are available to provide expansion to your telemetry installation.





SCADAPack Standard for Oil & Gas Applications

Series	Inputs		Counters		Outputs		Communication Ports			Flow Runs	Reference
	Analog	Digital	Freq	Turbine	Analog	Digital	Ethernet	USB	Serial		
SP330	n/a	n/a	1	2	n/a	n/a	1	2	3	3	TBUP330-1•21-AA0•
SP334	8	16	1	2	2	10	1	2	3	3	TBUP334-1•21-A•••
SP350	5	8*	1	2	2	8#	1	2	3	3	TBUP350-1•21-AA••
SP357	13	8*	1	2	2or4	24#	1	2	3	3	TBUP357-1•21-A•••
SP32P	n/a	4~	4^	n/a	n/a	1	1	n/a	3	3	TBUP4N-••5-01-0-0
SP32P4	8	20~	4^	n/a	2	13	1	n/a	4	4	TBUP4-••5-0•-0-•
SP32P4A	9	35~>	4^	n/a	2	33+	1	n/a	4	4	TBUP4A-••5-0•-0-•
SP32P4B	8	35~	4^	n/a	2	17	1	n/a	4	4	TBUP4B-••5-0•-•-•
SP100	4	6!	1	1	n/a	6!	n/a	n/a	2	2	TBUP1•0-1A21-AA0•

Note:

'*' 8 Dry Contact Digital Inputs shared with Output points
'>' 32 Dry Contact Digital Inputs shared with Outputs
'#' 8 Open Drain Digital Outputs shared with Input points
'+' 32 Dry Contact Digital Outputs shared with Inputs
'~' 3 24VAC/30VDC Digital Inputs shared with Counter Inputs
'^' 3 0-5kHz shared with Digital Inputs
'!' Selectable as Input or Output

Realflo is compliant with AP121.1 custody transfer and AGA3, AGA7, AGA8, NX 19 gas flow calculation standards.



SCADAPack 4203 Transmitters combine a Modbus multivariable transmitter with an integrated SCADAPack Smart RTU to create a complete gas flow computer for Class 1, Division 1 hazardous areas. The multivariable transmitter is also available separately (model 4102) allowing it to be used with any choice of SCADAPack for multiple flow run installations.

SCADAPack 4102 Modbus Multivariable Transmitter & 4203 Gas Flow Computer

Inputs				Outputs		Ports				
Analog	Digital	Turbine Meter Count	Counter	Analog	Digital	Ethernet	Serial	Gas Calcs	Series	Reference
n/a	n/a	n/a	n/a	1	n/a	1	1	n/a	4102(1)	TBUT4102•2•1•••00•
1	1*	1	1#	1	1~	n/a	2	Yes	4203-DR (2)	TBUT4203R2•1••••2•
3	2*>	1#	1#	n/a	2~^	n/a	2	Yes	4203-DS (2)	TBUT4203S2•1••••2•

Note:

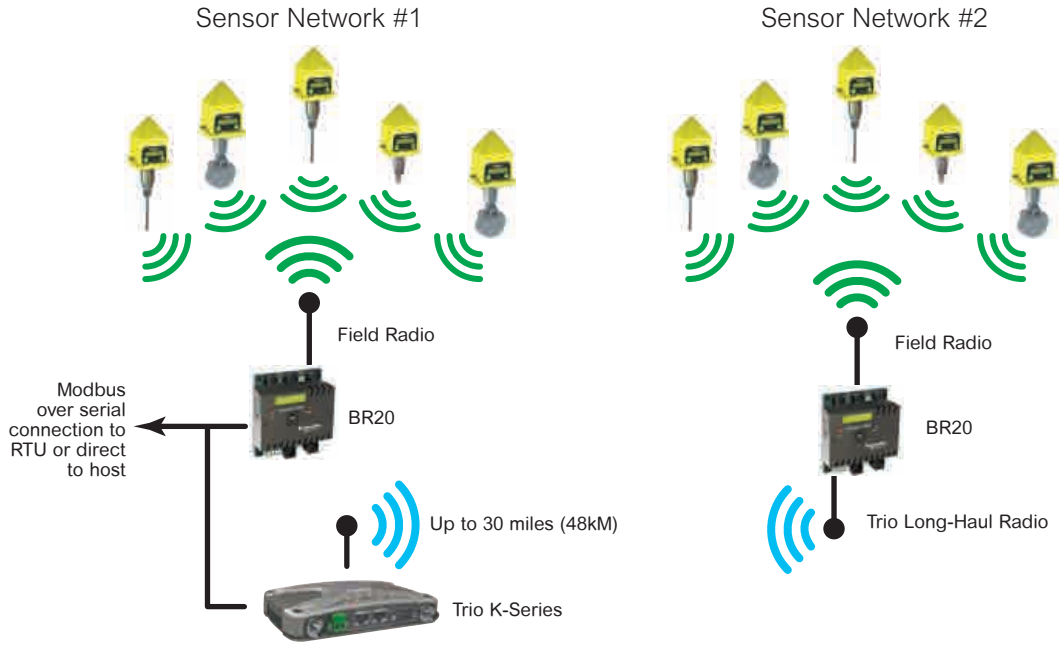
(1) No Internal Smart RTU. Process Pressure, Differential Pressure & Temperature Sensors
(2) Built-in Smart RTU. Gas Flow, Process Pressure, Differential Pressure & Temperature Sensors
'*' Point shared with Counter Input/Digital Output
'#' Point shared with Digital Input/Digital Output
'>' Point shared with Digital Output/ Turbine Meter Counter Input
'~' Point shared with Counter Input/Digital Input
'^' Point shared with Digital Input/ Turbine Meter Counter Input

Accutech Self-Powered Wireless Instrumentation

Rapid deploy wireless instrumentation solutions for telemetry and remote SCADA

With a wide range of available instruments for temperature, pressure, flow, level and more, Accutech is ideally suited to telemetry and remote SCADA applications including upstream oil and gas and outside plant applications in water and wastewater.

Accutech field instruments are easy to install being self contained with power, radio and sensor. The high performance license-free radio and long lasting battery reduces support costs while delivering your valuable data.



Flexible and Secure Wireless Communication

Accutech networks use license-free frequency hopping spread spectrum radios offering superior range of up to 1000m using standard integrated antennas. Extended reach options include external directional antennas and an integrated Trio™ long haul data radio that offers 256 bit AES encryption.

Easily Configured, Highly Scalable Deployment

Each Accutech base radio can support 100 field instruments with up to 1 second sampling on all instruments. 256 base radios can coexist for almost infinite scalability. Push button configuration and simple link test features allow entire networks to be deployed in hours.

Ease of Use, Low Maintenance

Highly reliable, Accutech instruments are optimally energy efficient devices that allow for up to 10 years operation on a single battery. An advanced warning alarm will provide months of notice before a field replaceable battery is required.

Certified Durability and Safety

With NEMA4 and explosion-proof packaging options, Accutech products are designed for the most demanding applications and are certified CSA Class 1, Div 1 and ATEX/IECex (-ai and -d). External push button interface enables hassle free configuration, while easy access battery cells are field replaceable.

Accutech Self-Powered Wireless Instrumentation

Accutech offers a versatile selection of instruments and base radios with performance enhancing options that can satisfy any application. Optional external sensor configurations allow installation in below ground areas or on process equipment that is hard to reach. External hi-gain antennas are available for complex environments where considerable obstructions and ultra long reach are required.

With this kind of flexibility Accutech becomes a key element in any challenging application:

- Wellhead monitoring (including plunger arrival)
- Gas pipeline leak detection with acoustic monitors
- Tank level measurement (with dual float liquid interface option)
- Environmental monitoring (storm water, irrigation, reservoirs, ...)
- Pressure measurement in any process, from 5psi to 10,000psi.
- Securing remote sites with discreet input switches
- Delivering 4-20mA signals from 3rd party instruments
- More… limited only by imagination.

Base Radio	Level	IO	Pressure	Temperature
				
BR10 Explosion proof	GL10 Gauge Level	AI10 IAV10 Analog Input	AP10 Absolute Pressure	RT10 RTD Temperature
				
BR20 DIN Rail Mount Base Radio	SL10 Submersible Level	SI10 Switch Input/Output	GP10 Gauge Pressure	TC10 Thermocouple Temperature
				
			DP20 Differential Pressure	
				
		4AO, 8SW, 4AO-8SW Output Modules		

Flow				
				
TM10 Turbine Meter Totalizer			Entire Accutech range being upgraded to this ultra robust diecast enclosure and with an even larger battery life.	

Trio Data Radios

Wireless communication for telemetry and remote SCADA solutions

Trio Data Radios reduce installation and maintenance costs associated with the monitoring and control of your remote telemetry system while ensuring data integrity over short and long-haul distances. Trio licensed and license-free data radios enable you to take ownership of your network by providing simple and rapid system configuration, consistent & dependable network performance, and long term reliability & availability.



Benefits

- Optimised design implementation
  Commissioning costs minimised by eliminating the need for costly trench work and wiring infrastructure.
- Rapid deployment
  Permanent or temporary systems are brought on line with easy to install and configure hardware components and effective software network management and diagnostic tools.
- Reliability and high availability
  Wireless means no more lost data due to damaged or degraded cabling. Operational lifetime is extended and data integrity is assured over longer distances. Network-wide management tools - A powerful Network Management System is available for remote configuration and monitoring of the entire radio system from any network node.

Trio Q Licensed Band Data Radios

Trio Q is the latest family of advanced high-speed licensed digital data radios for providing both Ethernet and serial communications for complex and demanding applications in Point-to-Point and Point-to-Multipoint (Multiple Address Radio) Telemetry and Remote SCADA applications allowing industrial users to wirelessly transport serial or Ethernet data protocols, including DNP, MODBUS and IEC, over distances of up to 50km using the licensed UHF spectrum.

Trio Q data radios are suited for critical infrastructure applications in challenging environments, particularly where there are long distances to cover, public communications are unreliable and redundant communications are mandatory.

Key benefits: capacity, cost efficiency, performance

Over-the-air data speeds are much faster than in previous licensed data radio systems. Also, the radio system can dynamically change its speed during a signal fade or rain storm, improving reliability while operating at the fastest over the air speeds.

Combined with features like IP routing and automatic retries, together with advances in collision avoidance, Trio Q provides the ideal platform for building a scalable, easy-to-use, licensed data radio system, where users can greatly increase the number of remote sites per system, and the amount of data transported over the network. Features such as ChannelShare+™ and web-based user configuration, together with powerful remote diagnostics and Network Management, make Trio Q Data Radios the complete licensed radio solution that works with leading host systems and remote equipment.

The ability of Trio Q data radios to emulate E Series modulation modes provide seamless backward compatibility and thereby dramatically add to the versatility and value that these radios can offer in protecting the user's installed asset base by allowing expansions to the existing system and also providing future-proofing.

Trio Q Data Radios come in a variety of hardware form factors. The QR450 Half-Duplex Radio is ideal for deployment at remote sites and operates in simplex or half-duplex modes. Built around a rugged but compact die-cast housing, it has Class 1, Division II hazardous approvals and an optional DIN rail mounting kit. Complementing this is the QB450 Full Duplex Radio, which is ideal for deployment at entry point or repeater sites as it provides high performance full-duplex operation in a 1RU 19" rack form factor. Where 1+1 redundancy is important, there are Hot Standby variants of both the full duplex (QH450) and half duplex (QP450) radios.

Trio Q Ethernet & Serial Licensed Radios

Description	Reference
Half Duplex Remote	
QR4 Ser-Eth 10W HDplx 400-450MHz 12.5&25kHz 8 to 56kbps	TBURQR4LH-E00E1L00
QR4 Ser-Eth 10W HDplx 450-518MHz 12.5&25kHz 8 to 56kbps	TBURQR4HH-E00E1L00
Full Duplex Base	
QB4 Ser-Eth 10W FDplx 400-450MHz 12.5&25kHz 8 to 56kbps	TBURQB4LN-E00E1L00
QB4 Ser-Eth 10W FDplx 450-518MHz 12.5&25kHz 8 to 56kbps	TBURQB4HN-E00E1L00
Half Duplex Protected (Redundant) Remote	
QP4 Ser-Eth 10W HDplx HotStd 400-450MHz 12.5&25kHz 8 to 56kbps	TBURQP4LN-E00E1L0B
QP4 Ser-Eth 10W HDplx HotStd 450-518MHz 12.5&25kHz 8 to 56kbps	TBURQP4HN-E00E1L0B
QP4 Ser-Eth 10W HDplx HotStd 400-450MHz 12.5&25kHz 8 to 56kbps	TBURQP4LN-E00E1L0E
QP4 Ser-Eth 10W HDplx HotStd 450-518MHz 12.5&25kHz 8 to 56kbps	TBURQP4HN-E00E1L0E
Full Duplex Hot Stand By (Redundant) Base	
QH4 Ser-Eth 10W FDplx HotStd 400-450MHz 12.5&25kHz 8 to 56kbps	TBURQH4LN-E00E1L0A
QH4 Ser-Eth 10W FDplx HotStd 450-518MHz 12.5&25kHz 8 to 56kbps	TBURQH4HN-E00E1L0A

Trio Data Radios

Which Trio data radio is right for my application?

Trio radios are broadly split into licensed and unlicensed frequency models with each further divided into Ethernet & Serial and Serial only interfaced models.

The following chart may be used to determine the appropriate Trio radio to fit your needs. Further technical information can be found on the website: www.schneider-electric.com.au.

Trio Radio Selection Chart

	License-free						Licensed				
											
	JR900	JR240	KR900	KR240	KP900	KB900	QR450	QB450	QP450	QH450	MR450
Interface											
Ethernet + Serial	✔	✔					✔	✔	✔	✔	
Serial Only			✔	✔	✔	✔					✔
Frequency Band											
450MHz							✔	✔	✔	✔	✔
900MHz	✔		✔		✔	✔					
2.4GHz		✔		✔							
Radio Type											
Remote	✔	✔	✔	✔	✔	✔	✔				✔
Base								✔			
Hot Standby									✔	✔	
Package											
Board Only						✔					
Standalone	✔	✔	✔	✔	✔		✔				✔
Rack								✔	✔	✔	
Encryption *	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	
Unique Features											
KwikStream™ High Speed Repeater mode	✔	✔	✔	✔	✔	✔					
LinkXtend™ Dual Antenna Network Bridging	✔	✔	✔	✔	✔	✔					
ChannelShare™ Collision Avoidance	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
SmartPath™ Enhanced Redundancy	✔	✔	✔	✔	✔	✔					
Multistream™ Simultaneous Data Stream			✔	✔	✔	✔	✔	✔	✔	✔	✔
Approvals											
FCC/IC/ACA	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Hazardous Area	✔	✔	✔	✔	✔	✔	✔				✔
ETSI		✔		✔			✔	✔	✔	✔	✔

* Export restrictions may apply.

HVAC & Commercial Refrigeration Control Solutions

HVAC Machine Control Solutions

Modicon M171 Logic Controllers for HVAC Solutions	3.10.2 – 3.10.3
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SoMachine HVAC	3.10.8 – 3.10.9

Commercial Refrigeration Machine Control Solutions

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Eliwell EWCM Compressor Rack Controller	3.10.13
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HVAC & Commercial Refrigeration Control Solutions

MachineStruxure™ automation solutions from Schneider Electric can help you quickly design a cost-optimised HVAC&R control system with on-board energy efficiency solutions. With MachineStruxure™, you can maximise performance throughout the machine's entire service life. MachineStruxure™ solutions for HVAC&R applications allow you to:

- Reduce your machine's time to market. Shorten development and setup times using our Tested, Validated & Documented Architectures (TVDA) and a large assortment of predefined HVAC&R controlling functions.
- Improve machine performance with innovative automation technology and dedicated HVAC&R application functions, supplemented with advanced drive technology, to increase energy efficiency while reducing maintenance and improving reliability.
- Gain a competitive advantage and optimise overall costs for your machine: from design to maintenance, we are ready to help you in any location with our worldwide network of training, solution design and delivery centres, after-sales services, and HVAC&R control experts.



Schneider Electric offers high level quality and technology products, control systems and services for commercial and industrial refrigeration and HVAC applications.

HVAC & Commercial Refrigeration Control Solutions

Modicon M171 Logic Controllers for HVAC Solutions

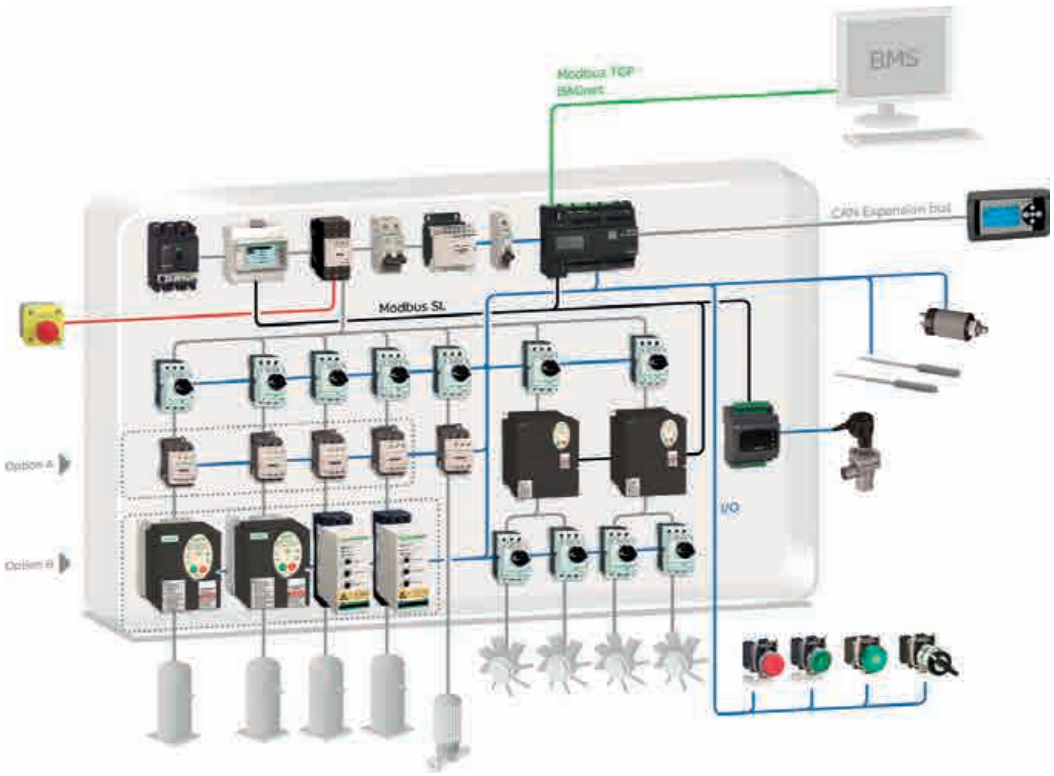
Modicon M171 provides a control solution for HVAC equipment including fluid systems - chillers, heat pumps, air handling units, pumping stations and fan coil units for residential, building, or industrial applications. Modicon M171 creates machines with intuitive automation, flexible and scalable performance, all-embedded functionality, and open connectivity.

- Ready-to-use architectures and function blocks

  Tested, Validated, and Documented Architectures (TVDAs) help reduce design time. They include system user guides, CAD files, and dedicated Pumping and HVAC Application Functions Blocks (AFBs) that make system design fast and easy.
- Flexible and scalable machine control platforms

  Scalable drive, HMI, logic, and motion controllers provide the foundation for a wide range of machine applications. Advanced drive technology and on-board energy efficiency solutions help you quickly design a cost-optimised system.
- Maximise your business and machine performance

  With MachineStruxure™, you can maximise performance throughout the machine's entire life cycle. MachineStruxure™ solutions allow you to:
  - ☐ Reduce your machine's time-to-market
  - ☐ Increase profitability
  - ☐ Improve efficiency
  - ☐ Simplify integration and maintenance



Typical Modicon M171 architecture for Air/Water cooled chiller, including a complete Schneider Electric solution.

Modicon M171 Logic Controllers for HVAC Solutions

Flexible and scalable performance

Multiple BMS connectivity options and an embedded web server enable ease in remote control; while a unique software environment supports the development of algorithms and functions that can be used on all platforms.



Modicon™ M171 optimised logic controller for simple and compact machines is one of the smallest programmable controllers on the market. Available also for flush mounting, it requires minimal installation and offers tremendous versatility.

Modicon™ M171 performance logic controller for complex and BMS connectable machines can be adapted to virtually any application.

Modicon M171 Optimised Selection Guide

Simple and compact machines: ■ Air/water-cooled chiller ■ Rooftop unit ■ Heat pump ■ Compressor rack ■ Ventilation unit				
Programming software		SoMachine HVAC V 1.0 or higher		
Maximum number of I/O with expansion modules		44	28	
Generic programmable inputs	Digital input	6 digital inputs: 6 volt-free in 1 group	2 digital inputs	
	Analogue input	5 configurable analogue inputs: ■ 3 NTC or digital inputs ■ 2 NTC, 0-20 mA, 4-20 mA, 0-10 V, 0-5 V, 0-1 V, or digital inputs	5 configurable analogue inputs: ■ 2 NTC, PT1000, or digital inputs ■ 2 NTC, 0-20 mA, 4-20 mA, 0-10 V, 0-5 V, 0-1 V, or digital inputs ■ 1 NTC, PT1000, 0-20 mA, 4-20 mA, 0-10 V, 0-5 V, 0-1 V, or digital inputs	
Generic programmable outputs	Digital output	6 digital outputs: ■ 5 SPST with the same common ■ 1 open collector	4 digital outputs: ■ 3 SPST with the same common ■ 1 SPDT	
	Analogue output	5 analogue outputs: ■ 2 open collector for 12 V PWM/PPM ■ 3 x 0-10 V	5 analogue outputs: ■ 2 open collector for 12 V PWM/PPM or digital inputs ■ 2 x 0-10 V ■ 1 x 4-20 mA	
Communication	Embedded communication	■ 1 LAN Expansion bus ■ 1 Modbus SL Master/Slave for TM171O*M***		
	Optional communication	None except with a gateway		
	USB port	No (program can be downloaded with the TM171AMFK programming stick and TM171ADMI programming cable)		
	Services	Remote download through Modbus SL		
Power supply		12-24 VAC or 24 VDC for all, 12-24 VAC for TM171Opp22S		100...240 V, isolated
Display	Buit-in	Yes, on TM171OD•22•	Yes	Yes, on TM171ODM14R
	Remote	Yes, with TM171DLED, TM171DLCD, and TM171DWAL2p displays		
Mounting		35 mm (1.38 in.) DIN rail	Flush mounting	35 mm (1.38 in.) DIN rail
Product certifications		CE, UL, and CSA		
Logic controller type		**Modicon M171 optimised logic controllers**		
		TM171O••22•	**TM171OF22R TM171OFM22R**	**TM171O•M14R** **TM171OD14R**

Modicon M171 Performance Selection Guide

Complex and BMS connectable machines: ■ Air/water-cooled chiller ■ Rooftop unit ■ Heat pump ■ Precision air conditioner ■ Booster station ■ Compressor rack ■ Heat recovery unit			
Programming software		SoMachine HVAC V 1.0 or higher	
Maximum number of I/O with expansion modules		351	327
Generic programmable inputs	Digital input	9 digital inputs (8 + 1): ■ 2 groups of 4 digital inputs, 24 VAC or 48 VDC ■ 1 fast digital input or high speed counter, volt-free	–
	Analogue input	6 configurable analogue inputs: ■ 2 NTC or digital inputs ■ 4 NTC, PT1000, 4-20 mA, 0-5 V, 0-10 V, 0-30 kΩ/0-5 kΩ variable resistor, or digital inputs	3 configurable analogue inputs: ■ 1 built-in NTC ■ 1 NTC or digital input ■ 1 x 4-20 mA or 0-10 V on TM171PFE03 ■ Built-in humidity sensor on TM171PFE03HR
Generic programmable outputs	Digital output	7 digital outputs: ■ 2 SPDT with independent common ■ 5 SPST with independent common	–
	Analogue output	5 analogue outputs: ■ 3 x 0...+10 V or 4-20 mA ■ 2 x 0...+10 V or 4-20 mA or DO Open Collector	–
Communication	Embedded communication	■ 1 CAN Expansion bus ■ 1 Modbus SL Master/Slave	■ 1 CAN Expansion bus ■ 1 Modbus SL Master/Slave or BACnet MS/TP ■ 1 Modbus TCP and BACnet IP (WebVisu)
	Optional communication	With TM171A••• communication modules: ■ Modbus TCP (WebVisu) ■ Modbus SL ■ BACnet MS/TP ■ BACnet IP (WebVisu) ■ CAN bus ■ RS 232 ■ Profibus	None except with a gateway
	USB port	Yes	No
	Services	■ Remote download ■ File management ■ Text e-mail ■ Virtual FTP ■ Datalogging	
Power supply		24 VAC or 48 VDC	
Display	Buit-in	Yes, on TM171PDM27• controllers	Yes
	Remote	Yes, with TM171DGRP display	
Mounting		35 mm (1.38 in.) DIN rail	Flush mounting
Product certifications		CE, UL, and CSA	
Logic controller type		**Modicon M171 performance logic controllers**	
		TM171PDM27• TM171PBM27R	**TM171PFE03•• **

Modicon M171 Logic Controllers & Accessories



TM171ODM14R



TM171OFM22R



TM171EO22R



TM171DLCD2U

Modicon M171 Optimised Controls

Description	I/O	Communication	Mounting	Reference
M171 Optimised Blind	22	Modbus RS485	DIN Rail	TM171OBM22R
M171 Optimised Display	22	Modbus RS485	DIN Rail	TM171ODM22R
M171 Optimised Display	22	Modbus RS485	Panel	TM171OFM22R
M171 Optimised Display SSR	22	Modbus RS485	DIN Rail	TM171ODM22S
M171 Optimised Display	22	Modbus TTL	DIN Rail	TM171OD22R
M171 Optimised Display 100-240 Vac	14	Modbus TTL	DIN Rail	TM171OD14R
M171 Optimised Display	22	Modbus TTL	Panel	TM171OF22R
M171 Optimised Display 100-240 Vac	14	Modbus RS485	DIN Rail	TM171ODM14R
M171 Optimised Blind 100-240 Vac	14	Modbus RS485	DIN Rail	TM171OBM14R
M171 Optimised Blind	22	Modbus TTL	DIN Rail	TM171OB22R

Modicon M171 Optimised Accessories

Description	Reference
M171 Optimised LV Connector 1m cable	TM171ACB4OI1M
M171 Optimised LV Connector 2m cable	TM171ACB4OI2M
M171 Optimised Modbus connector 1m cable	TM171ACB4ORS485
M171 Optimised AO Connector 1m cable	TM171ACB4OAO1M
M171 Optimised Wall thermostat without backlight	TM171DWAL2U
M171 Optimised Expansion Bus Connector 2m Cable	TM171ACB4OLAN
M171 Optimised Display LED	TM171DLED
M171 Optimised Expansion 15 I/O	TM171EO15R
M171 Optimised Display LCD	TM171DLCD2U
M171 Optimised Programming Stick TTL	TM171AMFK
M171 Optimised Expansion 14 I/O, 100-240 Vac	TM171EO14R
M171 Optimised Expansion 22 I/Os	TM171EO22R
M171 Optimised Wall thermostat with backlight	TM171DWAL2L
M171 Optimised AO Connector 2m cable	TM171ACB4OAO2M
M171 Optimised Programmable cable TTL-USB	TM171ADMI

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TM171PBM27R

Modicon M171 Performance Controls

Description	I/O	Communication	Mounting	Reference
M171 Performance Display	22	Modbus RS485	Wall/Panel	TM171PFE03
M171 Performance Blind	22	Modbus RS485	DIN Rail	TM171PBM27R
M171 Performance Display	22	Modbus RS485	Wall/Panel	TM171PFE03HR
M171 Performance Display	22	Modbus RS485	DIN Rail	TM171PDM27R
M171 Performance Display SSR	22	Modbus RS485	DIN Rail	TM171PDM27S

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TM171EP27R



TM171AETH

Modicon M171 Performance Accessories

Description	Reference
M171 Performance Graphic Display	TM171DGRP
M171 Performance 27 I/O Screw Terminal Blocks	TM171ASCTB27
M171 Performance Expansion 27 I/O	TM171EP27R
M171 Performance 14 I/O Screw Terminal Blocks	TM171ASCTB14
M171 Performance Plug-in Modbus Serial	TM171AMB
M171 Performance Plug-in Profibus	TM171APBUS
M171 Performance Grey wall support display	TM171ABKPG
M171 Performance Plug-in CANopen	TM171ACAN
M171 Performance Expansion 14 I/O	TM171EP14R
M171 Performance Plug-in BACnet MSTP or Modbus	TM171ARS485
M171 Performance Plug-in RS232 with Relay	TM171ARS232
M171 Performance Plug-in Ethernet and BACnet MSTP or MB	TM171AETHRS485
M171 Performance Plug-in Ethernet	TM171AETH
M171 Performance White wall support display	TM171ABKPB

Modicon M171 Logic Controllers & Accessories



TM171VEVM4

Modicon M171 Electronic Expansion Valve

Description	Reference
EEV Driver, Actuator	TM171VEVA2
EEV Driver, Autonomous & Hardwired	TM171VEVD4
EEV Driver, Autonomous & Modbus	TM171VEVM4
M171 EEV Driver Screw Terminal Blocks	TM171ASCTBVEV



TM1STNTCWN75750

Modicon M171 Sensors

Description	Reference
PT1000 5.0m IP68 5x20 -50..+110C Green	TM1STPTTSN52050
Humidity & Temperature Probe 4..20mA Wall Mount	TM1SH314
Humidity Probe 4..20mA Clip Mount	TM1SH284
NTC 1.5m IP68 5x20 -50+110°C Grey	TM1STNTCRN52015
NTC 1.5m IP67 6x15	TM1STNTCRN61515
NTC for internal air wall mounting	TM1STNTCWN75750
NTC for external air wall mounting	TM1STNTCWN65605
Humidity Probe 4..20mA Wall Mount	TM1SH304



TM1SH284



TM1STPTTSN52050



TM1SH314

SoMachine HVAC

Software solution

SoMachine HVAC programming software is compliant with IEC 61131-3. It can be used to develop, configure, and commission entire HVAC.

It includes:

- Programming Modicon M171 logic controllers (performance and optimised) and remote display units
- Setting up expansion buses and networks (BACnet, Modbus)
- Configuring BMS communication modules on BACnet MS/TP and BACnet IP
- Dedicated libraries

General characteristics

Programming languages	■ ST (Structured Text) ■ FBD (Function Block Diagram) ■ LD (Ladder) ■ IL (Instruction List) ■ SFC (Sequential Function Chart)
Applications	Graphical and text-based languages: ■ Adaptation to each developer background ■ Library management ■ Code debugging ■ Parameter definition ■ Simulation mode Advanced programming: ■ Vectors ■ Pointers
System solutions management	■ Multi-target project ■ Management of Modbus data ■ Data exchange between several Modicon M171 performance logic controllers
Graphical user interface	Graphic display: ■ Multipage ■ Buttons ■ Edit box ■ Static text ■ Images ■ Animations ■ Bars ■ Lists of data (parameters/variables/alarms) ■ Configurable buttons ■ Multilanguage ■ Automatic documentation
Communication bus configurators	■ Control networks: Modbus serial link, Modbus TCP, Modbus SL, Profibus ■ Expansion bus fieldbus: CAN Expansion bus ■ BMS connectivity: BACnet MS/TP, BACnet IP
Advanced simulation options	■ Full simulation ■ I/O emulation ■ HMI ■ IEC code ■ Live debug ■ Triggers ■ Oscilloscope
Advanced debugging and simulation options	Remote control/download: ■ Modbus SL & TCP ■ CAN ■ Modem ■ Parameter management ■ Status monitoring Field test: ■ Oscilloscope ■ Debug window ■ Export to Excel

SoMachine HVAC

SoMachine HVAC software is supplied on a Disc or can be downloaded from our website:

www.schneider-electric.com > Solutions > Machine Control Solutions > HVAC & R

The product version concerned offers all the SoMachine HVAC functions associated with logic controllers.

System Requirements:

- Processor: Pentium 1.6 GHz or higher
- RAM: 1 GB; 2 GB recommended
- Hard disk: 500 MB minimum
- OS: 32-bit Windows; XP Pro SP3 or Windows 7 (32-bit or 64-bit) or Windows 8
- Drive: DVD drive
- Display: SVGA video card; 800×600, 128 MB; 1024×768, 256 MB recommended
- Peripheral device: A mouse or compatible pointing device
- Peripheral device: USB interface

SoMachine HVAC Programming Software

Description	Reference
TM171P*** performance and	TM171SW
TM1710*** optimised logic controllers	

Modicon M171 Programming Accessories

Description	Use	Reference
Connection cordset for PC terminal	M171 Performance	TSXCUSB485
Cable for Modbus serial link	M171 Performance	VW3A8306D30
Programming USB-TTL Card	M171 Optimised	TM171ADMI
Programming TTL Card	M171 Optimised	TM171AMFK


TM171ADMI


TM171AMFK


TSXCUSB485


VW3A8306D30

Eliwell IDPlus 32x74 Refrigeration Thermostats

The Eliwell IDPlus range are new-generation devices with up to four activation points, typically used for heating, static and ventilated refrigeration units and mono blocks at normal or low temperatures. IDPlus controllers are equipped with various functions including:

- Temperature Control
- Defrost Control
- Deep Cooling Cycle
- Pre-Set Parameter Map
- Parameter Reset to Factory Default
- Condenser Over Heating
- Alarms



IDP17Y07E0001



IDP2EYB7E0001

Eliwell IDPlus 32x74 Refrigeration Thermostats

Model	Mounting	Display Range	Inputs	Outputs	Supply Voltage	Reference
IDPlus 902	Panel Mount: 71x29mm	-50..+110C	1x NTC, PTC or PT1000 1x Volt Free Digital	1x 8A	12V ACDC	IDP11Y03E0001
					230VAC	IDP11Y07E0001
IDPlus 961			1x NTC, PTC or PT1000 1x Volt Free Digital	1x 2Hp	12V ACDC	IDP17Y03E0001
					230VAC	IDP17Y07E0001
IDPlus 971			2x NTC, PTC or PT1000 1x Volt Free Digital	2 Relays 2Hp, 8A	12V ACDC	IDP24YB7E0001
					230VAC	IDP29YB3E0001
IDPlus 974			2x NTC, PTC or PT1000 1x Volt Free Digital	3 Relays 2Hp, 8A, 5A	12V ACDC	IDP29YB7E0001
					230VAC	IDP2EYB3E0001
IDPlus 978			2x NTC, PTC or PT1000 1x Volt Free Digital	4 Relays 1.5Hp, 8A, 5A, 5A	230VAC	IDP2EYB7E0001

Note:
(1) Analogue input type selectable by parameter.
(2) TTL-RS485 BusAdaptor required for communication. Cat No BA11250N3700
(3) NTC 1.5m sensors included

COLDFACE Cold Room Controls

Coldface series controllers ensure the control of all static or ventilated cold room functions in a single device.

