New Zealand Catalogue 2021

Electrical distribution, automation and control. Service and support.

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Life Is On Schneider Electric

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About Schneider Electric

Schneider's purpose is to empower all to make the most of our energy and resources, bridging progress and sustainability for all. We call this Life Is On.

Our mission is to be your digital partner for Sustainability and Efficiency.

We drive digital transformation by integrating world-leading process and energy technologies, end-point to cloud connecting products, controls, software and services, across the entire lifecycle, enabling integrated company management, for homes, buildings, data centers, infrastructure and industries.

We are the most local of global companies. We are advocates of open standards and partnership ecosystems that are passionate about our shared Meaningful Purpose, Inclusive and Empowered values.

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B

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J					
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M580	Programmable automation controllers	Modicon	M580	N	4
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	NS Moulded case (MCCB) – 1600b-3200	Compact	NS1600b/3200	D	30
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	Acti 9 system DIN mount, 1 to 2 pole, 1 to 63A – DC	Acti 9	C60H-DC	C	7
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Motor Circuit Breakers	up to 15kW	TeSys	GV2	H	39
	up to 45kW	TeSys	GV3	H	46
	up to 55kW	TeSys	GV4	H	49
Motor Protection Relays	Function modules	TeSys	Model U	H	59
	Motor Management	TeSys	Island	H	71
Motor Starters	Multifunction motor protection relays	TeSys	TeSys T	H	73
	Ultra compact motor starter	TeSys	TeSys H	H	51
	Thermistor protection relay	TeSys	LT3	H	75
Moulded Case Circuit Breakers (MCCBs)	NSXm Moulded case (MCCB) – Basic	Compact	NSXm 16-160	D	5-6
	NSX Moulded case (MCCB) – Intelligent Outlook	Compact	NSX 100-630	D	7-24
	NS Moulded case (MCCB) – 630 to 1600A	Compact	NS630b/1600	D	26-29
	NS Moulded case (MCCB) – 1600b-3200	Compact	NS1600b/3200	D	30
	Moulded case circuit breaker (MCCB) – 100 to 630A	Compact	NSX100/630	D	7-24
MSC Chassis	Fishbone busbar for moulded case circuit breakers	Powerpact	CNS/NS	D	23
	For miniature circuitbreakers – fishbone type	Acti 9		C	25
MTZ	Smart connected circuit breaker	Masterpact	MTZ	D	32-35
N					
Neutral Terminals	DIN rail mounted terminal blocks		NSY	F	30-32
NCF	timing relay	Compact	NSXm 16-160	M	15
NS/NSX	Moulded case circuit breaker (MCCB) - 16 to 160A	Compact	NSXm 16-160	D	5-6
	Moulded case circuit breaker (MCCB) – 100 to 630A	Compact	NSX100/630	D	7-24
	Moulded case circuit breaker (MCCB) – 630 to 1600A	Compact	NS630b/1600	D	26-29
	Moulded case circuit breaker (MCCB) – 1600 to 3200A	Compact	NS1600b/3200	D	30
O					
Operator Interface	Human Machine Interface	Harmony	HMI	N	34
Overcurrent Measurement	Measurement control relay		RM22/RM35	M	21
Overload Alarm	Function modules	TeSys	Model U	H	58
Overload relay	Control module – advanced	TeSys	Model U	H	59
	Control module – multifunction	TeSys	Model U	H	60
	Multifunction motor protection relays	TeSys	TeSys T	H	73
	Thermal overload relay	TeSys	Model D / D Green	H	23
	Electronic overload relay	TeSys	Model D / D Green	H	24
	Thermal overload relay	TeSys	Model F	H	33
	Thermal overload relay	TeSys	Model K	H	6
	Thermistor protection relay	TeSys	LT3	H	75
Overvoltage Measurement	Measurement control relay		RM22	M	21
P					
Panel Busbar System	for motor starters	TeSys	AK5	H	76
Parallel Wiring Module	Control wiring accessory for	TeSys	Model U	H	62
Parallel Wiring Splitter	Control wiring accessory for	TeSys	Model U	H	63
Pendant Stations	Insulated pendant stations – 2 to 12 hole	Harmony	XAC	J	52
	Wireless pendant	Harmony	eXLhoist	J	58
Phase Rotation	Monitoring relay		RM22	M	20
Phase failure	Monitoring relay		RM22	M	20
Phaseo	Regulated power supplies	Phaseo	ABL	M	33
Photoelectric Sensors	Compact 50 x 50 Universal	Telemecanique	XUK	K	27
	Cylindrical universal	Telemecanique	XUB	K	26
	Miniature universal	Telemecanique	XUM	K	27
Pilot Lights	22mm double insulated bezel	Harmony	Style 5	J	32
	22mm metal bezel	Harmony	Style 4	J	18
	30mm double insulated bezel	Harmony	Style 5	J	32
	30mm metal bezel	Class 9001	K	J	49
	30mm three phase indicator	Harmony	Style 5	J	35
	Acti 9 system DIN mount	Acti 9	PL	C	23

Speed search index

B

	Description	Product	Part	Sect	Page
Plug-in relays	Interface, miniature, signalling, universal		RSL, RSB, RXM, RXG, RUM, RPM	M	4
Potentiometer	22mm IP69	Harmony	Style 4/5	J	20, 35
Power Factor Correction Capacitors	VarplusCan capacitors	VarplusCan		E	17
Power Monitoring Solutions	PowerLogic			E	7
Power Meters	Power meters	PowerLogic		E	7-8
Power Supplies	Regulated AC to DC	Phaseo	ABL	M	2
Powerpact chassis	for moulded case circuit – fishbone type	Compact NSX	CNS Powerpact	D	25
PowerTag	Wireless CT	PowerTag	Acti 9	E	6
Pressure Sensors	Analogue	Telemecanique	XML	K	42
	Electronic	Telemecanique	XML	K	43
Pressure Switches	Industrial	Telemecanique		K	41
Programmable automation controllers	Programmable automation controllers	Modicon	M340	N	2
	Programmable automation controllers	Modicon	M580	N	4
	Programmable logic controllers	Modicon	M221	M	28
	Smart Relays	Zelio	SR2 & SR3	M	23
Protection Relay	Control module – advanced	TeSys	Model U	H	59
	Control module – multifunction	TeSys	Model U	H	60
	Multifunction motor protection relays	TeSys	TeSys T	H	73
	Thermal overload relay	TeSys	Model D / D Green	H	23
	Thermal overload relay	TeSys	Model F	H	33
	Thermal overload relay	TeSys	Model K	H	6
	Thermistor protection relay	TeSys	LT3	H	75
Proximity Sensors	Inductive	Telemecanique	XS	K	29
Pushbuttons	16mm black insulated bezel	Harmony	Style 6	J	3
	22mm black insulated bezel	Harmony	Style 5	J	24
	22mm chromium plated bezel	Harmony	Style 4	J	9
	30mm black insulated bezel	Harmony	Style 5	J	29
	30mm chromium plated bezel	Class 9001	K	J	47
	Acti 9 system DIN mount	Acti 9	iPB	C	23
Prisma	Metal switchboards	Prisma Plus	PACK	F	23-28

R

RCBO	Acti 9 system DIN mount 18mm combined MCB/RCD – 10kA	Acti 9	iC60H RCBO	C	12
	Acti 9 system DIN mount combined MCB/RCD – 6kA	Acti 9	iDPN Vigi	C	11-12
RCCB	Residual current devices	Acti 9	iID RCCB	C	11-13
RC Network	TeSys Model D coil	TeSys	Model D	H	19
Residual Current Devices	Add on Vigi blocks for miniature circuit breakers	Acti 9	iC60/120	C	13
	See also “RCCB” & “RCBO”				
Relays	Control	TeSys	Model K	H	5
	Interface plug-in		RSL, RSB, RXG	M	6, 7, 8
	Minature plug-in		RXM	M	9
	Universal plug-in		RUM	M	10
	Power		RPM, RPF	M	11
	Solid state		SSL, SSM, SSP	M	12
RFID safety switches	Smart relays	Zelio	SR2/SR3	M	23
	Machine safety devices	Telemechanique	XCS	L	7
RXG, RUM, RPM	Relays			M	4
Reversing Contactors	TeSys Model K contactors	TeSys	Model K	H	5
Reversing Module	TeSys Model U reverser block	TeSys	Model U	H	56
Reversing Starters	TeSys Model K	TeSys	Model K	H	5
	TeSys Model U	TeSys	Model U	H	56
Rotary Encoders	Incremental and absolute	Telemecanique	XCC	K	36
RJ45 port	22mm black insulated bezel	Harmony	Style 5	J	35
	Cover IP65/67/69	Harmony	Style 5	J	35

S

Speed search index

	Description	Product	Part	Sect	Page
Safeguarding of machine	Control stations, foot switches	Preventa	XPE	L	13
	Guard switches - metal	Preventa	XCS	L	5
	Guard switches - plastic	Preventa	XCS	L	6
	Coded magnetic switches	Preventa	XCS	L	7
	RFID safety switches	Preventa	XCS	L	7
	Safety limit switches	Preventa	XCS	L	8
	Safety light curtains	Preventa	XUSL	L	15
	Safety trip wire	Preventa	XY2	L	10
	Safety relays	Preventa	XPSU	L	20
	Safety controllers	Preventa	XPSMCM	L	27
	Contactor safety cover	TeSys	Model D/ U	H	18,70
Safety Enabling Switches	Validation control	Preventa	XY2AU	L	14
Safety Functions of a Machine	Technical information	Preventa		L	2
	Type 4 (SIL3/ PLe)	Preventa	XUSL	L	15
Safety Modules	Safety relay	Preventa	XPSLI	L	20
	Safety configurable controller	Preventa	XPSMCM	L	27
Safety Switches	for commercial applications 2 & 4 pole, 40 to 125A	Acti 9	iID RCCB	C	11-12
Safety Validation Control	Enabling switches	Preventa	XY2AU	L	14
SCADA Software	Supervisory,Control & Data Acquisition Software			N	50
Screw Terminal Blocks	Terminal blocks		NSY	F	29-34
Selector Switches	22mm black insulated bezel	Harmony	Style 5	J	26
	22mm chromium plated bezel	Harmony	Style 4	J	11
	30mm black insulated bezel	Harmony	Style 5	J	30
	30mm chromium plated bezel	Class 9001	K	J	47
	Acti 9 system DIN mount	Acti 9	CM	C	23
Sensors	Electronic pressure sensors	Telemecanique		K	41
	Inductive proximity	Telemecanique	XS	K	29
	Cables (Leads)	Telemecanique	XZ	K	39
	Photoelectric	Telemecanique	XU	K	26
	Pressure, pressure switches for power circuits	Telemecanique	XM	K	41
Shunt Trip	for motor circuit breaker	TeSys	GV2	H	43
	for motor circuit breaker	TeSys	GV3	H	47
	for motor circuit breaker	TeSys	GV4	H	50
Smart Relays	Programmable electronic relay	Zelio	SR2 & SR3	M	23
Soft starters	Soft starter 0.37 to 15kW	Altistart 01	ATS01	I	6
	Soft starter 7.5 to 315kW	Altistart 22	ATS22	I	7
	Soft starter 7.5 to 630kW	Altistart 48	ATS48	I	10
Software	Zelio programming tools	Zelio	SR2 & SR3	M	23
	M221 programming tools	Modicon	M221	M	30
Solid State Relays	Interface, compact, panel, power	Zelio	SSL, SSM, SSR, SSP	M	10
Specialty Sensors	Rotation, capacitive, analogue	Telemecanique	XT/XS	K	33
Star Delta Starter	Motor starter	TeSys	Model D	H	37
Suppressor Module	Integral			H	72
Surge Arrestors	Acti 9 system DIN mount	Acti 9	iPRD	C	17-18
Switchboards Disconnectors	Metal switchboards	Prisma Plus	PACK	F	23-28
	Isolators 12 – 175A, panel mounting	TeSys	Vario	H	83
	Isolators 40 – 2500A	Interpact		D	2-4
Switch Mode Power Supply	Power supplies	Phaseo	ABL	M	2
T					
Telefast	I/O connection system	Telefast	ABE7	M	39
Temperature Controllers	Digital panel mount 48x48	Zelio	RTC	M	28
Terminal Blocks & Cable Ends	Cable duct		AK2	F	37
	Cable ends		DZ5	F	36
	Earth terminal blocks		NSY	F	30-35
	Neutral terminal blocks		NSY	F	30-35
	Screw terminal blocks		NSY	F	30
	Spring terminal blocks		NSY	F	31
	Push in terminal blocks		NSY	F	33
	Double Deck terminal blocks		NSY	F	34
Thermal Magnetic Motor Circuit Breakers	GV2	TeSys	GV2	H	39
	GV3	TeSys	GV3	H	46
	GV4	TeSys	GV4	H	49
Thermal Overload	TeSys Model D / D Green	TeSys		H	23
	TeSys Model F	TeSys		H	33
	TeSys Model K	TeSys		H	6
Thermal Overload Alarm Module	TeSys Model U function module	TeSys		H	58
Thermistor Protection Relays	LT3			H	75
Time Delay Relays	Delay on, single shot, interval timer & multifunction	Acti 9	iRT	C	24
	Delay on/off, flashing, single shot & multifunction		RE22 & RE48	M	17

Speed search index

B

	Description	Product	Part	Sect	Page
Time Switches	24 hr/7 day single & multichannel – digital/analogue	Acti 9	IH & IHP	C	24
	Programmable “smart relay”	Zelio	SR2 & SR3	M	29
Timers	Delay on, single shot, interval timer & multifunction	Acti 9	iRT	C	24
	Delay on/off, flashing, single shot & multifunction		RE22 & RE48	M	17
	22mm black insulated bezel	Harmony	Style 5	J	35
	TeSys Model D accessories	TeSys	Model D / D Green	H	21
Toroids	Earth leakage relays	Vigirex		E	16
Tower Lights	Signalling and sound	Harmony	XVB & XVU	J	61,64
Transformers	MV			G	1-5
Transformer Step Down	400/230/24	Phaseo	ABL6	M	2
Triple Deck Terminal Blocks	Terminal blocks		NSY	F	32
Trip Wire Switches	Safety rated	Telemecanique	XY2	L	10
U					
Ultrasonics	Flat and cylindrical	Telemecanique	XX	K	34
U Model	TeSys Model U Integrated Starter Protector	TeSys		H	52
Undercurrent Measurement	Measurement control relays		RM22 & RM35	M	21
Undervoltage Measurement	Measurement control relays		RM22	M	20
Undervoltage Trip	GV2 motor circuit breakers	TeSys	GV2	H	43
	GV3 motor circuit breakers	TeSys	GV3	H	47
	GV4 motor circuit breakers	TeSys	GV4	H	50
Unity Control Expert	PLC Programming software	Unity Control Expert		N	25
USB port	22mm black insulated bezel	Harmony	Style 5	J	35
	Cover IP65/67/69	Harmony	Style 5	J	35
Upump	Upump soft starter pump controller	Altistart		I	9
V					
Variable Speed Drive	Variable speed drive 0.18 to 2.2kW	Altivar 12	ATV12	I	12
	HVAC variable speed drive 0.75 to 75kW	Altivar 212	ATV212	I	24
	Variable speed drive 0.18 to 15kW	Altivar 320	ATV320	I	14
	Variable speed drive 0.75 to 75kW	Altivar 340	ATV340	I	23
	Variable speed drive 0.75 to 315kW	Altivar Process	ATV630/650/930/950	I	25
	Variable speed drive 110 to 1200kW	Altivar Process	ATV660/680/960/980	I	43
Vario	Load break switches	TeSys	Vario	H	83
Varistor	TeSys Model D coil	TeSys		H	19
Varlogic	Power factor controller	Varlogic RT		E	19
Varpact	Power factor correction module	Varpact		E	20
VarplusCan	Power factor correction capacitors	VarplusCan		E	17
Varplus Logic	Power factor controller	Varplus Logic		E	19
Varset	Automatic PFC units	Varset		E	21-22
Vigirex protection and monitoring	Relays	Vigirex		E	16
Vijeo Designer	HMI Configuration Software	Harmony		N	48
Voltage Measurement	Over & undervoltage relays		RM22	M	20
W					
Wall Mounted Enclosure	IP66 steel		NSYCRN	F	16-18
	IP66 stainless steel		NSYS3X	F	19-21
	IP66 insulated		NSYPLM	F	8-11
Wireless Battery Less	Pushbuttons and receivers	Harmony	Style 5	J	44
	Limit switch and reciever		XCKW/XCMW	K	25
Z					
Zelio	Logic smart electronic relay	Zelio	SR2 & SR3	M	23

Power Distribution

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Power management E

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Low voltage final distribution

C

Protection and isolation

Acti 9 system

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RCCBs and RCBOs	C11-13
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Control and signalling

Acti 9 system

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Contactors and load shedding contactors	C21
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Connection devices and accessories

Acti 9 system

Comb busbars and accessories	C27
Connection devices and accessories	C28
3 phase chassis for 18 and 27mm wide devices	C29-30
3 phase + N chassis for 36mm wide RCBOs	C29

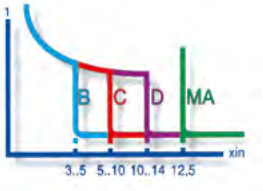
Protection and isolation

Acti 9 system
Miniature circuit breakers
Tripping curves
Markings and 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.



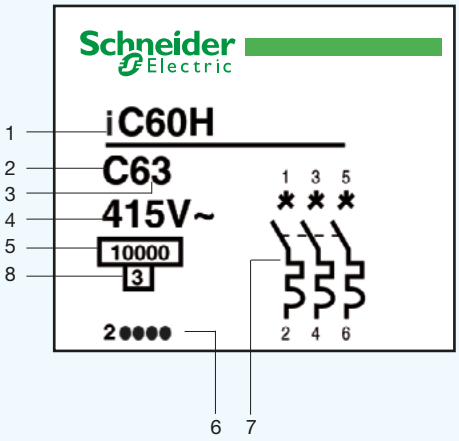
Curve B (1)
tripping: 3 to 5 times the rated current (In); protection of generators, persons, very long cables.

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.

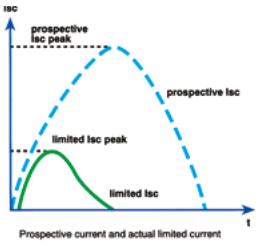
Curve MA (magnetic only)
tripping: 12 In; protection of motor starters (+ thermal protection when combined with contactor).

Circuit breaker marking



Key

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. I2t classification



Circuit breaker limitation

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. For example, on a 6A rating with a prospective short circuit of 5000A, the current will be limited at 350A or 7%.

Installation of current limiting circuit breakers offers several advantages:

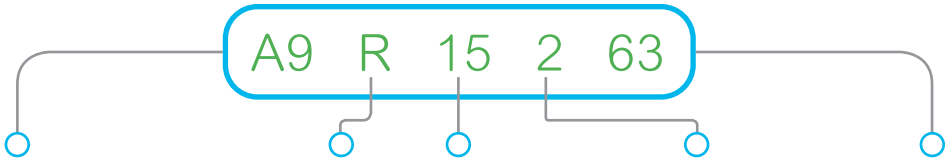
- **Better network protection**
  Current limiting circuit breakers considerably reduce the undesirable effects of short circuit currents in an installation.
- **Reduced thermal effects**
  Cable heating is reduced, hence longer cable life.
- **Reduced mechanical effects**
  Electrodynamic forces reduced,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

Note
(1) For additional Curve trip units, please contact Schneider Electric.

Acti 9 system
iSW – 20 to 32A AS/NZS60669-2-4
iSW – 40 to 125A AS/NZS60947-3

C

Priciple of catalogue numbers for IID RCCB, Vigi iC60, iC60 MCB, Switches, Reflex iC60,



Range	Family	Code	Internal code	Poles	Code	Rating (A)	Code
Acti 9 (A9)	IID	R		0	0	0	00
	Vigi iC60	V		1P	1	1	01
	IC60	F		2P	2	2	02
	Auxiliaries and accessories	A		3P	3	4	04
	Switches	S		4P	4	6	06
	Reflex iC60	C		1N	5	10	10
				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

A9S60120

Control Switches

Model	Current rating	No. of poles	Voltage (VAC)	Width in mod. of 9mm	Reference
iSW	20A	1	250V	2	**A9S60120**
		2	415V	2	**A9S60220**
	32A	1	250V	2	**A9S60132**
		2	415V	2	**A9S60232**
		3	415V	4	**A9S60332**

A9S66163

Switch-disconnectors

Model	Current rating	No. of poles	Voltage (VAC)	Width in mod. of 9mm	Reference
iSW	40A	1	250V	2	**A9S66140**
		2	415V	2	**A9S66240**
		3	415V	4	**A9S66340**
		4	415V	8	**A9S66440**
	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 iSW		1 C/O		1	**A9A26924**

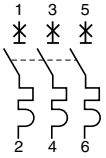
Protection and isolation

Acti 9 system
iC60N miniature circuit breakers – 1 to 63A
6kA at 240/415V, C curve and D curve
iDPN – 6 to 40 AS/NZS60898.1
Standards AS/NZS60898.1

A9F44120

iC60N

Compatible with PowerTag

	Rating (In)	Reference C curve	Reference D curve
1P	1A	**A9F44101**	**A9F45101**
	2A	**A9F44102**	**A9F45102**
	4A	**A9F44104**	**A9F45104**
	6A	**A9F44106**	**A9F45106**
	10A	**A9F44110**	**A9F45110**
	16A	**A9F44116**	**A9F45116**
	20A	**A9F44120**	**A9F45120**
	25A	**A9F44125**	**A9F45125**
Width in mod. of 9mm – 2	32A	**A9F44132**	**A9F45132**
	40A	**A9F44140**	**A9F45140**
	50A	**A9F44150**	**A9F45150**
	63A	**A9F44163**	**A9F45163**
2P	1A	**A9F44201**	**A9F45201**
	2A	**A9F44202**	**A9F45202**
	4A	**A9F44204**	**A9F45204**
	6A	**A9F44206**	**A9F45206**
	10A	**A9F44210**	**A9F45210**
	16A	**A9F44216**	**A9F45216**
	20A	**A9F44220**	**A9F45220**
	25A	**A9F44225**	**A9F45225**
Width in mod. of 9mm – 4	32A	**A9F44232**	**A9F45232**
	40A	**A9F44240**	**A9F45240**
	50A	**A9F44250**	**A9F45250**
	63A	**A9F44263**	**A9F45263**
3P	1A	**A9F44301**	**A9F45301**
	2A	**A9F44302**	**A9F45302**
	4A	**A9F44304**	**A9F45304**
	6A	**A9F44306**	**A9F45306**
	10A	**A9F44310**	**A9F45310**
	16A	**A9F44316**	**A9F45316**
	20A	**A9F44320**	**A9F45320**
	25A	**A9F44325**	**A9F45325**
Width in mod. of 9mm – 6	32A	**A9F44332**	**A9F45332**
	40A	**A9F44340**	**A9F45340**
	50A	**A9F44350**	**A9F45350**
	63A	**A9F44363**	**A9F45363**

A9F44220

A9F44320

Protection and isolation

Acti 9 system
iC60H miniature circuit breakers – 1 to 63A
10kA at 240/415V, B, C and D curve
Standards AS/NZS60898.1

iC60H

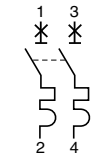
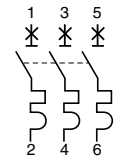
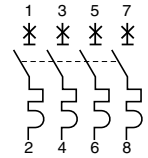
Compatible with PowerTag

A9F54120

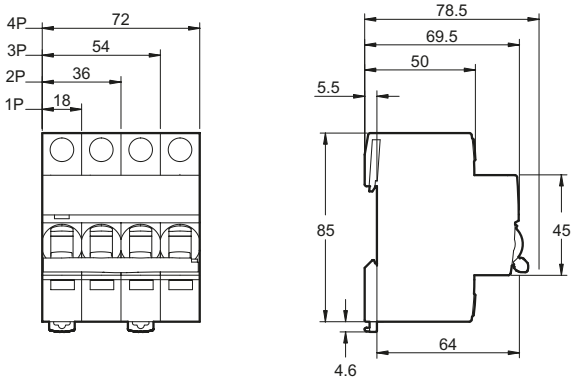
A9F54220

A9F54320

A9F54420

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

Dimensions 18mm pitch



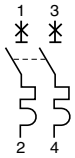
Connection: Tunnel terminals for the following cables
– up to 25A : 25mm² stranded
– 32 to 63A : 35mm² stranded

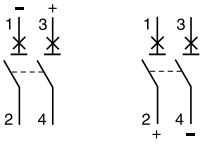
Acti 9 system
C60H-DC miniature circuit breakers – 1 to 63A
6kA at 250/500V, C Curve, IEC60947-2

C60H-DC

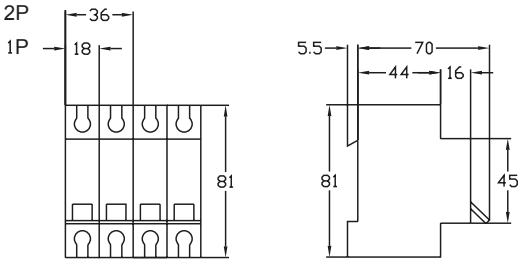
A9N61512

A9N61531

		Rating (In)	Reference C curve
1P	Width in mod. of 9mm – 2	1A	**A9N61501**
		2A	**A9N61502**
		3A	**A9N61503**
		4A	**A9N61504**
		5A	**A9N61505**
		6A	**A9N61506**
		10A	**A9N61508**
		13A	**A9N61509**
		15A	**A9N61510**
		16A	**A9N61511**
		20A	**A9N61512**
		25A	**A9N61513**
		30A	**A9N61514**
		32A	**A9N61515**
		40A	**A9N61517**
		50A	**A9N61518**
		63A	**A9N61519**
2P	 Width in mod. of 9mm – 4	1A	**A9N61521**
		2A	**A9N61522**
		3A	**A9N61523**
		4A	**A9N61524**
		5A	**A9N61525**
		6A	**A9N61526**
		10A	**A9N61528**
		13A	**A9N61529**
		15A	**A9N61530**
		16A	**A9N61531**
		20A	**A9N61532**
		25A	**A9N61533**
		30A	**A9N61534**
		32A	**A9N61535**
		40A	**A9N61537**
		50A	**A9N61538**
		63A	**A9N61539**

Operating voltage (Ue)	12…250 V DC	12…500 V DC	
Diagrams			
	Supply from above or below, observing the polarity	Supply from above	Supply from below
Breaking capacity	20 kA / 110 V DC 10 kA / 220 V DC 6 kA / 250 V DC	20 kA / 220 V DC 10 kA / 440 V DC 6 kA / 500 V DC	

Dimensions 18mm pitch



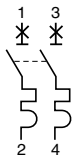
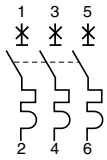
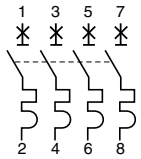
Connection: Tunnel terminals for the following cables
– up to 25A : 25mm² stranded
– 32 to 63A : 35mm² stranded

Protection and isolation

Acti 9 system
C120N miniature circuit breakers – 63 to 125A
10kA at 240/415V, C curve and D curve
Standards AS/NZS60898.1

C120N

A9N18356

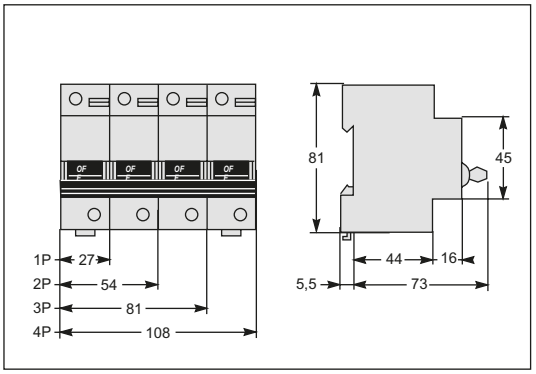
		Rating (In)	Reference C curve
1P		63A	**A9N18356**
		80A	**A9N18357**
		100A	**A9N18358**
		125A	**A9N18359**
	Width in mod. of 9mm – 3		
2P		63A	**A9N18360**
		80A	**A9N18361**
		100A	**A9N18362**
		125A	**A9N18363**
	Width in mod. of 9mm – 6		
3P		63A	**A9N18364**
		80A	**A9N18365**
		100A	**A9N18367**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

A9N18360

A9N18365

A9N18376

Dimensions 27mm pitch



Connection: Tunnel terminals for stranded cables up to 50mm²

Protection and isolation

Acti 9 system
iC60L miniature circuit breakers – 1 to 63A
15kA at 240/415V, C and K curve
Standards AS/NZS60898.1

A9F94120

A9F94220

A9F94320

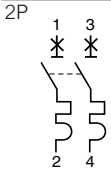
A9F94420

iC60L

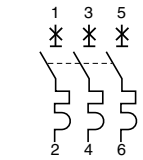
Compatible with PowerTag

	Rating (In)	Reference C curve	Reference D curve
1P	1A	**A9F94101**	**A9F95101**
	2A	**A9F94102**	**A9F95102**
	4A	**A9F94104**	**A9F95104**
	6A	**A9F94106**	**A9F95106**
	10A	**A9F94110**	**A9F95110**
	16A	**A9F94116**	**A9F95116**
	20A	**A9F94120**	**A9F95120**
	25A	**A9F94125**	**A9F95125**
	32A	**A9F94132**	**A9F95132**
	40A	**A9F94140**	**A9F95140**
	50A	**A9F94150**	**A9F95150**
	63A	**A9F94163**	**A9F95163**
2P	1A	**A9F94201**	**A9F95201**
	2A	**A9F94202**	**A9F95202**
	4A	**A9F94204**	**A9F95204**
	6A	**A9F94206**	**A9F95206**
	10A	**A9F94210**	**A9F95210**
	16A	**A9F94216**	**A9F95216**
	20A	**A9F94220**	**A9F95220**
	25A	**A9F94225**	**A9F95225**
	32A	**A9F94232**	**A9F95232**
	40A	**A9F94240**	**A9F95240**
	50A	**A9F94250**	**A9F95250**
	63A	**A9F94263**	**A9F95263**
3P	1A	**A9F94301**	**A9F95301**
	2A	**A9F94302**	**A9F95302**
	4A	**A9F94304**	**A9F95304**
	6A	**A9F94306**	**A9F95306**
	10A	**A9F94310**	**A9F95310**
	16A	**A9F94316**	**A9F95316**
	20A	**A9F94320**	**A9F95320**
	25A	**A9F94325**	**A9F95325**
	32A	**A9F94332**	**A9F95332**
	40A	**A9F94340**	**A9F95340**
	50A	**A9F94350**	**A9F95350**
	63A	**A9F94363**	**A9F95363**
4P	1A	**A9F94401**	**A9F95401**
	2A	**A9F94402**	**A9F95402**
	4A	**A9F94404**	**A9F95404**
	6A	**A9F94406**	**A9F95406**
	10A	**A9F94410**	**A9F95410**
	16A	**A9F94416**	**A9F95416**
	20A	**A9F94420**	**A9F95420**
	25A	**A9F94425**	**A9F95425**
	32A	**A9F94432**	**A9F95432**
	40A	**A9F94440**	**A9F95440**
	50A	**A9F94450**	**A9F95450**
	63A	**A9F94463**	**A9F95463**

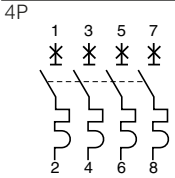
Width in mod. of 9mm – 2



Width in mod. of 9mm – 4

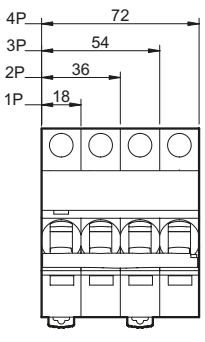


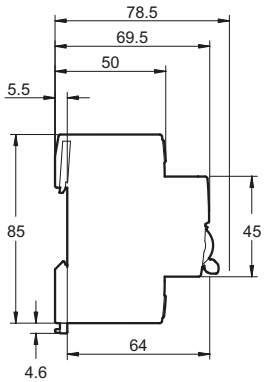
Width in mod. of 9mm – 6



Width in mod. of 9mm – 8

Dimensions 18mm pitch





Connection: Tunnel terminals for the following cables

– up to 25A : 25mm² stranded

– 32 to 63A : 35mm² stranded

Protection and isolation

Acti 9 system
C120H miniature circuit breakers – 63 to 125A
15kA at 240/415V, C curve and D curve
STI fuse carriers
Standards AS/NZS608981

C

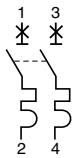
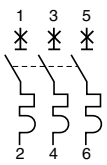
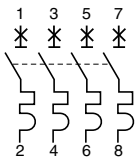
A9N18446

A9N18459

A9N18469

A9N18479

C120H

		Rating (In)	Reference C curve	Reference D curve
1P		63A	**A9N18445**	**A9N18489**
		80A	**A9N18446**	**A9N18490**
		100A	**A9N18447**	**A9N18491**
		125A	**A9N18448**	**A9N18492**
	Width in mod. of 9mm – 3			
2P		63A	**A9N18456**	**A9N18500**
		80A	**A9N18457**	**A9N18501**
		100A	**A9N18458**	**A9N18502**
		125A	**A9N18459**	**A9N18503**
	Width in mod. of 9mm – 6			
3P		63A	**A9N18467**	**A9N18511**
		80A	**A9N18468**	**A9N18512**
		100A	**A9N18469**	**A9N18513**
		125A	**A9N18470**	**A9N18514**
	Width in mod. of 9mm – 9			
4P		63A	**A9N18478**	**A9N18522**
		80A	**A9N18479**	**A9N18523**
		100A	**A9N18480**	**A9N18524**
		125A	**A9N18481**	**A9N18525**
	Width in mod. of 9mm – 12			

A9N15656

STI fuse-carriers

	Voltage(V)	FuseDiaxL (mm)	Width in mod. of 9mm	Reference
1P	500	10.3x38	2	**A9N15636**
1P+N	500	10.3x38	2	**A9N15646**
2P	500	10.3x38	4	**A9N15651**
3P	500	10.3x38	6	**A9N15656**
3P+N	500	10.3x38	6	**A9N15658**

To be equipped with aM or gG (gL-gI) type fuse.
25A max, connection 6mm².
Includes housing for spare fuse(s).

Fuse indicator (1x)	**15668**

Protection and isolation

Acti 9 system – Type A
iID RCCBs (safety switches) – 40 to 125A
iDPN Vigi RCBO (combined MCB/RCD) C Curve – 6kA
Clipsal 4RCBE C Curve – 10kA
Standards AS/NZS 61008.1, 61009.1

Type A

Tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether suddenly applied or slowly rising.

A9R51240

A9R51440

RCCB (residual current circuit breaker without overcurrent protection)

Compatible with PowerTag

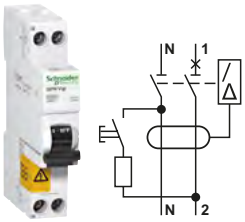
Model	Current rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iID	40A	2	30mA	4	**A9R51240**
	63A	2	30mA	4	**A9R51263**
	100A	2	30mA	4	**A9R21291**
	125A	2	30mA	4	**16970**
	40A	4	30mA	8	**A9R51440**
	63A	4	30mA	8	**A9R51463**
	80A	4	30mA	8	**A9R21480**
	100A	4	30mA	8	**A9R21491**
	125A	4	30mA	8	**16924**

A9D32620

RCBO (RCCB with overcurrent protection)

Compatible with PowerTag

Model	Current rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iDPN Vigi	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**
	40A	1P + N	30mA	4	**A9D32640**



Slimline RCBO (RCCB with overcurrent protection)

Compatible with PowerTag

Model	Voltage rating (V)	Current rating (A)	No. of poles	Width in mod. of 9mm	Reference 10mA (2)	Reference 30mA
iSPN Vigi	240	6	1P + N	2	**A9D40606**	**A9D73606**
		10	1P + N	2	**A9D40610**	**A9D73610**
		16	1P + N	2	**A9D40616**	**A9D73616**
		20	1P + N	2	**A9D40620**	**A9D73620**
		25	1P + N	2	**A9D40625**	**A9D73625**
		32	1P + N	2	**A9D40632**	**A9D73632**

Note
Please refer to the Schneider Electric Pocketbook for Medilec RCDs – Medical Electrical Equipment Series.
(1) Not compatible with Acti 9 system.
(2) 10mA Type 1 suitable for medical use

Protection and isolation

Acti 9 system
iDPN/iSPN Vigi RCBO (combined MCB/RCD) C Curve – 6k
iC60H(2) RCBO (combined MCB/RCD) C Curve – 10kA
Standards AS/NZS 61008.1, 61009.1

Type A

Tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether suddenly applied or slowly rising.

A9D11216

A9D11816

RCBO (residual current circuit breaker with overcurrent protection)

Compatible with PowerTag

Model	Current rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iC60H*	6A	1P + Ns	30mA	2	**A9D11806**
	10A	1P + Ns	30mA	2	**A9D11810**
	16A	1P + Ns	30mA	2	**A9D11816**
	20A	1P + Ns	30mA	2	**A9D11820**
	32A	1P + Ns	30mA	2	**A9D11832**
iC60H2	10A	2	30mA	4	**A9D11210**
	16A	2	30mA	4	**A9D11216**
	20A	2	30mA	4	**A9D11220**
	25A	2	30mA	4	**A9D11225**
	32A	2	30mA	4	**A9D11232**

***Note:** Requires special padlock. Part number A9A27049
1P + Ns means the neutral is solid and is NOT switched

A9R91440

Type A Si

With all the features of a Type A device, “Si” type super immunised earth leakage protection range has been specially developed to be used with loads or in environments causing disturbances. Examples are lightning or switching surges, harmonics generated by increasing number of loads and constant load leakage current from electronic ballasts, speed drives, computers, etc.

The Si increases safety and allows improved continuity of supply.

A9R91240

RCCB (residual current circuit breaker without overcurrent protection)

Compatible with PowerTag

Model	Current rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iID	40A	2	30mA	4	**A9R91240**
	63A	2	30mA	4	**A9R91263**
	40A	4	30mA	8	**A9R91440**
	63A	4	30mA	8	**A9R91463**

A9D33620

RCBO (RCCB with overcurrent protection)

Compatible with PowerTag

Model	Currentrates	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iDPN Vigi	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**

Protection and isolation

Acti 9 system
ID RCCBs (safety switches)
Add on Vigi blocks
ARC fault detection device (AFDD)

C

Type A

Tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether suddenly applied or slowly rising.

A9V51263

A9N18572

Add on Vigi blocks for C60/C120 (converts an MCB to an RCBO)

Model	Current rating	No. of poles	Sensitivity	Voltage	Width mod.of 9mm	Reference
Vigi iC60type Type A	≤ 63A	2	30mA	240/415	4	**A9V51263**
		2	300mA S	240/415	4	**A9V25263**
		3	30mA	415	7	**A9V51363**
		3	300mA S	415	7	**A9V25363**
		4	30mA	415	7	**A9V51463**
		4	300mA S	415	7	**A9V25463**
Vigi C120type Type A	≤ 125A	2	30mA	240/415	7	**A9N18572**
		2	300mA	240/415	7	**A9N18573**
		3	30mA	240/415	10	**A9N18575**
		3	300mA	240/415	10	**A9N18576**
		4	30mA	240/415	10	**A9N18578**
		4	300mA	240/415	10	**A9N18579**

S indicates a selective type with time delay for discrimination with downstream devices.

Type B

Provides protection of 3 phase installations and personal protection even in the presence of DC fault currents. Examples are Variable Speed Drives (tested and validated with Schneider Electric VSDs), 3 phase battery chargers and inverters, and 3 phase backed-up power supplies.

Installed where downstream devices are likely to produce a pure DC fault. Also includes the protection of a Type A device.

A9Z51216

New

RCCB for EV (residual current circuit breaker without overcurrent protection) Compatible with PowerTag

Model	Current rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iID	16A	2	30mA	8	**A9Z51216**
	25A	2	30mA	8	**A9Z51225**
	40A	2	30mA	8	**A9Z51240**
	40A	4	30mA	8	**A9Z51440**
	63A	4	30mA	8	**A9Z51463**

RCCB (residual current circuit breaker without overcurrent protection) Compatible with PowerTag (Flex)

Model	Current rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iD	125A	4	30mA	8	**16763**

Type B Si

With all the features of a Type B device, “Si” type super immunised earth leakage protection range has been specially developed to be used with loads or in environments causing disturbances. Examples are lightning or switching surges, harmonics generated by increasing number of loads and constant load leakage current from electronic ballasts, speed drives, computers, etc.

The Si increases safety and allows improved continuity of supply.

A9Z61425

New

RCCB (residual current circuit breaker without overcurrent protection) Compatible with PowerTag

Model	Current rating	No. of poles	Sensitivity	Width in mod. of 9mm	Reference
iID	25A	2	30mA	8	**A9Z61225**
	40A	2	30mA	8	**A9Z61240**
	63A	2	30mA	8	**A9Z61263**
	25A	4	30mA	8	**A9Z61425**
	40A	4	30mA	8	**A9Z61440**
	63A	4	30mA	8	**A9Z61463**
	80A	4	30mA	8	**A9Z61480**

Arc Fault Detection

Acti 9 system
iDPN N VigiARC (combined MCB/RCD/AFDD)
6kA and 10kA at 240V, C curve

C

A9T26620

New

Arc Fault Detection Devices (AFDD) + RCBO

Compatible with PowerTag

Description	Rating (In)	kA	Width in mod. of 9mm	Reference
iDPN N VigiARC C 6A 6000A 30mA Type A	6A	6	4	**A9T26606**
iDPN N VigiARC C 10A 6000A 30mA Type A	10A	6	4	**A9T26610**
iDPN N VigiARC C 16A 6000A 30mA Type A	16A	6	4	**A9T26616**
iDPN N VigiARC C 20A 6000A 30mA Type A	20A	6	4	**A9T26620**
iDPN N VigiARC C 25A 6000A 30mA Type A	25A	6	4	**A9T26625**
iDPN H VigiARC C 6A 10 000A 30mA Type A	6A	10	4	**A9T27606**
iDPN H VigiARC C 10A 10 000A 30mA Type A	10A	10	4	**A9T27610**
iDPN H VigiARC C 16A 10 000A 30mA Type A	16A	10	4	**A9T27616**
iDPN H VigiARC C 20A 10 000A 30mA Type A	20A	10	4	**A9T27620**
iDPN H VigiARC C 25A 10 000A 30mA Type A	25A	10	4	**A9T27625**

Arc faults

Low cross-section areas, low mechanical protection, and high numbers of derivations and connections can increase the risk of damage to the interior core conductor in the final circuits.

When a cable is damaged, or an electrical connection comes loose, there are two phenomena which could initiate a fire due to an electric arc:

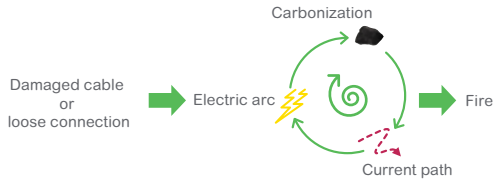


Figure 3.3. Arc fault generation

Carbonization:
This phenomenon is behind the series of arc faults that results from an arc between two parts of the same conductor. Whenever a conductor is damaged or a connection is not properly tightened, a localized hot spot occurs which carbonizes the insulating materials in the vicinity of that conductor.

Because carbon is a conductive material, it enables the flow of the current, which becomes excessive at various points. Since the carbon is deposited in a non-homogeneous manner, the currents which pass through it generate electric arcs to facilitate their paths. Then each arc amplifies carbonization of the insulating materials, a reaction thus occurs which is maintained until the quantity of carbon is sufficient for an arc to inflame it spontaneously.

Resistive short circuit:
This phenomenon is behind the parallel arc that happens between two different conductors. Whenever the insulating materials between two live conductors are damaged, a significant current can be established between the two conductors, but it is too weak to be considered a short circuit by a circuit breaker and is undetectable by residual current protective devices as this current does not go to earth.

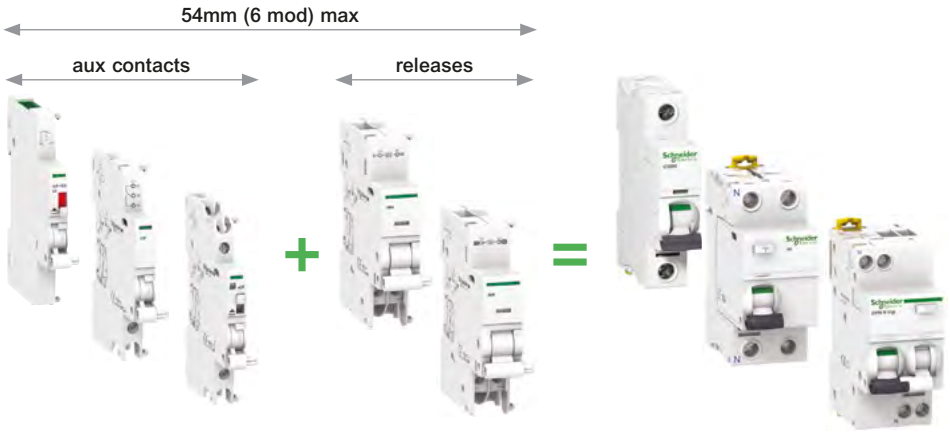
When passing through these insulating materials, these leakage currents optimize their paths by generating arcs that gradually transform the insulating materials into carbon. These carbonized insulating materials then amplify the current leak between the two conductors. Thus, a new chain reaction occurs, amplifying the quantity of arc current and carbon until the first flame appears from the carbon lit by one of the arcs.

The common feature of these phenomena is the ignition of the fire by arcs which inflame the carbon: that is why detection of the presence of arcs is one way to help prevent fires from occurring.

Detecting the presence of arcs is one way to prevent fires from occurring.

Acti 9 system
Auxiliaries to suit MCBs, RCCBs and RCBOs

Auxiliaries



Auxiliaries compatible with iC60, iID, iDPN Vigi, RCA and ARA

A9A26897

A9A26924

A9A26946

Description	Rated Voltage VAC	VDC	Width in mod. of 9mm	Reference
iOF+SD24 Comm Ready		24	1	**A9A26897**
iOF open close auxiliary (1 C/O)	240…415	24…130	1	**A9A26924**
iSD fault indication auxiliary (1 C/O)	240…415	24…130	1	**A9A26927**
iOF/SD+OF auxiliary (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**
	24	24	2	**A9A27108**
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**

Auxiliaries compatible with C120, DPN, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC

A9N26500

Description	Rated Voltage VAC	VDC	Width in mod. of 9mm	Reference
OF+SD24 Comm Ready		24	1	**A9N26899**
OF open close auxiliary (1 C/O)	240…415	24…130	1	**A9N26924**
SD fault indication auxiliary (1 C/O)	240…415	24…130	1	**A9N26927**
OF/SD+OF auxiliary (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
Accessories to suit MCBs, RCCBs and RCBOs

A9A26970

A9A26981

A9A27005

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

Description		Qty	Reference
Padlock device	Padlock diameter 3…6mm	10	**A9A26970**
	Padlock for Slimline RCBO	10	**A9A27049**
Terminal shield	2x1 pole	1 pair	**A9A26975**
	2x2 poles	2 pair	**A9A26976**
	3P = A9A26975+A9A26976, 4P = A9A26976 x2		
Screw shield	12x1 pole	12	**A9A26982**
	20x4 poles (splittable)	20	**A9A26981**
Interpole barrier		10	**A9A27001**
Spacer	Includes space for cable routing	5	**A9A27062**
Multi-cable terminal	For 3x copper cables flexible up to 10mm	3	**19096**
Plug-in base	1 per pole, plug in/out	1	**A9A27003**
Rotary handle (for 2/3/4 pole)	Complete assembly includes black handle	1	**A9A27005**
	Complete assembly includes red handle	1	**A9A27006**

26970

26981

Accessories compatible with C120, DPN, C60H-DC, SW60-DC, C60PV-DC, C60NA-DC

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**
Plug-in base	1 per pole, plug in/out, C60H-DC	1	**26996**
	1 per pole, plug in/out, C120 <=63A Max.	1	**26997**
Rotary handle	Operating assembly (no handle)	1	**27046**
	Removable extended handle	1	**27047**

Acti 9 system
Type 1 or 1+2 Surge arresters

16332

16363

A9L16632

Type 1 or 1+2 Surge arresters (withdrawable or fixed)

Model	No. of poles	Un (V)	Uc (V)	Iimp 10/350 wave (kA)	Imax 8/20 wave (kA)	In (kA)	Remote indicator	Up (kV)	Reference
Type 1+2 Withdrawable									
PRD1 25r	1P	230	350	25	40	25	Yes	1.5	**16329**
PRD1 25r	1P + N	230/400	350	25/100 N/PE	40	25	Yes	1.5	**16330**
PRD1 25r	3P	230	350	25	40	25	Yes	1.5	**16331**
PRD1 25r	3P + N	230/400	350	25/100 N/PE	40	25	Yes	1.5	**16332**
Type 1 Withdrawable									
PRD1 Master	1P	230	350	25		25	No	1.5	**16360**
PRD1 Master	1P + N	230/400	350	25/100 N/PE		25	No	1.5	**16361**
PRD1 Master	3P	230	350	25		25	No	1.5	**16362**
PRD1 Master	3P + N	230/400	350	25/100 N/PE		25	No	1.5	**16363**
Type 1+2 Fixed									
iPRF1 12.5r	1P + N	230	350	12.5/50 N/PE	50	25	Yes	1.5	**A9L16632**
iPRF1 12.5r	3P	230/400	350	12.5	50	25	Yes	1.5	**A9L16633**
iPRF1 12.5r	3P + N	230/400	350	12.5/50 N/PE	50	25	Yes	1.5	**A9L16634**
Type 1 Fixed									
PRF1 Master	1P	230	440	35	-	50	No	1.5	**16649**

Un: rated voltage — Uc: maximum continous operating voltage — Up: voltage protection level

Surge arresters		**Spare cartridges**		
Model	Reference	Phase Type 1	Phase Type 2	Neutral
PRD1 25r 1P	**16329**	16315	16316	
PRD1 25r 1P+N	**16330**	16315	16316	16317
PRD1 25r 3P	**16331**	3 x 16315	3 x 16316	
PRD1 25r 3P+N	**16332**	3 x 16315	3 x 16316	16317
PRD1 Master 1P	**16360**	16314		
PRD1 Master 1P+N	**16361**	16314		16317
PRD1 Master 3P	**16362**	3 x 16314		
PRD1 Master 3P+N	**16363**	3 x 16314		16317

Acti 9 system
iPRD Arrestors

C

A9L40100

A9L65101

Type 2 iPRD Surge arresters (replaceable cartridge)

Model	No. of poles	ImaxkA	Un V	Remote indicator	Up kV	Width in mod. of 9mm	Reference
iPRD20	1P	20	230	No	1	2	**A9L20100**
	1P + N*	20	230	No	1.2	4	**A9L20500**
	3P	20	230/400	No	1	6	**A9L20300**
	3P + N*	20	230/400	No	1.2	8	**A9L20600**
iPRD 20r	1P + N*	20	230/400	Yes	1.2	4	**A9L20501**
	3P + N*	20	230/400	Yes	1.2	8	**A9L20601**
iPRD 40	1P	40	230	No	1.3	2	**A9L40100**
	1P + N*	40	230	No	1.2	8	**A9L40500**
	3P	40	230/400	No	1.3	6	**A9L40300**
	3P + N*	40	230/400	No	1.3	8	**A9L40600**
iPRD 40r	1P	40	230	Yes	1.3	2	**A9L40101**
	1P + N*	40	230	Yes	1.3	4	**A9L40501**
	3P	40	230/400	Yes	1.3	6	**A9L40301**
	3P + N*	40	230/400	Yes	1.3	8	**A9L40601**
iPRD 65r	1P	65	230	Yes	1.5	2	**A9L65101**
	1P + N	65	230	Yes	1.5	4	**A9L65501**
	3P	65	230/400	Yes	1.5	6	**A9L65301**
	3P + N	65	230/400	Yes	1.5	8	**A9L65601**

A9L65102

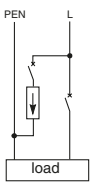
Cartridges for iPRD

iPRD20	+ 20r	20	230	2	**A9L20102**
iPRD40	+ 40r	40	230	2	**A9L40102**
iPRD65	+ 65r	65	230	2	**A9L65102**
iPRD neutral		230		2	**A9L00002**

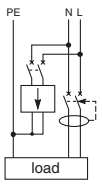
* 1P+N, 3P+N required if no MEN connection Uc = 340V L/N all devices

Rated discharge current (Imax)		Associated disconnection and protection device (kA rating same as installation)
65kA	Very high risk level (Strongly exposed site)	50A C Curve
40kA	High risk level	40A C Curve
20kA	Low risk level	25A C Curve

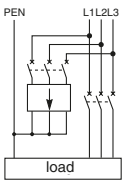
Surge protection devices have been tested for co-ordination with Schneider Electric circuit breakers to IEC60364.		
Response time		< 25 ns
End of life indication:by white/red mechanical indicator	White	in operation
	Red	at end of life
End of life remote indication (* for models ending with 'r')		by contact NO, NC 250V//0.25A
Type of connection terminals		tunnel terminals, 2.5 to 35mm²
Operating temperature		-5°C to +40°C



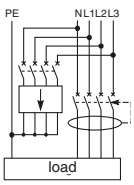
1P



1P + N



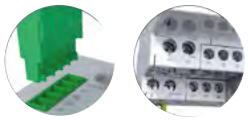
3P

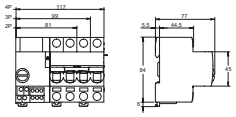


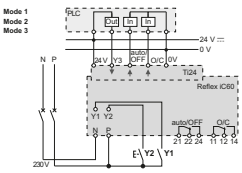
3P + N

Control, remote control

Acti 9 system
Reflex iC60 Integrated control circuit breakers
IEC60947-2 15kA
Remote Control Auxiliary (RCA) for iC60 circuit breaker







Reflex iC60

The Reflex iC60 devices are integrated control circuit breakers which combine the following main functions in a single device:

- Remote control by latched and/or impulse-type order according to the 3 operating modes to be chosen by the user.
- Circuit breaker, to provide:
  - circuit protection against short-circuit overload.

Resetting after a fault is performed manually, by the resetting handle.

The version with Ti24 allows direct interfacing of the Reflex iC60 with a PLC.

The Ti24 interface also allows fast, reliable connection of the Reflex iC60 to the Acti 9 Smartlink thanks to the prefabricated cables.

The iMDU auxiliary allows the Reflex iC60 to be controlled in 24/48V AC/DC.

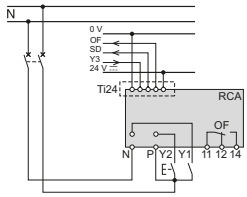
Reflex iC60H with Ti24 interface		Rating (In)	Width on mod. of 9mm	Reference
2P		10	9	**A9C65210**
		16	9	**A9C65216**
		25	9	**A9C65225**
		40	9	**A9C65240**
3P		10	11	**A9C65310**
		16	11	**A9C65316**
		25	11	**A9C65325**
		40	11	**A9C65340**
4P		10	13	**A9C65410**
		16	13	**A9C65416**
		25	13	**A9C65425**
		40	13	**A9C65440**
iMDU	Side auxiliary used to allow safety voltages of 24 or 48V AC/DC to be used on 230V control inputs on the Reflex		1	**A9C18195**

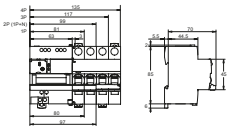
Notes

B & D Curve avaliable 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





RCA

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.

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 in 24 V DC (control, OF and SD indications).
- Fast, reliable connection of the remote control to the Acti 9 Smartlink thanks to the prefabricated cables.

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

RCA with Ti24 interface

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

Acti 9 communication system
Acti 9 Smartlink

C

The Acti 9 communication system

The Acti 9 Smartlink transmits data from Acti 9 devices to a PLC or a supervision system via the Modbus serial line communication network.

Functions

Data transmission between the Modbus network and Acti 9 devices

- Circuit breakers, residual current circuit breakers, residual current devices:
  - open/closed state, tripped state, number of opening/closing cycles, number of tripping actions.
- Contactors, impulse relays:
  - opening control, closing control, open/closed state, number of cycles, total period of operation of the load (device closed).
- Remote controlled circuit breaker/Reflex iC60:
  - opening control, closing control, open/closed state, tripped state, number of cycles, total period of operation of the load.
- Power meters:
  - number of pulses recorded, pulse value setting (e.g. kWh), total consumption recorded, estimate of power consumption.

All the data are stored in memory: number of cycles, consumption, period of operation, even in the event of a power failure.

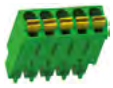
The Acti 9 Smartlink can also exchange data with any device having 24 V DC digital inputs/outputs.

No configuration of the connected products is required.

When the Acti 9 Smartlink is switched on, communication automatically adjusts to the Modbus Master (PLC, control station) communication parameters.

A9XMSB11

A9XMEA08

Description		Set of	Reference
Acti 9 Smartlink Si B Ethernet & PowerTag Concentrator (1)			**A9XMZA08**
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**
	Medium-sized: 450 mm	6	**A9XCAH06**
	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	Reference	Description
iACT24	**A9C15924**	Low-level control and indication auxiliary for iCT contactors
iATL24	**A9C15424**	Low-level control and indication auxiliary for iTL impulse relays
iOF+SD24	**A9A26897**	Low-level indication auxiliary for iC60, iID, ARA, RCA, iSW-NA
OF+SD24	**A9N26899**	Low-level indication auxiliary for C60, C120, DPN, RCCB/ID, C60H-DC
RCA		Remote control with Ti24 interface
Reflex iC60		Reflex iC60 with Ti24 interface

Without Ti24 interface

Power meters with pulse output, e.g. IEM2000T Meters complying with the IEC 62053-21 standard 24 V DC indicator lamp, Harmony XVL range. All loads not exceeding 100 mA, 24 V DC IC2000 light sensitive switches, timers, thermostats, time switches, load shedding devices. All 24 V DC auxiliary contacts, IEC 61131-2 type 1.

Note

(1) Maximum of 20 PowerTag devices per concentrator.

A9C20731

A9C20842

A9C20884

Contactors

Type	Ratings (AC7a)	No. of contacts	Coil voltage	Width in mod. of 9mm	Reference
iCT	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**
	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**
	25A	2NO	24VAC	2	**A9C20132**
		4NO	24VAC	4	**A9C20134**
		4NC	24VAC	4	**A9C20137**
	63A	2NO	24VAC	4	**A9C20162**
		4NO	24VAC	6	**A9C20164**
		4NC	24VAC	6	**A9C20167**

Note Where group mounting is employed use spacer A9A27062 between every contactor. Ref C21.
Refer to Section R for application and selection notes.

High performance contactors

Description	Reference
iCT + 20A 1NO 230V 2(+1)	**A9C15030**
iCT + 20A 1NO (manual selector) 230V 2(+1)	**A9C15031**

A9C15415

Contactor auxiliary/interface

Type	Description	Control voltage	Width in mod. of 9mm	Reference
iACTs	Aux. Contact 5A (1A DC) 1 NO + 1NC	24-240VAC / 24-130VDC	1	**A9C15914**
	Aux. Contact 5A (1A DC) 1 C/O	24-240VAC / 24-130VDC	1	**A9C15915**
	Aux. Contact 5A (1A DC) 2 NO	24-240VAC / 24-130VDC	1	**A9C15916**
iACTc	Impulse/latched control	230-240VAC	2	**A9C18308**
	Impulse/latched control	24-48VDC	2	**A9C18309**
iACT24	Control and indication 24VDC	24VDC (Y3) 230VAC (Y2)	2	**A9C15924**
Accessories	Yellow clip for mech/elect link (bags of 10)			**A9C15415**
	Spacer (bags of 5)			**A9A27062**

A9C15914

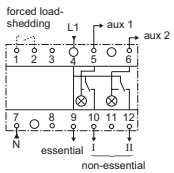
A9C15924

A9C15908

Load-shedding contactor

When consumption exceeds selected threshold supply stops to non-essential circuits.

Description	Threshold	Voltage	Width in mod. of 9mm	Reference
CDSc 1P	5 – 90A	230	16	**A9C15906**
CDS 1P	5 – 90A	230	10	**A9C15908**
CDS 3P	5 – 90A	230/400	16	**A9C15913**



Notes
– CDSc 1P – Cyclic load-shedding of 1 to 4 non-essential circuits.
– CDS 1P – load-shedding and restoration in cascading configuration of 2 non-essential circuits via 2 15A relays, with time delayed action.
– CDS 3P – load-shedding for each phase.

Acti 9 system
Impulse and changeover relays

C

A9C30811

Impulse relays

Specifically designed for multifunction control or remote control of circuits via impulse orders (⎍) e.g. Lighting control

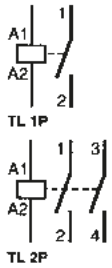
Operation

Closing of the impulse relay pole(s) is triggered by an impulse on the coil. Equipped in the factory with two stable mechanical positions, the pole(s) will be opened by the next impulse. Each impulse received by the coil reverses the position of the pole(s).

- Manual controls on front face:
  - Direct and priority manual control by O-I toggle.
  - Disconnection of remote control by selector switch.
- Indication: mechanical on front face by toggle position.

A9C30812

iTL impulse relay – 16A



Type	Width in mod.of 9mm	Rat. (A)	No. of contacts	Coil voltage (VAC)	(VDC)	Reference
TL	2	16	1NO	240	110	**A9C30811**
				130	48	**A9C30311**
				48	24	**A9C30211**
				24	12	**A9C30111**
				12	6	**A9C30011**
TL	2	16	2NO	240	110	**A9C30812**
				130	48	**A9C30312**
				48	24	**A9C30212**
				24	12	**A9C30112**
				12	6	**A9C30012**

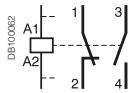
New

High performance impulse relay

Type	Width in mod.of 9mm	Rat. (A)	No. of contacts	Coil voltage (VAC)	(VDC)	Reference
iTL + TL	2(+1)	16	1NO	230V	-	**A9C15032**

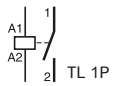
A9C30815

iTLi impulse changeover relay – 16A



Type	Width in mod. of 9mm	Rat. (A)	No. of contacts	Coil voltage (VAC)	(VDC)	Reference
TLI	2	16	1NC+1NO	240	110	**A9C30815**
				130	48	**A9C30315**
				48	24	**A9C30215**
				24	12	**A9C30115**

iTL impulse relay – 32A

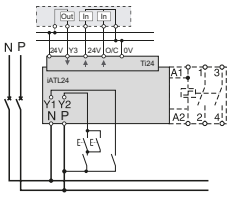


Type	Width in mod. of 9mm	Rat. (A)	No. of contacts	Coil voltage (VAC)	(VDC)	Reference
TL	2	32	1NO	240	110	**A9C30831**

A9C15424

iATL24 Control and indication auxiliary

This auxiliary allows an implulse relay to be interfaced with the Acti 9 Smartlink interface or PLC in 24VDC (control, O/C indication).



Type	Width in mod. of 9mm	Coil voltage (VAC)	(VDC)	Reference
iATL24	2	240	24	**A9C15424**

Acti 9 system
Pushbuttons, pilot lights and selector switches

A9E18032

Pushbuttons 20A, 250VAC (1) (2)

Type	Width in mod. of 9mm	Colour	Circuit	Reference
Single PB	2	grey	1NC	**A9E18030**
		red	1NC	**A9E18031**
		grey	1NO	**A9E18032**
		grey	1NO + 1NC	**A9E18033**

Type	Width in mod. of 9mm	Power light	Colour	Colour	Circuit	Reference
Single PB+ indicator light	2	110...230VAC	green	grey	1NO	**A9E18036**
			red	grey	1NC	**A9E18037**
		12...48VAC/DC	green	grey	1NO	**A9E18038**
			red	grey	1NC	**A9E18039**
Double PB	2			green/red	1NO/1NC	**A9E18034**
				grey/grey	1NO/1NO	**A9E18035**

A9E18035

A9E18036

A9E18326

Pilot lights LED technology, 100,000 hours service life

Type	Width in mod. of 9mm	Colour	Reference 12..48 VAC/DC	Reference 110..230 VAC
Single PL	2	red	**A9E18330**	**A9E18320**
		green	**A9E18331**	**A9E18321**
		white	**A9E18332**	**A9E18322**
		blue	**A9E18333**	**A9E18323**
		yellow	**A9E18334**	**A9E18324**
Double indicator light	2	green/red	**A9E18335**	**A9E18325**
Blinker 2Hz 240VAC	2	red		**A9E18326**
3 phase indicator light 400VAC (3P)	2	red/red/red		**A9E18327**

A9E18325

A9E18327

A9E18074

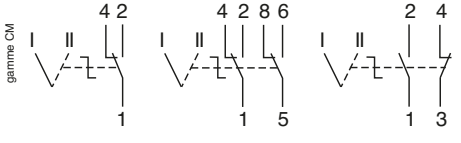
Selector switches 20A, 250VAC (2)

Type	Width in mod. of 9mm	Contact	Reference
2 positions	2	1 changeover switch	**A9E18070**
	4	2 changeover switches	**A9E18071**
	2	1 NO + 1 NC	**A9E18072**
3 positions	2	1 changeover switch	**A9E18073**
	4	2 changeover switches	**A9E18074**

A9E18070

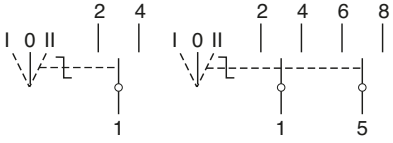
2 position selector switches

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



3 position selector switches

1 changeover switch | 2 changeover switches



Notes
(1) Pushbuttons are spring return, used for impulse type controls.
(2) Resistive load, if you require any other load please consult your Schneider Electric sales representative.

Acti 9 system
Time delay relays
Time switches – analogue and digital

C

A9E16065

A9E16070

Time delay relays – 0.1s to 100h (1)

Type	No. of contacts	Rating	Width in mod. of 9mm	Coil voltage	Reference
iRTA	1C/O	8A	2	24VDC or 24–240VAC	**A9E16065**
iRTB	1C/O	8A	2	24VDC or 24–240VAC	**A9E16066**
iRTC	1C/O	8A	2	24VDC or 24–240VAC	**A9E16067**
iRTH	1C/O	8A	2	24VDC or 24–240VAC	**A9E16068**
iRTL	1C/O	8A	2	24VDC or 24–240VAC	**A9E16069**
iRTMF	1C/O	8A	2	12–240VAC/DC	**A9E16070**

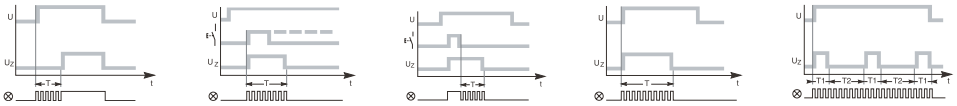
Notes

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: energises a load at the closing of an auxiliary pushbutton. The time delay starts at the closing of the command pushbutton.
- RTC delay on break: energises a load as soon as a contact is closed. Mini impulse duration: ≥ 200ms. At the end on the time delay, the load is de-energised. Able to re-start time period without breaking the load.
- 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-energised.
- RTL repeat cycle timer: repetitive cycle which alternatively energises and de-energises a load. From the energisation of RTL, the load is switched on.
- RTMF multifunction timer: one relay providing functions A, B, C and H via a selector switch located in front.

RTA RTB RTC RTH RTL



U: supply voltage Uz: load voltage ⊗ LED on relay

15335

15337

Time switches: analogue (1)

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	6	10A	100Hr	**15337**

CCT15838

CCT15441

New

Time switches: digital (1)

Type	Channels	Cycle	Width in mod.of 9mm	Rating (cos =1)	Min time between switching	Number of switching operations	Reserve (Yr)	Reference
IHP + 1c18mm	1NO	24Hr/7 Day	2	16A	1 sec	42	3	**CCT15838**
IHP 1C w	1C/O	24Hr/7 Day	5	16A	1 min	56	6	**CCT15441**
IHP 2C w	2C/O	24Hr/7 Day	5	16A	1 min	56	6	**CCT15443**
ITA 1c	1 C/O	24 h, 7d, year	4	16A	1 min	300	10	**CCT15910**
ITA 4c	4 C/O	24 h, 7d, year	8	10A	1 min	300	10	**CCT15940**
Programming Kit		For reference CCT15910 and CCT15940 only - includes software, USB cable and memory key						**CCT15950**

CCT15910

CCT15940

Note

IHP 1C w and IHP 2C w have screw-less connections (2x2.5mm per connection), holiday mode, input(s) for external override control and compatibility with comb busbar distribution.

(1) Resistive load, if you require any other load please consult your Schneider Electric sales representative.

Control and signalling

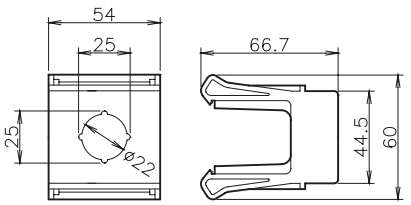
Acti 9 system
Button holders
Light sensitive switches
Bells and buzzers
Control transformers

A9A15151

A9A15152

Button holders

Type	Width in mod. of 9mm	Reference
M9 Ø 22 holder	6	**A9A15151**
M9 universal holder	6	**A9A15152**



They can be attached to a symmetrical 35mm rail, in modular cabinets or enclosures, for control and indications auxiliaries: pushbuttons, emergency stops, switches, light indicators; for tertiary and industrial applications.

- For ZB5 plastic buttons, switches and indicators.
- Depth under rail 60mm (same as products in the Acti 9 range).
- Drilling diameter: Ø 22.3.
- Self-extinguishing insulating material.
- Colour: light grey RAL7035.

CCT15285

Light sensitive switches (PE cell included)

Type	No. of contacts	Width in mod. of 9mm	Rating cos=1 (1)	Reference
Automatic light control 2-2000 lux with switchboard cell IC2000	1 C/O	5	16A	**CCT15285**
Automatic light control 2-2000 lux with wall-mounted cell IC2000	1 C/O	5	16A	**CCT15369**

The IC2000 has screwless terminals and a test button to check operation regardless of light level. The light cell can rotate to desired direction.

Note

(1) The use of a CT contactor for higher loads is recommended.

CCT15369

Bells and buzzers

Type	Volt (V) 50-60Hz	Output (1) (dBA)	Consumption (2) (VA)	Width in mod. of 9mm	Reference
SO Bell	240V	80	5VA	2	**A9A15320**
	8–12V	80	3.6VA	2	**A9A15321**
iRO Buzzer	240V	70	5VA	2	**A9A15322**
	8–12V	70	3.6VA	2	**A9A15323**

Notes

(1) At a distance of 60cm.
(2) Max. energisation time = 10 minutes.

A9A15322

Control transformers

Type	Description	Secondary voltage (V)	Power (VA)	Width in mod. of 9mm	Reference
iTR	Bell transformer	8–12	8	4	**A9A15216**
	240V primary	8–12	16	4	**A9A15212**
iTR	Safety transformer	12–24	25	10	**A9A15219**
	240V primary	12–24	63	10	**A9A15222**

A9A15212

Acti 9 system
Emergency lighting kit

PBELKIT4

Emergency lighting test kit

The Emergency Light test kits are designed to perform a discharge test on emergency lighting installations. The Acti 9 test kits are completely pre-wired to provide an “off the shelf” solution to emergency light discharge test requirements.

Operation

Engaging the selector switch to the “test” position will start the timer (2hrs factory setting). During this time the contactors coils are energised – opening the normally closed contacts. While the contacts remain open, power supply to the normal lighting circuits is cut. The simulated power failure initiates the discharge test operation of the emergency lighting. Duration of the test operation is set by the timer and can be reset mid-cycle via the selector switch.

Features

- 8 pole surface mount enclosure (IP30) – PBELSAKIT only.
- 2 or 4 N/C contactor, 25A/240VAC.
- 3 position selector switch (keylockable + 2 keys PBELSAKIT only).
- Emergency lighting label.
- Relay timer 0.1–10hrs (2hrs factory setting).

Type	Voltage	Reference
Emergency lighting kit (without enclosure)	2 N/C	**PBELKIT2**
	4 N/C	**PBELKIT4**
Stand-alone kit (with enclosure)	4 N/C	**PBELSAKIT**

Connection devices and accessories

Acti 9 system
Comb busbar up to 100A
Comb busbar accessories

Horizontal comb busbar for 18mm pitch

A9XPH112

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**
		NL1NL2NL3	12	1	**A9XPH512**
		NL1NL2NL3	24	1	**A9XPH524**
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**
		AuxNL1AuxNL2AuxNL3	57	1	**A9XAH557**
	*3 (Aux+1P)	AuxL1AuxL2AuxL3…	57	1	**A9XAH657**

Accessories

Description	Type	Set of	Reference
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**

Horizontal comb busbar for 9mm pitch

New

Description	Compatible with	Type	Modules of 18mm	Set of	Reference
Standard Comb busbar 80A	iDPN/iDPN Vigi/ iSPN	1P+N top	12	1	**A9XPC612**
			24	1	**A9XPC624**
		3P+N top	12	1	**A9XPC712**
			24	1	**A9XPC724**
		1P+N bottom	12	1	**A9XPH612**
			24	1	**A9XPH624**
		3P+N bottom	12	1	**A9XPH712**
			24	1	**A9XPH724**

Accessories

A9X21095

New

Description	Type	Set of	Reference
End caps	1P+N	40	**A9X21094**
End caps	3P+N	40	**A9X21095**
Insulated tooth caps		20	**A9XPT620**
Insulated connector (up to 16mm cable)		4	**A9XPC604**

Description	Compatible with	Type	Modules of 18mm	Set of	Reference
Comb busbar 80A + Aux (white)	DPN	1P+N (AuxNL1...)	48	1	**A9XPA648**
		3P+N (AuxNL1AuxNL2AuxNL3...)	48	1	**A9XPA748**
	iDPN Vigi	1P+N (AuxNL1...)	48	1	**A9XPV648**
		3P+N (AuxNL1AuxNL2AuxNL3...)	48	1	**A9XPV748**

Notes
Compatible with the breaking capacity of Schneider Electric modular circuit breakers. *End caps ordered separately.

C

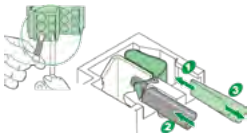
Acti 9 system
Splitter block

Linergy FM – quick device feeder

Multiclip 80 A is a four-pole splitter block 24 modules wide installable on a standard DIN rail.
Outgoing feeders are connected at the front, without screws, in spring terminals.
The spring contact pressure adapts automatically to the cross section of the conductor.
Supplied with 12 black and 12 blue pre-stripped 6mm² cables. Very fast connection, simple phase rebalancing.

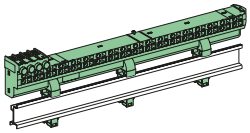
Compatible with inter-rows of 150 mm DIN rail.

Acti 9 Smartlink simply clips onto the top of Multiclip.



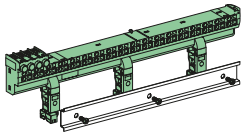
Description	Width in Mod. of 9mm	Type	Rating	Reference
Multiclip distribution block	48	3P+N	80A	**04000**

Linergy DX – quick distribution blocks



Distribloc 63 A is a four pole splitter block installable on a standard DIN rail.
Outgoing feeders are connected at the front, without screws, in spring terminals.
The appearance of its front panel (45 mm front tip) enables it to fit in on a row perfectly, alongside modular devices.

Description	Connection	Width in Mod. of 9mm	Type	Rating	Reference
Distribloc	Top incomer, bottom distribution out	8	3P+N	63A	**04040**
	Bottom incomer, top distribution out	8	3P+N	63A	**04041**



Notes

63A - Incoming connection 16mm. Outgoing connection per phase 1-6mm x4, neutral 1-6mm x12.
Breaking capacity of Schneider Electric outgoing circuit breakers, even when reinforced by cascading implementation.

Connection devices and accessories

Acti 9 system
Encapsulated chassis for iC60 & C120 MCB's & RCBO's
3 Pole, 250A, 25kA for 0.1s
MSC chassis for DPN Vigi, 30kA for 0.1s

SAU25024183

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

Description	Pole capacity 18mm	Length (mm)	Rating	Reference
3 phase 18mm pole spacing	12	110	250A	**SAU25012183**
	18	164	250A	**SAU25018183**
	24	218	250A	**SAU25024183**
	30	272	250A	**SAU25030183**
	36	326	250A	**SAU25036183**
	42	380	250A	**SAU25042183**
	48	434	250A	**SAU25048183**
	60	542	250A	**SAU25060183**
	72	650	250A	**SAU25072183**
	84	758	250A	**SAU25084183**
	96	866	250A	**SAU25096183**
	108	974	250A	**SAU250108183**

SAU250H243

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

Description	Pole capacity 27mm	Pole capacity 18mm	Pole capacity Total	Length (mm) L	Rating	Reference
3 phase 18mm or 27mm pole spacing	6	6	12	137	250A	**SAU250H123**
	6	12	18	191	250A	**SAU250H183**
	6	18	24	245	250A	**SAU250H243**
	6	24	30	299	250A	**SAU250H303**
	6	30	36	353	250A	**SAU250H363**
	12	30	42	434	250A	**SAU250H423**
	12	36	48	488	250A	**SAU250H483**
	12	48	60	596	250A	**SAU250H603**
	12	60	72	704	250A	**SAU250H723**
	12	72	84	812	250A	**SAU250H843**
	12	84	96	920	250A	**SAU250H963**

SAU25012273

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

Description	Pole capacity 27mm	Length (mm) L	Rating	Reference
3 phase 27mm pole spacing	12	164	250A	**SAU25012273**
	18	245	250A	**SAU25018273**
	24	326	250A	**SAU25024273**
	30	407	250A	**SAU25030273**
	36	488	250A	**SAU25036273**
	42	569	250A	**SAU25042273**
	48	650	250A	**SAU25048273**
	60	812	250A	**SAU25060273**
	72	974	250A	**SAU25072273**

CD25124N

MSC 36 for DPN. Vigi (Ph + N)

Description	Pole capacity	Qty of DPNs	Length (mm) L	Rating	Reference
3 phase and neutral (N.R.N.W.N.B)	12	6	110	250A	**CD25124N**
	20	10	182	250A	**CD25204N**
	24	12	218	250A	**CD25244N**
	32	16	290	250A	**CD25324N**
	36	18	326	250A	**CD25364N**
	48	24	434	250A	**CD25484N**
	72	36	650	250A	**CD25724N**

Acti 9 system
Isobar chassis for iC60 MCBs & iC60H RCBO

C

SEA9BN6TNA

Safety through a unique busbar disconnection system

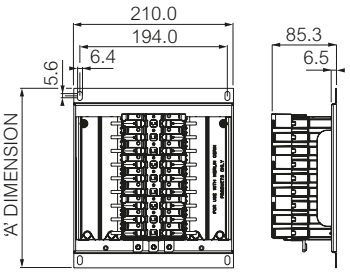
The Isobar chassis is the safest distribution system for the installer and end user, due to its unique busbar disconnection system for unused busbar tee-offs.

When a tee-off is not used, it can be disconnected from the mains supply via a slider switch. The encapsulated busbar system and slider switch gives a high level of protection against direct contact.

Isobar – for iC60 MCB and iC60H RCBO

Description	Pole capacity 18mm	Length (mm) "A"	Rating	Reference
3 phase – type TNA	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**
Incomers	250A 3P Compact NSX MCCB and Interpact INS load break switch connection kit			**A9TNA250CK**
Isobar boots	Pack of 50 boots for tee-offs			**ISOBOOTS**

Note
Max 250A, 16kA/0.2sec (25kA with M9 MCB and NS250 MCCB incomer).



Acti 9 system
MSC chassis – 250A, 25kA for 0.1s

MIP0108S

Surface mounting distribution board

Description	Reference
Mini Pragma 1 row 6 modules	**MIP0106S**
Mini Pragma 1 row 8 modules	**MIP0108S**
Mini Pragma 1 row 12 modules	**MIP0112S**

Comes with earth and neutral bars, comb bus bar and pole fillers

Accessories

Description	Reference
Blanking strip, height = 46mm, L = 1m	**03220**
4 divisible blanking plates, height = 46mm, L = 90mm	**03221**

Notes
Insulation voltage – 690V.
MSC chassis end tags fit NSX100 - NSX250, INS250-160A, INS250.
25kA/0.1sec.
Max current 250A.
Contact Schneider Electric for 400A MSC chassis.