The enclosure, with innovative design for on-board installation, combines ease of installation, water resistance and the possibility of installing isolation switches on a DIN rail. The versions with door on the front panel allow direct access to the isolation switch to manually stop the power supply. The controllers are available with a series of advanced functions, such as the logging of HACCP events with a yearly calendar, Pump down management, programmed defrosts and network connectivity. Features include:

- Large high-visibility display
- Intuitive access to the frequently used parameters
- Large space for wiring and DIN rail modules
- Components 4 DIN protected by front door IP65



RCA3UDTX2E700



RCS3UDTX2E700

Eliwell EWRC 300/500 Cold Room Controller

Model	Mounting	Display Range	Inputs	Outputs	Supply Voltage	Reference
EWRC 500 NT RTC/HACCP/ Buzzer 4DIN	Wall Mount	-50..+110C	3x NTC or PTC 2x Volt Free Digital	5 Relays 2Hp, 8A, 8A, 8A, 8A	230VAC	RCA3UDTX2E700
EWRC 500 NT RTC/HACCP/ Buzzer					230VAC	RCS3UDTX2E700
EWRC 300 NT				3 Relays 2Hp, 8A , 8A	230VAC	RCS3HDLX2E700

Technical data

	EWRC 300 NT	EWRC 500 NT
Max dimensions:	front panel 213x318mm, depth 102mm	front panel 213x318mm, depth 102mm
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Power consumption:	14W max	14W max
Power terminals:	Screw-type	Screw-type
Analogue inputs:	3 x NTC / PTC*	3 x NTC / PTC*
Display range:	NTC: -50.0...110.0°C; PTC: -55.0...150.0°C	NTC: -50.0...110.0°C; PTC: -55.0...150.0°C
Digital inputs:	2 voltage-free inputs	2 voltage-free inputs
Connections:	TTL and RS485** port for Unicard, TelevisSystem and Modbus RTU systems	TTL and RS485** port for Unicard, TelevisSystem and Modbus RTU systems
Digital outputs:	Common-line max 18A OUT1 common-line 2HP 12(12)A 250V~ OUT2 common-line 1HP 8(8)A 250V~ OUT3 common-line ½HP 8(4)A 250V~	Common-line max 18A OUT1 common-line 2HP 12(12)A 250V~ OUT2 common-line 1HP 8(8)A 250V~ OUT3 common-line ½HP 8(4)A 250V~ OUT4 common-line 1HP 8(8)A 250V~ OUT5 SPDT ½HP 8(4)A 250V~

* selectable from parameter

** with optional module

EWCM Compressor Rack Controllers

EWCM controllers provide a means of managing compressors in refrigeration plants, cutting energy-use to a minimum and protecting the system. The end-to-end, flexible solution can be adapted to fit multiple plant configurations. The new backup function guarantees continuous operation, with no additional external devices, in combined systems with inverter-piloted loads and relays, should an inverter failure occur. Features include:

- Dedicated energy-saving algorithms
- Energy-saving function via digital inputs
- Dedicated inverter-control algorithms
- Suction and discharge setpoint management reflecting ambient conditions.
- Backup function in the event of inverter failure.



EM6A22101EL11

Eliwell EWCM Compressor Rack Controller

Description	Reference
EWCM 4180/C Panel Mount Compressor Control with Cables	EM6A22101EL11
EWCM 9100 EO DIN Rail Compressor Control	EM32BH2B0GH00
EWCM 9900 EO DIN Rail Advanced Compressor Control	EM83CI3B0GH00



EM83CI3B0GH00

Technical data

	EWCM 4180/C	EWCM 9100 EO	EWCM 9900 EO
Enclosure:	Plastic casing, flame retardant grade UL94-V0	PC+ABS UL94 plastic resin casing. V-0 13 DIN modules (227.5x110x60mm)	PC+ABS UL94 plastic resin casing. V-0 18 DIN modules (315x110x60mm)
Mounting:	Panel-mount 71x29mm	DIN Omega bar support	DIN Omega bar support
Analogue inputs:	2 4...20mA / ratiometric 0...5V / 0...10V / NTC / D.I.	4 NTC/NTC extended/PTC/ D.I.+ 2 high precision current (4...20mA / 0...5V / 0...10V)	4 NTC/NTC extended/PTC/ DI + 2 high precision current/ voltage (4...20mA / 0...5V / 0...10V) + 1 current/voltage (4...20mA / 0...5V / 0...10V)
Digital inputs:	7 SELV contacts	10 voltage (100...240V~) + 4 configurable voltage-free	14 voltage (100...240V~) + 6 configurable voltage-free
Analogue outputs:	■ 2 PWM - Open Collector ■ 0...10V / 4...20mA / 0...20mA*	2 voltage/current (0...10V/4...20mA)	3 voltage/current (0...10V/4...20mA)
Digital outputs:	5 SPST 2A 250V~ + Open Collector	11 SPST 5(2)A 250V~ + 2 SPDT 8(3)A 250V~	17 SPST 5(2)A 250V~ + 2 SPDT 8(3)A 250V~
Connections:	TTL port for connection to CopyCard and TelevisSystem via optional module	■ TTL port for connection to CopyCard USB ■ RS-485 for connection to TelevisSystem and systems based on the ModBus protocol	■ TTL port for connection to CopyCard USB ■ RS-485 for connection to TelevisSystem and systems based on the ModBus protocol
Display:	4 figure LED	LCD on external keyboard	LCD on external keyboard
Clock:	Present	Present	Present
Power consumption:	5VA max	20W	20W
Power supply:	12V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz

V800 Pulse EEV System

The Electronic Expansion Valve (EEV) is designed to maximise the energy saving and performance potential of refrigerated cabinets in refrigeration applications. The complete Eliwell solution consists of the EEV V800 driver, which can be connected to the IWK/V remote display device, and the ID 985/V electronic controller. The V800 is designed to control superheat through the Eliwell PXV Pulse Valve. It is also compatible with most Pulse valves available from other manufacturers.



V800 EEV SYSTEM

Eliwell V800 Pulse EEV System

Model	Description	Reference
V800/P3	Pulse EEV Driver	EVD2A53BSC000
IWK/V	Remote terminal for parameter configuration & display	WK1400100N000
ID 985/V	Refrigeration Control for V800 connection	ID34DR4SCDH00
V800K1	V800 Standard Kit	EVK2A43BXC010
V800/K2	V800 Starter Kit	EVK2A43BXC020

Technical Data

	V800	ID 985/V	IWK/V
Dimensions:	front panel 70.2x87mm, depth 61.6mm	front panel 74x32mm, depth 60mm	front panel 74x32mm, depth 30mm
Mounting:	on DIN Omega bar support	panel mounting with 71x29mm drilling template	panel mounting with 71x29mm drilling template
Display:	–	no decimal point * 3 and a half digits + sign	no decimal point * 4 and a half digits + sign
Display range:	–	-55...140°C	-55...140°C
Analogue inputs:	1 NTC/4-20mA/0-5V 1 NTC/4-20mA	3 NTC/PTC	–
Digital inputs:	2 voltage free	2 voltage free	–
Connections:	■ TTL port for connection to CopyCard and TelevisSystem ■ TTL port for connection to USB Copy Card and IWK/V ■ LAN port for connection to ID 985/V ■ RS-485 serial port: Models/P1/P3	■ TTL port for connection to CopyCard ■ LAN port for connection to V800 ■ RS-485 serial port	■ TTL port for connection to V800
Digital outputs:	1 SPDT N.O. 5A 250V~, N.C. 2A 250V~ 1 open collector max current 35mA	1 SPDT 5(2)A 1/4 HP 250V~ 3 SPST 3A 250V~	–
Analogue outputs:	1 0...10V max current 20mA	–	–
Accuracy:	better than 0.5% of end of scale +1 digit	better than 0.5% of end of scale +1 digit	better than 0.5% of end of scale +1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C	1 or 0.1°C
Power supply:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz	From V800
Power consumption:	3W max	2.5W max	<1W
User interface:	10-way DipSwitch	LED display	LED display

V800 Pulse EEV System

V800 EEV Kits

EVK2A43BXC010 – Standard Kit

Includes:

- 1 x ID 985 /V
- 1 x V800/P2
- 1 x 'FAST' NTC probe (SN8P0X3002)
- 1 x ratiometric probe (TD420030)

EVK2A43BXC020 – Starter Kit

Includes:

- 1 x ID 985 /V
- 1 x V800/P2
- 1 x 'FAST' NTC probe (SN8P0X3002)
- 1 x ratiometric probe (TD420030)
- 1 x USB Copy Card (CCA0BUI02N000)
- 1 x Device Manager CD (DMP1000002000)
- 1 x Device Manager Interface - DMI

Pulse Electronic Expansion Valves



PXV VALVE, COIL & CONNECTOR

Eliwell PXV Pulse Electronic Expansion Valves

Inlet	Outlet	Orifice No	Orifice Size	Capacity R134A	Reference
3/8"	1/2"	4	1.1mm	3.2kW	PXVB03S040000
		5	1.3mm	5.6kW	PXVB03S050000
1/2"	5/8"	7	2.3mm	12.2kW	PXVB04S070000

Note: Suitable for R22, R134a, R404A, R407C, R410A, R507 refrigerants. Valves for CO_2 available on request

Eliwell PXV Coils, Connectors & Orifice Kits

Description	Reference
N° 2 orifice kit	PXVB0AR640000
N° 3 orifice kit	PXVB0AR650000
N° 6 orifice kit	PXVB0AR680000
IP65 connector for EEV coil	PXVB0AR020000
EEV Coil 220/230VAC	PXVB0ARA60000

V910 Stepper EEV System

The V910 Electronic Expansion Valve driver is for the proportional motorised or stepper valve. The V910 is designed to optimise energy efficiency and refrigeration performance. Its wide compatibility with refrigerants and most EEV step valves, whether unipolar or bipolar, makes this product particularly flexible.



SKP1000000000

Eliwell V910 Stepper EEV System

Model	Description	Reference
V910	Step EEV Driver	EVD4A31BSH100
SKP10	Configuration keyboard	SKP1000000000

Stepper Electronic Expansion Valves



SXVB262270040

Eliwell SXVB Stepper Electronic Expansion Valves

Connections	Body Type	Orifice Size	Capacity R134a	Reference
1/2"	2	2.7mm	29.7kW	SXVB262270040
1/2"	2	3.2mm	35.9kW	SXVB262320040

Note: Suitable for R22, R407c, R404a, R134a, R410A refrigerants. CO2 & hydrocarbons available on request

Eliwell SXVB Cable

Description	Reference
SXVB Cable 3m	SXVB2624VC300

Sensors, Transducers and Accessories



SN9S0A2500



SN7P0A3000



SN8P0A1500K

Eliwell Temperature Sensors

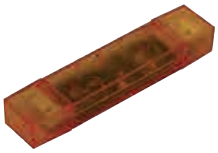
Sensor Type	Tip Dimensions	Range	Cable Material	Cable Length	Protection	Reference
Semitech NTC 103AT11	Moulded rubber 5x6x15mm	-50...+110C	Thermoplastic rubber	1.5m	IP67	SN691150K
Semitech NTC 103AT11	Moulded rubber 5x6x15mm	-50...+110C	Thermoplastic rubber	3m	IP67	SN691300K
NTC 103AT11	Moulded rubber 5x20mm	-50...+110C	Thermoplastic rubber	1.5m	IP68	SN8DED11502C0
NTC 103AT11	6x40mm AISI304	-30..+80C	PVC	1.5m	IP67 Tip Only	SN8P0A1500K
NTC 103AT11	6x40mm AISI304	-30..+80C	PVC	3m	IP67 Tip Only	SN8P0A3000
PTC KTY82-121	6x40mm AISI304	-30..+80C	PVC	3m	IP67 Tip Only	SN7P0A3000K
PT1000 2 wire	6x40mm AISI304	-50..+200C	Silicone	2.5m	IP67 Tip Only	SN9S0A2500



EWPA WITH PACKARD CONNECTOR & CABLE

Eliwell Pressure Transducers

Output Signal	Pressure Connection	Range	Cable	Protection	Model	Reference
4..20mA 2 wire	1/4" SAE Male	-0.5...7 bar relative	2m Packard	IP54	EWPA007	TD240007
4..20mA 2 wire	1/4" SAE Male	0...30 bar relative	2m Packard	IP54	EWPA030	TD240030
0.5..4.5V 3 wire ratiometric	1/4" SAE Female	0...35 bar relative	2m Packard	IP67	EWPA030	TD420030



CCA0BHT00UU00



BA11250N3700

Eliwell Accessories

Description	Reference
Copy Card Standard	CC0S00A00M000
UniCard USB	CCA0BHT00UU00
Gasket 32x74mm	GU000001
BusAdaptor 130 TTL-RS485	BA11250N3700
Comms Adaptor Kit EWRC NT	KP00Q1S0

TelevisGo Management and Monitoring System

TelevisGo is a system used to monitor, control and manage installations remotely. TelevisGo is based on a PC Embedded standard platform to offer greater performance and data file space. The PC incudes a Microsoft Embedded operating system allowing easy system expansion using standard software packages. Systems are available with full functionality (R2 version), or reduced functionality R2 LE version.



Eliwell TelevisGo R2

Description	No of Devices	Custom Algorithms	Reference
TelevisGo R2 /10 Kit	10	Yes	TGOBSE101E00K
TelevisGo R2 /30 Kit	30	Yes	TGOBSE301E00K
TelevisGo R2 /60 Kit	60	Yes	TGOBSE601E00K
TelevisGo R2 /224 Kit	224	Yes	TGOBSE2H1E00K

Note: All kits include Serial Adaptor and 1.5m RS232 cable



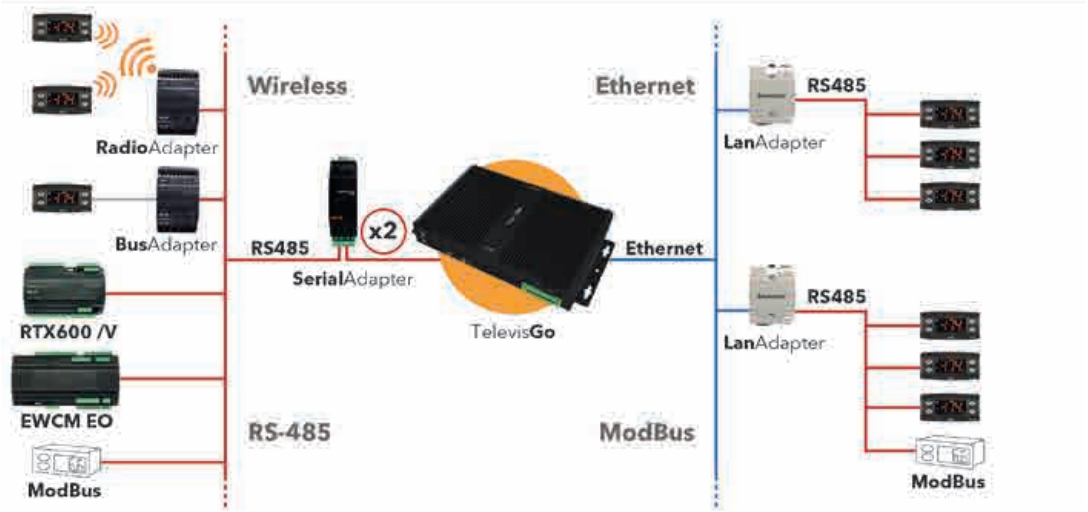
TGOBSE2H1E00K

Eliwell TelevisGo R2 LE

Description	No of Devices	Custom Algorithms	Reference
TelevisGo R2 LE /10 Kit	10	No	TGOBSE101ER0K
TelevisGo R2 LE/30 Kit	30	No	TGOBSE301ER0K
TelevisGo R2 LE/60 Kit	60	No	TGOBSE601ER0K

Note: All kits include Serial Adaptor and 1.5m RS232 cable

Connectivity



TelevisGo Management and Monitoring System Features

Data recording and alarm management

- Recording temperature / pressure / humidity / digital inputs and outputs / functional statuses
- Recording alarm conditions and sending a signal by email and SMS

Energy reports

- Connection to energy meters with MODBUS protocol
- Dashboards dedicated to the real time and historic display of energy consumption
- Graphic display of energy consumption combined with the functional parameters of the system

Graphic display of the system

- Display and access to data and parameters of the controllers by means of a freely configurable graphic interface
- HTML interface accessible by most browsers for PC, tablet and smartphone (Internet Explorer, Mozilla, Firefox)
- The graphic interface can be planned off-line with the tools freely available for download from our website www.eliwell.com

Web connectivity

- All TelevisGo functions are accessible in remote mode with a web browser
- It is possible to access all the historic and real time information and to interact with each controller connected to the system to change its parameters and activate the functions
- The complete management of TelevisGo is included (configuration, updating, restarting of the device)
- TelevisGo can be connected to the Internet with ADSL, 3G or 4G connections, or by configuring the LAN/WAN network to which the device is connected

Activity automation

- Automation of recurrent activities such as switching the lights on and off for energy saving
- Periodic sending by e-mail of detailed reports in PDF format
- Periodic transfer of data to centralised systems for performance analysis

Algorithms and Expandability with IEC 61131*

- System extensions with new plug-n-play algorithms installed through the web interface
- Algorithms for management of floating evaporation, faulty pressure probe backup and distribution of dewpoint for energy saving functions with RTX600 /V and EWCM 9000 EO
- System for the development of new algorithms for distributed management of the installation based on Eliwell FREE Studio software with standard languages IEC 61131

*functions not available in LE versions

Temperature Controllers



O16H6980198



O16H6999110



E37M1201001

Ranco O16 Temperature Controls

Model	Temparature Range	Differential Range	Sensing Element	Capillary Length	Element Type	Reference
O16-6930	-34..+32C	+3..+22C	9.5 x 152mm	1800mm	Bulb	O16H6930198
O16-6980	-18..+13C	+2..+12C	14.5 x 152mm	1800mm	Bulb	O16H6980198
O16-6981	-5..+25C	+2..+12C	14.5 x 152mm	1800mm	Bulb	O16H6981198
O16-6983	-10..+40C	+2..+12C	14.5 x 152mm	1800mm	Bulb	O16H6983198
O16-6950	-35..-7C	+2..+12C	9.5 x 38mm	2000m	Coiled	O16H6950198
O16-6951	-18..+13C	+2..+12C	9.5 x 38mm	2000m	Coiled	O16H6951198
O16-6954	-5..+25C	+2..+12C	9.5 x 38mm	2000m	Coiled	O16H6954198
O16-8900	-18..+13C	+4..+30C	9.5 x 38mm	2000m	Coiled	O16H8900198

Ranco Ice Bank Controls

Model	Description	Reference
O16	Fixed Temperature Ice Thickness Control	O16H6999110
E37	Electronic Ice Thickness and Liquid Level Control	E37M1201001

Technical data

	O16 Electromechanical Temperature Controls
SPDT single pole switch electrical rating:	16 (16) A 250V~ normally open or normally closed 1 (1) A 250V~ opposite side.
Ambient operating / storage temperature:	-30°C...+55°C / -40°C...+65°C
Electrical contacts:	1 common; 2 opens the contact when the temperature increases; 4 closes the contact when the temperature increases
Cable entry:	14mm insulating grommet
Installation:	two threaded holes in the back of the casing to accept M4x6mm screws (supplied)
Regulation Set Points:	hex nut incorporating recess for crosshead screwdriver, on both range and differential spindles.
Casing enclosure rating:	IP44 (with top cover installed)

Pressure Controllers



O16H8713198

Ranco O16 Single Pressure Controls

Model	Pressure Side	Pressure Range	Differential Range	Pressure Connection	Reference
O16-8705	Low	-30..700 kPa	60 kPa Fixed	Male 7/16"-20 UNF	O16H8705198
O16-8706	Low	-30..700 kPa	60..400 kPa	Male 7/16"-20 UNF	O16H8706198
O16-8713	Low	-30..700 kPa	60..400 kPa	Capillary 1m	O16H8713198
O16-8750	High	700..3000 kPa	250..800 kPa	Male 7/16"-20 UNF	O16H8750198
O16-8751	High	700..3000 kPa	320 kPa Fixed	Male 7/16"-20 UNF	O16H8751198



O17H8701198

Ranco O17 Dual Pressure Controls

Model	Pressure Side	Pressure Range	Differential Range	Pressure Connection	Reference
O17-8701	High/Low	700..3000/ -30..700 kPa	350 Fixed/ 60..400 kPa	2x Male 7/16"-20 UNF	O17H8701198
O17-8703	High/Low	700..3000/ -30..700 kPa	350 Fixed/ 60 Fixed kPa	2x Male 7/16"-20 UNF	O17H8703198
O17-8705	High/Low	700..3000/ -30..700 kPa	350 Fixed/ 60..400 kPa	2x Male 7/16"-20 UNF	O17H8705198
O17-8711	High/Low	700..3000/ -30..700 kPa	350 Fixed/ 60..400 kPa	2x Capillary 1m	O17H8711198

Technical data

	O16/O17 Electromechanical Single/Dual Pressure Controls
SPDT single pole switch electrical rating:	16 (16) A 250V~ normally open or normally closed 1 (1) A 250V~ opposite side.
Ambient operating / storage temperature:	-30°C...+55°C / -40°C...+65°C
Connection to pressure line:	7/16 - 20 UNF straight male output connector, 1/4 flared female connector
Cable entry:	14mm insulating grommet
Refrigerant:	Equipment suitable for use with the most common gases
Installation:	two threaded holes in the back of the casing to accept M4x6mm screws (supplied)
Regulation Set Points:	hex nut incorporating recess for crosshead screwdriver, on both range and differential spindles.
Terminals:	1 common; 2 opens when the pressure increases; 4 closes when the pressure increases.
Casing enclosure rating:	IP44 (with top cover installed)

Ranco Accessories

Ranco Accessories

Description	Reference
O16 Cover Assembly	03600253006
O17 Cover Assembly	03600254004
O16 Manual Front Reset Cover Assembly	03600253011
O17 Top Plate Assembly	03200025001
O16 Top Plate Assembly	00390527001
Angled Mounting Bracket	31696-1K
Flat Mounting Bracket	48129-3K
Sensor to suit E37M1201001	L56-M3001K

Ranco Temperature Limit Controls

Ranco family of fixed setting temperature limit control with fail-safe design

Description	Nominal Break Temp	Switch Type	Maximum Head Temp	Reference
Limit Thermostat	90C	SPST	70C	L07P1036000
Limit Thermostat	93C	SPST	70C	L07P1050000
Manual Reset Limit (Plated)	90C	SPST	70C	LM7P5071000
Manual Reset Limit	125C	SPST	90C	LM7P6599000
Heating Control		SPDT	100C	C28P1316000

EBERLE
by Schneider Electric

Eberle Residential and Commercial Controllers

Solutions for Energy Saving and Efficiency

Eberle is a leading European brand focused on the manufacturing of energy efficient residential and commercial heating and air-conditioning controls. The Eberle range offers a comprehensive range of programmable and non-programmable HVAC controls suitable for wall and flush-mounting as well as a full set of components for electric and hydronic underfloor heating systems and radiators. All products are optimised for energy efficiency and designed to enable simple installation and ease of use.

The Eberle Product Portfolio

As well as HVAC controls and underfloor heating components Eberle's product portfolio includes hygrostats, and universal temperature controls for various applications.



KLR-E7007



RTR-E6705

Eberle AC Controls

The range of Eberle AC Control Devices

Description	Power Supply	Switch Type	Switching Current	Temperature Setting	Reference
ITR-4 - Controller	240V AC	SPST	10A at unity PF / 4A at 0.6 PF	0C to 60C	052820641820
ITR-3 Controller - 528 000	240V AC	Changeover	10A at unity PF / 4A at 0.6 PF	-40C to 20C	052835143000
ITR-3 Controller - 528 200 40 100 C	240V AC	Changeover	10A at unity PF / 4A at 0.6 PF	20C to 100C	052835143200
LSW-3/020 24V - Air Stream Controller	24V AC / DC	Chanegover	10A at unity PF / 4A at 0.6 PF	-20C to 60C	053055026000
KLR-E 7019 Eberle - AC Controller	240V AC	SPDT	6A at unity PF / 3A at 0.6 PF	5C to 30C	111701951100
KLR-E 7004 Eberle - AC Controller	240V AC	SPDT	6A at unity PF / 3A at 0.6 PF	5C to 30C	111770451100
KLR-E 7006 Eberle - AC Controller	240V AC	SPDT	6A at unity PF / 3A at 0.6 PF	5C to 30C	111770651100
KLR-E 7007 Eberle - AC Controller	24V AC / 240V AC	SPDT	6A at unity PF / 3A at 0.6 PF	5C to 30C	111770791100
KLR-E 7012 Eberle - AC Controller	240V AC	SPDT	6A at unity PF / 3A at 0.6 PF	5C to 30C	111771251100
RTR-E 7799,Eberle,16A	240V AC	SPST	10A at unity PF / 4A at 0.6 PF	10C to 60C	111779951103
FR-E 525 31 Eberle 16A	240V AC	Changeover	14A AC	10C to 60C	515110651100
FRE-E 515 7101 Eberle	240V AC	SPST	10A at unity PF / 4A at 0.6 PF	10C to 60C	515710151110
KLR-E 52556 Eberle	24V AC	Analogue	3mA at 0V to 10V DC	5C to 30C	515781121100
KLR-E 7201 Eberle - AC Controller	240V AC	SPDT	10A at unity PF / 4A at 0.6 PF	5C to 30C	517720151100
KLR-E 7202 Eberle - AC Controller	240V AC	SPDT	10A at unity PF / 4A at 0.6 PF	5C to 30C	517720251100
KLR-E 7203 Eberle - AC Controller	240V AC	SPDT	6A at unity PF / 3A at 0.6 PF	5C to 30C	517720351100
KLR-E 525 52 Hp Eberle - AC Controller	240V AC	SPDT with neutral zone	6A at unity PF / 3A at 0.6 PF	5C to 30C	517724051100
KLR-E 7603 Hp Eberle - AC Controller	240V AC	SPDT with neutral zone	10A at unity PF / 4A at 0.6 PF	5C to 30C	517724151100
KLR-E 7611 Eberle - AC Controller	240V AC	SPDT with neutral zone	10A at unity PF / 4A at 0.6 PF	5C to 30C	517724351100
RTR-E 7610 Eberle - Ac Controller	240V AC	2 stage relay	10A at unity PF / 4A at 0.6 PF	5C to 30C	517729951100
KLR-E 527 23, Eberle	240V AC	SPDT	Fan 6A at unity PF / 3A at 0.6 PF Heat / Cool 3A at unity PF / 2A at 0.6 PF	5C to 30C	517770151100
Tr 3400 N-00 Self Optimising Controller	12-24V AC/DC	Relay	240V AC at 3A 12V DC at 20mA	-150C to 1700C	886974031040

Eberle Thermostats

The range of Eberle Thermostats and Hygrostats

Description	Power Supply	Switch Type	Switching Current	Temperature Setting	Reference
AZT-I 524 410 - All-Purpose Thermostat	240V AC	Changeover	10A	-15C to +15C	052461141410
Instat Plus 3F (Gb) - Clock Thermostat	240V AC	Changeover	16A	7C to 32C	053730141903
Instat Plus 3L (Gb) - Clock Thermostat	240V AC	Changeover	16A	7C to 32C	053740141903
RTR-E 3521/16A Neutral-Room Thermostat	24 to 240V AC	SPST	AC 10mA to 16A DC 100W	5C to 30C	101110151102
RTR-E 6721 Eberle - Room Thermostat	240V AC	Changeover	10mA to 10A Heating 10mA to 5A Cooling DC 30W	5C to 30C	111170151100
RTR-E 6747 Eberle - Room Thermostat	24V / 240V AC	Changeover	10mA to 10A Heating 10mA to 5A Cooling DC 30W	5C to 30C	111170290100
RTR-E 6722 Eberle - Room Thermostat	24V / 240V AC	Changeover	10mA to 10A Heating 10mA to 5A Cooling DC 30W	5C to 30C	111170291100
RTR-E 6763 Eberle - Room Thermostat	240V AC	Changeover	AC 10mA to 10A heating AC 10mA to 5A cooling DC 30W	5C to 30C	111170351100
RTR-E 6704 Eberle - Room Thermostat	240V AC	Changeover	AC 10mA to 10A heating AC 10mA to 5A cooling DC 30W	-20C to +35C'	111170851100
RTR-E 6705,12V, Eberle- Room Thermostat	240V AC	Changeover	AC 10mA to 16A DC 100W		111170911100
RTR-E 6705 Eberle - Room Thermostat	240V AC	Changeover	AC 10mA to 10A heating AC 10mA to 5A cooling DC 30W	5C to 60C	111170951100
UTR 60 Controller - 0 60°C	230V AC	Changeover	10A	0C to 60C	052472141894
HYG-E 6001 Eberle - Hygrostat	24V to 240V AC	Changeover	AC Up to 10A heating AC Up to 5A cooling	35% to 100% Relative Humidity	119170191100
HYG-E 7001 Eberle - Hygrostat/Thermostat	24V to 240V AC	Changeover	AC Up to 10A heating AC Up to 5A cooling	10C to 35C 35% to 100% Relative Humidity	119790191100

Eberle AC Control Accessories

Accessories to accompany the range of Eberle AC and Thermostat Controllers

Description	Reference
F193720 Remote Sensor 4M PVC	000193720000
Screwset SS001	007103188001
ARA 1-E Adapter Frame	007632399001
ARA 1,7-E Adapter Frame	007632488001
WU 1 Voltage monitor - 65 260V	040011760100
DWUD 2 Ac Voltage Monitor	040020752300
ISCH 20-2S Installation Contactor	049081140000
ISCH 24-4S Installation Contactor	049084140000
ISCH 40-4S Installation Contactor	049088140000
ISCH 63-4S Installation Contactor	049089140000
F 891 000 Sensor 4M/PVC	052891040000
Air Sensor 1 5M Silicon - For Typ 05283	052893000002
Standard Sensor 1.5M-Silicon F Typ05283	052894000002
ELAR-20 Load Rejection Relay	053015140420
SBA 1 On Delay Relay	054510641020
SBA-2 Electronic Timer	054513641030
SBR-2 Eberle Electronic Timer	054521649020
SBRH Delayed Action Relay	054525641030
Fit 3R, Blue, Eberle	527810355100
Fit 3R, White, Eberle	527810455100
Fit 3F, Blue, Eberle	527812355100
Fit 3F, White, Eberle	527812455100
Fit 3L, Blue, Eberle	527813355100
Fit 3L, White, Eberle	527813455100
DAE-F 565 19 Uni	856519140000

Notes

Technical Information

Reference Charts

Transformer Maximum Downstream Short Circuit Current and Selecting CBs supplied by one or more MV/LV Transformers	Page 4.0.1
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Coordination between Acti 9 MCBs and RCBOs and Upstream Fuses	Page 4.0.3
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Maximum short-circuit current downstream of an MV/LV transformer

The values indicated in the table below correspond to a bolted 3-phase short-circuit across the LV terminals of an MV/LV transformer connected to a network with a short-circuit power of 500 MVA.

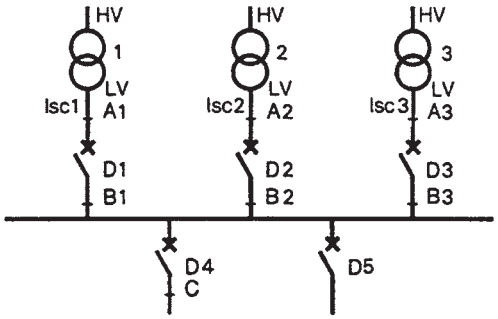
	Transformer kVA rating														
433 V (1)	50	100	160	250	315	400	500	630	750	1000	1250	1500	2000	2500	3150
In (A)	66.7	133.3	213.3	333.3	420.0	533.3	666.7	840	1000	1333	1667	2000	2667	3333	4200
Isc (kA)	1.7	3.3	5.3	8.3	10.5	13.3	16.7	21.0	22.2	26.7	30.3	32.0	42.7	53.3	58.7
Usc (%)	4	4	4	4	4	4	4	4	4.5	5	5.5	6.25	6.25	6.25	7.15

Selecting incoming or outgoing circuit-breakers according to the number and kVA rating of source transformers

The selection of a circuit-breaker protecting a circuit mainly depends on:

- the rated current of the source or of the load which determines the rating of the equipment,
- the maximum short-circuit current at the point of installation which determines the minimum breaking capacity of the equipment.

Case with several transformers



Eg. If transformers 1, 2 & 3 were rated at 630kVA each, circuit breakers D1, D2 & D3 must have a breaking capacity 6 42kA.
Circuit-breakers D4 & D5 must have a breaking capacity 6 63kA.
Note: Special precautions to be taken when cascading with several transformers in parallel. See page 16 of Complementary technical information Catalogue ABTED305161EN.

For the case involving several transformers in parallel (2):

- the incoming circuit-breaker D1 must have a breaking capacity higher than the larger of the following 2 values:
  - either Isc1 (for a short-circuit in B1)
  - or Isc2 + Isc3 (for a short-circuit in A1)
- the outgoing circuit-breaker D4 must have a breaking capacity higher than Isc1 + Isc2 + Isc3.

Note:
(1) Rated voltage between phases of the transformer under no-load conditions.
(2) To connect several transformers in parallel, the transformers should have the same Use, the same transformation ratio and the same coupling.
The power ratio between the 2 transformers should be a maximum of 2.

Using Cable Data & Upstream Short-Circuit Current Information

The tables below quickly give a good evaluation of the short-circuit current at a point in the network when the short-circuit current upstream (refer page 4.0.1), the CSA, constitution and length of the cable are known.

To obtain more precise values, particularly in the case of major installations, a detailed calculation has to be carried out. In addition, the cascading technique enables a circuit-breaker with a breaking capacity less than the prospective short-circuit current to be installed downstream provided a current limiting circuit-breaker is fitted upstream. (See next page)

The values are calculated using the resistivity of copper at 25˚C.

Examples (See chart below).
In the 415V switchboard, choose on the line corresponding to the cable cross-sectional area: 70 sq. mm, the nearest lower value to the cable length: 75m. The crossing of this column with the line which corresponds to the nearest higher value of the upstream short-circuit current Isc1=40kA, gives the required short-circuit current value: 8kA.

CSA per phase conductor (mm^2)	Length of cable (M)																							
1.5													0.8	1	1.3	1.6	3	6.5	8	9.5	13	16	32	
2.5												1	1.3	1.6	2.1	2.6	5	10	13	16	21	26	50	
4											0.8	1.7	2.1	2.5	3.5	4	8.5	17	21	25	34	42	85	
6											1.3	2.5	3	4	5	6.5	13	25	32	38	50	65	130	
10									0.8	1.1	2.1	4	5.5	6.5	8.5	11	21	42	55	65	85	110	210	
16								0.9	1	1.4	1.7	3.5	7	8.5	10	14	17	34	70	85	100	140	170	340
25							1	1.3	1.6	2.1	2.6	5	10	13	16	21	26	50	100	130	160	210	260	
35							1.5	1.9	2.2	3	3.5	7.5	15	19	22	30	37	75	150	190	220	300	370	
50						1.1	2.1	2.7	3	4	5.5	11	21	27	32	40	55	110	210	270	320			
70						1.5	3	3.5	4.5	6	7.5	15	30	37	44	60	75	150	300	370				
95				0.9	1	2	4	5	6	8	10	20	40	50	60	80	100	200	400					
120		0.9	1	1.1	1.3	2.5	5	6.5	7.5	10	13	25	50	65	75	100	130	250						
150	0.8	1	1.1	1.2	1.4	2.7	5.5	7	8	11	14	27	55	70	80	110	140	270						
185	1	1.1	1.3	1.5	1.6	3	6.5	8	9.5	13	16	32	65	80	95	130	160	320						
240	1.2	1.4	1.6	1.8	2	4	8	10	12	16	20	40	80	100	120	160	200	400						
300	1.5	1.7	1.9	2.2	2.4	5	9.5	12	15	19	24	49	95	120	150	190	240							
2 x 120	1.5	1.8	2	2.3	2.5	5.1	10	13	15	20	25	50	100	130	150	200	250							
2 x 150	1.7	1.9	2.2	2.5	2.8	5.5	11	14	17	22	28	55	110	140	170	220	280							
2 x 185	2	2.3	2.6	2.9	3.5	6.5	13	16	20	26	33	65	130	160	200	260	330							
3 x 120	2.3	2.7	3	3.5	4	7.5	15	19	23	30	38	75	150	190	230	300	380							
3 x 150	2.5	2.9	3.5	3.5	4	8	16	21	25	33	41	80	160	210	250	330	410							
3 x 185	2.9	3.5	4	4.5	5	9.5	20	24	29	39	49	95	190	240	290	390								

Upstream ISC (kA)	Downstream Short-circuit current (kA)																							
100	94	94	93	92	91	83	71	67	63	56	50	33	20	17	14	11	9	5	2.4	2	1.6	1.2	1	0.5
90	85	85	84	83	83	76	66	62	58	52	47	32	20	16	14	11	9	4.5	2.4	2	1.6	1.2	1	0.5
80	76	76	75	75	74	69	61	57	54	49	44	31	19	16	14	11	9	4.5	2.4	2	1.6	1.2	1	0.5
70	67	67	66	66	65	61	55	52	49	45	41	29	18	16	14	11	9	4.5	2.4	1.9	1.6	1.2	1	0.5
60	58	58	57	57	57	54	48	46	44	41	38	27	18	15	13	10	8.5	4.5	2.4	1.9	1.6	1.2	1	0.5
50	49	49	48	48	48	46	42	40	39	36	33	25	17	14	13	10	8.5	4.5	2.4	1.9	1.6	1.2	1	0.5
40	39	39	39	39	39	37	35	33	32	30	29	22	15	13	12	9.5	8	4.5	2.4	1.9	1.6	1.2	1	0.5
35	34	34	34	34	34	33	31	30	29	27	26	21	15	13	11	9	8	4.5	2.3	1.9	1.6	1.2	1	0.5
30	30	29	29	29	29	28	27	26	25	24	23	19	14	12	11	9	7.5	4.5	2.3	1.9	1.6	1.2	1	0.5
25	25	25	25	24	24	24	23	22	22	21	20	17	13	11	10	8.5	7	4	2.3	1.9	1.6	1.2	1	0.5
20	20	20	20	20	20	19	19	18	18	17	17	14	11	10	9	7.5	6.5	4	2.2	1.8	1.5	1.2	1	0.5
15	15	15	15	15	15	15	14	14	14	13	13	12	9.5	8.5	8	7	6	4	2.1	1.8	1.5	1.2	0.9	0.5
10	10	10	10	10	10	10	9.5	9.5	9.5	9.5	9	8.5	7	6.5	6.5	5.5	5	3.5	2	1.7	1.4	1.1	0.9	0.5
7	7	7	7	7	7	7	7	7	6.5	6.5	6.5	6	5.5	5	5	4.5	4	2.9	1.8	1.6	1.3	1.1	0.9	0.5
5	5	5	5	5	5	5	5	5	5	5	5	4.5	4	4	4	3.5	3.5	2.5	1.7	1.4	1.3	1.1	0.8	0.5
4	4	4	4	4	4	4	4	4	4	4	4	3.5	3.5	3.5	3	3	2.9	2.2	1.5	1.3	1.2	1.1	0.8	0.4
3	3	3	3	3	3	3	3	3	2.9	2.9	2.9	2.8	2.7	2.6	2.5	2.4	2.3	1.9	1.4	1.2	1.1	0.9	0.8	0.4
2	2	2	2	2	2	2	2	2	2	2	2	1.9	1.9	1.8	1.8	1.7	1.7	1.4	1.1	1	0.9	0.8	0.7	0.4
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	0.9	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.3

Coordination between Acti 9 MCBs and RCBOs and Upstream Fuses

Selectivity

Selectivity between MCB iC60 and fuse gG in upstream according to the IEC 60947-2 annexe A. The table below shows the limits of selectivity for a short-circuit current in kA with a fuse in upstream and a MCB iC60 in downstream.

Upstream		Fuse gG BS88 and NH												
	in (A)	16	20	25	32	40	50	63	80	100	125	160	200	250
Discrimination limit (kA)														
iC60 Curve C	1	1.5	4.8	T	T	T	T	T	T	T	T	T	T	T
	2	0.6	1	2.1	4.5	8.7	29.5	T	T	T	T	T	T	T
	4		0.5	0.9	1.7	2.7	5.3	15.1	T	T	T	T	T	T
	6		0.4	0.7	1.2	1.9	3.4	6.9	19	T	T	T	T	T
	10			0.6	0.9	1.4	2.3	3.9	8.4	16	T	T	T	T
	16					1.1	1.8	2.8	5.3	9.3	17.5	T	T	T
	20					0.9	1.5	2.3	4.2	7.1	12	T	T	T
	25						1.3	2.1	3.7	6.1	9.7	T	T	T
	32							1.9	3.2	5.1	7.6	19.6	T	T
	40								2.9	4.6	6.7	13.8	T	T
	50								2.6	4.2	6.1	12.3	T	T
	63									4	6	11.7	T	T

19 Please respect the breaking capacity of the circuit breaker (iC60N: 10kA, iC60H: 15kA)
1.9 Discrimination limit (kA) = 1.9kA.
T Total discrimination
No discrimination

Example: Combination of a fuse gG 63A in upstream with a MCB iC60 of 25 A B curve in downstream, selectivity up to a short circuit current of 2.1kA.

Cascading

The table below shows the enhanced breaking capacity thanks to cascading of the iC60 MCB and the maximum rating of the upstream fuse.

Upstream		Fuse gG BS88 and NH		
	in (A)	16-100	125	160
Downstream device				
iC60N	10kA	50kA	35kA	-
iC60H	15kA			
iC60L	25-20-15kA			

The enhanced breaking capacity is indicated in kA according to IEC 60947-2 annex A.

Cascading (Back-up) at 415V

Upstream	NSX100B	NSX100F	NSX100N	NSX100H	NSX100S	NSX100L	NSX160B	NSX160F	NSX160N	NSX160H	NSX160S	NSX160L
Breaking Capacity (kA rms)	25	36	50	70	100	150	25	36	50	70	100	150
Downstream												
iC60N <=40A	20	25	30	30	30	30	20	25	30	30	30	30
iC60N 50 & 63A	20	25	30	30	30	30	20	25	30	30	30	30
iC60H <=40A	25	36	40	40	40	40	25	36	40	40	40	40
iC60H 50 & 63A	25	36	36	36	36	36	25	30	30	30	30	30
C120N	25	25	25	25	25	25	25	25	25	25	25	25
C120H	25	25	25	25	25	25	25	25	25	25	25	25
NG125H			40	50	70	100			40	50	70	100
NSX100B		36	36	50	50	50		36	36	50	50	50
NSX100F			50	70	100	150			50	70	100	150
NSX100N				70	100	150				70	100	150
NSX100H					100	150					100	150
NSX100S						150						150
NSX160B								36	36	50	50	50
NSX160F									50	70	100	150
NSX160N										70	100	150
NSX160H											100	150
NSX160S												150

Cascading (Back-up) at 415V continued...

Upstream	NSX250B	NSX250F	NSX250N	NSX250H	NSX250S	NSX250L	NSX400F	NSX400N	NSX400H	NSX400S	NSX400L
Breaking Capacity (kA rms)	25	36	50	70	100	150	36	50	70	100	150
Downstream											
iC60N ≤ 40A	20	25	30	30	30	30					
iC60N 50 & 63A	20	25	25	25	25	25					
iC60H ≤ 40A	25	30	30	30	30	30					
iC60H 50 & 63A	25	25	25	25	25	25					
C120N	25	25	25	25	25	25					
C120H	25	25	25	25	25	25					
NG125H			40	50	70	100					
NSX100B		36	36	50	50	50	36	36	50	50	50
NSX100F			50	70	100	150		50	70	100	150
NSX100N				70	100	150			70	100	150
NSX100H					100	150				100	150
NSX100S						150					150
NSX160B		36	36	50	50	50	36	36	50	50	50
NSX160F			50	70	100	150		50	70	100	150
NSX160N				70	100	150			70	100	150
NSX160H					100	150				100	150
NSX160S						150					150
NSX250B		36	36	50	50	50	36	36	50	50	50
NSX250F			50	70	100	150		50	70	100	150
NSX250N				70	100	150			70	100	150
NSX250H					100	150				100	150
NSX250S						150					150
NSX400F								50	70	100	150
NSX400N									70	100	150
NSX400H										100	150
NSX400S											150

Upstream	NSX630F	NSX630N	NSX630H	NSX630S	NSX630L	NS800H	NS800L	NS800LB	NS1000H	NS1000L	NS1250 -1600H
Breaking Capacity (kA rms)	36	50	70	100	150	70	150	200	70	150	70
Downstream	enhanced breaking capacity (kA rms)										
NSX100B	36	36	50	50	50	50	50	50	50	50	50
NSX100F		50	70	100	150	70	150	150	70	150	70
NSX100N			70	100	150	70	150	150	70	150	70
NSX100H				100	150		150	150		150	
NSX100S					150		150	200		150	
NSX160B	36	36	50	50	50	50	50	50	50	50	50
NSX160F		50	70	100	150	70	150	150	70	150	70
NSX160N			70	100	150	70	150	150	70	150	70
NSX160H				100	150		150	150		150	
NSX160S					150		150	200		150	
NSX250B	36	36	50	50	50	50	50	50	50	50	50
NSX250F		50	70	100	150	70	150	150	70	150	70
NSX250N			70	100	150	70	150	150	70	150	70
NSX250H				100	150		150	150		150	
NSX250S					150		150	200		150	
NSX400F		50	70	100	150	70	150	150	70	150	70
NSX400N			70	100	150	70	150	150	70	150	70
NSX400H				100	150		150	150		150	
NSX400S					150		150	200		150	
NSX630F		50	70	100	150	70	150	150	70	150	70
NSX630N			70	100	150	70	150	150	70	150	70
NSX630H				100	150		150	150		150	
NSX630S					150		150	200		150	

Cascading is the use of the current limiting capacity of circuit-breakers at a given point to permit installation of lower-rated and therefore lower-cost circuit-breakers downstream.

The upstream Compact circuit-breakers acts as a barrier against short-circuit currents. In this way, downstream circuit-breakers with lower breaking capacities than the prospective short-circuit (at their point of installation) operate under their normal breaking conditions. Since the current is limited throughout the circuit controlled by the limiting circuit-breaker, cascading applies to all switch gear downstream. It is not restricted to two consecutive devices.

With cascading, the devices can be installed in different switchboards. Thus, in general, cascading refers to any combination of circuit-breakers where a circuit-breaker with a breaking capacity less than the prospective Isc at its point of installation can be used. Of course, the breaking capacity of the upstream circuit-breaker must be greater than or equal to the prospective short-circuit current at its point of installation.

Cascading tables are:

- drawn up on the basis of calculations (comparison between the energy limited by the combination of the two CB's and the maximum permissible thermal stress for the downstream device),
- verified experimentally

The tables below indicate cascading possibilities between Schneider Electric circuit breakers on 415 V distribution networks.

Requirements of AS/NZS3000:2007

- Clause 2.5.4.5 'Characteristics of short-circuit protective devices' item (a) allows cascading [back up protection] where the upstream device is rated for the prospective short circuit rating and protects the downstream device and conductors.
- Clause 2.5.6.2 'Protection afforded by separate devices' requires coordination with overload protective devices.

Cascading (Back-up) & Enhanced Discrimination at 415V

With traditional circuit-breakers, cascading between two devices generally results in no discrimination.

With Compact NSX circuit-breakers, the discrimination characteristics in the tables remain applicable and are in some cases even enhanced. Protection discrimination is ensured for short-circuit currents greater than the rated breaking capacity of the circuit-breaker and even, in some cases, for its enhanced breaking capacity. In the latter case, **protection discrimination is total**, i.e. only the downstream device trips for any and all possible faults at its point in the installation.

Example

Consider a combination between:

- a Compact NSX250N with trip unit TM250D
- a Compact NSX100F with trip unit TM25D.

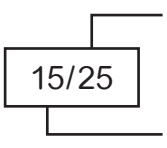
The discrimination tables* indicate total discrimination. Protection discrimination is therefore ensured up to the breaking capacity of the NSX100F, i.e. **36 kA**.

The cascading tables indicate an enhanced breaking capacity of **50 kA**.

The enhanced discrimination tables indicate that in a cascading configuration, discrimination is ensured up to **50 kA**, i.e. for any and all possible faults at that point in the installation.

Enhanced discrimination tables

For each combination of two circuit breakers, the tables indicate the:



downstream device breaking capacity enhanced by cascading

enhanced selectivity limit

The shaded background indicates that the two values are equal, i.e. for all faults likely to occur downstream, only the downstream device trips (total discrimination).

Technical principle

Enhanced discrimination is the result of the exclusive Compact NSX Roto-active breaking technique which operates as follows:

- due to the short-circuit current (electrodynamic forces), the contacts in both devices simultaneously separate. The result is major limitation of the short-circuit current;
- the dissipated energy provokes the reflex tripping of the downstream device, but is insufficient to trip the upstream device.

Upstream circuit breaker: Compact NSX160 to NSX250. Downstream circuit breaker: Acti 9

Upstream		NSX160B	NSX160F	NSX160N/H/S	NSX160L	NSX250B	NSX250F	NSX250N/H/S	NSX250L
		25 kA	36 kA	50/70/100 kA	150 kA	25 kA	36 kA	50/70/100 kA	150 kA
	Trip unit	TM-D							
Downstream	Rating	125-160	125-160	125-160	125-160	200-250	200-250	200-250	200-250
iC60N 6 kA	≤ 40	20/20	25/25	30/30	30/30	20/20	25/25	30/30	30/30
	50-63	20/20	25/25	30/30	30/30	20/20	25/25	25/25	25/25
iC60H 10 kA	≤ 40	25/25	36/36	40/40	40/40	25/25	30/30	30/30	30/30
	50-63	25/25	30/30	30/30	30/30	25/25	25/25	25/25	25/25
C120N/H 10/15 kA	≤ 40	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25
	50-125					25/25	25/25	25/25	25/25
NG125H 36 kA	≤ 40			50/50	100/100			50/50	100/100
	50-80							50/50	100/100

Upstream circuit breaker: Compact NSX100 to NSX250. Downstream circuit breaker: Acti 9

Upstream		NSX100B		NSX100F		NSX100N/H/S/L		NSX160B		NSX160F		NSX160N/H/S		NSX160L		NSX250B	NSX250F	NSX250N/H/S	NSX250L
		25 kA		36 kA		50/70/100/150 kA		25 kA		36 kA		50/70/100 kA		150 kA		25 kA	36 kA	50/70/100 kA	150 kA
	Trip unit	Micrologic 2.2/5.2/6.2																	
Downstream	Rating	40	100	40	100	40	100	80	160	80	160	80	160	80	160	250	250	250	250
iC60N 6 kA	≤ 25	20/20	20/20	25/25	25/25	30/30	30/30	20/20	20/20	25/25	25/25	25/25	25/25	25/25	25/25	20/20	25/25	30/30	30/30
	32		20/20		25/25		30/30	20/20	20/20	25/25	25/25	25/25	25/25	25/25	25/25	20/20	25/25	30/30	30/30
	40		20/20		25/25		30/30	20/20	20/20	25/25	25/25	25/25	25/25	25/25	25/25	20/20	25/25	30/30	30/30
	50							20/20	20/20	25/25	25/25	25/25	25/25	25/25	25/25	20/20	25/25	25/25	25/25
	63								20/20		25/25		25/25		25/25	20/20	25/25	25/25	25/25
iC60H 10 kA	≤ 25	25/25	25/25	36/36	36/36	40/40	40/40	25/25	25/25	36/36	36/36	40/40	40/40	40/40	40/40	25/25	30/30	30/30	30/30
	32		25/25		36/36		40/40	25/25	25/25	36/36	36/36	40/40	40/40	40/40	40/40	25/25	30/30	30/30	30/30
	40		25/25		36/36		40/40	25/25	25/25	36/36	36/36	40/40	40/40	40/40	40/40	25/25	30/30	30/30	30/30
	50							25/25	25/25	30/30	30/30	30/30	30/30	30/30	30/30	25/25	25/25	25/25	25/25
	63								25/25		30/30		30/30		30/30	25/25	25/25	25/25	25/25
C120N/H 10/15 kA	≤ 125															25/25	25/25	25/25	25/25
NG125H 36 kA	≤ 80																	50/50	100/100

Upstream circuit breaker: Compact NSX250. Downstream circuit breaker: NSX100

Upstream		NSX250F	NSX250N	NSX250H	NSX250S	NSX250L
		36 kA	50 kA	70 kA	100 kA	150 kA
	Trip unit	TM-D				
Downstream	Rating	200-250	200-250	200-250	200-250	200-250
NSX100B 25 kA	≤ 25	36/36	36/36	50/50	50/50	50/50
Trip unit TM-D	40-100	36/36	36/36	36/50	36/50	36/50
NSX100F 36 kA	≤ 25		50/50	70/70	100/100	150/150
Trip unit TM-D	40-100		36/50	36/70	36/100	36/150
NSX100N 50 kA	≤ 25			70/70	100/100	150/150
Trip unit TM-D	40-100			36/70	36/100	36/150
NSX100H 70 kA	≤ 25				100/100	150/150
Trip unit TM-D	40-100				36/100	36/150
NSX100S 100 kA	≤ 25					150/150
Trip unit TM-D	40-100					36/150
NSX100B 25 kA	Micrologic 2.2/5.2/6.2	36/36	36/36	36/50	36/50	36/50
NSX100F 36 kA	Micrologic 2.2/5.2/6.2		36/50	36/70	36/100	36/150
NSX100N 50 kA	Micrologic 2.2/5.2/6.2			36/70	36/100	36/150
NSX100H 70 kA	Micrologic 2.2/5.2/6.2				36/100	36/150
NSX100S 100 kA	Micrologic 2.2/5.2/6.2					36/150

Upstream circuit breaker: Compact NSX400 to NSX630. Downstream circuit breaker: NSX100 to NSX250

Upstream		NSX400F	NSX400N	NSX400H	NSX400S	NSX400L	NSX630F	NSX630N	NSX630H	NSX630S	NSX630L
		36 kA	50 kA	70 kA	100 kA	150 kA	36 kA	50 kA	70 kA	100 kA	150 kA
	Trip unit	Micrologic 2.3/5.3/6.3									
Downstream	Rating	400	400	400	400	400	630	630	630	630	630
NSX100B 25 kA	All	36/36	36/36	50/50	50/50	50/50	36/36	36/36	50/50	50/50	50/50
NSX100F 36 kA	All		50/50	70/70	100/100	150/150		50/50	70/70	100/100	150/150
NSX100N 50 kA	All			70/70	100/100	150/150			70/70	100/100	150/150
NSX100H 70 kA	All				100/100	150/150				100/100	150/150
NSX100S 100 kA	All					150/150					150/150
NSX160B 25 kA	All	36/36	36/36	50/50	50/50	50/50	36/36	36/36	50/50	50/50	50/50
NSX160F 36 kA	All		50/50	70/70	100/100	150/150		50/50	70/70	100/100	150/150
NSX160N 50 kA	All			70/70	100/100	150/150			70/70	100/100	150/150
NSX160H 70 kA	All				100/100	150/150				100/100	150/150
NSX160S 100 kA	All					150/150					150/150
NSX250B 25 kA	All						36/36	36/36	50/50	50/50	50/50
NSX250F 36 kA	All							50/50	70/70	100/100	150/150
NSX250N 50 kA	All								70/70	100/100	150/150
NSX250H 70 kA	All									100/100	150/150
NSX250S 100 kA	All										150/150

Upstream circuit breaker: Compact NS800 to NS1600. Downstream circuit breaker: NSX100 to NSX630

Upstream		NS800N	NS800H	NS800L	NS800LB	NS1000N	NS1000H	NS1000L	NS1250N	NS1250H	NS1600N	NS1600H
		50 kA	70 kA	150 kA	200 kA	50 kA	70 kA	150 kA	50 kA	70 kA	50 kA	70 kA
	Trip unit	Micrologic / 2 Isd: 10Ir / 5.0-6.0-7.0 inst: OFF										
Downstream	Rating	800	800	800	800	1000	1000	1000	1250	1250	1600	1600
NSX100B 25 kA	TM-D / Micrologic	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX100F 36 kA	TM-D / Micrologic	50/50	70/70	150/150	150/150	50/50	70/70	150/150	50/50	70/70	50/50	70/70
NSX100N 50 kA	TM-D / Micrologic		70/70	150/150	150/150		70/70	150/150		70/70		70/70
NSX100H 70 kA	TM-D / Micrologic			150/150	150/150			150/150				
NSX100S 100 kA	TM-D / Micrologic			150/150	200/200			150/150				
NSX100L 150 kA	TM-D / Micrologic				200/200							
NSX160B 25 kA	TM-D / Micrologic	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX160F 36 kA	TM-D / Micrologic	50/50	70/70	150/150	150/150	50/50	70/70	150/150	50/50	70/70	50/50	70/70
NSX160N 50 kA	TM-D / Micrologic		70/70	150/150	150/150		70/70	150/150		70/70		70/70
NSX160H 70 kA	TM-D / Micrologic			150/150	150/150			150/150				
NSX160S 100 kA	TM-D / Micrologic			150/150	200/200			150/150				
NSX160L 150 kA	TM-D / Micrologic				200/200							
NSX250B 25 kA	TM-D / Micrologic	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50	50/50
NSX250F 36 kA	TM-D / Micrologic	50/50	70/70	150/150	150/150	50/50	70/70	150/150	50/50	70/70	50/50	70/70
NSX250N 50 kA	TM-D / Micrologic		70/70	150/150	150/150		70/70	150/150		70/70		70/70
NSX250H 70 kA	TM-D / Micrologic			150/150	150/150			150/150				
NSX250S 100 kA	TM-D / Micrologic			150/150	200/200			150/150				
NSX250L 150 kA	TM-D / Micrologic				200/200							
NSX400F 36kA	Micrologic 2.3/5.3/6.3	50/50	70/70	10/150	10/150	50/50	70/70	15/150	50/50	70/70	50/50	70/70
NSX400N 50kA	Micrologic 2.3/5.3/6.3		70/70	10/150	10/150		70/70	15/150		70/70		70/70
NSX400H 70kA	Micrologic 2.3/5.3/6.3			10/150	10/150			15/150				
NSX400S 100kA	Micrologic 2.3/5.3/6.3			10/150	10/200			15/150				
NSX400L 150kA	Micrologic 2.3/5.3/6.3				10/200							
NSX630F 36kA	Micrologic 2.3/5.3/6.3					50/50	65/70	10/150	50/50	65/70	50/50	65/70
NSX630N 50kA	Micrologic 2.3/5.3/6.3						65/70	10/150		65/70		65/70
NSX630H 70kA	Micrologic 2.3/5.3/6.3							10/150				
NSX630S 100kA	Micrologic 2.3/5.3/6.3							10/150				

Refer to "complimentary technical information" (LVPED308005EN) for the basic overload and short-circuit discrimination rules (ie when protection settings are not set to maximum).

■ Requirements of AS/NZS3000:2007

- Clause 2.5.4.5 'Characteristics of short-circuit protective devices' item (a) allows cascading [back up protection] where the upstream device is rated for the prospective short-circuit rating and protects the downstream device and conductors. Clause 2.5.6.2 'Protection afforded by separate devices' requires coordination with overload protective devices. Clause 2.5.7 'Reliability of supply' requires discrimination on ALL circuits in an electrical installation.

Backup Protection of Switches

Acti 9 I isolators and ID RCCB's
Compact Non-Auto Circuit-Breakers

Acti 9 I Isolators, Rating (A)		2 pole (240V)					3 pole (415V)				
Upstream Protection		20	32	40-63	100	125	20	32	40-63	100	125
By circuit breaker	iC60N	6.5	5.5	7			4.5	4	5		
Isc. Max.	iC60H	6.5	5.5	7			4.5	4	5		
(kA ms)	C120N	3	3	5	7	7	2	2	3	5	5
	C120H	4.5	4.5	6.5	15	15	3	3	6	10	10
By fuse (type gG & BS)	20A	8					8				
Isc. Max.	32A		8					8			
(kA ms)	63A			10					10		
	100A				6					6	
	125A					6					6

ID RCCB's, Rating (A)		2 pole (240V)				3 pole (415V)			
Upstream Protection		ID25	ID40	ID63	ID80	ID25	ID40	ID63	ID80
By circuit-breaker	iC60N	20	20	20		10	10	10	
Isc. Max.	iC60H	30	30	30		15	15	15	
(kA ms)	C120N	10	10	10	10	10	10	10	10
	C120H	10	10	10	10	10	10	10	10
By fuse (type gG & BS)	25A	100				100			
Isc. Max.	40A		80				80		
(kA ms)	63A			30				30	
	80A				20				20

Compact Switch-disconnectors, Upstream protection			NSX100NA	NSX160NA	NSX250NA	NSX400NA	NSX630NA
By 380/415V circuit breaker	Type/maximum rating (A)		NSX100B/100	NSX160B/160	NSX250B/250		
	Isc max.	kA rms	25	25	25		
	making capacity	kA peak	53	53	53		
	Type/maximum rating (A)		NSX100F/100	NSX160F/160	NSX250F/250	NSX400F/400	NSX630F/630
	Isc max.	kA rms	36	36	36	36	36
	making capacity	kA peak	76	76	76	76	76
	Type/maximum rating (A)		NSX100N/100	NSX160N/160	NSX250N/250	NSX400N/400	NSX630N/630
	Isc max.	kA rms	50	50	50	50	50
	making capacity	kA peak	105	105	105	105	105
	Type/maximum rating (A)		NSX100H/100	NSX160H/160	NSX250H/250	NSX400H/400	NSX630H/630
	Isc max.	kA rms	70	70	70	70	70
	making capacity	kA peak	154	154	154	154	154
	Type/maximum rating (A)		NSX100S/100	NSX160S/160	NSX250S/250	NSX400S/400	NSX630S/630
	Isc max.	kA rms	100	100	100	100	100
	making capacity	kA peak	220	220	220	220	220
	Type/maximum rating (A)		NSX100L/100	NSX160L/160	NSX250L/250	NSX400L/400	NSX630L/630
	Isc max.	kA rms	150	150	150	150	150
	making capacity	kA peak	330	330	330	330	330
By 500V fuse	Type aM (1) maximum rating (A)		100	160	250	400	630
	Isc max.	kA rms	100	100	100	100	100
	making capacity	kA peak	220	220	220	220	220
	Type BS (2) maximum rating (A)		80 & 63M80	125 & 100M125	200 & 100M200	315 & 200M315	500
	Isc max.	kA rms	80	80	80	80	80
	making capacity	kA peak	176	176	176	176	176
	Type BS (1) maximum rating (A)		160 & 100M160	160 & 100M160	250 & 200M250	355 & 315M355	450 & 400M450
	Isc max.	kA rms	80	80	80	80	80
	making capacity	kA peak	176	176	176	176	176

Compact Switch-disconnectors, Upstream protection			NS800NA	NS1000NA	NS1250NA	NS1600NA
By 380/415V circuit breaker	Type/maximum rating (A)		NS800N/800	NS1000N/1000	NS1250N/1250	NS1600N/1600
	Isc max.	kA rms	50	50	50	50
	making capacity	kA peak	105	105	105	105
	Type/maximum rating (A)		NS800H/800	NS1000H/1000	NS1250H/1250	NS1600H/1600
	Isc max.	kA rms	70	70	70	70
	making capacity	kA peak	154	154	154	154
	Type/maximum rating (A)		NS800L/80	NS1000L/1000		
	Isc max.	kA rms	150	150		
	making capacity	kA peak	330	330		

Compact INS Load Break Switches

Compact INS Switch-disconnectors, Upstream protection		INS40	INS63	INS80	INS100	INS125	INS160
By circuit-breaker - 380/415V							
Type/max rating (A)		NSX100B/40	NSX100B/63	NSX100B/80	NSX100B/100		
Isc max. making capacity	kA rms	25	25	25	25		
	kA peak	52	52	52	52		
Type/max rating (A)		NSX100F/N/40	NSX100F/N/63	NSX100F/N/80	NSX100F/N/100		
Isc max. making capacity	kA rms	36	36	36	36		
	kA peak	75	75	75	75		
Type/max rating (A)		NSX100H/S/L/40	NSX100H/S/L/63	NSX100H/S/L/80	NSX100H/S/L/100		
Isc max. making capacity	kA rms	36	36	36	36		
	kA peak	75	75	75	75		
Type/max rating (A)		NSX160B/40	NSX160B/63	NSX160B/80	NSX160-250B/100	NSX160-250B/125	NSX160-250B/160
Isc max. making capacity	kA rms	25	25	25	25	25	25
	kA peak	52	52	52	52	52	52
Type/max rating (A)		NSX160F/40	NSX160F/63	NSX160F/80	NSX160-250F/100	NSX160-250F/125	NSX160-250F/160
Isc max. making capacity	kA rms	25	25	25	36	36	36
	kA peak	52	52	52	75	75	75
Type/max rating (A)		NSX160N/40	NSX160N/63	NSX160N/80	NSX160-250N/100	NSX160-250N/125	NSX160N-250N/160
Isc max. making capacity	kA rms	25	25	25	50	50	50
	kA peak	52	52	52	105	105	105
Type/max rating (A)		NSX160H/S/L/40	NSX160H/S/L/63	NSX160H/S/L/80	NSX160-250H/S/L/100	NSX160-250H/S/L/125	NSX160-250H/S/L/160
Isc max. making capacity	kA rms	25	25	25	70	70	70
	kA peak	52	52	52	154	154	154
By fuse - 500V							
Type aM (1) max rating (A)		125	125	125	200	200	200
Isc max. making capacity	kA rms	100	100	100	100	100	100
	kA peak	220	220	220	220	220	220

Note: 1) Protection by external thermal relay also required. 2) External thermal relay not required.