Notes

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Low voltage power distribution

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InterPact INS
Load break switches

INS40 to INS2500 Load break switches
Standard AS/NZS 3947.2 (IEC 60947.3)

28904

28912

31106

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	90	160A	**28912**
INS250 - 100	30	8.5	55	100	**31100**
INS250 - 160	30	8.5	75	160	**31104**
INS250 - 200	30	8.5	75	200	**31102**
INS250 - 250	30	8.5	140	250	**31106**
INS250	30	8.5	140	250A	**31106**
INS320	50	20	180	320A	**31108**
INS400	50	20	220	400A	**31110**
INS500	50	20	295	500A	**31112**
INS630	50	20	295	630A	**31114**
INS630b	105	35 (1)	315	630A	**31342**
INS800	105	35 (1)	400	800A	**31330**
INS1000	105	35 (1)	560	1000A	**31332**
INS1250	105	35 (1)	710	1250A	**31334**
INS1600	105	35 (1)	710	1600A	**31336**
INS2000	105	–	–	2000A	**31338**
INS2500	105	–	–	2500A	**31340**

31110

4 pole, front connected

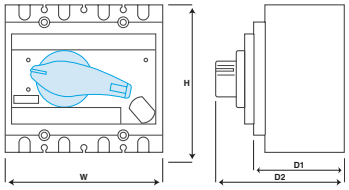
Type	Making capacity kA peak	Withstand current kA r.m.s/1 sec	415V kW rating (for motor switching)	Rating	Reference
INS40	15	3	22	40A	**28901**
INS63	15	3	33	63A	**28903**
INS80	15	3	45	80A	**28905**
INS100	20	5.5	55	100A	**28909**
INS125	20	5.5	63	125A	**28911**
INS160	20	5.5	90	160A	**28913**
INS250	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	295	630A	**31115**

31336

3 pole and 4 pole, front connected – with visible break (consult us)

InterPact 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	348	228	320
INS2000/2500	4P	440	464	228	320

Dimensions



Note
(1) Withstand current 50 kA rms/0.5 sec.

InterPact INS
Load break switch accessories

OF auxiliary

Accessories

Description		To fit	Reference
Auxiliaries			
Aux switch	1 OF or CAM (early make or break)	INS40 to INS2500	**29450**
Connection accessories			
Snap-in connectors S ≤ 95mm²		INS100 to INS160 set of 3	**28947**
Crimp lugs (for 95mm² cable with interphase barriers)		INS100 to INS160 set of 3	**28951**
One-piece spreader		INS250 3/4P	**LV431061**

Spreaders

Terminal extensions

Type		Reference
INS250	3 x spreaders 45mm	**LV431563**
INS400/630	3 x spreaders 52.5mm	**LV432490**
INS400/630	3 x spreaders 70mm	**LV432492**

Terminal shields

		Load break switch	Reference
Terminal shield short (for rear connections)	Short 3P/4P – 1 piece	INS250	**LV429516**
		INS320 to INS630	**LV432592**
Terminal shield 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 – 1 piece	INS320 to INS630	**LV432596**
Phase barriers	3P/4P – 6 pieces	INS100 to INS160	**28959**
		INS250	**29329**
		INS320 to INS630	**LV432570**
	3P/4P – 2 pieces	INS630b to INS1600	**31315**

Single handle transfer switch

		Load break switch	Reference
(Complete assembly)	3P/3P	INS250	**31146**
	3P/3P	INS320	**31148**
	3P/3P	INS400	**31150**
	3P/3P	INS500	**31152**
	3P/3P	INS630	**31154**
Extended rotary handle		INS250/630	**31055**

InterPact INS
Load break switch accessories

LV431050

Rotary handle

		Load break switch	Reference
Extended front rotary handle	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** *
Spare handle		INS40 to INS160	**28962**
		INS250	**31082**
		INS320 to INS630	**31084**
Direct lateral control support		INS250	**31054**

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

LV429358

31073

Locking

		Load break switch	Reference
Key locking of handle	Ronis (1 lock, 1 key) *	INS250 to IN2500	**41940**
	Ronis (2 locks, 1 key) *	INS250 to INS1600	**41950**
	Locking device for Ronis locks	INS250	**31087**
		INS320 to INS630	**31088**
		INS630b to INS1600	**31291**

*** Note** Locking device (Ref. 31087 or 31088) also required with locks.

Mechanical interlock		INS40 to INS160	**28953**
		INS250	**31073**
		INS320 to INS630	**31074**
Common load bars	3P downstream coupling	INS250	**LV429358**
(for transfer switch)	3P downstream coupling	INS320 to INS630	**LV432619**

ComPact NSXm 16 to 160A
Fixed trip moulded case circuit breaker

Product configurator on se.com/nz

DIN Rail mounted space saving MCCB with EverLink™ connectors

LV426250

New

ComPact NSXm B 3 Pole 16 to 160A 25KA Everlink

With thermal-magnetic trip unit TM-D

Rating		Reference
TM16D (25 KA 380/415 V)	3P	**LV426200**
TM25D (25 KA 380/415V)	3P	**LV426201**
TM32D (25 KA 380/415V)	3P	**LV426202**
TM40D (25 KA 380/415V)	3P	**LV426203**
TM50D (25 KA 380/415V)	3P	**LV426204**
TM63D (25 KA 380/415V)	3P	**LV426205**
TM80D (25 KA 380/415V)	3P	**LV426206**
TM100D (25 KA 380/415V)	3P	**LV426207**
TM125D (25 KA 380/415V)	3P	**LV426208**
TM160D (25 KA 380/415V)	3P	**LV426209**

LV426350

New

ComPact NSXm F 3 Pole 16 to 160A 36KA Everlink

With thermal-magnetic trip unit TM-D

Rating		Reference
TM16D (36 KA 380/415V)	3P	**LV426300**
TM25D (36 KA 380/415V)	3P	**LV426301**
TM32D (36 KA 380/415V)	3P	**LV426302**
TM40D (36 KA 380/415V)	3P	**LV426303**
TM50D (36 KA 380/415V)	3P	**LV426304**
TM63D (36 KA 380/415V)	3P	**LV426305**
TM80D (36 KA 380/415V)	3P	**LV426306**
TM100D (36 KA 380/415V)	3P	**LV426307**
TM125D (36 KA 380/415V)	3P	**LV426308**
TM160D (36 KA 380/415V)	3P	**LV426309**

LV426713

New

ComPact NSXm ELCB Everlink

With Micrologic 4.1 trip unit with embedded earth leakage protection

Rating	Reference	Reference	Reference	Reference
	25kA	**25kA**	**36kA**	**36kA**
	3P	**4P**	**3P**	**4P**
25A	**LV426710**	**LV426715**	**LV426720**	**LV426725**
50A	**LV426711**	**LV426716**	**LV426721**	**LV426726**
100A	**LV426712**	**LV426717**	**LV426722**	**LV426727**
160A	**LV426713**	**LV426718**	**LV426723**	**LV426728**

ComPact NSXm NA switch disconnector Everlink

Rating		Reference
50NA	3P	**LV426600**
100NA	3P	**LV426601**
160NA	3P	**LV426602**

Note:
(1) NSXm also available with compression lug/busbar connectors

Accessories
compact NSXm 16 to 160A

DIN Rail mounted space saving MCCB

LV426912

Insulation accessories

Description		Reference
1 long Terminal shield	3P	**LV426912**
	4P	**LV426913**
Interphase barriers	Set of 6	**LV426920**

LV426950

LV426900

Electrical auxiliaries

Description		Reference
Auxilliary contacts		
Standard OF or SD	Set of 6	**LV426950**
SDx module for ELCB Micrologic 4.1, 24-250 V AC/DC (Available Q3 2018)		**LV426900**

LV426905

LV426950

Locks

Description	Reference
Toggle locking device for 1 to 3 padlocks	
By removable device	**29370**
By fixed device (OFF or ON)	**LV426905**

LV426843

Voltage releases

	Voltage	MX (Shunt)	MN (Under voltage)
AC	110…130 V 50/60 Hz	**LV426843**	**LV426803**
	220…240 V 50 Hz 208…240 V 60 Hz	**LV426844**	**LV426804**
	380…415 V 50 Hz	**LV426846**	**LV426806**
	440…480 V 60 Hz	**LV426846**	**LV426807**
DC	24 V DC	**LV426841**	**LV426801**

LV426930

Rotary handles

Description	Reference
Direct rotary handle, black, IP54	**LV426930**
Extended rotary handle, black, IP54	**LV426932**
Side mount rotary handle, black, IP54	**LV426935**

LV426932

LV426970

Connection accessories

With thermal-magnetic trip unit TM-D

Rating		Reference
Everlink connectors with voltage tap off	Set of 3	**LV426970**
Terminal with nuts and screws M6	Set of 3	**LV426960**

NSX100/160/250F/N/H: fixed/FC device based on separate components

Product configurator on se.com/nz

ComPact: For complete circuit breaker price add trip unit to basic frame

LV429003

Basic frame

Type	Reference
ComPact NSX100	**3P**
NSX100F (36 kA 380/415 V)	**LV429003**
NSX100N (50 kA 380/415 V)	**LV429006**
NSX100H (70 kA 380/415 V)	**LV429004**
ComPact NSX160	**3P**
NSX160F (36 kA 380/415 V)	**LV430403**
NSX160N (50 kA 380/415 V)	**LV430406**
NSX160H (70 kA 380/415 V)	**LV430404**
ComPact NSX250	**3P**
NSX250F (36 kA 380/415 V)	**LV431403**
NSX250N (50 kA 380/415 V)	**LV431406**
NSX250H (70 kA 380/415 V)	**LV431404**

+ Trip unit distribution protection

All trip units compatible with PowerTag

LV429030

LV429070

LV429095

Type	Reference
Thermal-magnetic TM-D	
Rating	**3P** 3d
TM16D	**LV429037**
TM25D	**LV429036**
TM32D	**LV429035**
TM40D	**LV429034**
TM50D	**LV429033**
TM63D	**LV429032**
TM80D	**LV429031**
TM100D	**LV429030**
TM125D	**LV430431**
TM160D (for NSX160 only)	**LV430430**
TM200D	**LV431431**
TM250D	**LV431430**
Micrologic 2.2 (LSI protection)	
Rating	**3P** 3d
Micrologic 2.2 40 A	**LV429072**
Micrologic 2.2 100 A	**LV429070**
Micrologic 2.2 160 A	**LV430470**
Micrologic 2.2 250 A	**LV431470**
Micrologic 5.2 A (LSI protection, ammeter)	
Rating	**3P** 3d
Micrologic 5.2 A 40 A	**LV429091**
Micrologic 5.2 A 100 A	**LV429090**
Micrologic 5.2 A 160 A	**LV430490**
Micrologic 5.2 A 250 A	**LV431490**
Micrologic 5.2 E (LSI protection, energy meter)	
Rating	**3P** 3d
Micrologic 5.2 E 40 A	**LV429096**
Micrologic 5.2 E 100 A	**LV429095**
Micrologic 5.2 E 160 A	**LV430491**
Micrologic 5.2 E 250 A	**LV431491**

Commission quickly

With EcoStruxure Power Commission (EPC) software, you can integrate smart devices, commission connected switchboards, and generate comprehensive reports as part of factory and site acceptance tests.

NSX100/160/250/F/N/H: fixed/FC device based on separate components

ComPact

LV429120

LV429170

LV430521

+ Trip unit (cont.) motor protection

All trip units compatible with PowerTag

Description	Reference
Magnetic MA (I protection)	
Rating	**3P** 3d
MA2.5	**LV429125**
MA6.3	**LV429124**
MA12.5	**LV429123**
MA25	**LV429122**
MA50	**LV429121**
MA100	**LV429120**
MA150	**LV430500**
MA220	**LV431500**
Micrologic 2.2-M (LSI protection)	
Rating	**3P** 3d
Micrologic 2.2-M 25 A	**LV429174**
Micrologic 2.2-M 50 A	**LV429172**
Micrologic 2.2-M 100 A	**LV429170**
Micrologic 2.2-M 150 A	**LV430520**
Micrologic 2.2-M 220 A	**LV431520**
Micrologic 6.2 E-M (LSIG protection, energy meter)	
Rating	**3P** 3d
Micrologic 6.2 E-M 25 A	**LV429184**
Micrologic 6.2 E-M 50 A	**LV429182**
Micrologic 6.2 E-M 80 A	**LV429180**
Micrologic 6.2 E-M 150 A	**LV430521**
Micrologic 6.2 E-M 220 A	**LV431521**

+ Trip unit distribution + earth leakage protection

LV433803

New

LV433882

New

Type	Reference	Reference
Micrologic 4.2 (LSIR protection)		
Rating	**3P** 3d	**4P** 4d 3d + N/2
Micrologic 4.2 40 A	**LV433800**	**LV433805**
Micrologic 4.2 100 A	**LV433801**	**LV433806**
Micrologic 4.2 160 A	**LV433802**	**LV433807**
Micrologic 4.2 250 A	**LV433803**	**LV433808**
Micrologic 7.2 E (LSIR protection)		
Rating		**4P** 4d 3d + N/2
Micrologic 7.2 E 40 A		**LV433879**
Micrologic 7.2 E 100 A		**LV433880**
Micrologic 7.2 E 160 A		**LV433881**
Micrologic 7.2 E 250 A		**LV433882**

ComPact NSX100/160/250NA switch disconnector (complete unit)

Type	Reference	Reference
	3P	**4P**
ComPact NSX100NA	**LV429629**	**LV429639**
ComPact NSX160NA	**LV430629**	**LV430639**
ComPact NSX250NA	**LV431629**	**LV431639**

Trip unit accessories

ComPact and NSX100/160/250

LV429211

+ Vigi module or insulation monitoring module

Description	Reference
	4P
MH type for NSX100/160 (200 to 440 V)	**LV429211**
MH type for NSX250 (200 to 440 V)	**LV431536**
Connection for a 4P Vigi on a 3P breaker	**LV429214**

D

LV429521

LV434210

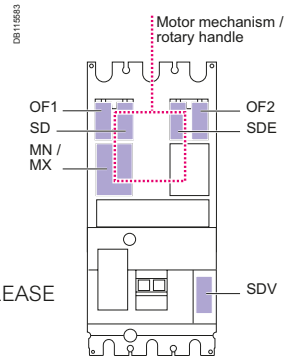
Trip unit accessories

Description	Reference
External neutral CT for 3 pole breaker with Micrologic 5/6	
25-100 A	**LV429521**
150-250 A	**LV430563**
24 V DC wiring accessory for Micrologic 5/6	
24 V DC power supply connector	**LV434210**

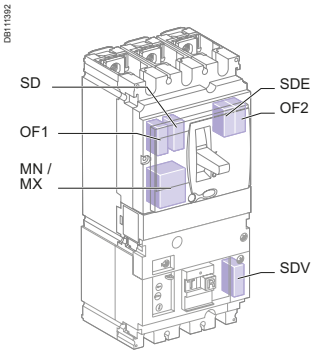
OF 1-2 ON/OFF
SD TRIP
SDE FAULT TRIP
SDV EARTH FAULT
MN UNDERVOLTAGE RELEASE
MV SHUNT RELEASE

NA, TMD, MA

Standard

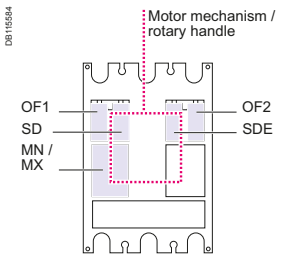


Remote indications via SDx or SDTAM



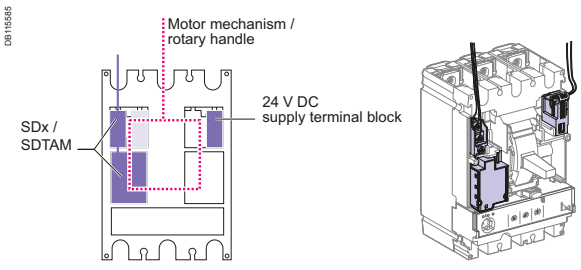
Micrologic 2 / 5 / 6

Standard



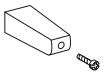
or

Remote indications via SDx or SDTAM

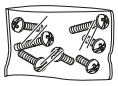


The SDx or SDTAM uses the OF1 and MN/MX slots.
External connection is made via a terminal block in the OF1 slot.
The 24 V DC supply provides for the Micrologic 5 / 6 display when the device is OFF or under low-load conditions.

ComPact NSX100/160/250

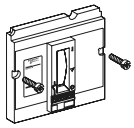


LV429313



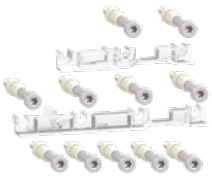
LV429312

LV429234



LV429528

LV429502



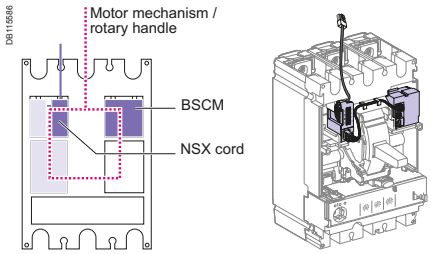
LV429513

Spare parts

Description		Reference
5 spare toggle extensions (NSX100-250)		**LV429313**
Bag of screws		**LV429312**
12 snap-in nuts (fixed/FC)	M6 for NSX100N/H/L	**LV429234**
	M8 for NSX160/250N/H/L	**LV430554**
NS retrofit escutcheon	Small cut-out	**LV429528**
1 base for extended rotary handle		**LV429502**
Torque limiting screws (set of 12)	3P/4P ComPact NSX100-250	**LV429513**

NA, TMD, MA, Micrologic 2

Communication of status indications



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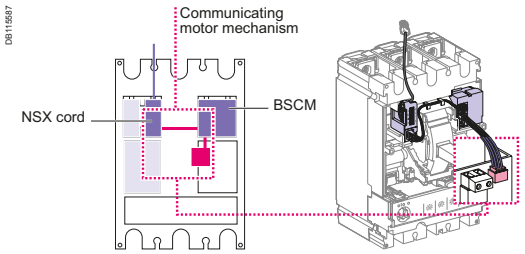
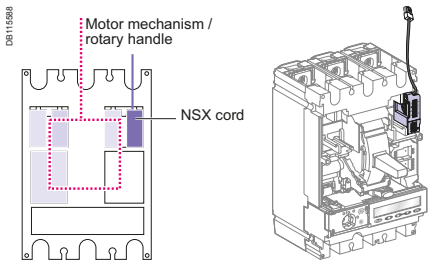
Communication of status indications and controls



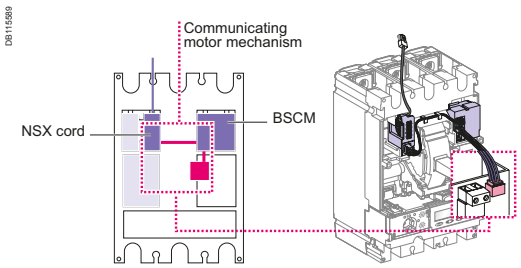
Micrologic 5 / 6

Communication of measurements with or without FDM12 display



or

Communication of status indications, controls and measurements with or without FDM121 display



ComPact NSX100/160/250

29450

LV429532

LV429424

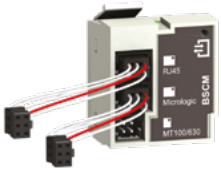
LV429387

Electrical auxiliaries

Description		Reference	Reference
Auxiliary contacts (changeover)			
OF or SD or SDE or SDV			**29450**
OF or SD or SDE or SDV low level			**29452**
SDE adapter, mandatory for trip unit TM, MA or Micrologic 2			**LV429451**
SDx output module for Micrologic			
SDx module 24/415 V AC/DC			**LV429532**
SDTAM contactor tripping module (early-break thermal fault signal) for Micrologic 2.2-M/6.2 E-M			
SDTAM 24/415 V AC/DC overload fault indication			**LV429424**
Voltage releases	Voltage	MX (Shunt)	MN (Under Voltage)
AC	110-130 V 50/60 Hz	**LV429386**	**LV429406**
	220-240 V 50/60 Hz and 208-277 V 60 Hz	**LV429387**	**LV429407**
	380-415 V 50 Hz and 440-480 V 60 Hz	**LV429388**	**LV429408**
DC	24 V	**LV429390**	**LV429410**

LV429435

LV429441



LV434205

LV434201

Motor mechanism

Description		Reference	Reference
Motor mechanism module supplied with SDE adapter			
	Voltage	MT100/160	MT250
AC	110-130 V 50/60 Hz	**LV429433**	**LV431540**
	220-240 V 50/60 Hz and 208-277 V 60 Hz	**LV429434**	**LV431541**
	380-415 V 50/60 Hz and 440-480 V 60 Hz	**LV429435**	**LV431542**
DC	24-30 V	**LV429436**	**LV431543**
Communicating motor mechanism module supplied with SDE adapter			
Motor mechanism module	MTc 100/160	220-240 V 50/60 Hz	**LV429441**
	MTc 250	220-240 V 50/60 Hz	**LV431549**
+			
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**

ComPact NSX100/160/250

D

LV431567

Indication and measurement modules

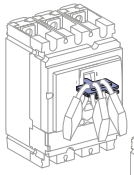
Description	Reference	Reference	Reference
Current transformer module			
Rating (A)	100	150	250
3P	**LV429457**	**LV430557**	**LV431567**
Current transformer module and voltage output			
Rating (A)	100	150	250
3P	**LV429461**	**LV430561**	**LV431569**

LV429337

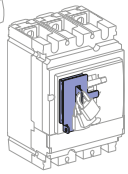
LV429338

Rotary handles

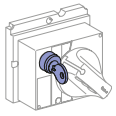
Description		Reference
Direct rotary handle		
With black handle		**LV429337**
Extended rotary handle		
With black handle		**LV429338**
Accessories for direct or extended rotary handle		
Indication auxiliary	2 early-make contacts	**LV429346**



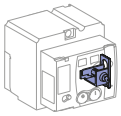
29370



LV429371



LV429344



LV429449

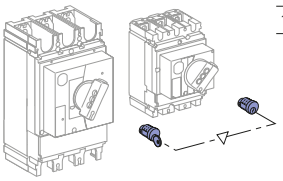
Locks

Description		Reference
Toggle locking device for 1 to 3 padlocks		
By removable device		**29370**
By fixed device		**LV429371**
Locking of rotary handle		
Keylock adaptor (keylock not included)		**LV429344**
Keylock (keylock adaptor not included)	Ronis 1351B.500	**41940**
Locking of motor mechanism module		
Keylock adapter + Ronis keylock (special)		**LV429449**

Accessories

ComPact NSX100/160/250

LV429369



LV429344

LV429317

LV429372

Interlocking

Description		Reference
Mechanical interlocking for circuit breakers		
With rotary handles		**LV429369**
Interlocking with key (2 keylocks / 1 key) for rotary handles		
Keylock kit (keylock not included) (1)		**LV429344**
1 set of 2 keylocks	Ronis 1351B.500	**41950**

Installation accessories

Description	Reference
IP40 escutcheon for all control types	**LV429317**

60mm busbar adaptor

Description	Reference
3P 60mm busbar adaptor for NSX100/160/250	**LV429372**
4P 60mm busbar adaptor for NSX100/160/250	**LV429373**

Note:
(1) For only 1 device.

ComPact NSX100/160/250

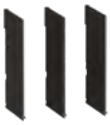
LV429235 LV429236

LV431563

LV431061

LV429515

LV429517



LV429329

Connection accessories (Cu or Al)

Description		Reference
Rear connections		
2 short (43mm to terminal connection)		**LV429235**
2 long (88mm to terminal connection)		**LV429236**
Terminal extensions		
Spreaders from 35 to 45mm pitch (1)	3P	**LV431563**
One-piece spreader from 35 to 45mm pitch	4P	**LV431061**

Insulation accessories

Description		Reference
1 short terminal shield for breaker or plug-in base (2)	3P	**LV429515**
	4P	**LV429516**
1 long terminal shield for breaker or plug-in base (2)	3P	**LV429517**
	4P	**LV429518**
Interphase barriers for breaker or plug-in base	Set of 6	**LV429329**

Notes
(1) Supplied with interphase barriers.
(2) Supplied as one unit.

NSX400/630N/H: fixed/FC device based on separate components

Product configurator on se.com/nz

ComPact: For complete circuit breaker price add trip unit to basic frame

LV432403

Basic frame

Description	Reference
ComPact NSX400	**3P**
NSX400N (50 kA 380/415 V)	**LV432403**
NSX400H (70 kA 380/415 V)	**LV432404**
ComPact NSX630	**3P**
NSX630N (50 kA 380/415 V)	**LV432803**
NSX630H (70 kA 380/415 V)	**LV432804**

+ Trip unit Distribution protection

All trip units compatible with PowerTag

LV432081

LV432097

Description	Reference
Distribution protection	
Micrologic 2.3 (LSI protection)	
Rating	**3P** 3d
Micrologic 2.3 250 A	**LV432082**
Micrologic 2.3 400 A	**LV432081**
Micrologic 2.3 630 A	**LV432080**
Micrologic 5.3 A (LSI protection, ammeter)	
Rating	**3P** 3d
Micrologic 5.3 A 400 A	**LV432091**
Micrologic 5.3 A 630 A	**LV432090**
Micrologic 5.3 E (LSI protection, energy meter)	
Rating	**3P** 3d
Micrologic 5.3 E 400 A	**LV432097**
Micrologic 5.3 E 630 A	**LV432096**
Micrologic 6.3 A (LSIG protection, ammeter)	
Rating	**3P** 3d
Micrologic 6.3 A 400 A	**LV432103**
Micrologic 6.3 A 630 A	**LV432102**
Micrologic 6.3 E (LSIG protection, energy meter)	
Rating	**3P** 3d
Micrologic 6.3 E 400 A	**LV432109**
Micrologic 6.3 E 630 A	**LV432108**

LV432068

LV432074

Description	Reference
Motor protection	
Micrologic 1.3-M (I protection)	
Rating	**3P** 3d
Micrologic 1.3-M 320 A	**LV432069**
Micrologic 1.3-M 500 A	**LV432068**
Micrologic 2.3-M (LSI protection)	
Rating	**3P** 3d
Micrologic 2.3-M 320 A	**LV432072**
Micrologic 2.3-M 500 A	**LV432071**
Micrologic 6.3 E-M (LSIG protection, energy meter)	
Rating	**3P** 3d
Micrologic 6.3 E-M 320 A	**LV432075**
Micrologic 6.3 E-M 500 A	**LV432074**

Commission quickly

With EcoStruxure Power Commission (EPC) software, you can integrate smart devices, commission connected switchboards, and generate comprehensive reports as part of factory and site acceptance tests.

Trip unit accessories

ComPact NSX400/630

LV433930

New

LV433953

New

LV432456

LV432575

+ Trip unit distribution + earth leakage protection

All trip units compatible with PowerTag

Type	Reference	Reference
Micrologic 4.3 (LSIR protection)		
Rating	**3P** 3d	**4P** 4d 3d + N/2
Micrologic 4.3 400 A	**LV433930**	**LV433932**
Micrologic 4.3 570 A	**LV433931**	**LV433933**
Micrologic 7.3 E (LSIR protection)		
Rating	**3P** 3d	**4P** 4d 3d + N/2
Micrologic 7.3 E 400 A	**LV433950**	**LV433952**
Micrologic 7.3 E 570A	**LV433951**	**LV433953**

+ Vigi module or insulation monitoring module

Description		Reference	Reference
Vigi module		**3P**	**4P**
Type MB	200 to 440 V	**LV432455**	**LV432456**
Connection for a 4P Vigi on a 3P breaker			**LV432457**

Trip unit accessories

Description	Reference
External neutral CT for 3 pole breaker with Micrologic 5/6	
400-630 A	**LV432575**

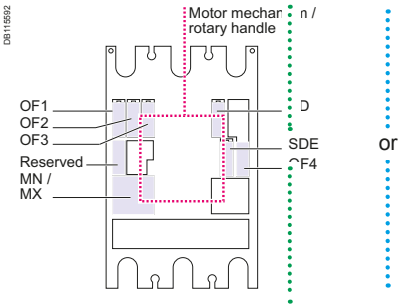
ComPact NSX400/630NA switch disconnector (complete unit)

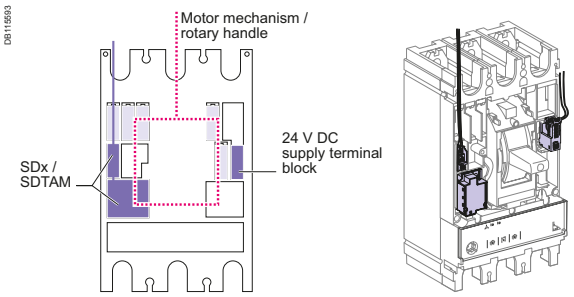
Type	Reference	Reference
	3P	**4P**
ComPact NSX400NA	**LV432756**	**LV432757**
ComPact NSX630NA	**LV432956**	**LV432957**

Micrologic 2 / 5 / 6

Standard

OF1-4	ON/OFF
SD	TRIP
SDE	FAULT TRIP
SDV	EARTH FAULT
MN	UNDERVOLTAGE RELEASE
MV	SHUNT RELEASE





The SDx or SDTAM uses the reserved slot and the MN/MX slots.
External connection is made via a terminal block in the reserved slot.
The 24 V DC supply provides for the Micrologic 5 / 6 display when the device is OFF or under low-load conditions.

ComPact NSX400/630

LV432475 LV432476

Connection accessories (Cu or Al)

Description	Reference
Rear connections	
2 short (50mm to terminal connection)	**LV432475**
2 long (115mm to terminal connection)	**LV432476**

LV432490

Fixed/FC device with 52.5mm or 70mm pitch = fixed/FC device with 45mm pitch + spreaders

The pitch of all ComPact and Vigicompact NSX400/630 devices is 45mm. Spreaders are available for fixed front, plug-in or withdrawable connection with pitch of 52.5mm or 70mm.

Description		Reference
Upstream or downstream spreaders		
52.5mm	3P	**LV432490**
70mm	3P	**LV432492**

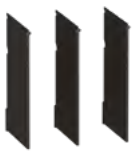
LV432591

Insulation accessories

Description		Reference
Short terminal shield, 45mm (1 piece)	3 P	**LV432591**
Long terminal shield, 45mm (1 piece)	3 P	**LV432593**
Long terminal shield for spreaders, 52.5mm (1 piece) (supplied with insulating plate)	3 P	**LV432595**
Interphase barriers	Set of 6	**LV432570**

LV432593

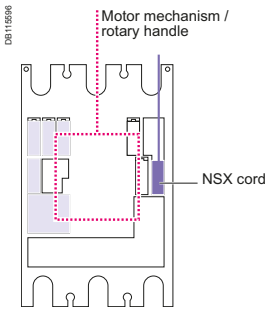
LV432595



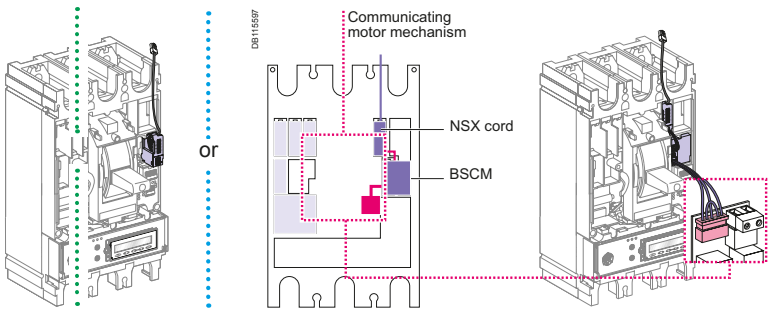
LV432570

Micrologic 5 / 6

Communication of status indications



Communication of status indications, controls and measurements with or without FDM121 display



ComPact NSX400/630

29450

LV429532

LV429424

LV429387

Electrical auxiliaries

Description		Reference	Reference
Auxiliary contacts (changeover)			
OF or SD or SDE or SDV			**29450**
OF or SD or SDE or SDV low level			**29452**
SDx output module for Micrologic electronic trip unit			
SDx module 24/415 V AC/DC			**LV429532**
SDTAM contactor tripping module (early-break thermal fault signal) for Micrologic 2.3-M/6.3 E-M			
SDTAM 24/415 V AC/DC overload fault indication			**LV429424**
Voltage releases			
	Voltage	MX (Shunt)	MN (Under voltage)
AC	110-130 V 50/60 Hz	**LV429386**	**LV429406**
	220-240 V 50/60 Hz and 208-277 V 60 Hz	**LV429387**	**LV429407**
	380-415 V 50 Hz and 440-480 V 60 Hz	**LV429388**	**LV429408**
DC	24 V	**LV429390**	**LV429410**

LV432652

LV434205

LV434201

Motor mechanism

Description			Reference
Motor mechanism module			
	Voltage		MT400-630
AC	110-130 V 50/60 Hz		**LV432640**
	220-240 V 50/60 Hz and 208-277 V 60 Hz		**LV432641**
	380-415 V 50 Hz		**LV432642**
DC	24-30 V		**LV432643**
Communicating motor mechanism module			
Motor mechanism module	MTc 400/630	220-240 V 50/60 Hz	**LV432652**
+			
Breaker 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**

Accessories

ComPact NSX400/630

LV432657

LV432653

Indication and measurement modules

Description		Reference	Reference
Current transformer module			
Rating (A)		400	600
3P		**LV432657**	**LV432857**
Current transformer module and voltage output			
Rating (A)		400	600
3P		**LV432653**	**LV432861**

LV432597

LV432598

Rotary handles

Description		Reference
Direct rotary handle		
With black handle		**LV432597**
Extended rotary handle		
With black handle (246-675mm)		**LV432598**
Accessories for direct or extended rotary handle		
Indication auxiliary	1 early-break contact	**LV432605**
	2 early-make contacts	**LV429346**

LV432553

32556

LV432513

LV432498

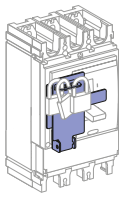
Spare parts

Description		Reference
5 spare toggle extensions		**LV432553**
Bag of screws		**LV432552**
ComPact NS retrofit escutcheon	Small cut-out	**LV432571**
IP40 toggle escutcheon	ComPact NS type/small cut-out	**32556**
Torque limiting screws (set of 12)	3P/4P ComPact NSX400-630	**LV432513**
1 base for extended rotary handle		**LV432498**

Accessories

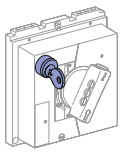
ComPact NSX400/630

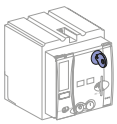
29370


LV432631

Locks

Description		Reference
Toggle locking device for 1 to 3 padlocks		
By removable device		**29370**
By fixed device		**LV432631**
Locking of rotary handle		
Keylock adaptor (keylock not included)		**LV432604**
Keylock (keylock adaptor not included)	Ronis 1351B.500	**41940**
Locking of motor mechanism module		
Keylock adaptor (keylock not included)		**LV432649**
Keylock (keylock adaptor not included)	Ronis 1351B.500	**41940**

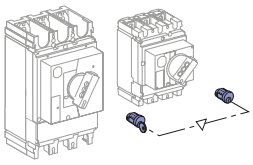

LV432604


LV432649

LV432621

Interlocking

Description		Reference
Mechanical interlocking for circuit breakers		
With rotary handles		**LV432621**
Interlocking with key (2 keylocks / 1 key) for rotary handles		
Keylock kit (keylock not included) (1)		**LV432604**
1 set of 2 keylocks (1 key only, keylock kit not included)	Ronis 1351B.500	**41950**


LV432604

LV432558

Installation accessories

Description	Reference
Front-panel escutcheons	
IP40 escutcheon for all control types	**LV432558**

LV432623

60mm busbar adaptor

Description	Reference
3P 60mm busbar adaptor for NSX400/630	**LV432623**
4P 60mm busbar adaptor for NSX400/630	**LV432624**

Note
(1) For only 1 device.

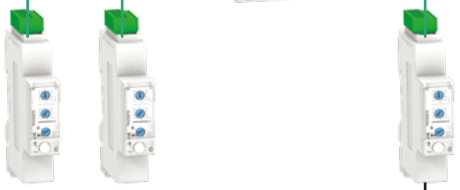
NSX Local and remote communication with Micrologic 5.2E, 5.3E, 6.2E-M, 6.3E-M

Remote Communication

Ethernet (TCP/IP/Modbus)

Phaseo Power Supply

IFE Switchboard Server



ULP

Modbus Interface Module is required to address each NSX breaker.

Reference No: LV434000

Local Communication

FDM121

FDM121

Front display module one to one displays power measurement.

OPTIONAL with Remote or Local Communication.

Reference No: TRV00121

NSX CORD

NSX CORD

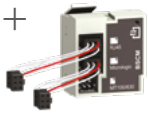
NSX Cord plugs into either the FDM121 or ULP module via RJ45 connections.

Reference No: LV434201 = 1.3m length

Reference No: LV434202 = 3.0m length

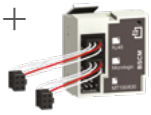
NSX 400/ 630A MCCB

BSCM



NSX 100/160/ 250A MCCB

BSCM



BSCM module provides open/close and trip control and or communication.

Reference No: LV434205

With EcoStruxure Power Commission (EPC) software, commissioning and maintaining your circuit breaker is seamless and intuitive.

Note

RJ45–RJ45 cables available in varying lengths to connect from a FDM121 to ULP and an ULP to a gateway

One 24v DC Phaseo power supply, 30w, 1.2A (ref: ABL8MEM24012) will support many ULP, FDM121 modules.

Communication devices

Product configurator on se.com/nz

ComPact NSX100/160/250/400/630

LV434205

TRV00121

LV434000

LV434201 TRV00217

Monitoring and control (remote operation)

Description		Reference
Circuit breaker accessories		
Breaker Status Control Module	BSCM	**LV434205**
ULP display module		
FDM121 switchboard front display module		**TRV00121**
FDM128 switchboard display module (max 8 devices)		**LV434128**
FDM mounting accessory (diameter 22mm)		**TRV00128**
ULP communication module		
Modbus interface	Modbus SL communication interface module	**LV434000**
ULP wiring accessories		
NSX cord L = 0.35 m		**LV434200**
NSX cord L = 1.3 m		**LV434201**
NSX cord L = 5 m		**LV434198**
10 stacking connectors for communication interface modules		**TRV00217**
5 RJ45 connectors female/female		**TRV00870**
10 ULP line terminators		**TRV00880**

Enerlin'X FDM128

- Full monitioring & control of 8 power devices thanks to LCD touchscreen fitted on the front face of the Smart Panel
- Access to switchgear settings, status, and measurements
- Auto discovery of Modbus SL connected devices
- Simple installation, with just a Ø22 mm hole on the switchboard front panel

LV434001

LV434063

Smart Panel connect and control devices

Description	Reference
Input / Output interface for MCCB's & ACB's	**LV434063**
Ethernet interface for LV breakers	**LV434001**
Ethernet & gateway for LV breakers	**LV434002**

LV434021

New

PowerTag for NSX

Description	Reference	Reference
	3P	4P
PowerTag NSX250	LV434020	**LV434021**
PowerTag NSX630	LV434022	**LV434023**

Wireless to ethernet concentrator

Description	Reference
Acti 9 PowerTag Link, 20 devices	**A9XMWD20**
Acti 9 PowerTag Link HD, 100 devices	**A9XMWD100**

Note
(1) Maximum of 20 PowerTag devices per concentrator.

ComPact NSX 1P/2P AC/DC breakers
NSX100/NSX160 moulded case circuit breakers
Standard AS/NZS 3947.2

1P front connected AC/DC (Icu = 25kA 240V AC, 50kA 250V DC).

	Trip unit	Rating (fixed)	Reference
NSX100N/NSX160N (50kA) Standard thermal-magnetic trip unit 1 pole (1)	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**
	TM125D (NS160N)	125A	**LV438679**
	TM160D (NS160N)	160A	**LV438680**

2P front connected AC/DC (Icu = 25kA 415V AC, 85kA 240V AC, 85kA 250V DC)

	Trip unit	Rating	Reference
NSX100M/NSX160M (85kA) Standard themal-magnetic trip unit 2 pole (1)	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**
	TM125D	125A	**LV438709**
	TM160D	160A	**LV438710**

Notes

(1) Number of poles taking part in current interruption
Example. The NSX100N/M DC circuit breaker exists in the follow versions
* 1 pole with an Icu of 50kA, for systems ≤ 250V
* 2 pole with an Icu of 85kA, for systems ≤ 500V; 1 pole can be used in a 250V system.

3/4 POLE DC BREAKERS AVAILABLE ON REQUEST

NSX plug-in and withdrawable

Product configurator on se.com/nz

Compact NSX 100/160/250/400/630

LV429289

Plug-in Configuration

Description		Circuit breaker	Reference
Plug-in kit	Kit includes plug-in base, safety trip interlock,	NSX100/160/250	**LV429289**
3 pole	short terminal shields, power connections	NSX 400/630	**LV432538**

Withdrawable Configuration

Description		Circuit breaker	**Reference**
Withdrawable kit	Plug-in kit (as above)		**LV429289**
3 pole	Chassis side plates for base	NSX100/160/250	**LV429282**
	Chassis side plates for breaker		**LV429283**
	Plug-in kit (as above)		**LV432538**
	Chassis side plates for base	NSX400-630	**LV432532**
	Chassis side plates for breaker		**LV432533**

LV429282

LV429274

LV429273

Accessories

Description		Circuit breaker	Reference
Aux connections (1)	9-wire fixed connector (for plug-in base)	NSX100/630	**LV429273**
	9-wire moving connector (for plug-in breaker)	NSX100/160/250	**LV429274**
		NSX 400/630	**LV432523**
	Support for moving connectors (plug-in)	NSX100/160/250	**LV429275**
		NSX 400/630	**LV432525**
	9-wire manual aux connector (fixed + moving, for withdrawable)	NSX100/630	**LV429272**
Connection adaptor for plug-in base	Adaptor for phase barriers or terminal shields	NSX100/160/250	**LV429306**
	(3 pole) (for fixed part)	NSX 400/630	**LV432584**
	6 phase barriers (for fixed part)	NSX100/160/250	**LV429329**
		NSX 400/630	**LV432570**
	1 short terminal shield (3 pole) (for fixed part)	NSX100/160/250	**LV429515**
		NSX 400/630	**LV432591**
Parts of plug-in kit	3P plug-in base FC/RC	NSX100/160/250	**LV429266**
		NSX 400/630	**LV432516**
	Set 2 power connections for MCCB	NSX100/160/250	**LV429268**
		NSX 400/630	**LV432518**
	Set 2 power connections for MCCB with Vigi	NSX100/160/250	**LV429269**
		NSX 400/630	**LV432519**
	Safety trip lever for advance opening	NSX100/160/250	**LV429270**
		NSX 400/630	**LV432520**

LV429272

LV429306

Notes

(1) The number of 9-wire fixed/moving connectors used, depends on what combination of auxiliaries are fitted to the breaker.

PowerPact CNS Encapsulated chassis

For Compact NSX and NSXm / GV4 breakers

New

CNS X B 24 DS

Range	Family	Code
CNS	NSX	X
	NSXm/GV4	M

Main Bar
A (40x6mm)
B (40x8mm)

Poles
12
18
24
30
36
42
48
60
72

Sides	Code
Double sided (L/R)	DS

Feed	Code
Top/Bottom feed	
Dual feed chassis	DFC

Sides	Code
Single sided	SS

Sides	Code
Right hand bottom feed	RHBF
Right hand top Feed	RHTF
Dual feed chassis	DFC

CNSX63012DSTBF

CNSX63006SSLRHDFC
Single sided chassis

CNSX and CNSM PowerPact chassis

Description	Poles	Height (mm)	Reference NSX version	Height (mm)	Reference NSXm version
Top /Bottom feed connections 630A	12	373	**CNSXB12DS**	325	**CNSMB12DS**
	18	478	**CNSXB18DS**	406	**CNSMB18DS**
	24	583	**CNSXB24DS**	487	**CNSMB24DS**
	30	688	**CNSXB30DS**	568	**CNSMB30DS**
	36	793	**CNSXB36DS**	649	**CNSMB36DS**
	42	898	**CNSXB42DS**	730	**CNSMB42DS**
	48	1003	**CNSXB48DS**	811	**CNSMB48DS**
	60	1213	**CNSXB60DS**	973	**CNSMB60DS**
Dual feed connections 630A	12	498	**CNSXB12DSDFC**	450	**CNSMB12DSDFC**
	18	603	**CNSXB18DSDFC**	531	**CNSMB18DSDFC**
	24	708	**CNSXB24DSDFC**	612	**CNSMB24DSDFC**
	30	813	**CNSXB30DSDFC**	693	**CNSMB30DSDFC**
	36	918	**CNSXB36DSDFC**	774	**CNSMB36DSDFC**
	42	1023	**CNSXB42DSDFC**	855	**CNSMB42DSDFC**
	48	1128	**CNSXB48DSDFC**	936	**CNSMB48DSDFC**
	60	1338	**CNSXB60DSDFC**	1098	**CNSMB60DSDFC**

Accessories

Description	Chassis type	Reference
IP2X NSXm term. shield for CNSM chassis	NSXm/GV4	**TBC**
IP2X NSXm term. shield for CNSM chassis	NSXm/GV4	**TBC**

Performance

Short circuit withstand: Icw 50kA 1s, Icc 70kA with NSX250H or NSXm160H

Thermal performance:

40x8mm main bar: 630A (consult SE for reference designs as per AS/NSZ61439.1 testing)

40x6mm main bar: TBA following test results

Notes

(1) Phase stickers (supplied) applied by customer, to determine orientation of chassis.

(2) Single sided chassis available as dual feed and top/bottom feed. Right hand bottom feed (RHBF) is essentially a left hand top feed, etc.

(3) Busbars extend 125mm at top and bottom of all chassis.

Product configurator on se.com/nz

ComPact NS system
NS630b/1600 moulded case circuit breakers
Standard AS/NZS 3947.2 (IEC 60947.2)

3 pole - front connected circuit breaker

Trip unit		Type	Rating	Reference
Micrologic 2.0 (50kA and 70kA at 415v)	50kA	NS630bN	252-630A	**33460**
		NS800N	320-800A	**33466**
		NS1000N	400-1000A	**33472**
		NS1250N	500-1250A	**33478**
		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**
Micrologic 5.0 (50kA and 70kA at 415v)	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**

Note: For other options, including extended rotary handle, please use the product configurator.

Moulded case circuit breakers

Product configurator on se.com/nz

ComPact NS system with energy monitoring and communication capability
NS630b/1600 moulded case circuit breakers
Standard AS/NZS 3947.2 (IEC 60947.2)

3 pole - front connected circuit breaker including Energy monitoring and modbus communication

Trip unit		Type	Rating	Reference
Micrologic 2.0E (50kA and 70kA at 415v)	50kA	NS630bN	252-630A	**34400**
		NS800N	320-800A	**34404**
		NS1000N	400-1000A	**34408**
		NS1250N	500-1250A	**34412**
		NS1600N	640-1600A	**34416**
	70kA	NS630bH	252-630A	**34401**
		NS800H	320-800A	**34405**
		NS1000H	400-1000A	**34409**
		NS1250H	500-1250A	**34413**
		NS1600H	640-1600A	**34417**
Micrologic 5.0E (50kA and 70kA at 415v)	50kA	NS630bN	252-630A	**34420**
		NS800N	320-800A	**34424**
		NS1000N	400-1000A	**34428**
		NS1250N	500-1250A	**34432**
		NS1600N	640-1600A	**34436**
	70kA	NS630bH	252-630A	**34421**
		NS800H	320-800A	**34425**
		NS1000H	400-1000A	**34429**
		NS1250H	500-1250A	**34433**
		NS1600H	640-1600A	**34437**

Note: For other options, including extended rotary handle, please use the product configurator.

EcoStruxure Power Commission (EPC) software

- Simplify commissioning and maintenance
- Set up and test switchboards equipped with smart devices
- Reduce commissioning time
- Speed up FAT and SAT delivery
- Improve preventive maintenance with protection settings/checking, warnings and alarms, trip history, and maintenance reports

Moulded case circuit breakers

ComPact NS system
Installation, connection and accessories
NS630b to NS1600 moulded case circuit breakers

3 Pole – front connected non auto circuit breaker

Trip Unit	Type	Reference
Non-auto	NS630bNA	**33486**
	NS800NA	**33487**
	NS1000NA	**33488**
	NS1250NA	**33489**
	NS1600NA	**33490**

NS630b – NS1600,
Extended rotary handle

Rotary handle for manually operated devices

Type		Reference
Devices with direct rotary handles		
Handle	Black	**Order Form** (1)
Locking by keylocks	Ronis	
	OFF position	**33870**
	OFF and ON positions	**33872**
Devices with extended rotary handles		
Handle	Black	**Order Form** (1)
Mechanical interlocking		
For 2 devices with extended rotary handles		**33890**

Locking for manually operated devices

Type	Reference
Removable toggle locking system	
Locking by 3 padlocks	**44936**

33899 + 41940

33897

33895

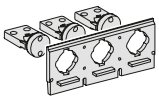
Locking and accessories for motorised devices

Type		Reference
Transparent cover + padlock (not supplied)		**33897**
OFF position	Ronis keylock	**33899 + 41940**
Operation counter		**33895**

Notes
(1) The order form on page D43 needs to be filled out and faxed to Schneider Electric.
Motor mechanisms cannot be fitted to complete manually operated devices on page D29.
Please fill out order form on page D43.

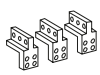
ComPact NS system
Installation, connection and accessories
NS630b to NS1600 moulded case circuit breakers

33640


Rear connections
(Order form)

Connection accessories

Type			Reference
Rear connections		Top (set of 3)	**Order Form** (1)
		Bottom (set of 3)	**Order Form** (1)
Bare-cable connectors + 1 connector shield for 4 cables (240mm²)		3P (3 parts)	**33640**
Sealable terminal shield		3P	**33628**
Vertical-connection adaptors		3P (3 parts)	**33642**
Cable-connection adaptors		3P (3 parts)	**33644**
Interphase barriers		3P/4P top (3 parts)	**33646**
		3P/4P bottom (3 parts)	**33646**
Spreaders		3P	**33622**
Cable lug kits	240mm²	3P (6 lug kit)	**33013**
	300mm²	3P (6 lug kit)	**33015**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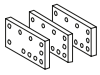
33628

33646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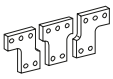

33622

33013, 33015

OF auxiliary

Electrical auxiliaries

Type		Reference
Indication contacts		
OF, SD, SDE	6A – 240V	**29450**

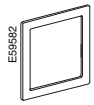
Up to 3 OF, 1 SD and 1 SDE can be connected (the SDE contact is standard for electrically operated devices).

Type	Reference MX (2)	Reference MN (3)
Instantaneous voltage releases		
24-30VAC/DC	**33659**	**33668**
48-60VAC/DC	**33660**	**33669**
100-130VAC/DC	**33661**	**33670**
200-250VAC/DC	**33662**	**33671**
240-277VAC	**33663**	
380-480VAC	**33664**	**33673**

MX/MN voltage release

Installation accessories

33717



33718

Description	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**

Notes
(1) The order form on page D43 needs to be filled out and faxed to Schneider Electric.
(2) MX – Shunt release
(3) MN – Under voltage release

Moulded case circuit breakers

ComPact NS system
NS1600b to NS3200 moulded case circuit breakers
Standard: IEC 947-2
Complete device

Product configurator on se.com/nz

NS1600 – NS3200 Amps

Circuit breakers

Type Icu = 85kA to 220/415V	Reference 3P
ComPact NS type N	
NS1600b	**Order Form** (2)
NS2000	**Order Form** (2)
NS2500	**Order Form** (2)
NS3200	**Order Form** (2)

+ Micrologic control units

Type		Reference with ammeter
Basic protection	2.0A	**Order Form** (2)
Selective protection	5.0	**Order Form** (2)
Options for Micrologic trip unit		
Ammeter (2)		**Order Form**
Earth fault protection (includes ammeter) (1)(2)		**Order Form**
External earth fault and neutral sensor		**33576**
Earth leakage protection (includes ammeter) (1)(2)		**Order Form**
External earth leakage sensor		**33577**
Modbus/Digipact communications (2) (includes ammeter option)		**Order Form**

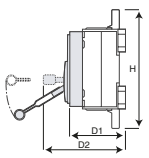
Switch-disconnector (non-auto 40 kA rms/0.5 sec)

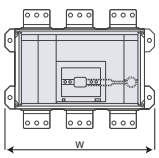
Type	Reference 3P
NS1600b NA	**34024**
NS2000 NA	**34027**
NS2500 NA	**34030**
NS3200 NA	**34033**

Electrical auxiliaries and connections

Type		Reference
Vertical adaptors (set of 3)	NS1600b-2500	**33975**
Indication contacts		
OF, SD, SDE 6A – 240V (3) Up to 3 OF, 1 SD and 1 SDE can be connected		**29450**

Dimensions





Product	H (mm)	W (mm)	D1 (mm)	D2 (mm)
NS1600b/3200H	330	420	168.5	222.5
NS1600b/3200N	330	420	168.5	222.5

Notes

(1) Add to price of Micrologic 5.0. Earth fault and 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 D43.

(3) 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 and voltage releases may be field fitted.
Voltage releases have a continuous rating.

NOW, YOU'RE READY...

Built on the legendary performance and reliability of the MasterPact range.

MasterPact MTZ circuit breakers prepare you for the future of power distribution with smart connectivity, remote monitoring, and easy customization via digital modules.

- Intuitive EcoStruxure Power Device App smartphone app for easy operation and maintenance
- Precise Class 1 power meter built in for energy-saving capabilities
- Easy customization with digital modules
- Intuitive MicroLogic™ X control unit
- Easy installation using established architectures
- Seamless integration with building and energy management systems with EcoStruxure architectures
- Designed and tested to applicable standards for ANSI, UL, and IEC
- Low migration cost from MasterPact NT/NW to MasterPact MTZ

With MasterPact MTZ breakers, enhanced performance and connectivity equip you for the future of power distribution.

Available from 630 A to 6300 A.

Product configurator on se.com/nz

MasterPact MTZ
Standard AS/NZS 90947.2 (IEC 60947.2)

D

MasterPact MTZ

With MasterPact MTZ circuit breakers, you're ready for all the ways power distribution is changing. Smart connectivity gives you real-time data to help avoid downtime. Digital modules allow you to customize the circuit breaker to your speci"c needs. And proven durability gives you the assurance that you're placing your power distribution on a reliable foundation.

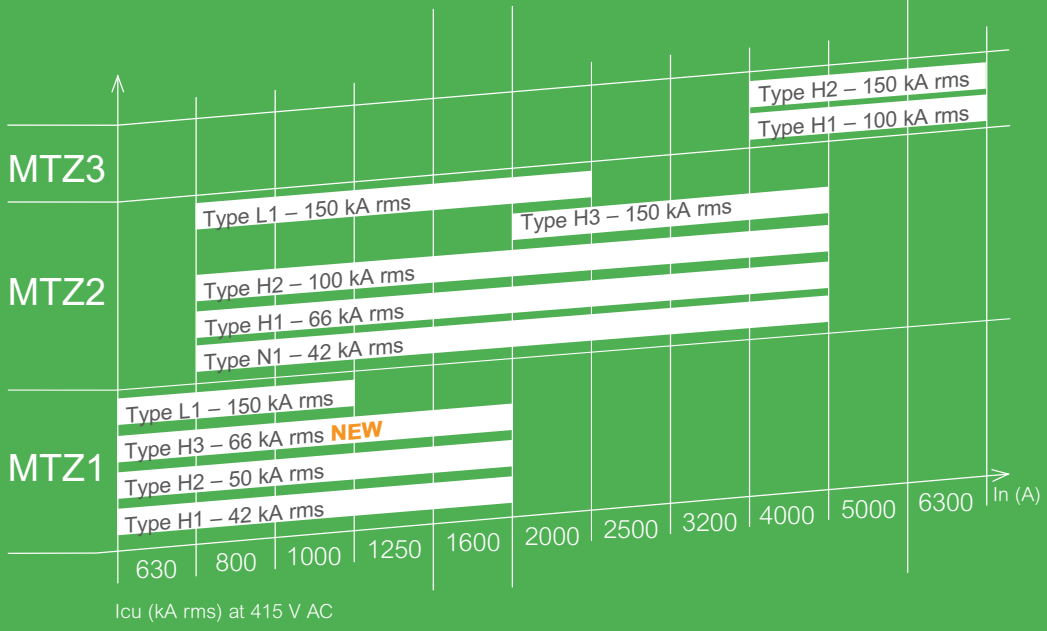
MasterPact MTZ circuit breakers are available in three sizes:

...FUTURE READY

MTZ1
From 630 to 1600 A

MTZ2
From 800 to 4000 A

MTZ3
From 4000 to 6300 A



Now featuring digital modules to customize Micrologic X control units

2.0 X | 5.0 X | 6.0 X | 7.0 X

Downloadable digital modules provide enhanced:

- Protection: Energy Reduction Maintenance Settings, Ground fault alarm, Under/Over voltage protection, Reverse active power
- Measurement: Energy per phase, Individual harmonics analysis
- Diagnostics and maintenance: Power restoration assistant, MasterPact operation assistant, Wave form capture on trip event, Modbus legacy dataset

MasterPact MTZ digital modules

Customise Micrologic X control unit anytime

Masterpact™ MTZ
FUTURE READY

D

Measurement

Energy management is the challenge of present & future generations. To meet this requirement Micrologic X incorporates all the measuring functions of a power meter including **Energy Class 1 accuracy** third-party certified.

Maintenance & Diagnostics

Optimal continuity of services as well as extended life of equipment is one of customers main concerns. For that purpose **Micrologic X integrates new extended diagnosis** and assistance to maintenance.

Protection

Improvement of the reliability of Micrologic X, dual settings and additional facilities **increase the performance and the flexibility** of low voltage systems of protection.

11 Optional 24/7 downloadable digital modules dedicated to upgrading Micrologic X

- Under voltage and over voltage
- Underfrequency and overfrequency
- Reverse active power
- Ground-fault alarm
- Energy Reduction Maintenance Settings
- Energy per phase
- Individual harmonics analysis
- Power restoration assistant
- MasterPact operation assistant
- Waveform capture on trip event
- Modbus legacy dataset

Communication

- It is now common practice to make available most of the information processed by a Protection Control Unit, locally for network operations and maintenance, as well as remotely for higher functions of control, monitoring, energy efficiency and assets management.
- To comply with this requirement, Micrologic X control units **incorporate several channels of communications, including Ethernet, Modbus SL and wireless communications facilities.**

A new digital user experience

With the MasterPact MTZ circuit breaker, every stage of the project — from designing and configuring to operating and maintaining — is streamlined using its digital capabilities.

D

DESIGN

EcoStruxure Power Design software
Single-line diagram design software that calculates and sizes your electrical installation.

CONFIGURE AND ORDER

Product Configurator
Configure MasterPact MTZ to save time and ensure accuracy.

MySE
Order your MasterPact MTZ online

BUILD AND COMMISSION

EcoStruxure Power Commision software
Commission and upgrade easily with protection setting and factory-acceptance test.

Monitor with EcoStruxure Power software
Obtain data visualization and reporting for increased efficiency.

OPERATE AND MAINTAIN

EcoStruxure Power monitoring software
Power Monitoring Expert
Power SCADA Operation
Building Operation
Facility Advisor

schneider-electric.com/ecostruxure-facility-advisor

Operate with your smartphone
Locally in the facility room

Ecostruxure Power Device App

Android iOS

Remote, continuous notifications

The Facility Expert maintenance logbook app.
Track facility data and receive alerts in case of power events and scheduled maintenance.

schneider-electric.com/ecostruxure-facility-expert

Operate with MicroLogic X control unit

Locally in the facility room

Status "at a glance"

CUSTOMIZE OR UPGRADE

GoDigital store
Purchase additional digital modules for even more visibility and efficiency over the MasterPact MTZ circuit breaker life cycle.
godigital.schneider-electric.com

A new way of selecting and ordering your circuit breakers

Configuring complex products has now become easier thanks to the new online selector tools on the website, available across many ranges and products.

Simply look for the Product Configurator blue button, then select the criterea you require.

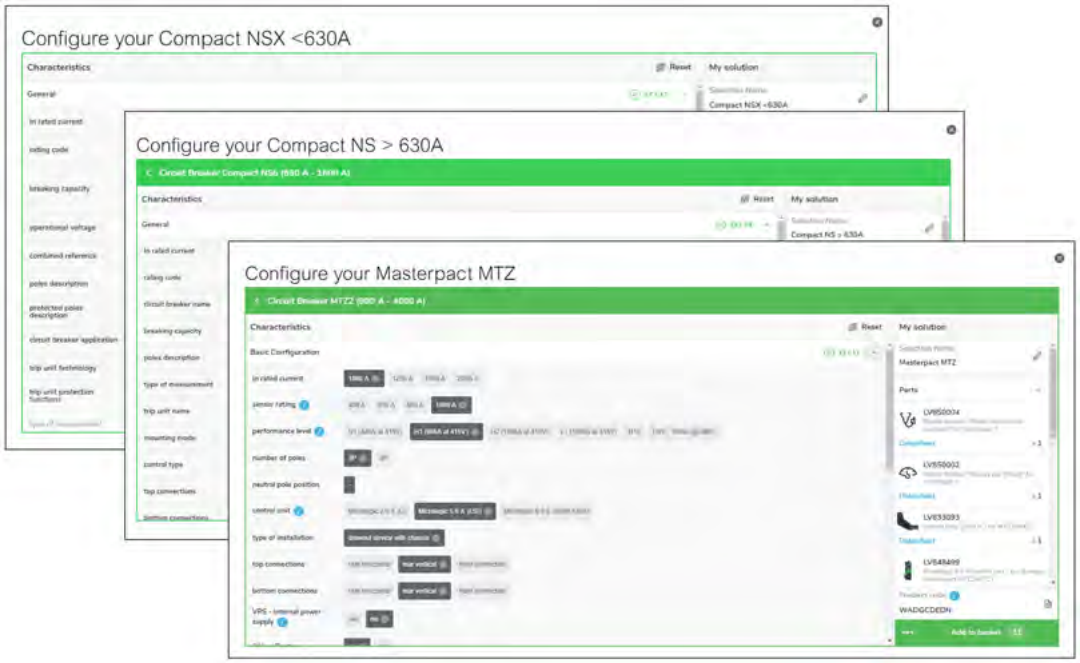
When complete, the configuration can be sent to Customer Care, or ordered direclty through your MySE account.

D

Step 1
Find the configurator button on the range page

Step 2
Go through the selections until the configuration is complete

Step 3
Send you completed configuration to customer care, or order via MySE



Note
(1) For source-changeovers, 2 configurations need to be submitted.

ASCO 230 Series, 7000 Series

ASCO SERIES 230 Automatic Transfer Switch

New

For Light Commercial and Industrial use

The switch has three operational positions (Source I, Center-off, Source II).
The SERIES 230 is available in 5 different frame sizes up to 800A and can operate in multiple control modes including automatic, remote and manual operation.

A Frame

B Frame

C2000 controller

Frame	Poles	Rating	Comms (modbus RS485)	Controller	Reference
A	2	63A	N	Embedded	**A2ADTLB10063FB**
		80A	N	Embedded	**A2ADTLB10080FB**
		63A	Y	Embedded	**A2ADTLB10063FB-72D**
		80A	Y	Embedded	**A2ADTLB10080FB-72D**
	4	63A	N	Embedded	**A2ADTLB30063JB**
		80A	N	Embedded	**A2ADTLB30080JB**
		63A	Y	Embedded	**A2ADTLB30063JB-72D**
		80A	Y	Embedded	**A2ADTLB30080JB-72D**
B	4	100A	Y	C2000 panel mount	**B2ADTLB30100JE-132**
		125A	Y	C2000 panel mount	**B2ADTLB30125JE-132**
		160A	Y	C2000 panel mount	**B2ADTLB30160JE-132**
C	4	200	Y	C2000 panel mount	**C2ADTLB30200JE**
		250A	Y	C2000 panel mount	**C2ADTLB30250JE**
D	4	315	Y	C2000 panel mount	**D2ADTLB30315JE**
		400A	Y	C2000 panel mount	**D2ADTLB30400JE**
E	4	500	Y	C2000 panel mount	**E2ADTLB30500JE**
		630	Y	C2000 panel mount	**E2ADTLB30630JE**
		800	Y	C2000 panel mount	**E2ADTLB30800JE**

Accessories

Description	Type	Model	Reference
Auxiallary contact block	NO	230 Series	**972970**
	NC	230 Series	**972970-001**

ASCO 7000 SERIES Power Transfer Switch

New

For Mission-Critical Applications

ASCO Power Transfer Switches are the industry standard. High speed transfer of loads between alternative sources of power, regardless of current rating, is achieved using a reliable, field-proven solenoid operating mechanism.

When combined with a programmable microprocessor controller with keypad and LCD display, they offer the most advanced method of transferring all types of loads, such as motors, electronic drives, UPSs and microprocessor-based systems.

For more information on ASCO 7000 Series, please contact Schneider Electric.

TransferPact Source-changeover systems

Compact NSX and NS
Masterpact NT and NW
Note: For pricing, please contact your local Schneider Electric representative

NSX changeover

Masterpact Compact changeover

Source changeover systems (SCO)

An SCO switches the load between two sources, typically to a secondary generator. A system can include two or three circuit breakers or disconnectors. The secondary supply is sized to what is required in a mains loss situation, and can be smaller than the primary.

Manual source-changeover system (1)

This is the most simple type. It is controlled manually by an operator and consequently the time required to switch from the normal to the replacement source can vary.

Remote-operated source-changeover system

Recommended for systems with high ratings (above 400 A). Transfer is controlled electrically and mechanical interlocking prevents electrical malfunctions or incorrect manual operation.

Automatic source-changeover systems

An automatic controller may be added to a remote-operated source-changeover system for automatic source control according to programmable operating modes. This function is sometimes available on the generator, but if not an Automatic Controller is required. This method ensures the minimum amount of time for the transition of power.

Due to the different configuration available, please use the tick sheets provided or contact your Schneider Electric representative for a price.

LV429358

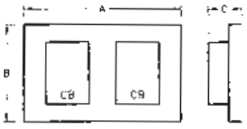
Common load bars

	Circuit breaker	Reference
3P 250A	NSX100/160/250	**LV429358**
3P 630A	NSX400/630	**LV432619**

UA automatic controller

Logic panels (for automatic operation) (2)

Type	Reference
ACP aux + control unit 380..415VAC	**29364**
UA automatic controller 380..415VAC	**29380**
IVE electrical interlocking 48..415VAC	**29352**



Dimension of basic source changeover

Product	A (mm)	B (mm)	C (mm)
NSX100/160/250 plate	354	300	222
NSX400/630 plate	470	380	294

Notes

(1) For manual changeover with no protection, see Transfer Switches on page D5
For basic NSX100/160/250 interlocking, see page D14/15
For basic NSX400/630 interlocking, see page D22

(2) Exclude ACP and UA for manual operation (without logic)
Include ACP and UA units to automate SCO units..

Units include : - circuit breakers, motor operators, mechanical interlock
- IVE electrical interlock, auxiliary change over contacts.

Each SCO is fully assembled and tested.
Please contact Technical Support on 0800 652 999

Notes

Notes

Fuse assembly devices

FuPact ISFT100, ISFT160
Standard : IEC 947-1, 3 and 5

LV480800

ISFT100 3 pole fixed front-connected fuse-switch disconnectors

Description	Reference
Basic device for mounting on backplate (1)	
Connection via 1.5 to 50mm² bare cable connectors	**LV480800**

LV480801

Accessories (ISFT100)

Description	Reference
Comb busbar to supply 3 devices	**49862**
Comb busbar to supply 4 devices	**49863**
Incoming connector (25 to 95mm2) for comb busbars (set of 3)	**49865**
Din rail mount	**49877**
Electrical auxiliary contact NO + NC	**49885**

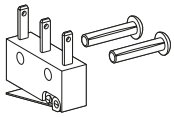
LV480803

ISFT160 3 pole fixed front-connected fuse-switch disconnectors

Description	Reference
Basic device for mounting on backplate (2)	
Connection via standard M8 terminals	**LV480801**
Connection via 1.5 to 50mm2 bare cable connectors	**LV480802**
Basic device for mounting on busbars (2)	
With hook-on 60mm busbar M8 terminals	**LV480803**

49862

49865



49885

Accessories (ISFT160)

Description		Reference
Comb busbar to supply 3 devices		**LV480812**
Comb busbar to supply 4 devices		**LV480813**
Incoming connector (25 to 95mm) for comb busbars	set of 3	**LV480818**
Electrical auxiliary contact NO + NC		**LV480755**
Terminal shield 3P		**LV480819**

Notes
(1) Fuse size for ISFT100 = DIN/NH000
(2) Fuse size for ISFT160 = DIN/NH00

Fuse assembly devices

FuPact ISFT250 to ISFT630
Standard: IEC 947-1, 3 and 5

LV480804

New

ISFT250 to ISFT630 3 pole fixed, front-connected fuse-switch disconnectors

Description		Reference
Basic device for mounting on a backplate (1)		
Connection via standard M10 terminals	ISFT250	**LV480804**
	ISFT400	**LV480806**
	ISFT630	**LV480808**
Basic device for mounting on a busbars (1)		
With hook-on 60mm busbar M8 terminals	ISFT250	**LV480805**
	ISFT400	**LV480807**

Accessories

Description			Reference
Terminal shields	For ISFT250	set of 1	**LV480824**
	For ISFT400	set of 1	**LV480827**
	For ISFT630	set of 1	**LV480831**

Electrical auxiliaries

Description	Reference
Auxiliary changeover contact NO+NC	**49885**

LV480852

ISFL160 3 pole fixed, front-connected fuse-switch disconnectors

Description	Reference
Basic device for mounting on busbars (2)	
Direct connection to 100mm busbars	**LV480852**

LV480863

ISFL250 to ISFL630 3 pole fixed, front-connected fuse-switch disconnectors

Description		Reference
Basic device for mounting on busbars (3)		
Direct connection to 185mm busbars	ISFL250	**LV480863**
	ISFL400	**LV480864**
	ISFL630	**LV480865**

Note

(1) Fuse sizes ISFT250 = 1
ISFT400 = 2
ISFT630 = 3

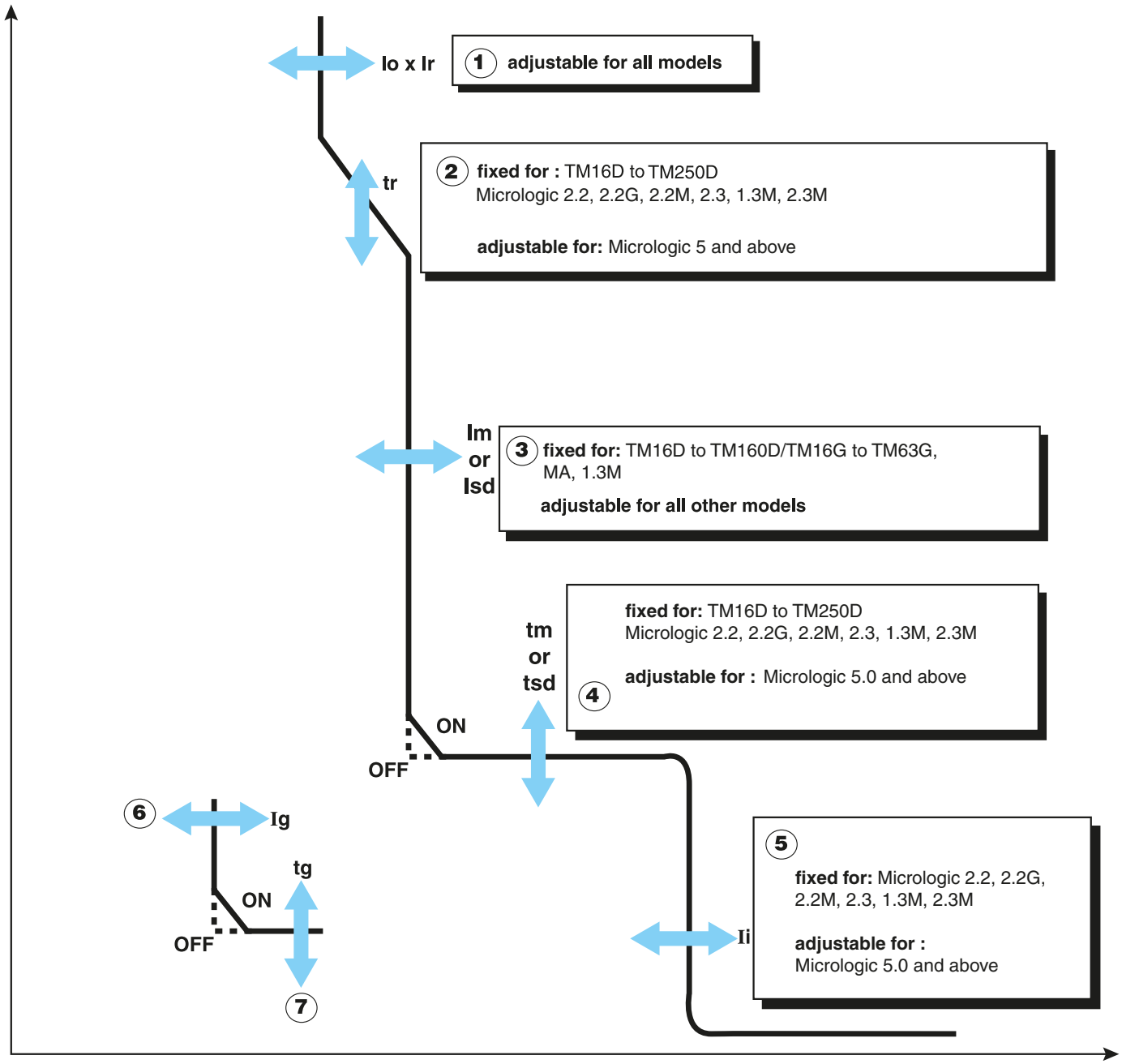
(2) Fuse sizes ISFL160 = 000 or 00

(3) Fuse sizes ISFL250 = 1
ISFL400 = 2
ISFL630 = 3

ComPact NS/NSX MCCBs
MasterPact NT/NW ACBs

D

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

Busway systems

Schneider Electric Busway systems offers a new path for achieving your electrical installations. It is part of a comprehensive offer of products that are perfectly coordinated to meet all your medium and low voltage distribution requirements. All the products have been designed to work seamlessly together making the electrical installation both optimised and high-performance.

D

High power busways (800 - 6300A)

Canalis KT

Canalis KR

I-Line II

Medium power busways (100 - 1000A)

Canalis KS

Low power busways (40 - 100A)

Canalis KN

Lighting busways (25 - 40A)

KBA Lighting Busway

KBB Lighting Busway

Canalis lighting

A flexible, expandable busbar trunking system

Canalis is a modular prefabricated busbar trunking system. It is the interface between the equipment and the products.

It provides great flexibility and scalability thanks to the prefabricated tap-off system.

The Canalis KBA and KBB ranges with option T are compatible with the DALI protocol.

A solution which is simple to implement

It is a tried-and-tested solution: more than 70,000 km of Canalis busbar trunking has been installed across the world since 1954.

Simply choosing a DALI-compatible KBA or KBB version and adding one or more DALI controllers in the switchboard results in a device ready for operation.

Canalis busbar trunking is quick and completely safe to install. Connections are made without tools and are designed to avoid any risk of incorrect wiring.