Backup Protection of Switches

Compact INS Load Break Switches (continued)

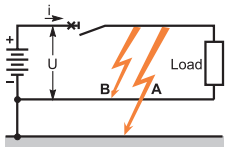
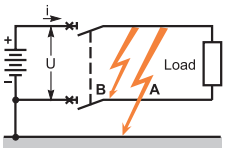
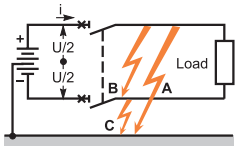
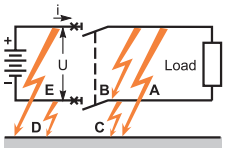
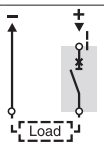
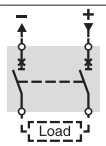
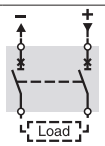
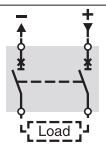
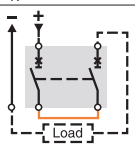
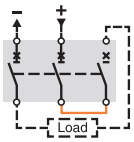
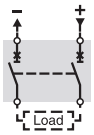
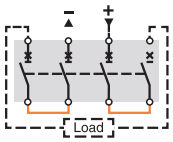
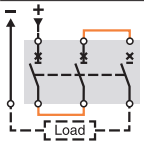
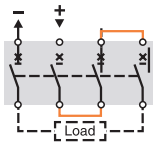
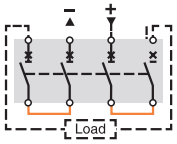
By fuse - 500V continued							
Type gG (2) max rating (A)		32	50	63	80	100	125
Isc max. making capacity	kA rms	100	100	100	100	100	100
	kA peak	220	220	220	220	220	220
Type gG (1) max rating (A)		100	100	100	125/160	125/160	125/160
Isc max. making capacity	kA rms	100	100	100	100/50	100/50	100/50
	kA peak	220	220	220	220/105	220/105	220/105
Type BS (2) max rating (A)		32	50 & 32M50	63 & 32M63	80 & 63M80	100 & 63M100	125 & 100M125
Isc max. making capacity	kA rms	80	80	80	80	80	80
	kA peak	176	176	176	176	176	176
Type BS (1) max rating (A)		125 & 100M125	125 & 100M125	125 & 100M125	160 & 100M160	160 & 100M160	160 & 100M160
Isc max. making capacity	kA rms	80	80	80	80	80	80
	kA peak	176	176	176	176	176	176

Compact INS Switch-disconnectors, Upstream protection		INS250-100 / INV100	INS250-160 / INV160	INS250-200 / INV200	INS250 / INV250	INS320 / INV320	INS400 / INV400
By circuit-breaker - 380/415V							
Type/max rating (A)		NSX100-160-250B/100	NSX160-250B/160	NSX250B/200	NSX250B/250	NSX400-630B/320	NSX400-630B/400
Isc max. making capacity	kA rms	25	25	25	25		
	kA peak	52	52	52	52		
Type/max rating (A)		NSX100-160-250F/100	NSX160-250F/160	NSX250F/200	NSX250F/250	NSX400-630F/320	NSX400-630F/400
Isc max. making capacity	kA rms	36	36	36	36	36	36
	kA peak	75	75	75	75	75	75
Type/max rating (A)		NSX100-160-250N/100	NSX160-250N/160	NSX250N/200	NSX250N/250	NSX400-630N/320	NSX400-630N/400
Isc max. making capacity	kA rms	50	50	50	50	50	50
	kA peak	105	105	105	105	105	105
Type/max rating (A)		NSX100-160-250H/100	NSX160-250H/160	NSX250H/200	NSX250H/250	NSX400-630H/320	NSX400-630H/400
Isc max. making capacity	kA rms	70	70	70	70	70	70
	kA peak	154	154	154	154	154	154
Type/max rating (A)		NSX100-160-250S/100	NSX160-250S/160	NSX250S/200	NSX250S/250	NSX400-630S/320	NSX400-630S/400
Isc max. making capacity	kA rms	100	100	100	100	100	100
	kA peak	220	220	220	220	220	220
Type/max rating (A)		NSX100-160-250L/100	NSX160-250L/160	NSX250L/200	NSX250L/250	NSX400-630L/320	NSX400-630L/400
Isc max. making capacity	kA rms	150	150	150	150	150	150
	kA peak	330	330	330	330	330	330
By fuse - 500V							
Type aM (1) max rating (A)		315	315	315	315	800	800
Isc max. making capacity	kA rms	100	100	100	100	100	100
	kA peak	220	220	220	220	220	220
Type gG (2) max rating (A)		80	125	160	200	250	315
Isc max. making capacity	kA rms	100	100	100	100	100	100
	kA peak	220	220	220	220	220	220
Type gG (1) max rating (A)		225/355	225/355	225/355	225/355	630	630
Isc max. making capacity	kA rms	100/50	100/50	100/50	100/50	50	50
	kA peak	220/105	220/105	220/105	220/105	105	105
Type BS (2) max rating (A)		80 & 63M80	125 & 100M125	160 & 100M160	200 & 100M200	250 & 200M250	315 & 200M315
Isc max. making capacity	kA rms	80	80	80	80	80	80
	kA peak	176	176	176	176	176	176
Type BS (1) max rating (A)		250 & 200M250	250 & 200M250	250 & 200M250	250 & 200M250	355 & 315M355	355 & 315M355
Isc max. making capacity	kA rms	80	80	80	80	80	80
	kA peak	176	176	176	176	176	176

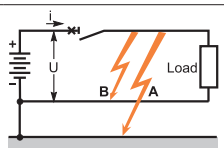
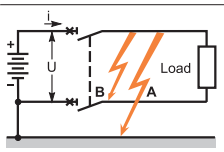
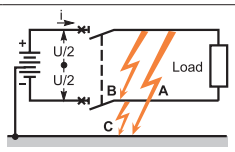
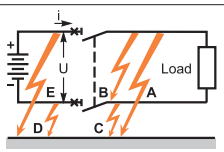
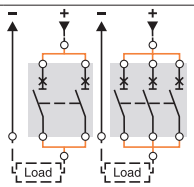
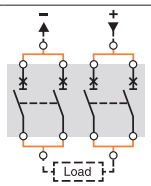
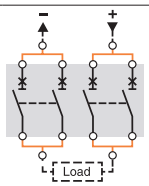
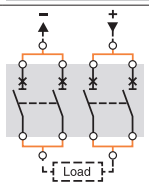
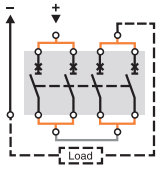
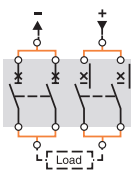
Compact INS Switch-disconnectors, Upstream protection		INS500 / INV500	INS630 / INV630	INS800 / INV800	INS1000 / INV1000	INS1250 / INV1250	INS1600 / INV1600
By circuit-breaker - 380/415V							
Type/max rating (A)		NSX630F/500	NSX630F/630				
Isc max. making capacity	kA rms	36	36				
	kA peak	75	75				
Type/max rating (A)		NSX630N/500	NSX630N/630	NS800N/800	NS1000N/1000	NS1250N/1250	NS1600N/1600
Isc max. making capacity	kA rms	50	50	35	35	35	35
	kA peak	105	105	75	75	75	75
Type/max rating (A)		NSX630H/500	NSX630H/630	NS800H/800	NS1000H/1000	NS1250H/1250	NS1600H/1600
Isc max. making capacity	kA rms	70	70	35	35	35	35
	kA peak	154	154	75	75	75	75
Type/max rating (A)		NSX630S/500	NSX630S/630				
Isc max. making capacity	kA rms	100	100				
	kA peak	220	220				
Type/max rating (A)		NSX630L/500	NSX630L/630	NS800L/800	NS1000L/1000		
Isc max. making capacity	kA rms	150	150	150	150		
	kA peak	330	330	330	330		
By fuse - 500V							
Type aM (1) max rating (A)		800	800				
Isc max. making capacity	kA rms	100	100				
	kA peak	220	220				
Type gG (2) max rating (A)		400	500				
Isc max. making capacity	kA rms	100	100				
	kA peak	220	220				
Type gG (1) max rating (A)		630	500/630				
Isc max. making capacity	kA rms	50	100/50				
	kA peak	105	220/105				
Type BS (2) max rating (A)		400	450 & 400M450				
Isc max. making capacity	kA rms	80	80				
	kA peak	176	176				
Type BS (1) max rating (A)		450 & 400M450	450 & 400M450				
Isc max. making capacity	kA rms	80	80				
	kA peak	176	176				

Note:
1) Protection by external thermal relay also required. 2) External thermal relay not required.

Determination of the series connection requirements for Compact NSX100-630 DC Circuit-Breakers depending on the type of DC distribution system

Type	Earthed			Isolated
Source	One polarity (negative here) connected to earth (or exposed conductive parts)		Mid-point connected to earth	Isolated polarities
Protected polarities	1 (disconnection of 1P)	2 (disconnection of 2P)	2	2
Diagrams (and types of faults)				
24V ⩽ Un ⩽ 250V Ics = 50kA for NSX100/160N 1P Ics = 85kA for NSX100/160H 1P Ics = 85kA for NSX100/160N 2P Ics = 100kA for NSX100/160H 2P Ics = 100kA for NSX100/250DC 3P				
	1P	2P or 3P	2P or 3P	2P or 3P
250V < Un ⩽ 500V Ics = 85kA for NSX100/160N 2P Ics = 100kA for NSX100/160H 2P Ics = 100kA for NSX100/250DC 3P	 Two-pole (1).			
	2P	3P	2P or 3P	4P
500V < Un ⩽ 750V Ics = 100kA for NSX100/250DC 3P	 Three-pole.			
	3P	4P	4P	

Parallel connection configurations for Compact NSX100-630 DC Circuit-Breakers depending on the type of DC distribution system (1)

Type	Earthed			Isolated
Source	One polarity (negative here) connected to earth (or exposed conductive parts)		Mid-point connected to earth	Isolated polarities
Protected polarities	1 (disconnection of 1P)	2 (disconnection of 2P)	2	2
Diagrams (and types of faults)				
Un ⩽ 250V Ics = 85kA for NSX100/160N 2P Ics = 100kA for NSX100/160H 2P Ics = 100kA for NSX100/250DC 3P	 2P, 3P or 4P in parallel	 2 x 2P in parallel	 2 x 2P in parallel	 2 x 2P in parallel
250V < Un ⩽ 500V Ics = 85kA for NSX100/160N 2P Ics = 100kA for NSX100/160H 2P Ics = 100kA for NSX100/250DC 3P	 2 x 2P in parallel, connected in series		 2 x 2P in parallel	

Note:
1) Check thermal rating tables on the following page when using parallel connected poles

Rating of the parallel connected Compact NSX DC circuit-breakers (1)

Type of circuit-breaker	Pole connection	Type of trip unit	Equivalent rated current In (A) at 40 degrees C	Magnetic threshold Im (A) +/- 20%
NSX100 N/H 2P	2P in parallel	TM16D	40	520
		TM25D	63	800
		TM32D	80	800
		TM40D	100	1400
		TM50D	125	1400
		TM63D	158	1400
		TM80D	200	1600
NSX100DC 3P	3P in parallel	TM16D	58	780
		TM25D	90	1200
		TM32D	115	1650
		TM40D	144	2100
		TM50D	180	2100
		TM63D	227	2100
		TM80D	288	2400
NSX100DC 4P	4P in parallel	TM16D	74	1040
		TM25D	115	1600
		TM32D	147	2200
		TM40D	184	2800
		TM50D	230	2800
		TM63D	290	2800
		TM80D	368	3200
	2 x 2P in parallel	TM16D	37	520
		TM25D	58	800
		TM32D	74	1100
		TM40D	46	1400
		TM50D	115	1400
		TM63D	145	1400
		TM80D	184	1600
NSX160DC 2P	2P in parallel	TM125D	313	2400
NSX160DC 3P	3P in parallel	TM100DC	360	2400
		TM125DC	450	3750
NSX160DC 4P	4P in parallel	TM100DC	460	3200
		TM125DC	575	5000
	2 x 2P in parallel	TM100DC	230	1600
		TM125DC	288	2500
NSX250DC 3P	2P in parallel	TM160DC	400	2500
		TM200DC	500	2000 to 4000
	3P in parallel	TM160DC	576	3750
		TM200DC	720	3000 to 6000
NSX250DC 4P	4P in parallel	TM160DC	736	5000
		TM200DC	920	4000 to 8000
	2 x 2P in parallel	TM160DC	368	2500
		TM200DC	460	2000 to 4000

Note:

1) The trip unit corresponding to the maximum current rating cannot be used. The equivalent current rating is based on the rating of the trip unit, the number of poles in parallel and an over-rating coefficient K:

   2P in parallel : K = 1.25
   3P in parallel : K = 1.20
   4P in parallel : K = 1.15

   The parallel connection accessories listed on page 2.2.34 must be used.

For Direct On Line

For high efficiency motors (high inrush currents) please consult us

Motor Rating	FLC	iC60 N/H	C120 N/H	NSX100/160/250 TMD		NSX 400/630 - ML 2.3			NSX 400/630 - ML 5.3/6.3		
AC-3 (kW)	(A)	C/D	C/D	Rating	Setting	Rating	Io Setting	Ir Setting	Rating	Ir Setting	Fine Setting
0.37	1.1	4									
0.55	1.5	4									
0.75	2	6									
1.1	2.5	6									
1.5	3.5	10									
2.2	5	16									
3	6.5	20									
3.7	7.5	20		16	0.7						
4	8.4	25		16	0.7						
5.5	11	32		16	0.9						
7.5	14	40		25	0.8						
9	17	40		25	0.9						
11	21	63	63	32	0.9						
15	28	63	80	40	0.9						
18.5	35		80	50	0.9						
22	40		80	50	1						
25	47		100	63	1						
30	55		100	80	0.9						
33	60		125	80	1						
37	66		125	100	0.9						
45	80			100	1						
55	100			160	0.8						
75	135			200	0.9						
90	165			250	0.9	400	250	0.9	400	250	225
110	200			250	1	400	280	0.9	400	280	252
132	240					400	320	1	400	320	320
160	280					400	360	1	400	360	360
185	325					630	450	0.95	630	450	428
200	340					630	450	0.98	630	450	440
220	385					630	500	1	630	500	500
250	425					630	630	0.95	630	630	599

This table has been made for 415 V motors only.
is based on holding continuously for
and for…
It doesn't trip for a sub-transient current of

DIRECT ON LINE
125% FLC
10 seconds at 600% FLC
1000% FLC

Requirements of AS/NZS3000:2007

- Clause 2.5.3 'Protection against overload current' requires protection to coordinate with the cable rating.
- Clause 2.5.3.3 'Alternative position of overload protective devices' allows overload protection by devices not located at the origin, eg: a motor overload relay downstream of the cable at the motor, protecting both the motor and the upstream cable. [The overload protection does not have to be at the switchboard as previously required.]
- If circuit-breaker ratings exceed the cable rating then they are for short-circuit protection only and separate cable overload protection is required to clause 2.5.3.

Note:
Magnetic trip: C curve - 5 to 10 times rating, D curve - 10 to 14 times rating. Adjustable types to be set at maximum.

For Star Delta, Auto Transformer and Resistor/Reactance

Motor Rating	FLC	iC60 N/H	C120 N/H	NSX100/160/250 TMD		NSX 400/630 - ML 2.3			NSX 400/630 - ML 5.3/6.3		
AC-3 (kW)	(A)	C/D	C/D	Rating	Setting	Rating	Io Setting	Ir Setting	Rating	Ir Setting	Fine Setting
0.37	1.1	6									
0.55	1.5	6									
0.75	2	6									
1.1	2.5	6									
1.5	3.5	6									
2.2	5	10									
3	6.5	10									
3.7	7.5	16		16	0.7						
4	8.4	16		16	0.7						
5.5	11	20		16	0.9						
7.5	14	25		25	0.7						
9	17	32		25	0.9						
11	21	40		32	0.9						
15	28	50	63	40	0.9						
18.5	35	63	80	50	0.9						
22	40		80	50	1						
25	47		80	63	1						
30	55		100	80	0.9						
33	60		100	80	1						
37	66		125	100	0.9						
45	80		125	100	1						
55	100			160	0.8						
75	135			200	0.9						
90	165			250	0.9	400	250	0.9	400	250	225
110	200			250	1	400	280	0.9	400	280	252
132	240					400	320	1	400	320	320
160	280					400	360	1	400	360	360
185	325					630	450	0.9	630	450	405
200	340					630	450	0.95	630	450	430
220	385					630	500	0.95	630	500	475
250	425					630	630	0.9	630	630	570

This table has been made for 415 V motors only. ASSISTED START, AUTO TRANSFORMER/STAR DELTA/RESISTANCE
is based on holding continuously for 120% FLC
and for… 20 seconds at 350% FLC
It doesn't trip for an inrush current of 1000% FLC

Requirements of AS/NZS3000:2007

- Clause 2.5.3 'Protection against overload current' requires protection to coordinate with the cable rating.
- Clause 2.5.3.3 'Alternative position of overload protective devices' allows overload protection by devices not located at the origin, eg: a motor overload relay downstream of the cable at the motor, protecting both the motor and the upstream cable. [The overload protection does not have to be at the switchboard as previously required.]
- If circuit-breaker ratings exceed the cable rating then they are for short-circuit protection only and separate cable overload protection is required to clause 2.5.3.

Note:

Magnetic trip: C curve - 5 to 10 times rating, D curve - 10 to 14 times rating. Adjustable types to be set at maximum.

For Fire Pump Starting

For high efficiency motors (high inrush currents) please consult us

Motor Rating	FLC	iC60 N/H	C120 N/H	NSX100/160/250 TMD		NSX 400/630 - ML 2.3			NSX 400/630 - ML 5.3/6.3		
AC-3 (kW)	(A)	C/D	C/D	Rating	Setting	Rating	Io	Ir	Rating	Ir	Fine Setting
0.37	1.1	4									
0.55	1.5	4									
0.75	2	6									
1.1	2.5	6									
1.5	3.5	10									
2.2	5	16									
3	6.5	20									
3.7	7.5	25		16	0.7						
4	8.4	32		16	0.7						
5.5	11	32		16	0.9						
7.5	14	50		25	0.8						
9	17	50		25	0.9						
11	21	63	63	32	0.9						
15	28		80	40	0.9						
18.5	35		100	50	0.9						
22	40			50	1						
25	47			63	1						
30	55			80	0.9						
33	60			80	1						
37	66			100	0.9						
45	80			100	1						
55	100			160	0.8						
75	135			200	0.9						
90	165			250	0.9	400	250	0.9	400	250	225
110	200			250	1	400	280	0.9	400	280	252
132	240					400	320	1	400	320	320
160	280					400	360	1	400	360	360
185	325					630	450	0.95	630	450	428
200	340					630	450	0.98	630	450	440
220	385					630	500	1	630	500	500
250	425					630	630	0.95	630	630	599

This table has been made for 415 V motors only. FIRE PUMP AS/NZS3000/7.10.9.2
Is based on holding continuously for 125% FLC
and for 20 seconds at 600% FLC
It doesn't trip for an inrush current of 1250% FLC

Requirements of AS/NZS3000:2007
Clause 7.2.9.2 'Fire pump motors - overcurrent protection' This sets the limits for overload characteristics.

- rated current sized to hold motor overloads of 1.25 full load current;
- overload trip sized to hold locked rotor current of 6 times full load current for at least 20 seconds.

No other overcurrent protective devices shall be inserted between the pump motor controller and the motor.
Note:
This means that the cable must be also sized to carry 1.25 times full load current.
Magnetic trip : D curve - 10 to 14 times rating. Adjustable types to be set at maximum.

Contactor Breakers - Integral & TeSys Model U

DOL Starting Contactor Breakers Total Coordination (Continuity of Service AS 60947.6.2)

3-phase Motor Rating – AC3 duty

415 Volts		TeSys U	TeSys U	
kW	A	Base	Control Unit (1)	Overload Range
0.37	1	LUB12	LUCB1X	0.35 to 1.4
0.55	1.5	LUB12	LUCB05	1.25 to 5
1.1	2.5	LUB12	LUCB05	1.25 to 5
1.5	3.5	LUB12	LUCB05	1.25 to 5
2.2	5	LUB12	LUCB12	3 to12
4	8.4	LUB12	LUCB12	3 to12
5.5	11	LUB12	LUCB12	3 to12
0.37	1	LUB32	LUCB1X	0.3 to 1.4
0.55	1.5	LUB32	LUCB05	1.25 to 5
1.1	2.5	LUB32	LUCB05	1.25 to 5
1.5	3.5	LUB32	LUCB05	1.25 to 5
2.2	5	LUB32	LUCB12	3 to 12
4	8.4	LUB32	LUCB12	3 to 12
5.5	11	LUB32	LUCB12	3 to 12
7.5	14	LUB32	LUCB18	4.5 to 18
11	21	LUB32	LUCB32	8 to 32
15	28	LUB32	LUCB32	8 to 32

Note:
1) Integral and TeSys U reference to be completed by the code corresponding to the control circuit voltage.

Coordination Tables
Altistart 01 Soft Start - Soft Stop units
Type 1 Coordination

Components to be combined in accordance with standards IEC 60947-1 and IEC 60947-4-2

Motor		Starter	Type of circuit-breaker		Type of contactor	Thermal overload relay
		Class 10	Telemecanique	Rating		
kW	A			A		
M1		A1	Q1		KM1, KM2, KM3, Q2	F4
0.37	0.98	ATS 01N103FT	GV2 ME05	1	LC1 K06 or LC1 D09	LR2 K0306 LRD 05
0.55	1.5	ATS 01N103FT	GV2 ME06	1.6	LC1 K06 or LC1 D09	LR2 K0307 LRD 06
0.75	2	ATS 01N103FT	GV2 ME07	2.5	LC1 K06 or LC1 D09	LR2 K0308 LRD 07
1.1	2.5	ATS 01N103FT	GV2 ME08	4	LC1 K06 or LC1 D09	LR2 K0308 LRD 08
		ATS 01N206QN	GV2 ME08	4	LC1 K06 or LC1 D09	LR2 K0308 LRD 08
1.5	3.5	ATS 01N106FT	GV2 ME08	4	LC1 K06 or LC1 D09	LR2 K0310 LRD 08
		ATS 01N206QN	GV2 ME08	4	LC1 K06 or LC1 D09	LR2 K0310 LRD 08
2.2	5	ATS 01N106FT	GV2 ME10	6.3	LC1 K06 or LC1 D09	LR2 K0312 LRD 10
		ATS 01N206QN	GV2 ME10	6.3	LC1 K06 or LC1 D09	LR2 K0312 LRD 10
3	6.5	ATS 01N106FT	GV2 ME14	9	LC1 K06 or LC1 D09	LR2 K0314 LRD 12
		ATS 01N206QN	GV2 ME14	9	LC1 K06 or LC1 D09	LR2 K0314 LRD 12
4	8.4	ATS 01N109FT	GV2 ME14	9	LC1 K06 or LC1 D09	LR2 K0316 LRD 14
		ATS 01N209QN	GV2 ME14	9	LC1 K06 or LC1 D09	LR2 K0316 LRD 14
5.5	11	ATS 01N112FT	GV2 ME16	13	LC1 K12 or LC1 D12	LR2 K0321 LRD 16
		ATS 01N212QN	GV2 ME16	13	LC1 K12 or LC1 D12	LR2 K0321 LRD 16
7.5	14.8	ATS 01N222QN	GV2 ME20	17	LC1 D18	LRD 21
9	18.1	ATS 01N222QN	GV2 ME21	21	LC1 D25	LRD 21
11	21	ATS 01N222QN	GV2 ME22	23	LC1 D25	LRD 22
15	28.5	ATS 01N232QN	GV2 ME32	32	LC1 D32	LR D3353

Altistart 48 Soft Start – Soft Stop Units
380V, 400V, 415V Power Supply
Type 1 Coordination

Components for use together in accordance with standards IEC 60947-4-1 and IEC 60647-4-2

Combine either circuit-breaker (light grey columns), contactor, starter, or switches/fuses (dark grey columns), contactor, starter

Motor		Starter		Type of circuit-breaker	Rating	Type of contactor
		Class 10	Class 20	Telemecanique		
kW	A	Standard applications	Severe applications	Merlin Gerin	A	
M1		A1		Q1		KM1, KM2, KM3
5.5	11	–	ATS48D17Q	GV2 L20	18	LC1D18
				NS80H MA	12.5	LC1D18
7.5	14.8	ATS48D17Q	ATS48D22Q	GV2 L20	18	LC1D18
				NS80H MA	25	LC1D18
11	21	ATS48D22Q	ATS48D32Q	GV2 L22	25	LC1D25
				NS80H MA	25	LC1D25
15	28.5	ATS48D32Q	ATS48D38Q	GV2 L32	32	LC1D32
				NS80H MA	50	LC1D32
18.5	35	ATS48D38Q	ATS48D47Q	GV3 L40	40	LC1D38
				NS80H MA	50	LC1D38
22	42	ATS48D47Q	ATS48D62Q	GV3 L65	65	LC1D50
				NS80H MA	50	LC1D50
30	57	ATS48D62Q	ATS48D75Q	GV3 L65	65	LC1D65
				NS80H MA	80	LC1D65
37	69	ATS48D75Q	ATS48D88Q	GK3E F80	80	LC1D80
				NS80H MA	80	LC1D80
45	81	ATS48D88Q	ATS48C11Q	NSX100 • MA (1)	100	LC1D115
55	100	ATS48C11Q	ATS48C14Q	NSX160 • MA (1)	150	LC1D115
75	131	ATS48C14Q	ATS48C17Q	NSX160 • MA (1)	150	LC1D150
90	162	ATS48C17Q	ATS48C21Q	NSX250 • MA (1)	220	LC1F185
110	195	ATS48C21Q	ATS48C25Q	NSX250 • MA (1)	220	LC1F225
132	233	ATS48C25Q	ATS48C32Q	NSX400 • MA (1)	320	LC1F265
160	285	ATS48C32Q	ATS48C41Q	NSX400 • MA (1)	320	LC1F330
220	388	ATS48C41Q	ATS48C48Q	NSX630 • MA (1)	500	LC1F400
250	437	ATS48C48Q	ATS48C59Q	NSX630 • MA (1)	500	LC1F500
315	560	ATS48C59Q	ATS48C66Q	NS630b • (1) Micrologic 5.0	630	LC1F630
355	605	ATS48C66Q	ATS48C79Q	NS800 • (1) Micrologic 5.0	800	LC1F800
400	675	ATS48C79Q	ATS48M10Q	NS800 • (1) Micrologic 5.0	800	LC1F800
500	855	ATS48M10Q	ATS48M12Q	NS1000 • (1) Micrologic 5.0	1000	LC1BM33
630	1045	ATS48M12Q	–	NS1250 • (1) Micrologic 5.0	1250	LC1BP33

(1) Replace p by B/F/N/H/ L, in function of breaking capacity, see the table below.

Breaking capacity of circuit-breakers according to standards IEC 60947-2 and 60947-4-2

380 V, 400 V, 415 V			Icu (kA)				
GV2 L20, GV2 L22, GV2 L32, GV3 L40, GV3 L50, GV3 L65			50kA				
GK3 EF80			35kA				
Disjoncteur/Circuit Breaker	B	F	N	H	S	L	LB
NS80H MA				70kA			
NSX100/160/250	25kA	36kA	50kA	70kA	100kA	150kA	
NSX400/630		36kA	50kA	70kA	100kA	150kA	
NS630b/800			50kA	70kA		150kA	200kA
NS1000			50kA	70kA		150kA	
NS1250	-	-	50kA	70kA	-	-	

Altistart 48 Soft Start – Soft Stop Units
380V, 400V, 415V Power Supply
Type 2 Coordination

Components for use together in accordance with standards IEC 60947-4-1 and IEC 60647-4-2 circuit-breakers, contactors, fast acting fuses, starters

Combination: circuit-breaker, contactor, starter

Motor		Starter		Type of circuit breaker Telemecanique	Rating	Type of contactor
kW	A	Class 10 Standard applications	Class 20 Severe applications	Merlin Gerin	A	
M1		A1		Q1		KM1, KM2, KM3
5.5	11	–	ATS48D17Q	GV2L20	18	LC1D40A
				NS80H MA	12.5	LC1D40
7.5	14,8	ATS48D17Q	ATS48D22Q	GV2L20	18	LC1D40A
				NS80H MA	25	LC1D40
11	21	ATS48D22Q	ATS48D32Q	GV2L22	25	LC1D40A
				NS80H MA	25	LC1D40
15	28.5	ATS48D32Q	ATS48D38Q	GV2L32	32	LC1D40A
				NS80HMA	50	LC1D80
18.5	35	ATS48D38Q	ATS48D47Q	NS80HMA	50	LC1D80
22	42	ATS48D47Q	ATS48D62Q	NS80HMA	50	LC1D80
30	57	ATS48D62Q	ATS48D75Q	NS80HMA	80	LC1D80
37	69	ATS48D75Q	ATS48D88Q	NS80HMA	80	LC1D80
45	81	ATS48D88Q	ATS48C11Q	NSX100 • MA (1)	100	LC1D115
55	100	ATS48C11Q	ATS48C14Q	NSX160 • MA (1)	150	LC1D115
75	131	ATS48C14Q	ATS48C17Q	NSX160 • MA (1)	150	LC1D150
90	162	ATS48C17Q	ATS48C21Q	NSX250 • MA (1)	220	LC1F185
110	195	ATS48C21Q	ATS48C25Q	NSX250 • MA (1)	220	LC1F225
132	233	ATS48C25Q	ATS48C32Q	NSX400 • MA (1)	320	LC1F265
160	285	ATS48C32Q	ATS48C41Q	NSX400 • MA (1)	320	LC1F330
220	388	ATS48C41Q	ATS48C48Q	NSX630 • MA (1)	500	LC1F500
250	437	ATS48C48Q	ATS48C59Q	NSX630 • MA (1)	500	LC1F500
315	560	ATS48C59Q	ATS48C66Q	NS630bL Micrologic 5.0	630	LC1F630
355	605	ATS48C66Q	ATS48C79Q	NS800L Micrologic 5.0	800	LC1F800
400	675	ATS48C79Q	ATS48M10Q	NS800L Micrologic 5.0	800	LC1F800
500	855	ATS48M10Q	ATS48M12Q	NS1000L Micrologic 5.0	1000	LC1BM33
630	1045	ATS48M12Q	–	NS1250 • (1) Micrologic 5.0 (2)	1250	LC1BP33

(1) Replace p by B,F,N, H or L, in function of the breaking capacity, see the table of breaking capacity on the previous page.
(2) Type 2 coordination is only possible if the fast acting fuses remain in the motor supply circuit and are not bypassed at the end of starting.