Canalis lighting is a constantly evolving offer compatible with the most efficient lighting management systems. (1)

CanBRASS

Design and quotation software for Canalis busbar trunking system. (2)

Notes

(1) For more information, refer to the Canalis Catalogue DEBU022EN

(2) Free design software, Canbrass, is available for download on se.com/nz website

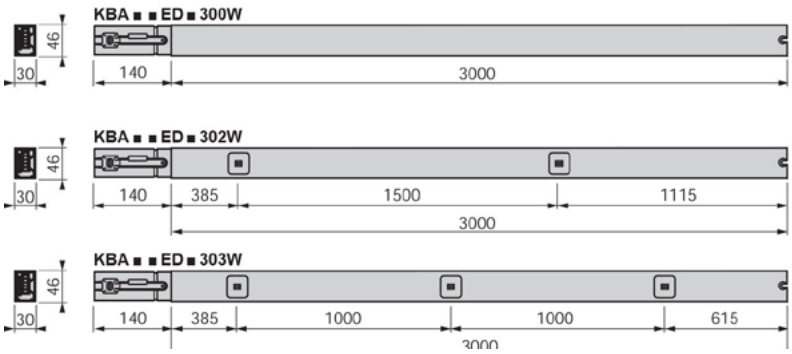
Canalis KBA
25A and 40A, IP55, Ue= 230V to 400V

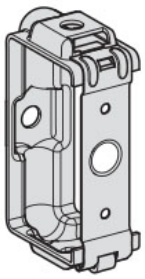
Straight Length Standard, Polarity: Ph + N + PE

Length (m)	No. of tap-offs	Rating (A)	Reference
3	2	25	**KBA25ED2302W**
	3	25	**KBA25ED2303W**
		40	**KBA40ED2303W**
	5	25	**KBA25ED2305W**
		40	**KBA40ED2305W**
2	2	25	**KBA25ED2202W**
	3	40	**KBA40ED2203W**

Straight Length Standard, Polarity: Ph + N + PE

Length (m)	No. of tap-offs	Rating (A)	Reference
3	2	25	**KBA25ED4302W**
	3	25	**KBA25ED4303W**
		40	**KBA40ED4303W**
	5	25	**KBA25ED4305W**
		40	**KBA40ED4305W**
2	2	25	**KBA25ED4202W**
	3	40	**KBA40ED4203W**





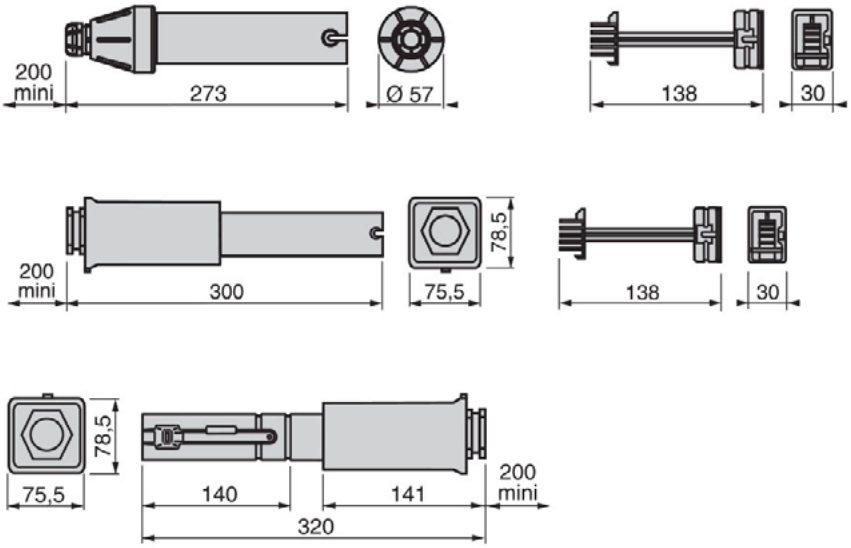
Fixing Systems

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

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

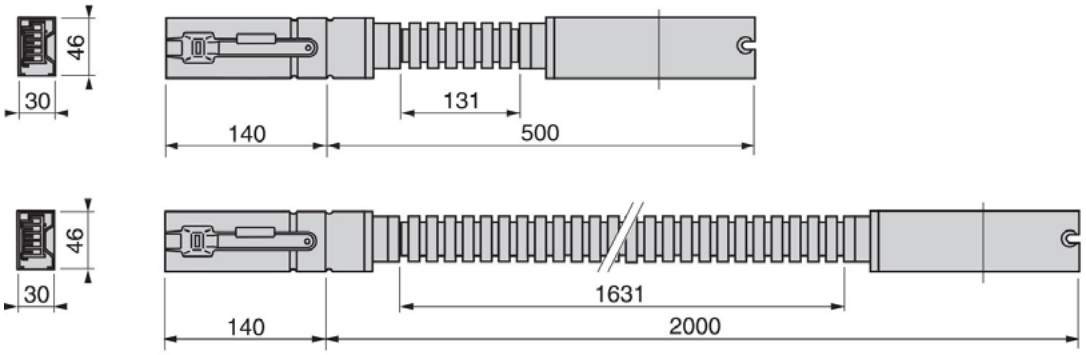
Feed units (supplied with end cover)

Rating (A)/ Mounting	Cable connection		Reference
	Terminals (mm2)	Cable gland max Ø (mm)	
25/ Left	4	PG 16, Ø 15	KBA25ABG4W
40/ Left	10	PG 21, Ø 19	KBA40ABG4W
25 or 40/ Right	10	PG 21, Ø 19	KBA40ABD4W



Flexible Lengths

Mounting	Length (m)	Reference
For elbows, changing levels, detours around obstacles, etc.	0	**KBA40DF405W**
	2	**KBA40DF420W**



iBusway for lighting management

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

Straight Lengths. Two Circuits: 2 x (1Ph + N) + E

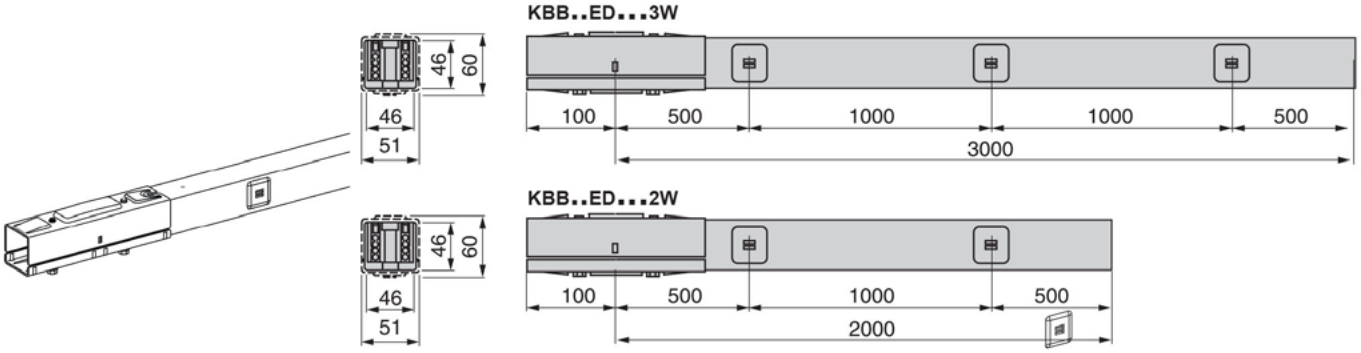
Length (m)	No. of tap-offs	Rating (A)	Reference
3	3 + 2	25	**KBB25ED22305W**
		40	**KBB40ED22305W**
2	2 + 1	40	**KBB40ED22203W**

Straight Lengths. Two Circuits: (1Ph + N) + (3Ph + N) +E

Length (m)	No. of tap-offs	Rating (A)	Reference
3	3 + 2	25	**KBB25ED42305W**
		40	**KBB40ED42305W**
2	2 + 1	40	**KBB40ED42203W**

Straight Lengths. Two Circuits: 2 x (3Ph + N) + E

Length (m)	No. of tap-offs	Rating (A)	Reference
3	3 + 2	25	**KBB25ED44305W**
		40	**KBB40ED44305W**
2	2 + 1	40	**KBB40ED44203W**



Flexible Lengths

Mounting	Length (m)	Reference
For elbows, changing levels, detours around obstacles, etc.	0	**KBB40DF4405W**
changing levels, detours around obstacles, etc.	2	**KBB40DF4420W**

KBB40ABG44W

Feed units (supplied with end cover)

Mounting	Cable connection Terminals (mm2)	Cable gland max Ø (mm)	Reference
Left/ Right	6 to 10	PG 21, Ø 19	**KBB40ABG44W**

KBB40ABG44W

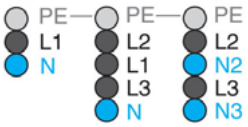
Fixing Systems

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

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

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

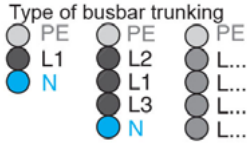
Type of busbar trunking



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

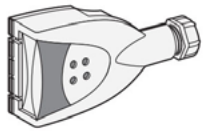
Polarity	Pack Qty	Reference
L1 + N or L2 + N or L3 + N L1 + L2 or L1 + L3 or L2 + L3 L2 + N2 or L3 + N3	10	**KBC10DCB20**

Type of busbar trunking

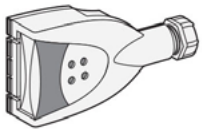


10 A tap-off unit, 3L + N + PE

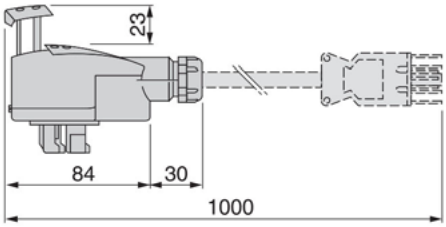
Polarity	Pack Qty	Reference
To be defined for each application (dimmer, emergency lighting, etc.)	10	**KBC10DCB40**

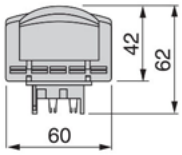


KBC10DCB20



KBC10DCB40





Single-circuit switching

Balancing on 3 phases or 3-circuit switching

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

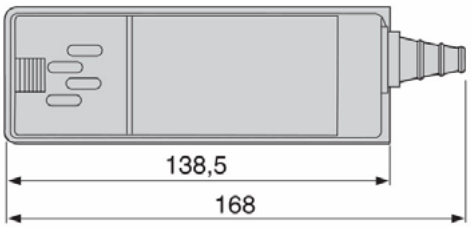
Polarity	Protection	Pack Qty	Reference
L1 + N or L2 + N or L3 + N	None	10	**KBC16DCB21**
	Cylindrical fuse NF 8.5 x 31.5 16 A gG maximum (not supplied)	10	**KBC16DCF21**

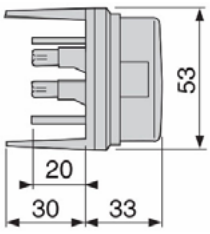
16 A tap-off unit, 3L + N + PE

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**

Type of busbar trunking

All types possible





Index

Power management

Power management

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Hour counters, ammeters and voltmeters
Selector switches
Panel meters

15440

Hour counter

Model	Voltage	Frequency	Width in mod. of 9mm	Reference
CH	240V	50/60Hz	4	**15440**

16061

15201

Voltmeters VLT

Model	Rating	Scale	Frequency	Accuracy class	Width in mod. of 9mm	Reference
Analogue	500V	0...500V	50/60Hz	1.5	8	**16061**
Digital	600V	0...600V	50/60Hz	1.5	4	**15201**

16029

15202

Ammeters AMP

Model	Rating	Scale	Frequency	Accuracy class	Width in mod. of 9mm	Reference
Digital		0...10A	50/60Hz	1.5	4	**15202**
		*0...5000A	50/60Hz	1.5	4	**15209**

* connection to CT required and scales required. AMP ammeter consumption = 1.1VA

15126

Voltmeter and ammeter selector switches

Model	Rating	Voltage	To suit	Width in mod of 9mm.	Reference
CMV	10A	415V	VLT voltmeter	6	**15125**
CMA	10A	415V	AMP ammeter	6	**15126**

METSEDM6200

DM6000H panel meters

Description		Reference
DM6000H	Panel meter - basic (V, I, f, PF)	**METSEDM6000HCL10NC**
DM6200H	Panel meter - basic with RS485 Modbus	**METSEDM6200HCL10RS**

Current transformers

METSECT5CC010

METSECT5MB040

METSECT5DB200

Solid-core current transformers

Rating	Max. diameter/dimensions Cable mm	Bar mm	Power (VA) accuracy class 0.5	1	3	Form factor	Reference
50/5	21	–	–	1.25	1.5	CC	**METSECT5CC005**
75/5	21	–	–	1.5	2.5	CC	**METSECT5CC008**
100/5	21	–	2	2.5	3.5	CC	**METSECT5CC010**
150/5	21	–	3	4	5	CC	**METSECT5CC015**
200/5	21	–	4	5.5	6	CC	**METSECT5CC020**
250/5	27	10 x 32 15 x 25	6	8	–	MA	**METSECT5MA025**
300/5	27	10 x 32 15 x 25	8	10	–	MA	**METSECT5MA030**
400/5	27	10 x 32 15 x 25	10	12	–	MA	**METSECT5MA040**
400/5	26	12 x 40 15 x 32	6	8	–	MB	**METSECT5MB040**
600/5	–	32 x 65	8	12	–	DA	**METSECT5DA060**
800/5	–	32 x 65	12	15	–	DA	**METSECT5DA080**
1000/5	–	32 x 65	15	20	–	DA	**METSECT5DA100**
1250/5	–	32 x 65	15	20	–	DA	**METSECT5DA125**
1250/5	–	38 x 84	12	15	–	DD	**METSECT5DD125**
1500/5	–	32 x 65	20	25	–	DA	**METSECT5DA150**
1500/5	–	38 x 84	15	20	–	DD	**METSECT5DD150**
2000/5	–	38 x 127	15	20	–	DB	**METSECT5DB200**
2500/5	–	38 x 127	20	25	–	DB	**METSECT5DB250**
3000/5	–	38 x 127	25	30	–	DB	**METSECT5DB300**
4000/5	–	52 x 127	30	50	–	DC	**METSECT5DC400**
Terminal cover for form factors MA and MB							**METSECT5COVER**

Split-core current transformers

Model	Rating (A)	Inside dimensions (mm)	Accuracy	Burden (VA)	Reference
3090 SCCT	200/5	32 x 38	1%	2.5	**3090SCCT022**
	300/5	32 x 38	1%	2.5	**3090SCCT032**
	400/5	62 x 73	1%	5.0	**3090SCCT043**
	600/5	62 x 73	1%	5.0	**3090SCCT063**
	800/5	62 x 73	1%	12.5	**3090SCCT083**
	800/5	62 x 140	1%	5.0	**3090SCCT084**
	1200/5	62 x 140	1%	22.5	**3090SCCT124**
	1600/5	62 x 140	1%	45.0	**3090SCCT164**
	2000/5	62 x 140	1%	45.0	**3090SCCT204**

Kilowatt hour meters – single and three phase

A9MEM2050

iEM2000 Watt hour meters – 1 phase digital (direct connect)

Model	Description	Reference
iEM2000	40A kWh meter	**A9MEM2000**
iEM2010	40A kWh meter with pulse output	**A9MEM2010**
iEM2050	45A kWh meter with pulse output and RS485 Modbus	**A9MEM2050**

Note: Class 1 accuracy

A9MEM2150

iEM2100 Watt hour meters – 1 phase digital (direct connect up to 63A)

Model	Description	Reference
iEM2100	kWh meter	**A9MEM2100**
iEM2105	kWh meter with pulse output	**A9MEM2105**
iEM2110	kWh meter with pulse output and four quadrant measurement	**A9MEM2110**
iEM2150	kWh meter with RS485 Modbus with four quadrant measurement	**A9MEM2150**

Note: Class 1 accuracy

A9MEM3155

iEM3100 kWh meter – 3 phase digital (direct connect up to 63A)

Model	Description	Reference
iEM3100	kWh meter	**A9MEM3100**
iEM3110	kWh meter with pulse output	**A9MEM3110**
iEM3115	kWh meter with multi-tariff capability	**A9MEM3115**
iEM3150	kWh meter & electrical parameter with RS485 Modbus	**A9MEM3150**
iEM3155	advanced multi-tariff kWh meter & electrical parameter with RS485 Modbus	**A9MEM3155**
with BMS communication protocols		
iEM3135	advanced multi-tariff kWh meter & electrical parameter with RS485 M-bus	**A9MEM3135**
iEM3165	advanced multi-tariff kWh meter & electrical parameter with RS485 BACnet	**A9MEM3165**
iEM3175	advanced multi-tariff kWh meter & electrical parameter with RS485 LON	**A9MEM3175**

Note: Class 1 accuracy

iEM3200 kWh meter – 3 phase digital (CT connected)

Model	Description	Reference
iEM3200	kWh meter	**A9MEM3200**
iEM3210	kWh meter with pulse output	**A9MEM3210**
iEM3215	kWh meter with multi-tariff capability	**A9MEM3215**
iEM3250	kWh meter & electrical parameter with RS485 Modbus	**A9MEM3250**
iEM3255	advanced multi-tariff kWh meter & electrical parameter with RS485 Modbus	**A9MEM3255**
with BMS communication protocols		
iEM3235	advanced multi-tariff kWh meter & electrical parameter with RS485 M-bus	**A9MEM3235**
iEM3265	advanced multi-tariff kWh meter & electrical parameter with RS485 BACnet	**A9MEM3265**
iEM3275	advanced multi-tariff kWh meter & electrical parameter with RS485 LON	**A9MEM3275**

Note: Class 0.5s accuracy

Kilowatt hour meters – three phase

A9MEM3300

iEM3300 kWh meter – 3 phase digital (direct connect up to 125A)

Model	Description	Reference
iEM3300	kWh meter	**A9MEM3300**
iEM3310	kWh meter with pulse output	**A9MEM3310**
iEM3350	kWh meter & electrical parameters with RS485 Modbus	**A9MEM3350**
iEM3355	advanced multi-tariff kWh meter & electrical parameters with RS485 Modbus	**A9MEM3355**
iEM3335	advanced multi-tariff kWh meter & electrical parameter with RS485 M-bus	**A9MEM3335**
iEM3365	advanced multi-tariff kWh meter & electrical parameter with RS-485 BACnet	**A9MEM3365**
iEM3375	advanced multi-tariff kWh meter & electrical parameter with RS485 LON	**A9MEM3375**

Note: Class 1 accuracy

A9MEM3455

iEM3400 kWh meters - 3 phase digital (using 0.333V - 1.0V low voltage CTs)

Model	Description	Reference
iEM3455	kWh meter & electrical parameters with pulse output and RS485 Modbus	**A9MEM3455**
iEM3465	kWh meter & electrical parameters with pulse output and RS485 BACnet	**A9MEM3465**

Note: Class 0.5s accuracy
Refer to page E9 for the low voltage CTs

iEM3500 kWh meters - 3 phase digital (using Rogowski coils)

Model	Description	Reference
iEM3555	kWh meter & electrical parameters with pulse output and RS485 Modbus	**A9MEM3555**
iEM3565	kWh meter & electrical parameters with pulse output and RS485 BACnet	**A9MEM3565**

Note: Class 0.5s accuracy

METSECTR25500

Rope-style current transformers for iEM3500 kWh meters

Current range (A)	CT core length (mm)	Diameter when closed (mm)	Reference
50 to 5000	250	80	**METSECTR25500**
	300	96	**METSECTR30500**
	460	146	**METSECTR46500**
	600	191	**METSECTR60500**
	900	287	**METSECTR90500**

EcoStruxure Power Commission (EPC) software

- Simplify commissioning and maintenance
- Set up and test switchboards equipped with smart devices
- Reduce commissioning time
- Speed up FAT and SAT delivery
- Improve preventive maintenance with protection settings/checking, warnings and alarms, trip history, and maintenance reports

Wireless energy sensors

New

A9MEM1560 A9MEM1580

A9MEM1540

A9MEM1563

A9MEM1592

LV434020

A9XMWRD

PowerTag - load metering and monitoring

Functions

Combined with an ethernet enabled concentrator by radio-frequency communication, PowerTag sensors measure the following quantities in accordance with the IEC 61557-12 standard.

- Cumulative active energy (class 1), total and partial (kWh) delivered and received.
- RMS Values;
  - phase-to-neutral and phase-to-phase voltages (V).
  - currents per phase (A).
  - total active power and active power per phase (W).
  - power factor

PowerTag Flex

Description	Reference
1P+N Top or bottom 63A	**A9MEM1560**
3P+N Top or bottom 63A	**A9MEM1570**
3P / 3P+N Top or bottom 160A	**A9MEM1580**

PowerTag Monoconnect

Description		Reference
1P	Top and bottom	**A9MEM1520**
1P+N	Top	**A9MEM1521**
	Bottom	**A9MEM1522**
3P	Top and bottom	**A9MEM1540**
3P+N	Top	**A9MEM1541**
	Bottom	**A9MEM1542**

PowerTag PhaseNeutral

Description	Reference
1P+N Top	**A9MEM1561**
1P+N Bottom	**A9MEM1562**
1P+N RCBO Bottom	**A9MEM1563**

A9MEM1561 and A9MEM1562 designed to fit Slimline RCBO.

A9MEM1563 designed to fit RCBO

PowerTag Flex

Description	Reference
	3P/4P
PowerTag Energy R200 3P/3PN 200A	**A9MEM1590**
PowerTag Energy R600 3P/3PN 600A	**A9MEM1591**
PowerTag Energy R1000 3P/3PN 1000A	**A9MEM1592**
PowerTag Energy R2000 3P/3PN 2000A	**A9MEM1593**

PowerTag for NSX

Description	Reference	Reference
	3P	**4P**
PowerTag NSX250	**LV434020**	**LV434021**
PowerTag NSX630	**LV434022**	**LV434023**

Wireless to ethernet concentrator

Description	Reference
Acti 9 PowerTag Link, DIN mount, 20 devices	**A9XMWD20**
Acti 9 PowerTag Link HD, DIN mount, 100 devices	**A9XMWD100**
Acti 9 Smartlink Si B Ethernet & PowerTag Concentrator, 20 devices	**A9XMZA08**
Acti 9 PowerTag Link Display, DIN mount, 20 devices	**A9XMWRD**

Commission quickly

With EcoStruxure Power Commission (EPC) software, you can integrate smart devices, commission connected switchboards, and generate comprehensive reports as part of factory and site acceptance tests.

Power meters

METSEPM3200

PM3200 power meters (Class 0.5s)

Model	Description	Reference
PM3200	Power meter – basic	**METSEPM3200**
PM3210	Power meter with pulse output	**METSEPM3210**
PM3250	Power meter with RS485 modbus	**METSEPM3250**
PM3255	Power meter with 2 digital inputs, 2 digital outputs, RS485 modbus, memory for load profile	**METSEPM3255**

METSEPM2110

New

PM2000 series power meters (Class 1 and 0.5)

Model	Description	Reference
PM2110	Power meter	**METSEPM2110**
PM2120	Power meter - RS485 Modbus, Class 1	**METSEPM2120**
PM2130	Power meter - RS485 Modbus, Class 0.5	**METSEPM2130**

METSEPM5100

New

New

PM5000 series power meters (class 0.5s and 0.2s)

Model	Description	Reference
PM5100	Power meter – pulse output	**METSEPM5100**
PM5110	Power meter – pulse output, RS485 modbus	**METSEPM5110**
PM5310	Power meter – RS485 modbus, energy logging, 2 digital input, 2 digital output	**METSEPM5310**
PM5320	Power meter – Ethernet port, energy logging, 2 digital input, 2 digital output	**METSEPM5320**
PM5330	Power meter – RS485 modbus, energy logging, 2 digital input, 2 digital output, 2 relay outputs	**METSEPM5330**
PM5340	Power meter – Ethernet port, energy logging, 2 digital input, 2 digital output, 2 relay outputs	**METSEPM5340**
PM5560	Power meter – RS485 modbus, 2 Ethernet ports, data logging, 4 digital input, 2 digital output, 4th CT input for neutral/ground measurement, internal web server	**METSEPM5560**
PM5580	Power meter – RS485 modbus, 2 Ethernet ports, data logging, 4 digital input, 2 digital output, 4th CT input for neutral/ground measurement, internal web server, DNP3.0 over Ethernet, 24VDC control power	**METSEPM5580**
PM5650	Power meter – RS485 modbus, 2 Ethernet ports, data logging, 4 digital input, 2 digital output, 4th CT input for neutral/ground measurement, internal web server, DNP3.0 over Ethernet, Waveform Capture, Sag/Swell	**METSEPM5650**

Note: PM5560, PM5580 and PM5650 are Class 0.2s, the rest are Class 0.5s (active energy conforming to IEC 62053-22)

METSEPM5350

PM5350 power meter (Class 0.5s)

Model	Description	Reference
PM5350	Power meter with RS485 modbus 4 digital inputs and 2 digital outputs	**METSEPM5350**

METSEPM8240

PM8000 power meters (Class 0.2s)

Description	Reference
PM8000 advance power meter with integrated display	**METSEPM8240**
PM8000 advance power meter, DIN rail mount (no display)	**METSEPM8243**
PM8000 advance power meter, DIN rail mount (with remote display)	**METSEPM8244**
Remote display with 3m cable and mounting hardware	**METSEPM89RD96**
Digital I/O module (6 digital inputs & 2 relay outputs)	**METSEPM89M2600**
Analog I/O module (4 analog inputs & 2 analogxoutputs)	**METSEPM89M0024**

Note: Built-in ION Technology frameworks which allow customisable applications

Power meters

PM53xxR Quick Click power meters

Tool-less, plug and play LVCT connected meters that save up to 75% on installation time!

METSEPM5310R

"Quick Click" Power meter

Model	Description	Reference
PM5310R	Power meter - RS485 modbus, energy logging, 2 digital inputs, 2 digital outputs, RJ45 connection to the LVCT	**METSEPM5310R**
PM5310R	Power meter - Ethernet port, energy logging, 2 digital inputs, 2 digital outputs, RJ45 connection to the LVCT	**METSEPM5320R**

Note: Class 0.5 accuracy

METSECTV35006

"Quick Click" Low voltage current transformer (LVCT)

3-in-1 solid core LVCT, 0.3V output with RJ45 connection port

Current rating (A)	Phase to phase center line spacing	Cable entry dimensions	Reference
60	25mm	15 x 30 mm (aperture)	**METSECTV25006**
100			**METSECTV25010**
125			**METSECTV25013**
160			**METSECTV25016**
60	29mm	16 x 20 mm	**METSECTV29006**
100			**METSECTV29010**
120			**METSECTV29012**
125			**METSECTV29013**
150			**METSECTV29015**
160			**METSECTV29016**
200			**METSECTV29020**
60	35mm	21 x 25 mm	**METSECTV35006**
100			**METSECTV35010**
120			**METSECTV35012**
125			**METSECTV35013**
150			**METSECTV35015**
160			**METSECTV35016**
200			**METSECTV35020**
250			**METSECTV35025**
250	45mm	31 x 31 mm	**METSECTV45025**
300			**METSECTV45030**
400			**METSECTV45040**
500			**METSECTV45050**
600			**METSECTV45060**
630			**METSECTV45063**
800	70mm	50 x 54 mm	**METSECTV70080**
1000			**METSECTV70100**
1250			**METSECTV70125**
1600			**METSECTV70160**

Connection cable (between power meter and LVCT)

Description	Length (m)	Reference
Category 5e cable, Patch cord, UTP, RJ45	0.5	**DCEPCURJX5GYM**
	1	**DCEPCURJ01GYM**
	2	**DCEPCURJ02GYM**
	3	**DCEPCURJ03GYM**
	5	**DCEPCURJ05GYM**
	10	**DCEPCURJ10GYM**

Branch circuit power monitoring

BCPMA084S

Branch circuit power monitoring (solid core)

100A solid core CT's for single phase circuits

Model	No. of single phase circuits	Measurements (single phase circuits)	No. of three phase circuits	*Measurements	Reference
BCPMC	42	I + $I_{Neutral}$	1	I + $I_{Neutral}$	**BCPMC042S**
	84	I + $I_{Neutral}$	2	I + $I_{Neutral}$	**BCPMC084S**
BCPMB*	42	I + $I_{Neutral}$	1	I + $I_{Neutral}$ + P + E + pf + f	**BCPMB042S**
	84	I + $I_{Neutral}$	2	I + $I_{Neutral}$ + P + E + pf + f	**BCPMB084S**
BCPMA*	42	I + $I_{Neutral}$ + P + E + pf	1	I + $I_{Neutral}$ + P + E + pf + f	**BCPMA042S**
	84	I + $I_{Neutral}$ + P + E + pf	2	I + $I_{Neutral}$ + P + E + pf + f	**BCPMA084S**

BCPMSCA84S

Branch circuit power monitoring (split-core)

50A split-core CT's for single phase circuits

Model	Number single phase circuits	Measurements (single phase circuits)	No. of three phase circuits	Measurements (three phase circuits)	Reference
BCPMSCC	30	I	1	I	**BCPMSCC30S**
	42	I	1	I	**BCPMSCC42S**
	60	I	2	I	**BCPMSCC60S**
	84	I	2	I	**BCPMSCC84S**
BCPMSCB	30	I	1	I + P + E + pf	**BCPMSCB30S**
	42	I	1	I + P + E + pf	**BCPMSCB42S**
	60	I	2	I + P + E + pf	**BCPMSCB60S**
	84	I	2	I + P + E + pf	**BCPMSCB84S**
BCPMSCA	30	I + P + E + pf	1	I + P + E + pf	**BCPMSCA30S**
	42	I + P + E + pf	1	I + P + E + pf	**BCPMSCA42S**
	60	I + P + E + pf	2	I + P + E + pf	**BCPMSCA60S**
	84	I + P + E + pf	2	I + P + E + pf	**BCPMSCA84S**

Note

*To obtain three phase measurements split-core low voltage current transformers must be used on incoming phases. Communication - Modbus RS485.

Low voltage current transformers

LVCT00202S

Model	Description	Accuracy (10-100%)	Current	Outside dimensions (mm)	Inside dimensions (mm)	*Reference
LVCT	0.3V output, split core	1%	0 - 100A	121 x 100	31 x 30	**LVCT00102S**
LVCT	0.3V output, split core	1%	0 - 200A	121 x 100	31 x 30	**LVCT00202S**
LVCT	0.3V output, split core	1%	0 - 300A	121 x 100	31 x 30	**LVCT00302S**
LVCT	0.3V output, split core	1%	0 - 400A	151 x 132	62 x 73	**LVCT00403S**
LVCT	0.3V output, split core	1%	0 - 600A	151 x 132	62 x 73	**LVCT00603S**
LVCT	0.3V output, split core	1%	0 - 800A	151 x 132	62 x 73	**LVCT00803S**
LVCT	0.3V output, split core	1%	0 - 800A	151 x 201	63 x 139	**LVCT00804S**
LVCT	0.3V output, split core	1%	0 - 1000A	151 x 201	63 x 139	**LVCT01004S**
LVCT	0.3V output, split core	1%	0 - 1200A	151 x 201	63 x 139	**LVCT01204S**
LVCT	0.3V output, split core	1%	0 - 1600A	151 x 201	63 x 139	**LVCT01604S**
LVCT	0.3V output, split core	1%	0 - 2000A	151 x 201	63 x 139	**LVCT02004S**
LVCT	0.3V output, split core	1%	0 - 2400A	151 x 201	63 x 139	**LVCT02404S**

Note

* For use ONLY with BCPM, EM4800, iEM3400

ION meters

19 Inch rack

- Symmetrical Components
- Flicker
- EN50160 Compliance Monitoring
- IEC61000-4-30 Class A
- GPS Synchronisation
- IRIG-B Port
- LCD Display
- Compact Draw-Out Configuration
- Transducer Version
- Real Time Metering
- Four Quadrant Energy Readings
- Revenue Class 0.2%, Accuracy
- Time Of Use/Interval Metering
- Harmonics, Individual, Total
- Sag/Swell Monitoring
- Transient Detection
- Waveform Capture
- Data Logging/Recording
- Memory Capacity: 5 or 10 MegaBytes
- Date/Time Stamping
- Alarms, Set-Points and Control
- Maths, Logic, Other Equations
- I/O Capabilities
- Analogue Inputs/Outputs
- Status Inputs
- Pulse/KYZ Outputs
- Transformer Line/Loss Compensation
- Multiple Communication Ports
- Ethernet, Serial, Modem, Optical
- Multiple Protocols
- Modbus, DNP3, MV-90
- Web Access Direct From Meter
- Email Alert Capabilities
- Alarm Call-outs
- Outage Dial-Outs/Notification
- DC Power Supply Options
- Interface with Third Party Devices (WAGES)
- Patented disturbance direction detection

Switchboard case

Socket style

DIN size
192mm x 192mm

DIN size
96mm x 96mm

- LCD Display
- Real Time Metering
- Transducer version
- Four Quadrant Energy Readings
- Revenue Class 0.2%, Accuracy
- Harmonics, Individual, Total
- Sag/Swell Monitoring
- Waveform Capture
- Data Logging/Recording
- Date/Time Stamping
- Alarms, Set-Points and Control
- Maths, Logic, Other Equations
- I/O Capabilities
- Ethernet, Serial, Modem, Optic
- Modbus, DNP3, MV-90
- Modbus Master
- Web Access Direct From Meter
- Email Alert Capabilities
- Alarm Call-Outs
- DC Power Supply Options
- Interface with Third Party Devices (WAGES)
- Patented disturbance direction detection

Ethernet gateways
Energy server

EGX150

Link150 Modbus/Ethernet gateway

Description	Reference
Modbus/Ethernet gateway	**EGX150**
RJ45 cable with one end open (3m)	**VW3A8306D30**

EBX510

Com'X 510 Energy server

Description	Reference
Com'X 510 Energy server	**EBX510**
Zigbee USB Key	**EBXA-USB-ZIGBEE**

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).

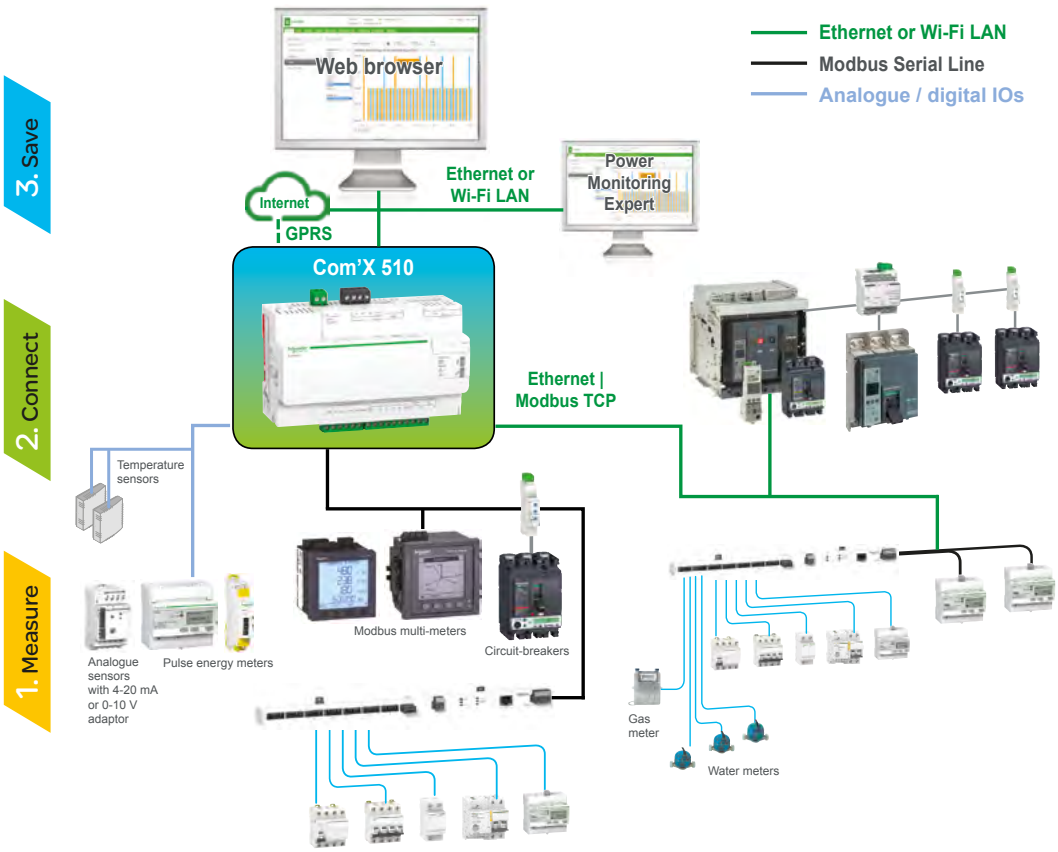
These web pages display real-time data as it is collected, in easy to understand tabular and summary formats. In addition, users can get simple analysis of historical data in bar graph or trending formats.

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.

Architecture



Product selection guide

E

		Multi Circuit & Wireless Meters	Energy meters					Basic multi-function power meters		
		BCPM	iEM2000 iEM2010	iEM2110 iEM2150	iEM3100 iEM3200 iEM3300	iEM3400 iEM3500	PowerTag (Acti 9) (NSX)	PM3200	PM3210 PM3250	PM3255
General selection criteria										
Installation		Inside panel		DIN rail			Direct		DIN rail	
Use on LV distribution systems		■	■	■	■	■	■	■	■	■
Use on LV and HV distribution systems		–	–	–	–	–	-	–	–	–
Current/voltage accuracy		1%	–	–	1%	1%	"I=0.5% V=1%"		0.3%	
Power/active energy accuracy		1%	–	–	1% / 0.5%	0.5%	1%		0.5%	
Instantaneous rms values										
Current	■ Phases	■	–	■	■	■	■	■	■	■
	■ Neutral	■	–	–	–	–	■ (2)	■	■	■
Voltage		■	–	■	■	■	■	■	■	■
Frequency		■	–	■	■	■	■ (1)	■	■	■
Total power	■ Active	■	–	■	■	■	■	■	■	■
	■ Reactive	–	–	■	iEM3x55	iEM3x55	■ (1)	■	■	■
	■ Apparent	–	–	–	–	–	–	■	■	■
Power per phase	■ Active	■	–	–	–	–	■	■	■	■
	■ Reactive	■	–	–	–	–	■ (1)	■	■	■
	■ Apparent	■	–	–	–	–	–	■	■	■
Power factor	■ Total	■	–	■	■	■	■	■	■	■
	■ Per phase	■	–	–	–	–	–	■	■	■
Energy values										
Active energy		■	■	■	■	■	■	■	■	■
Reactive energy		–	–	■	iEM3x55	iEM3x55	■ (1)	■	■	■
Apparent energy		–	–	–	–	–	–	■	■	■
User-set accumulation mode		–	–	–	–	–	–	–	–	–
Demand values										
Current	Present and maximum values	■	–	–	–	–	–	■ (present)	■	■
Total active power	Present and maximum values	■	–	–	–	–	–	■ (present)	■	■
Total reactive power	Present and maximum values	–	–	–	–	–	–	■ (present)	■	■
Total apparent power	Present and maximum values	–	–	–	–	–	–	■ (present)	■	■
Total predicted demand	kW, kVAR, kVA	–	–	–	–	–	–	–	–	–
Synchronisation of calculation window		–	–	–	–	–	–	–	–	–
User-set calculation mode		–	–	–	–	–	–	■	■	■

Note

(1) For 2 and 4 pole devices only.

(2) Available depending on concentrator and PowerTag model.

Product selection guide

	Basic multi-function power meters					Advance power meters	Micrologic trip units				
							Compact NSX				
	PM5350	PM5100 PM5110	PM5310 PM5320 PM5310R PM5320R	PM5330 PM5340	PM5560 PM5580 PM5650	PM8000	E	E	P	H	MTZ
	Panel mount		Panel mount			Panel mount		Integrated into the circuit breaker			
	■	■	■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	–	–	–	–	–
	0.3%		0.5%		I = 0.15% V = 0.1%	I = 0.1% V = 0.1%	I = 1% V = 0.5%		1.5%		0.5%
	0.5%		0.5%		0.2%	0.2%	2%		2%		1%
	■	■	■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	■	–	■	■	■
	■	■	■	■	■	■	■	■	■	■	■ (1)
	■	■	■	■	■	■	■	■	■	■	■ (1)
	■	■	■	■	■	■	■	■	■	■	■ (1)
	■	■	■	■	■	■	■	■	■	■	■ (1)
	■	■	■	■	■	■	■	■	■	■	■ (1)
	■	■	■	■	■	■	■	■	■	■	■ (1)
	■	■	■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	■	■	■	■	■ (1)
	■	■	■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	■	■	■	■	■
	–	–	–	–	–	■	■	–	■	■	■
	■	■	■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	■	■	■	■	■
	–	–	–	–	–	■	–	■	■	■	■
	■	–	–	–	–	■	■	■	■	■	■
	■	■	■	■	■	■	■	–	■	■	■

Note
(1) Requires Digital Module.

Product selection guide

E

		Multi Circuit & Wireless Meters	Energy meters					Basic multi-function power meters		
		BCPM	iEM2000 iEM2010	iEM2110 iEM2150	iEM3100 iEM3200 iEM3300	iEM3400 iEM3500	PowerTag (Acti 9) (NSX)	PM3200	PM3210 PM3250	PM3255
Other measurements										
Hour counter		–	–	–	■ (iEM3x55)	iEM3x55	■	–	–	■
Power quality measurements										
Total Harmonic Distortion	Voltage	–	–	–	–	–	–	–	■	■
	Current	–	–	–	–	–	–	–	■	■
Individual harmonic content (current and voltage)		–	–	–	–	–	–	–	–	–
Waveform capture		–	–	–	–	–	–	–	–	–
Detection of voltage sags and swells		–	–	–	–	–	–	–	–	–
EN50160 compliance checking		–	–	–	–	–	–	–	–	–
True rms measurement	Maximum harmonic number	–	–	–	15th	15th	–		15th	
Sampling rate	Points per cycle	–	–	–	–	–	–		32	
Data recording										
Min/max of instantaneous values		–	–	–	–	–	–	■	■	■
Data logging		–	–	–	–	–	–	–	–	■
Event logging		–	–	–	–	–	–	–	■	■
Trend curves		–	–	–	–	–	–	–	–	–
Alarms		■	–	–	–	–	■	–	■	■
Date and time stamping		–	–	–	–	–	■	–	■	■
Storage capacity		–	–	–	–	–	–	–	–	64kB
Display, sensors, input/outputs										
Front-panel display		–	■	■	■	■	–	■	■	■
Built-in current and voltage sensors		–	40A	63A	63A (iEM31xx) 125A (iEM33xx)	–	■ (1)	–	–	–
Digital or analogue inputs (max. no.)		–	–	–	2 (iEM3x15) 1 (iEM3x55)	1	–	–	–	2
Pulse output		–	1 (iEM2010)	1 (iEM2110)	1 (iEM3x10)	–	–	–	1 (PM3210)	–
Digital or analogue outputs (max. no. including pulse outputs)		–	1	1	–	1	–	–	–	2
Direct voltage connections without external VT L - L		277V L-N 480V L-L	230V	230V	277V L-N 480V L-L	277V L-N 480V L-L	■		277V L-N 480V L-L	
Power supply										
AC/DC version	AC	90 to 277V	230V	230V	100 to 277V	44 to 277V	–		20 to 277V	
	DC	–	–	–	–	44 to 277V	–		100 to 300V	
Communication										
RS485 port			–	–	–	■	–	–	■ (PM3250)	■
RS232 port		–	–	–	–	–	–	–	–	–
Modbus protocol		■	–	–	■ (iEM3x50)	■	–	–	■ (PM3250)	■
Ethernet port (Modbus/TCP/IP Protocol)		–	–	–	–	–	■ (2)	–	–	–
Embedded web pages		–	–	–	–	–	■ (2)	–	–	–
Ethernet gateway for other products on an RS485 link		–	–	–	–	–	–	–	–	–
Zigbee		–	–	–	–	–	■	–	–	–

Notes

(1) For 2 and 4 pole devices only. (2) Available on concentrator.

Product selection guide

	Basic multi-function power meters					Advance power meters	Micrologic trip units				
							Compact NSX				
	PM5350	PM5100 PM5110	PM5310 PM5320 PM5310R PM5320R	PM5330 PM5340	PM5560 PM5580 PM5650	PM8000	E	E	P	H	MTZ
	■	■	■	■	■	■	■	–	–	–	–
	■	■	■	■	■	■	■	–	–	■	■
	■	■	■	■	■	■	■	–	–	■	■
	–	15th	31st		63rd	63rd	–	–	–	■	■ 40th
	–	–	–	–	■ (PM5650)	■	–	–	–	■	■ (1)
	–	–	–	–	■ (PM5650)	■	–	–	–	–	–
	–	–	–	–	–	■	–	–	–	–	–
	15th	■	■	■	■	63rd	15th	15th	31st		■
	32		64		128	256	39	39	64		■
	■	■	■	■	■	■	■	■	■	■	■
	–	–	■	■	■	■	■	–	–	–	–
	–	–	■	■	■	■	■	■	■	■	■
	–	–	–	–	–	■	–	–	–	–	–
	■	■	■	■	■	■	■	–	■	■	■
	■	■	■	■	■	■	■	–	■	■	■
	–	–	256kB		1.1MB	512MB	–	–	–	–	–
	■	■	■	■	■	■	■	■	■	■	■
	–	–	–	–	–	–	■	■	■	■	■
	4	–	2		4	27DI/16AI	–	–	–	–	–
	–	1	–	–	–	1	–	–	–	–	–
	2	1	2		2	1DO/8RO/8AO	2		6		
	400V L-N 690V L-L			400V L-N 690V L-L		57 to 400V L-N 100 to 690V L-L	690V		690V		
	85-265V		100 to 277V		100 to 480V (PM5660, PM5650)	90 to 415V	–	–	–	–	
	100-300V		125 to 250V		125 to 250V (PM5660, PM5650) 24V (PM5580)	120 to 300V	–	–	–	–	
	■	■ (PM5110)	■	■ (PM5330)	■	■	–		Optional		–
	–	–	–	–	–	–	–	–	–	–	–
	■	■	■	■	■	■	■	■	■	■	■
	–	–	■ (PM5320)	■ (PM5340)	■	2	–	–	–	–	■
	–	–	–	–	■	■	–	–	–	–	–
	–	–	–	–	■	■	–	–	–	–	–

Notes
(1) Requires Digital Module.
(2) BCM module included in breaker, LV434000 ULP module required for modbus connection.
(3) Can be achieved with an eIFE or IFE module.

Earth leakage relays

Vigirex protection and monitoring

Vigirex earth leakage protection relays (DIN rail mount)

Type	Power supply	Settings	Reference
RH99M	12 to 24VAC – 12 to 48VDC	30mA to 30A – Inst to 4.5s	**56170**
	110 to 130VAC	30mA to 30A – Inst to 4.5s	**56172**
	220 to 240VAC	30mA to 30A – Inst to 4.5s	**56173**
	380 to 415 VAC	30mA to 30A – Inst to 4.5s	**56174**

E

Vigirex earth leakage protection relays (front panel mount)

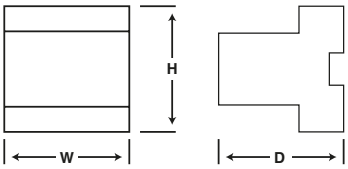
Type	Power supply	Settings	Reference
RH99P	12 to 24VAC – 12 to 48VDC	30mA to 30A – Inst to 4.5s	**56270**
	110 to 130VAC	30mA to 30A – Inst to 4.5s	**56272**
	220 to 240VAC	30mA to 30A – Inst to 4.5s	**56273**
	380 to 415 VAC	30mA to 30A – Inst to 4.5s	**56274**

504●●

Vigirex sensors (toroidal and rectangular)

Type	Description	Dimension Ø	Reference
Closed toroid, A-type	PA50	50mm	**50438**
	IA80	80mm	**50439**
	MA120	120mm	**50440**
	SA200	200mm	**50441**
	GA300	300mm	**50442**

Dimensions



Product	H (mm)	W (mm)	D (mm)
DIN rail mount	81	54	74
Front panel mount	72	72	78

Capacitors

VarPlus Can capacitors are specially designed and engineered to deliver a long working life with low losses for heavy-duty conditions.

Constructed internally with three single-phase capacitor elements. Each capacitor element is manufactured with metallized polypropylene film as the dielectric, having features such as heavy edge, slope metallization and wave-cut profile to ensure increased current handling capacity and reduced temperature rise.

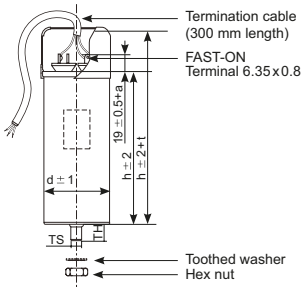
The unique finger-proof CLAMPTITE termination is fully integrated with discharge resistors, allowing suitable access for tightening and ensuring cable termination without any loose connections.

VarPlus Can heavy duty (525V rated voltage)

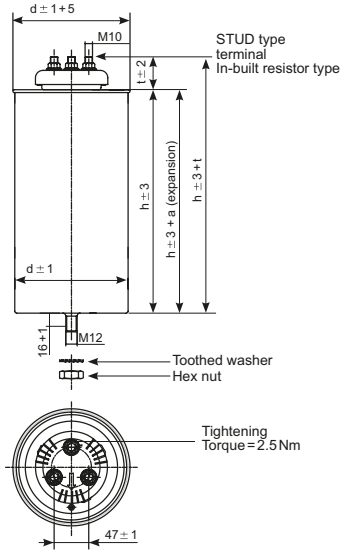
kVAr rating @ 415V	Case code	Reference
5.0	HC	**BLRCH080A096B52**
6.6	MC	**BLRCH106A127B52**
10.7	RC	**BLRCH172A206B52**
12.5	TC	**BLRCH200A240B52**
15.6	TC	**BLRCH250A300B52**
25.0	XC	**BLRCH400A480B52**

Dimensions (in mm)

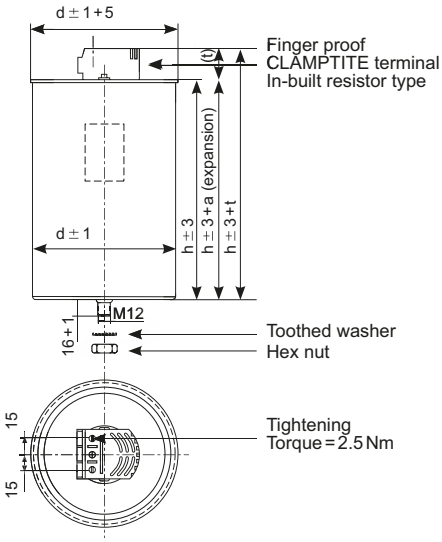
Case code	d	h	h + t
HC	63	195	245
MC	75	203	233
RC	90	212	242
TC	116	212	242
XC	116	278	321



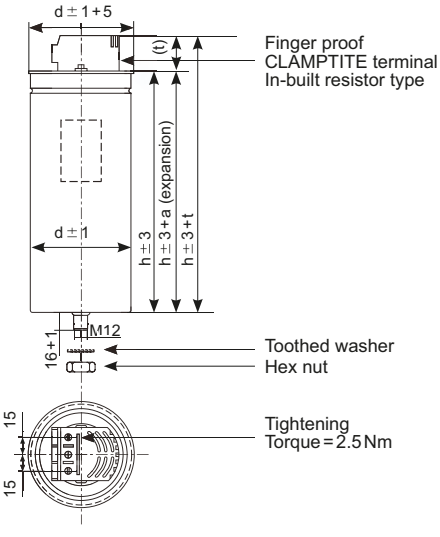
VarPlus Can HC
VarPlus Can HC



VarPlus Can XC



VarPlus Can TC



VarPlus Can MC and RC

Detuned reactors
Contactors for capacitor switching

Detuned reactors

The detuned reactors are designed to protect the capacitors by preventing amplification of the harmonics present on the network.

Description	Reference
6.25 kVAr / 400 V - 50 Hz	**LVR07065A40T**
12.5 kVAr / 400 V - 50 Hz	**LVR07125A40T**
25.0 kVAr / 400 V - 50 Hz	**LVR07250A40T**
50.0 kVAr / 400 V - 50 Hz	**LVR07500A40T**

Note: Tuning order 3.8 (190Hz)

Dimensions (in mm)

Description	H	W	D
6.25 kVAr / 400 V - 50 Hz	220	240	140
12.5 kVAr / 400 V - 50 Hz	220	240	140
25.0 kVAr / 400 V - 50 Hz	220	240	140
50.0 kVAr / 400 V - 50 Hz	270	260	160

LC1DLK●●

Capacitor switching contactors IEC 60831-1 compliance

Mounting Equivalent Contactor	Pole tightening torque (N.m)	kVAR at 415V 40°C	Auxiliary contact fitted as standard N/O	N/C	Reference
LC1D12	1.2	11	1	1	**LC1DFK●●**
LC1D18	1.7	15	1	1	**LC1DGK●●**
LC1D25	1.85	20	1	1	**LC1DLK●●**
LC1D32	2.5	25	1	1	**LC1DMK●●**
LC1D40	5	30	1	2	**LC1DPK●●**
LC1D50	5	40	1	2	**LC1DTK●●**
LC1D80	9	60	1	2	**LC1DWK12●●**
Standard coil voltages					
Volts AC	24	110	240	415	
50/60Hz	B7	F7	U7	N7	

PFC controllers
Combination guide

VarPlus Logic range

Type	Number of step output contacts	Supply voltage (V)	Reference
VL6	6	90-550	**VPL06N**
VL12	12	90-550	**VPL12N**

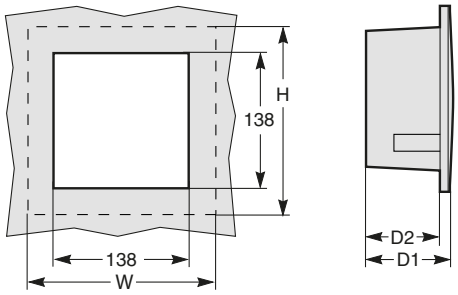
VarLogic RT range

Type	Number of step output contacts	Supply voltage (V)	Reference
RT6	6	320-470	**51207**
RT8	8	320-470	**51209**
RT12	12	320-470	**51213**

E

Dimensions

	H (mm)	W (mm)	D1 (mm)	D2 (mm)	Weight (kg)
VL6 / 12	144	144	59	47	0.6
RT6 / 8 / 12	143	143	67	57	1



Combination guide

VarPlus Can + Detuned Reactor + Contactor

Effective power (kVar)	Capacitor Qty	Capacitor Reference	Detuned reactor Qty	Detuned reactor Reference	Contactor Qty	Contactor Reference
6.5	1	**BLRCH106A127B52**	1	**LVR07065A40T**	1	**LC1DFKU7**
12.5	1	**BLRCH200A240B52**	1	**LVR07125A40T**	1	**LC1DGKU7**
25.0	1	**BLRCH400A480B52**	1	**LVR07250A40T**	1	**LC1DMKU7**
50.0	2	**BLRCH400A480B52**	1	**LVR07500A40T**	1	**LC1DWK12U7**

Protection options

NSX circuit breakers

kVar rating	Frame	Reference	Trip unit	Reference
6.5	NSX100F	**LV429003**	TM16D	**LV429037**
12.5	NSX100F	**LV429003**	TM25D	**LV429036**
25.0	NSX100F	**LV429003**	TM50D	**LV429033**
50.0	NSX100F	**LV429003**	TM100D	**LV429030**

VarPact PFC modules

VarPact with detuned reactors

For highly polluted network (25% < Gh/Sn ≤ 50%)

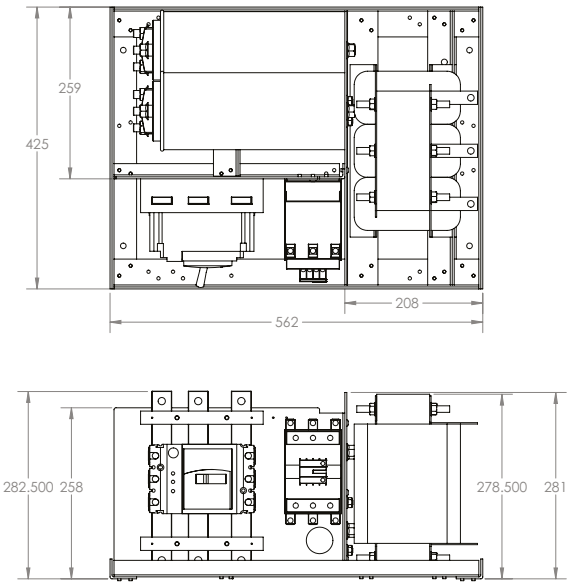
Tuning order	Description	Reference
3.8 (190Hz)	12.5kVAr module with circuit breaker protection and detuned reactor	**V12C52CR**
	25kVAr module with circuit breaker protection and detuned reactor	**V25C52CR**
	50kVAr module with circuit breaker protection and detuned reactor	**V50C52CR**

Accessories

Description	Reference
Busbar links (set of 3)	**FISHPLATES_VARP**
Mounting rails*	**MPLTVARSET**

* Requires 2 units per VarPact module.

Dimensions



VarPact with detuned reactors

Floor-standing automatic PFC unit

VarSet capacitor banks are engineered to provide the features and capabilities you need. Choose from a full range of capacitor banks that combine high-performance with easy ordering and reliable delivery. Each VarSet solution is built by utilising the available options to fulfil your requirement.

- suitable for large commercial buildings, industrial sites and utilities with diverse power factor correction needs
- customisable with a wide range of optional capabilities and features tailored to your specific requirements
- suitable heavy duty capacitors for any harmonic level and type of loads
- automatic compensation for variable and unstable loads up to 250kVAr (up to 500kVAr for a 2-tier solution)

VarSet floor standing unit selection guide

VarSet	kVar @ 415V	12.5kVar steps	25kVar steps	50kVar steps	Reactors	Step protection	Incomer
VS	100	A00: 0 step	B00: 0 step	C00: 0 step	R: w/ detuned reactor	C: Circuit breaker	C: Circuit breaker
	125	A01: 1 step	B01: 1 step	C01: 1 step			
	150	A02: 2 steps	B02: 2 steps	C02: 2 steps			D: Switch disconect
	175		B03: 3 steps	C03: 3 steps			
	200		B04: 4 steps	C04: 4 steps			N: None
	225			C05: 5 steps			
	250			C06: 6 steps			
	275			C07: 7 steps			
	300			C08: 8 steps			
	325			C09: 9 steps			
	350			C10: 10 steps			
	375						
	400						
	425						
	450						
	475						
	500						

Example product reference:	VS125A02B02C01RCN						
VS	125	A02	B02	C01	R	C	N

Notes
Maximum effective power per Prisma cubicle is 250 kVar (500 kVar for 2-cubicle solutions).
Maximum of 5 physical steps per cubicle (10 for 2-cubicle solutions).

Wall-mounted automatic PFC unit

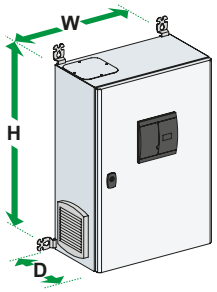
VarSet wall mounted (no detuned reactors)

Description	kVar	Reference
VarSet wall-mounted automatic power factor correction unit with incomer circuit breaker protection	50	**VLVAW1N03506AA**
	69	**VLVAW1N03529AA**
	75	**VLVAW1N03507AA**
	87.5	**VLVAW1N03530AA**
	100	**VLVAW1N03508AA**

VarSet wall-mounted (with detuned reactors)

Description	kVar	Reference
VarSet wall-mounted automatic power factor correction unit with detuned reactors and incomer circuit breaker protection	25	**VS025WA00B00C02TCC**
	37.5	**VS037WA00B01C01TCC**
	50	**VS050WA00B01C02TCC**
	75	**VS075WA01B01C00TCC**
	87.7	**VS087WA01B01C01TCC**
	100	**VS100WA01B02C00TCC**

Dimensions



VarSet wall-mounted (no detuned reactors)

kVar	Physical steps	Electrical steps	Dimensions (HxWxD mm)
50	6.25, 6.25, 12.5, 25	8 x 6.25	700 x 600 x 300 (all models)
69	6.25, 12.5, 25, 25	11 x 6.25	
75	25, 25, 25	3 x 25	
87.5	12.5, 25, 25, 25	7 x 12.5	
100	25, 25, 25, 25	4 x 25	

VarSet wall-mounted (with detuned reactors)

kVar	Physical steps	Electrical steps	Dimensions (HxWxD mm)
25	12.5, 12.5	12.5, 12.5	800 x 600 x 400
37.5	12.5, 25	12.5, 25, 37.5	1000 x 600 x 400
50	12.5, 12.5, 25	12.5, 25, 37.5, 50	1200 x 800 x 400
75	25, 50	25, 50, 75	
87.7	12.5, 25, 50	12.5, 25, 37.5, 50, 62.5, 75, 87.5	
100	25, 25, 50	25, 50, 75, 100	

Prisma Plus

VarSet floor-standing (all models)

kVar	Physical steps	Electrical steps	Dimensions (HxWxD mm)
100 to 250	Will vary depending on step selection (refer to page E25)		2200 x 700 x 655
250 to 500			2200 x 1400 x 655

AccuSine PFV+

AccuSine PFV+ power factor correction & load balancing (380 to 480V)

- 60A, 120A, 200A and 300A models
- Wall mount: IP00, IP20 (using wall-mount conversion kit)
- Floor-standing: IP31, IP54
- CE certified
- 1/4 cycle to inject correction
- Proprietary CAN+ communication bus (master-slave configuration)
- Provides make-up capacity
- Modbus RTU, Modbus TCP/IP
- Full-color Human Machine Interface
- Current transformers:
  - Primary – any Amps
  - Secondary – 1 or 5 Amps
  - Frequency – 50/60Hz or 400Hz

Rated current	Description	Frame size	Reference
60A	AccuSine PFV+ 60A 380-480V IP00	1	**EVCP060D5IP00**
	AccuSine PFV+ 60A 380-480V IP31	2	**EVCP060D5IP31**
	AccuSine PFV+ 60A 380-480V IP54	2	**EVCP060D5IP54**
120A	AccuSine PFV+ 120A 380-480V IP00	3	**EVCP120D5IP00**
	AccuSine PFV+ 120A 380-480V IP31	4	**EVCP120D5IP31**
	AccuSine PFV+ 120A 380-480V IP54	4	**EVCP120D5IP54**
200A	AccuSine PFV+ 200A 380-480V IP00	5	**EVCP200D5IP00**
	AccuSine PFV+ 200A 380-480V IP31	6	**EVCP200D5IP31**
	AccuSine PFV+ 200A 380-480V IP54	6	**EVCP200D5IP54**
300A	AccuSine PFV+ 300A 380-480V IP00	7	**EVCP300D5IP00**
	AccuSine PFV+ 300A 380-480V IP31	8	**EVCP300D5IP31**
	AccuSine PFV+ 300A 380-480V IP54	8	**EVCP300D5IP54**

Wall mount conversion kits

Description	Reference
60A, IP20	**PCSPWMKIT60A**
120A, IP20	**PCSPWMKIT120A**
200A and 300A, IP20	**PCSPWMKIT300A**

Notes

1 Converts IP00 to IP20 wall mounted enclosed assemblies.
2 Includes HMI mounting plate and cable entry enclosure for mounting on the bottom of the IP00 assemblies.

Dimensions

Frame size	Exterior dimensions (mm)		
	H	W	D
1	1300/1530 (1)	421	349
2	2092	800	500
3	1400/1730 (1)	421	384
4	2089	800	500
5	1323/1642 (1)	582	438
6	2089	900	600
7	1560/1882 (1)	582	438
8	2092	900	600

Note

(1) With wall mount conversion kit

Harmonic mitigation

Harmonic Basics and their effects in the electrical system

Harmonics are a growing concern in the management of electrical systems today. Designers are requested to pay more and more attention to energy savings and improved availability of electricity. In this context, the topic of harmonics is often discussed. But there is still a need for more explanation, in order to dissipate confusion and misinterpretation. Power electronic devices have become abundant today due to their capabilities for precise process control and energy savings benefits. However, they also bring drawbacks to electrical distribution systems: harmonics. The presence of harmonics in electrical systems means that current and voltage are distorted and deviate from sinusoidal waveforms.

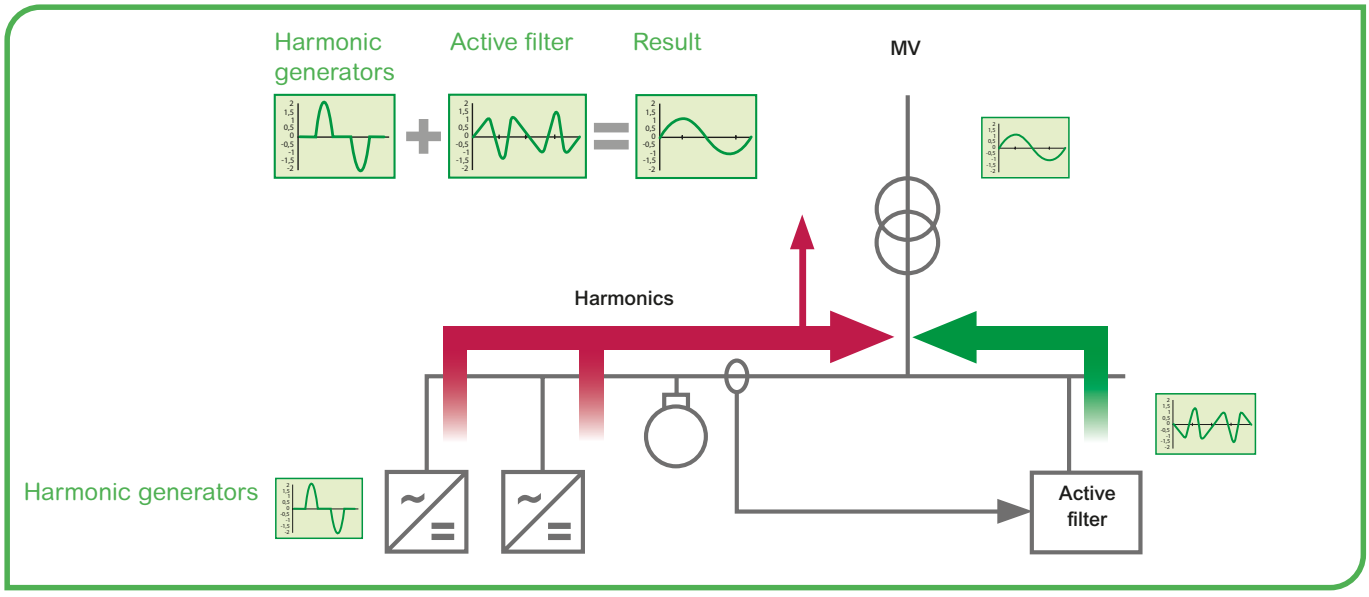
Harmonics: origin, effects and consequences

Harmonic currents are caused by nonlinear loads connected to the distribution system. A load is said to be nonlinear when the current it draws does not have the same wave shape as the supply voltage. The flow of harmonic currents through the system impedances in turn creates voltage distortion which distorts the supply voltage. Equipment consisting of power electronic circuits are typical nonlinear loads. Such loads are increasingly more abundant in all industrial, commercial, and residential installations and their percentage of the total load is growing steadily.

Examples include:

- Industrial equipment (welders, induction furnaces, battery chargers, DC power supplies)
- Variable Speed Drives for AC and DC motors
- Uninterruptible Power Supplies (UPS)
- Office equipment (PCs, printers, servers, displays, etc.)
- Household appliances (TVs, microwave ovens, fluorescent lighting, washing machines and dryers, light dimmers)

Harmonic currents increase the rms current in electrical systems and deteriorate the supply voltage quality. They stress the electrical network and potentially damage equipment. They may disrupt normal operation of devices and increase operating costs. Symptoms of problematic harmonic levels include overheating of transformers, motors and cables, thermal tripping of protective devices, and logic faults of digital devices. In addition, the life span of many devices are reduced by elevated operating temperatures.



AccuSine PCSn

AccuSine PCSn harmonic filters (208 to 415V)

The new AccuSine PCSn series is a scalable and flexible, high performance active harmonic filtering solution that brings reliability and efficiency to your electrical system, resulting in:

- Increased uptime
- Greater operational efficiency
- Prolonged equipment life
- Improved energy efficiency

Applications:

- Active Harmonic Mitigation
- Power Factor Correction
- Mains Load Balancing

Wall-mounted version

Description	Reference
AccuSine PCSn 20A 208-415Vac 3ph+N wall mount IP20	**PCSN020Y4W20**
AccuSine PCSn 30A 208-415Vac 3ph+N wall mount IP20	**PCSN030Y4W20**
AccuSine PCSn 50A 208-415Vac 3ph+N wall mount IP20	**PCSN050Y4W20**
AccuSine PCSn 60A 208-415Vac 3ph+N wall mount IP20	**PCSN060Y4W20**
AccuSine PCSn 60A 208-415Vac 3ph+N wall mount IP20 expansion module	**PCSN060Y4W20E**

Chassis version

Description	Reference
AccuSine PCSn 20A 208-415Vac 3ph+N chassis IP00	**PCSN020Y4CH00**
AccuSine PCSn 30A 208-415Vac 3ph+N chassis IP00	**PCSN030Y4CH00**
AccuSine PCSn 50A 208-415Vac 3ph+N chassis IP00	**PCSN050Y4CH00**
AccuSine PCSn 60A 208-415Vac 3ph+N chassis IP00	**PCSN060Y4CH00**
AccuSine PCSn 60A 208-415Vac 3ph+N chassis IP00 expansion module	**PCSN060Y4CH00E**

Rack-mounted version

Description	Reference
AccuSine PCSn 30A 208-415Vac 3ph+N rack mount 19"	**PCSN030Y4R19**
AccuSine PCSn 60A 208-415Vac 3ph+N rack mount 19"	**PCSN060Y4R19**
AccuSine PCSn 60A 208-415Vac 3ph+N rack mount 19" expansion module	**PCSN060Y4R19E**

Note

(1) Includes mounting rails and 1U spacer with holes for power cables

Racks for rack-mounted version

Description	Reference
NetShelter SX 42U x 600mm Wide x 1070mm Deep with doors	**AR3100**
NetShelter SX 42U x 600mm Wide x 1200mm Deep with doors	**AR3300**
NetShelter SX 1U toolless snap-in blanking panel, 10 pieces per pack	**AR8136BLK**
NetShelter SX 1U standard metal blanking panel, 2 pieces per pack	**AR8108BLK**
NetShelter SX 1U, 2U, 4U, 8U, blanking panel kit	**AR8101BLK**
NetShelter SX stabilization plate	**AR7700**
NetShelter SX bolt-down kit — moderate seismic zones	**AR7701**
NetShelter SX bolt-down kit — high seismic zones	**AR7701-S**

Note

(1) A maximum of six (6) rack-mounted filters can be fitted on a rack

AccuSine PCS+

AccuSine PCS+ harmonic filters (380 to 480V)

- 60A, 120A, 200A and 300A models
- Wall mount: IP00, IP20 (using wall-mount conversion kit)
- Floor-standing: IP31, IP54
- CE certified
- 1/4 cycle to inject correction
- Proprietary CAN+ communication bus (master-slave configuration)
- Provides make-up capacity
- Modbus RTU, Modbus TCP/IP
- Full-color Human Machine Interface
- Current transformers:
  - Primary – any Amps
  - Secondary – 1 or 5 Amps
  - Frequency – 50/60Hz or 400Hz

Rated current	Description	Frame size	Reference
60A	AccuSine PCS+ 60A 380-480V IP00	1	**PCSP060D5IP00**
	AccuSine PCS+ 60A 380-480V IP31	2	**PCSP060D5IP31**
	AccuSine PCS+ 60A 380-480V IP54	2	**PCSP060D5IP54**
120A	AccuSine PCS+ 120A 380-480V IP00	3	**PCSP120D5IP00**
	AccuSine PCS+ 120A 380-480V IP31	4	**PCSP120D5IP31**
	AccuSine PCS+ 120A 380-480V IP54	4	**PCSP120D5IP54**
200A	AccuSine PCS+ 200A 380-480V IP00	5	**PCSP200D5IP00**
	AccuSine PCS+ 200A 380-480V IP31	6	**PCSP200D5IP31**
	AccuSine PCS+ 200A 380-480V IP54	6	**PCSP200D5IP54**
300A	AccuSine PCS+ 300A 380-480V IP00	7	**PCSP300D5IP00**
	AccuSine PCS+ 300A 380-480V IP31	8	**PCSP300D5IP31**
	AccuSine PCS+ 300A 380-480V IP54	8	**PCSP300D5IP54**

Wall mount conversion kits

Description	Reference
60A, IP20	**PCSPWMKIT60A**
120A, IP20	**PCSPWMKIT120A**
200A and 300A, IP20	**PCSPWMKIT300A**

Notes

1. Converts IP00 to IP20 wall mounted enclosed assemblies.
2. Includes HMI mounting plate and cable entry enclosure for mounting on the bottom of the IP00 assemblies.

Dimensions

Frame size	Exterior dimensions (mm)		
	H	W	D
1	1300/1530 (1)	421	349
2	2092	800	500
3	1400/1730 (1)	421	384
4	2089	800	500
5	1323/1642 (1)	582	438
6	2089	900	600
7	1560/1882 (1)	582	438
8	2092	900	600

Note

(1) With wall mount conversion kit

Index

Enclosures and switchboard systems

Enclosures

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ThermoPlastic industrial boxes
Thalassa TBS & TBP

IP66

Industrial box styrene (1)

> Material – ABS.
> Colour grey RAL7035.
> IEC62208 certified.
> IP66 / IK07.
> Temperature range -25… +60°C.
> Low UV resistance.
> Indoor use.

H (mm)	W (mm)	D (mm)	Lid Height	Pack Qty	Reference with transparent lid	Reference
74	74	54	10	5	(2)	**NSYTBS775**
89	89	54	10	5	(2)	**NSYTBS885**
116	74	62	10	5	(2)	**NSYTBS1176**
116	74	94	40	3		**NSYTBS1179H**
116	116	62	10	5		**NSYTBS11116**
116	116	133	80	2		**NSYTBS111113H**
138	93	72	20	2	**NSYTBS1397T**	**NSYTBS1397**
164	121	87	20	2	**NSYTBS16128T**	**NSYTBS16128**
192	121	87	20	2	**NSYTBS19128T**	**NSYTBS19128**
192	121	105	40	2		**NSYTBS191210H**
192	164	87	20	1	**NSYTBS19168T**	**NSYTBS19168**
192	164	105	40	1	**NSYTBS191610HT**	**NSYTBS191610H**
241	194	87	20	1		**NSYTBS24198**
241	194	105	40	1	**NSYTBS241910HT**	**NSYTBS241910H**
241	194	127	60	1		**NSYTBS241912H**
291	241	88	20	1		**NSYTBS29248**
291	241	128	20	1	**NSYTBS292412T**	**NSYTBS292412**
291	241	128	60	1	**NSYTBS292412HT**	**NSYTBS292412H**
291	241	168	60	1		**NSYTBS292416H**
341	291	128	20	1		**NSYTBS342912**
341	291	168	60	1		**NSYTBS342916H**

Industrial box polycarbonate (1)

> IP66 / IK08.
> Temperature range -25… +80°C.
> High UV resistance.
> Outdoor use
> High Impact and Temperature Resistance for aggressive environments

H (mm)	W (mm)	D (mm)	Lid Height	Pack Qty	Reference with transparent lid	Reference
74	74	54	10	5	(2)	**NSYTBP775**
89	89	54	10	5	(2)	**NSYTBP885**
116	74	62	10	5	(2)	**NSYTBP1176**
116	116	62	10	5		**NSYTBP11116**
138	93	72	20	2	**NSYTBP1397T**	**NSYTBP1397**
164	121	87	20	2	**NSYTBP16128T**	**NSYTBP16128**
192	121	87	20	2	**NSYTBP19128T**	**NSYTBP19128**
192	121	105	40	2		**NSYTBP191210H**
192	164	87	20	1		**NSYTBP19168**
192	164	105	40	1		**NSYTBP191610H**
241	194	87	20	1		**NSYTBP24198**
241	194	105	40	1	**NSYTBP241910HT**	**NSYTBP241910H**
241	194	127	60	1		**NSYTBP241912H**
291	241	88	20	1		**NSYTBP29248**
291	241	128	20	1	**NSYTBP292412T**	**NSYTBP292412**
291	241	128	60	1		**NSYTBP292412H**
291	241	168	60	1		**NSYTBP292416H**
341	291	128	20	1		**NSYTBP342912**
341	291	168	60	1		**NSYTBP342916H**

Note
(1) Priced each and sold in Pack quantities
(2) Zinc plated cover screws

Accessories

Insulating mounting plates (2.5mm thickness)

H (mm)	W (mm)	Reference
192	164	**NSYAMPA1916TB**
241	194	**NSYAMPA2419TB**
291	241	**NSYAMPA2924TB**
341	291	**NSYAMPA3429TB**

Fixing lugs

Description	Reference
To fit enclosures >=116x116mm Vertical or horizontal. Kit comprises of 4x lugs + screws	**NSYAEFTB**

Hinges

NSYAEDH●●●●

Description	To suit cover height (mm)	Reference
To fit enclosures >=138x93mm. Permissible load 10kg/m^2. Kit comprises of 2xhinges + screws. Made of polycarbonate.	20	**NSYAEDH20TB**
	40	**NSYAEDH40TB**

F

Modular polyester enclosures
Thalassa PLS

IP65

Hot-moulded fibreglass reinforced polyester enclosures

Range of insulated modular boxes with bases made of hot-moulded fibreglass reinforced polyester and lids made of polycarbonate or polyester, depending on models.

Boxes PL 1-0 436843 Custom Fleet Evaluation Rating A4 S are with transparent polycarbonate lid, boxes PLSP with both lid and base made of fibreglass reinforced polyester.

- Colour grey RAL7035.
- IEC62208 certified.
- Modular design that allows the joining of boxes via coupling frames.
- Fully gasketed lids.
- Operating temperature between -30°C and 120°C for types PLS and up to 150°C for types PLSP.
- Suitable for outdoor use.

PLS enclosures

H (mm)	W (mm)	D (mm)	Lid (1)			Reference
180	270	180	T	S	PC	**NSYPLS1827G**
			O	S	PE	**NSYPLSP1827G**
270	270	180	T	S	PC	**NSYPLS2727G**
			O	S	PE	**NSYPLSP2727G**
270	270	230	T	D	PC	**NSYPLS2727AG**
			O	D	PC	**NSYPLSC2727AG**
270	360	180	T`	S	PC	**NSYPLS2736G**
			O	S	PE	**NSYPLSP2736G**
270	360	230	T	D	PC	**NSYPLS2736AG**
			O	D	PC	**NSYPLSC2736AG**
270	540	180	T	S	PC	**NSYPLS2754G**
			O	S	PE	**NSYPLSP2754G**
270	540	230	T	D	PC	**NSYPLS2754AG**
			O	D	PC	**NSYPLSC2754AG**

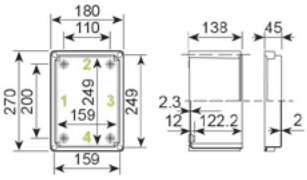
Notes

(1) Lids T = transparent
O = opaque
S = shallow
D = deep
PC = polycarbonate
PE = polyester

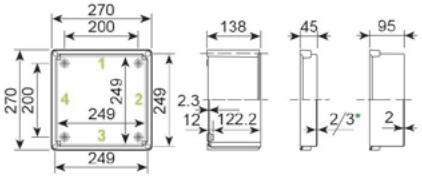
Spare lids available on request.

Dimensions

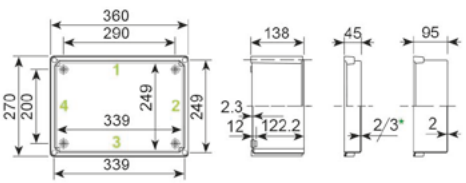
NSYPLS, NSYPLSP-1827



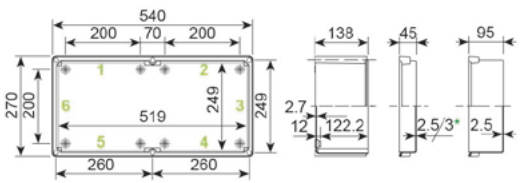
NSYPLS, NSYPLSO, NSYPLSP-2727



NSYPLS, NSYPLSO, NSYPLSP-2736



NSYPLS, NSYPLSO, NSYPLSP-2754



Modular polyester enclosures
Thalassa PLS

IP65

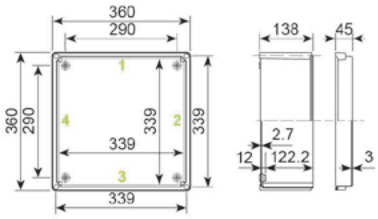
PLS enclosures

H (mm)	W (mm)	D (mm)	Lid (1)			Reference
360	360	180	T	S	PC	**NSYPLS3636G**
			O	S	PE	**NSYPLSP3636G**
360	540	180	T	S	PC	**NSYPLS3654G**
			O	S	PE	**NSYPLSP3654G**
360	540	230	T	D	PC	**NSYPLS3654AG**
			O	D	PC	**NSYPLSC3654AG**
540	540	180	T	S	PC	**NSYPLS5454G**
540	540	230	T	D	PC	**NSYPLS5454AG**
360	720	230	T	D	PC	**NSYPLS3672AG**
			O	D	PC	**NSYPLSC3672AG**
540	720	230	T	D	PC	**NSYPLS5472AG**
			O	D	PC	**NSYPLSC5472AG**

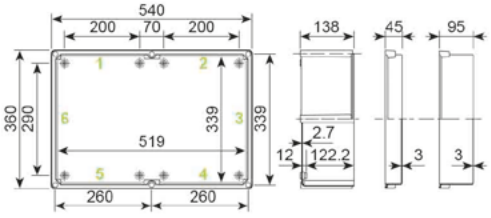
Notes
(1) Lids T = transparent
O = opaque
S = shallow
D = deep
PC = polycarbonate
PE = polyester
Spare lids available on request.

Dimensions

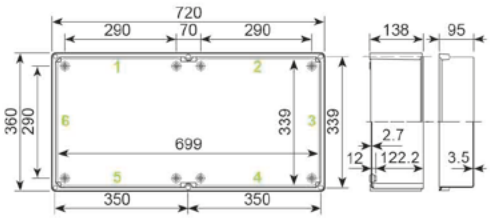
NSYPLS, NSYPLSP-3636



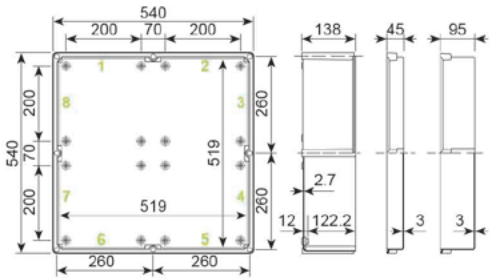
NSYPLS, NSYPLSO, NSYPLSP-3654



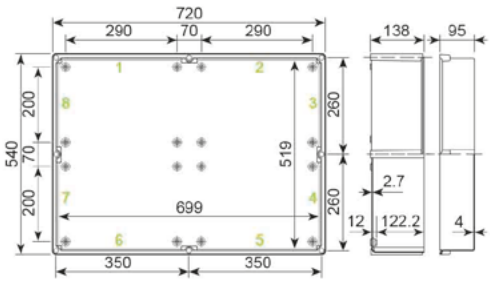
NSYPLS, NSYPLSO-3672



NSYPLS, NSYPLSO, NSYPLSP-5454



NSYPLS, NSYPLSO-5472



F

Modular polyester enclosures
Thalassa PLS

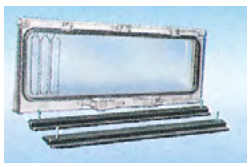
Accessories and mounting plates

Insulated mounting plates (4.0mm thickness)

H (mm)	W (mm)	Reference
135	225	**NSYPMB1827**
225	225	**NSYPMB2727**
225	315	**NSYPMB2736**
225	495	**NSYPMB2754**
315	315	**NSYPMB3636**
315	495	**NSYPMB3654**
315	675	**NSYPMB3672**
495	495	**NSYPMB5454**
495	675	**NSYPMB5472**

F

Hinged windows (IP65)



NSYVA27●●

H (mm)	W (mm)	D (mm)	Reference
78	165	25	**NSYVA278MA**
78	200	25	**NSYVA2710MA**

Note
Polycarbonate

Hinges

NSYBE27

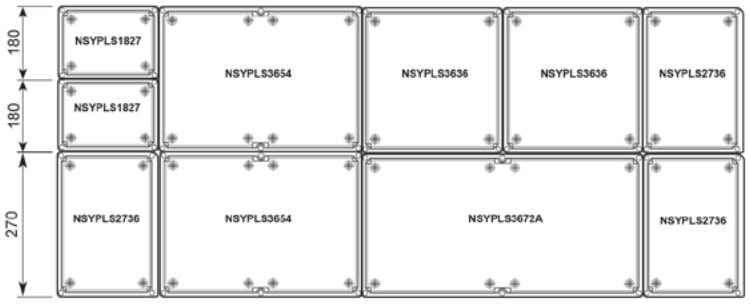
Description	Reference
External hinges opening 180 degrees	**NSYBE27G**

Coupling frames (c/w fixing hardware to join enclosures)

NSYUM27●●●

Coupling size	Hole size	Reference
270.0mm x 105mm	200mm x 77mm	**NSYUM27270**
360.0mm x 105mm	290mm x 77mm	**NSYUM27360**

Modular system possibilities



Locks and accessories

NSYCL27M

NSYCL27L405

NSYTCD274

NSYTCM274

NSYCAG19LP

NSYCAG33LP

NSYPF●●●

Locks

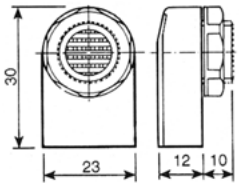
Description	Reference
Cabinet door catch	**NSYCL27M**
Cabinet door lock	**NSYCL27L405**
Slotted screw (set of 4)	**NSYTCD274**
Thumb screw (set of 4)	**NSYTCM274**

Accessories

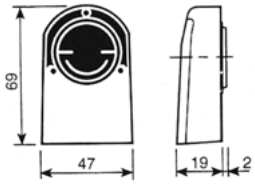
Description	Reference
Air vent, 19mm, external, IP45 (Pack of 2) (1)	**NSYCAG19LP**
Air vent, 33mm, external, IP44 (Pack of 2) (1)	**NSYCAG33LP**
Wall fixing lug (zinc) (set of 4)	**NSYPF27N**
Wall fixing lug (stainless steel) (set of 4)	**NSYPF27X**

Dimensions

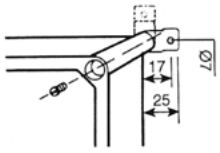
NSYCAG19LP



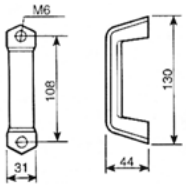
NSYCAG33LP



NSYPF●●



NSYATM27



Note
(1) Priced each and sold in Pack quantity only.

International approvals

Wall mounting polyester enclosures Thalassa PLM

IP66

Includes insulated mounting plate

Glass-fibre reinforced polyester cabinets

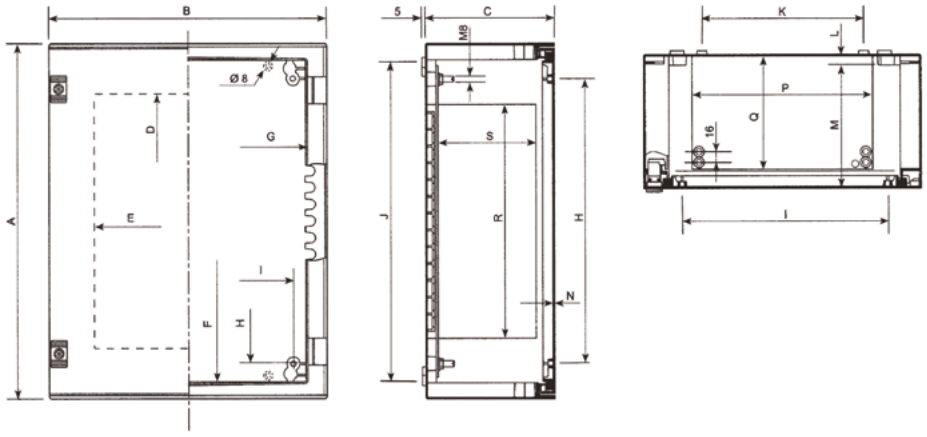
- One-piece monoblock body.
- Colour grey RAL7035.
- Completely reversible.
- Wide range of accessories, allowing for their use in distribution, control and measurement panels for industrial and recreational installations.
- Inserts located at the front of the cabinet for fixing of distribution chassis and internal door.
- Maximum working temperature ranges from -50° to 150°C.
- Resistant to principal chemical and atmospheric agents.
- Corrosion resistant.
- Stable to ultraviolet rays.
- High resistance to mechanical impacts IK10.
- Suitable for harsh indoor and outdoor environments.
- IEC62208 certified.

F

PLM cabinets

H (A) (mm)	W (B) (mm)	D (C) (mm)		Reference Glazed Door (2)	Reference Plain Door (3)
310	215	160	(1)	**NSYPLM32TG**	**NSYPLM32BG**
430	330	200		**NSYPLM43TG**	**NSYPLM43BG**
530	430	200		**NSYPLM54TG**	**NSYPLM54BG**
647	436	250		**NSYPLM64TG**	**NSYPLM64BG**
747	536	300		**NSYPLM75TG**	**NSYPLM75BG**
847	636	300		**NSYPLM86TG**	**NSYPLM86BG**
1056	852	350		**NSYPLM108TG**	**NSYPLM108BG**

Dimensions



	NSYPLM 32	43	54	64	75	86	108
F	270	380	480	580	680	780	980
G	170	260	360	360	460	560	760
H	225	325	425	525	625	725	925
I	125	225	325	325	425	525	725
J	275	375	475	575	675	775	975
K	75	150	250	250	350	450	650
L	8	13	13	13	15	15	15
M	144	181	181	228	278	278	327
N	2.3	2.7	2.9	2.9	3	3	4
P	132	179	279	279	379	479	684
Q	129	168	168	212	261	261	304
R	186	247	347	388	487	587	776
S	121	150	150	192	241	241	291

(1) Model PLM32 is made of polycarbonate.
(2) Mounting plate to be ordered separately.
(3) Includes insulated mounting plate

Wall mounting polyester enclosures
Thalassa PLM

Mounting plates and accessories

NSYPLM54

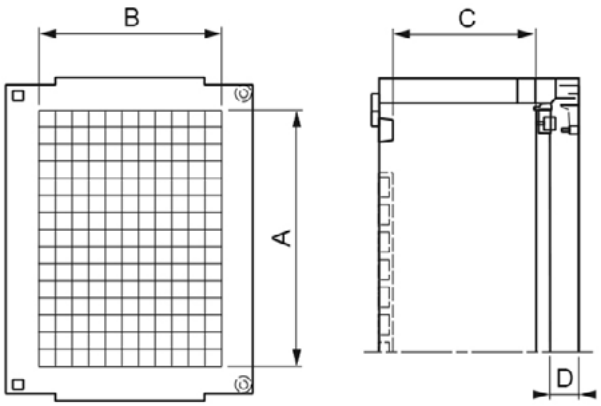
Insulated mounting plates (4.0mm thickness)

H (mm)	W (mm)	To fit enclosure	Reference
265	150	NSYPLM32	**NSYMB32**
365	250	NSYPLM43	**NSYMB43**
465	350	NSYPLM54	**NSYMB54**
565	350	NSYPLM64	**NSYMB64**
665	450	NSYPLM75	**NSYMB75**
765	550	NSYPLM86	**NSYMB86**
965	750	NSYPLM108 (1)	**NSYMB108**

NSYPAP●●

Internal doors

(A)	(B)	(C)	(D)	To fit enclosure	Reference
315	205	152	26	NSYPLM43	**NSYPAP43G**
415	305	152	26	NSYPLM54	**NSYPAP54G**
515	305	194	32	NSYPLM64	**NSYPAP64G**
615	405	244	32	NSYPLM75	**NSYPAP75G**
715	505	244	32	NSYPLM86	**NSYPAP86G**



NSYDPLM●●●

Depth adjustable supports (slots every 12.5mm)

(A)	(B)	To fit enclosure	Reference
205	105	NSYPLM64	**NSYDPLM250**
255	205	NSYPLM75 and NSYPLM86	**NSYDPLM300**
255	205	NSYPLM108	**NSYDPLM350**

NSYTCSPLM

Rail fixing insert

	To fit enclosure	Reference
	To fit all enclosures	**NSYTCSPLM**

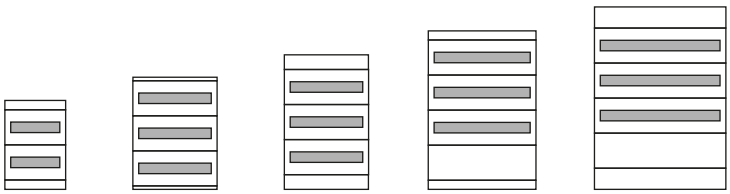
Note
(1) 5.0mm thickness.
Refer to page F16 for steel mounting plate options (**NSYMM●●**).

Din rail distribution system

DIN rail distribution chassis

- Front panels and finish covers: RAL7035 grey.
- Front panels and finish covers: self-extinguishing, insulating.
- Front panels and covers installed in the front part, are not depth adjustable.
- Rigid structure for the installation of modular devices.
- Rigid structure: galvanised steel.
- Open front panels with 35mm DIN rail and plain front panels with mounting plate, according to the model.
- Quick installation with no fixings.
- Shoulder height adjustable from 40 to 85mm.
- System for standard circuit marking.
- Not compatible with internal doors and the step slides.

No. of rows	No. of 18mm mods	(A)	(B)	(C)	(D) min	(E) min	To fit enclosure	Reference
2	24	216	115	137	38	54	NSYPLM43 (1)	**NSYDLA24G**
3	48	288	90	112	38	54	NSYPLM54 (1)	**NSYDLA48G**
3	48	288	140	170	80	96	NSYPLM64 (1)	**NSYDLA48PG**
3	66	395	115	145	129	179	NSYPLM75 (1)	**NSYDLA66G**
3	84	504	165	195	129	179	NSYPLM86 (1)	**NSYDLA84G**



NSYDLA24 NSYDLA48 NSYDLA48P NSYDLA66 NSYDLA84

Note
E+N bars not supplied.
(1) Also suitable for use with Metal Enclosures: NSYCRN43/54/75/86 and Stainless Steel Enclosures: NSYS3X43/54/64/75/86.

Wall mounting polyester enclosures
Thalassa PLM

Locks, accessories and spare parts

NSYKPLM

NSYCDBPLM

Locks

Description	Reference
Standard double bar lock and polymide key (1)	**NSYCDBPLM**
Key lock and Ronis 405 key (PLM32-86)	**NSYTL405PLM**
Key lock and Ronis 405 key (PLM108)	**NSYTEL405PL**
8mm triangle lock insert and key	**NSYTT8CRN**
Spare 8mm triangle key	**NSYLT8**
Stainless steel padlockable fitting	**NSYKPLM**
Spare double bar standard key (metal)	**NSYLDB5**
Spare double bar standard key (polymide) (1)	**NSYDBP**

NSYCAG35LP

NSYPFPLM

NSYPFXPLM

Accessories

Description	To fit enclosure	Reference
Plastic air vent 35mm, internal, IP44 rear of the enclosures (Pack of 2) (2)	NSYPLM43-86	**NSYCAG35LP**
Mounting brackets (polymide) (pack of 4) (2)	NSYPLM32	**NSYPFPLM32G**
Mounting brackets (polymide) (pack of 4) (2)	NSYPLM43-108	**NSYPFPLMG**
Mounting brackets (s/steel) (pack of 4) (2)	NSYPLM43-108	**NSYPFXPLM**
Coupling frame (lateral)	NSYPLM75+86	**NSYBUPLMG**
Coupling frame (lateral)	NSYPLM108	**NSYBU108PLMG**
Expansion nuts M6 (Pack of 20) (2)	NSYPLM64-108	**NSYTEX6**
Expansion nuts M8 (Pack of 8) (2)	NSY Enclosure body	**NSYTEX8**

NSYDPLM43-86

NSYAEDHPLM

Spare parts

Description	To fit enclosure	Reference
Replacement door without locking	NSYPLM32	**NSYDPLM32G**
	NSYPLM43	**NSYDPLM43G**
	NSYPLM54	**NSYDPLM54G**
	NSYPLM64	**NSYDPLM64G**
	NSYPLM75	**NSYDPLM75G**
	NSYPLM86	**NSYDPLM86G**
	NSYPLM108	**NSYDPLM108G**
Locking and rods	NSYPLM108	**NSYVPLM108G**
Rod guides (pack of 4)	NSYPLM108	**NSYAEDPLM108**
Hinge pins (pack of 2) (2)	NSYPLM32	**NSYAEDHPLM32**
Hinge pins (pack of 2) (2)	NSYPLM43-86	**NSYAEDHPLM**
Hinge pins (pack of 3) (2)	NSYPLM108	**NSYAEDHPLM108**

Notes
(1) Key can be made captive.
(2) Priced as Pack quantity.

F

International approvals

Floor standing polyester cabinets Thalassa PLA

Mounting plates
IP65

Hot-moulded reinforced polyester cabinets

- Resistant to principal chemical agents and corrosive atmospheres.
- UV light stabilised.
- Reversible door, opening to 120°. Maximum permissible load: 30kg/m2.
- Door closure system outside the sealed zone. Two closure points for enclosures up to 750mm height, four closure points from 1000mm height, with rod operating mechanism.
- Colour grey RAL7035.
- Double bar lock. Other types available.
- Two-door cabinets include a removable central upright.
- High degree of resistance to mechanical impacts IK10.
- Maximum working temperature ranges from -50° to 150°C.
- Suitable for outdoor environments with canopy.
- IEC62208 certified.

F

NSYPLA1573

PLA cabinets

H (mm)	W (mm)	D (mm)	No. of Doors	Reference Glazed Door	Reference Plain Door
500	500	320	1	**NSYPLA553TG**	**NSYPLA553G**
750	500	320	1	**NSYPLA753TG**	**NSYPLA753G**
1000	500	320	1	**NSYPLA1053TG**	**NSYPLA1053G**
1000	750	320	1	**NSYPLA1073TG**	**NSYPLA1073G**
1000	1000	320	2	**NSYPLA10103TG**	**NSYPLA10103G**
1250	750	320	1	**NSYPLA1273TG**	**NSYPLA1273G**
1250	1000	320	2	**NSYPLA12103TG**	**NSYPLA12103G**
1250	1250	320	2	**NSYPLA12123TG**	**NSYPLA12123G**
1500	750	320	1	**NSYPLA1573TG**	**NSYPLA1573G**
1500	1000	320	2	**NSYPLA15103TG**	**NSYPLA15103G**
1500	1250	320	2	**NSYPLA15123TG**	**NSYPLA15123G**

NSYPMB●●

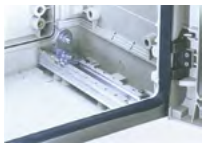
Insulated mounting plates

H (mm)	W (mm)	To fit enclosure	Reference
390	375	NSYPLA553G	**NSYPMB55**
640	375	NSYPLA753G	**NSYPMB75**
890	375	NSYPLA1053G	**NSYPMB105**
890	625	NSYPLA1073G	**NSYPMB107**
890	875	NSYPLA10103G	**NSYPMB1010**
1140	375	–	**NSYPMB125**
1140	625	NSYPLA1273G	**NSYPMB127**
1140	875	NSYPLA12103G	**NSYPMB1210**
1140	1125	NSYPLA12123G	**NSYPMB1212**
1390	375	–	**NSYPMB155**
1390	625	NSYPLA1573G	**NSYPMB157**
1390	875	NSYPLA15103G	**NSYPMB1510**
1390	1125	NSYPLA15123G	**NSYPMB1512**

Alternative two-door cabinet 2 mounting plate combinations

To fit enclosure	Reference
NSYPLA10103G	**NSYPMB105 + NSYPMB105**
NSYPLA12103G	**NSYPMB125 + NSYPMB125**
NSYPLA12123G	**NSYPMB125 + NSYPMB127**
NSYPLA15103G	**NSYPMB155 + NSYPMB155**
NSYPLA15123G	**NSYPMB155 + NSYPMB157**

Accessories, bases and canopies



NSYDPLA●

Depth adjustable supports

Description	Reference
To fit NSYPLA enclosures 320mm	**NSYDPLA3**
To fit NSYPLA enclosures 420mm	**NSYDPLA4**

NSYZNPLA●●

Bases

Description	Reference
To fit NSYPLA enclosures 320mm	
NSYPLA553, 753, 1053, 1253, 1553	**NSYZNPLA53G**
NSYPLA773, 1073, 1273, 1573	**NSYZNPLA73G**
NSYPLA10103, 12103, 15103	**NSYZNPLA103G**
NSYPLA15123	**NSYZNPLA123G**

Canopies (1)

Description	Reference
To fit NSYPLA enclosures 320mm	
NSYPLA553, 753, 1053, 1253, 1553	**NSYTJPLA53G**
NSYPLA773, 1073, 1273, 1573	**NSYTJPLA73G**
NSYPLA10103, 12103, 15103	**NSYTJPLA103G**
NSYPLA15123	**NSYTJPLA123G**

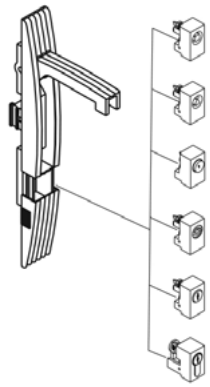
Note
(1) Essential for outdoor use.

Locks

NSYEBMPLAG

Locks (double bar lock comes as standard)

Description	Reference
Transformation handle (1)	**NSYEBMPLAG**
Spare 8mm triangle key (key only)	**NSYLT8**
Swing handle lock with padlocking device	**NSYCBCMPLAG**
Spare double bar standard key	**NSYLDB5**



Set of handle locks

Transformations of standard lock to other versions

Description	Reference
8mm triangular insert with LT8 key	**NSYINT81**
405 key type insert	**NSYIN405E1**
Push button insert	**NSYTSPLA**
5mm double bar insert (standard supply)	**NSYINDB51**

Note
(1) To obtain the complete lock, inserts must be ordered separately as well as EBMPLA.

Stainless steel industrial boxes
Spacial SBX

AISI 304L Stainless-Steel
IP66

SBX Stailess steel industrial boxes

- Material - AISI 304L Stainless-Steel
- IEC 62208 certified
- IP66, IK10
- Indoor and Outdoor use
- 1.2mm thickness, Scotch-Brite® brushed

SBX industrial boxes (1)

H (mm)	W (mm)	D (mm)	Box reference	Mounting plate reference	Din Rail reference	Fixing Lugs reference	Sealing kit reference
150	150	80	NSYSBX15158	NSYMM11SB	NSYAMRD15357SB	NSYAEFPFSBX (2)	NSYPPSB
150	300	80	NSYSBX15308	NSYMM13SB	NSYAMRD30357SB		
200	200	80	NSYSBX20208	NSYMM22SB	NSYAMRD20357SB		
200	300	80	NSYSBX20308	NSYMM23SB	NSYAMRD30357SB		
200	400	120	NSYSBX204012	NSYMM24SB	NSYAMRD40357SB		
300	300	120	NSYSBX303012	NSYMM33SB	NSYAMRD30357SB		

NSYSBX15308

NSYMM13SB

NSYAMRD30357SB

NSYAEFPFSBX NSYPPSB

NSYCGX12 NSYCGSP16

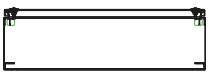
Other Accessories

	L (mm)	W (mm)	Section (mm2)	Dia (mm)	Sold in	Reference
Earthing Braids	150	12	6	7	1 unit	**NSYEB156D6**
	150	17	10	7	1 unit	**NSYEB1510D6**
Earthing Strip (87 connection)	1000					**NSYECB1M153**
Self- Tapping screws					100 unit	
Synthetic snap-in cable gland				M16	20 units	**NSYCGSP16**
				M20	20 units	**NSYCGSP20**
				M25	10 units	**NSYCGSP25**
				M40	5 units	**NSYCGSP40**
Cable gland (AISI 304L) (3)				M12	5 units	**NSYCGX12**
				M16	5 units	**NSYCGX16**
				M20	4 units	**NSYCGX20**
				M25	4 units	**NSYCGX25**
				M40	2 units	**NSYCGX40**

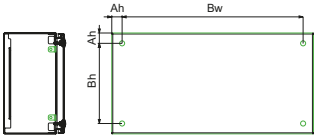
Dimensions

H (mm)	W (mm)	Thickness (mm)	Ah(mm)	Bh(mm)	Bw(mm)	C(mm)	D(mm)
150	150	1	21	109	109	125	13
150	300	1	21	109	259	275	13
200	200	1	21	159	159	175	13
200	300	1	21	159	259	275	13
200	400	1	21	159	359	375	13
300	300	1	21	259	259	275	13

Section A-A



Section B-B



Notes

(1) Available in Q2 2021
(2) Comes with 4 fixing lugs, screws and pre-mounted sealing gaskets
(3) Also avaialble in AISI 316L version - Add 'H' Suffix to part reference. Eg: NSYCGX12H

International approvals

Wall mounting steel enclosures
Spacial CRN

IP66

Steel enclosures

Metal enclosures made from a continuous length of sheet steel double folded at the front, with back welded to the frame. Both externally and internally protected with polyester epoxy resin grey paint to RAL7035 texturised.

- Concealed and easily removable hinges allowing over 120° door opening.
- Three welded earth studs.
- Embedded cable gland plate.
- Suitable for indoor use or where moisture content is less than 80%.
- IEC62208 certified.

CRN cabinets

H (A) (mm)	W (B) (mm)	D (C) (mm)	No. of doors	Reference	Reference
				Glazed Door (1)	Plain Door
250	200	150	1	-	**NSYCRN252150P**
300	250	150	1	**NSYCRN325150T**	**NSYCRN325150P**
300	250	200	1	**NSYCRN325200T**	**NSYCRN325200P**
300	300	200	1	**NSYCRN33200T**	**NSYCRN33200P**
400	300	150	1	**NSYCRN43150T**	**NSYCRN43150P**
400	300	200	1	**NSYCRN43200T**	**NSYCRN43200P**
500	400	150	1	**NSYCRN54150T**	**NSYCRN54150P**
500	400	200	1	**NSYCRN54200T**	**NSYCRN54200P**
500	400	250	1	**NSYCRN54250T**	**NSYCRN54250P**
600	500	200	1	**NSYCRN65200T**	**NSYCRN65200P**
600	500	250	1	**NSYCRN65250T**	**NSYCRN65250P**
700	500	250	1	**NSYCRN75250T**	**NSYCRN75250P**
800	600	250	1	**NSYCRN86250T**	**NSYCRN86250P**
800	600	300	1	**NSYCRN86300T**	**NSYCRN86300P**
800	600	400	1 (1)	**NSYCRNG86400T**	**NSYCRNG86400**
800	1000	300	2 (1) (2)	-	**NSYCRNG810300D**
1000	600	250	1	**NSYCRN106250T**	**NSYCRN106250P**
1000	800	250	1	**NSYCRN108250T**	**NSYCRN108250P**
1000	800	300	1	**NSYCRN108300T**	**NSYCRN108300P**
1000	800	400	1 (1)	**NSYCRNG108400T**	**NSYCRNG108400**
1000	1000	300	2 (1) (2)	**NSYCRNG1010300T**	**NSYCRNG1010300D**
1000	1200	300	2 (1) (2)	-	**NSYCRNG1012300D**
1200	800	400	1 (1)	**NSYCRNG128400T**	**NSYCRNG128400**
1200	1000	400	2 (1) (2)	-	**NSYCRNG1210400D**

Note

(1) Mounting plates to be ordered separately.

(2) IP55 for double door enclosures. Replacement doors on request.

Wall mounting steel enclosures
Spacial CRN

Mounting plates and accessories

NSYMM54

Steel mounting plates (2.0mm thickness up to CRN75, 3.0mm CRN86 and above)

H (mm)	W (mm)	To fit enclosure	Reference
215	150	NSYCRN2520	**NSYMM2520**
265	200	NSY325150, 200	**NSYMM3025**
265	250	NSYCRN33200	**NSYMM33**
365	250	NSYCRN43150, 200	**NSYMM43**
465	350	NSYCRN54150, 200, 250	**NSYMM54**
565	450	NSYCRN65200, 250	**NSYMM65**
665	450	NSYCRN75250	**NSYMM75**
765	550	NSYCRN(G)86250, 300, 400	**NSYMM86**
750	965	NSYCRNG108250, 300, 400, NSYCRNG810300D	**NSYMM108**
965	550	NSYCRN106250	**NSYMM106**
950	950	NSYCRNG1010300	**NSYMM1010**
950	1150	NSYCRNG1012300	**NSYMM1210**
1150	750	NSYCRNG128400	**NSYMM128**
1150	950	NSYCRNG1210400	**NSYMM1210**

NSYMB54

Insulated mounting plates (4.0mm thickness)

H (mm)	W (mm)	To fit enclosure	Reference
265	200	NSY325150, 200	**NSYMB3025**
265	250	NSYCRN33200	**NSYMB33**
365	250	NSYCRN43150, 200, 250	**NSYMB43**
465	350	NSYCRN54150, 200	**NSYMB54**
565	450	NSYCRN65200, 250	**NSYMB65**
665	450	NSYCRN75250	**NSYMB75**
765	550	NSYCRN(G)86250, 300, 400	**NSYMB86**
965	550	NSYCRN106250	**NSYMB106**
965	750	NSYCRN(G)108250, 300, 400 (1)	**NSYMB108**

NSYSDCR●●●

Depth adjustable supports (self-positioning slots every 12.5mm)

To fit enclosure depth	Reference
200	**NSYSDCR200**
250	**NSYSDCR250**
300	**NSYSDCR300**

NSYCAG

NSYPFCR

Accessories

Description	Reference
Metal Louvre, IP20, 144x62mm	**NSYCAG110X46M**
Metal Louvre, IP20, 208x90mm	**NSYCAG180X62M**
Metal Louvre, IP20, 244x90mm	**NSYCAG216X62M**
Metal Louvre, IP20, 345x118mm	**NSYCAG317X91M**
Diagram pocket	**NSYDPA44**
Diagram pocket	**NSYDPA5**
Set of 4 wall fixing lugs – CRN	**NSYPFCR**
Set of 4 wall fixing lugs – CRNG	**NSYAEFPFSC**

Note
(1) 6.0mm thickness.

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Wall mounting steel enclosures
Spacial CRN

Locks and spare parts

NSYCDB3

Locks (double bar lock comes as standard)

Description	Reference
Standard double bar lock (1)	**NSYCDB3**
Key lock insert and wing shaped key (405)	**NSYCL405CRN**
8mm triangle lock insert and key	**NSYTT8CRN**
Spare 8mm triangle lock (key only)	**NSYLT8**
Spare double bar standard key (metal)	**NSYLDB5**
Spare double bar standard key (polymide)	**NSYDBP**
Padlock handle (no cam) - CRN/S3X	**NSYCBCCRN**

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NSYSUCR200WM

Mounting Rails*

Description	Reference
Cross rail (set of 2) for CRN enclosure, depth 200	**NSYSUCR200WM**
Cross rail (set of 2) for CRN enclosure, depth 250	**NSYSUCR250WM**
Cross rail (set of 2) for CRN enclosure, depth 300	**NSYSUCR300WM**
Cross rail (set of 2) for CRN enclosure, depth 400	**NSYSUCR400WM**

*Max load 6kg

Spare parts

Description	To fit enclosure	Reference
1 Hinge for CRN		**NSYBICRN**

Note

(1) Standard double bar lock operated by
Wing shaped handle DBP (standard).
Key wing LDB 5 DIN 43668 (optional supply).
When DBP is affixed to lock, the double bar lock is transformed into normal wing lock.

International approvals

Wall mounting stainless steel enclosures Spacial S3X

ASI 304L stainless steel
ASI 316L stainless steel
IP66

Stainless steel enclosures

The stainless steel enclosures are specially suitable for corrosive environments and installations where hygiene is essential.

- Monobloc watertight AISI 304 stainless steel enclosures
- Scotch Brite (AST) type mechanical polish for an excellent surface quality and improved protection against corrosion.
- Welded studs for fixing of mounting plates and earthing.
- Suitable for outdoor environments (excluding salty and chlorinated environments).
- IEC62208 certified.

304L Stainless steel

H (A) (mm)	W (B) (mm)	D (C) (mm)	Weight (kg)	Reference Glazed Door	Reference Plain Door
300	200	150	3.9	-	**NSYS3X3215**
300	250	150	4.8	-	**NSYS3X302515**
300	300	150	5	-	**NSYS3X3315**
400	300	150	5.7	-	**NSYS3X4315**
400	300	200	6.7	**NSYS3X4320T**	**NSYS3X4320**
400	400	200	7	-	**NSYS3X4420**
500	400	200	9.2	**NSYS3X5420T**	**NSYS3X5420**
600	400	200	10.7	**NSYS3X6420T**	**NSYS3X6420**
600	600	250	14	-	**NSYS3X6625**
700	500	250	18.5	**NSYS3X7525T**	**NSYS3X7525**
800	600	250	23.5	**NSYS3X8625T**	**NSYS3X8625**
800	800	300	31	-	**NSYS3X8830**
1000	800	300	38.5	**NSYS3X10830T**	**NSYS3X10830**
1200	800	300	44	-	**NSYS3X12830**

316L Stainless steel

H (A) (mm)	W (B) (mm)	D (C) (mm)	Weight (kg)	Reference Plain door
300	200	150	3.9	**NSYS3X3215H**
300	250	150	4.8	**NSYS3X302515H**
300	300	150	5	**NSYS3X3315H**
400	300	150	5.7	**NSYS3X4315H**
400	300	200	6.7	**NSYS3X4320H**
400	400	200	7	**NSYS3X4420H**
500	400	200	9.2	**NSYS3X5420H**
600	400	200	10.7	**NSYS3X6420H**
600	600	250	14	**NSYS3X6625H**
700	500	250	18.5	**NSYS3X7525H**
800	600	250	23.5	**NSYS3X8625H**
800	800	300	31	**NSYS3X8830H**
1000	800	300	38.5	**NSYS3X10830H**
1200	800	300	44	**NSYS3X12830H**

Wall mounting stainless steel enclosures Spacial S3X

Mounting plates and accessories

NSYMB54

Insulated mounting plates (4.0mm thickness)

H (mm)	W (mm)	To fit enclosure	Reference
265	150	NSYS3X3215	**NSYMB32**
265	200	NSYS3X302515	**NSYMB3025**
265	250	NSYS3X3315	**NSYMB33**
365	250	NSYS3X4315/4320	**NSYMB43**
465	350	NSYS3X5420	**NSYMB54**
565	350	NSYS3X6420	**NSYMB64**
665	450	NSYS3X7525	**NSYMB75**
765	550	NSYS3X8625	**NSYMB86**
965	750	NSYS3X10830 (1)	**NSYMB108**

Note
(1) 5.0mm thickness

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NSYMM54

Steel mounting plates (2.0mm thickness up to NSYS3X75 3.0mm NSYS3X86 and above)

H (mm)	W (mm)	To fit enclosure	Reference
265	150	NSYS3X3215	**NSYMM32**
265	200	NSYS3X302515	**NSYMM3025**
265	250	NSYS3X3315	**NSYMM33**
365	250	NSYS3X4315/4320	**NSYMM43**
365	350	NSYS3X4420	**NSYMM44**
465	350	NSYS3X5420	**NSYMM54**
565	350	NSYS3X6420	**NSYMM64**
565	550	NSYS3X6625	**NSYMM66**
665	450	NSYS3X7525	**NSYMM75**
765	550	NSYS3X8625	**NSYMM86**
765	750	NSYS3X8830	**NSYMM88**
965	750	NSYS3X10830	**NSYMM108**
1165	750	NSYS3X12830	**NSYMM128**

NSYSDCR●●●

Depth adjustable supports (self-positioning slots every 12.5mm)

To fit enclosure depth	Reference
200	**NSYSDCR200**
250	**NSYSDCR250**
300	**NSYSDCR300**

Rear of enclosure with stainless steel mounting plate fixing studs. Wall mounting holes with blanking plugs.

Earthing studs welded to the door for use when electrical devices are mounted on the door.

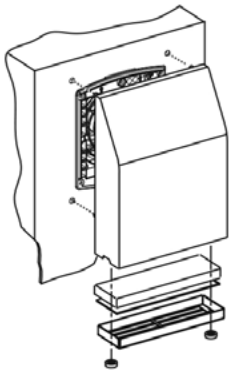
Wall mounting stainless steel enclosures
Spacial S3X

Locks, accessories and spare parts

NSYSTDCXH

NSYCBXHCRN

NSYPFCX



NSYHS3X

Locks (double bar lock comes as standard)

Description	Reference
Key lock insert and key	**NSYCL405CSX**
Triangular male lock insert 8mm (304 stainless steel)	**NSYTT8CSX**
Metal key for 8mm triangle insert	**NSYLT8**
Metal key for 5mm double bar insert	**NSYLDB5**
Replace. round lock, DB 3mm, chrome-plated zamak (1)	**NSYSTDCSX**
Replace. Round lock, DB 3mm (304 stainless steel) (1)	**NSYSTDCXH**
Replace. Round lock, DB 3mm (316 stainless steel) (1)	**NSYSTDCX2H**
Padlockable handle (316 stainless steel)	**NSYCBXHCRN**

Accessories

Description	Reference
Diagram pocket	**NSYDPA44**
Diagram pocket	**NSYDPA5**
Set of 4 wall fixing lugs (stainless steel 304)	**NSYPFCX**
Set of 4 wall fixing lugs (stainless steel 316)	**NSYPFC2X**

Fan/Filter Covers IP55

Characteristics	This solution protects the fan or the grille from any direct sprays. The cover is the preferred solution to guarantee the following: > an efficient air fow for cooling, > IP55 rating.
Material	2 materials available: > sheet-steel painted with epoxy-polyester resin (RAL 7035) for outdoor applications > stainless-steel 304L for food and beverage applications
Ingress protection rating	IP55
Mechanical protection rating	IK10
Certifications	UL
Installation	0ouble insulation maintained if installed in an insulated enclosure. The cover is placed over the fan or the grille with a filter located at the bottom of the cover to prevent the entry of particles. Easy access to the filter: only two screws needed. When mounting: remove the external part of the fan or the grille as well as the filter.
Supply	It is necessary to order 1 fan + 1 grille + 2 covers to have a complete system

Flow rate (m3/h)* with cover	**Dimensions (mm)**			**References**	
Free	With 1 outlet grille	External	Cut-out	Sheet-steel painted for outdoor applications RAL 7035	Stainless-steel 304L
74	53	240 x 180 x 60	125 x 125	**NSYCAP125LZF**	**NSYCAP125LXF**
110	82	350 x 305 x 80	223 x 223	**NSYCAP223LZF**	**NSYCAP223LXF**
165	123	350 x 305 x 80	223 x 223	**NSYCAP223LZF**	**NSYCAP223LXF**
316	265	430 x 373 x 105	291 x 291	**NSYCAP291LZF**	**NSYCAP291LXF**
502	430	430 x 373 x 105	291 x 291	**NSYCAP291LZF**	**NSYCAP291LXF**

* Values given for a fan powered at 230 V. For other voltages, the values are similar.

Spare parts

Description	To fit enclosure	Reference
Set of 2 hinges for S3X		**NSYHS3X**

Note
(1) Standard double bar lock with latch and fixing screw operated by means of LDB5 key supplies as standard.

NSYCVF165M230PF

IP54 fans (c/w grill and filter)

External dimensions (mm) H	W	D	Air flow m^3/h (1)	Voltage (V)	Power Consumption (W)	Reference
137	117	49	25m^3/h	230	5	**NSYCVF38M230PF**
170	150	62	63m^3/h	230	17	**NSYCVF85M230PF**
268	248	104	153m^3/h	230	17	**NSYCVF165M230PF**
268	248	116	260m^3/h	230	37	**NSYCVF300M230PF**
336	316	161	473m^3/h	230	85	**NSYCVF560M230PF**
336	316	162	718m^3/h	230	195	**NSYCVF850M230PF**
336	316	162	798m^3/h	400	40	**NSYCVF850M400PF**

NSYCAG●●●

IP54 grill and filter

External dimensions (mm) H	W	D	Use with	Reference
137	117	18	NSYCVF38	**NSYCAG92LPF**
170	150	18	NSYCVF85	**NSYCAG125LPF**
268	248	18	NSYCVF165, 300	**NSYCAG223LPF**
336	316	18	NSYCVF560, 850, 850/400	**NSYCAG291LPF**

Hole cut out size (mm)

H	W	Use with
92	92	NSYCVF38, NSYCAG92LPF
125	125	NSYCVF85, NSYCAG125LPF
223	223	NSYCVF165, 300, NSYCAG223LPF
291	291	NSYCVF560, 850, 850/400, NSYCAG291LPF

Filter

	Use with	Reference
	NSYCVF38, NSYCAG92LPF	**NSYCAF92**
	NSYCVF85, NSYCAG125LPF	**NSYCAF125**
	NSYCVF165, 300, NSYCAG223LPF	**NSYCAF223**
	NSYCVF560, 850, 850/400, NSYCAG291LPF	**NSYCAF291**

NSYCCOTHD

Control devices

Thermostat range	Control			Reference
0-60°C	Heat	1 NC	10A 250V AC1	**NSYCCOTHC**
	Fan	1 NO	10A 250V AC1	**NSYCCOTHO**
	Heat/Fan	1 NO + 1NC	10A 250V AC1	**NSYCCOTHD**

NSYCR55WU2

Resistance heaters

External dimensions (mm) H	W	D	Power (W)	Voltage (V)	Reference
70	50	140	55	250	**NSYCR55WU2**
70	50	140	90	250	**NSYCR100WU2**

Note
(1) Air flow with 1 outlet grill.

Surface mount enclosures

MIP0108S

IP40 surface mount enclosure

Description	Reference
Mini Pragma 1 row 6 way	**MIP0106S**
Mini Pragma 1 row 8 way	**MIP0108S**
Mini Pragma 1 row 12 way	**MIP0112S**

Comes with earth and neutral bars, comb bus bar and pole fillers. Entry plates removable top & bottom.

PDL56CB13

IP66 surface mounting enclosure

Description	Reference
56 Series 3 way enclosure (standard grey cover and 56E6 base), DIN rail, N+E bars and links	**PDL56CB13**
56 Series 4 way cover (fits 56E2 base - not included), includes DIN rail	**PDL56CB4LEGY**

WMDIN2

IP66 metal clad heavy industrial surface mount enclosure

Description	Reference
WilcoROWCO 4 way enclosure (yellow cover and base)	**WMDIN2**

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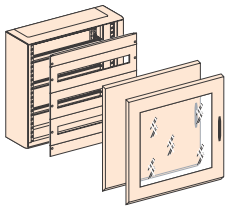
Prisma pack wall-mount enclosures

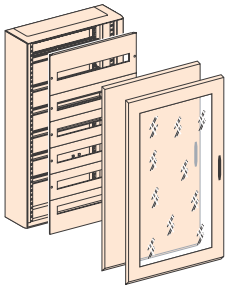
Enclosures and doors



Basic enclosures

Description	Reference
2 row, 48 way, H = 480mm	**08002**
3 row, 72 way, H = 630mm	**08003**
4 row, 96 way, H = 780mm	**08004**
5 row, 120 way, H = 930mm	**08005**
6 row, 144 way, H = 1080mm	**08006**

Supplied pre assembled with front plates, DIN rails, 1x40 way earth bar and blanking plates.
Door not included, available as an optional extra, refer below for options.

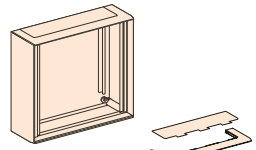


Doors

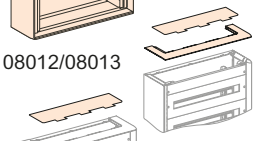
Description	Reference
Metal, 2 row, H = 480mm	**08082**
Metal, 3 row, H = 630mm	**08083**
Metal, 4 row, H = 780mm	**08084**
Metal, 5 row, H = 930mm	**08085**
Metal, 6 row, H = 1080mm	**08086**
Glass, 2 row, H = 480mm	**08092**
Glass, 3 row, H = 630mm	**08093**
Glass, 4 row, H = 780mm	**08094**
Glass, 5 row, H = 930mm	**08095**
Glass, 6 row, H = 1080mm	**08096**
Replacement door handle c/w lock and 1 Ronis 405 key	**01220**

Reversible doors (opening to left or right), equipped with a lockable handle.

Extension enclosures, accessories and earth bars



08012/08013



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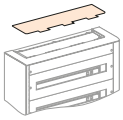

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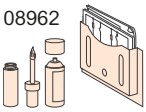
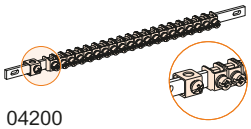


08962 08961 08963

Enclosure accessories

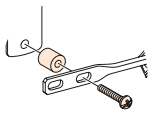
Description	Reference
Enclosure extension, H = 480mm (empty) (1)	**08012**
Enclosure extension, H = 630mm (empty) (1)	**08013**
2 combination uprights	**08817**
Top or bottom plate (additional) with plastic gland plate	**08878**
Plain metal gland plate	**08879**
Flush-mount kit (minimum depth 120mm)	**08822**
4 external wall-mount brackets	**08803**
Horizontal partition	**04333**
Earthing wire 6mm² (2)	**08911**
Touch-up spray paint, RAL 9001	**08962**
Touch-up paintbrush, RAL 9001	**08961**
Adhesive drawing holder (A4)	**08963**



04200

Earth bar

Description	Reference
Earth bar with 40 clamps + one 35mm² terminal (L = 450mm)	**04200**
2 earth bars with 20 clamps + one 35mm² terminal (L = 200mm)	**04202**



04210

Kit for neutral bar

A neutral bar is created by inserting insulating spacers behind an earth bar.

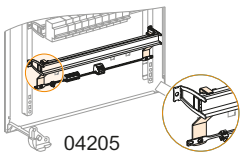
Description	Reference
Kit for neutral bar	**04210**

DBPS 4 way neutral bar

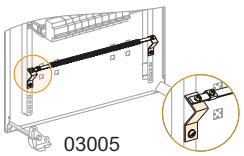
Description	Reference
DBPS 4 way neutral bar and DIN support bracket	**SNZ04255NB**

Fixing accessories

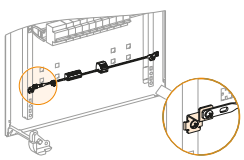
Description	Reference
Earth bar mounted on rear of modular rail	
Two supports for earth bar on modular rail	**04205**
Earth bar used: > 450mm earth bar with clamps > 200mm earth bar with clamps	
Earth bar mounted on 45° supports	
Two 45° supports for modular rail	**03005**
Earth bar used: > 450mm earth bar with clamps	
Earth bar mounted on fixing brackets	
Two fixing brackets for the earth bar on the functional uprights	
H = 15mm	**04206**
H = 45mm	**04207**
H = 80mm	**04208**
Earth bar used: > 450mm earth bar with clamps	



04205



03005



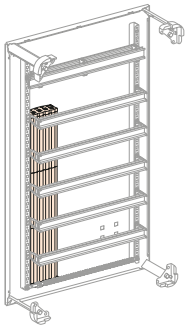
04206/04207/04208

Notes

(1) Vertical association with enclosure only.

(2) The wire is used to earth a door with electrical devices fitted.

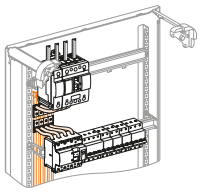
Distribution components



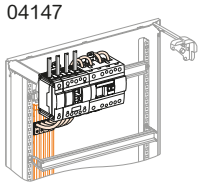
Linergy BW – powerclip busbars

Description		Reference
125A Powerclip busbars		
Three pole	L = 450mm	**04103**
	L = 750mm	**04107**
Four pole	L = 450mm	**04104**
	L = 750mm	**04108**
160A Powerclip busbars (1)		
Three pole	L = 1000mm	**04111**
Four pole	L = 1000mm	**04121**

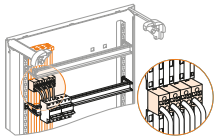
F



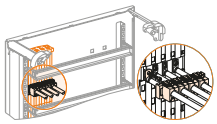
04147



04148



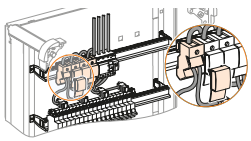
04151



04152

Busbar connections

Functional unit	Description	Reference
NG125 and INS40/125 (equipped with tunnel terminals)	4 125A connections, L = 230mm A 35mm² ferrule for connection to tunnel terminals is crimped to one end. A 45° ring lug is crimped to the other end. 95mm² tunnel terminals for INS: Reference 28947 (set of 3) Reference 28948 (set of 4)	**04145**
NG160 incoming device (located on left-hand side), NG125, INS160, C120	One-piece connection, 160A, L = 150mm Supply to Powerclip busbars from a switchboard incomer. Supply to a row incomer from Powerclip busbars.	**04147**
NG160 incoming device (located in the middle), NG125, INS160, C120	One-piece connection, 160A, L = 440mm	**04148**
12 Powerclip tap-off with 6mm² and 10mm² terminals		**04151**
12 Powerclip tap-off with 16mm² terminals		**04152**
20 screws CHC M6 x 12 for Powerclip busbar		**04158**
8 IPxxB covers for Powerclip busbars		**04150**



Linergy DX – 160A Polybloc distribution blocks

Description	Reference
160A, 1P, 6 x 16mm spring connections, 1 x 70mm incomer	**04031**

Note
Installation on a raised DIN rail.

Note
(1) Not compatible with 80Amp Multiclip (04000) due to height.

Prisma pack wall-mount enclosures

Distribution components and cable running

04040

Linergy DX – 63A quick distribution blocks

Description	Reference
63A, 4 x 6mm per phase (3) & 12 x 6mm neutral, 25mm top incomer	**04040**
63A, 4 x 6mm per phase (3) & 12 x 6mm neutral, 25mm bottom incomer	**04041**

04000

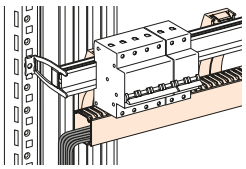
04014

Linergy FM – multiclip quick device feeders

Description	Reference
63A, 4P, 2 x 4mm & 2 x 6mm per phase (3) & 4 x 4mm & 4 x 6mm for neutral	**04008**
80A, 4P, 6 x 6mm per phase (3) & 18 x 6mm for neutral	**04000**
160A, 4P, 6 x 10mm per phase (3) & 9 x 10mm for neutral	**04018**
200A, 2P, 12 x 10mm per phase (2)	**04012**
200A, 3P, 12 x 10mm per phase (3)	**04013**
200A, 4P, 12 x 10mm per phase (3) & 18 x 10mm for neutral	**04014**
200A, 4P, 18 x 10mm per phase (3) & 27 x 10mm for neutral	**04026**

Linergy FH – 100A comb busbars

Description	Reference
24 poles with 18mm pitch for Acti 9 circuit breakers	
One-pole, 24 way	**A9XPH124**
Two-pole, 12 way	**A9XPH224**
Three-pole, 8 way	**A9XPH324**
Comb accessories	
20 insulated tooth caps	**A9XPT920**
4 insulated connectors for 35mm² cables	**A9XPCM04**



Cable running

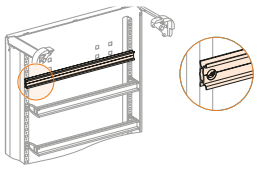
Description	Reference
Cable straps	
12 horizontal cable straps	**04239**
4 covers for horizontal cable straps, L = 430mm	**04243**
Trunking	
4 horizontal sections, 60 x 30mm, L = 450mm + supports	**04257**
12 horizontal trunking supports	**04255**
2 fixing brackets, height = 15mm (for vertical trunking)	**04206**

F

Other installation accessories

Blanking plates

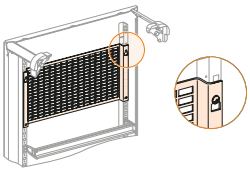
Description	Reference
Blanking strip, height = 46mm, L = 1m	**03220**
4 divisible blanking plates, height = 46mm, L = 90mm	**03221**



03004

Modular rails

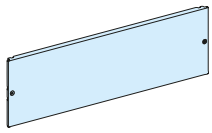
Description	Depth behind front plate (mm)	Useful length (mm)	Reference
Pack modular device rail	50	432	**01260**
Adjustable modular device rail	18-84	432	**03002**
Recessed modular device rail	112	432	**03003**
Rear modular device rail	80	432	**03004**



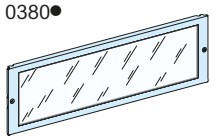
03172

Mounting plates

Description	Reference
Recessed slotted mounting plate height = 300mm	**03172**



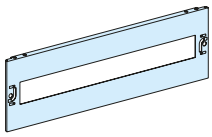
0380●



0334●

Plain (metal) and transparent (glass) front plates

Height (mm)	Reference Plain front plate	Reference Transparent front plate
50	**03801**	–
100	**03802**	–
150	**03803**	–
200	**03804**	**03342**
250	**03805**	–
300	**03806**	**03343**
450	**03807**	**03344**



03203

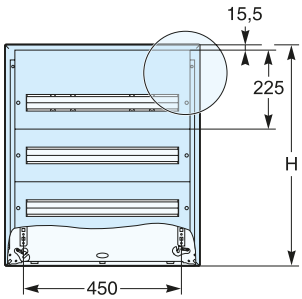
01094

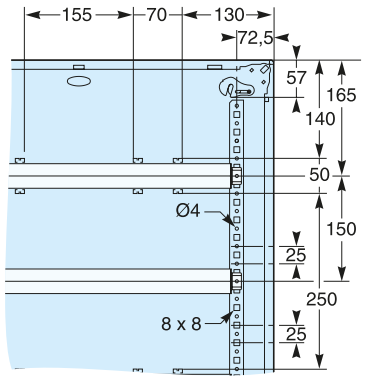
Modular front plates

Description	Height (mm)	Reference
Standard modular front plate	150	**03203**
Standard modular front plate	200	**03204**
Bottom modular front plate for 4, 5 & 6 row enclosures	200	**01264**
Top & bottom modular front plate for 2 & 3 row enclosures	225	**01265**
Standard modular front plate	250	**03205**
Front plate hinge kit		**08585**
Replacement front plate locking screws (set of 10 pairs)		**01094**

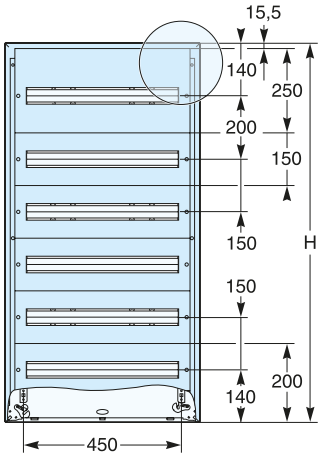
Dimensions

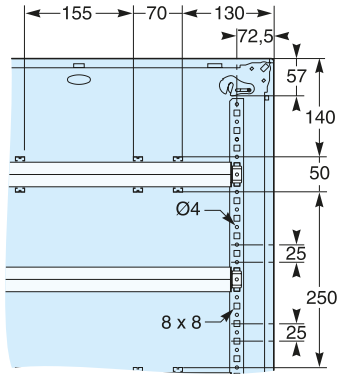
2 and 3-row wall-mounted enclosures





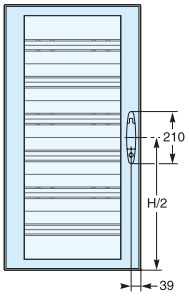
4, 5 and 6-row wall-mounted enclosures

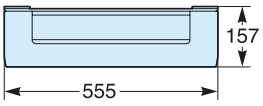




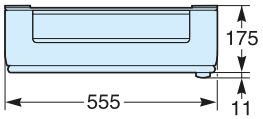
No. of rows	Height (mm)
2	480
3	630
4	780
5	930
6	1080

Door



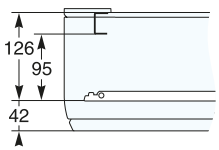


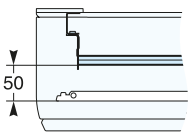
Without door



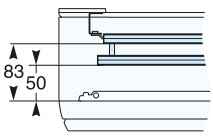
With door

Depths behind front plate

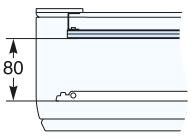




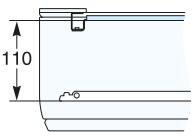
Standard 01260



Upper rail used in 4, 5 and 6 row enclosures



Rear 03004



Recessed 03003

F

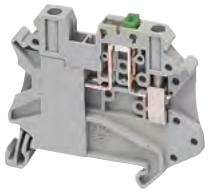
Screw terminal blocks for use on 35mm DIN rail

NSYTRV22

NSYTRV352

NSYTRV952BB

NSYTRV42PE


NSYTRV42SC

NSYTRV42SF5

NSYTRV162SF

Screw terminal blocks – passthrough

Description (CSA mm²)	Rating (A)	Pack qty	Blue reference	Grey reference
2.5 (1)	24	50	**NSYTRV22BL**	**NSYTRV22**
4 (1)	32	50	**NSYTRV42BL**	**NSYTRV42**
6	41	50	**NSYTRV62BL**	**NSYTRV62**
10	57	50	**NSYTRV102BL**	**NSYTRV102**
16	76	50	**NSYTRV162BL**	**NSYTRV162**
35	125	50	**NSYTRV352BL**	**NSYTRV352**
50	150	10	**NSYTRV502BL**	**NSYTRV502**

Screw terminal blocks – protective earth

Description (CSA mm²)	Rating (A)	Pack qty	Reference
2.5	–	50	**NSYTRV22PE**
4	–	50	**NSYTRV42PE**
6	–	50	**NSYTRV62PE**
10	76	50	**NSYTRV102PE**
16	101	50	**NSYTRV162PE**
35	125	50	**NSYTRV352PE**

Screw terminal accessories

Description	To fit terminal	Pack qty	Blue reference	Grey reference
End Plate width 2.2mm	2.5-10mm	50	**NSYTRAC22BL**	**NSYTRAC22**
	16mm	10	**–**	**NSYTRAC162**
Partition Plate width 2mm	2.5-16mm	50	**NSYTRAP22BL**	**NSYTRAP22**
	95-150mm	10	**–**	**NSYTRAC952**
Cover	95mm	10	**–**	**NSYTRACP1**
	150mm	10	**–**	**NSYTRACP2**

Description	To fit terminal	Pack qty	Screw to screw reference	Screw to spring reference
Step-down bridge to 2.5/4mm	6mm	10	**NSYTRALV62**	**NSYTRALVR62**
	10mm	10	**NSYTRALV102**	**NSYTRALVR102**

Screw terminal blocks – disconnect and fuse

Description	Rating (A)	Colour	Pack qty	Reference
4mm² Disconnect (blade)	20	Grey	50	**NSYTRV42SC**
4mm² Disconnect with test points (blade)	20	Grey	50	**NSYTRV42ST**
4mm² Disconnect (for removable carrier)	20	Grey	50	**NSYTRV42TB**
Removable carrier for fuse 5x20mm			10	**NSYTRASF520**
Removable carrier for component			10	**NSYTRASV1**
Partition Plate for NSYTRV42SC/ST/STAR/TB		Grey	50	**NSYTRAP23**
4mm² Disconnect for 5x20mm Fuse (lever type)	6.3	Black	50	**NSYTRV42SF5**
16mm² Disconnect for 5x20mm Fuse (fixed carrier)	10	Black	50	**NSYTRV162SF**

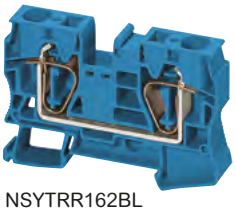
Note
(1) Other colours available, add suffix to grey reference, AR for Orange, RD for Red, WH for White.

Spring terminal blocks for use on 35mm DIN rail

NSYTRR62

NSYTRR43

NSYTRR24


NSYTRR162BL

NSYTRR102PE

NSYTRALR102

Spring terminal blocks – passthrough

Description (CSA mm²)	Rating (A)	Connection points	Pack qty	Blue reference	Grey reference
2.5	24	1 x 1	50	**NSYTRR22BL**	**NSYTRR22**
		1 x 2	50	**NSYTRR23BL**	**NSYTRR23**
		2 x 2	50	**NSYTRR24BL**	**NSYTRR24**
4	32	1 x 1	50	**NSYTRR42BL**	**NSYTRR42**
		1 x 2	50	**NSYTRR43BL**	**NSYTRR43**
		2 x 2	50	**NSYTRR44BL**	**NSYTRR44**
6	41	1 x 1	50	**NSYTRR62BL**	**NSYTRR62**
10	57	1 x 1	50	**NSYTRR102BL**	**NSYTRR102**
16	76	1 x 1	50	**NSYTRR162BL**	**NSYTRR162**

Spring terminal blocks – protective earth

Description (CSA mm²)	Connection points	Pack qty	Grey reference
2.5	1 x 1	50	**NSYTRR22PE**
	1 x 2	50	**NSYTRR23PE**
4	1 x 1	50	**NSYTRR42PE**
	1 x 2	50	**NSYTRR43PE**
6	1 x 1	50	**NSYTRR62PE**
10	1 x 1	50	**NSYTRR102PE**
16	1 x 1	50	**NSYTRR162PE**

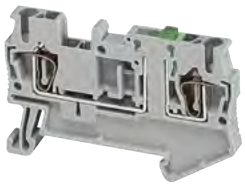
Spring terminal accessories

Description	To fit terminal	Pack qty	Blue reference	Grey reference
End Plate width 2.2mm	2.5mm 1 x 1	50	**NSYTRACR22BL**	**NSYTRACR22**
	2.5mm 1 x 2	50	**NSYTRACR23BL**	**NSYTRACR23**
	2.5mm 2 x 2	50	**NSYTRACR24BL**	**NSYTRACR24**
	4mm 1 x 1	50		**NSYTRACR42**
	4mm 1 x 2	50		**NSYTRACR43**
	4mm 2 x 2	50		**NSYTRACR44**
	6mm 1 x 1	50		**NSYTRACR62**
	6mm 1 x 2	50		**NSYTRACR63**
	10mm 1 x 1	50		**NSYTRACR102**
	16mm 1 x 1	50		**NSYTRACR162**
Partition Plate width 2mm	2.5mm 1x1	50		**NSYTRAPR42**
	2.5mm 1x2	50		**NSYTRAPR23**
	2.5mm 1x3	50		**NSYTRAPR24**
	4mm 1x1	50		**NSYTRAPR42**

Description	To fit terminal	Pack qty	Spring to spring reference
Step-down bridge to 2.5/4mm	6mm	10	**NSYTRALR62**
	10mm	10	**NSYTRALR102**
	16mm	10	**NSYTRALR162**

F

Spring terminal blocks for use on 35mm DIN rail



NSYTRR22SC

Spring terminal – disconnect

Description	Connection points	Rating (A)	Colour	Pack qty	Reference
2.5mm² Disconnect (blade)	1 x 1	20	Grey	50	**NSYTRR22SC**
2.5mm² Disconnect (for removable carrier)	1 x 1	20	Grey	50	**NSYTRR22TB**
Removable carrier for fuse 5 x 20mm				10	**NSYTRASF520**
Removable carrier for component				10	**NSYTRASV1**
Removable carrier with 1N4007 diode				10	**NSYTRASV2**

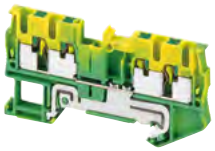
F

Linergy TR terminal blocks

Push-in terminal blocks foruse on 35mm DIN rail

NSYTRP22

NSYTRP43BL



NSYTRP24PE

NSYTRP24DPE

Push-in terminal blocks – passthrough

Description (CSA mm²)	Rating (A)	Connection points	Pack qty	Blue reference	Grey reference
2.5	30	1 x 1	50	**NSYTRP22BL**	**NSYTRP22**
		1 x 2	50	**NSYTRP23BL**	**NSYTRP23**
		2 x 2	50	**NSYTRP24BL**	**NSYTRP24**
2.5 double decker	24	1 x 1	50	**NSYTRP24DBL**	**NSYTRP24D**
4	38	1 x 1	50	**NSYTRP42BL**	**NSYTRP42**
		1 x 2	50	**NSYTRP43BL**	**NSYTRP43**
		2 x 2	50	**NSYTRP44BL**	**NSYTRP44**

Push-in terminal blocks – protective earth

Description (CSA mm²)	Rating (A)	Connection points	Pack qty		Grey reference
2.5		1 x 1	50		**NSYTRP22PE**
		1 x 2	50		**NSYTRP23PE**
		2 x 2	50		**NSYTRP24PE**
2.5 double decker		1 x 1	50		**NSYTRP24DPE**
4		1 x 1	50		**NSYTRP42PE**
		1 x 2	50		**NSYTRP43PE**
		2 x 2	50		**NSYTRP44PE**

Push-in terminal accessories

Description	To fit terminals	Pack qty	Blue reference	Grey reference
End Plate width 2.2mm	2.5mm 1 x 1	50	**NSYTRACR22BL**	**NSYTRACR22**
	2.5mm 1 x 2	50	**NSYTRACR23BL**	**NSYTRACR23**
	2.5mm 2 x 2	50	**NSYTRACR24BL**	**NSYTRACR24**
	4 mm 1 x 1	50		**NSYTRACR42**
	4 mm 1 x 2	50		**NSYTRACP43**
	4 mm 2 x 2	50		**NSYTRACP44**
Partition Plate width 2.mm	2.5mm 1 x 1	50		**NSYTRAPR42**
	2.5mm 1 x 2	50		**NSYTRAPR23**
	2.5mm 2 x 2	50		**NSYTRAPR24**
	4 mm 1 x 1	50		**NSYTRAPR42**
End Plate width 2.2mm for disconnects	2.5mm 1 x 1	50		**NSYTRACPK22**
	2.5mm 1 x 2	50		**NSYTRACPK23**
	2.5mm 2 x 2	50		**NSYTRACPK24**
	4 mm 1 x 1	50		**NSYTRAPR42**

F

Linergy TR terminal blocks

Screw and Spring multi-level terminal blocks for use on 35mm DIN rail
Marketing accessories

NSYTRV24D

NSYTRACE24

Screw terminal – multi-level

Description	Rating (A)	Colour	Pack qty	Reference
2.5mm² Double deck	24	Grey	50	**NSYTRV24D**
4mm² Double deck	30	Grey	50	**NSYTRV44D**
4mm² Double deck Protective Earth	30	Grn/Yell	50	**NSYTRV44DPE**
2.5mm² Triple deck	20	Grey	50	**NSYTRV26T**
Partition Plate for NSYTRV24D/44D/44DPE		Grey	50	**NSYTRACEP24**
End Plate for NSYTRV24D/44D/44DPE		Grey	50	**NSYTRACE24**
End Plate for NSYTRV26T		Grey	50	**NSYTRACE26**
Vertical bridge for NSYTRV24D/44D		Grey	50	**NSYTRALV24**

F

NSYTRV26T

NSYTRACEP24

Spring terminal – multi-level

Description	Rating (A)	Colour	Pack qty	Reference
2.5mm2 Double deck	22	Grey	50	**NSYTRR24D**
4mm2 Double deck	28	Grey	50	**NSYTRR44D**
4mm2 Double deck Protective Earth	30	Grn/Yell	50	**NSYTRR44DPE**
2.5mm2 Triple deck	20	Grey	50	**NSYTRR26T**
End Plate for NSYTRR24D		Grey	50	**NSYTRACRE24**
End Plate for NSYTRR44D/44DPE		Grey	50	**NSYTRACRE44**
End Plate for NSYTRR26T		Grey	50	**NSYTRACRE26**
Vertical bridge for NSYTRR24D/44D		Grey	50	**NSYTRALV24R**

NSYTRR44D

NSYTRACRE44

NSYTRR26T

NSYTRACRE26

Clip-in marker strips

10 consecutive figures or numbers, printed horizontally

Lateral sides for the NSYTRV and Central shaft for NSYTRR 1-10 / 91-100 sold in lots of 10 L1, L2, L3, N, PE sold in lots of 10 1-100 sold as each	2.5mm	4mm	6mm	>=10mm (1)
1....10	**NSYTRAB510**	**NSYTRAB610**	**NSYTRAB810**	**NSYTRAB1010**
11...20	**NSYTRAB520**	**NSYTRAB620**	**NSYTRAB820**	**NSYTRAB1020**
21...30	**NSYTRAB530**	**NSYTRAB630**	**NSYTRAB830**	**NSYTRAB1030**
31...40	**NSYTRAB540**	**NSYTRAB640**	**NSYTRAB840**	**NSYTRAB1040**
41...50	**NSYTRAB550**	**NSYTRAB650**	**NSYTRAB850**	**NSYTRAB1050**
51...60	**NSYTRAB560**	**NSYTRAB660**	**NSYTRAB860**	**NSYTRAB1060**
61...70	**NSYTRAB570**	**NSYTRAB670**	**NSYTRAB870**	**NSYTRAB1070**
71...80	**NSYTRAB580**	**NSYTRAB680**	**NSYTRAB880**	**NSYTRAB1080**
81...90	**NSYTRAB590**	**NSYTRAB690**	**NSYTRAB890**	**NSYTRAB1090**
91..100	**NSYTRAB5100**	**NSYTRAB6100**	**NSYTRAB8100**	**NSYTRAB10100**
1...100	**NSYTRAB51100**	**NSYTRAB61100**		
L1, L2, L3, N, PE	**NSYTRAB5L1N**	**NSYTRAB6L1N**		

Note
(1) For 16mm terminal blocks or bigger, the strip must be broken and used individually.

Spring terminal blocks for use on 35mm DIN rail

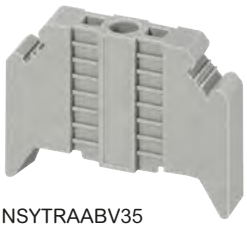
NSYTRAL210

Common accessories

Description	Connection points	To fit terminal	Pack qty	Reference
Plug-in bridge Red	2	2.5	50	**NSYTRAL22**
		4	50	**NSYTRAL42**
		6	10	**NSYTRAL62**
		10	10	**NSYTRAL102**
		16	10	**NSYTRAL162**
		35	10	**NSYTRAL352**
		50 (1)	10	**NSYTRAL502**
		70 (1)	10	**NSYTRAL702**
	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**

Description		To fit terminal	Pack qty	Reference
End stop for 35mm DIN rail	Clip on, 5.2mm	2.5 - 150	50	**NSYTRAAB35**
	With screw, 9.5mm	2.5 - 150	50	**NSYTRAABV35**
Test adaptor	For plug-in bridge shaft	2.5 - 35	10	**NSYTRAFT**
DIN rail, Perforated, W = 35mm, H = 7.2mm, L = 2000mm			20	**NSYSDR200BD**
DIN rail, Perforated, W = 35mm, H = 15mm, L = 2000mm			20	**NSYDPR200D**
Terminal marker carrier for end stop				**NSYTRASB4**

NSYTRAAB35



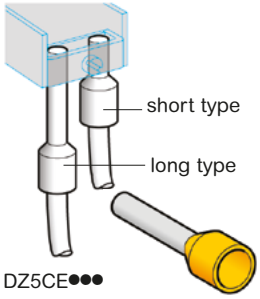
NSYTRAABV35

NSYSDR200BD

NSYDPR200D

Note
(1) Screw bridge.

Cable ends and marking accessories



DZ5CE●●●

Cable ends with insulation sleeves (1)

Wire size		Pack qty	Colour	Reference
Short type	0.50 sq mm	100	White	**DZ5CE005**
	0.75 sq mm	100	Blue	**DZ5CE007**
	1.00 sq mm	100	Red	**DZ5CE010**
	1.50 sq mm	100	Black	**DZ5CE015**
	2.00 sq mm	100	Yellow	**DZ5CE020**
	2.50 sq mm	100	Grey	**DZ5CE025**
Long type	1.50 sq mm	100	Black	**DZ5CE0153**
	2.50 sq mm	100	Grey	**DZ5CE0253**

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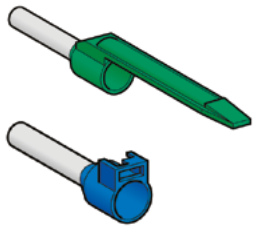
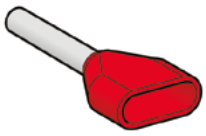

DZ5CA●●●

Cable ends with insulation sleeves and cable marking facility (1)

Wire size		Pack qty	Colour	Reference
Short type	0.50 sq mm	100	White	**DZ5CA005**
	0.75 sq mm	100	Blue	**DZ5CA007**
	1.00 sq mm	100	Red	**DZ5CA010**
	1.50 sq mm	100	Black	**DZ5CA015**
	2.50 sq mm	100	Grey	**DZ5CA025**
Short type	4.00 sq mm	100	Orange	**DZ5CA042**
	6.00 sq mm	100	Green	**DZ5CA062**
	10.00 sq mm	100	Brown	**DZ5CA102**
	16.00 sq mm	100	White	**DZ5CA162**
Long type	4.00 sq mm	100	Orange	**DZ5CA043**
	6.00 sq mm	100	Green	**DZ5CA063**
	10.00 sq mm	100	Brown	**DZ5CA103**
	16.00 sq mm	100	White	**DZ5CA163**
	25.00 sq mm	100	Black	**DZ5CA253**



Double cable ends (1)

Wire size		Pack qty	Colour	Reference
Short type	1.50 sq mm	500	Black	**AZ5DE015**
	2.50 sq mm	500	Black	**AZ5DE025**

Notes
(1) Priced each and sold in Pack quantity only.

Clip-in markers and cable duct

Clip-in markers
Cable duct
Standoffs

AK2GD●●●●

AK2GA●●

Cable-duct (L = 2000mm)

Width (mm)	Height (mm)	Colour	Pack qty	Reference
25	50	Grey	8	**AK2GD2550**
37.5	75	Grey	8	**AK2GD3775**
50	75	Grey	8	**AK2GD5075**
100	75	Grey	8	**AK2GD10075**
125	75	Grey	8	**AK2GD12575**
30	35	Blue	8	**AK2GA33**
30	55	Blue	8	**AK2GA35**
30	90	Blue	8	**AK2GA39**
60	55	Blue	8	**AK2GA65**
60	90	Blue	8	**AK2GA69**

AK2CD●●

AK2CA●

Covers for cable-duct (L = 2000mm)

To fit cable-duct width (mm)	Colour	Pack qty	Reference
25	Grey	8	**AK2CD25**
37.5	Grey	8	**AK2CD37**
50	Grey	8	**AK2CD50**
100	Grey	8	**AK2CD100**
125	Grey	8	**AK2CD125**
30	Blue	8	**AK2CA3**
60	Blue	8	**AK2CA6**

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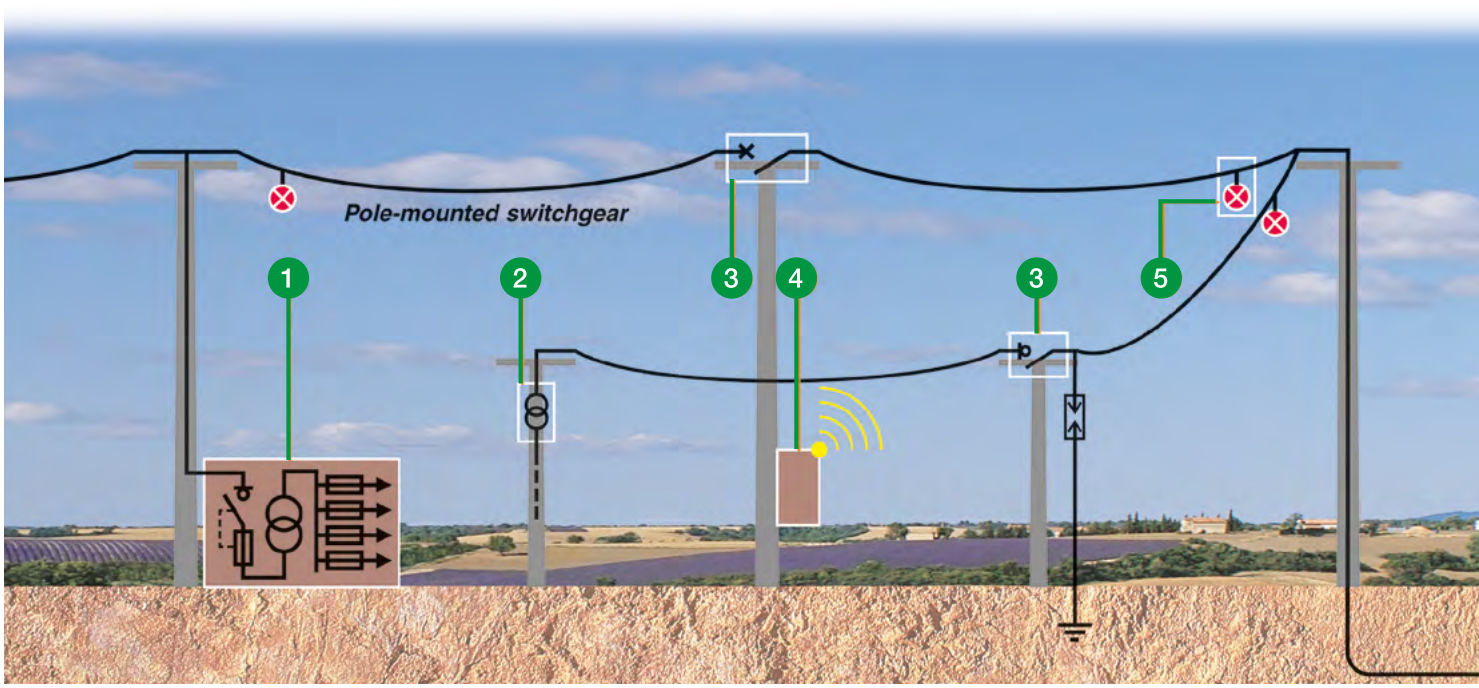
Medium voltage distribution

Medium voltage panorama

Medium voltage switchgear and transformer panorama G2

Medium voltage panorama

Complete offer ranging from 3kV to 40kV



G

1 Prefabricated MV/LV substation (rectangular)

KPX
Up to 33kV
and 2.5MVA

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

2 Pole-mounted transformers

MINERA
Immersed transformer
Up to 33kV and 500kVA

3 Pole-mounted switchgear

E Series
Up to 38kV/800A
Recloser

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

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

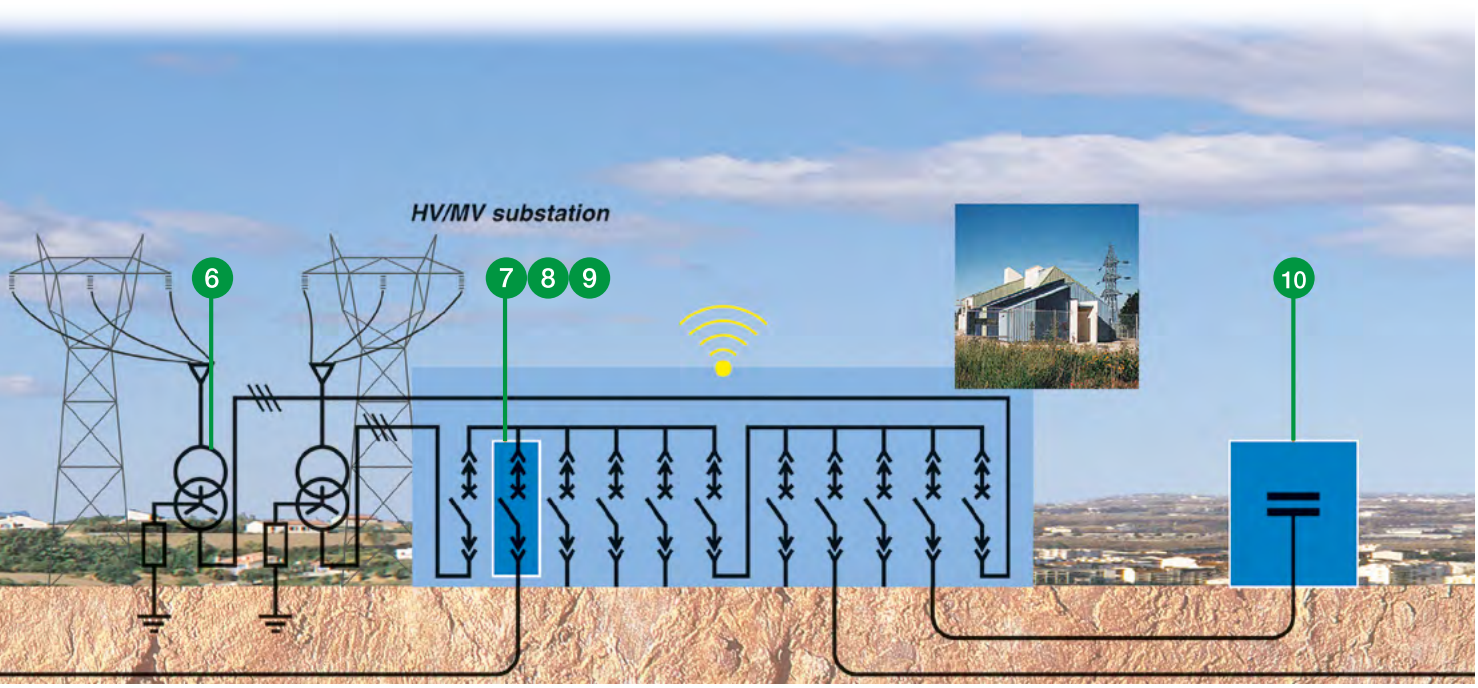
4 5 Overhead network control and monitoring

AVDC
Monitoring, control
and protection

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

Medium voltage panorama

Complete offer ranging from 3kV to 40kV



6 Power transformer

MINERA
Power transformer
up to 170kV
and 80MVA

7 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
WI up to 52kV/2500A

8 9 Digital protection relays and power metering

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

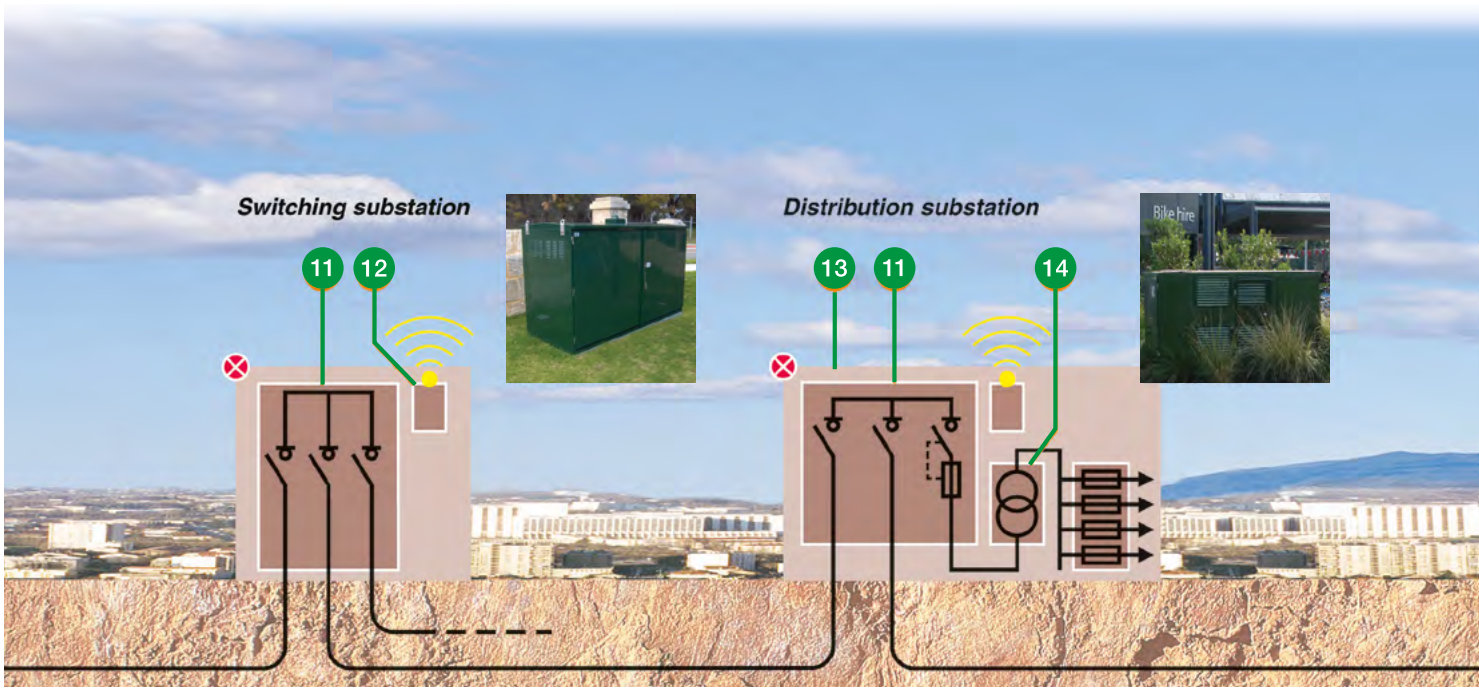
MiCOM Series Px10, Px20,
Px30 & Px40 protection and
control relays.

PowerLogic Digital Meters
Waveform capture and
accurate metering

VAMP series
arc fault detection relays

Medium voltage panorama

Complete offer ranging from 3kV to 40kV



G

11

Ring main unit

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

12

Remote control and fault tracking

Easergy T300, Flair
Remote control and monitoring through DNP3, Modbus and IEC protocols

13

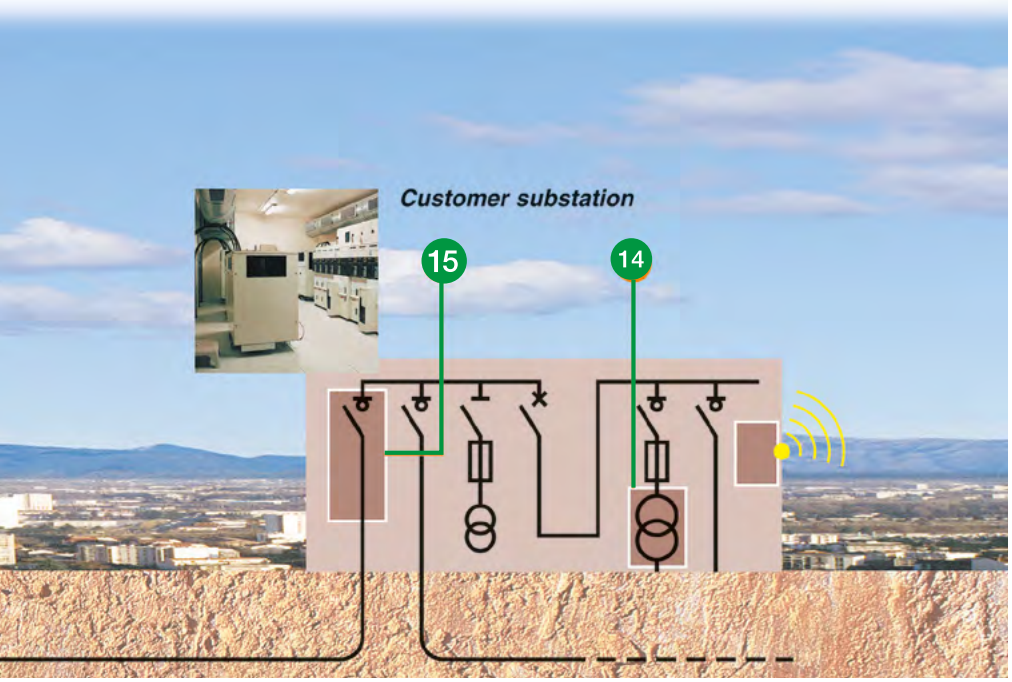
Prefabricated MV/LV substation (square)

KPX²
Up to 22kV and 2.5MVA

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

Medium voltage panorama

Complete offer ranging from 3kV to 40kV



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Distribution transformer

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

Trihal Dry Type transformers up to 36kV and 3.15MVA

15

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 and automation, 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.