Fast acting fuse (essential for type 2 coordination), starter combinations

Starter	Fast acting fuses			
Reference	Reference	Size	Rating A	I2t kA2.s
A1	Q3			
ATS48D17Q	DF3ER50	14 x 51	50	2,3
ATS48D22Q and ATS48D32Q	DF3FR80	22 x 58	80	5,6
ATS48D38Q and ATS48D47Q	DF3FR100	22 x 58	100	12
ATS48D62Q and ATS48D75Q	DF400125	00	125	45
ATS48D88Q and ATS48C11Q	DF400160	00	160	82
ATS48C14Q and ATS48C17Q	DF430400	30	400	120
ATS48C21Q to ATS48C32Q	DF431700	31	700	490
ATS48C41Q	DF433800	33	800	490
ATS48C48Q and ATS48C59 /	DF4331000	33	1000	900
ATS48C66Q	DF42331400	2 x 33	1400	1200
ATS48C79Q	DF4441600	44	1600	1600
ATS48M10Q and ATS48M12Q	DF4442200	44	2200	4100

Maximum prospective short-circuit current of the starter according to standard IEC 60947-4-2

Starter	Iq (kA)
ATS48D17Q	50
ATS48D22Q to ATS48D47Q	40
ATS48D62Q to ATS48C79Q	50
ATS48M10Q and ATS48M12Q	85

Co-ordination Tables
Altivar 12, 312, Variable Speed Drives

Altivar 12 - Motor Control Protection Tables

Altivar 12 Motor Control Protection Tables

kW Rating	VSD Reference		Circuit Breaker (CB) reference	Operating range or rating	Max short cct I (Icu)	Contactor
0.18	ATV12H018M2	CB Only*	GV2ME08	2.5…4	>100	LC1K09••
		Motor CB	GV2L08	4	>100	
		Modular CB	2-pole C60N	6	10	
0.37	ATV12H037M2	CB Only*	GV2ME14	6…10	>100	LC1K09••
		Motor CB	GV2L10	6.3	>100	
		Modular CB	2-pole C60N	10	10	
0.55	ATV12H055M2	CB Only*	GV2ME14	6…10	>100	LC1K09••
		Motor CB	GV2L14	10	>100	
		Modular CB	2-pole C60N	10	10	
0.75	ATV12H075M2	CB Only*	GV2ME16	9…14	>100	LC1K12••
		Motor CB	GV2L16	14	>100	
		Modular CB	2-pole C60N	16	10	
1.5	ATV12HU15M2	CB Only*	GV2ME21	17…23	50	LC1D18••
		Motor CB	GV2L20	18	>100	
		Modular CB	2-pole C60N	20	10	
2.2	ATV12HU22M2	CB Only*	GV2ME32	24…32	50	LC1D25••
		Motor CB	GV2L22	25	10	
		Modular CB	2-pole C60N	32	10	

* Minimum Combination

ATV312/ATV32 Motor Control Protection Tables

Altivar 312 Motor Control Protection Tables

kW Rating	VSD Reference	Circuit Breaker (CB) reference	Circuit Breaker Rating (A)	Contactor Reference
Single phase supply voltage: 200 ... 240 V				
0.18	ATV312/ATV32 H018M2	GV2 L08	4	LC1D09••
0.37	ATV312/ATV32 H037M2	GV2 L10	6.3	LC1D09••
0.55	ATV312/ATV32 H055M2	GV2 L14	10	LC1D09••
0.75	ATV312H075M22	GV2 L14	10	LC1D09••
1.1	ATV312/ATV32 HU11M2	GV2 L16	14	LC1D09••
1.5	ATV312/ATV32 HU15M2	GV2 L20	18	LC1D09••
2.2	ATV312/ATV32 HU22M2	GV2 L22	25	LC1D09••
Three phase supply voltage: 380 ... 500 V				
0.37	ATV312/ATV32 H037N4	GV2 L07	2.5	LC1D09••
0.55	ATV312/ATV32 H055N4	GV2 L08	4	LC1D09••
0.75	ATV312/ATV32 H075N4	GV2 L08	4	LC1D09••
1.1	ATV312/ATV32 HU11N4	GV2 L10	6.3	LC1D09••
1.5	ATV312/ATV32 HU15N4	GV2 L14	10	LC1D09••
2.2	ATV312/ATV32 HU22N4	GV2 L14	10	LC1D09••
3	ATV312/ATV32 HU30N4	GV2 L16	14	LC1D09••
4	ATV312/ATV32 HU40N4	GV2 L16	14	LC1D09••
5.5	ATV312/ATV32 HU55N4	GV2 L22	25	LC1D09••
7.5	ATV312vHU75N4	GV2 L32	32	LC1D18••
11	ATV312/ATV32 HD11N4	GV3 L40	40	LC1D25••
15	ATV312/ATV32 HD15N4	GV3 L50	50	LC1D32••

Note:
(1) Add coil voltage suffix in place of ••

Co-ordination Tables
Altivar 61/71 Variable Speed Drives

Altivar 61/71 - Variable Speed Drives Contactors & Circuit-Breakers Type 2 Co-ordination Chart

3-phase supply voltage 380...415 V 50/60 Hz

Motor	Drive	Circuit Breaker		Line Contactor
Power (1)	Reference	Reference (2)	Rating	Reference
kW			A	(3) (4)
Type 2 coordination				
0.75	ATV61/ATV71 H075N4	GV2L08	4	LC1D09••
1.5	ATV61/ATV71 HU15N4	GV2L10	6.3	LC1D09••
2.2	ATV61/ATV71 HU22N4	GV2L14	10	LC1D25••
3	ATV61/ATV71 HU30N4	GV2L16	14	LC1D25••
4	ATV61/ATV71 HU40N4	GV2L16	14	LC1D25••
5.5	ATV61/ATV71 HU55N4	GV2L22	25	LC1D25••
7.5	ATV61/ATV71 HU75N4	GV3 L32	50	LC1D40A••
11	ATV61/ATV71 HD11N4	GV3 L40	50	LC1D50A••
15	ATV61/ATV71 HD15N4	GV3 L50	50	LC1D65••
18.5	ATV61/ATV71 HD18N4	GV3 L50	50	LC1D65A••
22	ATV61/ATV71 HD22N4	GV3 L65	80	LC1D65A••
30	ATV61/ATV71 HD30N4	NS80HMA80	80	LC1D80••
37	ATV61/ATV71 HD37N4	NSX100•MA100	100	LC1D95••
45	ATV61/ATV71 HD45N4	NSX160•MA100	150	LC1D115••
55	ATV61/ATV71 HD55N4	NSX160•MA220	150	LC1D150••
75	ATV61/ATV71 HD75N4	NSX250•MA220	150	LC1D185••
90	ATV61/ATV71 HD90N4	NSX250•MA220	220	LC1D185••
110	ATV61/ATV71 HC11N4	NSX250•MA220	220	LC1F225••
132	ATV61/ATV71 HC13N4	NSX400•Micrologic 1.3M	320	LC1F265••
160	ATV61/ATV71 HC16N4	NSX400•Micrologic 1.3M	320	LC1F230••
200	ATV61HC22N4	NSX630•Micrologic 1.3M	320	LC1F400••
220	ATV61/ATV71 HC25N4	NSX630•Micrologic 1.3M	500	LC1F400••
250	ATV61/ATV71 HC25N4	NSX630•Micrologic 1.3M	500	LC1F500••
280	ATV61/ATV71 HC28N4	NSX630•Micrologic 1.3M	500	LC1F500••
315	ATV61/ATV71 HC31N4	NS800L•Micrologic 1 or 5	500	LC1F630••
400	ATV61/ATV71 HC40N4	NS800L Micrologic 2 or 5		LC1F630••
400	ATV61/ATV71 HC40N4	NS800L Micrologic 2 or 5		LC1F800••
500	ATV61/ATV71 HC50N4	NS1000L Micrologic 2 or 5		LC1BL
630	ATV61HC63N4	NS1000L Micrologic 2 or 5		LC1BM

(1) Standard power ratings for 4-pole motors 50/60 Hz 400 V.

(2) NS80HMA, NS••••, NS800, NS1000
For references to be completed, replace the dot with the letter corresponding to the circuit-breaker performance (N, H, L).
Breaking capacity of circuit-breakers according to standard IEC60947-2:

Circuit-breaker	Icu (kA) for 400 V			
		N	H	L
GV2L08...L14	100	-	-	-
GV2L08...L22	50	-	-	-
NS80HMA	70	-	-	-
NS100•MA, NS160•MA, NS250•MA	-	36	70	150
NS400•, NS630•, NS800, NS1000	-	50	70	150

(3) Composition of contractors:
LC1 D18 to LC1 D150: 3-pole +1 "N/O auxiliary contact and 1 "N/C" auxiliary contact
LC1 F•••: 3 poles. To add auxiliary contacts or other accessories, please consult our specialist catalogue "Motor-starter solutions. Control and protection components".

(4) Replace •• with the control circuit voltage reference indicated in the table below.

	Volts ~	24	48	110	220	230	240
LC1D	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1F115...F225	50 Hz (LX1 coil)	B5	E5	F5	M5	P5	U5
	60 Hz (LX1 coil)	-	E6	F6	M6	-	U6
	40...400 Hz (LX9 coil)	-	E7	F7	M7	P7	U7
LC1F265...F330	40...400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7
LC1F400...F630	40...400 Hz (LX1 coil)	-	E7	F7	M7	P7	U7
LC1F800	40...400 Hz (LX1 coil)	-	-	FE7	P7	P7	P7

Note:
for the LC1BM, please consult your local sales off for specification of this contactor.
For other voltages available between 24 V and 600 V, or a DC control circuit, please consult your sales representative.

Combinations for customer assembly
Altivar Process ATV 630 & Motor starters
Supply voltage 380...415 V


NSX100FMA100

+


LC1D80••

+


ATV630D55N4

IEC standard motor starters

Motor Power (1)		Drive reference	Circuit breaker reference (2)	Rating	Irm	Line contactor reference (4) (5)
kW	HP			A	A	
3-phase supply voltage: 380...415V 50/60Hz						
0.75	1	ATV630U07N4	GV2L07	2.5	33.5	LC1D09••
1.5	2	ATV630U15N4	GV2L08	4	51	LC1D09••
2.2	3	ATV630U22N4	GV2L10	6.3	78	LC1D09••
3	-	ATV630U30N4	GV2L14	10	138	LC1D09••
4	5	ATV630U40N4	GV2L14	10	138	LC1D09••
5.5	7.5	ATV630U55N4	GV2L16	14	170	LC1D18••
7.5	10	ATV630U75N4	GV2L20	18	223	LC1D18••
11	15	ATV630D11N4	GV2L22	25	327	LC1D25••
15	20	ATV630D15N4	GV3L32	32	448	LC1D25••
18.5	25	ATV630D18N4	GV3L40	40	560	LC1D40A••
22	30	ATV630D22N4	GV3L50	50	700	LC1D50A••
30	40	ATV630D30N4	GV3L65	65	910	LC1D50A••
37	50	ATV630D37N4	NS80HMA	80	1000	LC1D65A••
45	60	ATV630D45N4	NSX100•MA100	100	1300	LC1D80••
55	75	ATV630D55N4	NSX160•MA150	150	1500	LC1D115••
75	100	ATV630D75N4	NSX160•MA150	150	1500	LC1D115••
90	125	ATV630D90N4	NSX250•MA220	220	2420	LC1F185••
110	150	ATV630C11N4	NSX250•MA220	220	2860	LC1F185••
132	200	ATV630C13N4	NSX400• Micrologic 1.3-M	320	3500	LC1F265••
160	250	ATV630C16N4	NSX400• Micrologic 1.3-M	320	4000	LC1F265••

(1) Standard power ratings for 400 V 50/60 Hz 4-pole motors. The values expressed in HP conform to the NEC (National Electrical Code).
(2) For references to be completed, replace the dot with the letter corresponding to the breaking performance of the circuit breaker (F, N, H, S or L). Breaking capacity of circuit breakers according to standard IEC 60947-2.

Circuit breaker	Icu (kA) for 380...415 V					
		F	N	H	S	L
GV2L07	100	-	-	-	-	-
GV2L08…14 (3)	130	-	-	-	-	-
GV2L14 (3)…22	50	-	-	-	-	-
GV3L32…65	50	-	-	-	-	-
NS80HMA	70	-	-	-	-	-
NSX100•MA100	-	36	50	70	100	150
NSX160•MA150	-	36	50	70	100	150
NSX250•MA220	-	36	50	70	100	150

(3) GV2L14: Lcu of 130 kA in combination with an ATV630U30N4, Icu of 20 kA with an ATV630U40N4.
(4) Composition of contactors: LC1D09...D115: 3 poles + 1 NO auxiliary contact + 1 NC auxiliary contact. LC1F185...F265: 3 poles. To add auxiliary contacts or other accessories, please refer to the "Motor-starter solutions - Control and protection components" catalogue.
(5) Replace •• with the control circuit voltage code indicated in the table below:

	Volts ~	24	48	110	220	230	240
LC1D09...D115	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	-	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1F185	50 Hz (LX1 coil)	B5	E5	F5	M5	P5	U5
	60 Hz (LX1 coil)	-	E6	F6	M6	-	U6
	40....400 Hz (LX9 coil)	-	E7	F7	M7	P7	U7
LC1F265	40....400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.

Combinations for customer assembly
Altivar Process ATV650 & Motor starters
Supply voltage 380...415 V

IEC standard motor starters


NSX100FMA100

Motor Power (1)		Drive Refernce	Circuit breaker reference (2)	Rating	Irm	Line contactor reference (4) (5) (6)
kW	HP			A	A	
3-phase supply voltage: 380...415V 50/60Hz						
0.75	1	ATV650U07N4/N4E	GV2L07	2.5	33.5	LC1D09••
1.5	2	ATV650U15N4/N4E	GV2L08	4	51	LC1D09••
2.2	3	ATV650U22N4/N4E	GV2L10	6.3	78	LC1D09••
3	-	ATV650U30N4/N4E	GV2L14	10	138	LC1D09••
4	5	ATV650U40N4/N4E	GV2L14	10	138	LC1D09••
5.5	7.5	ATV650U55N4/N4E	GV2L16	14	170	LC1D18••
7.5	10	ATV650U75N4/N4E	GV2L20	18	223	LC1D18••
11	15	ATV650D11N4/N4E	GV2L22	25	327	LC1D25••
15	20	ATV650D15N4/N4E	GV3L32	32	448	LC1D25••
18.5	25	ATV650D18N4/N4E	GV3L40	40	560	LC1D40A••
22	30	ATV650D22N4/N4E	GV3L50	50	700	LC1D50A••
30	40	ATV650D30N4/N4E	GV3L65	65	910	LC1D50A••
37	50	ATV650D37N4/N4E	NS80HMA	80	1000	LC1D65A••
45	60	ATV650D45N4/N4E	NSX100•MA100	100	1300	LC1D80••
55	75	ATV650D55N4/N4E	NSX160•MA150	150	1500	LC1D115••
75	100	ATV650D75N4/N4E	NSX160•MA150	150	1500	LC1D115••
90	125	ATV650D90N4/N4E	NSX250•MA220	220	2420	LC1F185••

(1) Standard power ratings for 400 V 50/60 Hz 4-pole motors. The values expressed in HP conform to the NEC (National Electrical Code).
(2) For references to be completed, replace the dot with the letter corresponding to the breaking performance of the circuit breaker (F, N, H, S or L). Breaking capacity of circuit breakers according to standard IEC 60947-2.

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LC1D80••

Circuit breaker	Icu (kA) for 380...415 V					
		F	N	H	S	L
GV2L07	100	-	-	-	-	-
GV2L08…14 (3)	130	-	-	-	-	-
GV2L14 (3)…22	50	-	-	-	-	-
GV3L32…65	50	-	-	-	-	-
NS80HMA	70	-	-	-	-	-
NSX100•MA100	-	36	50	70	100	150
NSX160•MA150	-	36	50	70	100	150
NSX250•MA220	-	36	50	70	100	150
NSX400p Micrologic 1.3-M	-	36	50	70	100	150

(3) GV2L14: Lcu of 130 kA in combination with an ATV650U30N4/N4E, Icu of 20 kA with an ATV650U40N4/N4E.
(4) Composition of contactors: LC1D09...D115: 3 poles + 1 NO auxiliary contact + 1 NC auxiliary contact. LC1F185: 3 poles
To add auxiliary contacts or other accessories, please refer to the “Motor-starter solutions - Control and protection components” catalogue.
(5) Replace •• with the control circuit voltage code indicated in the table below:

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ATV650D45N4

	Volts ~	24	48	110	220	230	240
LC1D09...D115	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	-	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1F185	50 Hz (LX1 coil)	B5	E5	F5	M5	P5	U5
	60 Hz (LX1 coil)	-	E6	F6	M6	-	U6
	40....400 Hz (LX9 coil)	-	E7	F7	M7	P7	U7

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.
(6) When they are used with ATV650U07N4/N4E...D90N4/N4E drives, the motor starters must be installed in a separate enclosure to maintain the IP 55 protection degree of the installation.

Combinations for customer assembly
Altivar Process ATV 930 & Motor starters
Supply voltage 380...415 V

IEC standard motor starters


NSX100FMA100

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LC1D80••

+


ATV930D45N4

Motor Power (1)		Drive Refernce	Circuit breaker reference (2)	Rating	Irm	Line contactor reference (3)(4)
kW	HP			A	A	
3-phase supply voltage: 380...415V 50/60Hz						
0.75	1	ATV930U07N4	GV2L07	2.5	33.5	LC1D09••
1.5	2	ATV930U15N4	GV2L08	4	51	LC1D09••
2.2	3	ATV930U22N4	GV2L10	6.3	78	LC1D09••
3	-	ATV930U30N4	GV2L14	10	138	LC1D09••
4	5	ATV930U40N4	GV2L14	10	138	LC1D09••
5.5	7.5	ATV930U55N4	GV2L16	14	170	LC1D18••
7.5	10	ATV930U75N4	GV2L20	18	223	LC1D18••
11	15	ATV930D11N4	GV2L22	25	327	LC1D25••
15	20	ATV930D15N4	GV3L32	32	448	LC1D25••
18.5	25	ATV930D18N4	GV3L40	40	560	LC1D40A••
22	30	ATV930D22N4	GV3L50	50	700	LC1D50A••
30	40	ATV930D30N4	GV3L65	65	910	LC1D50A••
37	50	ATV930D37N4	NS80HMA	80	1000	LC1D65A••
45	60	ATV930D45N4	NSX100•MA100	100	1300	LC1D80••
55	75	ATV930D55N4	NSX160•MA150	150	1500	LC1D115••
55	75	ATV930D55N4C	NSX160•MA150	150	1500	LC1D115••
75	100	ATV930D75N4	NSX160•MA150	150	1500	LC1D115••
75	100	ATV930D75N4C	NSX160•MA150	150	1500	LC1D115••
90	125	ATV930D90N4	NSX250•MA220	220	2420	LC1F185••
90	125	ATV930D90N4C	NSX250•MA220	220	2420	LC1F185••
110	150	ATV930C11N4C	NSX250•MA220	220	2860	LC1F185••
132	200	ATV930C13N4C	NSX400•Micrologic 1.3-M	320	3500	LC1F265••
160	250	ATV930C16N4C	NSX400•Micrologic 1.3-M	320	4000	LC1F265••

(1) Standard power ratings for 400 V 50/60 Hz 4-pole motors. The values expressed in HP conform to the NEC (National Electrical Code).
(2) For references to be completed, replace the dot with the letter corresponding to the breaking performance of the circuit breaker (F, N, H, S or L).
Breaking capacity of circuit breakers according to standard IEC 60947-2.

Circuit breaker	Icu (kA) for 380...415 V					
		F	N	H	S	L
GV2L07…L14	100	-	-	-	-	-
GV2L16…L22	50	-	-	-	-	-
GV3L32…L65	50	-	-	-	-	-
NS80HMA	70	-	-	-	-	-
NSX100•MA100	-	36	50	70	100	150
NSX160•MA150	-	36	50	70	100	150
NSX250•MA220	-	36	50	70	100	150
NSX400p Micrologic 1.3-M	-	36	50	70	100	150

(3) Composition of contactors:
LC1D09...D115: 3 poles + 1 NO auxiliary contact + 1 NC auxiliary contact. LC1F185...F265: 3 poles
To add auxiliary contacts or other accessories, please refer to the "Motor-starter solutions - Control and protection
(4) Replace •• with the control circuit voltage code indicated in the table below:

	Volts ~	24	48	110	220	230	240
LC1D09...D115	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	-	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1F185	50 Hz (LX1 coil)	B5	E5	F5	M5	P5	U5
	60 Hz (LX1 coil)	-	E6	F6	M6	-	U6
	40....400 Hz (LX9 coil)	-	E7	F7	M7	P7	U7
LC1F265	40....400 Hz (LX1 coil)	B7	E7	F7	M7	P7	U7

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.

Combinations for customer assembly
Altivar Process ATV 950 & Motor starters
Supply voltage 380...415 V



NSX100FMA100

+



LC1D80••

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ATV950D45N4

IEC standard motor starters

Motor Power (1)		Drive Refernce	Circuit breaker reference (2)	Rating	Irm	Line contactor reference (3)(4)(5)
kW	HP			A	A	
3-phase supply voltage: 380...415V 50/60Hz						
0.75	1	ATV950U07N4/N4E	GV2L07	2.5	33.5	LC1D09••
1.5	2	ATV950U15N4/N4E	GV2L08	4	51	LC1D09••
2.2	3	ATV950U22N4/N4E	GV2L10	6.3	78	LC1D09••
3	-	ATV950U30N4/N4E	GV2L14	10	138	LC1D09••
4	5	ATV950U40N4/N4E	GV2L14	10	138	LC1D09••
5.5	7.5	ATV950U55N4/N4E	GV2L16	14	170	LC1D18••
7.5	10	ATV950U75N4/N4E	GV2L20	18	223	LC1D18••
11	15	ATV950D11N4/N4E	GV2L22	25	327	LC1D25••
15	20	ATV950D15N4/N4E	GV3L32	32	448	LC1D25••
18.5	25	ATV950D18N4/N4E	GV3L40	40	560	LC1D40A••
22	30	ATV950D22N4/N4E	GV3L50	50	700	LC1D50A••
30	40	ATV950D30N4/N4E	GV3L65	65	910	LC1D50A••
37	50	ATV950D37N4/N4E	NS80HMA	80	1000	LC1D65A••
45	60	ATV950D45N4/N4E	NSX100•MA100	100	1300	LC1D80••
55	75	ATV950D55N4/N4E	NSX160•MA150	150	1500	LC1D115••
75	100	ATV950D75N4/N4E	NSX160•MA150	150	1500	LC1D115••
90	125	ATV950D90N4/N4E	NSX250•MA220	220	2420	LC1F185••

(1) Standard power ratings for 400 V 50/60 Hz 4-pole motors. The values expressed in HP conform to the NEC (National Electrical Code).
(2) For references to be completed, replace the dot with the letter corresponding to the breaking performance of the circuit breaker (F, N, H, S or L).
Breaking capacity of circuit breakers according to standard IEC 60947-2.

Circuit breaker	Icu (kA) for 380...415 V					
		F	N	H	S	L
GV2L07…L14	100	-	-	-	-	-
GV2L16…L22	50	-	-	-	-	-
GV3L32…L65	50	-	-	-	-	-
NS80HMA	70	-	-	-	-	-
NSX100•MA100	-	36	50	70	100	150
NSX160•MA150	-	36	50	70	100	150
NSX250•MA220	-	36	50	70	100	150

(3) Composition of contactors:
LC1D09...D115: 3 poles + 1 NO auxiliary contact + 1 NC auxiliary contact. LC1F185: 3 poles
To add auxiliary contacts or other accessories, please refer to the "Motor-starter solutions - Control and protection
(4) Replace •• with the control circuit voltage code indicated in the table below:

	Volts ~	24	48	110	220	230	240
LC1D09...D115	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	-	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1F185	50 Hz (LX1 coil)	B5	E5	F5	M5	P5	U5
	60 Hz (LX1 coil)	-	E6	F6	M6	-	U6
	40....400 Hz (LX9 coil)	-	E7	F7	M7	P7	U7

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.
(5) When used with ATV950U07N4/N4E...D90N4/N4E drives, the motor starters must be installed in a separate enclosure to maintain IP 55 protection for the installation.

Star Delta Selection Chart

TeSys Star Delta Selection Chart



Star Delta Starter Contactor Selection Chart

P Motor (1) kW (415V)	Line (KM2) (2)	Delta (KM3) (2)	Star (KM1) (2)	Thermal overload Relay	Star-delta wiring kit
Maximum operating rate: 30 starts/hour. Maximum start duration: 30 seconds.					
7.5	LC1D09	LC1D09	LC1D09	LRD14	LAD91217
11	LC1D18	LC1D18	LC1D09	LRD16	LAD93217
22	LC1D25	LC1D25	LC1D18	LRD22	LAD93217
30	LC1D32	LC1D32	LC1D18	LRD35	LAD93217
37	LC1D40A	LC1D40A	LC1D40A	LRD350	LAD9SD3
45	LC1D50A	LC1D50A	LC1D40A	LRD350	LAD9SD3
55	LC1D65A	LC1D65A	LC1D40A	LRD365	LAD9SD3
75	LC1D80	LC1D80	LC1D50	LRD3363	LA9D8017

P Motor (1) kW (415V)	Line (KM2) (2)	Delta (KM3) (2)	Star (KM1) (2)	Thermal overload Relay	Timer (3)
Maximum frequency: 12 starts/hour. Maximum starting time: 20 seconds					
90	LC1D115/F115	LC1D115/F115	LC1D115/F115	LRD5367/F5367	LADS2
110	LC1D115/F115	LC1D115/F115	LC1D115/F115	LRD5367/F5367	LADS2
132	LC1F150	LC1F150	LC1F115	LR9F5369	LADS2
160	LC1F185	LC1F185	LC1F115	LR9F5371	LADS2
200	LC1F225	LC1F225	LC1F185	LR9F5371	LADS2
220	LC1F265	LC1F265	LC1F185	LR9F7375	LADS2
315	LC1F330	LC1F330	LC1F265	LR9F7379	LADS2
355	LC1F400	LC1F400	LC1F265	LR9F7379	LADS2

Note:
(1) Standard ratings for squirrel cage motors.
(2) Contactors basic reference to be completed by the code corresponding to the control circuit voltage.
(3) Star Delta time includes break before make contacts (approx. 40ms).

Capacitor Bank Sizing Table

Based on the installation power (in kW) and power factor.

Given the installation power factor (cos φ) before compensation and the desired power factor after compensation, the table below can be used to obtain the coefficient which must be applied to the active power to determine the required capacitor bank output.

before compensation		capacitor kvar output required per kW load to obtain the following values of power factor cos φ (or tan φ)														
tan φ	cos φ	tg φ	0.75	0.59	0.48	0.46	0.43	0.40	0.36	0.33	0.29	0.25	0.20	0.14	0.0
		cos φ	0.80	0.86	0.90	0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1
2.29	0.40		1.557	1.691	1.805	1.832	1.861	1.895	1.924	1.959	1.998	2.037	2.085	2.146	2.288
2.22	0.41		1.474	1.625	1.742	1.769	1.798	1.831	1.840	1.896	1.935	1.973	2.021	2.082	2.225
2.16	0.42		1.413	1.561	1.681	1.709	1.738	1.771	1.800	1.836	1.874	1.913	1.961	2.022	2.164
2.10	0.43		1.356	1.499	1.624	1.651	1.680	1.713	1.742	1.778	1.816	1.855	1.903	1.964	2.107
2.04	0.44		1.290	1.441	1.558	1.585	1.614	1.647	1.677	1.712	1.751	1.790	1.837	1.899	2.041
1.98	0.45		1.230	1.384	1.501	1.532	1.561	1.592	1.626	1.659	1.695	1.737	1.784	1.846	1.988
1.93	0.46		1.179	1.330	1.446	1.473	1.502	1.533	1.567	1.600	1.636	1.677	1.725	1.786	1.929
1.88	0.47		1.130	1.278	1.397	1.425	1.454	1.485	1.519	1.532	1.588	1.629	1.677	1.758	1.881
1.83	0.48		1.076	1.228	1.343	1.370	1.400	1.430	1.464	1.497	1.534	1.575	1.623	1.684	1.826
1.78	0.49		1.030	1.179	1.297	1.326	1.355	1.386	1.420	1.453	1.489	1.530	1.578	1.639	1.782
1.73	0.50		0.982	1.232	1.248	1.276	1.303	1.337	1.369	1.403	1.441	1.481	1.529	1.590	1.732
1.69	0.51		0.936	1.087	1.202	1.230	1.257	1.291	1.323	1.357	1.395	1.435	1.483	1.544	1.686
1.64	0.52		0.894	1.043	1.160	1.188	1.215	1.249	1.281	1.315	1.353	1.393	1.441	1.502	1.644
1.60	0.53		0.850	1.000	1.116	1.144	1.171	1.205	1.237	1.271	1.309	1.349	1.397	1.458	1.600
1.56	0.54		0.809	0.959	1.075	1.103	1.130	1.164	1.196	1.230	1.268	1.308	1.356	1.417	1.559
1.52	0.55		0.769	0.918	1.035	1.063	1.090	1.124	1.156	1.190	1.228	1.268	1.316	1.377	1.519
1.48	0.56		0.730	0.879	0.996	1.024	1.051	1.085	1.117	1.151	1.189	1.229	1.277	1.338	1.480
1.44	0.57		0.692	0.841	0.958	0.986	1.013	1.047	1.079	1.113	1.151	1.191	1.239	1.300	1.442
1.40	0.58		0.665	0.805	0.921	0.949	0.976	1.010	1.042	1.076	1.114	1.154	1.202	1.263	1.405
1.37	0.59		0.618	0.768	0.884	0.912	0.939	0.973	1.005	1.039	1.077	1.117	1.165	1.226	1.368
1.33	0.60		0.584	0.733	0.849	0.878	0.905	0.939	0.971	1.005	1.043	1.083	1.131	1.192	1.334
1.30	0.61		0.549	0.699	0.815	0.843	0.870	0.904	0.936	0.970	1.008	1.048	1.096	1.157	1.299
1.27	0.62		0.515	0.665	0.781	0.809	0.836	0.870	0.902	0.936	0.974	1.014	1.062	1.123	1.265
1.23	0.63		0.483	0.633	0.749	0.777	0.804	0.838	0.870	0.904	0.942	0.982	1.030	1.091	1.233
1.20	0.64		0.450	0.601	0.716	0.744	0.771	0.805	0.837	0.871	0.909	0.949	0.997	1.058	1.200
1.17	0.65		0.419	0.569	0.685	0.713	0.740	0.774	0.806	0.840	0.878	0.918	0.966	1.007	1.169
1.14	0.66		0.388	0.538	0.654	0.682	0.709	0.743	0.775	0.809	0.847	0.887	0.935	0.996	1.138
1.11	0.67		0.358	0.508	0.624	0.652	0.679	0.713	0.745	0.779	0.817	0.857	0.905	0.966	1.108
1.08	0.68		0.329	0.478	0.595	0.623	0.650	0.684	0.716	0.750	0.788	0.828	0.876	0.937	1.079
1.05	0.69		0.299	0.449	0.565	0.593	0.620	0.654	0.686	0.720	0.758	0.798	0.840	0.907	1.049
1.02	0.70		0.270	0.420	0.536	0.564	0.591	0.625	0.657	0.691	0.729	0.796	0.811	0.878	1.020
0.99	0.71		0.242	0.392	0.508	0.536	0.563	0.597	0.629	0.663	0.701	0.741	0.783	0.850	0.992
0.96	0.72		0.213	0.364	0.479	0.507	0.534	0.568	0.600	0.634	0.672	0.712	0.754	0.821	0.963
0.94	0.73		0.186	0.336	0.452	0.480	0.507	0.541	0.573	0.607	0.645	0.685	0.727	0.794	0.936
0.91	0.74		0.159	0.309	0.425	0.453	0.480	0.514	0.546	0.580	0.618	0.658	0.700	0.767	0.909
0.88	0.75		0.132	0.282	0.398	0.426	0.453	0.487	0.519	0.553	0.591	0.631	0.673	0.740	0.882
0.86	0.76		0.105	0.255	0.371	0.399	0.426	0.460	0.492	0.526	0.564	0.604	0.652	0.713	0.855
0.83	0.77		0.079	0.229	0.345	0.373	0.400	0.434	0.466	0.500	0.538	0.578	0.620	0.687	0.829
0.80	0.78		0.053	0.202	0.319	0.347	0.374	0.408	0.440	0.474	0.512	0.552	0.594	0.661	0.803
0.78	0.79		0.026	0.176	0.292	0.320	0.347	0.381	0.413	0.447	0.485	0.525	0.567	0.634	0.776
0.75	0.80			0.150	0.266	0.294	0.321	0.355	0.387	0.421	0.459	0.499	0.541	0.608	0.750
0.72	0.81			0.124	0.240	0.268	0.295	0.329	0.361	0.395	0.433	0.473	0.515	0.582	0.724
0.70	0.82			0.098	0.214	0.242	0.269	0.303	0.335	0.369	0.407	0.447	0.489	0.556	0.698
0.67	0.83			0.072	0.188	0.216	0.243	0.277	0.309	0.343	0.381	0.421	0.463	0.530	0.672
0.65	0.84			0.046	0.162	0.190	0.217	0.251	0.283	0.317	0.355	0.395	0.437	0.504	0.645
0.62	0.85			0.020	0.136	0.164	0.191	0.225	0.257	0.291	0.329	0.369	0.417	0.478	0.620
0.59	0.86				0.109	0.140	0.167	0.198	0.230	0.264	0.301	0.343	0.390	0.450	0.593
0.57	0.87				0.083	0.114	0.141	0.172	0.204	0.238	0.275	0.317	0.364	0.424	0.567
0.54	0.88				0.054	0.085	0.112	0.143	0.175	0.209	0.246	0.288	0.335	0.395	0.538
0.51	0.89				0.028	0.059	0.086	0.117	0.149	0.183	0.230	0.262	0.309	0.369	0.512
0.48	0.90					0.031	0.058	0.089	0.121	0.155	0.192	0.234	0.281	0.341	0.484

E.g. Calculate the required kvar output for a 500kW installation
to raise the power factor from cos φ = 0.75 (tan φ = 0.88) to cos φ = 0.93 (tan φ = 0.4)
Qc = 500 x 0.487 = 244 kvar, whatever the system rated voltage.

Useful Formulas:

$$\text{P.f.} = \cos\varphi = \frac{kW}{kVA} \qquad kW = \frac{\sqrt{3}VA\cos\varphi}{1000} \qquad kVAr = \frac{\sqrt{3}VA\sin\varphi}{1000} \qquad KVA = \frac{\sqrt{3}VA}{1000} \qquad I = \frac{kVA \times 1000}{\sqrt{3}V} \qquad Ic = \frac{kVAr \times 1000}{\sqrt{3}V}$$

Where:

P.f. = Power factor; kW = Active Power; kVAr = Reactive Power; kVA = Apparent Power; V = Volts; A = Amps; I = line current; Ic = Rated capacitor current.
AS/NZS3000:2007 Clause 4.15.2.3 'Current carrying capacity of supply conductors' require circuit breakers to be rated at 1.35 times the rated capacitor current [to allow for capacitor and voltage tolerances and harmonic currents.]

Surge Arrestor Selection Guide

Q1) What pole configuration do you need? 1P, 1P+N, 3P, or 3P+N
- If MEN link is in distribution board (TNC earthing) use 1P or 3P.
- If no MEN link in distribution board (TNS earthing) then use 1P+N or 3P+N.