Notes

Automation & control

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Variable speed drives & soft starters I

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Motor starters and protection components

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H

TeSys K contactors
2 and 3 pole mini contactors
Selection guide

Applications		**Simple automation systems**			
Rated operational current i.e. maxi AC3 (Ue ≤ 440V)		6A	9A	12A	16A
i.e. AC1 (0 ≤ 40°C)		–	20A	20A	–
Rated operational voltage		690 V			
Number of poles		3	3 or 4	3	3
Rated operational power in category AC3	220/240V	1.5kW	2.2kW	3kW	3kW
	380/400V	2.2kW	4kW	5.5kW	7.5kW
	415/440V	2.2/3kW	4kW	5.5kW	7.5kW
Add on auxiliary contact blocks	Front	Up to 4 N/C or N/O			
	Side	–			
	Front time delay	1 N/C			
	Front dust and damp protected	–			
Associated manual-auto thermal overload relays	Class 10A	0.11...16A			
	Class 20A	–			
Suppressor modules		Varistor or diode + Zener diode or RC circuit			
Contactor type references	~	LC1K06	LC1K09	LC1K12	LC1K16
	⎓	LP1K06	LP1K09	LP1K12	
Reversing contactor with mechanical interlock type references	~	–	LC2K09	–	–
	⎓	–	LP2K09	–	–

H

Product configurator on se.com/nz

TeSys K
Mini contactors
For motors up to 7.5kW

LC1K0910●7

3 pole contactors AC control

Motor Power rating		Rated operational current		Auxiliary fitted as standard		Reference (1)
230V (kW)	415V (kW)	AC1 (A)	AC3 (A)	N/O	N/C	
1.5	2.2	20	6	1	–	**LC1K0610●●**
				–	1	**LC1K0601●●**
2.2	4	20	9	1	–	**LC1K0910●●**
				–	1	**LC1K0901●●**
3	5.5	20	12	1	–	**LC1K1210●●**
				–	1	**LC1K1201●●**
4	7.5	20	16	1	–	**LC1K1610●●**
				–	1	**LC1K1601●●**

LC2K0910●D

3 pole contactors DC control

Motor Power rating		Rated operational current		Auxiliary fitted as standard		Reference (1)
230V (kW)	415V (kW)	AC1 (A)	AC3 (A)	N/O	N/C	
1.5	2.2	20	6	1	–	**LP1K0610●●**
				–	1	**LP1K0601●●**
2.2	4	20	9	1	–	**LP1K0910●●**
				–	1	**LP1K0901●●**
3	5.5	20	12	1	–	**LP1K1210●●**
				–	1	**LP1K1201●●**

3 pole reversing contactor, AC control (2)

Motor Power rating		Rated operational current		Auxiliary fitted as standard		Reference (1)
230V (kW)	415V (kW)	AC1 (A)	AC3 (A)	N/O	N/C	
1.5	2.2	20	6	2	–	**LC2K0610●●**
				–	2	**LC2K0601●●**
2.2	4	20	9	2	–	**LC2K0910●●**
				–	2	**LC2K0901●●**
3	5.5	20	12	2	–	**LC2K1210●●**
				–	2	**LC2K1201●●**
4	7.5	20	16	2	–	**LC2K1610●●**
				–	2	**LC2K1601●●**

LC2K0910●7

3 pole reversing contactor, DC control (2)

Motor Power rating 50/60 Hz		Rated operational current		Auxiliary fitted as standard		Reference (1)
230V (kW)	415V (kW)	AC1 (A)	AC3 (A)	N/O	N/C	
1.5	2.2	20	6	2	–	**LP2K0610●●**
				–	2	**LP2K0601●●**
2.2	4	20	9	2	–	**LP2K0910●●**
				–	2	**LP2K0901●●**
3	5.5	20	12	2	–	**LP2K1210●●**
				–	2	**LP2K1201●●**

4 pole contactors, AC control

Number of main poles		Rated operational current	Reference (1)
N/O	N/C	AC1 (A)	
2	2	20	**LC1K09008●●**
4	-	20	**LC1K09004●●**

4 pole contactors, DC control

Number of main poles		Rated operational current	Reference (1)
N/O	N/C	AC1 (A)	
2	2	20	**LP1K09008●●**
4	-	20	**LP1K09004●●**

Coil voltage code (1)

AC voltage (V)	**Volts ∿**	24	110	220	240	415
50/60Hz		B7	F7	M7	U7	N7
DC voltage (V)	**Volts ⎓**	24	110			
		BD	FD			

Note

(1) "●●" Complete reference with coil voltage code, e.g. LC1K0610B7 for 24V 50/60Hz. Indicative prices for common coil voltages

(2) It is essential to electrically interlock LC2 or LP2 reversing contactors..

Product configurator on se.com/nz

TeSys K
Auxiliaries and suppressor modules
Thermal overload relays

LA1KN22

Auxiliaries and suppressor modules - Front mount

Clip-on front mounting, 1 block per mini-contactor

Type	Range	Composition N/O	Composition N/C	Composition 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)	24-48VAC/DC	–	–	1	**LA2KT2E**
	110-240VAC	–	–	1	**LA2KT2U**
Diode and Zener diode	12-24VDC				**LA4KC1B**
RC	220-250VAC				**LA4KA1U**

LR2K0308

LA7K0064

Thermal overload relays (Class 10A) (1)

	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**
	Terminal block for separate mount	**LA7K0064**

Note
(1) Three phase differential protection.

Notes

TeSys D & TeSys D Green contactors
Selection guide

Applications		All types of control system				
SAFETY RATED All Model D / Model D Green Contactors conform to the following standards as required for safety rated contactors IEC/EN 60947-4-1 Mirror Contacts IEC/EN 60947-5-1 Mechanically Linked Contacts						
Rated operational current	Ie max AC-3 (Ue y 440 V)	9 A	12 A	18 A	25 A	32 A	38 A
	Ie AC-1 (q y 60 °C)	25 A		32 A	40 A	50 A	
Rated operational voltage		690 V on ⎓ and ∿					
Number of poles		3 or 4	3 or 4	3 or 4	3 or 4	3	
Rated operational power in AC-3	220/240 V	2.2 kW	3 kW	4 kW	5.5 kW	7.5 kW	9 kW
	380/400 V	4 kW	5.5 kW	7.5 kW	11 kW	15 kW	18.5 kW
	415/440 V	4 kW	5.5 kW	9 kW	11 kW	15 kW	18.5 kW
Auxiliary contacts		1 N/C and 1 N/O instantaneous incorporated in the contactors, with add-on blocks common to the whole range comprising up to 4 N/C or N/O instantaneous, up to 1 N/O + 1 N/C time delay and up to 2 N/O or 2 N/C protected contacts and 2 screen continuity terminals.					
Thermal overload relays manual-auto compatible	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		
Suppressor modules for Standard model D (∿ and low consumption contactors are fitted with a built-in bidirectional peak limiting diode suppressor as standard)	Varistor	●	●	●	●	●	●
	Diode	–	–	–	–	–	–
	RC circuit	●	●	●	●	●	●
	Bidirectional peak limiting diode	●	●	●	●	●	●
Interfaces	Relay output	●	●	●	●	●	●
	Relay interface with manual override switch	●	●	●	●	●	●
	Solid state	●	●	●	●	●	●
Contactor type references	⎓ or ∿ 3 pole	LC1 D09	LC1 D12	LC1 D18	LC1 D25	LC1 D32	LC1 D38
	⎓ or ∿ 4 pole	LC1 DT20/ LC1 D098	LC1 DT25/ LC1 D128	LC1 DT32/ LC1 D188	LC1 DT40/ LC1 D258	– –	– –

TeSys D & TeSys D Green contactors
Selection guide

40 A 60 A	50 A 80 A	65 A	80 A 125 A	95 A	115 A 200 A	150 A
690 V ⎓ or ∿			1000 V on ⎓ supply, 690 V on ∿ supply			
3 4	3	3 4	3 4	3	3 4	3
11 kW 18.5 kW 22 kW	15 kW 22 kW 25/30 kW	18.5 kW 30 kW 37 kW	22 kW 37 kW 45 kW	25 kW 45 kW 45 kW	30 kW 55 kW 59 kW	40 kW 75 kW 80 kW
1 N/C and 1 N/O instantaneous incorporated in the contactors, with add-on blocks common to the whole range comprising up to 4 N/C or N/O instantaneous, up to 1 N/O + 1 N/C time delay and up to 2 N/O or 2 N/C protected contacts and 2 screen continuity terminals.						
9…40 A 13…40 A	9…50 A 13…50 A	9…65 A 13…65 A	17…104 A 17…80 A	17…104 A	60…150 A 60…150 A	60…150 A 60…150 A
● ● ● ● ● ● ● ●	● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ●	● ● – – ● ● – –	– – ● –
● ● ● ● ● ●	● ● ●	● ● ● ● ● ●	● ● ● ● ● ●	● ● ●	● ● ● ● ● ●	● ● –
LC1 D40A LC1 DT60A LC1 DT60A	LC1 D50A – –	LC1 D65A LC1 DT80A LC1 DT80A	LC1 D80 LC1DT80 –	LC1 D95 – –	LC1 D115 LC1 D115 LC1 D115	LC1 D150 – –

TeSys D & TeSys D Green low consumption contactors
Selection guide

Applications		Automation systems		
SAFETY RATED All Model D / Model D Gren Contactors conform to the following standards as required for safety rated contactors IEC/EN 60947-4-1 Mirror Contacts IEC/EN 60947-5-1 Mechanically Linked Contacts				
Rated operational current	Ie max AC-3 (Ue ≤ 440 V)	9 A	12 A	18 A
	Ie AC-1 (≤ 60 °C)	25 A	25 A	32 A
Rated operational voltage		690 V		
Number of poles		3 or 4	3 or 4	3 or 4
Rated operational power in AC-3	220/240 V	2.2 kW	3 kW	4 kW
	380/400 V	4 kW	5.5 kW	7.5 kW
	415/440 V	4 kW	5.5 kW	9 kW
Coil consumption		Model D - 2.4W (100mA, 24V DC); Model D Green - 0.5W (500mA inrush, 100mA stable, 24VDC)		
Operating ranges		Model D - 0.7…1.25Uc; Model D Green - 0.85…1.1Uc		
Operating time at 20 °C and at Uc	Closing	70 ms		
	Opening	25 ms		
Auxiliary contact block modules		1 N/C and 1 N/O instantaneous contacts incorporated in the contactors, with add-on blocks common to the whole range, comprising up to 2 N/C or 2 N/O instantaneous standard contacts		
Interference suppression		Built-in suppression as standard, by bi-directional peak limiting diode		
Contactor type	3-pole	LC1 D09	LC1 D12	LC1 D18
	4-pole	LC1 DT20/D098	LC1 DT25/D128	LC1 DT32/D188

H

TeSys D & TeSys D Green low consumption contactors
Selection guide

25 A	32 A	38 A	40A	50A	65A
40 A	50 A	50 A	60A	80A	80A
690 V					
3 or 4	3 or 4	3 or 4	3	3	3
5.5 kW	7.5 kW	9 kW	11kW	15kW	18.5kW
11 kW	15 kW	18.5 kW	18.5kW	22kW	30kW
11 kW	15 kW	18.5 kW	22kW	25kW	37kW
Model D - 2.4W (100mA, 24V DC); Model D Green - 0.5W (500mA inrush, 100mA stable, 24VDC)					
Model D - 0.7…1.25Uc; Model D Green - 0.85…1.1Uc					
70 ms					
25 ms					
1 N/C and 1 N/O instantaneous contacts incorporated in the contactors, with add-on blocks common to the whole range, comprising up to 2 N/C or 2 N/O instantaneous standard contacts					
Built-in suppression as standard, by bi-directional peak limiting diode					
LC1 D25	LC1 D32	LC1 D38	LC1D40A	LC1D50A	LC1D65A
LC1 DT40/D258					

Product configurator on se.com/nz

TeSys D
3 pole contactors
For motor control up to 80kW

LC1D09●●

LC1D1156●●/1506●●

3 pole contactor, AC control

Motor power rating		Rated operational current			Reference (1) (2)
230V (kW)	400 V (kW)	AC1 (A)	AC3 (A)	AC4 (A)	
2.2	4	25	9	2.2	**LC1D09●●**
3	5.5	25	12	3.7	**LC1D12●●**
4	7.5	32	18	4	**LC1D18●●**
5.5	11	40	25	5.5	**LC1D25●●**
7.5	15	50	32	7.5	**LC1D32●●**
9	18.5	50	38	7.5	**LC1D38●●**
11	18.5	60	40	9	**LC1D40A●● (4)**
15	22	80	50	11	**LC1D50A●● (4)**
18.5	30	80	65	11	**LC1D65A●● (4)**
22	37	80	66	15	**LC1D80A●● (4)**
22	37	125	80	15	**LC1D80●●**
25	45	125	95	15	**LC1D95●●**
30	55	200	115	18.5	**LC1D1156●● (3)**
40	75	200	150	22	**LC1D1506●● (3)**

LC1D09-D38

3 pole contactor, DC control (BD) and Low consumption (BL)

Motor power rating		Rated operational current			Reference (1) (2)
230V (kW)	400 V (kW)	AC1 (A)	AC3 (A)	AC4 (A)	
2.2	4	25	9	2.2	**LC1D09●●**
3	5.5	25	12	3.7	**LC1D12●●**
4	7.5	32	18	4	**LC1D18●●**
5.5	11	40	25	5.5	**LC1D25●●**
7.5	15	50	32	7.5	**LC1D32●●**
9	18.5	50	38	7.5	**LC1D38●●**
11	18.5	60	40	9	**LC1D40A●● (6)**
15	22	80	50	11	**LC1D50A●● (6)**
18.5	30	80	65	11	**LC1D65A●● (6)**
22	37	80	66	11	**LC1D80A●● (6)**
22	37	125	80	15	**LC1D80●●**
25	45	125	95	15	**LC1D95●●**
30	55	200	115	18.5	**LC1D1156●● (3)**
40	75	200	150	22	**LC1D1506●● (3)**

Coil voltage code (1)

AC voltage 50/60Hz					
Volts	24	48	110	240	415
LC1D09…D150 (D115 and D150 coils with integral suppression device fitted as standard)	B7	E7	F7	U7	N7

DC voltage					
Volts	12	24	110	220	440
LC1D09…D38 (0.7…1.25 Uc) (5)	JD	BD	FD	MD	RD
LC1D40A…D80A (0.7…1.25 Uc) (5)					
LC1 D80 …D95 (0.85…1.1 Uc)					
LC1 D115…D150 (0.75…1.2 Uc) (5)					

LC low consumption – DC voltage	
Volts	24
LC1D09…D38 (0.8…1.25 Uc) (5)	BL

Notes
(1) "●●" Complete reference with coil voltage code, e.g. LC1D09U7 for 240V 50/60Hz. Indicative prices for common coil voltages.
(2) 1N/O and 1 N/C auxiliary contacts fitted as standard.
(3) The "6" indicates connection by lugs or bars. Use LA9D115703 if a terminal shroud is required.
(4) Everlink terminals are not compatible with previous terminal options. For complete range of voltages, see page H34.
(5) Coils with integral suppression device fitted as standard.
(6) Contactor also available in TeSys D Green range (Page H14).

Product configurator on se.com/nz

TeSys D
4 pole contactors

LC1DT40

LC1D80004●●

4 pole contactors, AC control

Non Inductive loads AC1 (A)	Number of main poles N/O	N/C	Auxiliary contacts fitted as standard (2) N/O	N/C	Reference (1)
Connection by screw clamp terminals					
20	4	–	1	1	**LC1DT20●●**
	2	2	1	1	**LC1D098●●**
25	4	–	1	1	**LC1DT25●●**
	2	2	1	1	**LC1D128●●**
32	4	–	1	1	**LC1DT32●●**
	2	2	1	1	**LC1D188●●**
40	4	–	1	1	**LC1DT40●●**
	2	2	1	1	**LC1D258●●**
Connection by EverLink®, BTR screw connectors (4)					
60	4	–	1	1	**LC1DT60A●●**
80	4	–	1	1	**LC1DT80A●●**
Connection by screw clamp terminals or connectors					
60	2	2	–	–	**LC1D40008●●** or **LP1D40008●●**
80	2	2	–	–	**LC1D65008●●** or **LP1D65008●●**
125	4	–	–	–	**LC1D80004●●** or **LP1D80004●●**
	2	2	–	–	**LC1D80008●●** or **LP1D80008●●**
200	4	–	–		**LC1D1150046●●** (3)

4 pole contactor, DC control (BD) and Low consumption (BL)

Non Inductive loads AC1 (A)	Reference (1)
20	**LC1DT20●●/LC1D098●●**
25	**LC1DT25●●/LC1D128●●**
32	**LC1DT32●●/LC1D188●●**
40	**LC1DT40●●/LC1D258●●**
60	**LC1DT60A●●** (6)
60	**LP1D40008●●**
80	**LC1DT80A●●** (6)
80	**LP1D65008●●**
125	**LP1D80004●●**
125	**LP1D80008●●**
200	**LC1D1150046●●**

Coil voltage code (1)

AC voltage 50/60Hz					
Volts	24	48	110	240	415
LC1D09…D150, LC1DT20…DT80A (D115 and D150 coils with integral suppression device fitted as standard)	B7	E7	F7	U7	N7
DC voltage					
Volts	24		110	220	
LC1D09…D258, DT20…DT80A, LP1D40…D65 (0.7…1.25 Uc) (5)	BD		FD	MD	
LP1D40…D80 (0.85…1.1 Uc)					
LC1 D115 (0.75…1.2 Uc) (5)					
LC low consumption - DC voltage					
Volts		24			
LC1D09…D258, LC1DT20…DT40 (0.8…1.25 Uc) (5)		BL			

Notes

(1) "●●" Complete reference with coil voltage code, e.g. LC1D09U7 for 240V 50/60Hz. Indicative prices for common coil voltages.
(2) For non-standard voltage, add 10% to above prices.
(3) The "6" indicates connection by lugs or bars. Use LA9D115703 if a terminal shroud is required.
(4) Everlink terminals are not compatible with previous terminal options. For complete range of voltages, see page H34.
(5) Coils with integral suppression device fitted as standard.
(6) Contactor also available in TeSys D Green range (Page H14).

Product configurator on se.com/nz

TeSys D Green
AC/DC contactors

New

TeSys D Green : AC/DC coil contactors

Green Premium™ Product

- 80% less energy consumption than standard contactor, reduce panel heat
- Suitable for direct control by PLC output up to 37 kW (80A, 400V)
- Wide control voltage band (except low consumption BBE coil-24 V DC).
- Dimensions similar to TeSys D AC contactor, making it fully compatible with all TeSys D accessories
- Embedded surge suppresor, noise free design

LC1D09●●●

LC1D40A●●●

H

3 pole contactor, AC/DC control and low consumption

Motor power rating 230V (kW)	Motor power rating 400V (kW)	Rated operational current AC1 (A)	Rated operational current AC3 (A)	Reference (1) (2) (3)
2.2	4	25	9	**LC1D09●●●**
3	5.5	25	12	**LC1D12●●●**
4	7.5	32	18	**LC1D18●●●**
5.5	11	40	25	**LC1D25●●●**
7.5	15	50	32	**LC1D32●●●**
9	18.5	50	38	**LC1D38●●●**
11	18.5	60	40	**LC1D40A●●● (4)**
15	22	80	50	**LC1D50A●●● (4)**
18.5	30	80	65	**LC1D65A●●● (4)**
22	37	80	66	**LC1D80A●●● (4)**

4 pole contactor, AC/DC control (2) (4)

Non Inductive loads AC1 (A)	Reference (1)
60	**LC1DT60A●●●**
80	**LC1DT80A●●●**

Coil voltage code (1)

AC/DC voltage (V)				
	24 (DC only) Low consumption	24-60	48-130	100-250
LC1D09…D80A and LC1DT60A...DT80A		BNE	EHE	KUE
LC1D40A…D80A	BBE			

Notes

(1) "●●●" Complete ref. with coil voltage code e.g. LC1D09KUE for 110-250V. Indicative price for common coil voltages.
(2) 1N/O and 1 N/C auxiliary contacts fitted as standard
(3) Replace LC1 with LC2 for reversing configuration. E.g. LC1D09●●● to LC2D09●●●. It is essential to electrically interlock LC2 contactors.
(4) Everlink terminal: Hexagon socket head (Allen key required).

TeSys D Green
Co-ordination with PLC output modules

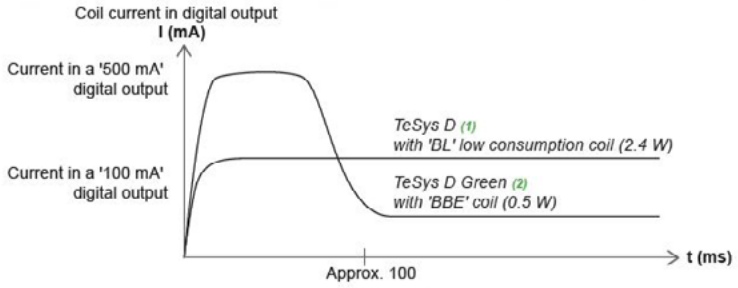
Coil selection

The PLC your are using				>>>	Compatible contactors (1)	Coil code
PLC type	**Output type**	**Output I (A)**	**Output module commercial reference**			
M221 / M241 / M251	Static output: 24 V DC	0.5	TM3DQ8●●● and Q16●●● (T, TG, U, UG)	>>>	LC1D09●● to LC1D38●●, LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●●	BL, BBE
		0.3 (sealed) 0.8 (inrush)	TM3XTYS4	>>>	LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●●	BBE, BL, BD, BNE
		0.1	TM3DQ16●● and Q32●● (TK, UK)	>>>	LC1D09●● to LC1D38●●	BL
	Relay output: 24 V DC / 230 V AC	2	TM3DQ8 and DQ16 (R,RG), TM3DM8 and DM24 (R,RG)	>>>	LC1D09●● to LC1D38●●, LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●●	Code of any DC coil up to 24 V or any AC coil up to 230 V
M340 / M580	Static output: 24 V DC	0.5	BMXDDO1602 and DM16022	>>>	LC1D09●● to LC1D38●●	BL
					LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●●	BBE
		0.1	BMXDDO3202, BMXDDM3202K, BMXDDO6402K	>>>	LC1D09●● to LC1D38●●	BL
	Relay output: 24 V DC / 230 V AC	2	BMXDRA0805 and DM16025	>>>	LC1D09●● to LC1D38●●, LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●●	Code of any DC coil up to 24 V or any AC coil up to 230 V
	Triac output: 230 V AC	0.6	BMXDAO1605	>>>	LC1D09●● to LC1D38●●, LC1D40●●● to LC1D80A●●●, LC1DT60A●●● to LC1DT80A●●●	Code of any AC coil up to 230 V (P7 code = 230 V)
AVANTYS	Static output: 24 V DC	0.5	STBDDO3200	>>>	LC1D09●● to LC1D38●●	BL
					LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●●	BBE
	Triac output: 230 V AC	2	STBDAO8210	>>>	LC1D09●● to LC1D38●●, LC1D40A●●● to LC1D80A, LC1DT60A●●● to LC1DT80A●●●	Code of any AC coil up to 230 V (P7 code = 230 V AC)

Coils consumption characteristics

Coil type	Uc DC - min -max	Average consumption at UC DC / 20 °C	
		Inrush	Sealed
BL	24 V - 0.8 Uc to 1.1 Uc	2.4 VA	2.4 W - 2.4 VA
BBE		11 W - 12.5 VA	0.5 W - 0.5 VA

TeSys D Green ("BBE" coil) vs TeSys D (low consumption "BL" coil)



(1) Up to 38 A.
(2) 40 to 80 A.

TeSys D Green is well adapted to direct control by PLC static outputs, even in its high ratings.

Notes
(1) "●●●" Complete ref. with coil voltage code e.g. LC1D40ABBE for 24V DC.

TeSys D
Capacitor switching contactors
Mechanical interlock
Reversing kit

LC1DWK12●●

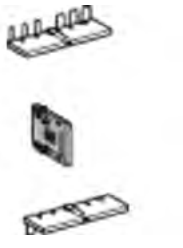
Capacitor switching contactors

kVAR at 415V (60°C)	Mounting Equivalent Contactor	Pole tightening torque (N.m)	Auxiliary contact fitted as standard N/O	N/C	Reference (1)
12.5	LC1D12	1.7	1	2	**LC1DFK●●**
16.7	LC1D18	2.5	1	2	**LC1DGK●●**
20	LC1D25	2.5	1	2	**LC1DLK●●**
25	LC1D32	2.5	1	2	**LC1DMK●●**
30	LC1D40	5	1	2	**LC1DPK●●**
40	LC1D50	5	1	2	**LC1DTK●●**
63	LC1D80	9	1	2	**LC1DWK12●●**

Standard coil voltages (1)		
Volts AC	240	415
50/60Hz	U7	N7

LAD9R1V kit

LAD9R1 kit



LAD9R3 kit

Reversing kits for 3-Pole reversing contactors

With 2 identical frame sizes	Description	Reference
LC1D09…D38	Mechanical interlock with electrical interlocking and set of power links	**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

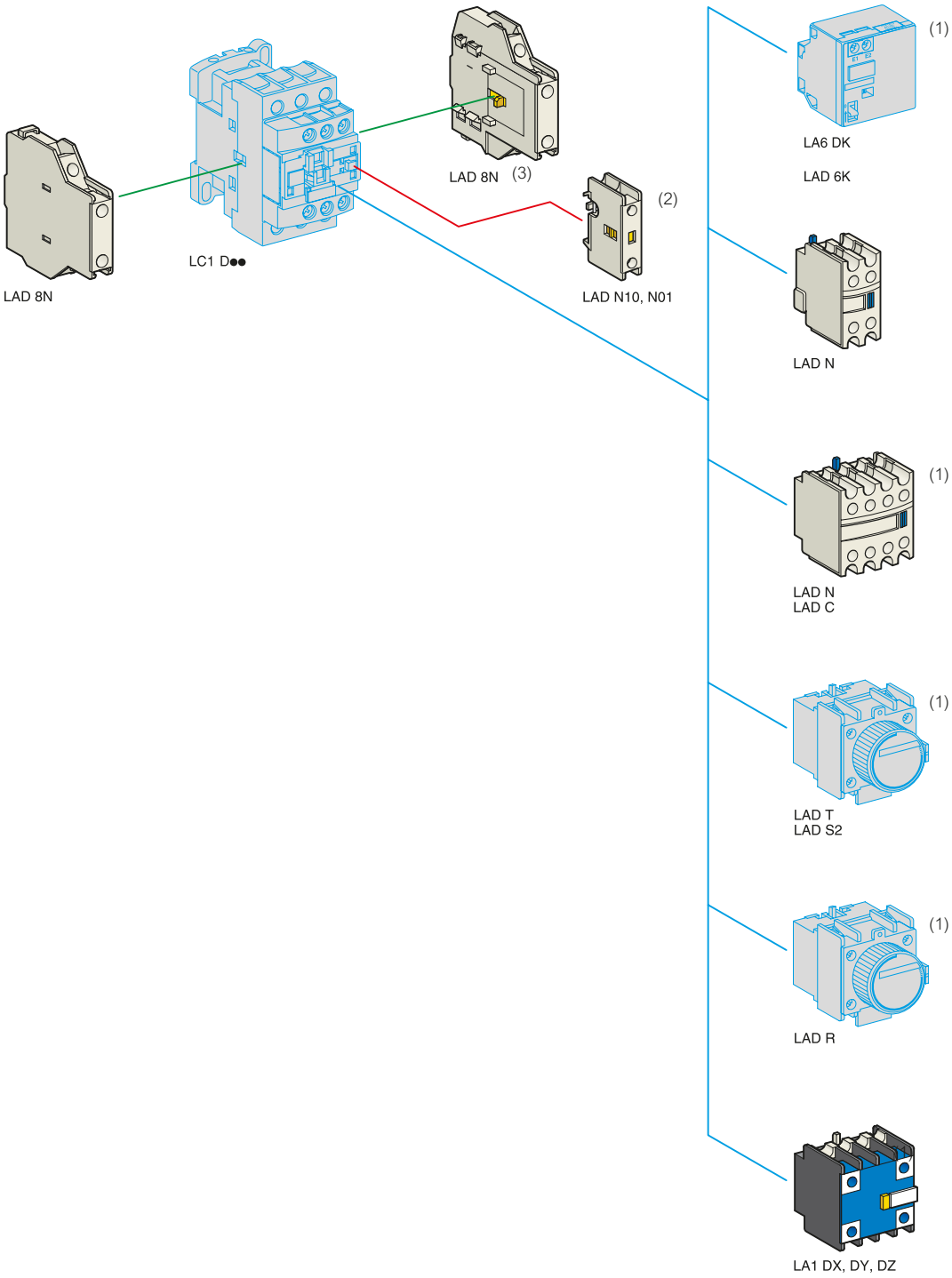
Contactors	Description	Reference
LC1D09…D38	Mechanical interlock	**LAD9V2**
LC1D40A…D80A	Mechanical interlock	**LAD4CM**
LC1D80…D95	Mechanical interlock - AC coil	**LA9D50978**
LC1D80…D95	Mechanical interlock - DC coil	**LA9D80978**
LC1D09...D38	Power links	**LAD9V5 + LAD9V6**
LC1D40A…D80A	Power links (reversing starter wiring set)	**LA9D65A69**
LC1D80…D95	Power links (reversing starter wiring set)	**LA9D8069**
LC1D115…D150	Power links (reversing starter wiring set)	**LA9D11569**

Interlocks and wiring kits for 4-Pole changeover contactors

Contactors	Description	Reference
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(2)**
LP1D80004	Power links	**LA9D8070(2)**
LC1D115004	Power links	**LA9D11570**

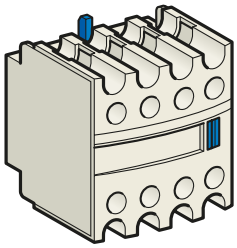
Notes
(1) "●●" Complete reference with coil voltage code, e.g. LC1DFKU7 for 240V 50/60Hz.
(2) Two LADN●1 auxiliary contact blocks required to provide electrical interlocking.

TeSys D contactors
Instantaneous auxiliary contact blocks



Note
Not all combinations are possible. Picture references are indicative only.
(1) Cannot add to low consumption contactors (BL).
(2) Will only suit LC1D80 and above.
(3) Left side mounting for standard TeSys D contactors. Right side mounting for TeSys D Green (AC/DC) contactors. Please refer to the reference chart on next page to ensure compatibility with selected contactor.

TeSys D
Instantaneous auxiliary contact blocks
Safety chain marking



LADN●●
LADC●●

Instantaneous auxiliary contact blocks

For use in normal operating environments.		Composition			Reference
Clip-on mounting	Number of contacts per block	N/O	N/C	Cont	
Front	1	1	–	–	**LADN10**
		–	1	–	**LADN01**
	2	1	1	–	**LADN11**
		2	–	–	**LADN20**
		–	2	–	**LADN02**
	4	2	2	–	**LADN22**
		1	3	–	**LADN13**
		4	–	–	**LADN40**
		–	4	–	**LADN04**
		3	1	–	**LADN31**
	1 N/O and 1 N/C make before break	2	2	–	**LADC22**
Side		1	1	–	**LAD8N11**
		2	–	–	**LAD8N20**
		–	2	–	**LAD8N02**

H

Maximum number of auxiliary contacts that can be fitted:

Contactors			Instantaneous auxiliary contacts					Time delay
Type	No. of poles and size		Side mounted		Front mounted			Front mounted
					1 contact	2 contacts	4 contacts	
AC	3P	LC1D09…D38	1 on LH side	**and**	-	1	or 1	or 1
AC/DC		LC1 D40A…D80A (3)	1 on LH or 1 on RH side	**and**	-	1	or 1	or 1
		LC1 D80 and D95 (50/60 Hz)	1 on each side	**or**	2	and 1	or 1	or 1
		LC1 D80 and D95 (50 or 60 Hz)	1 on each side	**and**	2	and 1	or 1	or 1
		LC1 D115 and D150	1 on LH side	**and**	-	1	or 1	or 1
	4P	LC1 DT20…DT40	1 on LH side	**and**	-	1	or 1	or 1
		LC1 DT60A and DT80A (3)	1 on LH or 1 on RH side	**and**	-	1	or 1	or 1
		LC1 D40008, D65008 and D80	1 on each side	**or**	1	or 1	or 1	or 1
		LC1 D115	1 on each side	**and**	1	or 1	or 1	or 1
DC	3P	LC1 D09…D38	-		-	1	or 1	or 1
		LC1 D40A…D80A	-		-	1	or 1	or 1
		LC1 D80 and D95	-		1	or 1	or 1	or 1
		LC1 D115 and D150	1 on LH side	**and**	-	1	or 1	or 1
	4P	LC1 DT20…DT40	-		-	1	or 1	or 1
		LC1 DT60A and DT80A	-		-	1	or 1	or 1
		LC1 D40008, D65008 and D80	-		2	and 1	or 1	or 1
		LC1 D115	1 on each side		-	and 1	or 1	or 1
LC (1) (2)	3P	LC1 D09…D38	-		-	1	-	-
	4P	LC1 DT20…DT40	-		-	1	-	-

(1) LC: low consumption
(2) LA1D●●● dust & damp proof auxiliary contact blocks not allowed
(3) For AC and AC/DC coils.

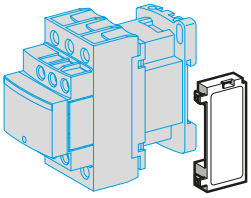
LAD9ET1S

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 (9A to 65A)	**LAD9ET1S**
Red safety cover for TeSys D contactor (80A to 95A)	**LAD9ET3S**
Red safety cover for TeSys D contactor (110A to 150A)	**LAD9ET4S**
Auxiliary contact block (2NO + 2NC)	**LADN22S**

TeSys D
Suppressor modules

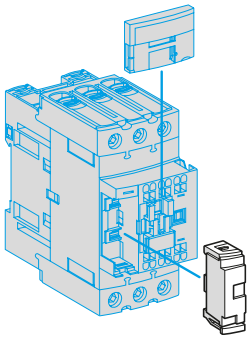


LAD 4●●

RC circuits (Resistor-Capacitor)

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. Voltage limited to 3 Uc max. and oscillating frequency limited to 400 Hz max. Slight increase in drop-out time (1.2 to 2 times the normal time).

Mounting	For use with contactor (1)			Reference
	Rating	Type		
		V ∼	V ⎓	
Clip-on side mounting (3)(5)	D09…D38 (3P) DT20…DT40	24…48	–	**LAD4RCE**
		50…127	–	**LAD4RCG**
		110…250	–	**LAD4RCU**
Clip-on front mounting (3)(5)	D40A…D65A (3P) DT60A…DT80A (4P)	24…48	–	**LAD4RC3E**
		50…127	–	**LAD4RC3G**
		110…240	–	**LAD4RC3U**
		380…415	–	**LAD4RC3N**
Screw fixing (4)	D80…D150 (3P) D40…D115 (4P)	24…48	–	**LA4DA2E**
		50…127	–	**LA4DA2G**
		110…240	–	**LA4DA2U**



LAD 4RC3●, LAD 4V3●, LA4 DE●●

Varistors (peak limiting)

Protection provided by limiting the transient voltage to 2 Uc max. Maximum reduction of transient voltage peaks. Slight increase in drop-out time (1.1 to 1.5 times the normal time).

Mounting	For use with contactor (1)			Reference
	Rating	Type		
		V ∼	V ⎓	
Clip-on side mounting (3)(5)	D09…D38 (3P) DT20…DT40	24…48	–	**LAD4VE**
		110…250	–	**LAD4VU**
Clip-on front mounting (3)(5)	D40A…D65A (3P) DT60A…DT80A (4P)	24…48	24…48	**LAD4V3E**
		110…250	110…250	**LAD4V3U**
Screw fixing (4)	D80…D115 (3P)	50…127	–	**LA4DE2G**
	D80…D115 (4P)	110…250	–	**LA4DE2U**
	D80…D95 (3P) D80 (4P)	–	110…250	**LA4DE3U**

Notes

(1) For satisfactory protection, a suppressor module must be fitted across the coil of each contactor except for TeSys D Green (●●E coil), as surge protection is already embedded.

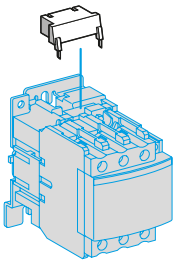
(2) From D09 to D65A and from LC1 DT20 to DT80A, d.c, low consumption or TeSys D Green 3-pole contactors are fitted with a built-in bidirectional peak limiting diode suppressor as standard. This bidirectional peak limiting diode is removable and can therefore be replaced by the user. (See reference above). If a d.c. or low consumption contactor is used without suppression, the standard suppressor should be replaced with a blanking plug (reference LAD 9DL for LC1 D09 to D38 and LC1 DT20 to DT40; reference LAD 9DL3 for LC1 D40A to D65A and LC1 DT60A to DT80A).

(3) Clipping-on makes the electrical connection. The overall size of the contactor remains unchanged.

(4) Mounting at the top of the contactor on coil terminals A1 and A2.

(5) In order to install these accessories, the existing suppression device must first be removed.

TeSys D
Suppressor modules

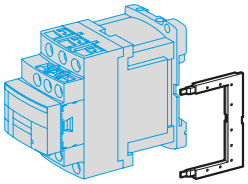


LA4 D●●●

Flywheel diodes

No overvoltage or oscillating frequency. Increase in drop-out time (6 to 10 times the normal time). Polarised component.

Mounting	For use with contactor (1)			Reference
	Rating	Type		
		V ∼	V ⎓	
Clip-on side mounting (5)	D09…D38 (3P), DT20…DT40	–	24…250	**LAD4DDL**
Clip-on front mounting (5)	D40A…D65A (3P), DT60A…DT80A (4P)	–	24…250	**LAD4D3U**
Screw fixing (4)	D80 and D95 (3P), D40…D80 (4P)	–	24…250	**LA4DC3U**



LAD 4DDL or LAD 4T●DL

Bidirectional peak limiting diodes

Protection provided by limiting the transient voltage to 2 Uc max. Maximum reduction of transient voltage peaks.

Mounting	For use with contactor (1)			Reference
	Rating	Type		
		V ∼	V ⎓	
Clip-on side mounting (3) (5)	D09…D38 (3P) DT20…DT40 (4P) (2)	24	–	**LAD4TB**
		–	24	**LAD4TBDL**
		72	–	**LAD4TS**
		–	72	**LAD4TSDL**
		–	125	**LAD4TGDL**
Clip-on front mounting (3)	D40A…D65A (3P) DT60A…DT80A (4P) (2)	12…24	12…24	**LAD4T3B**
		126…250	126…250	**LAD4T3U**
		251…440	251…440	**LAD4T3R**
Screw fixing (4)	D80…D95 (3P)	–	24	**LA4DB3B**
	D40…D80 (4P)	–	72	**LA4DB3S**

Notes

(1) For satisfactory protection, a suppressor module must be fitted across the coil of each contactor except for TeSys D Green (●●E coil), as surge protection is already embedded.

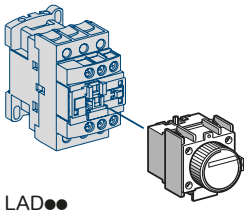
(2) From D09 to D65A and from LC1 DT20 to DT80A, d.c, low consumption or TeSys D Green 3-pole contactors are fitted with a built-in bidirectional peak limiting diode suppressor as standard. This bidirectional peak limiting diode is removable and can therefore be replaced by the user. (See reference above). If a d.c. or low consumption contactor is used without suppression, the standard suppressor should be replaced with a blanking plug (reference LAD 9DL for LC1 D09 to D38 and LC1 DT20 to DT40; reference LAD 9DL3 for LC1 D40A to D65A and LC1 DT60A to DT80A).

(3) Clipping-on makes the electrical connection. The overall size of the contactor remains unchanged.

(4) Mounting at the top of the contactor on coil terminals A1 and A2.

(5) In order to install these accessories, the existing suppression device must first be removed.

TeSys D
Time delay auxiliary contact blocks
Mechanical latch blocks

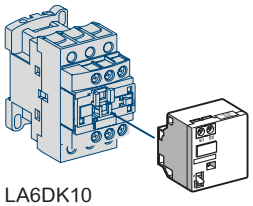


LAD●●

Time delay auxiliary contact blocks

LADS2: with switching time of 40ms ± 15ms between opening of the N/C contact and closing of the N/O contact (break before make) suitable for star-delta starters.

Number of contacts	Max. number of blocks per contactor	Time delay		Reference
	Clip-on mounting	Type		Range
1 N/O + 1 N/C	2	On-delay	0.1...3 (2)	**LADT0**
			0.1...30	**LADT2**
			10...180	**LADT4**
		Star-Delta	1...30 (3)	**LADS2**
		Off-delay	0.1...3 (2)	**LADR0**
			0.1...30	**LADR2**
			10...180	**LADR4**



LA6DK10

Mechanical latch blocks (2) (not suitable for use with low consumption (BL) contactors)

Clip-on mounting	Unlatching control	For use on contactor	Reference (1)
Front	Manual or electric	LC1D09…D38 AC or DC LC1DT20...DT40 AC or DC	**LAD6K10● (2)**
		LC1/LP1-D40, D50, D65	**LA6DK10●**
		LC1/LP1-D80, D115, D150	**LA6DK20●**

Standard coil voltages

AC Volts 50/60Hz, DC Volts	24	110/127	220/240	380/415
Code	B	F	M	Q

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Notes
(1) "●" Complete reference with coil voltage code. e.g. LAD6K10M for 220/240V 50/60Hz.
(2) The DC, low consumption contactors (coil code .L) are not compatible with the mechanical latch blocks LAD6K10.

Electronic serial timer modules (1)

On-delay type

Operational voltage AC		DC	Time	Reference
24…250V	100…250V	24...250V		
LC1-D09…D80A (3P)	LC1-D80…D150 (3P)	LC1-D12 and D25 (4P)	1.5…30s	**LA4DT2U (2)**
			25…500s	**LA4DT4U (2)**

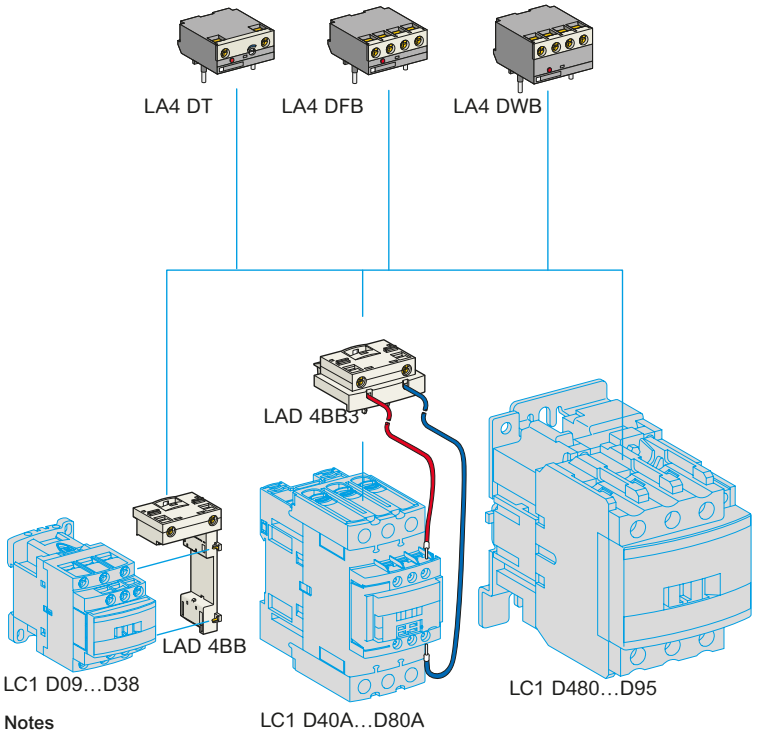
Interface modules

Operational voltage AC		Supply voltage	Reference
Relay interface			
24…250V		E1-E2 (DC)	
LC1D09…D150 (3P) and DT20...DT40 (4P)	–	24V	**LA4DFB (2)**
Solid state interface			
LC1D09…D38 (3P) LC1D40…D115 (3P)		24V	**LA4DWB (2)**

H

Cabling accessories

Description				Reference
For adapting existing wiring to a new product	LC1D09…D38	Without coil suppression		**LAD4BB**
		With coil suppression	AC 24…48V	**LAD4BBVE**
			AC 50…127V	**LAD4BBVG**
			AC 110…250V	**LAD4BBVU**
Connection kit 3 pole	LC1D09...D38			**LAD9P3**
Terminal shields 3 pole	LC1D1156 and D1506			**LA9D115703**
Terminal shields 4 pole	LC1D1156 and D1506			**LA9D115704**
Cable connections 120mm²	LC1D115 and D150			**LA9D115603**
S- Shaped busbar contactor & breaker side by side (GV3 + LC1D40A...65A)				**GV3S**



Notes

(1) For 24VAC operation, the contactor must be fitted with a 21V coil (LXD1Z7).
(2) Requires LAD4BB for connection to TeSys contactors D09 to D38, 3 pole contactors and LAD4BB3 for D40A...D80A contactors.

Product configurator on se.com/nz

TeSys D
3-pole thermal overload relays

Differential thermal overload relays (4)

for use with fuses or magnetic circuit-breakers GV2 L and GV3 L

> Compensated relays with manual or automatic reset,
> with relay trip indicator,
> for A.C. or D.C.

LRD●●

LRD 3●●

Class 10 A with connection by screw clamp terminals (1)

Relay setting range (A)	DOL 415V (kW)	Star Delta 415V (kW)	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…1.6		–	D09…D38	**LRD06**
1.6…2.5	1.1	1.5	D09…D38	**LRD07**
2.5…4	1.5	2.2-3	D09…D38	**LRD08**
4…6	2.2	3.7-4	D09…D38	**LRD10**
5.5…8	3.7	5.5	D09…D38	**LRD12**
7…10	4	7.5	D09…D38	**LRD14**
9…13	5.5	11	D12…D38	**LRD16**
12…18	9	15	D18…D38	**LRD21**
16…24	11	18.5	D25…D38	**LRD22**
23…32	15	22-25	D25…D38	**LRD32**
30…38	18.5	30-37	D32...D38	**LRD35**
Class 10 A (1) **for connection by EverLink® BTR screw connectors** (2)				
9…13	5.5	11	D40A…D65A	**LRD313**
12…18	9	15	D40A…D65A	**LRD318**
17…25	11	18.5	D40A…D65A	**LRD325**
23…32	15	22-25	D40A…D65A	**LRD332**
30…40	18.5	30-37	D40A…D65A	**LRD340**
37…50	22	40-45	D40A…D65A	**LRD350**
48…65	30	51-59	D50A and D65A	**LRD365**
62...80	55	80-90	D80A	**LRD380**
Class 10 A (1) **for connection by clamp terminals or connectors**				
17…25	11	17-25	D40…D95	**LRD3322**
23…32	15	22-30	D40…D95	**LRD3353**
30…40	22	30-37	D40…D95	**LRD3355**
37…50	25	40-45	D40…D95	**LRD3357**
48…65	30	51-59	D50…D95	**LRD3359**
55…70	37	63	D50…D95	**LRD3361**
63…80	45	63-75	D65 and D95	**LRD3363**
80…104	55	80-90	D80 and D95	**LRD3365**
80...104	55	80-90	D115 and D150	**LRD4365 (2)**
95...120	63	80-110	D115 and D150	**LRD4367 (2)**
110...140	80	100-132	D150	**LRD4369 (2)**
60...100	55	59-90	D115 and D150	**LR9D5367 (2)**
90...150	80	90-140	D115 and D150	**LR9D5369 (2)**

Class 10 A (1) **for connection by lugs**

Select the appropriate overload relay with screw clamp terminals or connectors from the table above and add one of the following suffixes:

> figure **6** for relays LRD 01 to LRD 35 and relays LRD 313 to LRD 365.
> **A66** for relays LRD 3322 to LRD 3365.

Relays LRD 43●● are suitable, as standard, for use with lug-clamps.

Class 10/20 A selectable electronic thermal overload relays rated to 690V (3)

Compensated relays for use with balanced or unbalanced loads with separate outputs for alarm tripping.

Relay setting range A	DOL 415V kW	Star Delta 415V kW	For use with contactor LC1	Reference
60…100	55	59-90	D115 and D150	**LR9D67**
90…160	60	90-140	D115 and D150	**LR9D69**

Notes

(1) Standard IEC 60947-4-1 specifies a tripping time for 7.2 times the setting current I_R : class 10 A: between 2 and 10 seconds
(2) BTR screws: hexagon socket head. In accordance with local electrical wiring regulations, a size 4 insulated Allen key must be used (reference **LAD ALLEN4)**.
(3) Electronic thermal overload relays for direct mounting beneath contactor LC1, with connectors using bars.
(4) Class 20 available, please consult your Schneider Elecric representative.

Product configurator on se.com/nz

TeSys D
Electronic overload relays

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.
> 5:1 adjustment range and self-powered.

LR9D01

Electronic thermal overload relays

Relay setting range	For use with contactors	Mounting	Reference
A	A		
0.1...0.5A	LC1D09...38	Direct	**LR9D01**
0.4...2A			**LR9D02**
1.6...8A			**LR9D08**
6.4...32A			**LR9D32**

Accessories

Description	For use with	Reference
Terminal block for clip-on mounting on 35mm rail (AM1DP200)	LR9D01...32	**LAD7B205**

LAD 7B205

H

TeSys D
Over current relays

LR97D07●●

LR97 D electronic over current relays

Relay setting range	Usable range (1)	For use with contactor	Relay supply voltage	Weight	Reference (2)
A	A			kg	
0.3…1.5	0.3…1.3	LC1 D09…D38	~ 200…240 V	0.172	**LR97D015M7**
			⎓/~ 24 V	0.172	**LR97D015B**
1.2…7	1.2…6	LC1 D09…D38	~ 200…240 V	0.172	**LR97D07M7**
			~ 100…120 V	0.172	**LR97D07F7**
			⎓/~ 24 V	0.172	**LR97D07B**
5…25	5…21	LC1 D09…D38	~ 200…240 V	0.172	**LR97D25M7**
			~ 100…120 V	0.172	**LR97D25F7**
			⎓/~ 24 V	0.172	**LR97D25B**
20…38	20…34	LC1 D25…D38	~ 200…240 V	0.172	**LR97D38M7**
			~ 100…120 V	0.172	**LR97D38F7**
			⎓/~ 24 V	0.172	**LR97D38B**

LT4730●●

LT47 electronic over current relays

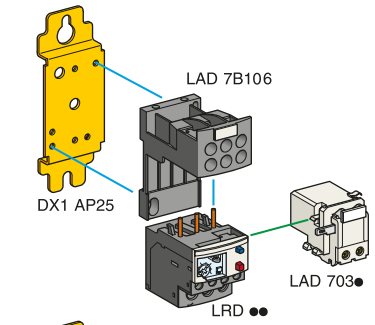
Relay setting range	Usable range (1)	Relay supply voltage	Weight	Reference (2)
A	A		kg	
LT47 relay with manual/electric reset				
0.5…6	0.5…5	~ 200…240 V	0.192	**LT4706M7S**
		~ 100…120 V	0.192	**LT4706F7S**
		⎓/~ 24 V	0.192	**LT4706BS**
3…30	3…25	~ 200…240 V	0.192	**LT4730M7S**
		~ 100…120 V	0.192	**LT4730F7S**
5…60	5…50	~ 200…240 V	0.192	**LT4760M7S**
		~ 100…120 V	0.192	**LT4760F7S**
		⎓/~ 24 V	0.192	**LT4760BS**

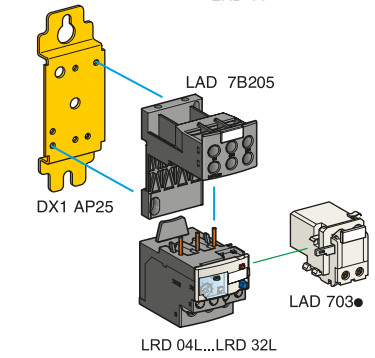
Accessories (to be ordered separately)

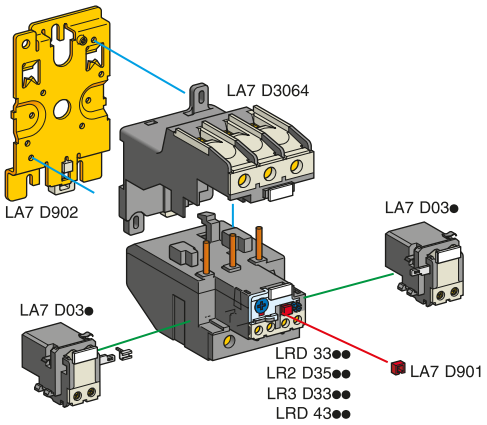
Description	For use with	Sold in lots of	Weight	Reference (2)
Pre-wiring kits allowing connection of the LR97 D relay N/C contact directly to the contactor	LC1 D09…D18	10	0.002	**LAD7C1**
	LC1 D25…D38	10	0.003	**LAD7C2**
Terminal block for clip-on mounting on 35 mm rail (AM1 DP200)	LR97 D	1	0.100	**LAD7B106**

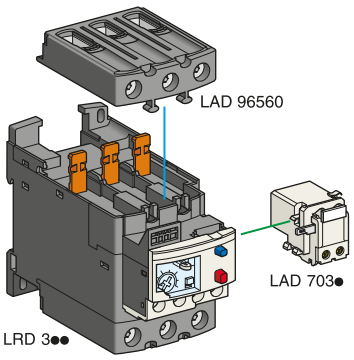
Notes
(1) To allow adjustment of the tripping sensitivity,
(2) If a pre-wiring kit is used, it is no longer possible to electrically wire signalling of tripped status.

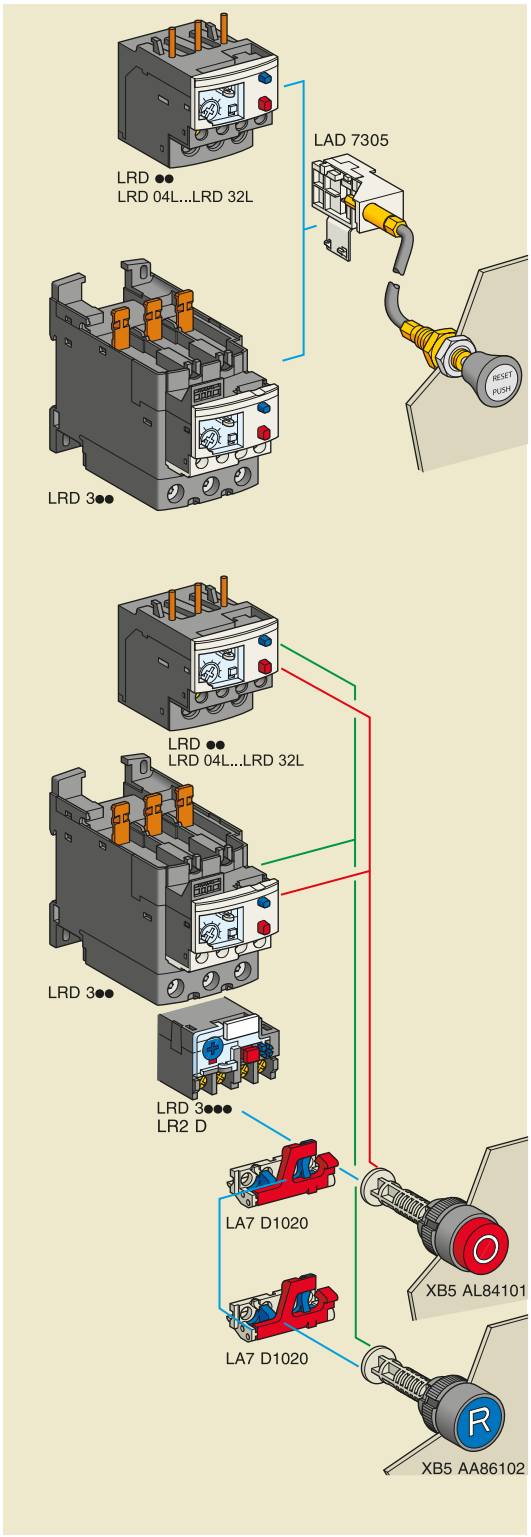
TeSys D overload accessories





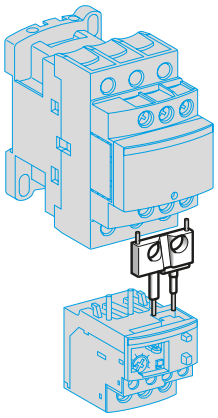




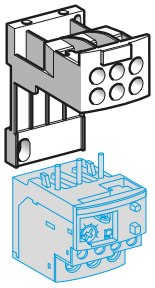


H

TeSys D
3 pole thermal overload relays
Pre-wiring kit and accessories
Remote trip/reset



LAD7C●



LAD7B106

Separate components for relays

Description	For use with	Sold in lots of	Unit reference
Pre-wiring kit allowing direct connection of the N/C contact of relay LRD 01…35 or LR3 D01…D35 to the contactor	LC1 D09…D18	10	**LAD7C1 (1)**
	LC1 D25…D38	10	**LAD7C2 (1)**
Terminal block (2) for clip-on mounting on 35mm rail (AM1 DP200) or screw fixing; for fixing centres	LRD 01…35 and LR3 D01…D35	1	**LAD7B106**
	LRD04L...LRD32L, LR3D04L...LR3D32L	1	**LAD7B205**
	LRD 33●●●, LR3 D33●●●, LR2 D35●●	1	**LA7D3064 (3)**
EverLink® terminal block for independent mounting	LRD 3●●, LRD 3●●L and LR3 D3●●	1	**LAD96560**
Remote Stop or electrical reset device (4)	LRD 01…35, LR3 D01… D35 and LRD 313… LRD 380	1	**LAD703● (5) (6)**
Remote tripping or electrical reset device (4)	All relays except LRD 01…35, LR3 D01…D35, LRD 3pp, LRD 3●●L and LR3 D3●●	1	**LA7D03● (5)**
Adapter for door mounting	LR3 D3●●	1	**LA7D1020**
Operating heads for spring return pushbutton	Stop	1	**XB5AL84101**
	Reset	1	**XB5AA86102**

H

Notes

(1) These pre-wiring kits cannot be used with reversing contactors.

(2) Terminal blocks are supplied with terminals protected against direct finger contact and screws in the open, “ready-to-tighten” position.

(3) To order a terminal block for connection by lugs, the reference becomes **LA7 D30646**.

(4) The time for which the coil of remote tripping or electrical resetting device **LA7 D03** or **LAD 703** can remain energised depends on its rest time: 1 s pulse duration with 9 s rest time; 5 s pulse duration with 30 s rest time; 10 s pulse duration with 90 s rest time; maximum pulse duration 20 s with a rest time of 300 s. Minimum pulse time: 200 ms.

(5) Reference to be completed by adding the code indicating the control circuit voltage.
Standard control circuit voltages (for other voltages, please consult your Regional Sales Office):

Volts	12	24	110	220/230	380/400	415/440
50/60 Hz	–	B	F	M	Q	N
Consumption, inrush and sealed: <100 W						

(6) Not compatible with 3-pole relays fitted with spring terminals.

TeSys F high power 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		115A	150A	185A	225A	265A	330A	400A	500A	630A	800A
i.e. maxi AC3 (Ue ≤ 440V)											
i.e. AC1 (0 ≤ 40˚C)		200A	250A	275A	315A	350A	400A	500A	700A	1000A	1000A
Rated operational voltage		1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V
Number of poles		3 or 4	3 or 4	3 or 4	3 or 4	3 or 4	3 or 4	2, 3 or 4	2, 3 or 4	2, 3 or 4	3
Rated operational power in category AC3	380/400V	55kW	75kW	90kW	110kW	132kW	160kW	200kW	250kW	335kW	450kW
	415V	59kW	80kW	100kW	110kW	140kW	180kW	220kW	280kW	375kW	450kW
Add on auxiliary contact blocks		Front mounting, identical to those used on LC1D contactors (Contacts: Instantaneous LADN●●, time delay LA2DT or LA3DR, dust and damp protected LA1DX or DY or DZ)									
Associated thermal overload relays	Manual-automatic	LR9F									
Contactor type references		LC1F115	LC1F150	LC1F185	LC1F225	LC1F265	LC1F330	LC1F400	LC1F500	LC1F630	LC1F800

Note
For applications >800Amps please consult your local sales office for custom built solutions.

Contactors and overloads

TeSys F high power contactors
For AC3 and AC1 application
AC or DC control circuit

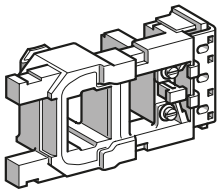
LC1F225

3 pole contactors rated to 1000V

(Coil to be ordered separately)

kW 415V	Amps AC3	Amps AC1	AC coil	DC coil references	Contactor references
59	115	200	**LX9FF**	**LX4FF**	**LC1F115**
80	150	250	**LX9FF**	**LX4FF**	**LC1F150**
100	185	275	**LX9FG**	**LX4FG**	**LC1F185**
110	225	315	**LX9FG**	**LX4FG**	**LC1F225**
140	265	350	**LX1FH**	**LX4FH2**	**LC1F265**
180	330	400	**LX1FH**	**LX4FH2**	**LC1F330**
220	400	500	**LX1FJ**	**LX4FJ**	**LC1F400**
280	500	700	**LX1FK**	**LX4FK**	**LC1F500**
375	630	1000	**LX1FL**	**LX4FL**	**LC1F630**
450	800	1000	**LX4F8W (1)**	**LX4F8W**	**LC1F800**

Power terminals can be protected against direct finger contact by the addition of shrouds –refer page H32.



LX1FH●●

F range coils (2) AC & DC

Standard control voltages (for other voltages, please consult sales)

	V	Hz	AC	V	DC
LC1F115 & 150	24	40-400	**LX9FF024**	24	**LX4FF024**
	110	40-400	**LX9FF110**	110	**LX4FF110**
	240	40-400	**LX9FF240**	220-230	**LX4FF220**
	415	40-400	**LX9FF415**	440-460	**Not available**
LC1F185 & 225	24	40-400	**LX9FG024**	24	**LX4FG024**
	110	40-400	**LX9FG110**	110	**LX4FG110**
	240	40-400	**LX9FG240**	220-230	**LX4FG220**
	415	40-400	**LX9FG415**	440-460	**Not available**
LC1F265 & 330	24	40-400	**Not available**	24	**LX4FH024**
	110	40-400	**LX1FH1102**	110	**LX4FH110**
	240	40-400	**LX1FH2402**	220-230	**LX4FH220**
	380-415	40-400	**LX1FH3802**	440-460	**Not available**
LC1F400	24	40-400	**Not available**		**Not available**
	110	40-400	**LX1FJ110**	110	**LX4FJ110**
	240	40-400	**LX1FJ240**	220	**LX4FJ220**
	415	40-400	**LX1FJ415**	440	**Not available**
LC1F500	24	40-400	**Not available**		**Not available**
	110	40-400	**LX1FK110**	110	**LX4FK110**
	240	40-400	**LX1FK240**	220	**LX4FK220**
	415-440	40-400	**LX1FK415**	440	**Not available**
LC1F630	24	40-400	**Not available**	24	**Not available**
	110-120	40-400	**LX1FL110**	110-120	**LX4FL110**
	220-240	40-400	**LX1FL220**	220	**LX4FL220**
	415	40-400	**LX1FL415**	440	**Not available**
LC1F800	24	40-400	**Not available**	24	**Not available**
	110	40-400	**LX4F8FW (1)**	110-120	**LX4F8FW (3)**
	220-240	40-400	**LX4F8MW (1)**	220-240	**LX4F8MW (3)**
	415-480	40-400	**LX4F8QW (1)**	380-400	**LX4F8QW (3)**

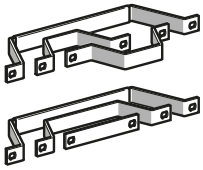
Rectifiers

	V	Coil reference	Rectifier reference
LC1F800	110-127	**LX4F8FW**	**DR5TE4U**
	220-240	**LX4F8MW**	**DR5TE4U**
	380-440	**LX4F8QW**	**DR5TE4S**
Rectifier mount			**LA9D09981**

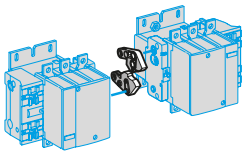
Notes

(1) Must add rectifier ref DR5TE4●.
(2) Max ambient temperature 55 Deg.
(3) These are standard DC coils.

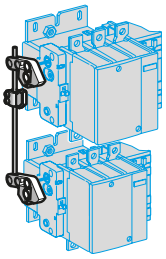
TeSys F reversing starter accessories
Horizontal and vertical mounting



LA9F●●●76



LA9F●970



LA9FF4F

Reversers assembled using 2 contactors of identical rating

For assembly of 3 pole reversing contactors for motor control

Contactor type (1)	Set of power connections Reference	Mechanical interlock Kit reference
Horizontally mounted		
LC1F115	**LA9FF976**	**LA9FF970**
LC1F150	**LA9F15076**	**LA9FF970**
LC1F185	**LA9FG976**	**LA9FG970**
LC1F225	**LA9F22576**	**LA9FG970**
LC1F265	**LA9FH976**	**LA9FJ970**
LC1F330	**LA9FJ976**	**LA9FJ970**
LC1F400	**LA9FJ976**	**LA9FJ970**
LC1F500	**LA9FK976**	**LA9FJ970**
LC1F630 or F800	**LA9FL976**	**LA9FL970**
Vertically mounted		
LC1F115 or F150	(1)	**LA9FF4F**
LC1F185	(1)	**LA9FG4G**
LC1F225	(1)	**LA9FG4G**
LC1F265 or F330	(1)	**LA9FH4H**
LC1F400	(1)	**LA9FJ4J**
LC1F630 or F800	(1)	**LA9FL4L**

Contactors pairs assembled using 2 contactors of different ratings

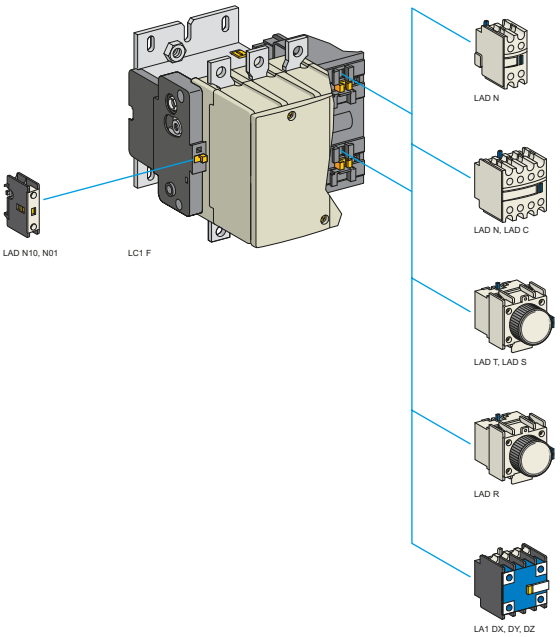
For assembly of 3 pole reversing contactors for motor control

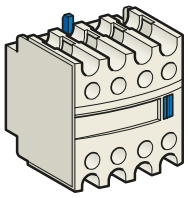
Contactor type At bottom	At top	Mechanical interlock Kit reference
Vertically mounted		
LC1F115 or F1154 or LC1F150 or F1504	**LC1F185** or **F1854**	**LA9FG4F**
	LC1F225 or **F2254**	**LA9FG4F**
	LC1F265 or **F2654**	**LA9FH4F**
	LC1F330 or **F3304**	**LA9FH4F**
	LC1F500 or **F5004**	**LA9FK4F**
	LC1F630, F6304 or **F800**	**LA9FL4F**
LC1F185 or F1854 or LC1F225 or F2254	**LC1F265** or **F2654**	**LA9FH4G**
	LC1F330 or **F3304**	**LA9FH4G**
	LC1F400 or **F4004**	**LA9FJ4G**
	LC1F500 or **F5004**	**LA9FK4G**
	LC1F630, F6304 or **F800**	**LA9FL4G**
LC1F265 or F2654 or LC1F330 or F3304	**LC1F400** or **F4004**	**LA9FJ4H**
	LC1F500 or **F5004**	**LA9FK4H**
	LC1F630, F6304 or **F800**	**LA9FL4H**
LC1F400 or F4004	**LC1F500** or **F5004**	**LA9FK4J**
	LC1F630, F6304 or **F800**	**LA9FL4J**
LC1F500 or F5004	**LC1F630, F6304** or **F800**	**LA9FL4K**

Note

(1) All power connections are to be made by the customer.

TeSys F Auxiliary contact blocks

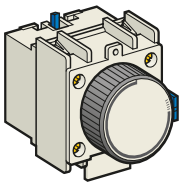



LADN, LADC

Instantaneous auxiliary contact blocks

For use in normal operating environments

Number of contacts	Max. number of blocks per contactor Clip-on mounting	Composition		Reference
1	1	1	–	**LADN10**
		–	1	**LADN01**
2	2	1	1	**LADN11**
		2	–	**LADN20**
		–	2	**LADN02**
4	2	2	2	**LADN22**
		1	3	**LADN13**
		4	–	**LADN40**
		–	4	**LADN04**
		3	1	**LADN31**
		2	2 (1)	**LADC22**


LADT, LADS

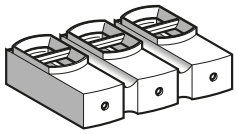
Time delay auxiliary contact blocks

Number of contacts	Max. number of blocks per contactor Clip-on mounting	Time delay Type	 Range	Reference
1 N/O + 1 N/C	2	On-delay	0.1...3 (2)	**LADT0**
			0.1...30	**LADT2**
			10...180	**LADT4**
		Star-Delta	1...30 (3)	**LADS2**
		Off-delay	0.1...3 (2)	**LADR0**
			0.1...30	**LADR2**
			10...180	**LADR4**

Notes

(1) Including 1 N/O + 1 N/C make before break.
(2) With extended scale from 0.1 to 0.6 s.
(3) With switching time for 40 ms ± 15 ms between opening of the N/C contact and closing of the N/O contact.

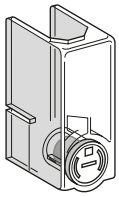
TeSys F Accessories



LA9F103

Insulated terminal blocks

For use on 3 pole contactors	Cabling	Tightening tool	Set of 2 blocks Set reference
LC1 F115, F150, F185	1 x 16...150mm² or 2 x 16...95mm²	4mm hexagonal socket key	**LA9F103**

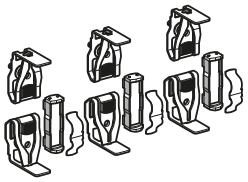


LA9F702

Power terminal protection shrouds

For use on 3 and 4 pole contactors	Number of shrouds per set	Set reference
LC1 F115	6	**LA9F701**
LC1 F150, F185	6	**LA9F702**
LC1 F225, F265, F330, F400 and F4002 F500 and F5002	6	**LA9F703**
LC1 F630, F6302 and F800	6	**LA9F704**

H



LA5FG431

Main contact sets

Per pole: 2 fixed contacts and 1 moving contact, 2 deflectors, 1 backplate, fixing screws and washers.

For contactor	Type	Replacement for	Reference
3 pole	LC1 F115, F150	3 poles	**LA5FF431**
	LC1 F185, F225	3 poles	**LA5FG431**
	LC1 F265	3 poles	**LA5FH431**
	LC1 F330, F400	3 poles	**LA5F400803**
	LC1 F500	3 poles	**LA5F500803**
	LC1 F630	3 poles	**LA5F630803**
	LC1 F800	3 poles	**LA5F800803**

TeSys F overload relays

Compensated and differential overload relays

Thermal overload relays:
> compensated and differential,
> with relay trip indicator,
> for AC
> for direct mounting on contactor or independent mounting (1).

LR9F●●

Relay setting range	For direct mounting beneath contactor LC1	Reference
A		
Class 10		
30...50	F115...F185	**LR9F5357**
48...80	F115...F185	**LR9F5363**
60...100	F115...F185	**LR9F5367**
90...150	F115...F185	**LR9F5369**
132...220	F185...F400	**LR9F5371**
200...330	F225...F500	**LR9F7375**
300...500	F225...F500	**LR9F7379**
380...630	F400...F630 and F800	**LR9F7381**

Compensated overload relays, class 10 or 20 with alarm

Thermal overload relays:
> compensated,
> with relay trip indicator,
> for a.c.,
> for direct mounting on contactor or independent mounting (1),
> class 10 or 20 by selector switch
> protection of 3 phase or single-phase circuits by selector switch,
> with alarm function that enables tripping to be forestalled

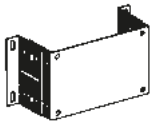
LR9F●

Relay setting range	For direct mounting beneath contactor LC1-	Reference
A		
30...50	F115...F185	**LR9F57**
40...80	F115...F185	**LR9F63**
60...100	F115...F185	**LR9F67**
90...150	F115...F185	**LR9F69**
132...220	F185...F400	**LR9F71**
200...330	F225...F500	**LR9F75**
300...500	F225...F500	**LR9F79**
380...630	F400...F630 and F800	**LR9F81**

Reset accessories

Description					Reference (2)
Electrical reset/trip					**LA7D03●**
Standard coil voltages					
Volts AC 50/60Hz	24	110	220/230	415/440	
Volts DC	24	110	220/230		
Code	B	F	M	N	

Mounting accessories


LA7F90●

	To fit overload	Reference
LR9-Range	LR9F5, 6 + 71	**LA7F901**
Mounting plate	LR9F7 + F81	**LA7F902**

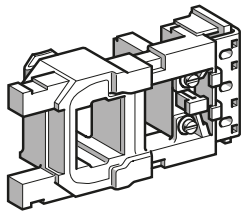
Notes

(1) When mounting overload relays up to size LR9-F5371 directly beneath the contactor they may be additionally supported by a mounting plate. Above this size it is always necessary to use the mounting plate. Power terminals can be protected against direct finger contact by the addition of shrouds and/or insulated terminal blocks, to be ordered separately (see page H32).

(2) "●" Complete reference with coil voltage code. e.g. **LA7D03M** for 220/230V 50/60Hz.

TeSys D and F
Contactor spare coils

LXD1●●



LX9FF●●●

Spare contactor coils AC (add 10% for non-standard coils)

To fit contactor	24V	110V	240V	415V
CAD LC1D09...D38 (1)	**LXD 1B7**	**LXD 1F7**	**LXD 1U7**	**LXD 1N7**
LC1D40, D50, D65, D80 and D95	**LX1 D6B7**	**LX1 D6F7**	**LX1 D6U7**	**LX1 D6N7**
LC1D115/150 (1)	**LX1 D8B7**	**LX1 D8F7**	**LX1 D8U7**	**LX1 D8N7**
LC1F115/150 LC1F1154/1504		**LX9 FF110**	**LX9 FF240**	**LX9 FF415**
LC1F185/225 LC1F1854/2254		**LX9 FG110**	**LX9 FG240**	**LX9 FG415**
LC1F265/330 LC1F2654/3304	**LX1 FH0242**	**LX1 FH1102**	**LX1 FH2402**	**LX1 FH3802**
LC1F400 LC1F4004		**LX1 FJ110**	**LX1 FJ240**	**LX1 FJ415**
LC1F500 LC1F5004		**LX1 FK110**	**LX1 FK240**	**LX1 FK415**
LC1F630 LC1F6304		**LX1 FL110**	**LX1 FL220**	**LX1 FL415**
LC1F800 (2)		**LX4 F8FW**	**LX4 F8MW**	**LX4 F8QW**

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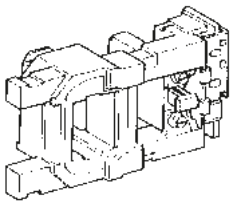
EverLink®

Everlink Coils AC

To fit contactor	24V	110V	240V	415V
LC1D40A, D50A and D65A	**LXD 3B7**	**LXD 3F7**	**LXD 3U7**	**LXD 3N7**

Coils DC

LX4D●●●



LX4FF●●●

To fit contactor	12V	24V	110V	220V	440V
LC1D09-D38	no spare coils necessary				
LC1D40, D50 and D65	**LX4 D6JW**	**LX4 D6BD**	**LX4 D6FW**	**LX4 D6MW**	**LX4 D6RD**
LC1D80/D95	**LX4 D7JW**	**LX4 D7BD**	**LX4 D7FW**	**LX4 D7MW**	**LX4 D7RD**
LC1D115/D150		**LX4 D8BD**	**LX4 D8FD**	**LX4 D8MD**	**LX4 D8RD**
LC1F115/150 LCIF1154/1504		**LX4 FF024**	**LX4 FF110**	**LX4 FF220**	**LX4 FF440**
LC1F185/225 LC1F1854/2254		**LX4 FG024**	**LX4 FG110**	**LX4 FG220**	**LX4 FG440**
LC1F265/330 LC1F2654/3304		**LX4 FH024**	**LX4 FH110**	**LX4 FH220**	**LX4 FH440**
LC1F400 LC1F4004		**LX4 FJ024**	**LX4 FJ110**	**LX4 FJ220**	**LX4 FJ440**
LC1F500 LC1F5004		**LX4 FK024**	**LX4 FK110**	**LX4 FK220**	**LX4 FK440**
LC1F630 LC1F6304		**LX4 FL024**	**LX4 FL110**	**LX4 FL220**	**LX4 FL440**
LC1F800			**LX4 F8FW**	**LX4 F8MW**	**LX4 F8QW**

Notes
(1) Coils are dual frequency.
(2) Add rectifier unit DR5TE4U.

Direct on line (DOL) enclosed starters

TeSys M, D & 56 series
3 pole DOL starters
0.25 to 45kW

LE1M35●●●

Model LE1 M DOL non-reversing starters with overload fitted, IP65 polycarbonate enclosure

Motor power rating 3 phase 50/60Hz AC3 230V (kW)	400V (kW)	Termal overload range LR2K (A)	Starter and overload reference (1) (2)
0.12	0.25	0.54…0.8	**LE1M35●●05**
0.18	0.37	0.8…1.2	**LE1M35●●06**
0.25	0.55	1.2…1.8	**LE1M35●●07**
0.37	1.1	1.8…2.6	**LE1M35●●08**
0.55	1.5	2.6…3.7	**LE1M35●●10**
1.1	2.2	3.7..5.5	**LE1M35●●12**
1.5	3	5.5…8	**LE1M35●●14**
2.2	4	8…11.5	**LE1M35●●16**
3	5.5	10…14	**LE1M35●●21**
3.7	7.5	12…16	**LE1M35●●22**

LE1D1●●

Model LE1 D DOL non-reversing starters without overload fitted, IP65 polycarbonate / IP55 metal enclosure (2) (3)

Motor power rating 3 phase 50/60 Hz AC3 230V (kW)	400V (kW)	Overload range (A)	Overload reference	Starter reference (1)
3	5.5	9…12	LRD16	**LE1D12●●**
4	7.5	12…18	LRD21	**LE1D18●●**
5.5	11	17…25	LRD22	**LE1D25●●**
7.5	15	23…32	LRD32	**LE1D35●●**
11	18.5	30…40	LRD340	**LE1D40A●●**
15	22	30…50	LRD350	**LE1D50A●●**
18.5	30	48…65	LRD365	**LE1D65A●●**

PDL56DOL9LOBGY

56 Series DOL motor starters without overload, IP66 (3)

Motor power rating 3 Phase 50Hz AC3 415V (kW)	Rated operational current (A)	Control voltage (V)	Overload range (A)	Overload reference	Reference
4	9	240V AC	7…10	LRD14	**PDL56DOL9LOBGY**
4	9	415V AC	7…10	LRD14	**PDL56DOL9LOGY**
5.5	12	240V AC	9…13	LRD16	**PDL56DOL12LOBGY**
5.5	12	415V AC	9…13	LRD16	**PDL56DOL12LOGY**
7.5	16	240V AC	12…18	LRD21	**PDL56DOL16LOBGY**
7.5	16	415V AC	12…18	LRD21	**PDL56DOL16LOGY**

Standard coil voltages (1)

Volts(V) 50/60Hz	230	240	415
LE1M35/LE1D09…LE1D35		U7	N7
LE1D40…LE1D65	P7		

Notes
(1) "●●" Complete reference with control voltage code. e.g. **LE1D12U7** for 240V 50/60Hz.
(2) **LE1M/LE1D** starters come complete with a green start button "I" and red stop/reset button "O".
(3) Overload not included in price of LE1D and 56 series DOL. Add overload to complete selection (see page H23).

Notes

Star- delta starters

Open version
Enclosed version
for motor control, up to 132 kW

LC3D090A●●

Open type star delta starters (overload purchased separately)

> Maximum operating rate: 30 starts/hour
> Maximum starting time: LC1D: 30 seconds
> 35mm rail mounted starter
> Comes with mechanical interlock

Power rating of 3 phase motor 415V	Recommended overload	Overload range	Reference (1)
(kW)		(A)	
11	LRD16	9-13	**LC3D120A●●**
22	LRD22	16-24	**LC3D180A●●**
30	LRD35	30-38	**LC3D320A●●**

LE3D09●●

Enclosed star delta starters (overload purchased separately)

> Maximum operating rate: 30 starts/hour
> Maximum starting time: LC1D: 30 seconds
> IP65 Polycarbonate enclosure
> Comes with mechanical interlock

Power rating of 3 phase motor 415V	Recommended overload	Overload range	Reference (1)
(kW)		(A)	
7.5	LRD14	7-10	**LE3D09●●**
11	LRD21	12-18	**LE3D12●●**
22	LRD32	23-32	**LE3D18●●**
30	LRD35	30-38	**LE3D35●●**

Coil voltage code (1)

AC voltage (V)	Volts	230	240	415
50/60Hz	50/60Hz	P7	U7	N7

TeSys Star Delta starters – contactor selection (2)

Mains voltage 400V (kW)	415V (kW)	KM2 line	KM3 delta	KM1 star	Interlock kit + timer	Overload
7.5	7.5	**LC1D09●●**	**LC1D09●●**	**LC1D09●●**	**LAD 9R1V + LADS2**	**LRD14**
11	11	**LC1D12●●**	**LC1D12●●**	**LC1D09●●**	**LAD 9R1V + LADS2**	**LRD16**
18.5	22	**LC1D18●●**	**LC1D18●●**	**LC1D18●●**	**LAD 9R1V + LADS2**	**LRD22**
25	30	**LC1D32●●**	**LC1D32●●**	**LC1D25●●**	**LAD 9R1V + LADS2**	**LRD35**
37	37	**LC1D40A●●**	**LC1D40A●●**	**LC1D40A●●**	**LAD9R3 + LADS2**	**LRD340**
55	59	**LC1D50A●●**	**LC1D50A●●**	**LC1D40A●●**	**LAD9R3 + LADS2**	**LRD365**
75	75	**LC1D80●●**	**LC1D80●●**	**LC1D80●●**	**LA9D8018**	**LRD3365**
110	110	**LC1D115●●**	**LC1D115●●**	**LC1D80●●**		
132	132	**LC1D150●●**	**LC1D150●●**	**LC1D115●**		

Star delta kits for 3-Pole contactors

Contactors	Description	Reference
LC1D09 and D12	Star-delta kit (Time delay LADS2 + power connection + mounting accessories)	**LAD91217**
LC1D18...D32	Star-delta kit (Time delay LADS2 + power connection + mounting accessories)	**LAD93217**
LC1D40A...D65A	Star-delta kit (Time delay LADS2 + power connection + mounting accessories)	**LAD9SD3**
LC1D80	Star-delta kit (Time delay LADS2 + power connection + mounting accessories)	**LA9D8017**
LC1D80	Mounting plate	**LA9D80973**

Note
(1) ●● Complete reference with coil voltage code, e.g. LC3D090AB7 for 24V AC. Indicative prices for common coil voltages.
(2) For Type 1 or Type 2 co-ordinated solution refer to technical section of this catalogue.

Thermal magnetic circuit breakers
Selection guide

Applications	Motor protection – Thermal magnetic				Magnetic Protection must be combined with Thermal Overload Relay		Motor protection with advanced features
Tripping threshold on short circuit	13 In on average						
Standard motor power ratings in AC3, 415V	Up to 15kW	Up to 15kW	Up to 30kW	Up to 37kW			Up to 55kW
Operational current at 415V	0.1...32A		9...65A	1...80A			1...115A
Breaking capacity at 415V (Icu) to IEC9472	10...100kA	50...100kA	50...100kA	35...100kA	50...100kA	50...100kA	25...100kA
Door interlock mechanism	Without	With	With	Without	With	With	With
Device type references	GV2ME	GV2P	GV3P	GV3ME	GV2L	GV3L	GV4P GV4L GV4PEM

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Note
(1) For more information call Schneider Electric customer care team.

Motor circuit breakers

Product configurator on se.com/nz

GV2 motor circuit breakers (to 32A)

GV2ME

GV2ME Thermal-magnetic motor circuit breakers (1)

415V (kW)	ICU (kA)	Current setting range – (A)	Associated Contactor Type 1	Type 2	Reference
	–	0.1-0.16	LC1K06	LC1D09	**GV2ME01**
0.06	100	0.16-0.25	LC1K06	LC1D09	**GV2ME02**
0.09	100	0.25-0.4	LC1K06	LC1D09	**GV2ME03**
0.12	100	0.4-0.63	LC1K06	LC1D09	**GV2ME04**
0.25	100	0.63-1.0	LC1K06	LC1D09	**GV2ME05**
0.55	100	1.0-1.6	LC1K06	LC1D09	**GV2ME06**
0.75	100	1.6-2.5	LC1K06	LC1D09	**GV2ME07**
1.5	100	2.5-4.0	LC1K06	LC1D09	**GV2ME08**
2.2	100	4.0-6.3	LC1K06	LC1D09	**GV2ME10**
4	100	6-10	LC1K09	LC1D09	**GV2ME14**
5.5	15	9-14	LC1D12	LC1D25	**GV2ME16**
7.5	15	13-18	LC1D18	LC1D25	**GV2ME20**
9	15	17-23	LC1D25	LC1D25	**GV2ME21**
11	15	20-25	LC1D25	LC1D25	**GV2ME22**
15	10	24-32	LC1D32	LC1D32	**GV2ME32**

> Local control with stop start pushbuttons > Short circuit and thermal overload protection

GV2P

GV2P Thermal-magnetic motor circuit breakers (1)

415V (kW)	ICU (kA)	Current setting range – (A)	Associated contactor Type 2	Reference
–	100	0.1-0.16	LC1D09	**GV2P01**
–	100	0.16-0.25	LC1D09	**GV2P02**
–	100	0.25-0.4	LC1D09	**GV2P03**
–	100	0.4-0.63	LC1D09	**GV2P04**
–	100	0.63-1.0	LC1D09	**GV2P05**
0.55	100	1.0-1.6	LC1D09	**GV2P06**
0.75	100	1.6-2.5	LC1D09	**GV2P07**
1.5	100	2.5-4.0	LC1D09	**GV2P08**
2.2	100	4.0-6.3	LC1D09	**GV2P10**
4	100	6-10	LC1D12	**GV2P14**
5.5	50	9-14	LC1D25	**GV2P16**
7.5	50	13-18	LC1D25	**GV2P20**
9	50	17-23	LC1D25	**GV2P21**
11	50	20-25	LC1D25	**GV2P22**
15	50	24-32	LC1D32	**GV2P32**

> Local control with rotary switch > Short circuit and overload protection
> Visual indication of short circuit trip > Differentiation between short circuit and overload.

GV2L

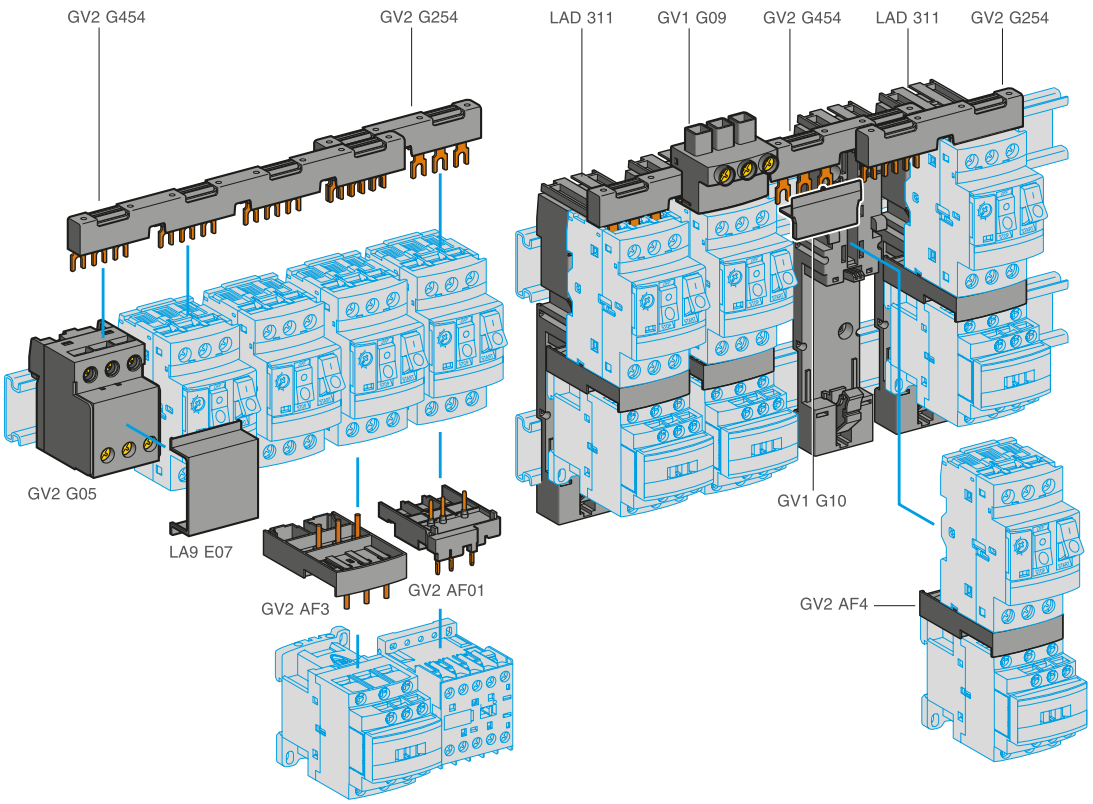
GV2L Magnetic motor circuit breakers (1)

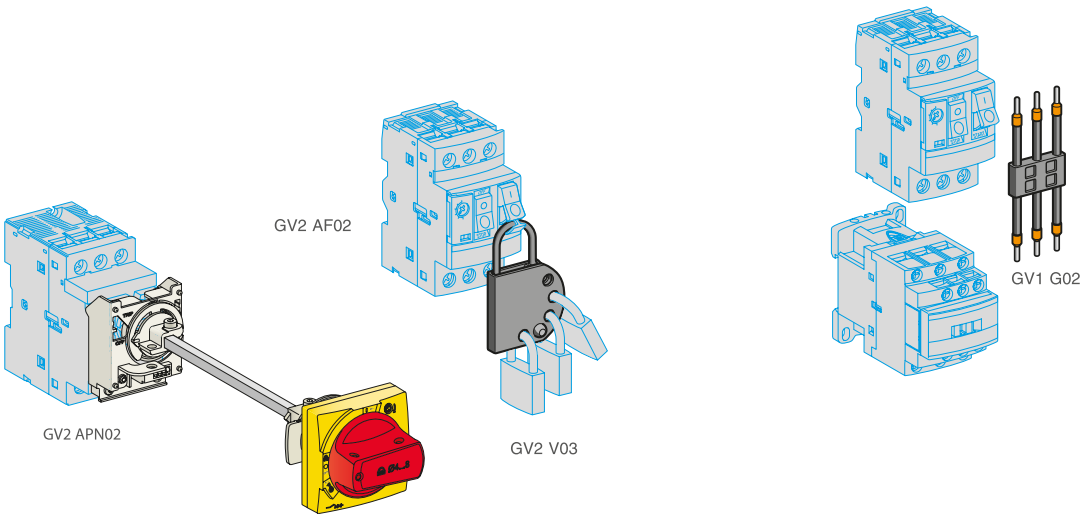
415V (kW)	ICU (kA)	Associated contactor Type 2	Associated overload relay	Reference
–	100	LC1D09	LRD03	**GV2L03**
–	100	LC1D09	LRD04	**GV2L04**
–	100	LC1D09	LRD05	**GV2L05**
0.55	100	LC1D09	LRD06	**GV2L06**
0.75	100	LC1D09	LRD07	**GV2L07**
1.5	100	LC1D09	LRD08	**GV2L08**
2.2	100	LC1D09	LRD10	**GV2L10**
4	100	LC1D09	LRD14	**GV2L14**
5.5	50	LC1D25	LRD16	**GV2L16**
7.5	50	LC1D25	LRD21	**GV2L20**
11	50	LC1D25	LRD22	**GV2L22**
15	50	LC1D50	LRD3355	**GV2L32**

> Local control with rotary switch > Short circuit protection

Note
(1) Enclosures for GV2ME and GV2P/L on page H44.

GV2 motor circuit breakers (to 32A) connector systems





GV2 motor circuit breaker accessories
GV2 Accessories & Chassis

Using GV2AF3 with a DC contactor

Using GV2AF4 and LAD31

Accessories

Description	Application	Reference
Adaptor plate	For mounting a GV2ME or GV2P and contactor LC1D09 to D38 with front faces aligned	**LAD311**
Height compensation plate	7.5mm	**GV1F03**
Combination block	Between GV2 and contactor LC1K or LP1K	**GV2AF01**
	Between GV2 and DC contactor	**GV2AF3**
	Between GV2 mounted on LAD31 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 (supplied with each circuit breaker)	For GV2P, GV2L (8 x 22mm)	**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...120mm	**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**
Padlockable external handle for GV2-P and GV2-L (150 to 290mm)	Padlocking in "Off" position, red handle, yellow legend plate, IP54	**GV2APN02**

Chassis for GV2P/L (3 phase – 50kA 0.1 sec)

Pole Capacity	Length (mm)	Rating	Reference
42 pole	542	630A	**INT_CHGV2/14**
78 pole	998	630A	**INT_CHGV2/26**

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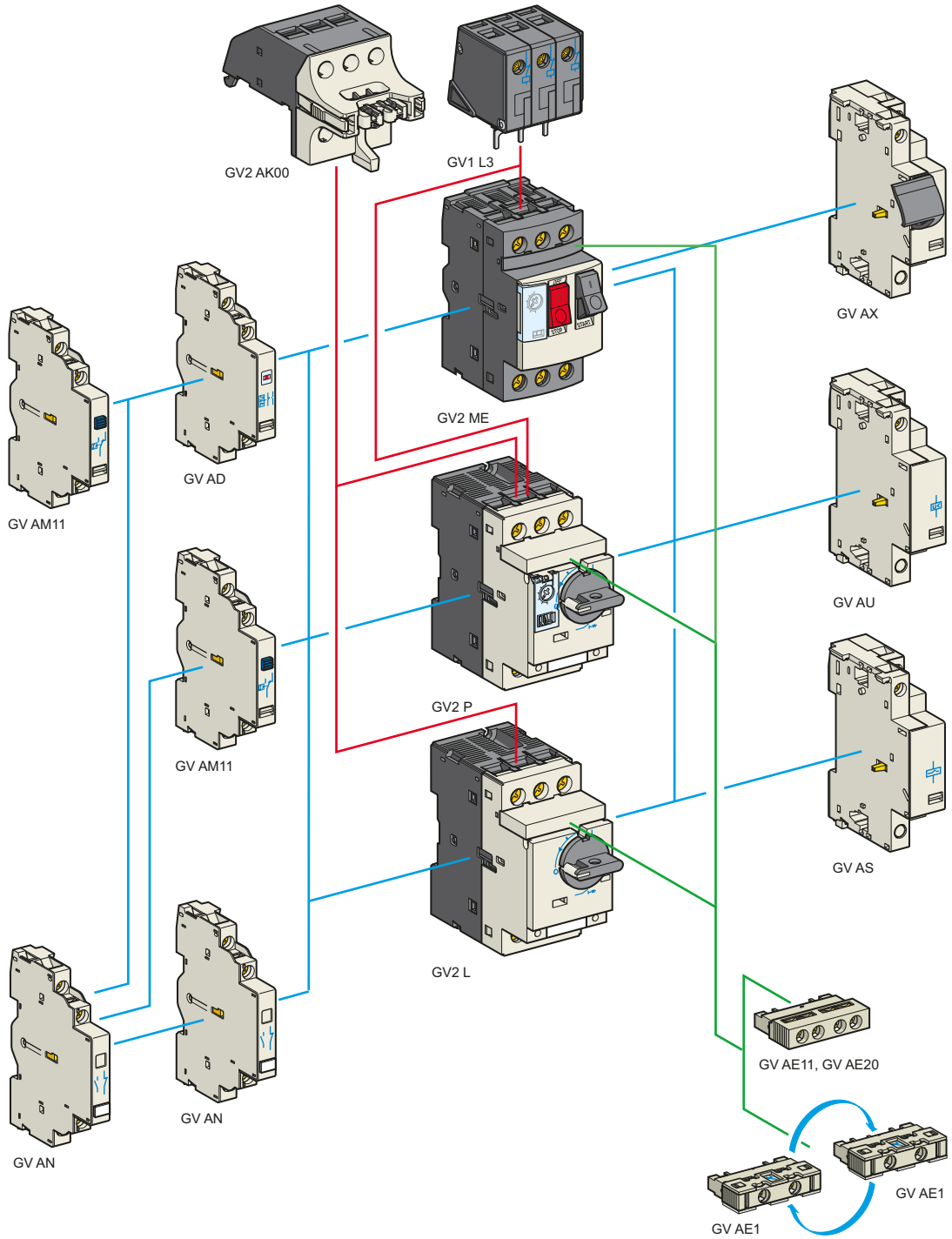
GV2 Accessories
Undervoltage trips
Shunt trips
Aux switches



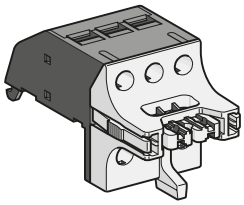
GVAD1010

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	Voltage		Reference
Undervoltage or shunt trips (4)			
Side (1 block on RH side of circuit breaker)	24V	50Hz	**GVA●025**
	110…115V	50Hz	**GVA●115**
	220V…240V	50Hz	**GVA●225**
	415V…440V	50Hz	**GVA●415**
Undervoltage trip INRS (6)			
Side (1 block on RH side of GV2ME●●)	220V…240	50Hz	**GVAX225**
	415V…440V	50Hz	**GVAX415**



GV2AK00

Visual Isolation Block – Padlockable

Description	Mounting	Maximum no.	Reference
Visible isolation block (5)	Front (1)	1	**GV2AK00**
Limiters	At top (GV2ME●● and GV2P●●)	1	**GV1L3**

Notes

(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, e.g. GVAU025. To order a shunt trip: replace the dot (●) in the reference with an S, e.g. GVAS025.
(5) Visible isolation of the 3 poles upstream of circuit breaker GV2P and GV2L.
(6) Safety device for dangerous machines, conform to INRS and VDE0113. For GV2ME only.

GV2 Enclosures and accessories

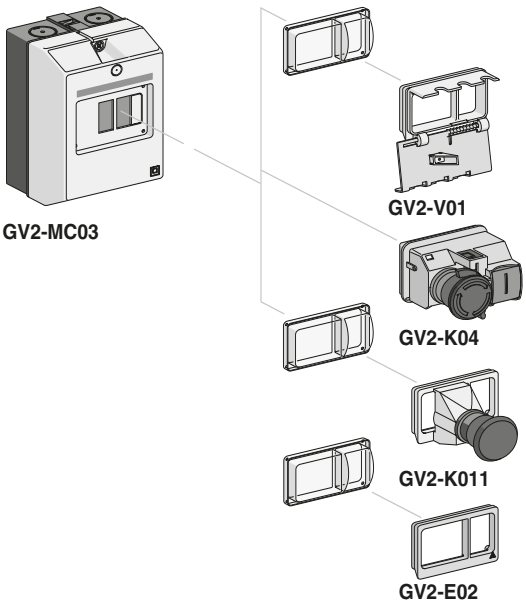
GV2MC03

Enclosures for thermal magnetic motor circuit breakers (3)

Description	Degree of protection	Possible attachments on side of GV2ME		Reference
		Left	Right	
Surface mounting Double insulated with protective sealable cover	IP55	1	1	**GV2MC03**
Surface mounting enclosure for 0.55 to 5.5kW GV2L/P. Comes with red rotary padlockable handle mounted on the cover	IP65			**GV2PC02**

Accessories

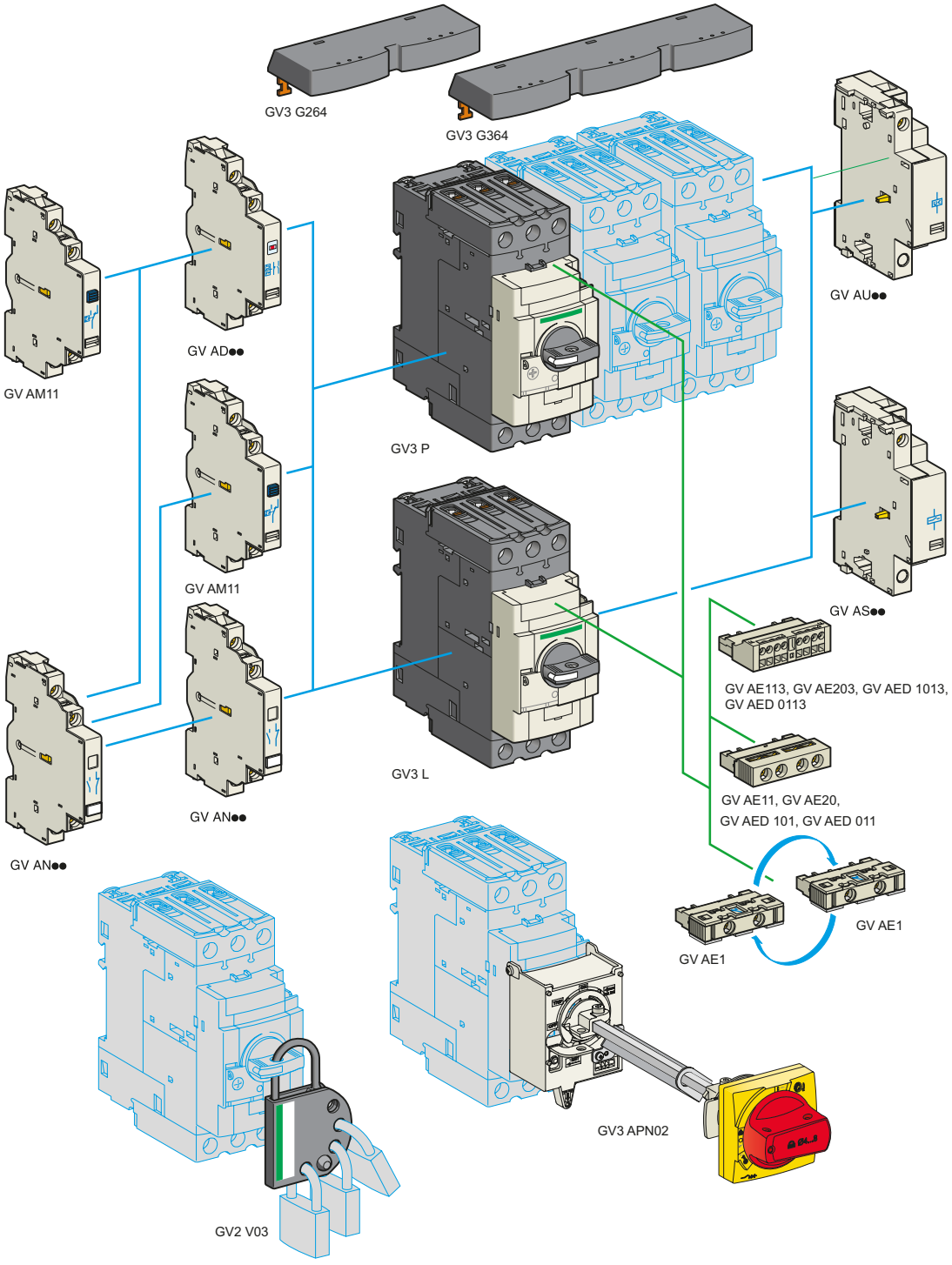
Description		Application	Reference
Padlocking device (1) for GV2ME operator (padlocking is only possible in "O" position)		1 to 3 padlocks Ø 4 to 8mm	**GV2V01**
Mushroom head "Stop" pushbutton Ø 40mm, red		Spring return (1)	**GV2K011**
		Turn to release	**GV2K031**
		Turn to release	**GV2K04 (2)**
Sealing kit	For enclosures and front plate	IP55	**GV2E02**



Notes

(1) Supplied with IP55 sealing kit. For use with GV2M●01.
(2) Padlockable in "Off" position using Ø 4 to 8mm shank padlocks.
(3) Circuit breakers to be ordered separately.

GV3 Accessories
Undervoltage trips
Shunt trips
Aux switches



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GV3 motor circuit breakers (to 73A)

GV3P●●
(except GV3P73 & GV3P80)

GV3P Thermal-magnetic motor circuit breakers (EverLink connectors) (2)

Control by rotary knob

Standard power ratings of 3 phase motors 50/60Hz in category AC-3			Setting range of thermal trips	Reference
400/415V P	Icu	Ics (1)		
kW	kA		A	
5,5	100	100	9...13	**GV3P13**
7,5	100	100	12...18	**GV3P18**
11	100	100	17...25	**GV3P25**
15	100	100	23...32	**GV3P32**
18.5	50	100	30...40	**GV3P40**
22	50	100	37...50	**GV3P50**
30	50	100	48...65	**GV3P65**
37	50	60	62...73	**GV3P73**

GV3P73

GV3L Magnetic motor circuit breakers (EverLink connectors) (2)

Control by rotary knob

Standard power ratings of 3 phase motors 50/60Hz in category AC-3			Associated equipment	Circuit	Reference
400/415V (kW) P	Icu	Ics	Thermal	Short circuit overload relay	breaker
kW	kA			Rating A	
11	100	100	**LRD325**	25	**GV3L25**
15	100	100	**LRD332**	32	**GV3L32**
18,5	50	100	**LRD340**	40	**GV3L40**
22	50	100	**LRD350**	50	**GV3L50**
30	50	100	**LRD365**	65	**GV3L65**
37	50	60	**LRD380**	80	**GV3L73**

GV3L●●

Accessories for GV3P + GV3L

Description		For circuit breakers	Reference
Remote handle	– red & yellow	GV3P●● and GVL●●	**GV3APN02**
Set of 3 pole 115A busbars 3 tap-offs. Pitch: 64mm		GV3P●● and GVL●●	**GV3G364**

Contact blocks for GV3P + GV3L

Description	Mounting	Maximum number	Type of contacts		Reference
Fault signalling contact + instantaneous auxiliary contact	Front	1	N/O (fault)	+ N/O	**GVAED101**
				+ N/C	**GVAED011**

Notes
(1) BTR screw of 4mm.
(2) Requires use of an insulated Allen key.

GV3
Add on blocks, accessories and enclosure

GVAD1010

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	Side (2) (LH)	1	N/O (fault)	+ N/O	**GVAD1010**
				+ N/C	**GVAD1001**
			N/C (fault)	+ N/O	**GVAD0110**
				+ N/C	**GVAD0101**
Short circuit signalling contact	Side (LH)	1	C/O common point		**GVAM11**

Electric trips

Mounting	Voltage		Reference
Undervoltage or shunt trips (3)			
Side (1 block on RH side of circuit breaker)	24V	50Hz	**GVA●025**
	110…115V	50Hz	**GVA●115**
	220…240V	50Hz	**GVA●225**
	415…440V	50Hz	**GVA●415**

Accessories

Description	For circuit breakers	Reference
Set of 3 pole, 115A busbars 3 tap-offs. Pitch: 64mm	GV3P●● and GVL●●	**GV3G364**
Padlocking device for use with up to 4 padlocks (not supplied) Ø 6mm shank max.	GV3P●● and GV3L●●	**GV2V03**

Enclosure for thermal magnetic motor circuit breakers

Description	Degree of Protection	Reference
Metal enclosure for GV3L/P. Comes with red padlockable rotary handle and circuit breaker adapter (4)	IP65/IK09	**GV3PC02**

Notes
(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.
(4) Assembling possibility: 1 GV3 P or GV3 L alone circuit breaker + 1 LC1D●●A●● contactor + GV3 S S-shape busbar.

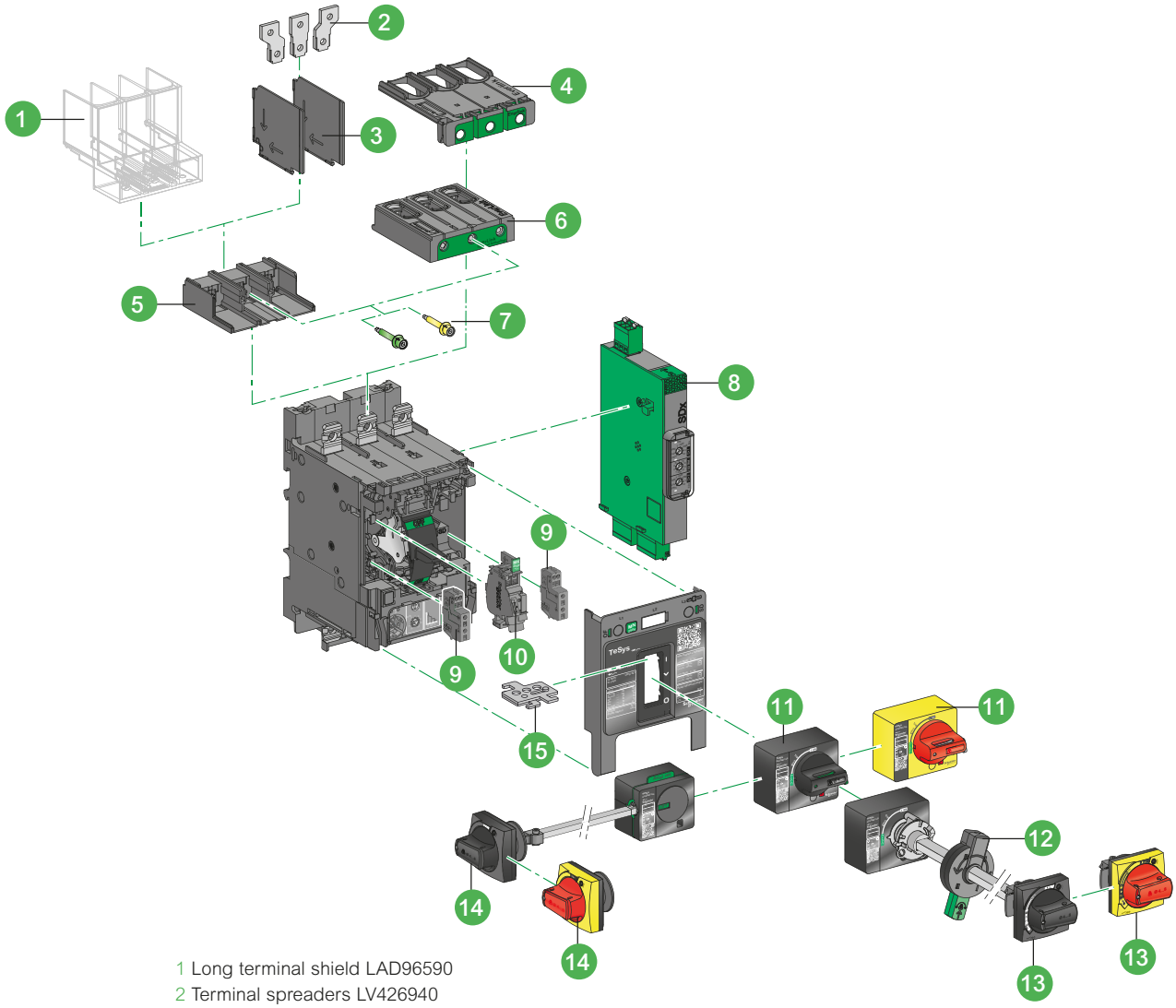
GV4 motor circuit breakers (to 115A)
Overview

TeSys GV4 circuit breakers

TeSys GV4 motor circuit breaker covers motor protection from 0.25 to 55 kW at 415 V AC (from 0.8 to 115 A) in one frame and is available in 3 breaking capacities (Icu): 25, 50 and 100 kA at 415 V AC.
3 types of protection available:

- Magnetic GV4L: to be used with an overload relay or a drive
- Thermal magnetic GV4P: electronic protection with wide range setting, dual class (10 & 20)
- Multifunction motor protection GV4PEM: GV4P with adjustable advanced protections (using NFC app or Ecoreach software) and possibility to have a side module SDx for alarming and fault differentiation

In addition to basic short circuit and overload protection, GV4PEM embed protection against long start, jam, ground fault, phase unbalance and phase loss.



1 Long terminal shield LAD96590
2 Terminal spreaders LV426940
3 Interphases barriers LV426920
4 Large spacing cover for EverLink connector GV4G66
5 Crimp lug connector GV4LUG
6 EverLink® connector LAD96595
7 Torque limiting breakaway bits LV42699
8 SDx alarming/fault differentiation module GV4ADM1111 (only with GV4PEM)
9 Auxiliary contact block for OF or SD function GV4AE11
10 MN undervoltage release GV4AU●●
11 Direct mounting black or red on yellow bezel rotary handle GV4ADN●●
12 Open door shaft operator (for front extended rotary handle) LV426937
13 Front extended rotary handle kit with red handle on yellow bezel or black handle GV4APN●●
14 Side rotary handle kit with red handle on yellow bezel or black handle LV4269●●
15 Toggle locking device 29370

Product configurator on se.com/nz

GV4 motor circuit breakers (to 115A)

GV4PEM

GV4PEM Thermal magnetic circuit breaker with advanced protection

Control by toggle disconnector and connection by EverLink® terminals

Standard ratings of 3-phase motors - 50 / 60 Hz in category AC-3			Thermal setting range	Reference
400/415V Power (kW)	Icu (1) (kA)	Ics (%)	Ir (A)	
0.25…0.75	50	100	0.8…2	**GV4PEM02N (2)**
0.55… 1.5	50	100	1.4…3.5	**GV4PEM03N (2)**
1.5… 3	50	100	2.9…7	**GV4PEM07N (2)**
3… 5.5	50	100	5…12.5	**GV4PEM12N (2)**
5.5… 11	50	100	10…25	**GV4PEM25N (1)(2)**
11… 22	50	100	20…50	**GV4PEM50N (1)(2)**
22… 37	50	100	40…80	**GV4PEM80N (1)(2)**
37… 55	50	100	65…115	**GV4PEM115N (1)**

GV4P

GV4PE

GV4P Thermal magnetic circuit breaker

Control with rotary handle and connection by EverLink® terminals

Standard ratings of 3-phase motors - 50 / 60 Hz in category AC-3			Thermal setting range	Reference	
400/415V Power (kW)	Icu (1) (kA)	Ics (%)	Ir (A)	with rotary handle	with toggle
0.25…0.75	50	100	0.8…2	**GV4P02N**	**GV4PE02N**
0.55… 1.5	50	100	1.4…3.5	**GV4P03N**	**GV4PE03N**
1.5… 3	50	100	2.9…7	**GV4P07N**	**GV4PE07N**
3… 5.5	50	100	5…12.5	**GV4P12N**	**GV4PE12N**
5.5… 11	50	100	10…25	**GV4P25N**	**GV4PE25N**
11… 22	50	100	20…50	**GV4P50N**	**GV4PE50N**
22… 37	50	100	40…80	**GV4P80N**	**GV4PE80N**
37… 55	50	100	65…115	**GV4P115N**	**GV4PE115N**

GV4L

GV4LE

GV4L Magnetic circuit breaker

Control with rotary handle and connection by EverLink® terminals

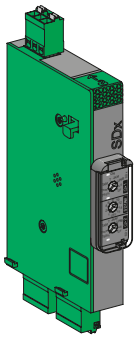
Standard ratings of 3-phase motors - 50 / 60 Hz in category AC-3			Nominal current	Magnetic setting range	Associated equipment	Reference	
400/415V Power (kW)	Icu (1) (kA)	Ics (%)	In (A)	Ii (A)	Overload	with rotary handle	with toggle
0.25…0.75	50	100	2	12… 28	LRD05 (0.63… 1A), LRD06 (1… 1.6A), LRD07 (1.6… 2.5A)	**GV4L02N**	**GV4LE02N**
0.55… 1.5	50	100	3.5	21… 49	LRD07 (1.6… 2.5A), LRD08 (2.5… 4A)	**GV4L03N**	**GV4LE03N**
1.5… 3	50	100	7	42… 98	LRD08 (2.5… 4A), LRD10 (4…6A)	**GV4L07N**	**GV4LE07N**
3… 5.5	50	100	12.5	75… 175	LRD12 (5.5… 8A), LRD14 (7… 10A), LRD313 (9…13A)	**GV4L12N**	**GV4LE12N**
5.5… 11	50	100	25	150… 350	LRD318 (12… 18A), LRD325 (17… 25A)	**GV4L25N**	**GV4LE25N**
11… 22	50	100	50	300… 700	LRD332 (23… 32A), LRD340 (30… 40A), LRD350 (37… 50A)	**GV4L50N**	**GV4LE50N**
22… 37	50	100	80	480… 1120	LRD365 (48… 65A), LRD3363 (63… 80A)	**GV4L80N**	**GV4LE80N**
37… 55	50	100	115	690… 1610	LR9F5367 (60… 100A) LR9D5369 (90… 150A)	**GV4L115N**	**GV4LE155N**

Notes

(1) 25kA Icu version also available (Price variation). Replace the reference last digit 'N' with 'B'. e.g.GV4PEM25N to GV4PEM25B.

(2) 100kA Icu version also available (Price variation). Replace the reference last digit 'N' with 'S'. e.g.GV4PEM25N to GV4PEM25S.

GV4
Add on blocks and accessories



GV4ADM1111

GV4AE11

Auxiliary contact blocks

Description	Mounting	Maximum number	Type of contact	Reference
Auxiliary contact block for OF(Open/close) or SD (trip alarm) indication	Internal plug in	2 (1OF or SD)	NO + NC	**GV4AE11**
SDx alarming/ fault differentiation module for GV4PEM version only	Side	2	NO/NC	**GV4ADM1111**

Electric trips

Description	Mounting	Maximum number	Voltage	Reference
MX Shunt trip	Internal plug in	1	24V AC/DC	**GV4AS027**
			110VAC/DC	**GV4AS137**
			230VAC	**GV4AS287**
			415VAC	**GV4AS487**
MN undervoltage trip	Internal plug in	1	24V AC/DC	**GV4AU027**
			110VAC/DC	**GV4AU137**
			230VAC	**GV4AU247**
			415VAC	**GV4AU415**

GV4AS137

H

Rotary handles

Description	Type	IP degree	Reference
Direct mounting rotary handle	Black	IP40	**GV4ADN01**
	Red/yellow	IP40	**GV4ADN02**
GV4 front extended rotary handle kit	Red/yellow	IP65	**GV4APN04**
	Black	IP54	**GV4APN01**
GV4 side rotary handle kit	Red/yellow	IP54	**LV426936**
Open door shaft operator			**LV426937**
Laser tool for marking			**GVAPL01**

GV4APN04

Other accessories

Description	Sold in	Reference
Crimped lug connector + screws	1	**GV4LUG**
Transparent terminal shield for crimped lug connector	1	**LAD96590**
Interphase barriers	6	**LV426920**
Spreader 3-pole To increase the pitch to 35 mm	1	**LV426940**
Limited torque throwaway bits Green - 9 N.m	6	**LV426990**
Limited torque throwaway bits Yellow - 5 N.m	6	**LV426992**
Removable toggle locking device for 1 to 3 padlocks		**29370**
Bag of 6 leads + 6 sealing accessories		**LV429375**

Software

Description	Reference
Configuration and setting software	**Ecoreach**

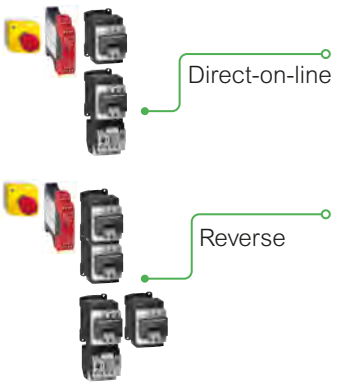
TeSys H motor starters

New

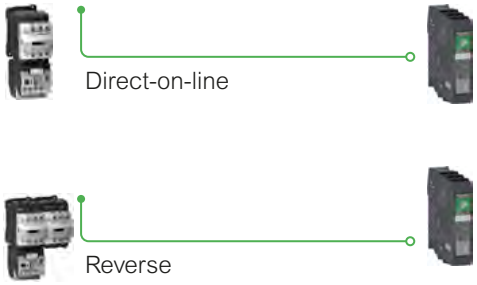
Ultra-compact 3kW/400V motor starter

- 22.5mm wide starter
- Reversing starter in the same width
- Direct mounting on DIN rail
- 30 000 000 of AC53a (asynchronous motors) electrical cycles
- Hybrid technology (each contactor is coupled with a power semi conductor for switching)
- Available in standard and safety versions

Conventional or TeSys H Safety Solutions



Conventional or TeSys H Standard Solutions



LZ1H2X4●●

Standard starters TeSys H

Starters	3- phases motor: max power (KW)		Current range	Reference (1)
	230 V	400 V	A	
Direct-on-line				
Screw terminals	0.37	0.75	0.18...2.4	**LZ1H2X4●●**
	1.5	3	1.5...6.5	**LZ1H6X5●●**
Reverse				
Screw terminals	0.37	0.75	0.18...2.4	**LZ2H2X4●●**
	1.5	3	1.5...6.5	**LZ2H6X5●●**

LZ7H2X4●●

Safety starters TeSys H

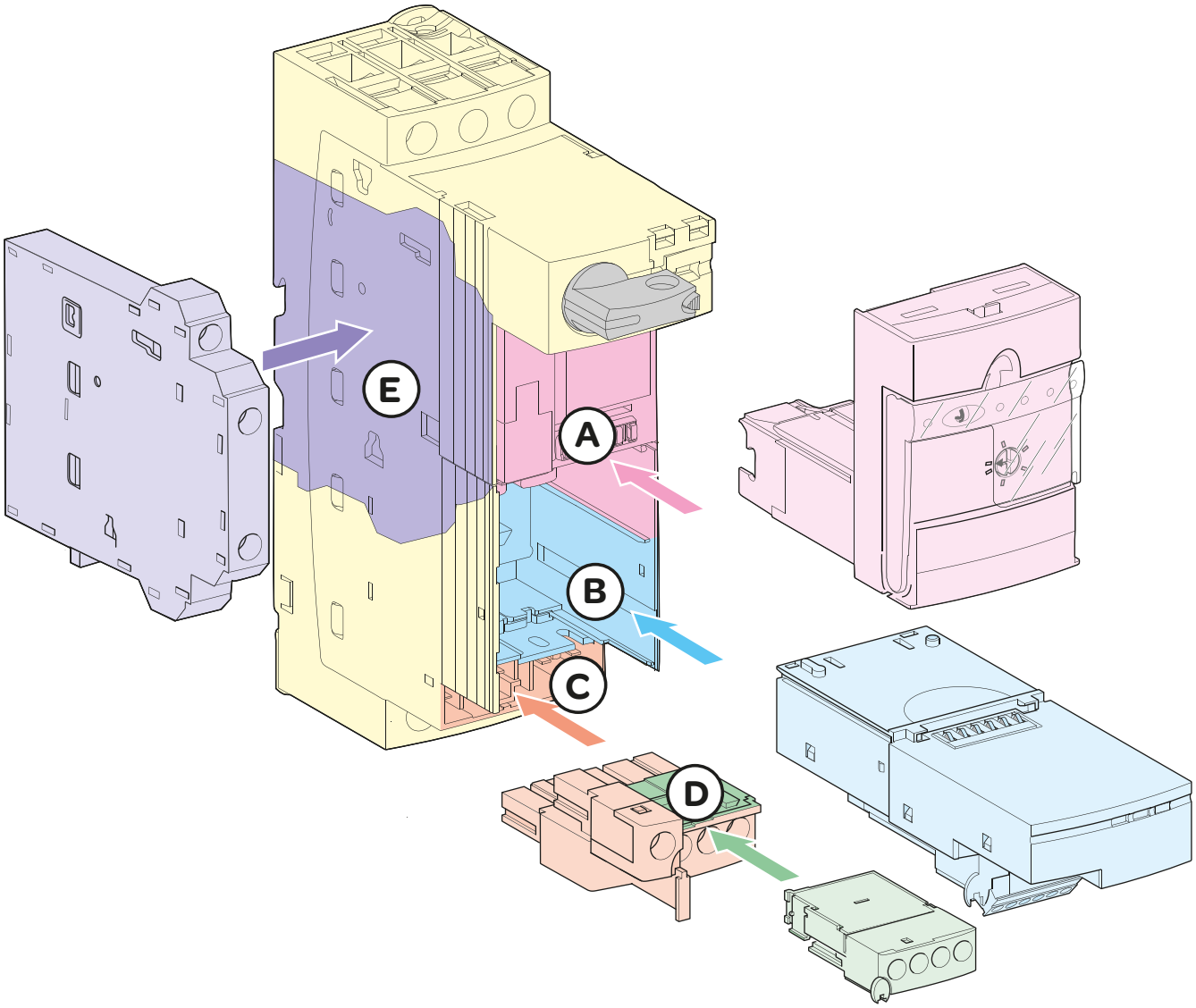
Starters	3- phases motor: max power (KW)		Current range	Reference (1)
	230 V	400 V	A	
Direct-on-line				
Screw terminals	0.37	0.75	0.18...2.4	**LZ7H2X4●●**
	1.5	3	1.5...6.5	**LZ7H6X5●●**
Reverse				
Screw terminals	0.37	0.75	0.18...2.4	**LZ8H2X4●●**
	1.5	3	1.5...6.5	**LZ8H6X5●●**

Notes

(1) Replace ●● with voltage code. BD (24V DC) or FU (110-230V AC).

Product configurator on se.com/nz

TeSys U integrated starter
Principle



Power base	C Cavity for control terminal block
A Cavity for control unit	D Cavity for additional contact block or shutter
B Cavity for auxiliary module	E Space for additional block fastening

Power Base
This is the basic constituent of the motor starter, it is composed of the power contacts, the control coil, the opening / closing mechanism of the protection device and the control pad.

Additional lateral block
Composed of the protection device signaling contacts.

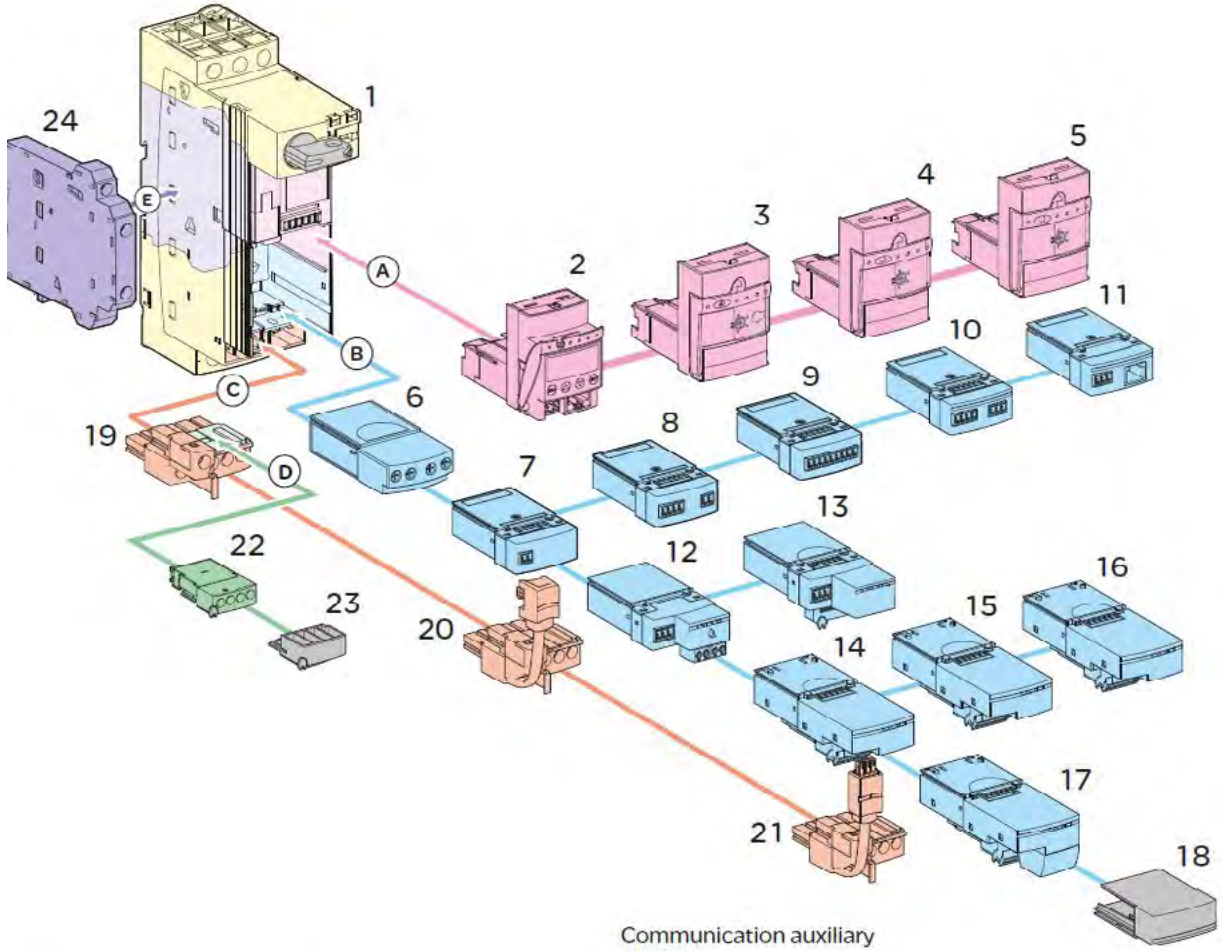
Control unit
Composed of the power base management processor and setting knobs.

Auxiliary module
Depending on its type, it integrates load status contacts or a communication processor or an alarm processor.

Control terminal block
It is composed of two terminals "coil control", 1 NO auxiliary contact, 1 NC auxiliary contact. It can be eventually connected to an auxiliary communication module via a dedicated cable.

Additional block
It includes protection device additional signaling contacts. By default, this is a simple shutter.

TeSys U integrated starter
Components overview



Power base
1- LUB
Non reversing power base - 1 rotation direction

Control units
2- LUCM
Multifunctional control unit

3- LUCB/LUCC/LUCD
Advanced control units

4- LUCA
Standard control unit

5- LUCL
Magnetic protection control unit

Auxiliary module
6- LUFN
Auxiliary contacts module

Load monitoring auxiliary modules
7- LUFW10
Overload alarm module

8- LUFDH11
Overload alarm module with manual reset

9- LUFDA01/LUFAD10
Overload alarm module with automatic reset/remote reset

10- LUFV2
Motor load indication module

Communication auxiliary modules
11- LUFC00
Telefast parallel liaison module, with RJ45 connector

12- ASILUFC5/ASILUFC51
AS-Interface c. m.

13- LULC031/LULC033
Modbus c. m

14- LULC07 Profibus DP c. m

15- LULC08 CANopen c. m.

16- LULC09 DeviceNET c. m.

17- LULC15 Advantys STB c. m.

Shutters
18- LU9C 1
Shutter for module cavity

23- Shutter for contacts additional block cavity

Control terminal blocks
19- LU9BN11
Terminal block for imbedded auxiliary contacts

20- LU9BN11C
Coil terminal block with its connecting cable

21- LU9BN11L
Coil terminal block with its connecting cable

Additional contacts blocks
22- LUA1
Additional contacts

24- LUA8
side-mounting additional contacts

Notes
(1) Communication modules can only be combined with a ∿ 24 V control unit (LUC● ●● BL).
(2) Installation note: Co-ordination between Tesys U and variable speed drive is essential, please confirm your design with our technical team.

TeSys U integrated starter
Control units operating characteristics

Operating characteristics

Control units	Standard	Advanced			Multifunction
	LUCA	LUCB	LUCC	LUCD	LUCM
Thermal overload protection					
Overcurrent protection	14.2 x the setting current				3 to 17 x the setting current
Short circuit protection	**13 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**
Motor type	3 phase		Single-phase	3 phase	Single-phase and 3-phase
Thermal overload test function					
Overtorque					
No-load running					
Long starting time					
Reset method 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.
					With communication modules to make use of these alarms via a bus, see below.
"Log" function					Log of the last 5 trips. Number of starts, number of trips, number of operating hours.
"Monitoring" function					Display of main motor parameters on front panel of the control unit, via remote terminal, via PC

With function modules (1)

Thermal overload alarm	With module LUF W10	
Thermal overload signalling and manual reset	With module LUF DH11	
Thermal overload signalling and automatic or remote reset	**With module LUF DA01 and LUF DA10**	
Indication of motor load (analogue)	**With module LUF V**	

With communication module or via Modbus port on control unit LUCM (1)

Starter status (ready, running, fault)	With any communication module	
Reset mode	Parameters can be set via the bus	
Alarm	With modules LUL C031, LUL C033, LUL C15, LUL C07, LUL C08 and LUL C09 (thermal overload alarm only).	With module LUL C031, LUL C033, LUL C15, LUL C07, LUL C08 and LUL C09 and Modbus port on the control unit (alarm possible for all types of fault).
Remote reset via the bus		
Indication of motor load		
Fault signalling and differentiation		
Remote programming and monitoring of all functions		With modules LUL C031, LUL C033, LUL C15, LUL C07, LUL C08 and LUL C09 and Modbus port on the control unit.
"Log" function		
"Monitoring" function		

Built-in function **Function provided with accessory**

Note
(1) Mounting possibilities: 1 function module **or** 1 communication module.

All-in-one motor starters

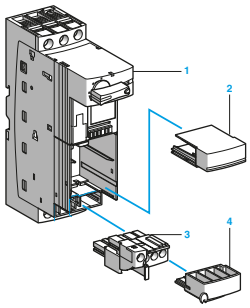
TeSys U integrated starter
Non-reversing power bases
Chassis 14 + 30 way

LUB120
LUB380

Power bases for non-reversing D.O.L. starting

Connection Power	Item	Rating ≤ 440V (A)	Reference
These bases have 2 auxiliary contacts: 1 N/O (13-14) and 1 N/C (21-22) which indicate the closed or open position of the power poles.			
They must be used in conjunction with a control unit.			
Without connections (1)	1 + 2	12	**LUB120**
		32	**LUB320**
		38	**LUB380**

> **Without connection**. This version enables wiring to be prepared in advance and is recommended when a communication module is required (allowing the use of control connection prewiring accessories) or when a reverser block is to be mounted by the customer.



Terminal blocks for power bases without connections

Connection	For base	Item	Reference
Single terminal block for wire remote inidcation and local coil control	LUB 120 or 320	3 + 4	**LU9BN11**
Terminal block with status remote indication cable			**LU9BN11C**

TUC_CH/16

Model U 3 phase chassis: 50kA 630 amp 415V

Amps	No. of starters	Main bus rating	Reference
32	16	630	**TUC_CH/16**
32	30	630	**TUC_CH/30**

To fit integral 18 on chassis

Description	Reference
Wings for 16 way chassis	**TUCH16W**
Wings for 30 way chassis	**TUCH30W**

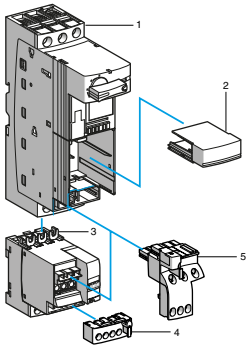
Note
(1) These terminals have no auxilliaries and will need to be purchased separately.

TeSys U integrated starter
Reversing power bases

LU22B12B

Power bases for reversing D.O.L. starting, pre-assembled

Connection Power	Control	Item (1)	Rating ≤ 440V (A)	Reference to be completed (2)
These bases have two N/O common point contacts (81-82-84) which indicate non-reversing and reversing operating status.				
Screw terminals	Screw terminals	1 + 2 + 3 + 4 + 5	12	**LU2B12●●**
			32	**LU2B32●●**
			38	**LU2B38●● (3)**



LU2B●2●●

Power bases for reversing D.O.L. starting, mounted by the customer

A reverser block should preferably be combined with a non-reversing power base without connections to create a reversing starter-controller.

The built-in N/O (13-14) and N/C (21-22) contacts are used for electrical interlocking between the reverser block and the base; they are therefore no longer available as output contacts.

The reverser block has two N/O common point contacts (81-82-84) which indicate non-reversing and reversing operating status.

32A reverser block	Connection		Item	Reference to be completed (2)
	Power	Control		
For mounting directly beneath the power base	Screw terminals	Without connections	3	**LU2MB0●●**
For mounting separately from the base (screw or rail fixing)	Screw terminals	Without connections		**LU6MB0●●**

Control circuit pre-wiring components

Description	Item	Reference
Pre-wired connector	5	**LU9MR1C**

Control coil voltage code:

Volts	24	48…72	110…240
⎓	BL	–	–
∿	B	–	–
⎓ or ∿	–	ES	FU

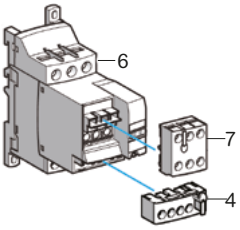
Notes

(1) The various sub-assemblies are supplied assembled but they are easy to separate, as shown in the illustration.

(2) "●●" Complete reference with coil voltage code.

(3) With BL or FU code only

TeSys U integrated starter
Reversing power bases for separate mount



LU6M + LU9M1 + LU9MR1
Reverser Block

Accessories

Description	Item	Application	Reference
Control block	4	Non-reversing power base without connections LU2B A0●● or B0●●	**LU9M1**
		Reverser block LU2M B0●● for direct mounting beneath power base	**LU9M1**
		Reverser block LU6M B0●● for mounting separately from power base	**LU9M1**
	7	Reverser block LU6M B0●● for mounting separately from power base	**LU9MR1**

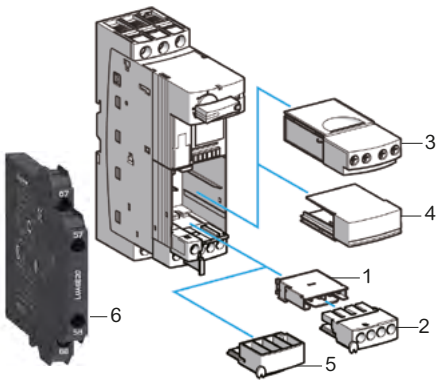
H

TeSys U integrated starter
Add on contact blocks and aux contact modules
Function modules

Contact states depending on the product status

		Position of control knob	Indication on front panel	N/O pole contact	N/C pole contact	N/O contact any fault	N/C contact any fault	⏻ N/O contact product ready
References of add on contact blocks and auxiliary contact modules Terminal referencing	–	–	–	–	**LUF N11** 31-32	**LUA1 C20** 97-98	**LUA1 C11** 95-96	**LUA1 C20** 17-18
	or	–	–	–	**LUF N02** 31-32 41-42	**LUA1 C200** No terminal block	**LUA1 C110** No terminal block	**LUA1 C200** No terminal block
	or	–	–	**LUF N20** 33-34 43-44	**LU9B N11** 21-22	–	–	**LUA1 C11** 17-18
	or	–	–	**LUF N11** 43-44	–	–	–	**LUA1 C110** No terminal block
	or	–	–	**LU9B N11** 13-14	–	–	–	–
Off		OFF	**0**					
Ready to operate			**0**					
Running			**1**					
Tripped on short circuit		TRIP	**1>>**					
Tripped on thermal overload	Manual reset mode	TRIP	**0**					
	Automatic reset on thermal overload mode		**0**					
	Remote reset mode		**0**					

N/O contact in closed position N/C contact in open position



LUB + LUA1 + LUFN

Signaling module and blocks

Add on contact blocks

Signalling and composition	Connection	Item	Reference
1 N/C fault signalling contact (95-96) + N/O (17-18)	Screw terminals	1 + 2	**LUA1C11**
1 N/O fault signalling contact (97-98) + N/O (17-18)	Screw terminals	1 + 2	**LUA1C20**
2 N/O fault signalling - side mount	Screw terminal	6	**LUA8E20**

Auxiliary contact modules for connection by screw clamp terminals

Module with 2 contacts indicating the state of the starter-controller power poles
Application: a or c 24…250V, Ith : 5A

Composition	Item	Reference
2 N/O contacts (33-34 and 43-44)	3	**LUFN20**
1 N/C contact (31-32) and 1 N/O contact (43-44)	3	**LUFN11**
2 N/C contacts (31-32 and 41-42)	3	**LUFN02**

Accessories

Description	For use on	Item	Reference
Blanking covers	Location for auxiliary contact, communication or function module	4	**LU9C1**
	Location for add on contact blocks	5	**LU9C2**

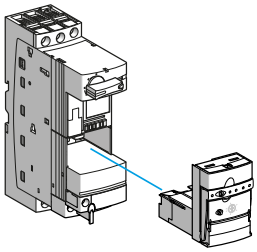
TeSys U integrated starter
Protection modules (control units)

LUCB05B

Advanced control units

Pressing the Test button on the front panel simulates tripping on thermal overload.

Maximum power ratings of standard 3 phase motors 50/60Hz 400/415V (kW)	Setting range (A)	Clip-in mounting on power base rating (A)	Reference to be completed by adding the voltage code (1)
Class 10 for 3 phase motors			
0.09	0.15…0.6	12 and 32	**LUCBX6●●**
0.25	0.35…1.4	12 and 32	**LUCB1X●●**
1.5	1.25…5	12 and 32	**LUCB05●●**
5.5	3…12	12 and 32	**LUCB12●●**
7.5	4.5…18	32	**LUCB18●●**
15	8…32	32	**LUCB32●●**
18.5	38	38	**LUCB38●●** (2)
Class 10 for single phase motors			
–	0.15…0.6	12 and 32	**LUCCX6●●**
0.09	0.35…1.4	12 and 32	**LUCC1X●●**
0.55	1.25…5	12 and 32	**LUCC05●●**
2.2	3…12	12 and 32	**LUCC12●●**
4	4.5…18	32	**LUCC18●●**
7.5	8…32	32	**LUCC32●●**
Class 20 for 3 phase motors			
0.09	0.15…0.6	12 and 32	**LUCDX6●●**
0.25	0.35…1.4	12 and 32	**LUCD1X●●**
1.5	1.25…5	12 and 32	**LUCD05●●**
5.5	3…12	12 and 32	**LUCD12●●**
7.5	4.5…18	32	**LUCD18●●**
15	8…32	32	**LUCD32●●**
18.5	38	38	**LUCD38●●** (2)



LUB●2●● + LUCB ●●●●

Control coil voltage code:

Volts	24	48…72	110…240
⎓	BL	–	–
∿	B	–	–
⎓ or ∿	–	ES	FU

Notes

(1) "●●" Complete reference with coil voltage code.
(2) With BL or FU code only.

TeSys U integrated starter
Protection modules (control units)

Magnetic control units

For use when installed upstream of a variable speed controller or a soft start unit where thermal protection is provided by these devices, the control unit LUCL●●, used in conjunction with a LUB120 or LUB320 power base, provides:

- Isolation
- Short-circuit protection of the motor starter (variable speed controller-based or soft start unit-based motor starters)

Description

LUCL32BL

1. Extraction and locking handle
2. Sealing of locking handle
3. Dial for magnetic adjustment of motor current (In)
4. Locking of settings by sealing the transparent cover

For single and 3 Phase motors

Maximum power ratings of standard 3 phase motors 50/60Hz 400/415V (kW)	Setting range (A)	Clip-in mounting on power base rating (A)	Reference to be completed by adding the voltage code (1)
0.09	0.15…0.6	12 and 32	**LUCLX6●●**
0.25	0.35…1.4	12 and 32	**LUCL1X●●**
1.5	1.25…5	12 and 32	**LUCL05●●**
5.5	3…12	12 and 32	**LUCL12●●**
7.5	4.5…18	32	**LUCL18●●**
15	8…32	32	**LUCL32●●**

LUCM12BL
Multifunction Control Unit

Multifunction control units – 24VDC only

Maximum power rating.			
400/415V (kW)	Setting range (A)	Power base (A)	Reference
0.09	0.15…0.6	12 and 32	**LUCMX6BL**
0.25	0.35…1.4	12 and 32	**LUCM1XBL**
1.5	1.25…5	12 and 32	**LUCM05BL**
5.5	3…12	12 and 32	**LUCM12BL**
7.5	4.5…18	32	**LUCM18BL**
15	8…32	32	**LUCM32BL**

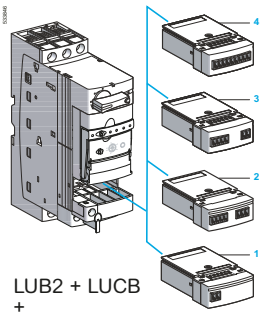
Control coil voltage code:

Volts	24	48…72	110…240
⎓	BL	–	–
∿	B	–	–
⎓ or ∿	–	ES	FU

Notes

(1) "●●" Complete reference with coil voltage code.

TeSys U integrated starter
Function modules



LUB2 + LUCB
+
LUFW10 or LUFV

Output	Item	Application	Reference
Thermal overload signalling and manual reset			
Module LUF DH11 makes it possible to differentiate thermal overload and short circuit faults. (The short circuit fault can then be signalled via add on contact blocks LUA1 C). The module includes two contacts for thermal overload signalling, as well as an LED on the front panel. To reset the motor starter, the operator must use the rotary knob on the power base. The module can only be used with an advanced control unit and requires an ∿/⎓ 24…240V external power supply.			
1 N/O + 1 N/C	3	∿ or ⎓ 24…250V	**LUFDH11**
Thermal overload signalling and automatic or remote reset			
These modules make it possible to differentiate thermal overload and short circuit faults. (The short circuit fault can then be signalled via add on contact blocks LUA1 C). The modules include one contact for thermal overload signalling, as well as an LED on the front panel. A second contact (terminals Z1-Z2) must be wired in series with terminal A1 of the motor starter. In the event of a thermal overload fault, this wiring allows motor control to be switched off. The rotary knob on the power base will then stay in the "ready position" . Resetting of the motor starter is automatic after the required motor cooling time if terminals X1-X2 are linked by a strap, or remote by pulsed closing of a volt-free contact connected to terminals X1-X2. These modules can only be used with an advanced control unit and require an ∿/⎓ 24…240V external power supply. **Note** Terminals X1-X2 are not isolated from the signalling module power supply. For remote resetting, use a volt-free contact specifically for each module to be reset.			
1 N/C	4	∿ or ⎓ 24…250V	**LUFDA01**
1 N/O	4	∿ or ⎓ 24…250V	**LUFDA10**

LUFW10
Overload Alarm Module

Thermal Overload Alarm			
Through load shedding, this module makes it possible to avoid stoppages in operation due to overload tripping. Imminent thermal overload tripping is displayed as soon as the thermal state exceeds the threshold of 105% (hysteresis = 5%). Signalling is possible via an LED on the front panel of the module and externally by an N/O relay output. It can only be used with an advanced control unit, from which it takes its power.			
1 N/O	1	∿ or ⎓ 24…250V	**LUFW10**

LUFV2
Motor Load Module

Indication of motor load			
This module provides a signal which is representative of the motor load status (I average/Ir). > I average = average value of the rms currents in the 3 phases, > Ir = value of the setting current. The value of the signal (4-20mA) corresponds to a load status of 0 to 200% (0 to 300% for a single-phase load). It can be used with an advanced or multifunction control unit. Module LUF V2 requires AC 24V external power supply.			
4 - 20mA	2	–	**LUFV2**

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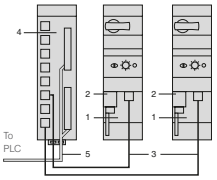
TeSys U integrated starter
Parallel link module and pre-wired coil connection components

LUFC00
Parallel Wiring Module

Parallel wiring module

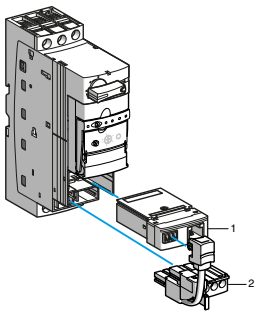
Description	Item	Reference
Parallel wiring module	1	**LUFC00**

Parallel type connection



1. Parallel wiring module LUFC00
2. Pre-wired coil connection LU9BN11C
3. Connection cable LU9RP with one RJ45 connector at each end
4. Splitter box LU9G02 for 8 motor starters with channel connections on the PLC side by 2 HE10 connectors and on the starter-controller side by 8 RJ45 connectors.
5. Connection cable TSXCDP●●● with one HE10 connector at each end.

LU9G02

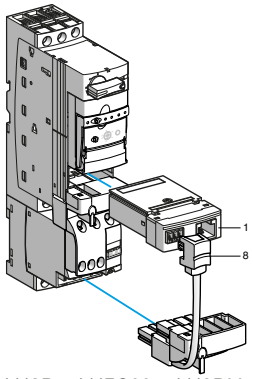


LUB + LUFC00 + LU9B

Connection of communication module output terminals to the coil terminals

By pre-wired connector or wire link.
> Pre-wired connector: pre-wired coil connection
> The use of a power base without pre-wired connections is recommended.

Description	For use with power base	Item	Reference
Pre-wired coil connection	LUB ●●	2	**LU9BN11C**
	LU2B ●●	8	**LU9MRC**



LU2B + LUFC00 + LU9BM

Connection of parallel wiring module to the PLC

By pre-wired connector or wire link. No tools are required to connect the parallel wiring module to the PLC. Connection is via a splitter box which allows up to 8 starter-controllers to be connected; a maximum of 4 reversing starters per splitter box is allowed.
The splitter box requires a ⎓ 24V power supply.

Splitter box

Connectors PLC side (16I/12O)	Starter-controller side	Item	Reference
2 x HE 10 20-way	8 x RJ45	4	**LU9G02 (1)**

Connection cables to the splitter box

Connectors	Item	Length	Reference (m)
2 x RJ45 connectors	3	0.3	**LU9R03**
		1	**LU9R10**
		3	**LU9R30**

Connection cables from splitter box to PLC

Type of connection		Gauge	C.s.a.	Length	Reference
PLC side	Splitter box side	AWG	(mm²)	(m)	
HE 10 20-way	HE 10 20-way	22	0.324	0.5	**TSXCDP053**
				1	**TSXCDP103**
				2	**TSXCDP203**
				3	**TSXCDP303**
		28	0.080	1	**ABFH20H100**
				2	**ABFH20H200**
Bare wires	HE 10 20-way	22	0.324	3	**TSXCDP301**
				5	**TSXCDP501**

LU9G02

Note
(1) Allows “run” and “fault” status of each starter-controller to be fed back to the PLC and transmits commands.

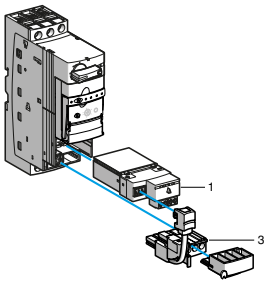
TeSys U integrated starter
AS-i communication module and pre-wired coil connection components

ASILUFC5

AS-i communication module

The AS-i communication module makes it easy to connect starter-controllers to the AS-i wiring system, and therefore allows remote control and command of these starter-controllers.

Description	Addressing	Reference
Communication module	Single 31 slaves	**ASILUFC5**
	Extended 62 slaves	**ASILUFC51**



LUB + ASILUFC5 + LU9B

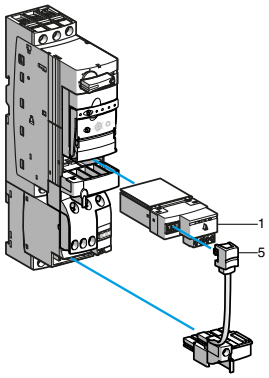
Connection to the ASi-bus (1)

By pre-wired connector or wire link.
⇦ Pre-wired connector: pre-wired coil connection
The use of a power base without pre-wired control circuit connections is recommended.

Description	For use with power base	Item	Reference
Pre-wired coil connection	LUB ●●	3	**LU9BN11C**
	LU2B ●●	5	**LU9MRC**

Software set-up

AS-i configuration is carried out using PL7 Micro/Junior/Pro software. From the module declaration screen, it is possible to configure all the slave devices corresponding to all the AS-i I/O. Configuration is carried out by following the instructions on the screen.



LU2B + ASILUF C5 + LU9M

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Notes
(1) Degree of protection IP54. Connection by 4x0.34mm² wires.
Black wire: +24V.
White wire: 0V
Blue wire: AS-Interface (–)
Brown wire: AS-Interface (+)

TeSys U integrated starter
Modbus communication module and pre-wired coil connection components

LULC033

1 Module status signalling LED
2 24V supply connection
3 RJ45 connector RS485 for Modbus link
4 2 discrete inputs
5 1 discrete output
6 Outputs for starter commands

Modbus communication module

Communication module LULC033 enables the model U starter-controller to be connected to the Modbus network.
It must have a ⎓ 24V supply and must be used in conjunction with a ⎓ 24V control unit, LUC● ●●BL.
It incorporates a 0.5A, ⎓ 24V digital output and 2 digital inputs for local command requirements.

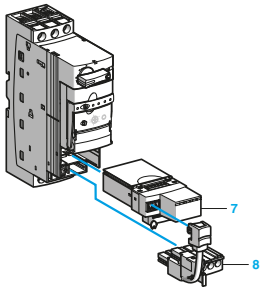
Description	Item	Reference
Communication module	7	**LULC033**

Information carried by the bus

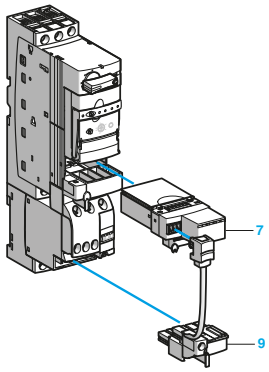
Depends on the type of control unit used.

Control unit	Standard	Advanced	Multifunction
Starter status (ready, running, fault)			
Start and Stop commands			
Thermal overload alarm			
Remote reset via the bus			
Indication of motor load			
Fault signalling and differentiation			
Remote programming and monitoring of all functions			
"Log" function			
"Monitoring" function			
Alarms (overcurrent, ...)			

Functions performed



LUB + LULC031 + LU9B



LU2B + LULC031 + LU9M

Description	For use with power base	Item	Reference
Pre-wired coil connection	LUB ●●	8	**LU9BN11C**
	LU2B ●●	9	**LU9MRC**

Connection to the Modbus network

Achieved either by means of a Modbus hub or using T-junctions.

Description	Length (m)	Reference
Modbus hub 8 slaves	–	**LU9GC3**
Cables fitted with two RJ45 connectors	0.3	**VW3A8306R03**
	1	**VW3A8306R10**
	3	**VW3A8306R30**
T-junctions (1)	0.3	**VW3A8306TF03**
	1	**VW3A8306TF10**
RS 485 line terminator	–	**VW3A8306RC**

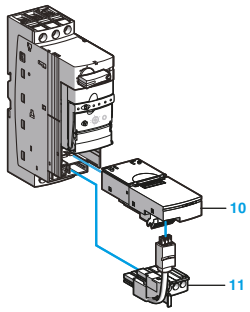
Note

(1) Fitted with 2 RJ45 female connectors (bus side) and a 0.3m or 1m length cable supplied with an RJ45 male connector (station side).

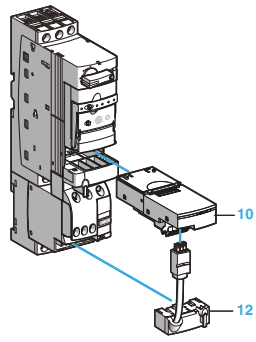
TeSys U integrated starter
CANopen communication module and pre-wired coil connection components

LULC08

1 LED indicating module status
2 Fault signalling LED
3 LED indicating ⎓ 24V supply ON for outputs OA3 and LO1
4 SUB-D connector for bus link
5 ⎓ 24V supply connection
6 Discrete input
7 Discrete input
8 Discrete output
9 Outputs for starter commands



LUB + LULC08 + LU9BN11L



LU2B + LULC08 + LU9MRL

CANopen communication module

Communication module LULC08 allows direct connection of model U starter-controllers and controllers on a CANopen bus.
The ⎓ 24V power supply for modules LULC08 is distributed via the bus (up to 25 LULC08 modules).
A ⎓ 24V supply must be connected to module LULC08 for outputs OA1, OA3 and LO1.

Description	Item	Reference
CANopen Communication module	10	**LULC08**

Information carried by the bus

Note: The Electronic Data Sheets (EDS) and user manuals are available on the website

Control unit	Standard	Advanced	Multifunction
Starter status (ready, running, fault)			
Start and stop commands			
Thermal overload alarm			
Remote reset via the bus			
Indication of motor load			
Fault signalling and differentiation			
Remote programming and monitoring of all functions			
“Log” function			
“Monitoring” function			
Alarms (overcurrent, …)			

Functions performed

Description	For use with power base	Item	Reference
Pre-wired coil connection	LUB ●●	11	**LU9BN11L**
	LU2B ●●	12	**LU9MRL**

Connection to the CANopen Network

Description	Length (m)	Reference
Standard		
Cables equipped with SUB-D connectors	0.3	**TSXCANCADD03**
	1.0	**TSXCANCADD1**
	3	**TSXCANCADD3**
	5	**TSXCANCADD5**
Reel of cable	50	**TSXCANCA50**
	100	**TSXCANCA100**
UL approved		
Cables equipped with SUB-D connectors	0.3	**TSXCANCBDD03**
	1.0	**TSXCANCBDD1**
	3	**TSXCANCBDD3**
	5	**TSXCANCBDD5**
Reel of cable	50	**TSXCANCB50**
	100	**TSXCANCB100**

Separate components

Description	Reference
Elbowed connector	**TSXCANKCDF90T**
Straight connector	**TSXCANKCDF180T**
Junction box	**TSXCANTDM4**

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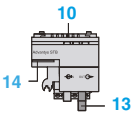
TeSys U integrated starter
Advantys STB communication module and pre-wired coil connection components

LULC15

1 Two-colour LED indicating module status
2 Fault signalling LED
3 LED indicating ⎓ 24V supply ON
4 Bus connectors
5 ⎓ 24V supply connection
6 Discrete input
7 Discrete input
8 Discrete output
9 Outputs for starter commands

Advantys STB communication module

Communication module LULC15 allows direct connection of TeSys U starter-controllers and controllers on an Advantys STB island, between two segments or at the end of a segment. in the latter case, the segment must be equipped with an EOS (End of segment) module STBXBE1100.
For local control requirements, the module is equipped with a configurable, ⎓ 24V, 0.5A discrete output and two configurable discrete inputs with an LUC ●●●BL or LUC ●T1BL control unit.
A ⎓ 24V supply must be connected to module LULC15, for outputs OA1, OA3 and LO1.



Description	Item	Reference
Advantys STB Communication module	10	**LULC15**
Line end adapter	13	**LU9RFL15**

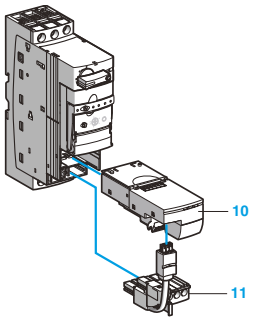
Information carried by the bus

Depends on the type of control unit used.

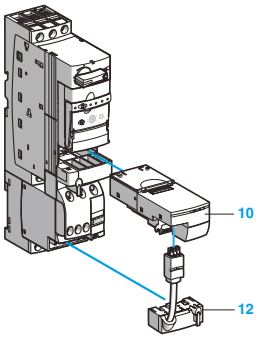
Control unit	Standard	Advanced	Multifunction
Starter status (ready, running, fault)			
Start and stop commands			
Thermal overload alarm			
Remote reset via the bus			
Indication of motor load			
Fault signalling and differentiation			
Remote programming and monitoring of all functions			
“Log” function			
“Monitoring” function			
Alarms (overcurrent, …)			

Functions performed

Connection of the communication module output terminals to the coil terminals



LUB + LULC15 + LU9N11L



LU2B + LULC15 + LU9MRL

Description	For use with	Item	Reference
Pre-wired coil connection	LUB●●	19	**LU9BN11L**
	LU2B●●	20	**LU9MRL**

> **Wire link**:
Allows insertion, for example, of an emergency stop control or a voltage interface. This type of connection must be used for a reversing starter-controller assembled using an LU6M reverser block for separate mounting. When reverser block LU6M and the power base are mounted side-by-side, a pre-wired coil connection LU9MRL ay be used.

Cables

Description	Length (m)	Item	Reference
Cables fitted with connectors, one straight and one elbowed	0.3	12	**LU9RCD03**
	1	12	**LU9RCD10**
	5	12	**LU9RCD50**
Cable fitted with two straight connectors	0.3	17	**LU9RDD03**
	3	17	**LU9RDD30**

TeSys U integrated starter
DeviceNet communication module and pre-wired coil connection components

LULC09

1 LED indicating module status
2 Fault signalling LED
3 LED indicating ⎓ 24V supply ON for outputs OA1, OA3 and LO1 and 24V bus
4 Devicenet connector for bus link
5 ⎓ 24V supply connection
6 Discrete input
7 Discrete input
8 Discrete output
9 Outputs for starter commands (non-reversing and reversing)
10 Pin for connection to control unit (advanced or multifunction)

DeviceNet communication module

When used in conjunction with the power base and control unit, communication module LULC09 allows TeSys U starter-controllers and controllers to be controlled via DeviceNet.

Communication module LULC09 is of the slave type and uses the TeSys U system's internal registers which can be accessed via DeviceNet.

Module LULC09 has a configurable 24V (0.5A) discrete output and two configurable discrete inputs.

Description	Item	Reference
DeviceNet Communication module	11	**LULC09**

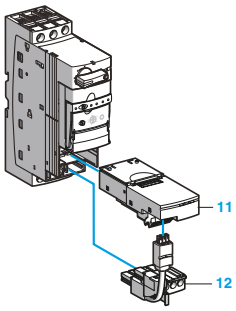
Information carried by the bus

Depends on the type of control unit used with module LULC09.

Compatibility of DeviceNet LULC09 communication module with ⎓ 24V control units

Information accessible via DeviceNet	LULC09 in conjunction with:		
	LUCA ●●BL	LUCB/C/D ●●BL	LUCM ●●BL
	Standard control unit	Advanced control unit	Multifunction control unit
Starter status (ready, running, fault)			
Start and stop commands			
Thermal overload alarm			
Remote reset via the bus			
Indication of motor load			
Fault signalling and differentiation			
Remote programming and monitoring of all functions			
“Log” function			
“Monitoring” function			
Alarms (overcurrent, …)			

Functions performed



LUB + LUC ●●●BL
+ LULC09 + LU9BN11L

Connection of the communication module output terminals to the coil terminals

Description	For use with	Item	Reference
Pre-wired coil connection	LUB●●	12	**LU9BN11L**
	LU2B●●●●	13	**LU9MRL**

Supply

The 24V supply to DeviceNet LULC09 modules is provided via the (V+, V-) terminals.

The 24V supply for the inputs/outputs must be provided separately from the supply to the LULC09 modules.

The 24V Aux terminal is for supply to the LUCM control unit or the LUTM controller.