Q2) What Imax (Maximum Discharge Current) do you want? 65kA, 40kA, 20kA, 10kA, or 8kA
- Residential, Eg: 20kA (or 10kA) (Upgrade to 40 kA if high risk)
- Commercial Main Distribution Board, Eg: 40 kA (Upgrade to 65 kA if high risk)
- Commercial Sub Distribution Board, Eg: 20 kA (Upgrade to 40 kA if high risk)

Q3) Is remote Indication required? Yes or No

Poles	Imax (kA)	Remote Indication	MCB (A) C Curve	Un (V)	Uc (V)	Up (kV)	Width in mod. of 9mm	Reference	Description
1P	65	YES	50	230	340	1.5	2	A9L65101	PRD 65r 1P 65kA AUX
	40	YES	40	230	340	1.5	2	A9L40101	PRD 40r 1P 40kA AUX
	40	NO	40	230	340	1.5	2	A9L40100	PRD 40 1P 40kA
	20	NO	25	230	340	1.2	2	A9L20100	PRD 20 1P 20kA
	8	NO	20	230	340	1.1	2	A9L08100	PRD 8 1P 8kA
1P+N	65	YES	50	230	340	1.5	4	A9L65501	PRD 65r 1P+N 65KA AUX
	40	YES	40	230	340	1.5	4	A9L40501	PRD 40r 1P+N 40kA AUX
	40	NO	40	230	340	1.5	4	A9L40500	PRD 40 1P+N 40kA
	20	YES	25	230	340	1.2	4	A9L20501	PRD 20r 1P+N 20kA AUX
	20	NO	25	230	340	1.2	4	A9L20500	PRD 20 1P+N 20kA
	8	YES	20	230	340	1.1	4	A9L08501	PRD 8r 1P+N 8kA AUX
	8	NO	20	230	340	1.1	4	A9L08500	PRD 8 1P+N 8kA
3P	65	YES	50	230	340	1.5	6	A9L65301	PRD 65r 3P 65kA AUX
	40	YES	40	230	340	1.5	6	A9L40301	PRD 40r 3P 40kA AUX
	40	NO	40	230	340	1.5	6	A9L40300	PRD 40 3P 40kA
	20	NO	25	230	340	1.2	6	A9L20300	PRD 20 3P 20kA
	8	NO	20	230	340	1.1	6	A9L08300	PRD 8 3P 8kA
3P+N	65	YES	50	230	340	1.5	8	A9L65601	PRD 65r 3P+N 65KA AUX
	40	YES	40	230	340	1.5	8	A9L40601	PRD 40r 3P+N 40kA AUX
	40	NO	40	230	340	1.5	8	A9L40600	PRD 40 3P+N 40kA
	20	YES	25	230	340	1.2	8	A9L20601	PRD 20r 3P+N 20kA AUX
	20	NO	25	230	340	1.2	8	A9L20600	PRD 20 3P+N 20kA
	8	YES	20	230	340	1.1	8	A9L08601	PRD 8r 3P+N 8kA AUX
	8	NO	20	230	340	1.1	8	A9L08600	PRD 8 3P+N 8kA
Cartridges for PRD Surge Arrestors									
-	65	-	-	230	340	1.5	2	A9L65102	C65-340 Cartridge 65kA
-	40	-	-	230	340	1.5	2	A9L40102	C40-340 Cartridge 40kA
-	20	-	-	230	340	1.2	2	A9L20102	C20-340 Cartridge 20kA
-	8	-	-	230	340	1.1	2	A9L08102	C8-340 Cartridge 8kA
-	65	-	-	230	340	-	2	A9L00002	C Neutral Cartridge

Note:
1) Type or Class 1: Used at incoming for buildings that have a lightning rod. Contact Schneider Electric.
2) Type or Class 2: MOV technology typically 65kA, 40kA, or 20kA. These are the most common.
3) Type or Class 3: MOV technology typically 8kA. Used for sensitive loads further than 30 cable meters from panel.
4) Imax: Maximum Discharge Current.
5) Un (V): Nominal operating voltage.
6) Uc (V): Maximum Continuous Operating Voltage.
7) Up (kV): Voltage Protection Level.
8) 2007 Cartridges are NOT interchangeable with 2006 Cartridges.

AS/NZS 3000:2007 APPENDIX F provides guidance on the installation of surge arrestors.

Average Full Load Motor Currents

Single phase motors
1-phase

kW	hp	220 V A	240 V A
0.37	0.5	3.9	3.6
0.55	0.75	5.2	4.8
0.75	1	6.6	6.1
1.1	1.5	9.6	8.8
1.5	2	12.7	11.7
1.8	2.5	15.7	14.4
2.2	3	18.6	17.1
3	4	24.3	22.2
4	5	29.6	27.1
4.4	6	34.7	31.8
5.2	7	39.8	36.5
5.5	7.5	42.2	38.7
6	8	44.5	40.8
7	9	49.5	45.4
7.5	10	54.4	50

Three phase motors
3-phase 4-pole 50/60 Hz motors

kW	hp	220-240 V A	380 V A	415 V A	440 V A	500 V A	660 V A	690 V A	1000 V A
0.37	0.5	1.8	1.03	–	0.99	1	0.6	-	0.4
0.55	0.75	2.75	1.6	–	1.36	1.21	0.9	-	0.6
0.75	1	3.5	2	2	1.68	1.5	1.1	-	0.75
1.1	1.5	4.4	2.6	2.5	2.37	2	1.5	-	1
1.5	2	6.1	3.5	3.5	3.06	2.6	2	-	1.3
2.2	3	8.7	5	5	4.42	3.8	2.8	-	1.9
3	4	11.5	6.6	6.5	5.77	5	3.8	3.5	2.5
3.7	5	13.5	7.7	7.5	7.1	5.9	4.4	-	3
4	5.5	14.5	8.5	8.4	7.9	6.5	4.9	4.9	3.3
5.5	7.5	20	11.5	11	10.4	9	6.6	6.7	4.5
7.5	10	27	15.5	14	13.7	12	8.9	9	6
9	12	32	18.5	17	16.9	13.9	10.6	10.5	7
10	13.5	35	20	–	–	15	11.5	12	7.5
11	15	39	22	21	20.1	18.4	14	12.1	9
15	20	52	30	28	26.5	23	17.3	16.5	12
18.5	25	64	37	35	32.8	28.5	21.3	20.2	14.5
22	30	75	44	40	39	33	25.4	24.2	17
25	35	85	52	47	45.3	39.4	30.3	-	20
30	40	103	60	55	51.5	45	34.6	33	23
33	45	113	68	60	58	50	39	-	25
37	50	126	72	66	64	55	42	40	28
40	54	134	79	71	67	60	44	-	30
45	60	150	85	80	76	65	49	46.8	33
51	70	170	98	90	83	75	57	-	38
55	75	182	105	100	90	80	61	58	40
59	80	195	112	105	97	85	66	-	43
63	85	203	117	115	109	89	69	-	45
75	100	240	138	135	125	105	82	75.7	53
80	110	260	147	138	131	112	86	-	57
90	125	295	170	165	146	129	98	94	65
100	136	325	188	182	162	143	107	-	71
110	150	356	205	200	178	156	118	113	78
129	175	420	242	230	209	184	135	-	85
132	180	425	245	240	215	187	140	135	90
140	190	450	260	250	227	200	145	128	95
147	200	472	273	260	236	207	152	-	100
150	205	483	280	270	246	210	159	-	102
160	220	520	300	280	256	220	170	165	115
180	245	578	333	320	289	254	190	-	135
185	250	595	342	325	295	263	200	-	138
200	270	626	370	340	321	281	215	203	150
220	300	700	408	385	353	310	235	224	160
250	340	800	460	425	401	360	274	253	200
257	350	826	475	450	412	365	280	-	203
280	380	900	510	475	450	400	305	-	220
295	400	948	546	500	473	416	320	-	227
300	410	980	656	510	481	420	325	-	230
315	430	990	584	535	505	445	337	321	239
335	450	1100	620	550	518	472	355	-	250
355	480	1150	636	580	549	500	370	350	262
375	500	1180	670	610	575	527	395	-	273
400	545	1250	710	650	611	540	410	390	288
425	580	–	760	690	650	574	445	-	302
445	600	–	790	730	680	595	455	-	317
450	610	–	800	740	690	608	460	-	320
475	645	–	850	780	730	645	485	-	335
500	680	–	900	820	780	680	515	494	350

These values are given as a guide only. They may vary depending on the type of motor and the manufacturer.

Acti 9 CT Contactor
Application Notes

use of Acti 9 contactors from 16 to 100 A

For automation needs in the housing, tertiary and industrial sectors, the range of modular CT contactors is used for:

■ power control of final circuits for housing and the tertiary sector:
☐ lighting (luminous signs, shop windows, safety lighting, etc.)
☐ heating, heat pumps, ovens
☐ hot water for domestic use
☐ small utility motors (pumps, fans, barriers, garage doors, etc.)
☐ emergency stops and safety systems
☐ air conditioning

■ energy distribution control:
☐ load shedding and restoration
☐ source changeover, etc.

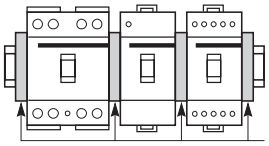
characterisation on load types

Standard IEC 1095 applies to electromechanical contactors for domestic and similar purposes. It differs from standard IEC 947-4 (designed for industrial applications) by specific requirements relating to safety of persons and equipment in premises and corridors accessible to the general public.

applications	industrial: IEC 947.4	domestic: IEC 1095
motor	AC3	AC7b
heating	AC1	AC7a
lighting	AC5a and b	AC5a and b

use for temperatures between 50 and 60°C

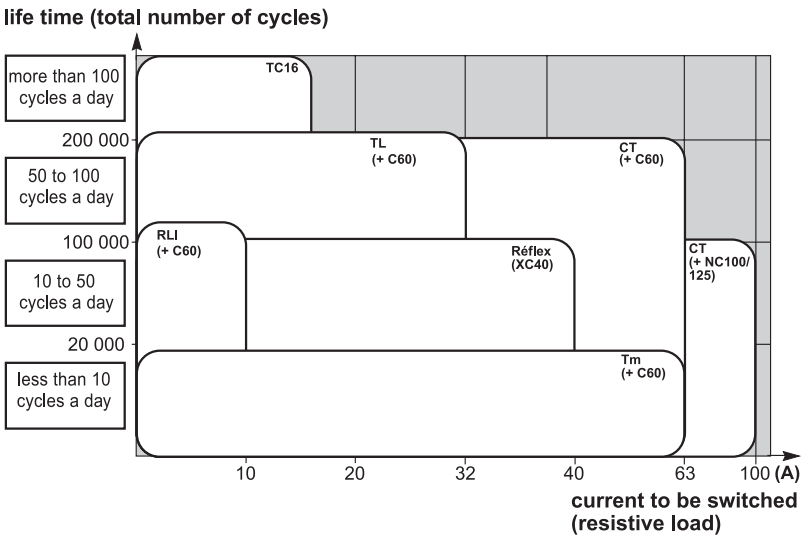
When contactors are mounted in enclosures with an internal temperature of between 50 and 60°C, a spacer, ref: 27062, must be placed between each contactor.



spacer
catalogue number
27062

positioning the remote control contactors

This table positions each device according to:
■ the number of cycles (total or daily)
■ the power to be controlled
It provides information on the protection circuit breaker to be associated.



Acti 9 CT Contactor
Lighting and Heating Applications
Product Selection Tables

lighting application AC5a and AC5b categories

- the following tables concern all the contactors from the CT range, with or without manual control, for 230 V single-phase lighting circuits
- they indicate the contactor rating to be chosen according to the number and type of lamps to be controlled. As a guideline, maximum power is also given.

- to obtain an equivalence on:
  - ☐ three-phase + neutral circuits: multiply the number of lamps and the power indicated in the table by 3.
  - ☐ three-phase without neutral circuits: multiply the number of lamps and the power indicated in the table by 1.7.

type of lighting application 230 V single-phase circuit power (W)	maximum number of lamps for a given rating CT contactors 16 A	25 A	40 A	63 A	100 A
incandescent lamp with or without halogen gas					
40	38	57	115	172	250
60	30	45	85	125	187
75	25	38	70	100	150
100	19	28	50	73	110
150	12	18	35	50	75
200	10	14	26	37	55
300	7	10	18	25	37
500	4	6	10	15	22
1000	2	3	6	8	12
12 V halogen lamp (on ELV electromagnetic transformer)					
20	15	23	42	63	94
50	10	15	27	42	63
75	8	12	23	35	52
100	6	9	18	27	40
150	4	6	13	19	28
26mm fluorescent tube (single parallel-corrected)					
15	15	20	40	60	90
18	15	20	40	60	90
20	15	20	40	60	90
36	15	20	40	60	90
40	15	20	40	60	90
58	10	15	30	43	64
65	10	15	30	43	64
115	5	7	14	20	30
140	5	7	14	20	30
26mm fluorescent tube (single uncorrected)					
15	22	30	70	100	150
18	22	30	70	100	150
20	22	30	70	100	150
36	20	28	60	90	135
40	20	28	60	90	135
58	13	17	35	56	84
65	13	17	35	56	84
115	7	10	20	32	48
140	7	10	20	32	48
26mm fluorescent tube (dual serial-corrected)					
2 x 18	30	46	80	123	180
2 x 20	30	46	80	123	180
2 x 36	17	25	43	67	100
2 x 40	17	25	43	67	100
2 x 58	10	16	27	42	63
26mm fluorescent tube (4 tubes, serial correction)					
4x18	15	23	46	69	100
electronic ballast (1 x 26mm tube)					
18	74	111	222	333	500
36	38	58	117	176	260
58	25	37	74	111	160
electronic ballast (2 x 26mm tube)					
2x18	36	55	111	166	250
2x36	20	30	60	90	135
2x58	12	19	38	57	85
electronic compact lamp (low consumption)					
7	133	200	400	600	900
11	80	120	240	360	540
15	58	88	176	264	396
20	44	66	132	200	300
23	38	57	114	171	256
low pressure sodium vapour lamp (without correction)					
18	18	34	57	91	
35	4	9	14	24	
55	5	9	14	24	
90	3	6	9	19	
135	2	4	6	10	
180	2	4	6	10	
low pressure sodium vapour lamp (with parallel correction)					
18	14	21	40	60	
35	3	5	10	15	
55	3	5	10	15	
90	2	4	8	11	
135	1	2	4	6	
180	1	2	5	7	
high pressure sodium vapour (without correction)					
70	8	12	20	32	
150	4	7	13	18	
250	2	4	8	11	
400	4	3	5	8	
1000	-	1	2	3	
high pressure sodium vapour lamp (with parallel correction)					
70	6	9	18	25	
150	6	9	18	25	

heating application AC7a and AC1 categories

- the following table concerns all the contactors in the CT range, with or without manual control, for 230 V single-phase and 400 V three-phase heating circuits.
- it indicates the contactor rating to be chosen according to the power to be controlled and the number of operations a day.

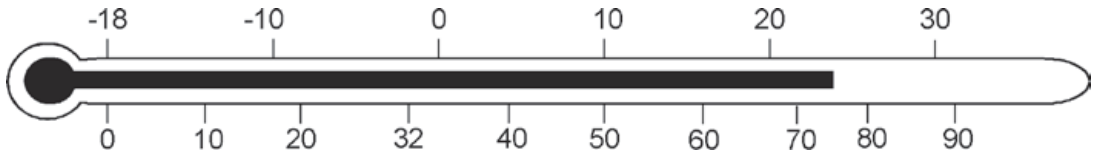
type of heating application number of operations / day	maximum power (kW) for a given rating CT contactors 25 A	40 A	63 A	100 A
230 V heating				
25	5.4	8.6	14	21.6
50	54	8.6	14	21.6
75	4.6	7.4	12	18
100	4	6	9.5	14
250	2.5	3.8	6	9
500	1.7	2.7	4.5	6.8
400 V heating				
25	16	26	14	63
50	16	26	14	63
75	14	22	35	52
100	11	17	26	40
250	5	8	13	19
500	3.5	6	9	14

small motor application AC7b category

- the following table concerns all the contactors in the CT range, with or without manual control, for 230 V single-phase and 400 V three-phase circuits.
- it indicates the contactor rating to be chosen according to the power of the motor to be controlled.

single-phase motor with capacitor			
230 V	1.4	2.5	4
single-phase motor with capacitor			
400 V	4	7.5	15

Temperature



Kelvin = ˚C + 273.16
Celsius = 5/9 (F-32)
Fahrenheit = 9C/5 + 32

Conversion Table

To Convert	Into	Multiply By
Centimetres	Inches	0.394
	Feet	0.0328
	Metres	0.01
	Millimetres	10
Feet	Centimetres	30.48
	Inches	12
	Metres	0.3048
	Miles	0.0001894
	Yards	0.333
Gallons	Pints	8
	Litres	3.785 (US) 4.54 (IMP)
	Quarts	4
Grams	Ounces	0.035
	Pounds	0.002
	Kilograms	0.001
Inches	Centimetres	2.54
	Feet	0.0833
	Metres	0.0254
	Yards	0.0278

To Convert	Into	Multiply By
Kilograms	Grams	1,000
	Ounces	35.274
	Pounds	2.205
Kilometres	Feet	3281
	Metres	1000
	Miles	0.621
	Yards	1.093
Litres	Cups	4.226
	Pints	2.113 (US) 1.761 (IMP)
	Gallons	0.264 (US) 0.22 (IMP)
	Millilitres	1000
	Quarts	0.066 (US) 0.055 (IMP)
Metres	Centimetres	100
	Feet	3.281
	Inches	39.3
	Kilometres	0.001
	Miles	0.0006214
	Millimetres	1000
	Yards	1.093

To Convert	Into	Multiply By
Miles	Feet	5.280
	Yards	1.760
	Kilometres	1.609
Ounces	Grams	28.35
	Pounds	0.0625
	Kilograms	0.028
Pints	Litres	0.473 (US) 0.568 (IMP)
	Quarts	0.5
	Gallons	0.125
Pounds	Grams	453.59
	Ounces	16
	Kilograms	0.454
Quarts	Pints	2
	Litres	0.946 (US) 1.136 (IMP)
	Gallons	0.25
Yards	Inches	36
	Feet	3
	Metres	0.914
	Miles	0.0005682

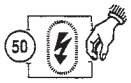
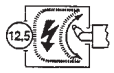
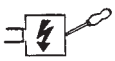
Pressure

Pressure Conversion Information

Bar	PSI	kPA
1 bar = 14.5 psi	1 psi = 6.895 kPA	1 kPA = 7.5188 mm Hg
1 bar = 100 kPa	1 psi = 51.71 mm Hg	1 kPA = 0.2953 in. of mercury
1 bar = 750 mm Hg	1 psi = 2.036 in. of mercury	1 kPA = 0.01 bar
1 bar = 29.53 in. of mercury	1 psi = 0.069 bar	1 kPA = 0.145 psi

IP	1st numeral	2nd numeral

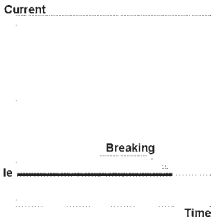
1st numeral: conforming to AS60529
protection against ingress of solid bodies

0 No protection.	
1 Full penetration of 50mm diameter sphere not allowed. Contact with hazardous parts not permitted.	
2 Full penetration of 12.5mm diameter sphere not allowed. The jointed test finger shall have adequate clearance from hazardous parts.	
3 The access probe of 2.5mm diameter shall not penetrate.	
4 The access probe of 1.0mm diameter shall not penetrate.	
5 Limited ingress of dust permitted (no harmful deposit).	
6 Totally protected against ingress of dust.	

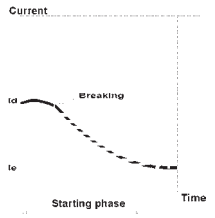
2nd numeral: conforming to AS60529
protection against ingress of water

0 No protection.	
1 Protected against vertically falling drops of water. Limited ingress permitted.	
2 Protected against vertically falling drops of water with enclosure tilted 15° from the vertical. Limited ingress permitted.	
3 Protected against sprays to 60° from the vertical. Limited ingress permitted	
4 Protected against water splashed from all directions. Limited ingress permitted.	
5 Protected against jets of water. Limited ingress permitted.	
6 Protected against strong jets of water. Limited ingress permitted.	
7 Protected against the effects of immersion between 15cm and 1m.	
8 Protected against long periods of immersion under pressure.	

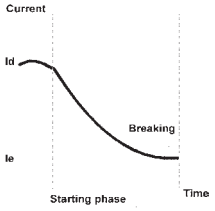
The standard utilisation categories fix the current values which the switching device must make or break. They depend on:
- the type of load being switched (squirrel cage or slip ring motor, resistors)
- the conditions under which opening and closing is performed (motor running or stalled or in the course of starting, reverse running).



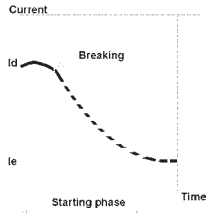
Category AC-1
Applies to all AC machines (loads), whose power factor is at least equal to 0.95 ($\cos \varphi \geq 0.95$)
Application Example:
Heating distribution.



Category AC-2
Applies to starting, plugging and inching of slip ring motors. On closing,the contactor makes the starting current, (approx 2.5xIe). On opening, it must break the starting current (voltage ⩽ mains voltage). Breaking is severe.
Application Example:
Lifting overhead cranes, gantries.



Category AC-3
Applies to squirrel cage motors with breaking during normal running of the motor. On closing, the contactor makes the starting current, which is about 5 to 7 times the rated current of the motor. On opening, it breaks the rated current drawn by the motor.
Application Example:
Conveyor belts, compressors, pumps, mixers, air conditioning units.



Category AC-4
Applies to plugging and inching of squirrel cage motors. The contactor makes the starting current, (approx 5 to 7 xIe). On opening, it breaks this same current which varies according to motor speed. Breaking is severe.
Application Example:
Hoists, printing machines, wire drawing machines.

Three Phase Current Ratings (AS/NZS3008.1.1:2009)

Table 7: Three single core solid or stranded V75 thermoplastic insulated cables

Current Carrying Capacity A

	Unenclosed			Enclosed	Buried Direct	Underground Ducts
Conductor Size	Spaced	Spaced from surface	Touching	Conduit in air		
						
mm^2	Cu	Cu	Cu	Cu	Cu	Cu
1	16	14	13	12	16	16
1.5	20	17	16	15	20	20
2.5	29	25	23	21	27	27
4	38	33	31	28	36	36
6	49	42	40	35	45	45
10	67	58	54	47	59	59
16	89	77	72	62	104	78
25	120	103	97	81	134	100
35	148	127	119	100	160	122
50	181	156	146	119	190	144
70	230	197	184	152	233	180
95	287	246	230	183	279	217
120	335	287	267	217	317	252
150	385	330	308	244	356	283
185	447	383	357	284	402	325
240	535	457	426	331	465	377

Table 4: Two single core solid or stranded V75 thermoplastic insulated cables

Current Carrying Capacity A

	Unenclosed			Enclosed	Buried Direct	Underground Ducts
Conductor Size	Spaced	Spaced from surface	Touching	Conduit in air		
						
mm^2	Cu	Cu	Cu	Cu	Cu	Cu
1	16	16	13	13	18	18
1.5	21	21	16	18	23	23
2.5	30	29	23	24	32	32
4	40	39	31	32	41	41
6	51	49	40	41	52	52
10	69	67	54	54	69	69
16	92	89	72	70	122	89
25	124	119	97	94	158	116
35	153	145	119	112	190	139
50	187	177	146	138	225	168
70	238	223	184	170	277	206
95	295	276	230	212	332	252
120	344	321	267	242	378	287
150	395	367	308	282	424	329
185	459	424	358	320	480	373
240	549	505	428	381	556	438

These ratings are based on 40 °C ambient air temperature and 25 °C ambient soil temperature.

Notes

Reference	Discount	Page
A9A26500	18U	2.1.11
A9A26897	18U	2.1.11
A9A26924	18U	2.1.11
A9A26927	18U	2.1.11
A9A26929	18U	2.1.11
A9A26946	18U	2.1.11
A9A26947	18U	2.1.11
A9A26948	18U	2.1.11
A9A26960	18U	2.1.11
A9A26961	18U	2.1.11
A9A26963	18U	2.1.11
A9A26969	18U	2.1.11
A9A26970	18U	2.1.12
A9A26971	18U	2.1.11
A9A26975	18U	2.1.12
A9A26976	18U	2.1.12
A9A26981	18U	2.1.12
A9A26982	18U	2.1.12
A9A27001	18U	2.1.12
A9A27005	18U	2.1.12
A9A27006	18U	2.1.12
A9A27049	18U	2.1.12
A9A27062	18U	2.1.12
A9C15409	18V	2.1.19
A9C15410	18V	2.1.19
A9C15412	18V	2.1.19
A9C15413	18V	2.1.19
A9C15424	18V	2.1.24
A9C15914	18V	2.1.12
A9C15924	18V	2.1.24
A9C18195	18V	2.1.22
A9C18308	18V	2.1.12
A9C18309	18V	2.1.12
A9C20134	18V	2.1.12
A9C20731	18V	2.1.12
A9C20732	18V	2.1.12
A9C20736	18V	2.1.12
A9C20833	18V	2.1.12
A9C20834	18V	2.1.12
A9C20837	18V	2.1.12
A9C20838	18V	2.1.12
A9C20842	18V	2.1.12
A9C20843	18V	2.1.12
A9C20844	18V	2.1.12
A9C20847	18V	2.1.12
A9C20862	18V	2.1.12
A9C20863	18V	2.1.12
A9C20864	18V	2.1.12
A9C20867	18V	2.1.12
A9C20868	18V	2.1.12
A9C20882	18V	2.1.12
A9C20884	18V	2.1.12
A9C22712	18V	2.1.12
A9C22715	18V	2.1.12
A9C30011	18V	2.1.17
A9C30012	18V	2.1.17
A9C30111	18V	2.1.17
A9C30112	18V	2.1.17
A9C30115	18V	2.1.17
A9C30211	18V	2.1.17
A9C30212	18V	2.1.17
A9C30215	18V	2.1.17
A9C30311	18V	2.1.17
A9C30312	18V	2.1.17
A9C30811	18V	2.1.17
A9C30812	18V	2.1.17
A9C30815	18V	2.1.17
A9C30831	18V	2.1.17
A9C32016	18V	2.1.17
A9C32116	18V	2.1.17
A9C32216	18V	2.1.17
A9C32316	18V	2.1.17
A9C32811	18V	2.1.18
A9C32816	18V	2.1.17
A9C32836	18V	2.1.17
A9C33811	18V	2.1.18
A9C34811	18V	2.1.18
A9C65210	18V	2.1.22
A9C65216	18V	2.1.22
A9C65225	18V	2.1.22
A9C65240	18V	2.1.22
A9C65310	18V	2.1.22
A9C65316	18V	2.1.22
A9C65325	18V	2.1.22
A9C65340	18V	2.1.22
A9C65410	18V	2.1.22
A9C65416	18V	2.1.22
A9C65425	18V	2.1.22
A9C65440	18V	2.1.22
A9C70122	18U	2.1.23
A9C70124	18U	2.1.23
A9D11210	18U	2.1.10
A9D11216	18U	2.1.10
A9D11220	18U	2.1.10
A9D11225	18U	2.1.10
A9D11232	18U	2.1.10
A9D11806	18U	2.1.10
A9D11810	18U	2.1.10
A9D11816	18U	2.1.10
A9D11820	18U	2.1.10
A9D11825	18U	2.1.10
A9D11832	18U	2.1.10
A9D11840	18U	2.1.10
A9D11845	18U	2.1.10
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ABE7FU100	2E5	3.3.38
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ABE7FU630	2E5	3.3.38
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ABE7H16R31	2E5	3.3.37
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ABE7R16S111	2E5	3.3.37
ABE7R16S210	2E5	3.3.37
ABE7R16T111	2E5	3.3.37
ABE7R16T230	2E5	3.3.37
ABE7R16T231	2E5	3.3.37
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ABE7R16T370	2E5	3.3.37
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ABE7S16E2F0	2E5	3.3.37
ABE7S16E2M0	2E5	3.3.37
ABE7TES160	2E5	3.3.38
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ABFTE20EP200	2E5	3.3.37
ABFTE20EP300	2E5	3.3.37
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ASI67FFP43EY	2E5	3.3.41
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ASITERV2	2E5	3.3.42
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AT1PA4	22P	3.3.48
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ATV630D30N4	2LC	3.2.14
ATV630D37N4	2LC	3.2.14
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ATV630U22N4	2LC	3.2.14
ATV630U30N4	2LC	3.2.14
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E481BPAXBH700	1I5	3.3.23
E481SP0XBH700	1I5	3.3.23
E4D12A00BD410	1I5	3.3.23
E4D12A00BD710	1I5	3.3.23
E4D12AASBD710	1I5	3.3.23
E4D12E00BH410	1I5	3.3.23
E4D12E00BH710	1I5	3.3.23
E4D12EASBH710	1I5	3.3.23
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E4D12N00BH710	1I5	3.3.23
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E7212I0XBH700	1I5	3.3.24
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E7213IAXBH700	1I5	3.3.24
E7213PAXBD700	1I5	3.3.24
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K115H004UP	1XQ	3.4.60
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K150F003UP	1XQ	3.4.60
K150F013UP	1XQ	3.4.61
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K150H004UP	1XQ	3.4.60
K150K006YP	1XQ	3.4.61
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K2D004Q	1XQ	3.4.56
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LP1K0610MD	1DW	3.1.1
LP1K0901BD	1DW	3.1.1
LP1K0901ED	1DW	3.1.1

Reference	Discount	Page
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LP1K0901JD	1DW	3.1.1
LP1K0901MD	1DW	3.1.1
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LP1K1210GD	1DW	3.1.1
LP1K1210JD	1DW	3.1.1
LP1K1210KD	1DW	3.1.1
LP1K1210MD	1DW	3.1.1
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LR2K0303	1JU	3.1.2
LR2K0304	1JU	3.1.2
LR2K0305	1JU	3.1.2
LR2K0306	1JU	3.1.2
LR2K0307	1JU	3.1.2
LR2K0308	1JU	3.1.2
LR2K0310	1JU	3.1.2
LR2K0312	1JU	3.1.2
LR2K0314	1JU	3.1.2
LR2K0316	1JU	3.1.2
LR2K0321	1JU	3.1.2
LR2K0322	1JU	3.1.2
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LR97D07F7	1K7	3.1.29
LR97D07M7	1K7	3.1.29
LR97D25F7	1K7	3.1.29
LR97D25M7	1K7	3.1.29
LR97D38F7	1K7	3.1.29
LR97D38M7	1K7	3.1.29
LR9D01	1K7	3.1.9
LR9D02	1K7	3.1.9
LR9D08	1K7	3.1.9
LR9D110S	1K7	3.1.9
LR9D32	1K7	3.1.9
LR9D5367	1K7	3.1.9
LR9D5369	1K7	3.1.9
LR9D5567	1K7	3.1.9
LR9D5569	1K7	3.1.9
LR9D67	1K7	3.1.9
LR9D69	1K7	3.1.9
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LR9F5363	1LU	3.1.12
LR9F5367	1LU	3.1.12
LR9F5369	1LU	3.1.12
LR9F5371	1LW	3.1.12
LR9F7375	1LD	3.1.12
LR9F7379	1LD	3.1.12
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LRD02	1JN	3.1.7
LRD03	1JN	3.1.7
LRD04	1JN	3.1.7
LRD05	1JN	3.1.7
LRD06	1JN	3.1.7
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LRD12	1JN	3.1.7
LRD14	1JN	3.1.7
LRD16	1JN	3.1.7
LRD21	1JN	3.1.7
LRD22	1JN	3.1.7
LRD313	1JN	3.1.7
LRD318	1JN	3.1.7
LRD32	1JN	3.1.7
LRD325	1JN	3.1.7
LRD332	1JN	3.1.7
LRD3361	1K1	3.1.7
LRD3363	1K1	3.1.7
LRD3365	1K1	3.1.7
LRD340	1JN	3.1.7
LRD35	1JN	3.1.7
LRD350	1JN	3.1.7
LRD365	1JN	3.1.7
LRD4365	1K1	3.1.7
LRD4367	1K1	3.1.7
LRD4369	1K1	3.1.7
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LT3SA00MW	1KQ	3.1.29
LT3SE00M	1KQ	3.1.29
LT3SM00M	1KQ	3.1.29
LT3SM00MW	1KQ	3.1.29
LT3SM00V	1KQ	3.1.29
LT4706BA	1K7	3.1.29
LT4706BS	1K7	3.1.29
LT4706EA	1K7	3.1.29
LT4706ES	1K7	3.1.29
LT4730BA	1K7	3.1.29
LT4730BS	1K7	3.1.29
LT4730EA	1K7	3.1.29
LT4730ES	1K7	3.1.29
LT4760BA	1K7	3.1.29
LT4760BS	1K7	3.1.29