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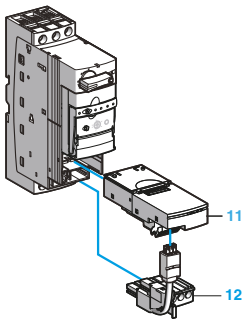
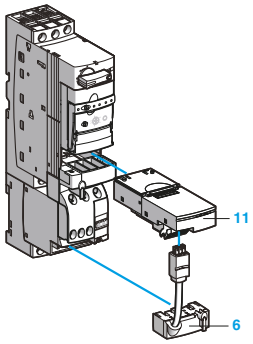
TeSys U integrated starter
Profibus DP communication module and pre-wired coil connection components

LULC07

1 LED indicating module status
2 Fault signalling LED
3 LED indicating ⎓ 24V supply ON for outputs OA1, OA3 and LO1
4 SUB-D connector for bus link
5 ⎓ 24V supply connection
6 Discrete input
7 Discrete input
8 Discrete output
9 Outputs for starter commands (non-reversing and reversing)
10 Pin for connection to control unit (advanced or multifunction)



LUB + LUC ●●●BL
+ LULC07 + LU9BN11L



LU2B + LUC ●●●BL
+ LULC07 + LU9MRL

Profibus DP communication module

When used in conjunction with the power base and control unit, communication module LULC07 allows TeSys U starter-controllers to be controlled via Profibus DP (Deported Periphery).

Communication module LULC07 is of the slave type and uses the TeSys U system's internal registers (which can be accessed via the Profibus DP bus) in cyclic or acyclic mode. This module has a 24V (0.5A) discrete output and two configurable discrete inputs.

Description	Item	Reference
Profibus DP Communication module	11	**LULC07**

Connection of the communication module output terminals to the coil terminals

Description	For use with	Item	Reference
Pre-wired coil connection	LUB●●	12	**LU9BN11L**
	LU2B●●●●	13	**LU9MRL**

Information carried by the bus

Depends on the type of control unit used with module LULC07.

Compatibility of DeviceNet LULC09 communication module with ⎓ 24V control units

Information accessible via Profibus DP	LULC07 in conjunction with:		
	LUCA ●●BL	LUCB/C/D ●●BL	LUCM ●●BL
	Standard control unit	Advanced control unit	Multifunction control unit
Starter status (ready, running, fault)			
Start and stop commands			
Thermal overload alarm			
Remote reset via the bus			
Indication of motor load			
Fault signalling and differentiation			
Remote programming and monitoring of all functions			
"Log" function			
"Monitoring" function			
Alarms (overcurrent, …)			

Functions performed

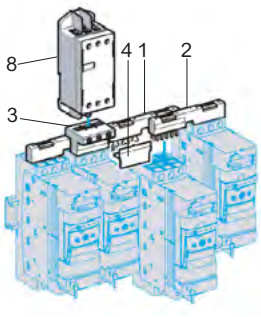
Components for connection to the bus and to the installation

The ⎓ 24V V-Aux supply to Profibus DP modules LULC07 must pass through power supply module LU9GC7.

LULC07 modules must be connected to the LU9GC7 splitter box in order to be powered.

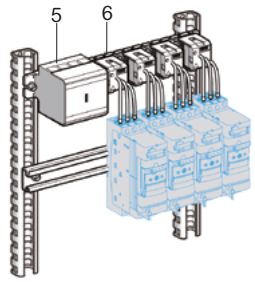
Description	Length (m)	Reference
Profibus DP power supply module	–	**LU9GC7**
Profibus DP connector	–	**LU9AD7**
Profibus DP cables 2-wire	100	**TSXPBSCA100**
	400	**TSXPBSCA400**
Profibus DP cables 4-wire	10	**LU9RPB010**
	100	**LU9RPB100**
	400	**LU9RPB400**

TeSys U integrated starter
Power connection pre-wired system, limiter blocks and accessories



Pre-wired system for power connections up to 63A

Description	Application	Pitch (mm)	Item	Sold in Lots of	Reference
Sets of 3-pole 63 A busbars	2 tap-offs	45	2	1	**GV2G245**
		54	–	1	**GV2G254**
	3 tap-offs	45	–	1	**GV2G345**
		54	–	1	**GV2G354**
	4 tap-offs	45	1	1	**GV2G445**
		54	–	1	**GV2G454**
	5 tap-offs	54	–	1	**GV2G554**
Protective end cover	For unused busbar outlets	–	4	5	**GV1G10**
Terminal block for supply to one or more busbar sets	Connection from the top	–	3	1	**GV1G09**



Pre-wired system for power connections up to 160A

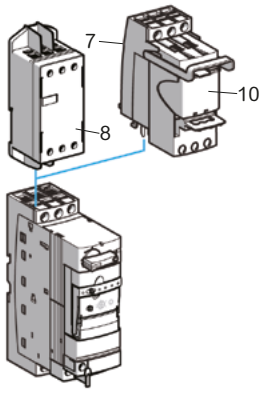
The busbar system can be screw-mounted onto any type of support.

Set of 4-pole busbars: 3-phase + neutral or 3-phase + common

Number of tap-offs at 18mm intervals	Length (mm)	for mounting in enclosure width (mm)	Reference
18	452	800	**AK5JB144**

Removable 3-phase power sockets

Number of points used on the busbar system	Thermal current	Item	Cable lengths	Sold in lots of	Unit reference
2	16	6	200	1	**AK5PC13 (1)**
	32	6	250	1	**AK5PC33 (1)**
			1000	1	**AK5PC33L (1)**



Limiter blocks and accessories

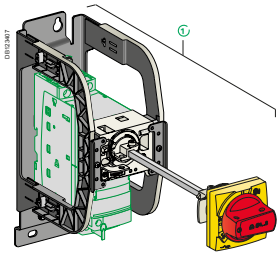
Application	Item	Breaking capacity Iq		Mounting	Unit reference
		☐ 440V kA	690V kA		
Limiter-disconnector (3) (5)	7 + 10	130	70	Direct on power base	**LUALB1 (2)**
Current limiter (3)	8	100	35	Separate	**LA9LB920**
Limiter cartridge	10	130	70	Limiter-disconnector	**LUALF1**
Clip-in marker holder	–	–	–	On power base, on reverser block, on parallel link splitter box	**LAD90 (4)**

Notes

(1) The rated peak current for the power sockets AK4 PC●● is 6kA. When used in association with power bases LUB●●, the prospective short-curcuit current must not exceed 7kA.
(2) Supplied with limited cartridge.
(3) These devices make it possible to increase the breaking capacity of the power base.
(4) Sold in lots of 100.
(5) The limiter must be mounted on an LUB or LU2B power base. The limiter can therefore not be common to several motor starters.

All-in-one motor starters

TeSys U integrated starter
Extended rotary handles with door interlocks mechanisms
Safey-chain Marking for TeSys U
Phase Barrier



Door interlock mechanisms

Description	Item	Reference
Door-mounted red handle/yellow front plate, IP54	1	**LU9APN22**
Door-mounted black handle, IP54		**LU9APN21**
Handle with mounting kit for MCC drawer		**LU9AP20**

LU9AP20

Safety-chain marking for TeSys U (Red identification cover)

Description	Reference
Red indication cover for TeSys U	**LU9ET1S**

LU9SP0

Phase Barrier (For type E UL508 certified starter)

Application	Use with	Mounting	Reference
Phase barrier	LUB12 or LUB32	Direct on power base	**LU9SP0**

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Digital load management solution
TeSys island

Concept

H

TeSys™ island

Concept

TeSys island is an innovative digital load management solution, industry 4.0 ready—providing data for higher machine efficiency and ease of servicing, and allowing faster time to market. TeSys island is a modular, multifunctional system providing integrated functions inside an automation architecture, primarily for the direct control and management of low-voltage loads. After commissioning, TeSys island can switch, help protect, and manage motors and other electrical loads up to 37 kW (80A) installed in an electrical control panel.

This system is designed around the concept of TeSys avatars. These avatars:
- are the functional object representing a logical function of the physical module with pre-defined logic
- determine the configuration of the island. The logical aspects of the island are managed with software tools, covering all phases of product and application lifecycle: design, engineering, commissioning, operation, and maintenance.

Benefits

> Enhanced efficiency through quicker engineering, removal of auxiliary wiring and efficient commissioning can be done remotely.

> Embedded algorithms detect abnormal load behaviors and generate alarms before machine stoppage.

> Pre-trip warnings can also be set on the system for scheduled maintenance.

> With Predictive Alarms, users are now more equipped with application status and can take appropriate actions to avoid machine outage."

> The Autonomous mode enables TeSys island to control loads independently from the PLC.

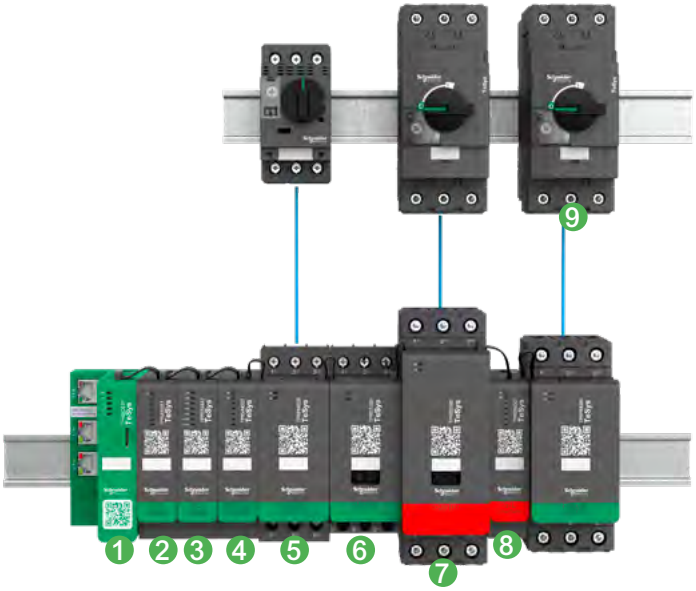
> TeSys island provides energy monitoring at the load level.

> TeSys island can be easily integrated into Schneider ElectricTM EcoStruxureTM Machine architecture and 3rd party automation solutions with open communications via fieldbuses like: EtherNet/IP, Modbus TCP, PROFINET, and PROFIBUS.

Digital load management solution
TeSys island

Product configurator on se.com/nz

Components



1. Bus Coupler
2. Analog I/O module
3. Digital I/O module
4. Voltage interface module
5. Power interface module
6. Standard Starter
7. SIL Starter
8. SIL interface module
9. GV motor circuit breaker (seperately)

LAD9R1

LAD9R3

TeSys island components (1) (2)

Component	Current rating (A)	Type	Reference
Bus Coupler		EtherNet/IP - Modbus TCP	**TPRBCEIP**
		PROFINET	**TPRBCPFN**
		PROFIBUS	**TPRBCPFB**
Analogue I/O module		2 input & 1 output	**TPRAN2X1**
Digital I/O module		4 input & 2 output	**TPRDG4X2**
Voltage interface module			**TPRVM001**
Power interface module	9 A (AC3)		**TPRPM009**
	38 A (AC3)		**TPRPM038**
	66 A (AC3) / 80A (AC1)		**TPRPM080**
Standard Starter	9 A (AC3)		**TPRST009**
	25 A (AC3)		**TPRST025**
	38 A (AC3)		**TPRST038**
	65 A (AC3)		**TPRST065**
	66 A (AC3) / 80A (AC1)		**TPRST080**
Safety Starter (SIL)	9 A (AC3)		**TPRSS009**
	25 A (AC3)		**TPRSS025**
	38 A (AC3)		**TPRSS038**
	65 A (AC3)		**TPRSS065**
	66 A (AC3) / 80A (AC1)		**TPRSS080**
Safety interface module			**TPRSM001**

LAD9P3

Assembly & Wiring Kits

Component	Type	Reference
Kit for reversing starter application	for 9, 25, 38 A (size 1 and 2) starters	**LAD9R1**
	for 65, 80 A (size 3) starters	**LAD9R3**
Jumper bar 3-pole for Star Delta application	for 9, 25, 38 A (size 1 and 2) starters	**LAD9P3**
	for 65, 80 A (size 3) starters, a hazard sticker is provided	**LAD9SD3S**

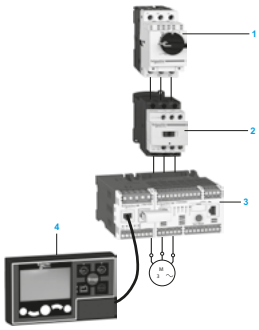
LAD9P3

Notes

(1) Product selection and configuration using free digital tools - 'Ecostruxure Motor Control configurator' or 'SoMove' (available on www.se.com)

(2) For more details, refer to document 'LVCATISL_EN' (available on www.se.com)

TeSys T
Motor management system



1 Magnetic Circuit breaker
2 Contactor
3 Controller with extention module
4 Operator control unit

TeSys T is a motor management system that provides protection, metering and monitoring functions for single-phase and 3-phase, constant speed, a.c. motors up to 810 A. TeSys T is used for motor control and protection in harsh industrial applications, in which downtime must be avoided because it is very costly. The base unit covers the following functions:

- measurement of 3-phase current via integral current transformers from 0.4 to 100 A (up to 810 A by external current transformers)
- measurement of earth current by external earth fault toroid
- measurement of motor temperature by PTC probe
- inputs and outputs for the various motor control modes, fault management and associated functions
- connection to the automation system via multiple communication protocols

Configurated with SoMove software

TeSys T motor management base unit – Class 5 to 30

Description	Communication protocol	FLA Range (A)	Control Voltage (V)	Reference
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	24V DC	**LTMR08MBD**
			100–240V AC	**LTMR08MFM**
		1.35…27	24V DC	**LTMR27MBD**
			100–240V AC	**LTMR27MFM**
		5…100	24V DC	**LTMR100MBD**
			100–240V AC	**LTMR100MFM**
	CANopen	0.4…8	24V DC	**LTMR08CBD**
			100–240V AC	**LTMR08CFM**
		1.35…27	24V DC	**LTMR27CBD**
			100–240V AC	**LTMR27CFM**
		5…100	24V DC	**LTMR100CBD**
			100–240V AC	**LTMR100CFM**
	Profibus DP	0.4…8	24V DC	**LTMR08PBD**
			100–240V AC	**LTMR08PFM**
		1.35…27	24V DC	**LTMR27PBD**
			100–240V AC	**LTMR27PFM**
		5…100	24V DC	**LTMR100PBD**
			100–240V AC	**LTMR100PFM**
	DeviceNet	0.4…8	24V DC	**LTMR08DBD**
			100–240V AC	**LTMR08DFM**
		1.35…27	24V DC	**LTMR27DBD**
			100–240V AC	**LTMR27DFM**
		5…100	24V DC	**LTMR100DBD**
			100–240V AC	**LTMR100DFM**
	Ethernet Modbus TCP Ethernet IP	0.4…8	24V DC	**LTMR08EBD**
			100–240V AC	**LTMR08EFM**
		1.35…27	24V DC	**LTMR27EBD**
			100–240V AC	**LTMR27EFM**
		5…100	24V DC	**LTMR100EBD**
			100–240V AC	**LTMR100EFM**

LTMR08MBD

LTMR08PBD

LTMR08EBD

TeSys T motor management expansion module

Description	Control voltage (V)	Length (m)	Reference
Expansion unit provides: 0.4…8 – 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	–	0.04	**LTMCC004**
		1.0	**LTM9CEXP10**

LTMEV40BD

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TeSys T
Motor management system

LTMCUF

Monitoring and configuration

Description	Item	Reference
LTMCUF HMI with Fast Device replacement	Display unit	**LTMCUF**
LTMCU HMI unit provides: – configuration – monitoring – fault and alarm notification	Display unit	**LTMCU**
	Connection cable	**LTM9CU10**
Connection cable		**TCSMCNAM3M002P**
Kit for portable LTMCU		**LTM9KCU**

LTM9KCU

External current transformers

Description	Current ratio	Reference
Individual Cts (1 per phase)	100:1	**LUTC1001**
	200:1	**LUTC2001**
	400:1	**LUTC4001**
	800:1	**LUTC8001**

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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**

Thermistor protection relays

LT3SM00V

Thermistor protection relays – LT3 (1)

Description	Control volts	Auxiliaries	Reference
Units with manual reset, short circuit detection and fault memory (Fault LED, Reset P/B, Test P/B)			
	115/240VAC	N/O + N/C	**LT3SM00M**
	415VAC	N/O + N/C	**LT3SM00V**
	24-240VAC/DC	2 x C/O	**LT3SM00MW**
Units with automatic reset, short circuit detection and without fault memory (Fault LED)			
	115/240VAC	N/O + N/C	**LT3SA00M**
	24-240VAC/DC	2 x C/O	**LT3SA00MW**
Units with automatic reset, without short circuit detection, without fault memory (Fault LED)			
	240VAC/DC	N/C	**LT3SE00M**

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Note

(1) PTC thermistor probes (positive temperature co-efficient). LT3SM remote reset – max. cable length 5 metres. Shielded cable is recommended for the thermistor probes.

AK5 Panel busbar system 160A
Tap-offs
Mounting plates

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 (see below).

When mounting tap-offs take into account the rated operating current of the busbar system:– 160A at 35°C.

Number of bars	Tap-off outlets polarity and pitch	Max. no.	Length (mm)	Reference
4	2 pole 18mm pitch	12	340	**AK5JB143**
		24	555	**AK5JB145**
		54	1100	**AK5JB1410**
	3 pole or 4 pole- (1) 36mm pitch	6	340	**AK5JB143**
		12	555	**AK5JB145**
		27	1100	**AK5JB1410**

Tap-offs

AK5PC12 AK5PC34

Polarity	Pitch (mm)	Rated thermal current (A)	Length of output conductors (mm)	Reference
1-phase + neutral	18	16	200	**AK5PC12**
		32	1000	**AK5PC32L**
3 phase	36	32	250	**AK5PC33**
		32	1000	**AK5PC33L**
3 phase neutral		32	250	**AK5PC34**
		32	1000	**AK5PC34L**

Component mounting plates incorporating tap-off

AK5PA231 AK5PA232

Polarity	Pitch (mm)	Rated thermal current (A)	Max. number of plates on busbar system JB143 (A)	AK5-JB145 (A)	Reference
Single plate (height 105mm) (1)					
3 phase	54	25	4	8	**AK5PA231**
3 phase +- neutral	54	25	4	8	**AK5PA241**
Double plate (height 190mm) (1)					
3 phase	54	25	4	8	**AK5PA232**
3 phase + common	54	25	4	8	**AK5PA2312**
		Common: 10A			

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.

AM1DL201

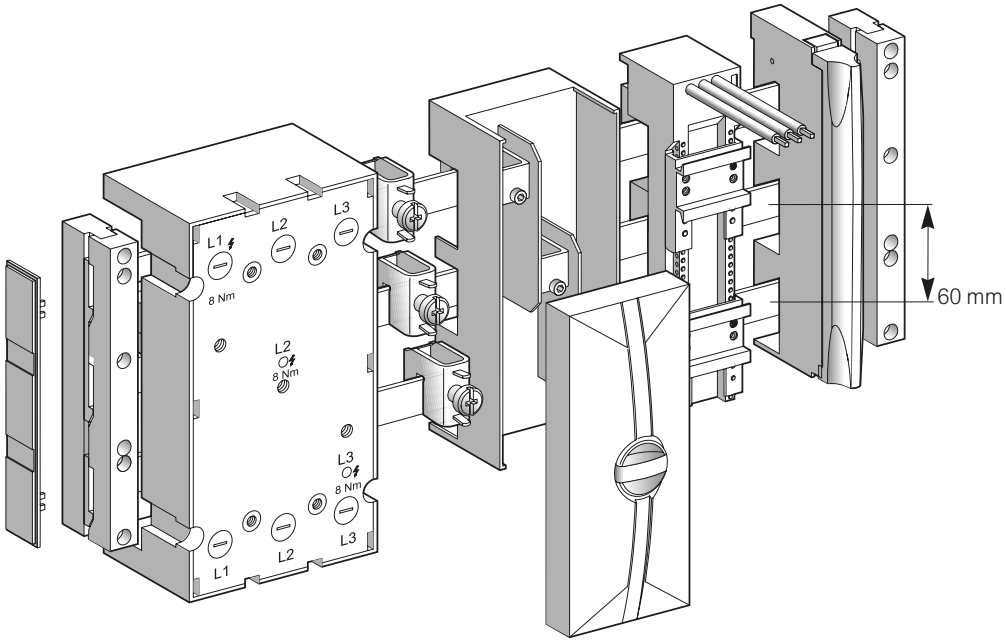
Description	Material and surface treatment	Depth	Length	Unit reference
Omega rail, width 75mm	2mm sheet steel 10 microns zinc chromate	15	2000 (2)	**AM1DL201**

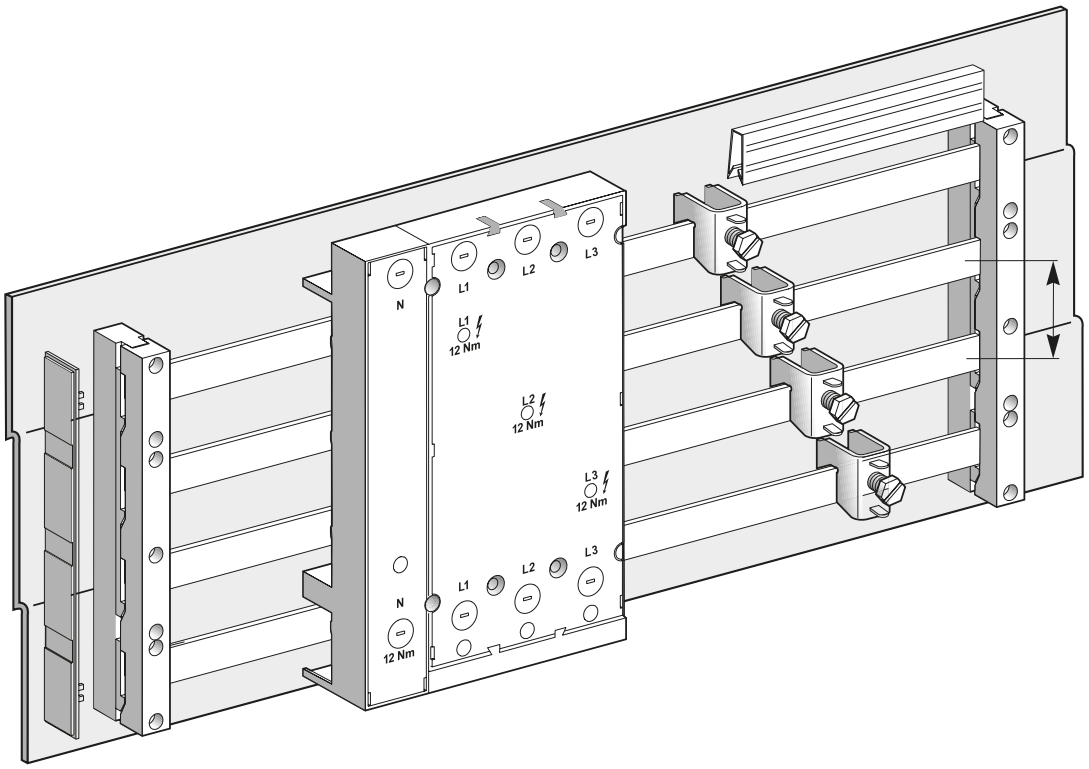
Notes

(1) Tap-offs supplied as (N-+-L1), (N-+-L2) or (N-+-L3).

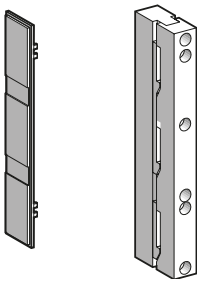
(2) Cut to length and drill fixing centres to suit.

LA9Z modular busbar system
Adaptors for use with busbar systems

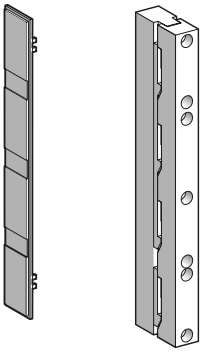




LA9Z modular busbar system
Busbar support



LA9ZX01573 LA9ZX01495

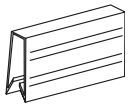


LA9ZX01131 LA9ZX01485

IEC busbar supports and accessories

		Reference
3-pole	For 12, 15, 20, 25, 30 x 5/10 mm² busbars	**LA9ZX01495**
	End covers for 3-pole busbar support	**LA9ZX01573**
4-pole	For 12, 15, 20, 25, 30 x 5/10 mm² busbars	**LA9ZX01485**
	End covers for 4-pole busbar support (5 left, 5 right)	**LA9ZX01131**

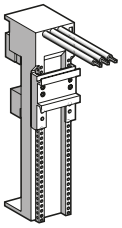
Other accessories

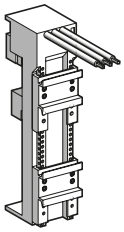
		Reference
Covers, length 1 m		
	For 12-30 x 5 mm² busbars	**LA9ZX01244**
	For 12-30 x 10 mm² busbars	**LA9ZX01245**

General characteristics

Conformity with			IEC 61439-2, UL508						
Degree of protection			IP20 with cover **LA9ZX01244** or **LA9ZX01245**						
Thermal resistance		**°C**	120						
Rated current frequency		**Hz**	50/60						
Rated operating current	Depending on type of busbars and at 35 °C	**mm**	12x5	15x5	20x5	25x5	30x5	12x10	20x10	30x10
		A	200	250	320	400	450	360	520	630
	K-factor to be applied depending on ambient temperature	**°C**	35	45	50	60	60	40	55	60
		K	1	0.75	0.65	0.35	0.35	0.9	0.55	0.35
Rated insulation voltage		**V**	690 as per IEC 60947-1 and NF C 20-040							
Rated operating voltage		**V**	690							
Peak permissible rated current	With busbar support		**LA9ZX01508 (UL)**			**LA9ZX01495 and LA9ZX01485 (IEC)**				
	Bar dimensions	**mm**	12x5	12x10		12x5	12x10	20x10	30x5	30x10
	Rated current	**kA**	35	35		30	35	35	45	55
Maximum thermal stress		**A^2s**	$1x10^8$	$4x10^8$		$1x10^8$	$11x10^8$	$11x\ 10^8$	$6.2x10^8$	$24.8x10^8$
Support fastening by screws		**mm**	4x6			4x5				

LA9Z modular busbar system
Choice of mounting plates


LA9ZA32621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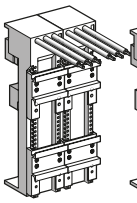
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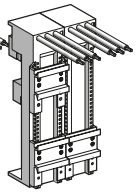
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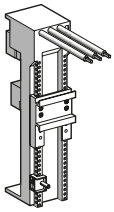
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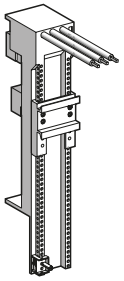
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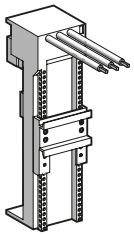
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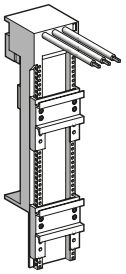
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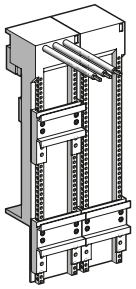

LA9ZA32626

For TeSys GV2 motor circuit breakers

Operating current AC-3 440 V	Protection by motor circuit breaker	For contactor	Mounting plate lxh	Reference
Mounting plate, 1-way				
25 A	GV2 ME GV2 P GV2 LE	LC1 D LC1 K LP4 K06-K12	45x200	**LA9ZA32621**
32 A	GV2 ME GV2 P GV2 LE	LC1 D	45x200	**LA9ZA32434**
Mounting plate, 2-way (3)				
25 A	GV2 ME GV2 P GV2 LE	LC1 D LC1 K LP4 K06-K12	90x200	**LA9ZA32622**
32 A	GV2 ME GV2 P GV2 LE	LC1 D	90x200	**LA9ZA32623**

TeSys U starter-controllers

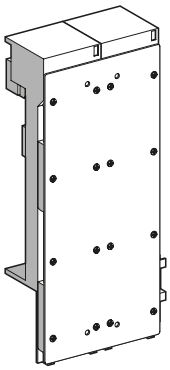
Operating current AC-3 440 V	Protection by power base		Mounting plate lxh	Reference
Mounting plate, 1-way				
32 A	LUB120, LUB320		45x200	**LA9ZA32427**
Mounting plate, 2-way				
32 A	LUB120, LUB320		45x260	**LA9ZA32428**

For TeSys GV3 motor circuit breakers

Operating current AC-3 440 V	Protection by power base	For contactor	Mounting plate lxh	Reference
Mounting plate, 1-way (1)				
63 A	GV3 P	–	54x200	**LA9ZA32624**
	GV3 P	LC1 D40A…65 A	54x260	**LA9ZA32625**
Mounting plate, 2-way (1) (2)				
63 A	GV3 P	LC1 D40A…65 A	117x260	**LA9ZA32626**

Notes
The mounting plate rails can be shifted vertically in 1.25 mm increments.
(1) Contactor-circuit breaker combination without additional part.
(2) Use the LAD 9R3 kit for the execution of changeover contactors.
(3) Use the LAD 9R1 or LAD 9R1V kit for the execution of changeover contactors.

LA9Z modular busbar system
Choice of mounting plates



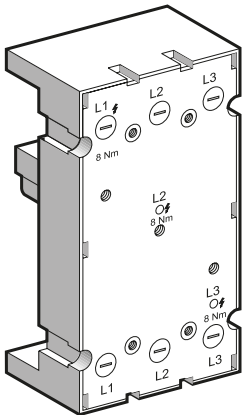
LA9ZA32627

For TeSys integral contactor-circuit breakers

Operating current AC-3 440 V	Protection by contactor-circuit breaker	Mounting plate lxh	Reference
Mounting plate, 1-way			
63 A	LD1, LD4 LD	108x260	**LA9ZA32627**

For Compact NSX circuit breakers

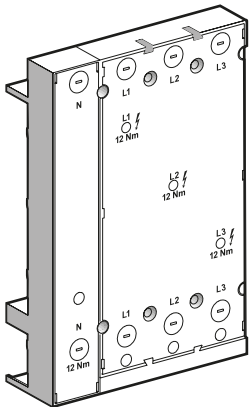
Operating current AC-3 440 V		Mounting plate lxh	Reference
100-250 A	Mounting plate for 3P circuit breakers	104x190	**LV429372**
	Mounting plate for 4P circuit breakers	139x251	**LV429373**
400-630 A	Mounting plate for 3P circuit breakers	139x270	**LV432623**
	Mounting plate for 4P circuit breakers	184x284	**LV432624**



LV432623

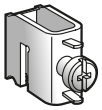
Characteristics of busbar mounting plates

Type of mounting plate		LA9ZA32621 LA9ZA32622	LA9ZA32427 LA9ZA32428 LA9ZA32434 LA9ZA32623	LA9ZA32624 LA9ZA32625 LA9ZA32626 LA9ZA32627
Degree of protection as per IEC 60529	**IP**	20		
Conductor cross section (colour: black)	**mm²**	4	6	10
		AWG 12	AWG 10	AWG 8
Type of conductor insulating material	**PVC**	105 °C		
Permissible current	**A**	25	32	63
Rated insulation voltage	**V**	690 as per IEC 60947-1 and NF C 20-040		
Peak rated current	**kA**	6	6	10
Maximum thermal stress	**A²s**	$2x10^5$	$2x10^5$	$3x10^5$

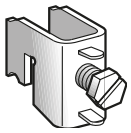


LV432624

LA9Z modular busbar system
Terminals, connection module



LA9ZX01285



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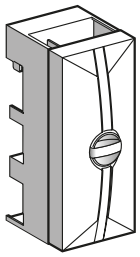
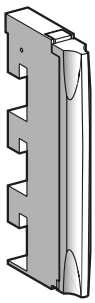


LA9ZX01243



LA9ZX01563

Terminals

	I max	Reference
One-pole for flat bars, 5 mm²	270 A Capacity 4-35 mm²	**LA9ZX01285**
	400 A Capacity 16-70 mm²	**LA9ZX01287**
3P cover, width 84 mm		**LA9ZX01413**

Terminals on mounting plate

	I max	Reference
3P, on mounting plate + cover, for 12 x 5 to 30 x 10 busbars	440 A Capacity 35-120 mm²	**LA9ZX01243**

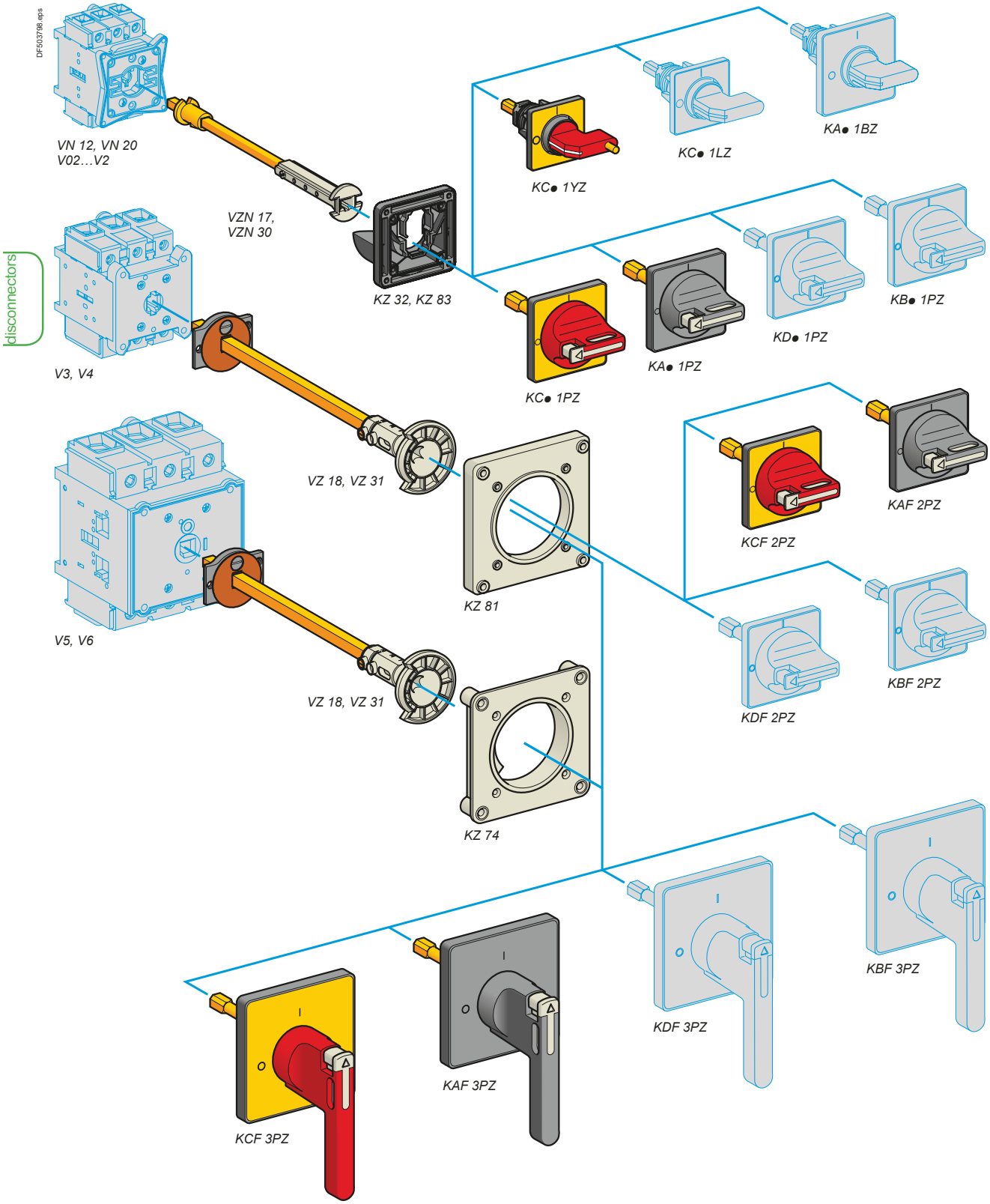
Connection module

	I max	Reference
3P, spring terminal connection + cover, for busbars of 12 x 5 to 30 x 10	80 A Capacity 1.5-16 mm²	**LA9ZX01563**

Connection by connectors

		LA9ZX01285 270 A maxi		LA9ZX01287 400 A maxi		LA9ZX01243 440 A		LA9ZX01563	
								4 A	80 A
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Flexible wire with end-piece	mm²	4	35	16	70	35	120	1.5	16
Multi-strand wire	mm²	4	35	16	70	35	120	1.5	16
Rigid wire	mm²	4	35	–	–	–	–	1.5	16
Tightening torque	N.m	... x 5		... x 10		... x 5-10		... x 5-10	
		Supplied without cover		Supplied without cover					

TeSys Vario switch disconnectors (12 to 175A)



disconnectors

H

Load break switches

TeSys Vario switch disconnectors
Note: Fitted with reversible contacts making them suitable for DIN rail or panel mounting
Enclosed isolators

VCD01

Main and emergency stop switch disconnectors for door and base mount IP 65

Handle	Front plate	Fixing (mm)	Rating Ith (1) (A)	Motor rating AC23 (415V) (2) (A/kW)	Reference
Red, padlockable with up to 3 padlocks	Yellow 60 x 60	Ø 22.5	20	11/5.5	**VCD01**
			25	14/7.5	**VCD0**
			32	21/11	**VCD1**
			40	28/15	**VCD2**
		4 screws	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**

VCF0GE

Enclosed 3 pole main and emergency stop switch disconnectors

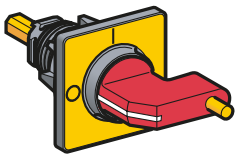
> 3 pole rotary switch disconnectors, 12 to 175A
> Padlockable operating handle (padlocks not supplied)
> IP65 enclosures, sealable and lockable

Operator handle	Front plate dimensions (mm)	Ith (enclosed) (1) (A)	Power in AC-23 (2) 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 (Ø4 to Ø8 shanks)	Yellow 90 x 90	100	37	1	**VCF5GEN**
		140	45	1	**VCF6GEN**

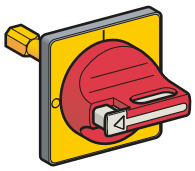
Notes
(1) Ith refers to the current a closed switch can sustain without its temperature rise exceeding the limits given in AS39473
(2) AC23 refers to the switching of motor loads or other highly inductive loads.

Load break switches

TeSys Vario switch disconnectors
Padlockable operator handles and front plates (for customer assembly) - IP65
Switch bodies



KCC1YZ



KCD1PZ

V5

Handles and front plates for main and emergency stop switch disconnectors

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 4 screws	**KCC1YZ**
				KCE1YZ
	Red, padlockable with up to 3 padlocks	Yellow 60 x 60	Ø 22.5 4 screws	**KCD1PZ**
				KCF1PZ
V3 and V4	Red, padlockable with up to 3 padlocks	Yellow 60 x 60	4 screws	**KCF2PZ**
V5 and V6 (1)	Red, long, padlockable with up to 3 padlocks	Yellow 90 x 90	4 screws	**KCF3PZ**

Switch bodies

Handle	Rating A	Reference
3-pole switch-disconnectors	25	**V0**
	32	**V1**
	40	**V2**
	63	**V3**
	80	**V4**
	125	**V5**
	175	**V6**

Notes
(1) For door mounting of 63 & 80A switch disconnectors, adapter plate KZ106, must be ordered separately.

Load break switches

TeSys Vario switch disconnectors
Switch bodies, add on modules, auxiliary contacts
(for customer assembly)

VZ0

VZ11

VZ15

VZ20

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**
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**

Maximum number of add on modules which can be fitted on switch body

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1 add-on module on each side of the switch body

VZ 7 or VZ 20	V0●	VZ 7 or VZ 20	VZ 7	VZ 7
or		or	or	or
VZ 11 or VZ 12	V0	VZ 11 or VZ 12	VZ 20	VZ 20
or	to	or	or	or
VZ 14 or VZ 15		VZ 14 or VZ 15	VZ 13	VZ 13
or	V4	or	or	or
VZ 0●/VZ 0 to VZ 4		VZ 0●/VZ 0 to VZ 4	VZ 16	VZ 16

VZ 0●	VZ 0●	V0●	VZ 0●	VZ 7	VZ 20	VZ 11	VZ 14
VZ 0	VZ 0	V0	VZ 0	VZ 7	VZ 20	VZ 11	VZ 14
VZ 1	VZ 1	V1	VZ 1	VZ 7	VZ 20	VZ 11	VZ 14
VZ 2	VZ 2	V2	VZ 2	VZ 7	VZ 20	VZ 11	VZ 14
VZ 3	VZ 3	V3	VZ 3	VZ 7	VZ 20	VZ 12	VZ 15
VZ 4	VZ 4	V4	VZ 4	VZ 7	VZ 20	VZ 12	VZ 15

Note: The add-on modules mounted next to the switch body are main pole modules. Maximum of 3 main pole modules per switch body.

Notes
(1) Protection shrouds are available on request.
(2) Late make N/O, early break N/C contacts.

TeSys Vario switch disconnectors
Accessories

VZ18

KZ32

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...330	**VZ18**
		400...420	**VZ31**
	V5 and V6	330...350	**VZ18**
		430...450	**VZ31**
Door interlock plates	V02...V2	–	**KZ32**
	V3...V6	–	**KZ74**

KZ15

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**
Legend bearer without legend plate	Front plate	45 x 45	**KZ14**
		60 x 60	**KZ16**
		90 x 90	**KZ101**

VZ8

Input terminal protection shrouds

Description	For use with	Reference
For switch bodies (3-pole shroud)	V02…V2	**VZ8**
	V3 and V4	**VZ9**
	V5 and V6	**VZ10**
For add-on pole modules (single-pole shroud)	VZ 02…VZ 2, VZ 11, VZ 14	**VZ26**
	VZ 3, VZ 4, VZ 12, VZ 15	**VZ27**
	VZ 13, VZ 16	**VZ28**
For contact blocks with 2 auxiliary contacts	VZ 02…VZ 2, VZ 11, VZ 14	**VZ29**

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Variable speed drives and soft starters

Selection guides

Services for drives I2
Soft starters I3
Variable speed drives I4

Soft starters

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Altistart 22 7.5…315kW I7
Altistart 48 7.5…630kW I10

Variable speed drives for machines

Altivar 12 0.18…2.2kW I12
Altivar Machine ATV320 0.18…15kW I14
Altivar Machine ATV340 0.75…75kW I23

Variable speed drives for buildings

Altivar 212 0.75…75kW I24

Variable speed drives for industrial processes

Altivar Process I25
ATV630 IP21 0.75…315kW I27
ATV650 IP55/54 0.75…315kW I28
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ATV950 IP55/54 0.75…315kW I30
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Altivar Process Drive Systems I43
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ATV680 Low Harmonic Drive Systems 110…1200kW I45
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ATV980 Regenerative Drive Systems 110…1200kW I47

Services for drives

PDL Elite and Ultradrive Elite

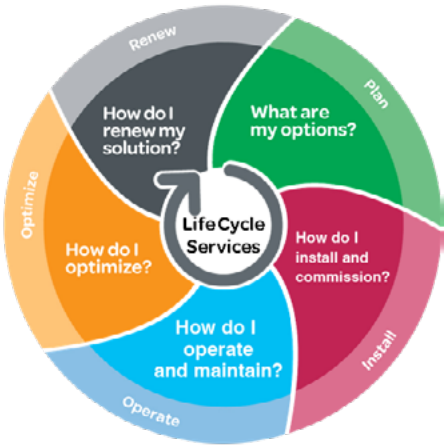
Services and lifecycle support

Schneider Electric offers a comprehensive suite of services to assist you throughout the entire lifecycle of your drives installation. We continue to support our legacy PDL Electronics and Telemecanique branded ranges. From the planning stage, right through to renewal, you will find our team are dedicated to providing expert services that ensure the reliability of your plant, control maintenance costs, and keep your process running at peak performance for maximum efficiency.

> Replacements
> Software / hardware conversions
> End-of-life services

> Training services
> mySchneider app
> Ecostruxure™ Asset Advisor
> Remote monitoring
> Energy optimisation

> Remote technical support
> Onsite expert assistance
> Preventative maintenance
> Repair and exchange
> Spare parts



> Audits
> Risk assessment
> Drives design and engineering

> Commissioning
> Start-up
> Extended warranty

I

New

Extended warranty plan

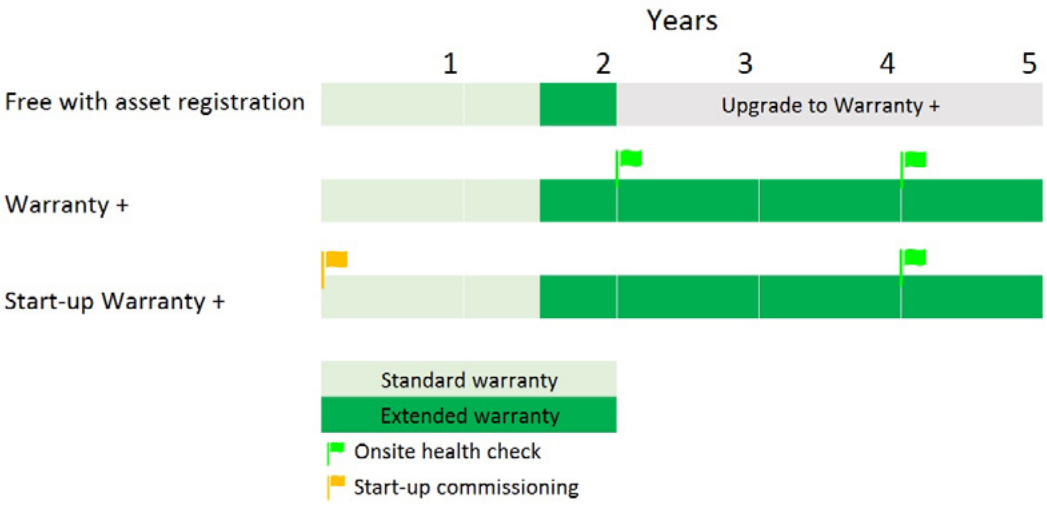
Warranty + is a tailored extended warranty plan that helps you manage your installation of selected Schneider Electric products. With plans from an additional 6 months up to a total of 5 years warranty, Warranty + helps you improve asset performance while reducing down time and operational costs.

Our extended warranty plan is scalable to fit your business needs:

> Free 6 months standard warranty extension by simply registering selected products
> Warranty + with up to 5 years warranty on selected products with onsite asset health check
> Start-up Warranty + with up to 5 years warranty on selected products with start-up commissioning and onsite asset heath check

Warranty + with up to 5 years warranty is at additional cost and is currently available for Altivar Process variable speed drives. Refer to our 5 Year Warranty Terms and Conditions available on request. Warranty extension for other products is available on request. To benefit from manufacturer expertise at preferential service rates with Warranty +, please contact us today to discuss your requirements.

For free 6 month warranty extension visit:
se.com/nz/registermyassets



Soft starters

Selection guide

● **Suitable**
◑ **May be suitable but not optimised**
○ **Not Recommended**

Application suitability is intended as a guide only. Please contact Schneider Electric for selection, application and engineering advice.

Soft starters

		Simple machines	Standard machines	Advanced machines
		Altistart 01	**Altistart 22**	**Altistart 48**
		Simple soft starter for light industrial and commercial machines	Standard soft starter for industrial and commercial machines	Advanced soft starter for industrial machines with standard and severe duty
Typical applications				
Pumps	Centrifugal	●	●	●
	Effluent	◑	●	●
	Piston	◑	◑	●
	Submersible	○	●	●
	Vacuum	◑	●	●
Fans		●	●	●
Compressors	Piston	◑	◑	●
	Refrigeration	◑	●	●
	Screw	◑	●	●
	Scroll	◑	●	●
Agitator		○	◑	●
Blower		◑	●	●
Centrifuge		○	○	◑
Conveyor		◑	◑	●
Crusher		○	○	●
Extruder		○	◑	◑
Grinder		○	○	●
Hoist		○	○	○
Lift		○	○	◑
Mixer		◑	●	●
Press		○	○	●
Refiner		○	○	●
Saw		○	◑	●
Separater		○	○	◑
Characteristics				
Supply voltage		1Ø 110 to 230V* 3Ø 380 to 415V*	3Ø 230 to 440V*	3Ø 230 to 415V*
Power range		0.37…15kW	4…315kW	4…630kW
Enclosure rating	Standard	IP20	IP20/IP00	IP20/IP00
	With option	-	IP20 wall mount	IP20 wall mount
Motor control features		1-ph or 2-ph control, integrated bypass contactor	3-ph control, start/stop, current limiting, integrated bypass contactor	3-ph control, start/stop/brake, Torque Control System, bypass contactor as option
Motor over-torque (typical)		-	<350% nominal current	<500% nominal current
Number of functions		1	20	36
Number of I/O	Analogue inputs	-	1x PTC probe	1x PTC probe
	Digital inputs	3	3	4
	Analogue outputs	-	-	1
	Digital outputs	1	-	2
	Relay outputs	1	2	3
Safety functions	Integrated	-	-	-
	With option	-	-	-
Communication	Integrated	-	Modbus	Modbus
	With option	when combined with TeSys U	-	via gateway: DeviceNet, PROFIBUS DP, Modbus TCP

Note *Models for other international voltages and specialised applications are available. Please consult your local Schneider Electric representative.

Selection guide

● **Suitable**
◑ **May be suitable but not optimised**
○ **Not Recommended**
HD **Heavy duty rating**

Application suitability is intended as a guide only. Please contact Schneider Electric for selection, application and engineering advice.

Variable speed drives
Altivar Machine

		Simple machines	Compact machines	Compact machines
		Altivar 12	**Altivar 320**	**Altivar 320 IP6x**
		Compact drive for small industrial and commercial machines	Compact or Book format drives for simple to advanced machines	Compact drives with high ingress protection
Typical applications				
Pumps	Centrifugal	●	●	●
	Effluent	●	●	●
	Piston	●	●	●
	Submersible	◑	◑	◑
	Vacuum	●	●	●
Fans		●	●	●
Compressors	Piston	●	●	●
	Refrigeration	●	●	●
	Screw	●	●	●
	Scroll	●	●	●
Agitator		●	●	●
Blower		●	●	●
Centrifuge		○	◑	◑
Conveyor		●	●	●
Crusher		◑	●	●
Extruder		◑	●	●
Grinder		◑	●	●
Hoist		○	◑	◑
Lift		○	●	●
Mixer		●	●	●
Press		◑	●	●
Refiner		◑	●	●
Saw		◑	●	●
Separater		○	◑	◑
Characteristics				
Supply voltage		1Ø 200 to 240V*	1Ø 200 to 240V* 3Ø 380 to 500V*	1Ø 200 to 240V* 3Ø 380 to 500V*
Power range		0.18…2.2kW	0.18…15kW	0.18…7.5kW
Enclosure rating	Standard	IP20	IP20	IP66, IP65 with switch
	With option	-	IP20 wall mount	-
Motor control features		Standard (U/f), Performance (sensor-less flux vector), Pump/ fan (U/f quad.)	Standard (U/f), Performance (sensor-less flux vector), Pump/ fan (U/f quad.), Energy saving, PM synchronous	Standard (U/f), Performance (sensor-less flux vector), Pump/ fan (U/f quad.), Energy saving, PM synchronous
Motor over-torque (typical)		150…170% Tn	170…200% Tn	170…200% Tn
Number of functions		40	150	150
Number of I/O	Analogue inputs	1	3	3
	Digital inputs	4	6	6
	Analogue outputs	1	1	1
	Digital outputs	1	1	1
	Relay outputs	1	2	2
Safety functions	Integrated	-	STO SIL3, SS1, SLS, SMS, GDL	STO SIL3, SS1, SLS, SMS, GDL
	With option	-	-	-
Communication	Integrated	Modbus	Modbus, CANopen	Modbus, CANopen
	With option	-	EtherNet/IP, Modbus TCP, DeviceNet, PROFIBUS DP V1, PROFINET, EtherCAT, POWERLINK	EtherNet/IP, Modbus TCP, DeviceNet, PROFIBUS DP V1, PROFINET, EtherCAT, POWERLINK

Note *Models for other international voltages and specialised applications are available. Please consult your local Schneider Electric representative.

Variable speed drives

Selection guide

Variable speed drives

	Altivar Building		Altivar Process	
	Advanced machines	HVAC	Fluid management	Advanced mechanics
	Altivar 340	**Altivar 212**	**Altivar 600**	**Altivar 900**
	High performance drives for complex precision machines	Dedicated drive for HVAC pump and fan applications within buildings	Advanced fluid management and energy optimisation for industrial processes and utilities	High performance drives dedicated to maximum productivity in heavy industrial processes
	●	●	●	◑
	●	○	● HD	◑ HD
	●	○	● HD	◑ HD
	◑	○	●	◑
	●	○	● HD	◑ HD
	●	●	●	◑
	●	○	● HD	◑ HD
	●	○	●	◑
	●	○	●	◑
	●	◑	●	◑
	●	○	◑ HD	● HD
	●	○	● HD	◑ HD
	●	○	○	● HD
	●	○	◑ HD	● HD
	●	○	○	● HD
	●	○	○	● HD
	●	○	○	● HD
	●	○	○	● HD
	●	○	○	● HD
	●	○	◑ HD	● HD
	●	○	○	● HD
	●	○	○	● HD
	●	○	○	● HD
	●	○	○	● HD
	3Ø 380 to 480V*	3Ø 380 to 480V*	3Ø 380 to 480V*	3Ø 380 to 480V*
	0.75…75kW	0.75…75kW	0.75…800kW (400V)	0.75…800kW (400V)
	IP20	IP21, IP55	IP21...IP55	IP21…IP55
	-	IP21 wall mount	IP21 wall mount 110…315kW	IP21 wall mount 110…315kW
	Performance (flux vector) open or closed loop, PM synchronous, synchronous reluctance	Standard (U/f), Performance (sensor-less flux vector), Pump/fan (U/f quad.), Energy saving	Standard (U/f), Performance (sensor-less flux vector), Pump/fan (U/f quad.), Energy saving, PM synchronous, reluctance	Performance (flux vector) open or closed loop, PM synchronous, synchronous reluctance
	170…220% Tn	120% Tn	120…170% Tn	130…180% Tn
	>150	50	>150	>150
	2, up to 4 with option	2	3, up to 5 with option	3, up to 5 with option
	5, up to 11 with option	3	6, up to 12 with option	8, up to 14 with option
	1	1	2	2
	2, up to 4 with option	-	0, up to 2 with option	2, up to 4 with option
	2, up to 5 with option	2	3, up to 6 with option	3, up to 6 with option
	STO SIL3	-	STO SIL3	STO SIL3
	SS1, SLS, SMS, SBC, GDL	-	-	SS1, SLS, SMS, SBC, GDL
	Modbus, EtherNet/IP and Modbus TCP dual port	Modbus, BACnet, APOGEE FLN, METASYS N2	Modbus, Modbus TCP	Modbus, EtherNet/IP and Modbus TCP dual port
	DeviceNet, PROFIBUS DP V1, PROFINET, CANopen, EtherCAT, POWERLINK	LonWorks	EtherNet/IP and Modbus TCP dual port, DeviceNet, CANopen, PROFIBUS DP V1, PROFINET	DeviceNet, PROFIBUS DP V1, PROFINET, CANopen, EtherCAT, POWERLINK

Note *Models for other international voltages and specialised applications are available. Please consult your local Schneider Electric representative..

International approvals

Altistart 01

Product configurator available on se.com/nz

Soft starter for simple machines
For 1-ph and 3-ph motors up to 15kW (1)
Reduced voltage starting, built-in bypass relay.

ATS01N103FT

Soft start only, 1-phase/3-phase supply voltage: 110-480V 50/60Hz

- Controls 1 phase to limit the motor torque, soft start only
- Rated at 20 starts/hr with a maximum start time of 5 sec or equivalent cycle (class 10)
- For 1-ph connection, connect the GV2 breaker poles in series
- For 3-ph connection, a line contactor is required to stop the motor
- Requires an external control voltage (24Vdc or 230Vac)

H (mm)	W (mm)	D (mm)	230V 1-phase kW	400V 3-phase kW	In (A)	Associated motor C/B (2)	Reference
100	22.6	100	0.37	1.1	3	GV2P08	**ATS01N103FT**
			0.75	2.2	6	GV2P10	**ATS01N106FT**
124	45	130	1.1	4	9	GV2P14	**ATS01N109FT**
			1.5	5.5	12	GV2P16	**ATS01N112FT**
			2.2	11	25	GV2P22	**ATS01N125FT**

ATS01N206QN

Soft start/soft stop, 3-phase supply voltage: 380-415V 50/60Hz

- Controls 2 phases to limit the motor torque, soft start and soft stop
- 6A to 22A starters are rated for a max of 10 starts/hr, with a max start time of 10 sec or equivalent cycle (class 10). The 32A (15kW) starter is rated for 5 starts per hour.
- For applications requiring controlled start and stop, divide the max possible number of starts/hr by 2
- Control voltage supply built in to starter

H (mm)	W (mm)	D (mm)	400V 3-phase kW	In (A)	Associated motor C/B (2)	Reference
124	45	130	2.2	6	GV2P10	**ATS01N206QN**
			4	9	GV2P14	**ATS01N209QN**
			5.5	12	GV2P16	**ATS01N212QN**
154	45	130	11	22	GV2P22	**ATS01N222QN**
			15	32	GV2P32	**ATS01N232QN**

Notes

(1) May not be suitable for more demanding applications requiring extra protection features e.g. effluent pumps. Use an Altistart 22 for standard duty or Altistart 48 for severe duty applications.

(2) MCB selected for the motor kW and 400V supply. A GV2ME●● may be used in place of the GV2P●●

International approvals

Altistart 22

Product configurator available on se.com/nz

Soft starters for 3-phase AC motors 7.5kW to 315kW
3-phase control, full protection features built in
Built in bypass contacts

Altistart 22 soft start/soft stop units

The Altistart 22 is a fully-featured range of compact soft start - soft stop soft units for AC motors in the power range 7.5kW to 315kW (400V supply). The range is suitable for all standard applications including:

- > pumps
- > conveyors
- > mixers
- > centrifugal machines
- > fans
- > compressors
- > refiners

Features:

- > Built in bypass contacts reduce heat loss, installation time, enclosure size and complexity
- > 3-phase control ensures optimum motor performance
- > Full protection features built-in
- > Conformal coated electronic cards for resistance to harsh environments
- > Built-in keypad and 4-digit LED display for simple set up without fiddly switches or dials
- > Modbus communication interface

Standard duty:

The nominal rating is for standard class 10 applications with the following duty cycles:

- > 3.5 In (350% nominal motor current) for 40sec from cold with S1 motor duty
- > 3.5 In for 20sec with S4 motor duty, based on a load factor of 90%, or an equivalent thermal cycle

Altistart 22 soft start/stop motor starter

ATS22D17Q

ATS22C11Q

ATS22C59Q

Standard duty, in-line connection (1)

Motor power (2) kW	Nominal current IcL (3) A	IP rating	Required line contactor (4)	Power dissipation (5) W	Frame size	Reference
400V 3-ph supply 230…440V 50/60Hz, control supply 1-ph 220…230V 50/60Hz (6)						
7.5	17	IP20	LC1D18●●	39	1	**ATS22D17Q**
15	32	IP20	LC1D32●●	44	1	**ATS22D32Q**
22	47	IP20	LC1D50A●●	48	1	**ATS22D47Q**
30	62	IP20	LC1D65A●●	59	2	**ATS22D62Q**
37	75	IP20	LC1D80●●	63	2	**ATS22D75Q**
45	88	IP20	LC1D115●●	66	2	**ATS22D88Q**
55	110	IP20	LC1D115●●	73	3	**ATS22C11Q**
75	140	IP00	LC1F150●●	82	3	**ATS22C14Q**
90	170	IP00	LC1F185●●	91	3	**ATS22C17Q**
110	210	IP00	LC1F225●●	117	4	**ATS22C21Q**
132	250	IP00	LC1F265●●	129	4	**ATS22C25Q**
160	320	IP00	LC1F330●●	150	4	**ATS22C32Q**
220	410	IP00	LC1F400●●	177	4	**ATS22C41Q**
250	480	IP00	LC1F500●●	218	5	**ATS22C48Q**
315	590	IP00	LC1F630●●	251	5	**ATS22C59Q**

Refer to section P to complete the motor starter selection with co-ordinated circuit breaker and line contactor.

Dimensions and weight (7)

Frame size	Dimensions H x W x D mm	Weight kg
1	265 x 130 x 169	7
2	295 x 145 x 207	12
3	356 x 150 x 229	18
4	425 x 206 x 299	33
5	455 x 304 x 340	50

Notes

(1) Inside delta (6-wire) connection also possible. Please consult the product catalogue and your local Schneider Electric representative.
(2) Motor kW ratings for a 400V supply, in accordance with IEC/EN 60947-4-2, class 10 motor protection (standard application).
(3) IcL refers to the maximum continuous current for the starter.
(4) The line contactor has the following functions:
- Disconnects the motor load under fault conditions
- Provides isolation when the motor is not running
- Increases the service life of the installation

A circuit breaker with shunt trip can be used in place of a line contactor. Refer to the Altistart 22 installation manual (BBV51330) for recommended wiring diagrams, and to Section P for complete motor starter selection with co-ordinated circuit breaker and line contactor.
(5) Steady state power dissipation at nominal current.
(6) Models to suit other supply voltages are available.
(7) Dimensions for the starter only, excluding options. Dimensions and weights are for the largest in the frame size.

Options

VW3G22400

Fans

Starters ATS22D17Q…C17Q (17A to 170A) can achieve a higher number of starts/hr with additional fan. The fan is foot-print mounted underneath the starter, adding 40mm to the overall depth. It is powered from the starter and has a noise level of less than 60dBA.

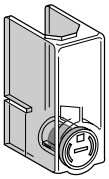
Description	For starter	Number of starts/hr *		Reference
		Without fan	With fan	
Heat sink fan	ATS22D17Q…D47Q	6	10	**VW3G22400**
	ATS22D62Q…D88Q	6	10	**VW3G22401**
	ATS22C11Q…C17Q	4	10	**VW3G22402**

* Based on 3.5 In (350% motor current) starting current for 20 sec, S4 motor duty. For applications requiring soft start and soft stop, divide the possible number of starts per hour by 2.

Wall mounting kit

Terminal box kit that allows the soft starter to be mounted on the wall while maintaining an IP21 enclosure rating. Cable glands and soft starter not included. Dimensions are of the final assembly, excluding optional fan for ATS22D17Q… C17Q (adds 40mm to depth).

Description	For starter	Dimensions H x W x D mm	Reference
Wall mounting kit	ATS22D17Q…D47Q	479 x 130 x 169	**VW3G22901NZ**
	ATS22D62Q…D88Q	508 x 145 x 207	**VW3G22902NZ**
	ATS22C11Q…C17Q	542 x 151 x 230	**VW3G22903NZ**
	ATS22C21Q…C41Q	870 x 206 x 294	**VW3G22904NZ**
	ATS22C48Q…C59Q	934 x 304 x 340	**VW3G22905NZ**



LA9F702

Protective shrouds for power terminals

Covers the 6 unprotected power terminals on the ATS22C11Q…C59Q soft starters. To be used with cable lug terminals (eyelet connections).

Description	For starter	Reference
Set of 6 power terminal protection shrouds	ATS22C11Q…C17Q	**LA9F702**
	ATS22C21Q…C59Q	**LA9F703**

ABL6TS06B

Control supply isolating transformer

230...400V (+-15%) input, 230V output isolating transformer used to provide increased availability of the soft starter control power supply. Recommended for installations prone to voltage fluctuations and transients, such as rural networks. Can also be used to provide a 230V 1-ph control supply when no neutral connection is available. Refer to Phaseo power supplies in section M for additional ratings.

Description	For starter	Reference
Control isolating transformer	ATS22D17Q…C59Q	**ABL6TS10U**

VW3G22101

Remote display terminal

Description		Reference
Remote 4-digit LED display terminal Panel mount, requires remote cable	IP54	**VW3G22101**
	IP65	**VW3G22102**
Remote display cable For connecting the remote LED display to the Altistart 22 Modbus port. Equipped with 2x RJ45 connectors	1m	**VW3A1104R10**
	3m	**VW3A1104R30**

Options

SoMove setup software

Configuration tools

Description	Reference
SoMove configuration software Free to download from www.schneider-electric.co.nz/somove	–
USB-Modbus RJ45 cable For connecting PC USB port to the starter.	**TCSMCNAM3M002P**

UPUMP1

Upump touch screen soft starter irrigation pump controller

Upump is the latest generation smart controller for soft starter irrigation pumps. With an animated, full colour touch screen, advanced protection and monitoring functions, plug-n-play functionality, Upump is all you need for pumping. Upump is also ready for web connectivity with a built in Ethernet port, web server and app for mobile devices.

Features:

- Full colour graphical touch screen, IP65 rated
- Simple one wire connection to ATS22 soft starter
- 22mm hole mounting for touch screen
- Comprehensive fault log with time stamp
- Full suite of protection features
- Real-time clock
- Manual/Auto/Timed Run operating modes
- Web ready with mobile app (1)

Connection to soft starter:

ATS22: via Modbus RJ45 cable (included). ATS48: via terminal wiring (not included).

Upump Air mobile app

Description		Reference
Upump with 3.5" touch screen Controller, 3.5" HMI and 3m connection lead for ATS22		**UPUMP1**
Upump with 5.7" touch screen Controller, 5.7" HMI and 3m connection lead for ATS22		**UPUMP2**
Accessories		
Remote mounting cable Allows the touch screen to be mounted separately to the Upump controller	3m	**HMIZSURDP**
	5m	**HMIZSURDP5**
Power supply for controller Supply: 1-ph 230VAC Output: 24VDC, 75W		**ABLS1A24031**

Notes

(1) Vijeo Designer Air app for iOS and Android devices is available at additional charge. Web connectivity requires local Wi-Fi or similar network.

International approvals

Altistart 48

Product configurator available on se.com/nz

Soft starters for 3-phase motors 7.5kW to 630kW.
3-phase control, full protection features built in
Standard or severe duty applications, patented torque control system

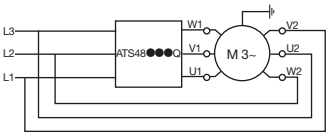
ATS48D17Q

ATS48M12Q

Altistart 48, IP20/IP00, soft start – soft stop motor starter unit

Standard or severe duty, in-line connection
3-phase supply voltage: 230…415V 50/60Hz, control supply voltage: 220…415V 50/60Hz (4)

Standard duty (1) 400V kW	In A	Severe duty (2) 400V kW	In A	Dimensions (3) (H x W x D) mm	Reference
7.5	17	5.5	12	275 x 160 x 190	**ATS48D17Q**
11	22	7.5	17	275 x 160 x 190	**ATS48D22Q**
15	32	11	22	275 x 160 x 190	**ATS48D32Q**
18.5	38	15	32	275 x 160 x 190	**ATS48D38Q**
22	47	18.5	38	275 x 160 x 190	**ATS48D47Q**
30	62	22	47	290 x 190 x 235	**ATS48D62Q**
37	75	30	62	290 x 190 x 235	**ATS48D75Q**
45	88	37	75	290 x 190 x 235	**ATS48D88Q**
55	110	45	88	290 x 190 x 235	**ATS48C11Q**
75	140	55	110	340 x 200 x 265	**ATS48C14Q**
90	170	75	140	340 x 200 x 265	**ATS48C17Q**
110	210	90	170	380 x 320 x 265	**ATS48C21Q**
132	250	110	210	380 x 320 x 265	**ATS48C25Q**
160	320	132	250	380 x 320 x 265	**ATS48C32Q**
220	410	160	320	670 x 400 x 300	**ATS48C41Q**
250	480	220	410	670 x 400 x 300	**ATS48C48Q**
315	590	250	480	670 x 400 x 300	**ATS48C59Q**
355	660	315	590	670 x 400 x 300	**ATS48C66Q**
400	790	355	660	890 x 770 x 315	**ATS48C79Q**
500	1000	400	790	890 x 770 x 315	**ATS48M10Q**
630	1200	500	1000	890 x 770 x 315	**ATS48M12Q**



Inside delta (6-wire) connection: The Altistart 48 can be wired inside the motor's delta wiring. This reduces the current through the starter by 1/√3,allowing a smaller starter to be used. There are certain conditions for inside delta connection — please consult the product catalogue and/or your local Schneider Electric representative.

ATS48 enclosed in IP55 enclosure

Altistart 48, IP55 enclosed, soft start – soft stop motor starter solution

If your installation requires an enclosed soft starter, we can provide a pre-engineered list of materials including enclosure, bypass contactor, remote display, start/stop push buttons, and a wiring diagram for customer assembly.

Notes
1) kW ratings for a 4-pole motor with 400V supply, class 10 motor protection. 400% In for 12sec, 10 starts/hr
2) kW ratings for a 4-pole motor with 400V supply, class 20 motor protection. 400% In for 25sec, 5 starts/hr
3) Dimensions for the starter only, excluding accessories
4) Models for other international supply voltages are available. Please contact your Schneider Electric representative

Options

ATS48D62Q with ATSF2-S Wall Mounting Kit installed

IP20 wall mounting kit

Mounting kit only — does not include soft starter or bypass contactor. Dimensions are for the final assembly.

Description	For Altistart 48	Dimensions H x W x D mm	Reference
IP20 wall mounting kit for installation without bypass contactor	ATS48D17Q…D47Q	435 x 160 x 190	**ATSF1-S**
	ATS48D62Q…C11Q	485 x 190 x 235	**ATSF2-S**
	ATS48C14Q…C17Q	570 x 200 x 265	**ATSF3-S**
	ATS48C21Q…C32Q	695 x 320 x 265	**ATSF4-S**
	ATS48C41Q…C66Q	1175 x 400 x 300	**ATSF5-S**
IP20 wall mounting kit for installation with bypass contactor	ATS48D17Q…D47Q	580 x 160 x 190	**ATSF1-BP**
	ATS48D62Q…C11Q	690 x 190 x 235	**ATSF2-BP**
	ATS48C14Q…C17Q	860 x 200 x 265	**ATSF3-BP**

VW3G48101

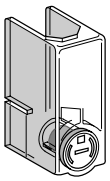
Remote display terminal

Description	Reference
Remote LED display terminal IP54, panel mount, includes 3m cable	**VW3G48101**

SoMove setup software

Configuration tools

Description	Reference
SoMove configuration software Configure, setup and monitor the starter from a PC. Free to download	–
USB-Modbus RJ45 cable For connecting PC USB port to the starter. 2.5m cable length	**TCSMCNAM3M002P**



LA9F702

Protective shrouds for power terminals

Covers the unprotected power terminals on starters ATS48C14Q…C32Q. To be used with cable lug terminals (eyelets). Note these starters have 9 power terminals.

Description	For Altistart 48	Reference
Power terminal shrouds Set of 6	ATS48C14…C17Q	**LA9F702**
	ATS48C21Q…C32Q	**LA9F703**

International approvals

Altivar 12

Variable speed drives
For 1-ph 230V supplies, 3-ph AC motors 0.18 to 2.2kW
IP20 enclosure, conformal coating, open loop vector motor control
Built in level C1 (residential) EMC RFI filter

Product configurator available on se.com/nz

Altivar 12 variable speed drives

The Altivar 12 variable speed drive is perfect for small machine applications for AC motors in the power range 0.18 to 2.2kW. Compact, high performance and user friendly, Altivar 12 will give your machines the competitive edge.

> pumps
> fans
> conveyors
> compressors
> mixers
> materials handling
> automatic gates
> portable machines

Small
Intuitive
Reliable
High-performance

Features:

> Integrated Category 1 EMC line filter for simple integration in residential environments (5)
> Conformal coated electronic cards for resistance to harsh environments
> Can be configured in complete safety with the power off, even in its packaging!
> High performance Sensorless Flux Vector motor control
> Modbus communication interface

ATV12H037M2

ATV12HU22M2

Altivar 12

Motor power (1)	Nominal output current (2)	Max. output current for 60sec (2)	Max. line current (3)	Dimensions (5)	Reference
kW	A	A	A	H x W x D mm	
230V 1-ph supply, 50/60Hz, integrated EMC filter (4), IP20					
0.18	1.4	2.1	2.8	143 x 72 x 103	**ATV12H018M2**
0.37	2.4	3.6	4.9	143 x 72 x 122	**ATV12H037M2**
0.55	3.5	5.3	6.7	143 x 72 x 132	**ATV12H055M2**
0.75	4.2	6.3	8.5	143 x 72 x 132	**ATV12H075M2**
1.5	7.5	11.2	14.9	143 x 105 x 157	**ATV12HU15M2**
2.2	10	15	20.2	143 x 105 x 157	**ATV12HU22M2**

Models also available:

> 1-ph supply: 100...120V, 3-ph 230V 0.18…0.75kW
> 3-ph supply: 200...240V, 0.18…4kW
> Version for baseplate mounting: 0.18...4kW

Accessories

Description	For drives		Reference
	kW	ATV12H...	
DIN rail mounting plate	0.18…0.75	075M2…H075M2	**VW3A9804**
Mounts on a 35mm rail	1.5, 2.2	U15M2, HU22M2	**VW3A9805**
EMC kit	0.18…0.75	075M2…H075M2	**VW3A9523**
Includes EMC plate and clamps	1.5, 2.2	U15M2, HU22M2	**VW3A9524**
Remote speed potentiometer			**SZ1RV1202**
2.2kΩ, with dial and knob			

Notes

(1) Typical ratings for a standard AC 3-phase 4-pole motor, 230V supply, at nominal switching frequency, for an ambient temperature of up to 50°C.
(2) Maximum continuous output current for a nominal switching frequency of 4kHz. Typical overload of 150% nominal output current for 60sec.
(3) Typical line current at nominal output current, from a 240V supply with a max. prospective line Isc of 1kA.
(4) Integrated EMC filter for IEC/EN61800-3 category C1 (residential). Additional EMC filters for extended motor cable lengths, and an EMC plate kit are available.
(5) Dimensions for drive only, excluding EMC plate and accessories.

Options

VW3A1006

Remote display terminal

Description		Reference
Remote LED display terminal Panel mount, requires remote cable	IP54	**VW3A1006**
	IP65	**VW3A1007**
Remote display cable For connecting remote LED display to the drive	1m	**VW3A1104R10**
	3m	**VW3A1104R30**

SoMove software

Configuration tools

Description	Reference
SoMove configuration software Free to download from www.schneider-electric.co.nz/somove	–
USB-Modbus RJ45 cable Connects PC USB port to the drive, 2.5m	**TCSMCNAM3M002P**
Simple Loader tool Duplicates configurations from one drive to another	**VW3A8120**
Multi-Loader tool Upload/download drive configurations to/from drives and a PC. ATV12 drives do not have to be powered	**VW3A8121**
Multi-Loader cable Cable with non-locking connector to connect Multi-loader to ATV12 drive still in its packaging	**VW3A8126**

Altivar 12 configured in packaging with Multi-loader tool

Additional EMC input filter

Extends the maximum permitted motor cable length while maintaining EMC compliance. Refer to the Altivar 12 product catalogue.

Description	For drives		Reference
	kW	ATV12H...	
Additional EMC input filter	0.18…0.75	018M2...075M2	**VW3A4416**
	1.5, 2.2	U15M2, U22M2	**VW3A4417**

ATV12H075M2 with additional EMC filter and EMC conformity kit

Replacement fan

Description	For drives		Reference
	kW	ATV12H...	
Replacement fan	1.5, 2.2	U15M2, U22M2	**VZ3V1301**

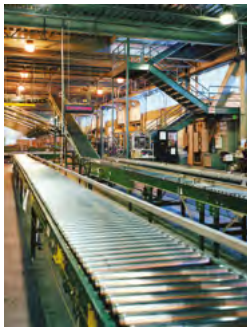
Altivar Machine ATV320

Variable speed drives for simple to advanced machines
For 3-ph motors 0.18 to 15kW
IP20 Compact, Book, and IP6x versions to suit the machine enclosure
Safety functions, advanced connectivity, resistant to harsh environments

Altivar 320 Compact

Altivar 320 Book

Altivar 320 IP6x



Altivar 320 sets the new standard for machine performance

What if one drive model could put all of your machines on the leading edge of the industry? What if that model was easy to install and integrate into automation architectures, regardless of cabinet layout or network system?

Altivar 320, part of the new Altivar™ Machine range, is that drive (0.18kW...15kW). Its powerful combination of safety, reliability, and simplicity make it a versatile choice that reduces costs both during installation as well as throughout the machine's life cycle.

Altivar 320 has a number of out-of-the-box features for building more effective machines at optimised build costs, including:

Unprecedented flexibility

> Simplified installation thanks to the availability of two IP20 form factors, Compact and Book, that allow efficient space usage in various cabinet layouts despite mechanical constraints.
> New IP6x version with customisable enclosure for harsh environmental conditions.
> ATV Logic programming allows the drive to perform simple machine control functions without the need for additional devices.

Improved machine performance

> Reliable motor control for asynchronous and synchronous motors, delivering leading-edge performance with simple, plug-and-play commissioning.

Extended machine availability

> Continuous machine operation as a result of robust design. Printed circuit boards are coated to class 3C3 in accordance with IEC 61721-3-3 to protect against corrosion in harsh environments, and the drive can provide uninterrupted operation in ambient temperatures of up to 60°C.

Optimal machine safety

> Comprehensive embedded safety solutions from STO (Safe Torque Off) to advanced safety functions*, compliant with Machinery Directive 2006/42/EC, allow simplified safety integration and machinery certification.

* SS1: Safe Stop 1
SLS: Safe Limited Speed
SMS: Safe Maximum Speed
GDL: Guard Door Locking

Typical applications

> Materials handling: conveyors, turntables...
> Packing and packaging machines: bagging, labelling, carton packers...
> Textile machines: looms, knitting, web cutters...
> Hoisting: travelling, pick and place, industrial elevators, gantry cranes (open loop)...
> Mechanical actuators: pumps, fans, compressors...
> Wood and metal working machines: saws, planers, benders, welders, grinders, presses...
> Other machines: mixers, kneaders , effluent pumps etc.

International approvals

Altivar Machine ATV320

Variable speed drives for simple to advanced machines
For 3-ph motors 0.18 to 15kW
IP20 Compact version
Safety functions, advanced connectivity, ATV Logic programmable

Product configurator available on se.com/nz

ATV320U04M2C

ATV320U04N4C

ATV320U22N4C

ATV320U75N4C

ATV320 Compact IP20 0.18…15kW

Motor power (1)	Nominal output current (2)	Max. output current for 60sec (2)	Recommended circuit breaker (3)	Power dissipation (2)	Frame size	Reference
kW	A	A		W		
230V 1-ph supply 200…240V, 50/60Hz, integrated EMC filter (4), IP20						
0.18	1.5	2.3	GV2L08	22	1C	**ATV320U02M2C**
0.37	3.3	5	GV2L10	32	1C	**ATV320U04M2C**
0.55	3.7	5.6	GV2L14	42	1C	**ATV320U06M2C**
0.75	4.8	7.2	GV2L16	48	1C	**ATV320U07M2C**
1.1	6.9	10.4	GV2L16	66	2C	**ATV320U11M2C**
1.5	8	12	GV2L20	82	2C	**ATV320U15M2C**
2.2	11	16.5	GV2L22	110	2C	**ATV320U22M2C**
400V 3-ph supply 380…500V, 50/60Hz, integrated EMC filter (4), IP20						
0.37	1.5	2.3	GV2L07	28	2C	**ATV320U04N4C**
0.55	1.9	2.9	GV2L08	33	2C	**ATV320U06N4C**
0.75	2.3	3.5	GV2L08	38	2C	**ATV320U07N4C**
1.1	3	4.5	GV2L10	47	2C	**ATV320U11N4C**
1.5	4.1	6.2	GV2L14	61	2C	**ATV320U15N4C**
2.2	5.5	8.3	GV2L14	76	3C	**ATV320U22N4C**
3	7.1	10.7	GV2L16	94	3C	**ATV320U30N4C**
4	9.5	14.3	GV2L16	112	3C	**ATV320U40N4C**
5.5	14.3	21.5	GV2L22	232	4C	**ATV320U55N4C**
7.5	17	25.5	GV3L32	262	4C	**ATV320U75N4C**
11	27.7	41.6	GV3L40	398	5C	**ATV320D11N4C**
15	33	49.5	GV3L50	475	5C	**ATV320D15N4C**

Models also available:

> 230V 3-ph supply: 200…240V, 50/60Hz, 0.18...15kW
> 600V 3-ph supply: 525...600V, 50/60Hz, 0.75...15kW

Dimensions and weight (5)

Frame size	Dimensions H x W x D mm	Weight kg
1C	143 x 72 x 138	1.1
2C	142 x 105 x 158	1.6
3C	184 x 140 x 158	2.2
4C	232 x 150 x 178	3.6
5C	330 x 180 x 198	6.9

Notes

(1) Typical ratings for a standard 3-phase AC 4-pole motor, 230V or 400V supply, at nominal switching frequency, for an ambient temperature of up to 50°C
(2) Maximum continuous output current for a nominal switching frequency of 4kHz. Typical overload of 150% nominal output current for 60 sec
(3) Refer to section P for complete circuit breaker and contactor co-ordination information
(4) Integrated category C2/C3 EMC filter according to IEC/EN61800-3
(5) Dimensions exclude EMC plate. Dimensions and weights are for the largest in the frame size

International approvals

Altivar Machine ATV320

Variable speed drives for simple to advanced machines
For 3-ph motors 0.18 to 15kW
IP20 Book version
Safety functions, advanced connectivity, ATV Logic programmable

Product configurator available on se.com/nz

ATV320U02M2B

ATV320U55N4B

ATV320D11N4B

ATV320 Book IP20 0.18…15kW

Motor power (1)	Nominal output current (2)	Max. output current for 60sec (2)	Recommended circuit breaker (3)	Power dissipation (2)	Frame size	Reference
kW	A	A		W		
230V 1-ph supply 200…240, 50/60Hz, integrated EMC filter (4), IP20						
0.18	1.5	2.3	GV2L08	25	1B	**ATV320U02M2B**
0.37	3.3	5	GV2L10	38	1B	**ATV320U04M2B**
0.55	3.7	5.6	GV2L14	42	1B	**ATV320U06M2B**
0.75	4.8	7.2	GV2L16	51	1B	**ATV320U07M2B**
1.1	6.9	10.4	GV2L16	64	2B	**ATV320U11M2B**
1.5	8	12	GV2L20	81	2B	**ATV320U15M2B**
2.2	11	16.5	GV2L22	102	2B	**ATV320U22M2B**
400V 3-ph supply 380…500, 50/60Hz, integrated EMC filter (4), IP20						
0.37	1.5	2.3	GV2L07	27	1B	**ATV320U04N4B**
0.55	1.9	2.9	GV2L08	31	1B	**ATV320U06N4B**
0.75	2.3	3.5	GV2L08	37	1B	**ATV320U07N4B**
1.1	3	4.5	GV2L10	50	1B	**ATV320U11N4B**
1.5	4.1	6.2	GV2L14	63	1B	**ATV320U15N4B**
2.2	5.5	8.3	GV2L14	78	2B	**ATV320U22N4B**
3	7.1	10.7	GV2L16	100	2B	**ATV320U30N4B**
4	9.5	14.3	GV2L16	125	2B	**ATV320U40N4B**
5.5	14.3	21.5	GV2L22	233	3B	**ATV320U55N4B**
7.5	17	25.5	GV3L32	263	3B	**ATV320U75N4B**
11	27.7	41.6	GV3L40	403	4B	**ATV320D11N4B**
15	33	49.5	GV3L50	480	4B	**ATV320D15N4B**

Dimensions and weight (5)

Frame size	Dimensions H x W x D mm	Weight kg
1B	317 x 45 x 245	2.5
2B	317 x 60 x 245	3
3B	232 x 150 x 232	7.5
4B	330 x 180 x 232	8.8

Notes

(1) Typical ratings for a standard 3-phase AC 4-pole motor, 230V or 400V supply, at nominal switching frequency, for an ambient temperature of up to 50°C.
(2) Maximum continuous output current for a nominal switching frequency of 4kHz. Typical overload of 150% nominal output current for 60 sec.
(3) Refer to section P for complete circuit breaker and contactor co-ordination information.
(4) Integrated category C2/C3 EMC filter according to IEC/EN61800-3
(5) Dimensions exclude EMC plate for ATV320U55N4B…D15N4B. Dimensions and weights are for the largest in the frame size.