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LTM9CEXP03	1L8	3.1.30
LTM9CEXP10	1L8	3.1.30
LTM9CU10	1L8	3.1.31
LTM9CU30	1L8	3.1.31
LTMCC004	1L8	3.1.30
LTMCU	1L8	3.1.31
LTMEV40BD	1L8	3.1.30
LTMEV40FM	1L8	3.1.30
LTMR08CBD	1L8	3.1.30
LTMR08CFM	1L8	3.1.30
LTMR08DBD	1L8	3.1.30
LTMR08DFM	1L8	3.1.30
LTMR08EBD	1L8	3.1.30
LTMR08EFM	1L8	3.1.30
LTMR08MBD	1L8	3.1.30
LTMR08MFM	1L8	3.1.30
LTMR08PBD	1L8	3.1.30
LTMR08PFM	1L8	3.1.30
LTMR100CBD	1L8	3.1.30
LTMR100CFM	1L8	3.1.30
LTMR100DBD	1L8	3.1.30
LTMR100DFM	1L8	3.1.30
LTMR100EBD	1L8	3.1.30
LTMR100EFM	1L8	3.1.30
LTMR100MBD	1L8	3.1.30
LTMR100MFM	1L8	3.1.30
LTMR100PBD	1L8	3.1.30
LTMR100PFM	1L8	3.1.30
LTMR27CBD	1L8	3.1.30
LTMR27CFM	1L8	3.1.30
LTMR27DBD	1L8	3.1.30
LTMR27DFM	1L8	3.1.30
LTMR27EBD	1L8	3.1.30
LTMR27EFM	1L8	3.1.30
LTMR27MBD	1L8	3.1.30
LTMR27MFM	1L8	3.1.30
LTMR27PBD	1L8	3.1.30
LTMR27PFM	1L8	3.1.30
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LU2B12BL	1LH	3.1.26
LU2B12ES	1LH	3.1.26
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LU2B32ES	1LH	3.1.26
LU2B32FU	1LH	3.1.26
LU9GC3	1LH	3.2.18
LU9R03	1LH	3.1.23
LU9R10	1LH	3.1.23
LU9R30	1LH	3.1.23
LUA1C11	1LH	3.1.28
LUA1C20	1LH	3.1.28
LUA8E20	1LH	3.1.28
LUB12	1LH	3.1.26
LUB120	1LH	3.1.26
LUB32	1LH	3.1.26
LUB320	1LH	3.1.26
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LUCC05FU	1LH	3.1.27
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LUCC12FU	1LH	3.1.27
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LUCD05FU	1LH	3.1.27
LUCD12BL	1LH	3.1.27
LUCD12ES	1LH	3.1.27
LUCD12FU	1LH	3.1.27
LUCD18BL	1LH	3.1.27
LUCD18ES	1LH	3.1.27
LUCD18FU	1LH	3.1.27
LUCD1XBL	1LH	3.1.27
LUCD1XES	1LH	3.1.27
LUCD1XFU	1LH	3.1.27

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LUCD32ES	1LH	3.1.27
LUCD32FU	1LH	3.1.27
LUCDX6BL	1LH	3.1.27
LUCDX6ES	1LH	3.1.27
LUCDX6FU	1LH	3.1.27
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LUFDA10	1LH	3.1.28
LUFDH11	1LH	3.1.28
LUFN02	1LH	3.1.28
LUFN11	1LH	3.1.28
LUFN20	1LH	3.1.28
LUFV2	1LH	3.1.28
LUFW10	1LH	3.1.28
LUTC1001	1LH	3.1.31
LUTC2001	1LH	3.1.31
LUTC4001	1LH	3.1.31
LUTC8001	1LH	3.1.31
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LV429004	0T7	2.2.9
LV429005	0T7	2.2.9
LV429006	0T7	2.2.9
LV429014	0T7	2.2.9
LV429018	0T7	2.2.9
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LV429033	0TF	2.2.9
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LV429289	0TF	2.2.19
LV429306	0TF	2.2.19
LV429319	0TF	2.2.20
LV429325	0TF	2.2.14
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LV429337	0TF	2.2.18
LV429338	0TF	2.2.18
LV429341	0TF	2.2.18
LV429344	0TF	2.2.18
LV429345	0TF	2.2.18

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LV429371	0TF	2.2.18
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LV429402	0TF	2.2.16
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LV429764	0T7	2.2.8
LV429765	0T7	2.2.8
LV429770	0T7	2.2.6
LV429772	0T7	2.2.6
LV429775	0T7	2.2.5
LV429777	0T7	2.2.5
LV429790	0T7	2.2.8
LV429792	0T7	2.2.8
LV429793	0T7	2.2.8
LV429794	0T7	2.2.8
LV429795	0T7	2.2.7

Reference	Discount	Page
LV429797	0T7	2.2.7
LV429825	0T7	2.2.6
LV429827	0T7	2.2.6
LV429828	0T7	2.2.6
LV429830	0T7	2.2.7
LV429832	0T7	2.2.7
LV429833	0T7	2.2.7
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LV429837	0T7	2.2.8
LV429838	0T7	2.2.8
LV429840	0T7	2.2.7
LV429841	0T7	2.2.7
LV429842	0T7	2.2.7
LV429843	0T7	2.2.7
LV429844	0T7	2.2.7
LV429845	0T7	2.2.7
LV429846	0T7	2.2.7
LV429847	0T7	2.2.7
LV429880	0T7	2.2.6
LV429882	0T7	2.2.6
LV429890	0T7	2.2.7
LV429892	0T7	2.2.7
LV430310	0T7	2.2.5
LV430311	0T7	2.2.5
LV430312	0T7	2.2.5
LV430313	0T7	2.2.5
LV430390	0T7	2.2.9
LV430391	0T7	2.2.9
LV430403	0T7	2.2.9
LV430404	0T7	2.2.9
LV430405	0T7	2.2.9
LV430406	0T7	2.2.9
LV430430	0TF	2.2.9
LV430431	0TF	2.2.9
LV430470	0TF	2.2.9
LV430475	0TF	2.2.10
LV430490	0TF	2.2.9
LV430491	0TF	2.2.9
LV430500	0TF	2.2.10
LV430505	0TF	2.2.9
LV430506	0TF	2.2.9
LV430520	0TF	2.2.10
LV430521	0TF	2.2.10
LV430554	0TF	2.2.20
LV430557	0TF	2.2.14
LV430561	0TF	2.2.14
LV430563	0TF	2.2.20
LV430629	0T7	2.2.5
LV430630	0T7	2.2.6
LV430631	0T7	2.2.6
LV430632	0T7	2.2.6
LV430633	0T7	2.2.6
LV430634	0T7	2.2.6
LV430635	0T7	2.2.6
LV430636	0T7	2.2.6
LV430670	0T7	2.2.8
LV430671	0T7	2.2.8
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LV430673	0T7	2.2.8
LV430674	0T7	2.2.8
LV430675	0T7	2.2.8
LV430676	0T7	2.2.8
LV430745	0T7	2.2.5
LV430746	0T7	2.2.5
LV430770	0T7	2.2.6
LV430771	0T7	2.2.6
LV430775	0T7	2.2.7
LV430776	0T7	2.2.7
LV430790	0T7	2.2.8
LV430791	0T7	2.2.8
LV430794	0T7	2.2.8
LV430795	0T7	2.2.8
LV430830	0T7	2.2.6
LV430831	0T7	2.2.6
LV430832	0T7	2.2.7
LV430833	0T7	2.2.7
LV430834	0T7	2.2.8
LV430835	0T7	2.2.8
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LV430842	0T7	2.2.7
LV430843	0T7	2.2.7
LV430844	0T7	2.2.7
LV430845	0T7	2.2.7
LV430846	0T7	2.2.7
LV430880	0T7	2.2.6
LV430881	0T7	2.2.6
LV430890	0T7	2.2.7
LV430891	0T7	2.2.7
LV430985	0T7	2.2.6
LV430986	0T7	2.2.6
LV430988	0T7	2.2.7
LV430989	0T7	2.2.7
LV430991	0T7	2.2.8
LV430992	0T7	2.2.8
LV431050	0XF	2.2.51
LV431110	0T7	2.2.5
LV431111	0T7	2.2.5
LV431112	0T7	2.2.5
LV431113	0T7	2.2.5
LV431140	0T7	2.2.5
LV431141	0T7	2.2.5
LV431142	0T7	2.2.5
LV431160	0T7	2.2.6
LV431161	0T7	2.2.6
LV431165	0T7	2.2.7
LV431166	0T7	2.2.7
LV431170	0T7	2.2.8

Reference	Discount	Page
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LV431390	0T7	2.2.9
LV431391	0T7	2.2.9
LV431403	0T7	2.2.9
LV431404	0T7	2.2.9
LV431405	0T7	2.2.9
LV431406	0T7	2.2.9
LV431430	0TF	2.2.9
LV431431	0TF	2.2.9
LV431432	0TF	2.2.9
LV431470	0TF	2.2.9
LV431475	0TF	2.2.10
LV431490	0TF	2.2.9
LV431491	0TF	2.2.9
LV431500	0TF	2.2.10
LV431505	0TF	2.2.9
LV431506	0TF	2.2.9
LV431520	0TF	2.2.10
LV431521	0TF	2.2.10
LV431535	0TF	2.2.14
LV431536	0TF	2.2.14
LV431540	0TF	2.2.17
LV431541	0TF	2.2.17
LV431542	0TF	2.2.17
LV431543	0TF	2.2.17
LV431544	0TF	2.2.17
LV431545	0TF	2.2.17
LV431546	0TF	2.2.17
LV431548	0TF	2.2.17
LV431549	0TF	2.2.17
LV431563	0TF	2.2.15
LV431564	0TF	2.2.51
LV431567	0TF	2.2.14
LV431569	0TF	2.2.14
LV431629	0T7	2.2.5
LV431630	0T7	2.2.6
LV431631	0T7	2.2.6
LV431632	0T7	2.2.6
LV431633	0T7	2.2.6
LV431634	0T7	2.2.6
LV431635	0T7	2.2.6
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LV431675	0T7	2.2.8
LV431676	0T7	2.2.8
LV431748	0T7	2.2.6
LV431749	0T7	2.2.6
LV431752	0T7	2.2.7
LV431753	0T7	2.2.7
LV431756	0T7	2.2.8
LV431757	0T7	2.2.8
LV431770	0T7	2.2.6
LV431771	0T7	2.2.6
LV431772	0T7	2.2.6
LV431790	0T7	2.2.8
LV431791	0T7	2.2.8
LV431792	0T7	2.2.8
LV431795	0T7	2.2.8
LV431796	0T7	2.2.8
LV431830	0T7	2.2.7
LV431831	0T7	2.2.7
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LV431835	0T7	2.2.7
LV431836	0T7	2.2.7
LV431860	0T7	2.2.6
LV431861	0T7	2.2.6
LV431870	0T7	2.2.7
LV431871	0T7	2.2.7
LV431872	0T7	2.2.7
LV431880	0T7	2.2.7
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LV432069	0TF	2.2.12
LV432071	0TF	2.2.12
LV432072	0TF	2.2.12
LV432074	0TF	2.2.12
LV432075	0TF	2.2.12
LV432080	0TF	2.2.12
LV432081	0TF	2.2.12
LV432082	0TF	2.2.12
LV432090	0TF	2.2.12
LV432091	0TF	2.2.12
LV432096	0TF	2.2.12
LV432097	0TF	2.2.12
LV432102	0TF	2.2.12
LV432103	0TF	2.2.12
LV432108	0TF	2.2.12
LV432109	0TF	2.2.12
LV432403	0TD	2.2.12
LV432404	0TD	2.2.12
LV432405	0TD	2.2.12
LV432413	0TD	2.2.12
LV432414	0TD	2.2.12
LV432455	0TF	2.2.14
LV432456	0TF	2.2.14
LV432457	0TF	2.2.14
LV432475	0TF	2.2.15
LV432476	0TF	2.2.15
LV432479	0TF	2.2.15
LV432480	0TF	2.2.51
LV432481	0TF	2.2.15
LV432484	0TF	2.2.15

Reference	Discount	Page
LV432485	0TF	2.2.51
LV432486	0TF	2.2.15
LV432487	0TF	2.2.51
LV432490	0TF	2.2.15
LV432491	0TF	2.2.51
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LV432493	0TF	2.2.51
LV432500	0TF	2.2.15
LV432502	0TF	2.2.15
LV432513	0TF	2.2.20
LV432516	0TF	2.2.19
LV432518	0TF	2.2.19
LV432519	0TF	2.2.19
LV432520	0TF	2.2.19
LV432523	0TF	2.2.19
LV432525	0TF	2.2.19
LV432532	0TF	2.2.19
LV432533	0TF	2.2.19
LV432538	0TF	2.2.19
LV432557	0TF	2.2.20
LV432559	0TF	2.2.20
LV432560	0TF	2.2.20
LV432566	0TF	2.2.14
LV432570	0TF	2.2.14
LV432571	0TF	2.2.20
LV432575	0TF	2.2.20
LV432584	0TF	2.2.19
LV432586	0TF	2.2.19
LV432591	0TF	2.2.14
LV432592	0TF	2.2.14
LV432593	0TF	2.2.14
LV432594	0TF	2.2.14
LV432595	0TF	2.2.14
LV432596	0TF	2.2.14
LV432597	0TF	2.2.18
LV432598	0TF	2.2.18
LV432604	0TF	2.2.18
LV432605	0TF	2.2.18
LV432606	0TF	2.2.18
LV432614	0TF	2.2.18
LV432619	0TF	2.2.33
LV432621	0X9	2.2.18
LV432623	1DQ	2.2.18
LV432631	0TF	2.2.18
LV432639	0TF	2.2.17
LV432640	0TF	2.2.17
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LV432649	0TF	2.2.17
LV432652	0TF	2.2.17
LV432653	0TF	2.2.14
LV432657	0TF	2.2.14
LV432676	0TD	2.2.11
LV432678	0TD	2.2.11
LV432682	0TD	2.2.11
LV432693	0TD	2.2.11
LV432695	0TD	2.2.11
LV432699	0TD	2.2.11
LV432701	0TD	2.2.11
LV432707	0TD	2.2.11
LV432709	0TD	2.2.11
LV432749	0TD	2.2.11
LV432750	0TD	2.2.11
LV432756	0TD	2.2.11
LV432776	0TD	2.2.11
LV432777	0TD	2.2.11
LV432803	0TD	2.2.12
LV432804	0TD	2.2.12
LV432805	0TD	2.2.12
LV432813	0TD	2.2.12
LV432814	0TD	2.2.12
LV432857	0TF	2.2.14
LV432861	0TF	2.2.14
LV432876	0TD	2.2.11
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LV432949	0TD	2.2.11
LV432950	0TD	2.2.11
LV432956	0TD	2.2.11
LV432976	0TD	2.2.11
LV432977	0TD	2.2.11
LV433638	0TF	2.2.52
LV433639	0TF	2.2.52
LV434010	8XX	2.2.27
LV434011	8XX	2.2.27
LV434128	8XX	2.2.27
LV434200	8XX	2.2.17
LV434201	8XX	2.2.17
LV434202	8XX	2.2.17
LV434204	0TF	2.2.27
LV434205	8XX	2.2.17
LV434206	0TF	2.2.27
LV434210	0TF	2.2.20
LV434212	0TF	2.2.20
LV438003	0T7	2.2.30
LV438008	0T7	2.2.30
LV438018	0T7	2.2.30
LV438019	0T7	2.2.30
LV438028	0TF	2.2.30

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LV438029	0TF	2.2.30
LV438048	0TF	2.2.30
LV438049	0TF	2.2.30
LV438103	0T7	2.2.30
LV438108	0T7	2.2.30
LV438118	0T7	2.2.30
LV438119	0T7	2.2.30
LV438135	0TF	2.2.30
LV438136	0TF	2.2.30
LV438145	0TF	2.2.30
LV438146	0TF	2.2.30
LV438203	0T7	2.2.30
LV438208	0T7	2.2.30
LV438218	0T7	2.2.30
LV438219	0T7	2.2.30
LV438245	0TF	2.2.30
LV438246	0TF	2.2.30
LV438255	0TF	2.2.30
LV438256	0TF	2.2.30
LV438262	0TD	2.2.30
LV438264	0TD	2.2.30
LV438267	0TD	2.2.30
LV438269	0TD	2.2.30
LV438272	0TD	2.2.30
LV438274	0TD	2.2.30
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LV438279	0TD	2.2.30
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LV438292	0TF	2.2.31
LV438293	0TF	2.2.31
LV438294	0TF	
LV438295	0TF	2.2.31
LV438320	0TF	2.2.31
LV438320	0TF	2.2.31
LV438325	0TF	2.2.31
LV438326	0TF	2.2.31
LV438327	0TF	2.2.31
LV438328	0TF	2.2.31
LV438329	0TF	2.2.31
LV438338	0TF	2.2.31
LV438562	0T7	2.2.29
LV438563	0T7	2.2.29
LV438564	0T7	2.2.29
LV438565	0T7	2.2.29
LV438566	0T7	2.2.29
LV438567	0T7	2.2.29
LV438568	0T7	2.2.29
LV438569	0T7	2.2.29
LV438570	0T7	2.2.29
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LV438573	0T7	2.2.29
LV438574	0T7	2.2.29
LV438575	0T7	2.2.29
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LV438586	0T7	2.2.29
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LV438588	0T7	2.2.29
LV438589	0T7	2.2.29
LV438590	0T7	2.2.29
LV438592	0T7	2.2.29
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LV438610	0T7	2.2.29
LV438612	0T7	2.2.29
LV438613	0T7	2.2.29
LV438614	0T7	2.2.29
LV438615	0T7	2.2.29
LV438616	0T7	2.2.29
LV438617	0T7	2.2.29
LV438618	0T7	2.2.29
LV438619	0T7	2.2.29
LV438620	0T7	2.2.29
LV438669	0T7	2.2.29
LV438670	0T7	2.2.29
LV438679	0T7	2.2.29
LV438680	0T7	2.2.29
LV438689	0T7	2.2.29
LV438690	0T7	2.2.29
LV438693	0T7	2.2.29
LV438694	0T7	2.2.29
LV438695	0T7	2.2.29
LV438699	0T7	2.2.29
LV438700	0T7	2.2.29
LV438709	0T7	2.2.29
LV438710	0T7	2.2.29
LV438719	0T7	2.2.29

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LV438720	0T7	2.2.29
LV481001	0ZK	2.2.53
LV481004	0ZK	2.2.53
LVCT00102S	0A9	2.3.3
LVCT00202S	0A9	2.3.3
LVCT00302S	0A9	2.3.3
LVCT00403S	0A9	2.3.3
LVCT00803S	0A9	2.3.3
LVCT00804S	0A9	2.3.3
LVCT01004S	0A9	2.3.3
LVCT01204S	0A9	2.3.3
LVCT01604S	0A9	2.3.3
LVCT02004S	0A9	2.3.3
LVCT02404S	0A9	2.3.3
LVR07065A40T	0QK	2.3.18
LVR07125A40T	0QK	2.3.18
LVR07250A40T	0QK	2.3.18
LVR07500A40T	0QK	2.3.18
LZ1H2X4BD	1LL	3.1.24
LZ1H2X4FU	1LL	3.1.24
LZ1H6X5BD	1LL	3.1.24
LZ1H6X5FU	1LL	3.1.24
LZ2H2X4BD	1LL	3.1.24
LZ2H2X4FU	1LL	3.1.24
LZ2H6X5BD	1LL	3.1.24
LZ2H6X5FU	1LL	3.1.24
LZ7H2X4BD	1LL	3.1.24
LZ7H2X4FU	1LL	3.1.24
LZ7H6X5BD	1LL	3.1.24
LZ7H6X5FU	1LL	3.1.24
LZ8H2X4BD	1LL	3.1.24
LZ8H2X4FU	1LL	3.1.24
LZ8H6X5BD	1LL	3.1.24
LZ8H6X5FU	1LL	3.1.24
M9PF5	0CA	2.1.29
M9PF5	0CA	2.1.35
MB200ADIN	1BE	2.1.27
MB200ADINX15	1BE	2.1.27
MB200BDIN	1BE	2.1.27
MB200BDINX15	1BE	2.1.27
MB218B30	1BE	2.1.27
MB218B30X15	1BE	2.1.27
MB224B30	1BE	2.1.27
MB224B30X15	1BE	2.1.27
MB224BH0	1BE	2.1.27
MB224BH0X15	1BE	2.1.27
MB224C10	1BE	2.1.27
MB224C10X15	1BE	2.1.27
MB224C31	1BE	2.1.27
MB224C31X15	1BE	2.1.27
MB224C32	1BE	2.1.27
MB224C32X15	1BE	2.1.27
MB224CH1	1BE	2.1.27
MB224CH1X15	1BE	2.1.27
MB224CH2	1BE	2.1.27
MB224CH2X15	1BE	2.1.27
MB224CM1	1BE	2.1.26
MB224CM1X15	1BE	2.1.26
MB224CM2	1BE	2.1.26
MB224CM2X15	1BE	2.1.26
MB224D11	1BE	2.1.27
MB224D11X15	1BE	2.1.27
MB224D12	1BE	2.1.27
MB224D12X15	1BE	2.1.27
MB236C30	1BE	2.1.27
MB236C30X15	1BE	2.1.27
MB236CH0	1BE	2.1.27
MB236CH0X15	1BE	2.1.27
MB236D10	1BE	2.1.27
MB236D10X15	1BE	2.1.27
MB236D11	1BE	2.1.27
MB236D11X15	1BE	2.1.27
MB236D12	1BE	2.1.27
MB236D12X15	1BE	2.1.27
MB236D31	1BE	2.1.27
MB236D31X15	1BE	2.1.27
MB236D32	1BE	2.1.27
MB236D32X15	1BE	2.1.27
MB236DH1	1BE	2.1.27
MB236DH1X15	1BE	2.1.27
MB236DH2	1BE	2.1.27
MB236DH2X15	1BE	2.1.27
MB236DM1	1BE	2.1.26
MB236DM1X15	1BE	2.1.26
MB236DM2	1BE	2.1.26
MB236DM2X15	1BE	2.1.26
MB248D30	1BE	2.1.27
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MB248E12X15	1BE	2.1.27

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NMC008	0V1	2.2.35
NMC043	0V1	2.2.35
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NMC1633SS	0V1	2.2.35
NMC1644	0V1	2.2.35
NMC1644SS	0V1	2.2.35

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NMC2018SS	0V1	2.2.35
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NS80018	0V1	2.2.34
NS80024	0V1	2.2.34
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SAUTR1208	RY1	3.8.60
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SAUTR1216	SX7	3.8.60
SAUTR1217	S3L	3.8.61
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SAUTR1403	4NJ	3.8.61
SAUTR1404	4NJ	3.8.61
SAUTR1405	4NJ	3.8.60
SAUTR1406	4NJ	3.8.61
SAUTR1407	4NJ	3.8.61
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SEA9BN6TNA	6CA	2.1.35
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SN400034	1I8	3.3.24
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SN5PPN116I3M0	1I8	3.3.24
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SN691300K	1I8	3.10.17
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SN8DED11502C0	1I8	3.10.17
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SN8P0A3000	1I8	3.10.17
SN9S0A2500	1I8	3.3.24
SR2A101BD	22V	3.3.27
SR2A101FU	22V	3.3.27
SR2A201BD	22V	3.3.27
SR2A201E	22V	3.3.27
SR2A201FU	22V	3.3.27
SR2B121B	22V	3.3.27
SR2B121BD	22V	3.3.27
SR2B121FU	22V	3.3.27
SR2B121JD	22V	3.3.27
SR2B122BD	22V	3.3.27
SR2B201B	22V	3.3.27
SR2B201BD	22V	3.3.27
SR2B201FU	22V	3.3.27
SR2B201JD	22V	3.3.27
SR2B202BD	22V	3.3.27
SR2CBL09	22V	3.8.46
SR2COM01	22V	3.3.28
SR2D101BD	22V	3.3.27
SR2D101FU	22V	3.3.27
SR2D201BD	22V	3.3.27
SR2D201FU	22V	3.3.27

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SR2E201B	22V	3.3.27
SR2E201BD	22V	3.3.27
SR2E201FU	22V	3.3.27
SR2MEM01	22V	3.3.28
SR2MEM02	22V	3.3.28
SR2MOD02	22V	3.3.28
SR2PACK2BD	22V	3.3.28
SR2PACK2FU	22V	3.3.28
SR2PACKBD	22V	3.3.28
SR2PACKFU	22V	3.3.28
SR2SFT01	22V	3.3.28
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SR3B101B	22V	3.3.27
SR3B101BD	22V	3.3.27
SR3B101FU	22V	3.3.27
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SSM1A130M7	22K	3.3.9
SSM1A145BD	22K	3.3.9
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STBXBE2100K	2DZ	3.8.41
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STBXCA1002	2DZ	3.8.41
STBXCA1003	2DZ	3.8.41
STBXCA1004	2DZ	3.8.41
STBXCA1006	2DZ	3.8.41
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TBUCSRV-250KPT	SX7	3.8.2
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TM3SAFL5RG	2D0	3.3.35

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TM3XTRA1	2D0	3.3.35
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TMASD1	2D0	3.3.35
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TMC2TI2	2D0	3.3.33
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XALK188F	1X6	3.4.49
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XS212SANAL2	26X	3.6.64
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Reference	Discount	Page
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140DDI35300	2EV	3.8.23
140DDI36400	2EV	3.8.23
140DDI67300	2EV	3.8.23
140DDI84100	2EV	3.8.23
140DDI85300	2EV	3.8.23
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140DDM69000	2EV	3.8.23
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140DDO88500	2EV	3.8.23
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140DRC83000	2EV	3.8.23
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140DVO85300	2EV	3.8.23
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140EHC20200	2EV	3.8.24
140EIA92100	2EV	3.3.40
140ERT85420	2EV	3.8.24
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140HLI34000	2EV	3.8.24
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140NOC77101	2EV	3.8.25
140NOC78000	2EV	3.8.25
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140NOC78100	2EV	3.8.25
140NOC78100C	2EV	3.8.25
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140NOE77111	2EV	3.8.25
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140NOM25200	2EV	3.8.25
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140NRP95400C	2EV	3.8.25
140NWM10000	2EV	3.8.25
140SAI94000S	4QR	3.8.24
140SDI95300S	4QR	3.8.24
140SDO95300S	4QR	3.8.24
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140XCA71706	2EV	3.8.23
140XCA71709	2EV	3.8.23
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170AAI14000	5EV	3.8.45
170AAI52040	5EV	3.8.45
170AAO12000	5EV	3.8.45
170AAO92100	5EV	3.8.45
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170ADO53050	5EV	3.8.44
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170ADO74050	5EV	3.8.44
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170AMM09000	5EV	3.8.45
170ANR12090	5EV	3.8.45
170ANR12091	5EV	3.8.45
170ARM37030	5EV	3.8.44
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170ENT11002	5EV	3.8.45
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170INT11000	5EV	3.8.45
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170PNT16020	5EV	3.8.45
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21507	182	2.1.36
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26975	17A	2.1.12
26976	17A	2.1.12
26981	17A	2.1.12
27001	17A	2.1.12
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27047	17A	2.1.12
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28072	0TF	2.2.32
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28085	0TF	2.2.32
28100	0T7	2.2.32
28101	0T7	2.2.32
28102	0T7	2.2.32
28103	0T7	2.2.32
28104	0T7	2.2.32
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28903	0XF	2.2.50
28904	0XF	2.2.50
28905	0XF	2.2.50
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28911	0XF	2.2.50
28912	0XF	2.2.50
28913	0XF	2.2.50
28943	0XF	2.2.51

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28947	0XF	2.2.51
28948	0XF	2.2.51
28951	0XF	2.2.51
28953	0X9	2.2.52
28957	0XF	2.2.52
28958	0XF	2.2.52
28959	0XF	2.2.52
29320	0TF	2.2.14
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29352	0X9	2.2.40
29356	0TF	2.2.40
29358	0TF	2.2.52
29359	0TF	2.2.52
29370	0X9	2.2.18
29450	0TF	2.2.16
29452	0TF	2.2.16
29452	0TF	2.2.40
29472	0X9	2.2.40
29473	0X9	2.2.33
2620202030	1XW	3.7.15
230MI	5CA	2.1.37
2502D8X1	1WG	3.7.15
2934D14G1	26R	3.6.29
2934D32G1	1BL	3.6.29
2934D33G1	26R	3.6.29
2934D34G1	26R	3.6.29
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31054	0XF	2.2.51
31055	0XF	2.2.52
31057	0XF	2.2.51
31073	0X9	2.2.52
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31106	0XF	2.2.50
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31141	0X9	2.2.52
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33547	0TK	2.2.38
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33576	0V5	2.2.38
33596	0TF	2.2.39
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33640	0TF	2.2.39
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33644	0TF	2.2.39
33646	0TF	2.2.39
33648	0TF	2.2.39
33658	0WR	2.2.40
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41950	0V5	2.2.18
44936	0TF	2.2.39
47518	0WR	2.2.39
400CK2	1BL	2.1.34
48129-3K	1I2	3.10.22
490NAC0100	2DZ	3.8.32
490NZC0201		3.8.32
499NES18100	2F1	3.8.57
4C11FD-CM	2CA	2.1.38
4C17FD-CM	2CA	2.1.38
4C24FD-CM	2CA	2.1.38
4C36FD-CM	2CA	2.1.38
4C6FD-CM	2CA	2.1.38
4CC15SB-WE	2CA	2.1.37
4CC1-WE	2CA	2.1.37
4CC2-WE	2CA	2.1.37
4CC30SB-WE	2CA	2.1.37
4CC3-WE	2CA	2.1.37
4CC45SB-WE	2CA	2.1.37
4CC4-WE	2CA	2.1.37
4CC60SB-WE	2CA	2.1.37
4CC6-CM	2CA	2.1.37
4CC6SB-CM	2CA	2.1.37
4CC9-CM	2CA	2.1.37
4CW24FD-CM	2CA	2.1.39
4CW36FD-CM	2CA	2.1.39
4F1-WE	2CA	2.1.38
4F6-WE	2CA	2.1.38
4F8-WE	2CA	2.1.38
4FC11FD-CM	2CA	2.1.38
4FC17FD-CM	2CA	2.1.38
4FCC10-WE	2CA	2.1.37
4FCC15-WE	2CA	2.1.37
4FCC30-WE	2CA	2.1.37
4FCC45-WE	2CA	2.1.37
4FCC60-WE	2CA	2.1.37
4FCS24FD-WE	2CA	2.1.38
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50421	0ZK	2.2.53
50437	0ZK	2.2.53
50437	0ZK	3.1.31
50438	0ZK	2.2.53
50438	0ZK	3.1.31
50439	0ZK	2.2.53
50440	0ZK	2.2.53
50441	0ZK	2.2.53
50442	0ZK	2.2.53
50965	0WR	2.2.27
54440	0WR	2.2.20
54441	0WR	2.2.20
54442	0WR	2.2.20
54443	0WR	2.2.20
54444	0WR	2.2.20
54445	0WR	2.2.20
54446	0WR	2.2.20
54655	0X9	2.2.40
56053	0ZK	2.2.53
56054	0ZK	2.2.53
56160	0ZK	2.2.53
56161	0ZK	2.2.53
56162	0ZK	2.2.53
56163	0ZK	2.2.53
56164	0ZK	2.2.53
56165	0ZK	2.2.53
56170	0ZK	2.2.53
56171	0ZK	2.2.53
56172	0ZK	2.2.53
56173	0ZK	2.2.53
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515710151110	RBW	3.10.23
515781121100	RCF	3.10.23
517720151100	RCF	3.10.23
517720251100	RCF	3.10.23
517720351100	RCF	3.10.23
517724051100	RCF	3.10.23
517724151100	RCF	3.10.23
517724351100	RCF	3.10.23
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517770151100	RCF	3.10.23
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527810455100	RCF	3.10.24
527812355100	RCF	3.10.24
527812455100	RCF	3.10.24
527813355100	RCF	3.10.24
527813455100	RCF	3.10.24
56/01/1-GY	3H2	3.1.34
56/01X-GY	3H2	3.1.34
56/2PB-GY	3G6	3.1.42
56/2PBS1-GY	3G6	3.1.42
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56AI315-GY	3H1	3.1.33
56AI320-GY	3H1	3.1.33
56AI332-GY	3H1	3.1.33
56AI410-GY	3H1	3.1.33
56AI420-GY	3H1	3.1.33
56AI432-GY	3H1	3.1.33
56AI440-GY	3H1	3.1.33
56AI450-GY	3H1	3.1.33
56AI510-GY	3H1	3.1.33
56AI520-GY	3H1	3.1.33
56AI532-GY	3H1	3.1.33
56AI540-GY	3H1	3.1.33
56AI550-GY	3H1	3.1.33
56AM25RO		3.1.39
56AM40	3HE	3.1.39
56B-BK	3GW	3.1.42
56C210-GY	3H8	3.1.35
56C215/32-GY	3H8	3.1.35
56C3/110-GY	3H8	3.1.35
56C310/4EL-GY	3H8	3.1.36
56C310D-GY	3H8	3.1.35
56C310EL2P-GY	3H8	3.1.36
56C310-GY	3H8	3.1.35
56C310HD-GY	3H8	3.1.35
56C310L-GY	3H8	3.1.35
56C310RC-GY	3H8	3.1.36
56C310RP-GY	3H8	3.1.35
56C315/4EL-GY	3H8	3.1.36
56C315D-GY	3H8	3.1.35
56C315ELP-RO	3H8	3.1.36
56C315-GY	3H8	3.1.35
56C315HD-GY	3H8	3.1.35
56C315RC-GY	3H8	3.1.36
56C320F-GY	3H8	3.1.35
56C320-GY	3H8	3.1.35
56C332-GY	3H8	3.1.35
56C410-GY	3H8	3.1.35
56C410RC-GY	3H8	3.1.36
56C416K-GY	3H8	3.1.35
56C420-GY	3H8	3.1.35
56C420RC-GY	3H8	3.1.36
56C432-GY	3H8	3.1.35
56C432RC-GY	3H8	3.1.36
56C440-GY	3H8	3.1.35
56C440RC-GY	3H8	3.1.36
56C450-GY	3H8	3.1.35
56C510-GY	3H8	3.1.35
56C510RC-GY	3H8	3.1.36
56C520-GY	3H8	3.1.35
56C520RC-GY	3H8	3.1.36
56C532-GY	3H8	3.1.35
56C532RC-GY	3H8	3.1.36
56C540-GY	3H8	3.1.35
56C540RC-GY	3H8	3.1.36
56C550-GY	3H8	3.1.35
56C610-GY	3H8	3.1.35
56C710-GY	3H8	3.1.35
56C720-GY	3H8	3.1.35
56CSC310-GY	3HE	3.1.37
56CSC315-GY	3HE	3.1.37
56CSC320-EO	3HE	3.1.37
56CSC332	3HE	3.1.37
56CSC332-EO	3HE	3.1.37
56CSC410-EO	3HE	3.1.37
56CSC420-EO	3HE	3.1.37
56CSC432	3HE	3.1.37
56CSC432-EO	3HE	3.1.37
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56CSC532-EO	3HE	3.1.37
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56CSC540-EO	3HE	3.1.37
56CSC550	3HE	3.1.37
56CSC550-EO	3HE	3.1.37
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56CTC2SO15-GY	3G6	3.1.44
56CTC2SO-GY	3G6	3.1.44
56CTC-GY	3G6	3.1.44
56CV310-GY	3H8	3.1.35
56CV310HD-GY	3H8	3.1.35
56CV315-GY	3H8	3.1.35
56CV315HD-GY	3H8	3.1.35
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56CV332-GY	3H8	3.1.35
56CV410-GY	3H8	3.1.35
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56CV520-GY	3H8	3.1.35
56CV532-GY	3H8	3.1.35
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56CV550-GY	3H8	3.1.35
56CV610-GY	3H8	3.1.35
56CV710-GY	3H8	3.1.35
56CV720-GY	3H8	3.1.35
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56DB2-GY	3GW	3.1.42
56DB2L-GY	3GW	3.1.42
56DB3-GY	3GW	3.1.42
56DB3L-GY	3GW	3.1.42
56DB4-GY	3GW	3.1.42
56DB4L-GY	3GW	3.1.42
56DB6BASE-GY	3GW	3.1.42
56DB6-GY	3GW	3.1.42
56DB6L-GY	3GW	3.1.42
56DB9-GY	3GW	3.1.42
56DB9L-GY	3GW	3.1.42
56DV-BK	3GW	3.1.42
56E16-GY	3GW	3.1.43
56E1-GY	3GW	3.1.43
56E2-GY	3GW	3.1.43
56E3-GY	3GW	3.1.43
56E4-GY	3GW	3.1.43
56E4VH-GY	3GW	3.1.43
56E6-GY	3GW	3.1.43
56E8-GY	3GW	3.1.43
56E8SB-GY	3GW	3.1.43
56E9-GY	3GW	3.1.43
56E9SB-GY	3GW	3.1.43
56ED2-GY	3GW	3.1.43
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56ES2-GY	3GW	3.1.43
56EV2/225-GY	3GW	3.1.43
56EV2/32-GY	3GW	3.1.43
56EV2-GY	3GW	3.1.43
56HPG1-CM	3GW	3.1.43
56HPG2/1-CM	3GW	3.1.43
56HPG2/2-CM	3GW	3.1.43
56HPG4/3-CM	3GW	3.1.43
56HPG4/4-CM	3GW	3.1.43
56K1CV310-GY	3H8	3.1.35
56K1CV315		3.1.35
56K1SW115-GY	3G6	3.1.40
56K1SW115MS-GY	3G6	3.1.40
56K1SW120-GY	3G6	3.1.40
56K1SW132-GY	3G6	3.1.40
56K1SW132MS-GY	3G6	3.1.40
56K1SW150-GY	3G6	3.1.40
56K1SW220-GY	3G6	3.1.40
56K1SW232		3.1.40
56K1SW250-GY	3G6	3.1.40
56K1SW310-GY	3G6	3.1.40
56K1SW310MS-GY	3G6	3.1.40
56K1SW320-GY	3G6	3.1.40
56K1SW332-GY	3G6	3.1.40
56K1SW350-GY	3G6	3.1.40
56K2SW115-GY	3G6	3.1.40
56K2SW115MS-GY	3G6	3.1.40
56K2SW120-GY	3G6	3.1.40
56K2SW132-GY	3G6	3.1.40
56K2SW132MS-GY	3G6	3.1.40
56K2SW150-GY	3G6	3.1.40
56K2SW220-GY	3G6	3.1.40
56K2SW232-GY	3G6	3.1.40
56K2SW250-GY	3G6	3.1.40
56K2SW310-GY	3G6	3.1.40
56K2SW310MS-GY	3G6	3.1.40
56K2SW320-GY	3G6	3.1.40

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56K2SW350-GY	3G6	3.1.40
56LEDK1	3G6	3.1.43
56LEDK3	3G6	3.1.43
56MF	3GW	3.1.43
56P210-GY	3HE	3.1.37
56P215/32-GY	3HE	3.1.37
56P3/110-GY	3HE	3.1.37
56P310-GY	3HE	3.1.37
56P310RP-GY	3HE	3.1.37
56P310SL-GY	3HE	3.1.37
56P315-GY	3HE	3.1.37
56P315RP-GY	3HE	3.1.37
56P32/500	3GJ	3.1.37
56P320F-GY	3HE	3.1.37
56P320-GY	3HE	3.1.37
56P320QC-EO	3HE	3.1.37
56P332-GY	3HE	3.1.37
56P410	3HE	3.1.37
56P410G1		3.1.38
56P410-GY	3HE	3.1.37
56P410QC-EO	3HE	3.1.37
56P416K-EO	3HE	3.1.37
56P420G1		3.1.38
56P420-GY	3HE	3.1.37
56P420QC-EO	3HE	3.1.37
56P432-GY	3HE	3.1.37
56P440-EO	3HE	3.1.37
56P450-GY	3HE	3.1.37
56P510	3HE	3.1.37
56P510G1		3.1.38
56P510-GY	3HE	3.1.37
56P510QC-EO	3HE	3.1.37
56P520G1		3.1.38
56P520-GY	3HE	3.1.37
56P520QC-EO	3HE	3.1.37
56P532-GY	3HE	3.1.37
56P540-GY	3HE	3.1.37
56P550-EO	3HE	3.1.37
56P610-EO	3HE	3.1.37
56P710-EO	3HE	3.1.37
56P720-EO	3HE	3.1.37
56PA320-EO	3HE	3.1.38
56PA332-EO	3HE	3.1.38
56PA410-EO	3HE	3.1.38
56PA416K-EO	3HE	3.1.38
56PA420-EO	3HE	3.1.38
56PA432-EO	3HE	3.1.38
56PA432G	3HE	3.1.38
56PA440-EO	3HE	3.1.38
56PA440G	3HE	3.1.38
56PA450-EO	3HE	3.1.38
56PA450G	1DQ	3.1.38
56PA510-EO	3HE	3.1.38
56PA510G	3HE	3.1.38
56PA520G	3HE	3.1.38
56PA520-GY	3HE	3.1.38
56PA532-EO	3HE	3.1.38
56PA532G	3HE	3.1.38
56PA540-EO	3HE	3.1.38
56PA540G	1DQ	3.1.38
56PA550-EO	3HE	3.1.38
56PA550G	3HE	3.1.38
56PA610-EO	3HE	3.1.38
56PA610G	1DQ	3.1.38
56PA710-EO	3HE	3.1.38
56PA710G	3HE	3.1.38
56PA720-EO	3HE	3.1.38
56PA720G	3HE	3.1.38
56PB-GY	3G6	3.1.42
56PBS1-GY	3G6	3.1.42
56PBS2-GY	3G6	3.1.42
56PBS-GY	3G6	3.1.42
56PC2-GY	3HE	3.1.38
56PCI-TR	3HE	3.1.38
56PC-TR	3HE	3.1.38
56PEK25-GY	3HE	3.1.43
56PEK32-GY	3HE	3.1.43
56PMK	3GW	3.1.43
56PO410-EO	3HE	3.1.39
56PO420-EO	3HE	3.1.39
56PO432-EO	3HE	3.1.39
56PO510-EO	3HE	3.1.39
56PO520-EO	3HE	3.1.39
56PO532-EO	3HE	3.1.39
56PO540-EO	3HE	3.1.39
56PO550-EO	3HE	3.1.39
56POK	3HE	3.1.39
56POKI	3HE	3.1.39
56RC-GY	3H8	3.1.36
56SB13-GY	3GW	2.1.39
56SB4-GY	3GW	2.1.39
56SC2-GY	3HE	3.1.38
56SC310RC-GY	3H8	3.1.36
56SC315RC-GY	3H8	3.1.36
56SC410RC-GY	3H8	3.1.36
56SC420RC-GY	3H8	3.1.36
56SC432RC-GY	3H8	3.1.36
56SC440RC-GY	3H8	3.1.36
56SC510RC-GY	3H8	3.1.36
56SC520RC-GY	3H8	3.1.36
56SC532RC-GY	3H8	3.1.36
56SC540RC-GY	3H8	3.1.36
56SHL	3HE	3.1.39
56SO210-GY	3H2	3.1.33
56SO215/32-GY	3H2	3.1.33
56SO3/110-GY	3H2	3.1.33
56SO310		3.1.33

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56SO310-GY	3H2	3.1.33
56SO310L-GY	3H2	3.1.33
56SO310RP-GY	3H2	3.1.33
56SO315A-GY	3H2	3.1.33
56SO315-GY	3H2	3.1.33
56SO315RP		3.1.33
56SO316/6LE-GY	3H2	3.1.47
56SO320F-GY	3H2	3.1.33
56SO320G	3H2	3.1.34
56SO320-GY	3H2	3.1.33
56SO332/6LE-GY	3H2	3.1.47
56SO332G	3H2	3.1.34
56SO332-GY	3H2	3.1.33
56SO410G	3H2	3.1.34
56SO410-GY	3H2	3.1.33
56SO416KG	3H2	3.1.34
56SO416K-GY	3H2	3.1.33
56SO420G	3H2	3.1.34
56SO420-GY	3H2	3.1.33
56SO432G	3H2	3.1.34
56SO432-GY	3H2	3.1.33
56SO440G	3H2	3.1.34
56SO440-GY	3H2	3.1.33
56SO450G	3H2	3.1.34
56SO450-GY	3H2	3.1.33
56SO4ELP10-RO	3H2	3.1.36
56SO4ELP15-GY	3H2	3.1.36
56SO510G	3H2	3.1.34
56SO510-GY	3H2	3.1.33
56SO516/6LE-GY	3H2	3.1.47
56SO520G	3H2	3.1.34
56SO520-GY	3H2	3.1.33
56SO532/6LE-GY	3H2	3.1.47
56SO532G	3H2	3.1.34
56SO532-GY	3H2	3.1.33
56SO540G	3H2	3.1.34
56SO540-GY	3H2	3.1.33
56SO550G	3H2	3.1.34
56SO550-GY	3H2	3.1.33
56SO610G	3H2	3.1.34
56SO610-GY	3H2	3.1.33
56SO710G	3H2	3.1.34
56SO710-GY	3H2	3.1.33
56SO720G	3H2	3.1.34
56SO720-GY	3H2	3.1.33
56SOAUX15	3H2	3.1.43
56SOCOVER-GY	3H2	3.1.43
56SOLOCK	3H2	3.1.43
56SPO310-RW	3HE	3.1.39
56SPO315-RW	3HE	3.1.39
56SPOK	3HE	3.1.39
56SSR/2-GY	4RZ	3.1.39
56SSR/3-GY	4RZ	3.1.39
56SSW10/I-GY	3G6	3.1.40
56SSW10-GY	3G6	3.1.40
56SSW15-GY	3G6	3.1.40
56SSW2/10-GY	3G6	3.1.40
56SSW2/15-GY	3G6	3.1.40
56SSW2AM-GY	3G6	3.1.40
56SW110/2-GY	3G6	3.1.41
56SW110/I-GY	3G6	3.1.41
56SW110-GY	3G6	3.1.41
56SW110HD-GY	3G6	3.1.41
56SW115/2-GY	3G6	3.1.41
56SW115-GY	3G6	3.1.41
56SW115HD-GY	3G6	3.1.41
56SW120-GY	3G6	3.1.41
56SW120-RY	3G6	3.1.41
56SW132-GY	3G6	3.1.41
56SW132-RY	3G6	3.1.41
56SW150-GY	3G6	3.1.41
56SW163-GY	3G6	3.1.41
56SW210/2-GY	3G6	3.1.41
56SW220CO-GY	3G6	3.1.42
56SW220-GY	3G6	3.1.41
56SW232-GY	3G6	3.1.41
56SW250-GY	3G6	3.1.41
56SW263-GY	3G6	3.1.41
56SW310-GY	3G6	3.1.41
56SW320CX-GY	3G6	3.1.41
56SW320-GY	3G6	3.1.41
56SW320R-GY	3G6	3.1.42
56SW320-RY	3G6	3.1.41
56SW332CX-GY	3G6	3.1.41
56SW332-GY	3G6	3.1.41
56SW332-RY	3G6	3.1.41
56SW350-GY	3G6	3.1.41
56SW350-RY	3G6	3.1.41
56SW363/2-GY	3G6	3.1.41
56SW363-GY	3G6	3.1.41
56SW363-RY	3G6	3.1.41
56SW420CO-GY	3G6	3.1.42
56SW420-GY	3G6	3.1.41
56SW432-GY	3G6	3.1.41
56SWAUX15	3G6	3.1.43
56SWH325-GY	3G6	3.1.41
56SWH332-GY	3G6	3.1.41
56SWH340-GY	3G6	3.1.41
56SWH363-GY	3G6	3.1.41
56SWH380-GY	3G6	3.1.41
56SWH425-GY	3G6	3.1.41
56SWH432-GY	3G6	3.1.41
56SWH440-GY	3G6	3.1.41
56SWH463-GY	3G6	3.1.41
56SWHS325-GY	3G6	3.1.41
56SWHS332-GY	3G6	3.1.41
56SWHS340-GY	3G6	3.1.41

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56SWHS363-GY	3G6	3.1.41
56SWHS425-GY	3G6	3.1.41
56SWHS432-GY	3G6	3.1.41
56SWHS440-GY	3G6	3.1.41
56SWHS463-CG	3G6	3.1.41
56SWT216-GY	3G6	3.1.44
56TC7-GY	3G6	3.1.44
56TCDB-GY	3G6	3.1.44
56TC-GY	3G6	3.1.44
56XDB1-GY	3GW	3.1.42
56XDB1L-GY	3GW	3.1.42
56XDB4-GY	3GW	3.1.42
56XDB4L-GY	3GW	3.1.42
56XDB6-GY	3GW	3.1.42
56XDB6L-GY	3GW	3.1.42
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6508805211	1WG	3.4.40
6508805212	1WG	3.4.40
6508805213	1WG	3.4.40
6508805214	1WG	3.4.40
66CV450-RG	3MG	3.1.45
66CV463-RG	3MG	3.1.45
66CV550		3.1.45
66CV563-RG	3MG	3.1.45
66CV750-RG	3MG	3.1.45
66CV763-RG	3MG	3.1.45
66P450-EO	3MG	3.1.45
66P450G	3MG	3.1.45
66P463-EO	3MG	3.1.45
66P463G	3MG	3.1.45
66P550-EO	3MG	3.1.45
66P563-EO	3MG	3.1.45
66P563G	3MG	3.1.45
66P750-EO	3MG	3.1.45
66P763-EO	3MG	3.1.45
66P763G	1DQ	3.1.45
66SO450G	Z0D	3.1.45
66SO463G	3MG	3.1.45
66SO563G	3MG	3.1.45
66SO763G	3MG	3.1.45
67CC432/3	3MJ	3.1.47
67CSC316/6	3MJ	3.1.47
67CSC332/6	3MJ	3.1.47
67CSC416/6	3MJ	3.1.47
67CSC432/3	3MJ	3.1.47
67CSC432/6	3MJ	3.1.47
67P316/6	3MJ	3.1.47
67P332/6	3MJ	3.1.47
67P416/6	3MJ	3.1.47
67P432/3	3MJ	3.1.47
67P432/6	3MJ	3.1.47
67SO316/6	3MJ	3.1.47
67SO332/6	3MJ	3.1.47
67SO416/6	3MJ	3.1.47
67SO432/6	3MJ	3.1.47
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8800A1D0B5E0A0A	0B1	2.3.13
8800A2C0B5A0A0A	0B1	2.3.13
8800A2C0B5E0A0A	0B1	2.3.13
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8800B2D0B5A0A0A	0B1	2.3.13
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9007E4	26R	3.6.30
9007E5	26R	3.6.30
9007E6	26R	3.6.30
9001A20	1WG	3.4.37
9001A21	1WG	3.4.37
9001A22	1WG	3.4.38
9001A24	1WG	3.4.38
9001A31	1WG	3.4.39
9001A6	1WG	3.4.39
9001A7	1WG	3.4.37
9001A8	1WG	3.4.38
9001A9	1WG	3.4.39
9001BW72Y	207	3.4.66
9001C20	1WG	3.4.37
9001C21	1WG	3.4.37
9001C21	1WG	3.4.44
9001C24	1WG	3.4.38
9001C31	1WG	3.4.39
9001C6	1WG	3.4.39
9001C7	1WG	3.4.37
9001C8	1WG	3.4.38
9001C9	1WG	3.4.39
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9001G21	1WG	3.4.37
9001G22	1WG	3.4.38
9001G24	1WG	3.4.38
9001G31	1WG	3.4.39

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9001G9	1WG	3.4.39
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9001K2L	1WN	3.4.37
9001K34	1WN	3.4.41
9001K35	1WN	3.4.41
9001K3L	1WN	3.4.37
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9001K52	1WG	3.4.41
9001K6	1WG	3.4.41
9001K62	1WG	3.4.41
9001K7	1WG	3.4.41
9001K70	1WN	3.4.41
9001K71	1WN	3.4.41
9001K92B	1WG	3.4.36
9001K92G	1WG	3.4.36
9001K92R	1WG	3.4.36
9001K92Y	1WG	3.4.36
9001K93B	1WG	3.4.36
9001K93G	1WG	3.4.36
9001K93R	1WG	3.4.36
9001K93Y	1WG	3.4.36
9001K95	1WG	3.4.41
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9001KA2	1WG	3.4.39
9001KA3	1WG	3.4.39
9001KA4	1WG	3.4.39
9001KA5	1WG	3.4.39
9001KA51	1WG	3.4.39
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9001KM7	1WG	3.4.40
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9001KN100RPEN	1WG	3.4.64
9001KN100WP	1WG	3.4.41
9001KN100WPEN	1WG	3.4.64
9001KN101WP	1WG	3.4.41
9001KN102RP	1WG	3.4.41
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9001KN200EN	1WG	3.4.64
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9001KN300	1WG	3.4.41
9001KN300EN	1WG	3.4.64
9001KN300R	1WG	3.4.41
9001KN301	1WG	3.4.41
9001KN302	1WG	3.4.41
9001KP	1WN	3.4.40
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9001KP25	1WN	3.4.39
9001KP38	1WN	3.4.39
9001KP40	1WN	3.4.39
9001KP5	1WN	3.4.39
9001KP7	1WN	3.4.39
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9001KR20	1WN	3.4.36
9001KR2U	1WN	3.4.36
9001KR3U	1WN	3.4.36
9001KR9	1WN	3.4.36
9001KR9M	1WN	3.4.36
9001KR9ML	1WN	3.4.36
9001KR9R	1WN	3.4.36
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9001KS11B	1WN	3.4.36
9001KS11K1	1WN	3.4.37
9001KS11K2	1WN	3.4.37
9001KS11K3	1WN	3.4.37
9001KS25	1WN	3.4.38
9001KS25B	1WN	3.4.36

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9001KS34	1WN	3.4.38
9001KS34B	1WN	3.4.36
9001KS34K1	1WN	3.4.37
9001KS42	1WN	3.4.38
9001KS42B	1WN	3.4.36
9001KS42K10	1WN	3.4.37
9001KS42K4	1WN	3.4.37
9001KS42K5	1WN	3.4.37
9001KS42K6	1WN	3.4.37
9001KS42K8	1WN	3.4.37
9001KS43B	1WN	3.4.36
9001KS52	1WN	3.4.38
9001KS52B	1WN	3.4.36
9001KS52K5	1WN	3.4.37
9001KS53B	1WN	3.4.36
9001KS62	1WN	3.4.38
9001KS62B	1WN	3.4.36
9001KS62K5	1WN	3.4.37
9001KS62K6	1WN	3.4.37
9001KS63B	1WN	3.4.36
9001KS72	1WN	3.4.38
9001KS72B	1WN	3.4.36
9001KS72K4	1WN	3.4.37
9001KS72K5	1WN	3.4.37
9001KS73B	1WN	3.4.36
9001KS88	1WN	3.4.38
9001KS88B	1WN	3.4.36
9001KT1	1WN	3.4.39
9001KT40	1WN	3.4.39
9001KT5	1WN	3.4.39
9001KT7	1WN	3.4.39
9001KU1	1WG	3.4.41
9001KU17	1WG	3.4.41
9001KU18	1WG	3.4.41
9001KU2	1WG	3.4.41
9001KU27	1WG	3.4.41
9001KU37	1WG	3.4.41
9001KU4	1WG	3.4.41
9001KU47	1WG	3.4.41
9001KU5	1WG	3.4.41
9001KU6	1WG	3.4.41
9001KU7	1WG	3.4.41
9001KY1	1WG	3.4.52
9001KY2	1WG	3.4.52
9001KY3	1WG	3.4.52
9001KYK126	1XC	3.4.52
9001KYK127	1XC	3.4.52
9001KYK227	1X6	3.4.52
9001KYSS1	1WG	3.4.52
9001KYSS2	1WG	3.4.52
9001KYSS3	1WG	3.4.52
9001L20	1WG	3.4.37
9001L21	1WG	3.4.37
9001L22	1WG	3.4.38
9001L24	1WG	3.4.38
9001L31	1WG	3.4.39
9001L6	1WG	3.4.39
9001L7	1WG	3.4.37
9001L8	1WG	3.4.38
9001L9	1WG	3.4.39
9001R20	1WG	3.4.37
9001R21	1WG	3.4.37
9001R22	1WG	3.4.38
9001R2205	1WG	3.4.38
9001R24	1WG	3.4.38
9001R31	1WG	3.4.39
9001R6	1WG	3.4.39
9001R7	1WG	3.4.37
9001R8	1WG	3.4.38
9001R9	1WG	3.4.39
9001SK1L	1WU	3.4.44
9001SK2L	1WU	3.4.44
9001SKP	1WU	3.4.47
9001SKP1	1WU	3.4.46
9001SKP25	1WU	3.4.46
9001SKP38	1WU	3.4.46
9001SKP40	1WU	3.4.46
9001SKP5	1WU	3.4.46
9001SKP7	1WU	3.4.46
9001SKR1U	1WU	3.4.43
9001SKR20	1WU	3.4.43
9001SKR2U	1WU	3.4.43
9001SKR3U	1WU	3.4.43
9001SKR9	1WU	3.4.43
9001SKR9R	1WU	3.4.43
9001SKS11	1WU	3.4.45
9001SKS11B	1WU	3.4.43
9001SKS25	1WU	3.4.45
9001SKS25B	1WU	3.4.43
9001SKS34	1WU	3.4.45
9001SKS34B	1WU	3.4.43
9001SKS42	1WU	3.4.45
9001SKS42B	1WU	3.4.43
9001SKS43B	1WU	3.4.43
9001SKS52	1WU	3.4.45
9001SKS52B	1WU	3.4.43
9001SKS53B	1WU	3.4.43
9001SKS62	1WU	3.4.45
9001SKS62B	1WU	3.4.43
9001SKS63B	1WU	3.4.43
9001SKS72	1WU	3.4.45
9001SKS72B	1WU	3.4.43
9001SKS73B	1WU	3.4.43
9001SKS88	1WU	3.4.45
9001SKS88B	1WU	3.4.43
9001SKT1	1WU	3.4.46
9001SKT40	1WU	3.4.46
9001SKT5	1WU	3.4.46
9001SKT7	1WU	3.4.46
9001SKY1	1WG	3.4.52
9001SKY2	1WG	3.4.52
9001SKY3	1WG	3.4.52
9001Y24	1WG	3.4.38
9001Y8	1WG	3.4.38
9002AC8	1XW	3.7.15
9002AW10M11	1WN	3.7.15
9002AW11M11	1XW	3.7.15
9002AW12M11	1XW	3.7.15
9002AW13M11	1XW	3.7.15
9002AW14M11	1WN	3.7.15
9002AW15M11	1XW	3.7.15
9002AW1M11	1XW	3.7.15
9002AW21M11	1XW	3.7.15
9002AW22M11	1XW	3.7.15
9002AW2M11	1XW	3.7.15
9002AW5M11	1WN	3.7.15
9002AW6M11	1WN	3.7.15
9002AW7M11	1XW	3.7.15
9002AW9M11	1XW	3.7.15
9007A	24F	3.6.26
9007AA1	24F	3.6.28
9007AB21	24F	3.6.23
9007AB22	24F	3.6.23
9007AB23	24F	3.6.23
9007AB26	24F	3.6.23
9007AC1	24F	3.6.23
9007AO1	24F	3.6.23
9007AO2	24F	3.6.23
9007AO2	24F	3.7.15
9007AO6	24F	3.6.23
9007AP221	24F	3.6.23
9007AP321	24F	3.6.23
9007AP323	24F	3.6.23
9007AW12M11	26R	3.6.27
9007AW14M11	26R	3.6.27
9007AW16M11	26R	3.6.27
9007AW18M11	26R	3.6.27
9007AW32M11	26R	3.6.27
9007AW34M11	26R	3.6.27
9007AW36M11	26R	3.6.27
9007AW38M11	26R	3.6.27
9007AW42M11	26R	3.6.27
9007AW44M11	26R	3.6.27
9007AW46M11	26R	3.6.27
9007AW48M11	26R	3.6.27
9007B	24F	3.6.26
9007B1	26R	3.6.30
9007B19	24F	3.6.30
9007B2	24F	3.6.30
9007B22	26R	3.6.30
9007B23	24F	3.6.30
9007B24	26R	3.6.30
9007B27	26R	3.6.30
9007B3	24F	3.6.30
9007B7	26R	3.6.30
9007B8	26R	3.6.30
9007B9	24F	3.6.30
9007BA1	24F	3.6.28
9007BA11	24F	3.6.28
9007BA2	24F	3.6.28
9007C	24F	3.6.26
9007C1	26R	3.6.30
9007C2	26R	3.6.30
9007C3	26R	3.6.30
9007C52A2M11	24F	3.6.25
9007C52B2M11	24F	3.6.25
9007C52DM11	24F	3.6.25
9007C52FM11	24F	3.6.25
9007C52JM11	24F	3.6.25
9007C52N2M11	24F	3.6.25
9007C54A2M11	24F	3.6.25
9007C54B2M11	24F	3.6.25
9007C54CM11	24F	3.6.25
9007C54DM11	24F	3.6.25
9007C54EM11	24F	3.6.25
9007C54FM11	24F	3.6.25
9007C54GM11	24F	3.6.25
9007C54JM11	24F	3.6.25
9007C54JS3M11	24F	3.6.25
9007C54KCM11	24F	3.6.25
9007C54KM11	24F	3.6.25
9007C54LM11	24F	3.6.25
9007C54N2M11	24F	3.6.25
9007C62A2M11	24F	3.6.25
9007C62B2M11	24F	3.6.25
9007C62CM11	24F	3.6.25
9007C62DM11	24F	3.6.25
9007C62EM11	24F	3.6.25
9007C62FM11	24F	3.6.25
9007C62GM11	24F	3.6.25
9007C62JM11	24F	3.6.25
9007C62JS3M11	24F	3.6.25
9007C62KCM11	24F	3.6.25
9007C62KM11	24F	3.6.25
9007C68T10M11	24F	3.6.25
9007CA1	24F	3.6.28
9007CA11	24F	3.6.28
9007CA1M	24F	3.6.28
9007CA8	24F	3.6.28
9007CB31	24F	3.6.23
9007CB32	24F	3.6.23
9007CB33	24F	3.6.23
9007CB36	24F	3.6.23
9007CC1	24F	3.6.23
9007CO3	24F	3.6.23
9007CO3	24F	3.7.15
9007CO6	24F	3.6.23
9007CO7	24F	3.7.15
9007CP221	24F	3.6.23
9007CP321	24F	3.6.23
9007CP323	24F	3.6.23
9007CT12	24F	3.5.10
9007D	26R	3.6.26
9007D1	26R	3.6.30
9007D2	26R	3.6.30
9007D3	26R	3.6.30
9007DA1	24F	3.6.28
9007DA11	24F	3.6.28
9007E	24F	3.6.26
9007EA1	24F	3.6.28
9007EA11	24F	3.6.28
9007ED	24F	3.6.26
9007F	24F	3.6.26
9007F4	26R	3.6.30
9007F5	26R	3.6.30
9007F6	26R	3.6.30
9007FA1	24F	3.6.28
9007FA3	24F	3.6.28
9007FA5	24F	3.6.28
9007FA6	24F	3.6.28
9007G	24F	3.6.26
9007GD	24F	3.6.26
9007HA1	24F	3.6.28
9007HA2	24F	3.6.28
9007HA22	24F	3.6.28
9007HA23	24F	3.6.28
9007HA4	24F	3.6.28
9007HA5	24F	3.6.28
9007J	24F	3.6.26
9007JKC	24F	3.6.26
9007JS3	24F	3.6.26
9007K	24F	3.6.26
9007KA1	24F	3.6.28
9007KA11	24F	3.6.28
9007KA12	24F	3.6.28
9007KA2	24F	3.6.28
9007KC	24F	3.6.26
9007L	24F	3.6.26
9007LA1	24F	3.6.28
9007LA4	24F	3.6.28
9007MA1	24F	3.6.28
9007MA11	24F	3.6.28
9007MA12	24F	3.6.28
9007ML01S0100	24F	3.6.23
9007ML02S0100	24F	3.6.23
9007ML03S0100	24F	3.6.23
9007ML10S0100	24F	3.6.23
9007MS01S0100	24F	3.6.23
9007MS02S0100	24F	3.6.23
9007MS03S0100	24F	3.6.23
9007MS10S0100	24F	3.6.23
9007N	24F	3.6.26
9007R16	26R	3.6.30
9007R17	24F	3.6.30
9007R18	26R	3.6.30
9007R19	24F	3.6.30
9007R20	26R	3.6.30
9007R21	24F	3.6.30
9007R22	24F	3.6.30
9007S9	24F	3.6.30
9007T10	24F	3.6.26
9007T5	24F	3.6.26
9007TSB1M11	26R	3.6.29
9007TSB3M11	26R	3.6.29
9007TUB12M11	26R	3.6.29
9007TUB1M11	26R	3.6.29
9007TUB2M11	26R	3.6.29
9007TUB3M11	26R	3.6.29
9007TUB4M11	26R	3.6.29
9007TUB5M11	26R	3.6.29
9007TUB7M11	26R	3.6.29
9007TUB8M11	26R	3.6.29
9007X1	26R	3.6.30
9007X2	24F	3.6.30
9012GAW1	25V	3.5.7
9012GAW2	25V	3.5.7
9012GAW21	25V	3.5.7
9012GAW22	25V	3.5.7
9012GAW22Q4	25V	3.5.8
9012GAW24	25V	3.5.7
9012GAW24Q4	25V	3.5.8
9012GAW25	25V	3.5.7
9012GAW25Q4	25V	3.5.8
9012GAW26	25V	3.5.7
9012GAW26Q4	25V	3.5.8
9012GAW2Q4	25V	3.5.8
9012GAW4	25V	3.5.7
9012GAW4Q4	25V	3.5.8
9012GAW5	25V	3.5.7
9012GAW5Q4	25V	3.5.8
9012GAW6	25V	3.5.7
9012GAW6Q4	25V	3.5.8
9012GBW1	25V	3.5.7
9012GBW1Q4	25V	3.5.8
9012GBW2	25V	3.5.7
9012GBW21	25V	3.5.7
9012GBW21Q4	25V	3.5.8
9012GBW22	25V	3.5.7
9012GBW22Q4	25V	3.5.8
9012GBW2Q4	25V	3.5.8
9012GCW1	25V	3.5.7
9012GCW2	25V	3.5.7
9012GCW21	25V	3.5.7
9012GCW22	25V	3.5.7
9012GCW23	25V	3.5.7
9012GCW24	25V	3.5.7
9012GCW3	25V	3.5.7
9012GCW4	25V	3.5.7
9012GGW1	25V	3.5.9
9012GGW4	25V	3.5.9
9012GHW1	25V	3.5.9
9012GJW1	25V	3.5.9
9013FHG12J52B7PU2	25P	3.5.3
9013FSG2J20B7PU2	25P	3.5.3
9013FYG2J21B7M4PU2	25P	3.5.3
9013FYG2J21B7PU2	25P	3.5.3
9016GAW1	25V	3.5.9
9016GAW2	25V	3.5.9
9016GAW21F	25V	3.5.9
9016GAW22	25V	3.5.9
990XSM00202	4M1	3.8.39
990XSM00203	4M1	3.8.39
990XSM00204	4M1	3.8.39
990XSM00205	4M1	3.8.39
990XSM00206	4M1	3.8.39
990XSM00207	4M1	3.8.39
990XSM00208	4M1	3.8.39
990XSM00209	4M1	3.8.39
990XSM00210	4M1	3.8.39
990XSM00211	4M1	3.8.39
990XSM00212	4M1	3.8.39
990XSM00213	4M1	3.8.39
990XSM00214	4M1	3.8.39
9998AS3	24F	3.6.30
9998AS4	24F	3.6.30
9998PC177Q4	25V	3.5.10
9998PC178Q4	25V	3.5.10
9998PC207	267	3.5.10
9998PC208	267	3.5.10
9998PC266Q4	25V	3.5.10
9998PC267Q4	25V	3.5.10
9998PC268Q4	25V	3.5.10
9998PC269Q4	25V	3.5.10
9998PC271Q5	25V	3.5.10
9998PC313	25V	3.5.10
9998PC314	25V	3.5.10