Altivar Machine ATV320

Product configurator available on se.com/nz

Variable speed drives for simple to advanced machines
For 3-ph motors 0.18 to 7.5kW
IP66 version without mains switch (4)
Customisable enclosure, resistant to harsh environments

ATV320U07M2W

ATV320U22N4WS IP65 version with mains switch

ATV320U75N4W

ATV320 IP6x customised with local controls

ATV320 IP66 0.18…7.5kW

Motor power (1)	Nominal output current (2)	Max. output current for 60sec (2)	Recommended circuit breaker (3)	Power dissipation (2)	Frame size	Reference (4)
kW	A	A		W		
230V 1-ph supply 200…240, 50/60Hz, integrated EMC filter (5), IP66						
0.18	1.5	2.3	GV2L08	22	1W	**ATV320U02M2W**
0.37	3.3	5	GV2L10	32	1W	**ATV320U04M2W**
0.55	3.7	5.6	GV2L14	42	1W	**ATV320U06M2W**
0.75	4.8	7.2	GV2L16	48	1W	**ATV320U07M2W**
1.1	6.9	10.4	GV2L16	66	3W	**ATV320U11M2W**
1.5	8	12	GV2L20	82	3W	**ATV320U15M2W**
2.2	11	16.5	GV2L22	110	3W	**ATV320U22M2W**
400V 3-ph supply 380…500, 50/60Hz, integrated EMC filter (5), IP66						
0.37	1.5	2.3	GV2L07	28	2W	**ATV320U04N4W**
0.55	1.9	2.9	GV2L08	33	2W	**ATV320U06N4W**
0.75	2.3	3.5	GV2L08	38	2W	**ATV320U07N4W**
1.1	3	4.5	GV2L10	47	2W	**ATV320U11N4W**
1.5	4.1	6.2	GV2L14	61	2W	**ATV320U15N4W**
2.2	5.5	8.3	GV2L14	76	3W	**ATV320U22N4W**
3	7.1	10.7	GV2L16	94	3W	**ATV320U30N4W**
4	9.5	14.3	GV2L16	112	3W	**ATV320U40N4W**
5.5	14.3	21.5	GV2L22	233	4W	**ATV320U55N4W**
7.5	17	25.5	GV3L32	263	4W	**ATV320U75N4W**
EMC plate with cable clamps (5)					1W	**VW3A9535**
					2W	
					3W	
					4W	**VW3A9536**

Dimensions and weight (6)

Frame size	Dimensions H x W x D mm	Weight kg
1W	340 x 250 x 182	5.5
2W	340 x 250 x 200	6.4
3W	340 x 250 x 235	8.2
4W	521 x 320 x 300	22

Customised local control & signalling

Altivar Machine ATV320 IP6x can be customised to your application using Harmony™ 22mm control and signalling devices. There is space for 2x 22mm devices such as push buttons, switches, potentiometer, E-stop, signal lights etc, to be installed by the customer. Some examples are listed below, additional parts required, refer to section J to complete the control and signalling offer. Note that the IP rating of the installed devices impacts the overall IP rating of the drive.

Description	Reference
Double headed push button green "I" red "O" with central pilot light, IP66	**ZB5AW7L3741**
Triple headed push button white "↑", white "↓", projecting red "STOP", IP66	**ZB5AA71114**
3 position selector switch stay put, IP69	**ZB5AD3**
Potentiometer 4.7kΩ single turn, IP66	**XB5AD912R4K7**
Emergency stop push button, illuminated, with monitoring contacts, IP65	**XB5AS86449B4**
Graphic display terminal, IP65 (7)	**VW3A1111**
Remote mounting kit for graphic display terminal	**VW3A1112**

Notes

(1) Typical ratings for a standard 3-phase AC 4-pole motor, 230V or 400V supply, at nominal switching frequency, for an ambient temperature of up to 40ºC.
(2) Maximum continuous output current for a nominal switching frequency of 4kHz. Typical overload of 150% nominal output current for 60 sec.
(3) Refer to section P for complete circuit breaker and contactor co-ordination information.
(4) Add 'S' to end of reference for IP65 version with mains switch.
(5) Integrated category C2/C3 EMC filter according to IEC/EN61800-3. Use EMC plate, or metal gland plate with EMC glands for EMC compliant installation.
(6) Dimensions and weights are for the largest in the frame size, and exclude IP65 version with mains switch.
(7) Graphic display covers both 22mm holes when mounted on the front panel of ATV320 IP6x.

Accessories

Direct mounting of GV2 on ATV320B

Several ATV320B drives with GV2 circuit breakers directly mounted

VW3A95811

VW3A9535

XB4BD912R4K7

Accessories for ATV320 Book

Description		For drive ATV320…	Reference
Circuit breaker bracket		U02M2B...U22M2B	**VW3A9921**
For direct mounting of GV2 breaker. Min. order qty 10pcs. Requires a GV2AF5		U04N4B...U40N4B	
Circuit breaker adaptor		U02M2B...U22M2B	**GV2AF5**
Adaptor for direct mounting of GV2 breaker		U04N4B...U40N4B	
Control module 90° adaptor		U02M2B...U22M2B	**VW3A9920**
Mounts the control module at 90° when drive is side mounted		U04N4B...U40N4B	
Components for daisy-chain connection of DC bus (1)	DC bus connection kit 0.1m, 5 pcs	U02M2B...U22M2B U04N4B...U40N4B	**VW3M7101R01**
	DC bus cable 15m	U02M2B...U22M2B U04N4B...U40N4B	**VW3M7102R150**
	Connectors for VW3M7102R150, 10 pcs	-	**VW3M2207**
Terminal box kit		U55N4B, U75N4B	**VW3A95817**
Allows wall mounting of drive to IP20		D11N4B, D15N4B	**VW3A95819**

Accessories for ATV320 Compact

Description	For drive ATV320…	Reference
DIN rail mounting kit	U02M2C...U07M2C	**VW3A9804**
Kit to mount drive on a 35mm DIN rail	U11M2C...U22M2C U04N4C...U15N4C	**VW3A9805**
Terminal box kit	U02M2C…U07M2C	**VW3A95811**
Allows wall mounting of drive to IP20	U11M2C...U22M2C U04N4C...U15N4C	**VW3A95812**
	U22N4C...U40N4C	**VW3A95814**
	U55N4C, U75N4C	**VW3A95816**
	D11N4C, D15N4C	**VW3A95818**
Option module adaptor	ATV320C/W	**VW3A3600**

Accessories for ATV320 IP6x

Description	For drive ATV320…	Reference
Circuit breaker mounting plate	02M2W...U22M2W	**VW3A9922**
For mounting GV2 breaker within the ATV320 IP6x enclosure. GV2 extended rotary handle to be ordered separately.	04N4W...U75N4W	
GV2 extended rotary handle	U02M2W…U22M2W U04N4W…U40N4W	**GVAPB65S**
	U55N4W…U75N4W	**GV2APN03**
EMC plate	U02M2W…U22M2W	**VW3A9535**
Metal plate with clamps for EMC compliant installation	U04N4W…U40N4W	
	U55N4W…U75N4W	**VW3A9536**
Metal gland plate	U02M2W…U22M2W	**VW3A9911**
Metal gland plate (undrilled) for use with metal EMC glands (not supplied)	U04N4W…U40N4W	
	U55N4W…U75N4W	**VW3A9912**
Option module adaptor	ATV320C/W	**VW3A3600**

Control accessories (2)

Description		Reference
Speed reference potentiometer IP20		**SZ1RV1202**
2.2kΩ, with dial and knob		
Speed reference potentiometer IP69 (2)	XB4 metal head	**XB4BD912R4K7**
4.7kΩ Harmony Ø22 mounting with head and base	XB5 plastic head	**XB5AD912R4K7**

Notes

(1) DC bus sharing requires specific installation and set up parameters. Please refer to the product installation manual.

(2) Refer to section J for our complete range of control and signalling devices.

Remote display and configuration options

VW3A1007

Components for panel mounting of graphic terminal

Download the configuration to the ATV320, even in it's packaging!

Remote display terminal

Description	Item number		Reference
Remote LED display terminal Panel mounted, requires cable (3m max.)	–	IP54	**VW3A1006**
		IP65	**VW3A1007**
Remote graphic display terminal 240x160 pixels, plain text, IP65. Requires cable and remote mounting kit	1		**VW3A1111**
Remote mounting kit IP65, 22.5mm Ø hole mounting	2		**VW3A1112**
Remote display cable Equipped with 2x RJ45 connectors	3	1m	**VW3A1104R10**
		3m	**VW3A1104R30**
		5m	**VW3A1104R50**
		10m	**VW3A1104R100**
USB A/mini-B USB cable For connecting graphic display terminal to PC			**TCSXCNAMUM3P**

Configuration tools

Description	Reference
SoMove configuration software Free to download from www.se.com/nz/somove	–
USB-Modbus RJ45 cable Connects PC USB port to the drive	**TCSMCNAM3M002P**
Simple Loader configuration tool Duplicates configurations from one drive to another	**VW3A8120**
Multi-loader configuration tool Upload/download drive configurations to/from drives and a PC. ATV320 drives do not have to be powered	**VW3A8121**
Multi-loader connection cable Cable with non-locking connector to connect Multi-loader to ATV320 drive still in its packaging	**VW3A8126**

Replacement parts

Description		For drive ATV320…	Reference
Replacement fan	ATV320C	U11M2C…U22M2C U04N4C…U15N4C	**VZ3V303S2001**
		U22N4C…U40N4C	**VZ3V303S3001**
	ATV320B	U02M2B...U07M2B U04N4B...U15N4B	**VZ3V32A100**
		U11M2B...U22M2B U22N4B...U40N4B	**VZ3V32B100**
		U55N4B, U75N4B	**VZ3V32C100**
		D11N4B, D15N4B	**VZ3V32D100**
Replacement internal fan	ATV320W	U11M2W…U22M2W U04N4W…U15N4W	**VZ3V32066S2**
		U22N4W…U40N4W	**VZ3V32066S3**
		U55N4W, U75N4W	**VZ3V32066S4**

Assembly of an ATV320C, option module adaptor, and a communication card

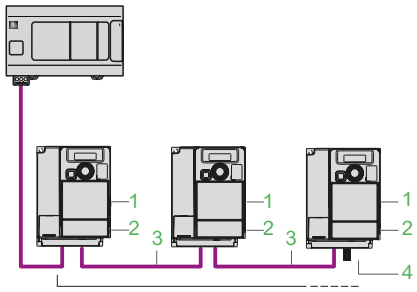
Assembly of an ATV320B and a communication card

VW3A3608

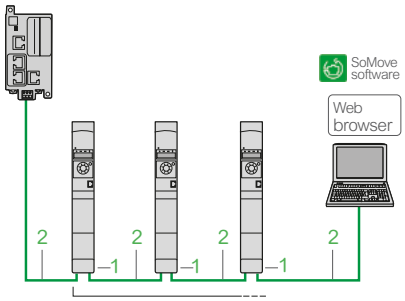
Communication options and accessories

Altivar 320 drives include Modbus serial and CANopen interfaces available on the single RJ45 port. One additional communication card can be installed to interface to a range of fieldbuses.

Description		Connector type	Length m	Reference
Compact option module adaptor Option card support for ATV320C and ATV320W drives		-	-	**VW3A3600**
Speed monitoring card (1) Detects undesirable load slip via a motor encoder. Recommended for hoisting applications.		Terminals	-	**VW3A3620**
Communication cards (1)	CANopen RJ45 daisy-chain	2x RJ45	-	**VW3A3608**
	CANopen via SUB-D9	SUB-D9	-	**VW3A3618**
	CANopen via terminals	Terminals	-	**VW3A3628**
	DeviceNet	Terminals	-	**VW3A3609**
	EtherCAT	2x RJ45	-	**VW3A3601**
	Ethernet Modbus TCP and Ethernet/IP	2x RJ45	-	**VW3A3616**
	POWERLINK	2x RJ45	-	**VW3A3619**
	PROFIBUS DP V1	SUB-D9	-	**VW3A3607**
	PROFINET	2x RJ45	-	**VW3A3627**
Modbus serial accessories	Modbus cable	RJ45	0.3	**VW3A8306R03**
			1	**VW3A8306R10**
			3	**VW3A8306R30**
	Modbus tap	RJ45	0.3	**VW3A8306TF03**
			1	**VW3A8306TF10**
	Modbus 10 way splitter hub	RJ45	-	**LU9GC3**
	2x Modbus RC line terminators	RJ45	-	**VW3A8306D30**
	Modbus tap	Terminals	-	**TSXSCA50**
	Modbus cable	-	100	**TSXCSA100**
	2x Modbus RC line terminators	Terminals	-	**VW3A8306DRC**
CANopen accessories	CANopen cable	RJ45	0.3	**VW3CANCARR03**
			1	**VW3CANCARR1**
	2x CANopen line terminators	RJ45	-	**TCSCAR013M120**
	CANopen connector	SUB-D9	-	**TSXCANKCDF180T**
	CANopen cable standard	-	50	**TSXCANCA50**
			100	**TSXCANCA100**
			300	**TSXCANCA300**
	2x CANopen line terminators	Terminals	-	**TCSCAR01NM120**
	CANopen junction box	2x RJ45 2x Terminals	-	**VW3CANTAP2**
Ethernet accessories (2)	Ethernet ConneXium cable Cat 5 STP	RJ45	2	**490NTW00002**
			5	**490NTW00005**
			12	**490NTW00012**



Example CANopen daisy-chain RJ45 network with ATV320C and components:
1 VW3A3600
2 VW3A3608
3 VW3CANCARR03
4 TCSCAR013M120



Example Ethernet/IP daisy-chain RJ45 network with ATV320B and components:
1 VW3A3616
2 490NTW00002

Notes
(1) Only one option card can be installed at a time.
(2) Refer to Section N for ConneXium Ethernet switches and accessories.

Braking and filter options

VW3A7730

VW3A7608R●●

Braking resistors

For applications requiring rapid deceleration or controlled stopping of high inertia or vertical loads. The braking energy is dissipated by the braking resistor.

Description	Supply Voltage	For drives kW	ATV320…	Resistor size (1)	Cable m	Reference
Braking resistor IP20	230V 1-ph	0.18, 0.37	U02M2, U04M2	100Ω, 100W	-	**VW3A7730**
		0.55…1.5	U06M2…U15M2	60Ω, 160W	-	**VW3A7731**
		2.2	U22M2	28Ω, 300W	-	**VW3A7732**
	400V 3-ph	0.37…3	U04N4…U30N4	100Ω, 100W	-	**VW3A7730**
		4, 5.5	U40N4, U55N4	60Ω, 160W	-	**VW3A7731**
		7.5, 11	U75N4, D11N4	28Ω, 300W	-	**VW3A7732**
		15	D15N4	16Ω, 960W	-	**VW3A7733**
Braking resistor IP65	230V 1-ph	0.18…0.75	U02M2…U07M2	100Ω, 25W	0.75	**VW3A7608R07**
					3	**VW3A7608R30**
		1.1, 1.5	U11M2, U15M2	72Ω, 25W	0.75	**VW3A7605R07**
					3	**VW3A7605R30**
		2.2	U22M2	27Ω, 50W	0.75	**VW3A7603R07**
					3	**VW3A7603R30**
	400V 3-ph	0.37…2.2	U04N4…U22N4	100Ω, 25W	0.75	**VW3A7608R07**
					3	**VW3A7608R30**
		3, 4	U30N4, U40N4	72Ω, 50W	0.75	**VW3A7606R07**
					3	**VW3A7606R30**
		5.5, 7.5	U55N4, U75N4	27Ω, 100W	0.75	**VW3A7604R07**
					3	**VW3A7604R30**

ATVRU75N4

Regenerative braking units

Regenerative braking units direct energy to the grid during braking cycles, reducing heat dissipation and improving energy efficency compared to braking resistors. Up to three regenative units can be connected in parallel depending on the required braking power. One or several drives can be connected via the DC bus to the braking unit. Refer to the product manual, sizing tool, and contact Schneider Electric for application advice.

Description	Supply Voltage	kW	Reference
Regenerative braking unit IP20	400V 3-ph	7.5kW	**ATVRU75N4**
		15kW	**ATVRD15N4**

ATV320U04N4B + VW3A4422

Additional EMC input filter

Reduces conducted high frequency emissions on the mains supply in accordance to IEC/EN 61800-3 for category C1 (residential), C2 (residential restricted), or C3 (industrial), depending on the motor cable length. Refer to the product catalogue for maximum cable lengths for each category.

Description	Supply Voltage	For drives (2)	kW	ATV320…	Reference
Additional EMC input filter IP20	230V 1-ph	ATV320C	0.18…0.75	U02M2C…U07M2C	**VW3A31401**
			1.1, 1.5	U11M2C, U15M2C	**VW3A31403**
			2.2	U22M2C	**VW3A31405**
		ATV320B	0.18…0.75	U02M2B…U07M2B	**VW3A4420**
			1.1, 1.5	U11M2B, U15M2B	**VW3A4421**
			2.2	U22M2B	**VW3A4426**
	400V 3-ph	ATV320C	0.37…1.5	U04N4C…U15N4C	**VW3A31404**
			2.2…4	U22N4C…U40N4C	**VW3A31406**
		ATV320B	0.37…4	U04N4B…U40N4B	**VW3A4422**
			5.5, 7.5	U55N4B, U75N4B	**VW3A4424**
			11, 15	D11N4B, D15N4B	**VW3A4425**

ATV320U55N4B + VW3A4424

Notes

(1) Average braking resistor power corresponds to a maximum ambient temperature of 50ºC and the following load factors:
- 2 s braking with 60% Tn braking torque for a 40 s cycle
- 0.8 s braking with 150% Tn braking torque for a 40 s cycle

(2) When used with IP6x drives, the EMC filter will have to be mounted inside a separate enclosure of a suitable IP rating for the installation.

Filter options

VW3A4553

Line chokes

Reduces harmonics and RMS line current, helps protect drive from line disturbances. Recommended when the supply Isc is greater than the maximum Isc of the drive. Refer to product catalogue.

Description	Supply Voltage	For drives (1)		Reference
		kW	ATV320…	
Line Choke IP00	230V 1-ph	0.18, 0.37	U02M2, U04M2	**VZ1L004M010**
		0.55, 0.75	U06M2, U07M2	**VZ1L007UM50**
		1.1…2.2	U11M2...U22M2	**VZ1L018UM20**
	400V 3-ph	0.37…1.5	U04N4…U15N4	**VW3A4551**
		2.2…4	U22N4…U40N4	**VW3A4552**
		5.5, 7.5	U55N4, U75N4	**VW3A4553**
		11, 15	D11N4, D15N4	**VW3A4554**

Output filters

Limits dV/dt and peak voltage at the motor terminals for screened motor cables up to 100m. Helps protect motor insulation for non-inverter rated motors. Refer to product catalogue.

Description	Supply Voltage	For drives (1)		Reference
		kW	ATV320…	
Motor dV/dt choke IP00	230V 1-ph	0.18…1.5	U02M2…U15M2	**VW3A4552**
		2.2	U22M2	**VW3A4553**
	400V 3-ph	0.37…4	U04N4…U40N4	**VW3A4552**
		5.5	U55N4	**VW3A4553**
		7.5, 11	U75N4, D11N4	**VW3A4554**
		15	D15N4	**VW3A4555**

Notes

(1) When used with IP6x drives, the choke/filter will have to be mounted inside a separate enclosure of a suitable IP rating for the installation.

Altivar 340

Variable speed drives for high performance machines
For 3 phase motors 0.75kW to 75kW
Precision motor control in open or closed loop
Embedded Ethernet connectivity

Product configurator available on se.com/nz

With advanced connectivity and precision control to excel in today's sophisticated automation architectures, Altivar™ Machine ATV340 offers high performance while reducing total machine costs.

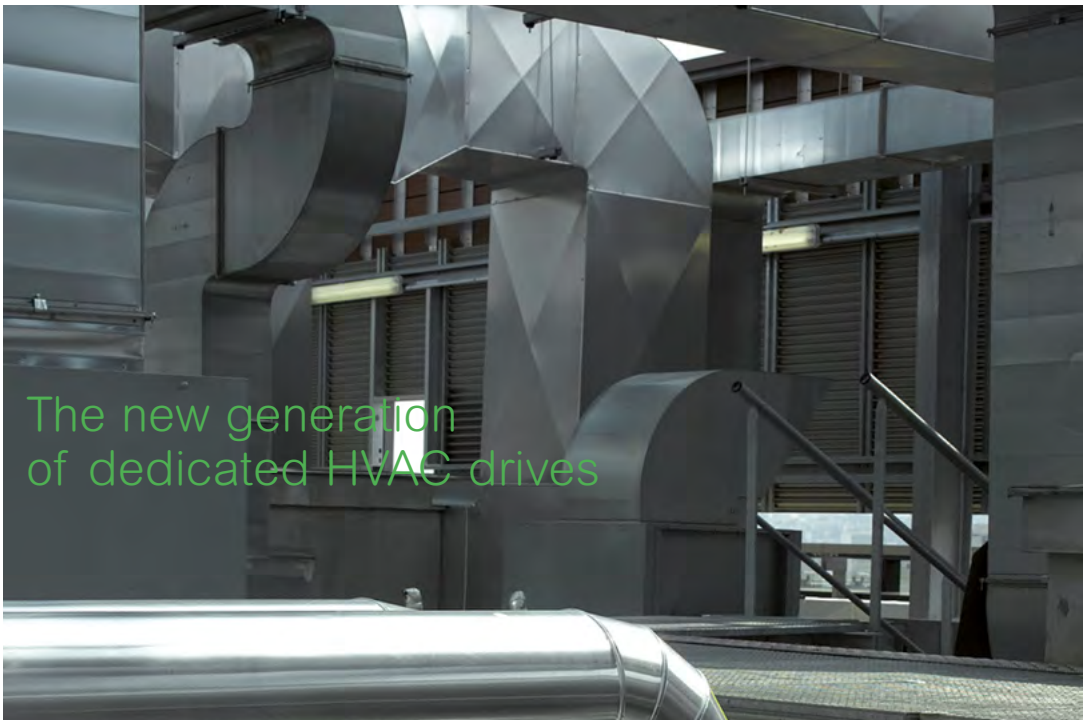
- **Improved performance** with asynchronous, synchronous, servo and reluctance motors with open or closed loop precision
- **Real time communication** with embedded Ethernet and support of a variety of communication protocols
- **Reliability and robustness** with coated circuit boards to 3C3 and the ability to operate in high ambient temperatures
- **Fast integration** with PLCopen compliance and reduced engineering time using Schneider Electric's MachineStruxure™ automation solutions.

Contact your local Schneider Electric representative to discuss your high performance machine application today.

Altivar 212

Variable speed drives for HVAC* applications in buildings
For 3-ph AC motors 0.75kW to 75kW
IP21 and IP55 versions, integrated reduced harmonics technology
Built in EMC filter, building communication protocols, HVAC application functions

Product configurator available on se.com/nz



Altivar 212 variable speed drives for HVAC*

Every aspect of the Altivar 212 range of variable speed drives has been designed to optimise the performance of pump and fan motors in the buildings environment!

- Embedded BMS (building management system) communication protocols allow access to control, status, and monitoring information
- Anti-harmonic technology (THDi ~30%) reduces RMS current draw while improving efficiency and extending equipment life
- Built in HVAC functions including PID controller, fire mode, damper control, sleep/wakeup, skip frequencies etc
- IP21 and IP55 versions available, both with conformal coating to resist harsh environmental conditions

Contact your local Schneider Electric representative to discuss your HVAC application today.

Notes
*Heating, Ventilation, Air Conditioning. Altivar 212 has been specifically designed for use in heating, ventilation and pumping applications in buildings. It is not intended for use in industrial or infrastructure applications or environments.

Altivar Process

Variable speed drives for 3-phase motors 0.75kW to 800kW
Embedded digital services to boost industrial and utility process efficiency

Presentation

Altivar Process is the first 'Services Oriented Drive', which thanks to embedded digital services, is designed to improve operational efficiency in process industries such as:

- Water & waste water - Municipal and irrigation pumping stations, boosting stations, borehole pumps, lifting stations, aeration, blowers, sludge conveying...
- Food & beverage - dairy (pumping, drying, refrigeration…), sugar (pumping, blowers, refiners, dryers...)
- Mining, minerals and metals - water pumps, floatation and thickening, de-watering and filtration, kiln fans, blowers, conveyors, rolling mills...
- Oil & gas - submersible pumps, jack pumps, oil line pumps, water injection pumps, re-gasification compressors...

Applications:

Altivar Process ATV600 series focuses on fluid and gas applications:

Pumps, fans, compressors, blowers etc.

- Advanced pump control, monitoring and protection functions. Pump curve management, BEP monitoring and sensor-less flow estimation…

Altivar Process ATV900 series focuses on maximum performance of mechanical applications:

Conveyers, separators, grinders, crushers, refiners etc.

- Superior motor control in open or closed loop, dynamic braking and regenerative solutions, torque control functions, advanced load sharing and safety…

Water & waste water applications

Benefits:

Improves overall equipment efficiency (OEE) and reduces total cost of ownership (TCO). Supports energy management, asset management and improved process performance.

- Enables sustainable cost savings thanks to predictive condition-based maintenance
- Reduces down time by up to 20% without additional investment

Food & beverage applications

Energy management services:

- Better that 5% accuracy energy measurement, dashboards, trends, drift detection…
- Start and Stop function reduces standby power consumption by up to 60%
- Reduction of harmonics, in the standard product and with an innovative low harmonics offer

Mining, minerals & metals applications

Embedded digital services:

- Embedded Ethernet, with option for advanced Ethernet functions (dual-port, self-healing networks etc)
- Integral to Plantstruxure™ automation architecture; configure and monitor the drive via SoMove or Unity automation software suites
- Advanced, secure web server for access to dashboards, monitoring and configuration from any web device
- Drift detection, trending, KPIs and alarms enable preventative maintenance actions
- Dynamic QR codes for dynamic help and application support from the web

Oil & gas applications

Flexible and ready for installation:

- IP21 and IP55 products to suit the installation. Modular high power floor-standing drives in compact IP23 or IP54 versions
- Delivered ready for fast and easy installation:
  - Integrated cable entry terminal box, equipped with cable glands and EMC connections
  - Removable, colour-coded control terminals
  - Designed for operation with long motor cables: 150m for screened cables and 300m for unscreened cables without the need for additional options
  - Unique engineered drives, customised to the application

Altivar Process

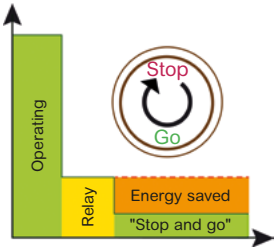
Variable speed drives for 3-phase motors 0.75kW to 800kW
Embedded digital services to boost industrial and utility process efficiency

IP21 and IP55 versions

Rugged design:

Operates in the harshest industrial environments:

- Up to 50°C for IP21 and up to 40°C for IP55 without de-rating
- High resistance to environmental conditions:
- Chemical resistance to class 3C3 conforming to IEC/EN 60721
- Mechanical resistance to class 3S3 conforming to IEC/EN 60721
- Protective conformal coating on all electronic cards
- Protection to suit the application:
- IP21 (UL type 1) for mounting on a wall or within an enclosure
- IP55 (UL type 12) for mounting near the motor, with protection against dust and water jets
- High tolerance to supply variations, minimum 50kA supply Isc rating



Stop and Go function reduces standby energy consumption by upto 60%

Green drive

Designed to meet the requirements of environmental protection directives and regulations:

- RoHS 2
- REACH + Substitute It Now (halogen-free wiring and plastics)
- PEP (Product Environmental Profile) eco-passport program for reducing the carbon footprint and conserving raw materials
- EoLI (End of Life Instructions) - greater than 70% recyclable materials (new ruling)
- Efficient energy management: 30% reduction in consumption

Dynamic QR code provide contextual help to your mobile device

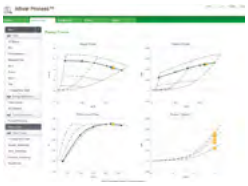
Advanced functions:

Altivar 600

- Embedded pump curve management
- Sensor-less estimated flow rate
- Measurements expressed in engineering units e.g. m3/h, kWh/m3
- Predictive and preventative maintenance tracking functions e.g. temperature probes, fan operation
- Embedded process controls – PID regulator, pump management, pump protections

Altivar 900

- Master/slave speed and torque sharing via Ethernet Multi-Drive Link for multi-motor applications
- Backlash function reduces mechanical stress
- Precision control of speed and torque in open or closed loop
- Management of backspin in PCP pumps, ENA control for donkey pumps



Embedded web server to access customisable dashboards, trends and process information

Safety and monitoring functions:

- Integrated STO (Safe Torque Off) function to SIL3/PIe
- Conformity to standards EN/IEC 61508, EN/ISO 13849, IEC 61800-5-2
- Monitoring functions to protect the installation:
  - monitoring of pump cycles
  - protection against water hammer
  - anti-clogging function for pumps
  - monitoring of temperatures via PT100/PT1000 probes

Options to adapt to the application:

- I/O expansion cards
- Communication cards
- Encoder interface cards (ATV900)
- Braking resistors (ATV900)
- Adaptive Passive Filters
- Additional EMC line filters
- Output filters
- Motor starter combination with circuit breakers and contactors

Altivar Process ATV600

Product configurator available on se.com/nz

Variable speed drives for 3-phase motors 0.75kW to 800kW
Embedded digital services to boost industrial and utility process efficiency
Integrated EMC filter, conformal coating, graphic display, Ethernet, and SIL3 safety

ATV630U07N4

ATV630D15N4

ATV630D55N4

ATV630C25N4

ATV630 IP21 wall mounting 0.75…315kW

Normal duty (1)		**Heavy duty** (2)					
110% overload for 60s		150% overload for 60s					
Motor power	Nominal output current	Motor power	Nominal output current	Recommended circuit breaker (2)	Power dissipation (3)	Frame size	Reference
kW	A	kW	A		W		
400V 3-ph supply: 380...480V 50/60Hz, integrated EMC filter (4), IP21							
0.75	2.2	0.37	1.5	GV2L07	47	1	**ATV630U07N4**
1.5	4	0.75	2.2	GV2L08	69	1	**ATV630U15N4**
2.2	5.6	1.5	4	GV2L10	90	1	**ATV630U22N4**
3	7.2	2.2	5.6	GV2L14	109	1	**ATV630U30N4**
4	9.3	3	7.2	GV2L14	130	1	**ATV630U40N4**
5.5	12.7	4	9.3	GV2L16	182	1	**ATV630U55N4**
7.5	16.5	5.5	12.7	GV2L20	216	2	**ATV630U75N4**
11	23.5	7.5	16.5	GV2L22	306	2	**ATV630D11N4**
15	31.7	11	23.5	GV3L32	425	3	**ATV630D15N4**
18.5	39.2	15	31.7	GV3L40	527	3	**ATV630D18N4**
22	46.3	18.5	39.2	GV3L50	573	3	**ATV630D22N4**
30	61.5	22	46.3	GV3L65	733	4	**ATV630D30N4**
37	74.5	30	61.5	GV4L80●	902	4	**ATV630D37N4**
45	88	37	74.5	GV4L115●	1064	4	**ATV630D45N4**
55	106	45	88	GV4L115●	1048	5	**ATV630D55N4**
75	145	55	106	NSX160●MA150	1543	5	**ATV630D75N4**
90	173	75	145	NSX250●MA220	1781	5	**ATV630D90N4**
110	211	90	173	NSX250●MA220	2820	6	**ATV630C11N4 (5)**
132	250	110	211	NSX400●ML 1.3-M	3357	6	**ATV630C13N4 (5)**
160	302	132	250	NSX400●ML 1.3-M	3912	6	**ATV630C16N4 (5)**
220	427	160	302	NSX630●ML 1.3-M	5481	7a	**ATV630C22N4 (5)**
250	481	200	387	NSX630●ML 1.3-M	6379	7b	**ATV630C25N4 (5)**
315	616	250	481	NS800L ML 2 or 5	7868	7b	**ATV630C31N4 (5)**

For sizes above 315kW, refer to ATV660/680 floor standing drive systems.

IP21 terminal box kit size 6	6	**VW3A9704**
IP31 terminal box kit size 7	7a	**VW3A9112**
	7b	**VW3A9113**

Models also available:

> 230V 3-ph supply: 200…240V, 0.75…75kW IP21 wall mounting
> 400V 3-ph supply: 380...415V, 110...800kW IP23/IP54 floor standing drive systems
> 690V 3-ph supply: 500…690V, 2.2…90kW IP20 wall mounting, and 110…1200kW IP23/IP54 floor standing drive systems

Dimensions and weight (6)

Frame size	Drive ATV630...	Dimensions H x W x D mm	Weight kg
1	U07N4...U55N4	350 x 144 x 203	4.7
2	U75N4, D11N4	409 x 171 x 233	7.7
3	D15N4...D22N4	546 x 211 x 232	14.3
4	D30N4...D45N4	673 x 226 x 271	28.7
5	D55N4...D90N4	922 x 290 x 323	58.5
6	C11N4...C16N4	1157 x 320 x 390	82
7a	C22N4	1498 x 440 x 380	172
7b	C25N4, C31N4	1498 x 598 x 380	203

Notes

(1) Normal duty: nominal output current with 110% overload for 60s, suitable for variable torque loads. Heavy duty: nominal output current with 150% overload for 60s, suitable for constant torque loads. Ratings at nominal switching frequency, for an ambient temperature of up to 50°C. Typical kW ratings for a standard AC 3-ph 4-pole motor, 400V 50Hz supply.
(2) Refer to Section P for complete circuit breaker and line contactor co-ordination information.
(3) Total power dissipation at normal duty nominal rating. Flange mounting kit available to reduce power dissipation within an enclosure.
(4) Integrated EMC filter to IEC/EN61800-3 category C2 (residential) for drives up to 45kW. Category C3 (industrial) for all larger sizes. Refer to additional EMC filter option for permissible motor cable lengths.
(5) Supplied as IP00, optional IP21 terminal box kit to be ordered separately.
(6) Dimensions with IP21 top cover and terminal box installed (optional for frame sizes 6 and 7). Weights are for the largest drive in the frame size.

International approvals

Altivar Process ATV600

Product configurator available on se.com/nz

Variable speed drives for 3-phase motors 0.75kW to 800kW
Embedded digital services to boost industrial and utility process efficiency
Integrated EMC filter, conformal coating, graphic display, Ethernet, and SIL3 safety

ATV650D15N4

ATV650D30N4E - version with Vario disconnect switch

ATV650C31N4F

ATV650 IP55 wall mounting 0.75…90kW

Normal duty (1)		**Heavy duty** (2)					
110% overload for 60s		150% overload for 60s					
Motor power	Nominal output current	Motor power	Nominal output current	Recommended circuit breaker (2)	Power dissipation (3)	Frame size	Reference (4)
kW	A	kW	A		W		
400V 3-ph supply: 380...480V 50/60Hz, integrated EMC filter (5), IP55							
0.75	2.2	0.37	1.5	GV2L07	47	A	**ATV650U07N4**
1.5	4	0.75	2.2	GV2L08	69	A	**ATV650U15N4**
2.2	5.6	1.5	4	GV2L10	90	A	**ATV650U22N4**
3	7.2	2.2	5.6	GV2L14	109	A	**ATV650U30N4**
4	9.3	3	7.2	GV2L14	130	A	**ATV650U40N4**
5.5	12.7	4	9.3	GV2L16	182	A	**ATV650U55N4**
7.5	16.5	5.5	12.7	GV2L20	216	A	**ATV650U75N4**
11	23.5	7.5	16.5	GV2L22	306	A	**ATV650D11N4**
15	31.7	11	23.5	GV3L32	425	A	**ATV650D15N4**
18.5	39.2	15	31.7	GV3L40	527	A	**ATV650D18N4**
22	46.3	18.5	39.2	GV3L50	573	A	**ATV650D22N4**
30	61.5	22	46.3	GV3L65	733	B	**ATV650D30N4**
37	74.5	30	61.5	GV4L80●	902	B	**ATV650D37N4**
45	88	37	74.5	GV4L115●	1064	B	**ATV650D45N4**
55	106	45	88	GV4L115●	1048	C	**ATV650D55N4**
75	145	55	106	NSX160●MA150	1543	C	**ATV650D75N4**
90	173	75	145	NSX250●MA220	1781	C	**ATV650D90N4**

ATV650 IP54 floor standing 110…315kW

Normal duty (1)		**Heavy duty** (2)					
110% overload for 60s		150% overload for 60s					
Motor power	Nominal output current	Motor power	Nominal output current	Recommended circuit breaker (2)	Power dissipation (3)	Frame size	Reference (6)
kW	A	kW	A		W		
400V 3-ph supply: 380...440V 50/60Hz, integrated EMC filter (5), IP54 separated airflow							
110	211	90	173	NSX250●MA220	2530	FA	**ATV650C11N4F**
132	250	110	211	NSX400●ML 1.3-M	3150	FA	**ATV650C13N4F**
160	302	132	250	NSX400●ML 1.3-M	4030	FA	**ATV650C16N4F**
200	370	160	302	NSX630●ML 1.3-M	4380	FB	**ATV650C20N4F**
250	477	200	370	NSX630●ML 1.3-M	5750	FB	**ATV650C25N4F**
315	590	250	477	NS800L ML 2 or 5	7810	FB	**ATV650C31N4F**

For sizes larger than 315kW, refer to ATV660/680 floor standing drive systems

Models also available:

> 400V 3-ph supply: 380...480V, 110...800kW floor standing IP23/IP54 drive systems
> 690V 3-ph supply: 500…690V, 110…1200kW floor standing IP23/IP54 drive systems

Dimensions and weight (7)

Frame size	Drive ATV650...	Dimensions H x W x D mm	Weight kg
A	U07N4...D22N4	678 x 264 x 299	20.6
B	D30N4...D45N4	910 x 290 x 340	50
C	D55N4...D90N4	1250 x 345 x 375	87
FA	C11N4F...C16N4F	2350 x 400 x 600	310
FB	C20N4F...C31N4F	2350 x 600 x 600	420

Notes

(1) Normal duty: nominal output current with 110% overload for 60s, suitable for variable torque loads. Heavy duty: nominal output current with 150% overload for 60s, suitable for constant torque loads. Ratings at nominal switching frequency, for an ambient temperature of up to 40°C. Typical kW ratings for a standard AC 3-ph 4-pole motor, 400V 50Hz supply.
(2) Refer to Section P for complete circuit breaker and line contactor co-ordination information.
(3) Total power dissipation at normal duty nominal rating.
(4) Wall mounting products are supplied with cable glands. For version with integrated Vario mains disconnect switch, add 'E' to the end of the reference.
(5) Integrated EMC filter for IEC/EN61800-3 category C2 (residential) for drives up to 45kW. Category C3 (industrial) for all larger sizes. Refer to additional EMC filter option for permissible motor cable lengths.
(6) Floor standing products include mains disconnection switch, semi-conductor fuses, line reactor, EMC filter, and dV/dt output filter as standard equipment.
(7) Dimensions and weights are for the largest drive in the frame size.

International approvals

Altivar Process ATV900

Product configurator available on se.com/nz

Variable speed drives for 3-phase motors 0.75kW to 800kW
Embedded digital services to boost industrial and utility process efficiency
Integrated EMC filter, conformal coating, graphic display, Ethernet, and SIL3 safety

ATV930U07N4

ATV930D15N4

ATV930D55N4

ATV930C25N4C

ATV930 IP21 wall mounting 0.75…315kW

Normal duty (1)		**Heavy duty** (2)					
120% overload for 60s		150% overload for 60s					
Motor power	Nominal output current	Motor power	Nominal output current	Recommended circuit breaker (2)	Power dissipation (3)	Frame size	Reference
kW	A	kW	A		W		
400V 3-ph supply: 380...480V 50/60Hz, integrated EMC filter (4), IP21							
0.75	2.2	0.37	1.5	GV2L07	47	1	**ATV930U07N4**
1.5	4	0.75	2.2	GV2L08	69	1	**ATV930U15N4**
2.2	5.6	1.5	4	GV2L10	90	1	**ATV930U22N4**
3	7.2	2.2	5.6	GV2L14	109	1	**ATV930U30N4**
4	9.3	3	7.2	GV2L14	130	1	**ATV930U40N4**
5.5	12.7	4	9.3	GV2L16	182	1	**ATV930U55N4**
7.5	16.5	5.5	12.7	GV2L20	216	2	**ATV930U75N4**
11	23.5	7.5	16.5	GV2L22	306	2	**ATV930D11N4**
15	31.7	11	23.5	GV3L32	425	3	**ATV930D15N4**
18.5	39.2	15	31.7	GV3L40	527	3	**ATV930D18N4**
22	46.3	18.5	39.2	GV3L50	573	3	**ATV930D22N4**
30	61.5	22	46.3	GV3L65	733	4	**ATV930D30N4**
37	74.5	30	61.5	GV4L80●	902	4	**ATV930D37N4**
45	88	37	74.5	GV4L115●	1064	4	**ATV930D45N4**
55	106	45	88	GV4L115●	1048	5	**ATV930D55N4**
75	145	55	106	NSX160●MA150	1543	5	**ATV930D75N4**
90	173	75	145	NSX250●MA220	1781	5	**ATV930D90N4**
110	211	90	173	NSX250●MA220	2820	6	**ATV930C11N4 (5)**
132	250	110	211	NSX400●ML 1.3-M	3357	6	**ATV930C13N4 (5)**
160	302	132	250	NSX400●ML 1.3-M	3912	6	**ATV930C16N4 (5)**
220	427	160	302	NSX630●ML 1.3-M	5481	7a	**ATV930C22N4 (6)**
250	481	200	387	NSX630●ML 1.3-M	6379	7b	**ATV930C25N4C (7)**
315	616	250	481	NS800L ML 2 or 5	7868	7b	**ATV930C31N4C (7)**

For sizes above 315kW, refer to ATV960/980 floor standing drive systems.

IP21 terminal box kit size 6	Without braking unit	6	**VW3A9704 (5)**
IP31 terminal box kit size 7	-	7a	**VW3A9112**
	Without braking unit	7b	**VW3A9113**
	With braking unit	7b	**VW3A9114**

Models also available:

> 230V 3-ph supply: 200…240V, 0.75…75kW IP21 wall mounting
> 400V 3-ph supply: 380...415V, 110...800kW IP23/IP54 floor standing drive systems
> 690V 3-ph supply: 500…690V, 2.2…90kW IP20 wall mounting, and 110…1200kW IP23/IP54 floor standing drive systems

Dimensions and weight (8)

Frame size	Drive ATV930...	Dimensions H x W x D mm	Weight kg
1	U07N4...U55N4	350 x 144 x 206	4.7
2	U75N4, D11N4	409 x 171 x 236	7.7
3	D15N4...D22N4	546 x 211 x 235	14.3
4	D30N4...D45N4	673 x 226 x 274	28.7
5	D55N4...D90N4	922 x 290 x 326	59.5
6	C11N4...C16N4	1205 x 320 x 393	104
7a	C22N4	1498 x 440 x 380	172
7b	C25N4C, C31N4C	1498 x 598 x 380	203

Notes

(1) Normal duty: nominal output current with 120% overload for 60s, suitable for variable torque or light starting loads. Heavy duty: nominal output current with 150% overload for 60s, suitable for constant torque loads. Ratings at nominal switching frequency, for an ambient temperature o f up to 50°C. Typical kW ratings for a standard AC 3-ph 4-pole motor, 400V 50Hz supply.
(2) Refer to Section P for complete circuit breaker and line contactor co-ordination information.
(3) Total power dissipation at normal duty nominal rating. Flange mounting kit available to reduce power dissipation within an enclosure.
(4) Integrated EMC filter to IEC/EN61800-3 category C2 (residential) for drives up to 45kW. Category C3 (industrial) for all larger sizes.
(5) Supplied as IP20 with braking unit for wall or cabinet mounting. IP00 version without braking unit available, add 'C' to end of reference. IP21 terminal box kit for IP00 version without braking unit to be ordered separately.
(6) Supplied as IP00, with embedded braking unit. IP31 terminal box kit for wall mounting to be ordered separately.
(7) Supplied as IP00, without braking unit. IP31 terminal box kit and braking unit to be ordered separately.
(8) Dimensions with IP21 top cover and terminal box installed, without additional options. Dimensions for frame size 7 include optional IP31 terminal box kit. Weights are for the largest drive in the frame size.

International approvals

Altivar Process ATV900

Product configurator available on se.com/nz

Variable speed drives for 3-phase motors 0.75kW to 800kW
Embedded digital services to boost industrial and utility process efficiency
Integrated EMC filter, conformal coating, graphic display, Ethernet, and SIL3 safety

ATV950D15N4

ATV950D30N4E - version with Vario disconnect switch

ATV950C31N4F

ATV950 IP55 wall mounting 0.75…90kW

Normal duty (1)		**Heavy duty** (2)					
120% overload for 60s		150% overload for 60s					
Motor power	Nominal output current	Motor power	Nominal output current	Recommended circuit breaker (2)	Power dissipation (3)	Frame size	Reference (4)
kW	A	kW	A		W		
400V 3-ph supply: 380...480V 50/60Hz, integrated EMC filter (5), IP55							
0.75	2.2	0.37	1.5	GV2L07	47	A	**ATV950U07N4**
1.5	4	0.75	2.2	GV2L08	69	A	**ATV950U15N4**
2.2	5.6	1.5	4	GV2L10	90	A	**ATV950U22N4**
3	7.2	2.2	5.6	GV2L14	109	A	**ATV950U30N4**
4	9.3	3	7.2	GV2L14	130	A	**ATV950U40N4**
5.5	12.7	4	9.3	GV2L16	182	A	**ATV950U55N4**
7.5	16.5	5.5	12.7	GV2L20	216	A	**ATV950U75N4**
11	23.5	7.5	16.5	GV2L22	306	A	**ATV950D11N4**
15	31.7	11	23.5	GV3L32	425	A	**ATV950D15N4**
18.5	39.2	15	31.7	GV3L40	527	A	**ATV950D18N4**
22	46.3	18.5	39.2	GV3L50	573	A	**ATV950D22N4**
30	61.5	22	46.3	GV3L65	733	B	**ATV950D30N4**
37	74.5	30	61.5	GV4L80●	902	B	**ATV950D37N4**
45	88	37	74.5	GV4L115●	1064	B	**ATV950D45N4**
55	106	45	88	GV4L115●	1048	C	**ATV950D55N4**
75	145	55	106	NSX160●MA150	1543	C	**ATV950D75N4**
90	173	75	145	NSX250●MA220	1781	C	**ATV950D90N4**

ATV950 IP54 floor standing 110…315kW

Normal duty (1)		Heavy duty (2)					
120% overload for 60s		150% overload for 60s					
Motor power	Nominal output current	Motor power	Nominal output current	Recommended circuit breaker (2)	Power dissipation (3)	Frame size	Reference (6)
kW	A	kW	A		W		
400V 3-ph supply: 380...440V 50/60Hz, integrated EMC filter (5), IP54 separated airflow							
110	211	90	173	NSX250●MA220	2530	FA	**ATV950C11N4F**
132	250	110	211	NSX400●ML 1.3-M	3150	FA	**ATV950C13N4F**
160	302	132	250	NSX400●ML 1.3-M	4030	FA	**ATV950C16N4F**
200	370	160	302	NSX630●ML 1.3-M	4380	FB	**ATV950C20N4F**
250	477	200	370	NSX630●ML 1.3-M	5750	FB	**ATV950C25N4F**
315	590	250	477	NS800L ML 2 or 5	7810	FB	**ATV950C31N4F**

For sizes larger than 315kW, refer to ATV960/980 floor standing drive systems

Models also available:

> 400V 3-ph supply: 380...480V, 110...800kW floor standing IP23/IP54 drive systems
> 690V 3-ph supply: 500…690V, 110…1200kW floor standing IP23/IP54 drive systems

Dimensions and weight (7)

Frame size	Drive ATV950...	Dimensions H x W x D mm	Weight kg
A	U07N4...D22N4	678 x 264 x 299	20.6
B	D30N4...D45N4	910 x 290 x 340	50
C	D55N4...D90N4	1250 x 345 x 375	87
FA	C11N4F...C16N4F	2350 x 400 x 600	310
FB	C20N4F...C31N4F	2350 x 600 x 600	420

Notes

(1) Normal duty: nominal output current with 120% overload for 60s, suitable for variable torque or light starting loads.
Heavy duty: nominal output current with 150% overload for 60s, suitable for constant torque loads.
Ratings at nominal switching frequency, for an ambient temperature of up to 40°C.
Typical kW ratings for a standard AC 3-ph 4-pole motor, 400V 50Hz supply.
(2) Refer to Section P for complete circuit breaker and line contactor co-ordination information.
(3) Total power dissipation at normal duty nominal rating.
(4) Wall mounting products are supplied with cable glands. For version with integrated Vario mains disconnect switch, add 'E' to the end of the reference.
(5) Integrated EMC filter for IEC/EN61800-3 category C2 (residential) for drives up to 45kW. Category C3 (industrial) for all larger sizes.
(6) Floor standing products include mains disconnection switch, semi-conductor fuses, line reactor, EMC filter, and dV/dt output filter as standard equipment.
(7) Dimensions and weights are for the largest drive in the frame size.

Accessories and replacement parts

ATV630C11N4 with VW3A9704 IP21 kit

ATV630U15N4 with NSYPTDS1 flange mounting kit inside an enclosure

XB4BD912R4K7

Accessories

Description	For drive	kW	ATV630/930…	Use with BU (1)	Reference
Wall mounting terminal box kit IP21 or IP31	ATV630	110...160	C11N4...C16N4	-	**VW3A9704**
		220	C22N4	-	**VW3A9112**
		250, 315	C25N4, C31N4	-	**VW3A9113**
	ATV930	110…160	C11N4...C16N4	-	**-**
			C11N4C…C16N4C	-	**VW3A9704**
		220	C22N4	-	**VW3A9112**
		250, 315	C25N4C, C31N4C	No	**VW3A9113**
				Yes	**VW3A9114**
Flange mounting kit Reduces heat dissipation within the enclosure, maintains an IP54 rating		0.75...5.5	U07N4...U55N4	-	**NSYPTDS1**
		7.5, 11	U75N4, D11N4	-	**NSYPTDS2**
		15...22	D15N4...D22N4	-	**NSYPTDS3**
		30...45	D30N4...D45N4	-	**NSYPTDS4**
		55...90	D55N4...D90N4	-	**NSYPTDS5**
		110…160	C11N4...C16N4	-	**VW3A95116**
		220	C22N4	-	**VW3A9513**
		250, 315	C25N4, C31N4	No	**VW3A9514**
			C25N4C, C31N4C	Yes	**VW3A9515**
Enclosure mounting brackets Enclosure mounting kit for use with flange mounted drive. Kit contains 4x brackets.			NSYPTDS1…S3		**NSYAEFPFPTD**
Speed reference potentiometer IP20 2.2kΩ, with dial and knob					**SZ1RV1202**
Speed reference potentiometer IP69 (2) 4.7kΩ Harmony Ø22 mounting with head and base			XB4 metal head		**XB4BD912R4K7**
			XB5 plastic head		**XB5AD912R4K7**

Replacement parts (3)

Description	For drive	kW		Required qty	Reference
Replacement power fans Wall mounting drives	ATV630/650 ATV930/950	0.75...5.5	U07N4...U55N4	1	**VX5VPS1001**
		7.5, 11	U75N4, D11N4	1	**VX5VPS2001**
		15...22	D15N4...D22N4	1	**VX5VPS3001**
		30...45	D30N4...D45N4	1	**VX5VPS4001**
		55...90	D55N4...D90N4	1	**VX5VPS5001**
		110...160	C11N4...C16N4	1	**VX5VPS6001**
		220	C22N4	1	**VZ3V1212**
		250, 315	C25N4, C31N4	2	
Replacement internal fans Wall mounting drives	ATV650/950	0.75...22	U07N4...D22N4	1	**VX5VP50A001**
		30...90	D30N4...D90N4	1	**VX5VP50BC001**
	ATV630/930	220	C22N4	1	**VZ3V1213**
		250, 315	C25N4, C31N4	2	
Replacement power fans Floor standing drives	ATV650F/950F	110…160	C11N4F...C16N4F	1	**VX5VPM001**
		200…315	C20N4F…C31N4F	2	
Replacement door fans Floor standing drives	ATV650F/950F	110…315	C11N4F...C31N4F	1	**VX5VPM002**
Replacement door fan filters Floor standing drives	ATV650F/950F	110…160	C11N4F...C16N4F	2	**NSYCAF223**
		200…315	C20N4F...C31N4F	2	**NSYCAF291**

Notes

(1) When used with Braking Unit.
(2) Refer to section J for more options.
(3) Refer to Schneider Electric for all drive servicing needs.

Display and configuration tools

VW3A1111

Remote display terminal

Supplied with the drive, the graphic display terminal has the following characteristics:
- Mounting options: on the front of the drive, or remotely on a panel using remote mounting accessories
- Connections: Modbus RJ45 to one drive, or several drives in multi-drop mode. Mini-USB port for connection to PC
- Uses: configure, control and monitor the drive, display process values and dashboards, store and download configurations, copy configurations from one drive to another or from a PC
- Display: 240x160 pixels, 8 lines, bi-colour (white/red) backlight, 23 languages, embedded dynamic QR codes for contextual help using web-connected smartphone or tablet, graphic display of trend curves (energy and process data)
- Other characteristics: IP65, capacitive touch buttons, real-time clock with battery backup, 16MB memory

Description	Item number	Length m	Reference
Graphic display terminal Supplied with the drive	1		**VW3A1111**
Remote mounting kit IP65, 22.5mm Ø hole mounting	2		**VW3A1112**
Remote display cable Equipped with 2x RJ45 connectors	3	1	**VW3A1104R10**
		3	**VW3A1104R30**
		5	**VW3A1104R50**
		10	**VW3A1104R100**
Graphic display port blanking plate Covers port when graphic display is removed. Pack of 10.			**VW3A1116**
USB A/mini-B USB cable For connecting graphic display to PC		3	**TCSXCNAMUM3P**

Components for panel mounting of graphic terminal

Configuration tools

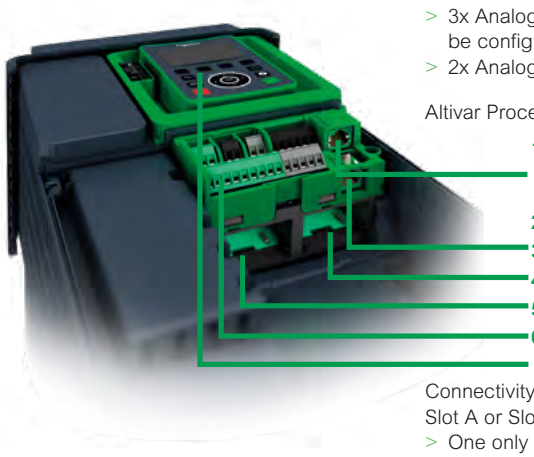
Description	For drive ATV630/930…	Length m	Reference
SoMove configuration software Free to download from www.se.com/nz/somove			**-**
USB-Modbus RJ45 cable Connects PC USB port to the drive modbus port			**TCSMCNAM3M002P**
Remote IP65 Ethernet port kit RJ45 port for remote Ethernet connection e.g. at drive terminal box. 22.5mm Ø hole mounting, requires remote Ethernet port cable.			**VW3A1115**
Remote Ethernet port cable	U07N4...D11N4	0.3	**VW3CANCARR03**
Connects drive Ethernet port to remote IP65 Ethernet port kit, mounted in drive IP21 terminal box.	D15N4...C31N4	1	**VW3CANCARR1**

VW3A1116

IP65 Ethernet port VW3A1115

I/O expansion and communication options

Integrated I/O and communication ports



Altivar Process ATV600:

> 6x Digital Inputs, 24VDC sink or source, multi-function assignable.
> 2x Safe Torque Off (STO) Inputs, dedicated safety function to SIL3, PLe.
> 3x Relay Outputs, R1 with NO and NC contacts, R2 and R3 with NO contacts. Max. 250VAC or 30VDC, 5A resistive or 2A inductive load.
> 3x Analogue Inputs, configurable as voltage (0...10V) or current (0...20mA/4...20mA). AI2 and AI3 can be configured to monitor sensor probes (PTC, PT100, PT1000, or KTY84).
> 2x Analogue Outputs, configurable as voltage (0...10V) or current (0...20mA).

Altivar Process ATV600 drives include the following interface ports as standard:

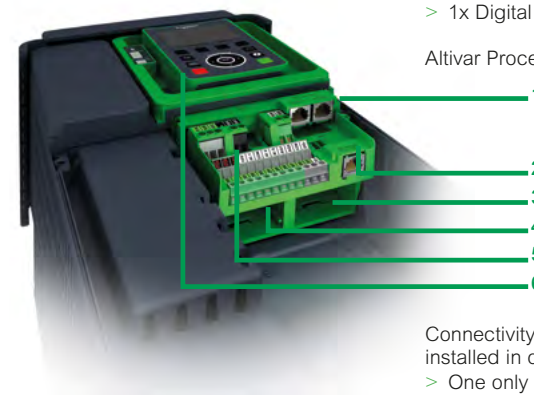
1. Ethernet Modbus TCP, 1x RJ45 port for control and monitoring. Supports SNMP, FDR, embedded web server, access security, connection to setup and monitoring tools (SoMove, Unity DTM).
2. Serial Modbus RS-485 RTU, 1x RJ45 port. Multi-drop connection to Modbus network
3. Slot A for I/O expansion or communcation card
4. Slot B for I/O expansion card
5. Removable terminals for field I/O wiring, colour coded
6. Serial Modbus RS-485 RTU, 1x RJ45 port for HMI (graphic display terminal, Magelis etc.), or PC with SoMove or Unity software

Connectivity can be extended with I/O expansion cards and communication cards installed in option Slot A or Slot B:

> One only communication card in Slot A
> Up to two I/O expansion cards in Slot A and/or Slot B. The I/O expansion cards must be of a different type, i.e. one logic expansion card and one relay output card

Altivar Process ATV900:

> 8x Digital Inputs, 24VDC sink or source, multi-function assignable.
> 2x Safe Torque Off (STO) Inputs, dedicated safety function to SIL3, PLe.
> 3x Relay Outputs, R1 with NO and NC contacts, R2 and R3 with NO contacts. Max. 250VAC or 30VDC, 5A resistive or 2A inductive load.
> 3x Analogue Inputs, configurable as voltage (0...10V) or current (0...20mA/4...20mA). AI1 can be configured as 0…±10V). AI2 and AI3 can be configured to monitor sensor probes (PTC, PT100, PT1000, or KTY84).
> 2x Analogue Outputs, configurable as voltage (0...10V) or current (0...20mA).
> 1x Digital Output



Altivar Process ATV900 drives include the following interface ports as standard:

1. Ethernet Modbus TCP / EtherNet/IP, 2x RJ45 ports for control and monitoring. Supports EtherNet/IP CIP objects compliant to ODVA specification, RSTP, SNMP, FDR, embedded web server, access security, connection to setup and monitoring tools (SoMove, Unity DTM).
2. Serial Modbus RS-485 RTU, 1x RJ45 port. Multi-drop connection to Modbus network.
3. Slot A for I/O expansion or communcation card
4. Slot B for I/O expansion or encoder interface card
5. Removable terminal block for field I/O wiring, colour coded
6. Serial Modbus RS-485 RTU, 1x RJ45 port for HMI (graphic display terminal, Magelis etc.), or PC with SoMove or Unity software

Connectivity can be extended with I/O expansion cards, communication cards, and encoder cards installed in option Slot A or Slot B:

> One only communication card in Slot A.
> Up to two I/O expansion cards in Slot A and/or Slot B. The I/O expansion cards must be of a different type, i.e. one logic expansion card and one relay output card.
> One only encoder interface card in Slot B.

Safety functions are extended via safety expansion card and additional option module support (Slot C).

I/O expansion and communication options

VW3A3203

VW3A3204

VW3A3720

VW3A3725

I/O expansion cards

Description	I/O type				Reference
	Logic inputs	Logic outputs	Analogue inputs	Relay outputs	
Logic and analogue I/O card	6	2	2 (1)	-	**VW3A3203**
Relay output card	-	-	-	3 (2)	**VW3A3204**

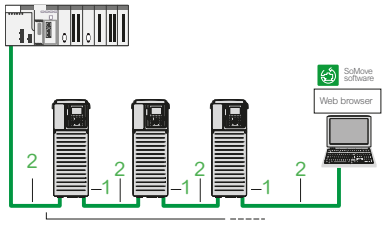
Communication cards

Description	Compatibility ATV600	ATV900	Connector type	Reference
Ethernet Modbus TCP and EtherNet/IP	●	-	2x RJ45	**VW3A3720**
Ethernet Modbus TCP and EtherNet/IP with Multi-Drive Link (3)	●	-	2x RJ45	**VW3A3721**
DeviceNet	●	●	Terminals	**VW3A3609**
PROFIBUS DP V1	●	●	SUB-D9	**VW3A3607**
PROFINET	●	●	2x RJ45	**VW3A3627**
CANopen RJ45 daisy-chain	●	●	2x RJ45	**VW3A3608**
CANopen with SUB-D9 connector	●	●	SUB-D9	**VW3A3618**
CANopen with terminal connector	●	●	Terminals	**VW3A3628**
EtherCAT	–	●	2x RJ45	**VW3A3601**
BACnet MSTP	●	–	Terminals	**VW3A3725**

Communication accessories

Description		Connector type	Length m	Reference
Modbus serial accessories	Modbus cable	RJ45	0.3	**VW3A8306R03**
			1	**VW3A8306R10**
			3	**VW3A8306R30**
	Modbus tap	RJ45	0.3	**VW3A8306TF03**
			1	**VW3A8306TF10**
	Modbus 10 way splitter hub	RJ45	-	**LU9GC3**
	2x Modbus RC line terminators	RJ45	-	**VW3A8306D30**
	Modbus tap	Terminals	-	**TSXSCA50**
	Modbus cable	-	100	**TSXCSA100**
	2x Modbus RC line terminators	Terminals	-	**VW3A8306DRC**
CANopen accessories	CANopen cable 2x RJ45	RJ45	0.3	**VW3CANCARR03**
			1	**VW3CANCARR1**
	2x CANopen line terminators	RJ45	-	**TCSCAR013M120**
	CANopen connector SUB-D9	SUB-D9	-	**TSXCANKCDF180T**
	CANopen cable standard	-	50	**TSXCANCA50**
			100	**TSXCANCA100**
			300	**TSXCANCA300**
	2x CANopen line terminators	Terminals	-	**TCSCAR01NM120**
	CANopen junction box	2x RJ45 2x Terminals	-	**VW3CANTAP2**
Ethernet accessories (4)	Ethernet ConneXium cable Cat 5 STP	RJ45	2	**490NTW00002**
			5	**490NTW00005**
			12	**490NTW00012**

Example Ethernet/IP daisy-chain network:
1 ATV900, or ATV600 with VW3A3720
2 490NTW00002



Notes

(1) Configurable as voltage (0...10V, -10...+10V), current (0...20mA, 4...20mA), or probe (PTC, PT100, or 2-wire or 3-wire PT1000, KTY) inputs. PTC input must not be used to protect an ATEX motor in explosive atmospheres. Please refer to the ATEX guide on our website.
(2) Normally Open (NO) contacts.
(3) Supports Multi-VSD pump control over Ethernet via Multi-Drive Link.
(4) Refer to section N for ConneXium Ethernet switches and accessories.

Encoder interface and safety cards (ATV900)

VW3A3420

VW3A3422

VW3A3423

VW3A3802

VW3A3800

Encoder interface cards

Encoder interface cards are used for closed-loop motor control modes, allowing extremely accurate speed regulation, improved torque response, and highly dynamic performance of the drive system. The ATV900 drive can support one encoder card, inserted into option slot B.

Description	Encoder type	Used with encoder (1)	Connector type	Reference
Digital encoder card	RS422, RS485 A/B/I	XCC1•••••••R XCC1•••••••X	SUB-D15	**VW3A3420**
	SSI	XCC2•••••••S•• XCC3•••••••S••		
	EnDat® 2.2	-		
Analogue encoder card	SinCos 1 Vpp SinCos Hiperface®	-	SUB-D15	**VW3A3422**
Resolver interface card	Resolver	-	SUB-D9	**VW3A3423**
HTL encoder card	Push/Pull Open collector	XCC1•••••••Y XCC1•••••••K•	Terminals	**VW3A3424**
Encoder cable			SUB-D15	**VW3M4701**
Prefabricated cable with 1x SUB-D15 connector, 1x free end, 1m length				

Safety expansion module (2)

Altivar 900 series drives include STO (Safe Torque Off) function to SIL3 as standard. The safety expansion module offers the following safety functions compliant with standard IEC/EN 61800-5-2:

- Safe Stop 1 (SS1)
- Safe Limited Speed (SLS)
- Safe Maximum Speed (SMS)
- Safe Brake Control (SBC)

Altivar 900 drives require the additional module support (VW3A3800) to accommodate the safety expansion module (VW3A3802). Connection cables and a safety module distribution unit supports the wiring of up to 5 drives with safety expansion modules. Configuration of the safety parameters is via SoMove PC software with Altivar 900 DTM. The Altivar 900 drive requires specific firmware to support the safety module, please contact Schneider Electric to assist with product compatibility and start up support.

Description	Length m	Reference
Safety expansion module		**VW3A3802**
Safety module with safety functions SS1, SLS, SMS, and SBC. 24Vdc supply, 1x 24 way male connector		
Additional module support		**VW3A3800**
Provides an option slot for the safety expansion module		
Connection cable 1x 24 way female connector, 1x open end	3	**VW3M8801R30**
For connection of field wiring to the safety module		
Safety module distribution unit		**VW3M8810**
Connection base for up to 5 safety modules via 24 way connectors. Spring terminal connectors for common safety wiring. DIN rail mounting within an enclosure.		
Connection cable 2x 24 way female connectors	1.5	**VW3M8802R15**
For connection between safety module(s) and a safety distribution unit	3	**VW3M8802R30**
Interlock jumper connector		**VW3M8820**
24 way connector with interlock jumper, 4 pcs		

1 ATV930 drive
2 Additional module support VW3A3800
3 Graphic terminal
4 Front cover
5 Safety module VW3A3802
6 Connection cable VW3M8801R30

Notes

(1) To complete the reference, please refer to Rotary Encoders in section K, or to our website.
(2) Available Q1 2021 for ATV930/950 drives only. Requires specific firmware and start up support - contact Schneider Electric. Additional safety functions and compatibility with entire ATV900 series will be available in a future release.

Braking options (ATV900)

VW3A7105

Braking units (1)

Braking units allow ATV900 drives to control the motor during braking or 'generator' mode e.g. to stop a high inertia load or when lowering a hoist. The braking power is dissipated via a braking resistor (to be ordered separately). Drives ATV930U07N4...C22N4 and ATV950U07N4...D90N4 include an integrated braking unit. A separate braking unit is required for ATV930C11N4C...C31N4C. Alternatively, Altivar Process ATV980 regenerative drive systems offer 4-quadrant operation and return braking power to the grid.

Description	For drive ATV930…	Power Cont.	Power Max.	Braking factor %	Reference
Braking unit IP20	C11N4C…C16N4C	100kW	160kW	5% at 320kW 15% at 250kW 50% at 200kW	**VW3A7105 (2)**
	C25N4C, C31N4C	200kW	420kW	5% at 420kW 15% at 320kW 50% at 250kW	**VW3A7101 (3)**

VW3A7741

VW3A7751

Braking resistors (1)

Braking resistors allow the drive to dissipate the energy generated by the motor during a controlled or rapid deceleration of high inertia or vertical loads. The resistors are IP20 or IP23 and have an integrated thermal protection switch. Several duty ratings are available to suit the braking cycle requirements of the application. Tn is nominal motor torque for a heavy duty rated drive, and the average braking power is for an ambient temperature of 50°C.

Motor (4) kW	For drive ATV930/950…	Resistor kW	Resistor Ω	Resistor IP	Qty per drive	Reference
Light duty: 0.8s braking with 150% Tn braking torque for a 40s cycle						
0.37…3	U07N4…U40N4	0.1	100	IP20	1	**VW3A7730**
4, 5.5	U55N4, U75N4	0.16	60	IP20	1	**VW3A7731**
7.5, 11	D11N4, D15N4	0.3	28	IP20	1	**VW3A7732**
15…22	D18N4…D30N4	1.1	16	IP20	1	**VW3A7733**
30, 37	D37N4, D45N4	1.1	10	IP20	1	**VW3A7734**
45	D55N4	1.1	8	IP20	1	**VW3A7735**
55, 75	D75N4, D90N4	1.9	5	IP23	1	**VW3A7736**
90…132	C11N4C…C16N4C	3.2	2.5	IP23	1	**VW3A7737**
160…200	C22N4, C25N4C	5.1	1.4	IP23	1	**VW3A7748**
250	C31N4C	3.2	2.5	IP23	2	**VW3A7737**
Medium duty: 4s braking with 165% Tn braking torque for a 40s cycle						
0.37…0.75	U07N4, U15N4	0.1	100	IP20	1	**VW3A7730**
1.5…3	U22N4…U40N4	0.26	100	IP20	1	**VW3A7740**
4, 5.5	U55N4, U75N4	0.5	60	IP20	1	**VW3A7741**
7.5, 11	D11N4, D15N4	1.1	28	IP20	1	**VW3A7742**
15…22	D18N4…D30N4	2.2	16	IP20	1	**VW3A7743**
30, 37	D37N4, D45N4	3.4	10	IP20	1	**VW3A7744**
45	D55N4	3.8	8	IP23	1	**VW3A7745**
55, 75	D75N4, D90N4	6.9	5	IP23	1	**VW3A7746**
90…132	C11N4C…C16N4C	11	2.5	IP23	1	**VW3A7747**
160…250	C22N4…C31N4C	29	1.4	IP23	1	**VW3A7757**
Severe duty: 54s of braking with 100% Tn braking torque and 6s of braking with 165% Tn braking torque for a 120s cycle						
0.37…3	U07N4...U40N4	1.7	100	IP20	1	**VW3A7750**
4, 5.5	U55N4, U75N4	3.4	60	IP20	1	**VW3A7751**
7.5, 11	D11N4, D15N4	5.1	28	IP23	1	**VW3A7752**
15…22	D18N4…D30N4	14	16	IP23	1	**VW3A7753**
30, 37	D37N4, D45N4	19	10	IP23	1	**VW3A7754**
45	D55N4	25	8	IP23	1	**VW3A7755**
55	D75N4	32	5	IP23	1	**VW3A7756**
75	D90N4	19	10	IP23	2	**VW3A7754**
90…132	C11N4C…C16N4C	32	5	IP23	2	**VW3A7756**
160, 200	C22N4, C25N4C	32	5	IP23	3	
250	C31N4C	32	5	IP23	4	

ATVRU75N4

Regenerative braking units

Regenerative braking units direct energy to the grid during braking cycles, reducing heat dissipation and improving energy efficency compared to braking resistors. Up to three regenative units can be connected in parallel depending on the required braking power. One or several drives can be connected via the DC bus to the braking unit. Refer to the product manual, sizing tool, and contact Schneider Electric for application advice.

Description	Supply Voltage	kW	Reference
Regenerative braking unit IP20	400V 3-ph	7.5kW	**ATVRU75N4**
		15kW	**ATVRD15N4**

Notes

(1) Not compatible with floor standing drives ATV950F 110…315kW. Refer to ATV960/980 drive systems.
(2) Only compatible with ATV930C11N4C…C16N4C drives. ATV930C11N4…C16N4 drives include braking unit.
(3) Braking unit mounts directly on the left side of the drive. If wall mounting, use terminal box IP21 kit VW3A9114.
(4) Drive sized for heavy duty application.

Additional EMC input filters

Integrated EMC input filters

Altivar Process drives have integrated radio interference input filters allowing the drive to be installed in accordance with EMC standards for power drive products, IEC/EN 61800-3, edition 2. Depending on the environment the drive is to be installed into, it may be necessary to use additional EMC input filters.

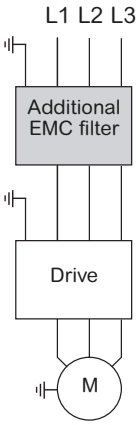
Integrated EMC input filter maximum screened cable length for compliance with IEC/EN 61800-3 (1)

			1st environment (residential)		2nd environment (industrial)
			C1	C2	C3
Drive	kW		m	m	m
ATV630/930 IP21 wall mounting	0.75...45	U07N4...D45N4	-	50	150
	55...160	D55N4...C16N4	-	-	150
	220...315	C22N4...C31N4	-	-	50
ATV650/950 IP55 wall mounting	0.75...45	U07N4...D45N4	-	50	150
	55...90	D55N4...D90N4	-	-	150
ATV650F/950F IP54 floor standing	110...315	C11N4F...C31N4F	-	-	300

Guide to EMC compliant installation

- Maximum cable lengths are given as a guide only, for screened (shielded) motor cables, at the drive nominal switching frequency. The actual length varies depending on the characteristics of the installation, including the motor, cables and overall EMC plan.
- Use 'VSD' type screened motor cables, with the screen bonded to both the VSD and the motor chassis ground. Use the supplied cable clamps and/or EMC type metal cable glands for sufficient high frequency bonding of the screen to ground.
- The drive should be installed as per the installation instructions for EMC compliant installation.
- If several motors are connected in parallel, it is the sum of the cable lengths that should be taken into account.
- Stated cable lengths are for EMC purposes only - please refer to the output filters section for maximum operating cable lengths for the drive.

Additional EMC input filters



Additional EMC input filters can be used to meet more stringent EMC requirements, reducing conducted emissions on the line supply according to standard IEC/EN 61800-3 category C1, C2 or C3 for extended cable lengths. Additional filters can be used on TN (MEN) and TT supply networks. For IT systems (isolated or impedance grounded neutral), EMC filters can cause insulation monitors to operate in a random manner.

Additional EMC input filter maximum screened cable length for compliance with IEC/EN 61800-3 (1)

			1st environment (residential)		2nd environment (industrial)
			C1	C2	C3
Drive	kW		m	m	m
ATV630/930 IP21 wall mounting	0.75...45	U07N4...D45N4	50	150	300
	55...160	D55N4...C16N4	50	150	300
	220...315	C22N4...C31N4	50	300	300
ATV650/950 IP55 wall mounting	0.75...45	U07N4...D45N4	50	150	300
	55...90	D55N4...D90N4	50	150	300

Note

(1) IEC/EN 61800-3 defines limits for conducted and radiated radio frequency emissions in several types of environments. Categories C1 and C2 are for 1st environment (domestic) installations, connected to a public supply. Category C3 is for 2nd environment (industrial) installations. Lengths given as a guide only, as the actual length varies depending on the characteristics of the installation, including the motor, cables and overall EMC plan.

VW3A4701

VW3A47901

Additional EMC input filters (continued)

Description	For drive kW	ATV630/930... ATV650/950... (1)	IP rating	Frame size	Reference
Additional EMC input filter IP20 or IP00	0.75...2.2	U07N4...U22N4	20	1	**VW3A4701**
	3...5.5	U30N4...U55N4	20	2	**VW3A4702**
	7.5...15	U75N4...D15N4	20	3	**VW3A4703**
	18.5, 22	D18N4, D22N4	20	4	**VW3A4704**
	30	D30N4	20	5	**VW3A4705**
	37, 45	D37N4, D45N4	20	6	**VW3A4706**
	55	D55N4	20	7	**VW3A4707**
	75, 90	D75N4, D90N4	20	8	**VW3A4708**
	110, 132	C11N4, C13N4	00	9	**VW3A4709**
	160	C16N4	00	10	**VW3A4710**
	220...315	C22N4...C31N4	00	11	**VW3A4411**
Protection kit for EMC input filter Terminal cover for IP21 or IP30 protection		For EMC filter			
		VW3A4701	21		**VW3A47901**
		VW3A4702	21		**VW3A47902**
		VW3A4703	21		**VW3A47903**
		VW3A4704	21		**VW3A47904**
		VW3A4705	21		**VW3A47905**
		VW3A4706	21		**VW3A47906**
		VW3A4707	21		**VW3A47907**
		VW3A4708	21		**VW3A47908**

Dimensions and weight (2)

Frame size	Dimensions H x W x D mm	Weight kg
1	230 x 75 x 135	2
2	250 x 75 x 140	2.4
3	290 x 80 x 160	4.1
4	300 x 90 x 170	5.2
5	330x 100 x 180	6.1
6	350 x 130 x 190	6.5
7	400 x 140 x 242	8.5
8	450 x 242 x 320	9.5
9	520 x 260 x 117	15
10	520 x 260 x 117	17
11	261 x 800 x 139	25

Note

(1) When used with IP55 drives, the additional EMC filter will have to be mounted inside a separate enclosure of a suitable IP rating for the installation.

(2) Dimensions and weight exclude protection kit option.

Harmonic mitigation

Altivar Process ATV680
Low Harmonic drive

AccuSine+ active filter

VW3APFD90NZ

Harmonics are a growing concern in all aspects of electrical systems engineering and management. Schneider Electric engineers draw on vast experience and a broad range of technologies to offer the optimum harmonics mitigation solution for your application.

Summary of harmonics mitigation solutions:

Installation level	Harmonic technology	Typical THDi performance	Drive model	Typical power
Drive	Reduced capacitor	<35%	Altivar 212	<90kW
Drive	AC/DC choke	<48%	All	All
Drive	Adaptive passive filter	<5%	All	<315kW
Drive	3-Level AFE	<4%	Altivar 680/980	>90kW
Network	Active filter	<5%	All with choke	>22kW
Network/drive*	Multi-pulse	<12%	All/Altivar 600/900	>90kW

* Multi-pulse transformer/drive required. Load staggering configuration also possible.

Altivar Process harmonic solutions

1. **Standard drives ATV630/650/660/930/950/960:** Integrated AC or DC chokes reduce current harmonic distortion (THDi) in compliance with standard IEC/EN 61000-3-12. The chokes are specifically designed to reduce THDi to <48% for 80% to 100% of the load range, corresponding to most frequent operation. Compatible with additional mitigation solutions e.g. adaptive passive filters, active filters.
2. **Adaptive passive filters:** Robust filters with simple installation and unique magnetic design to mitigate harmonics while maintaining excellent overall power factor.
3. **Low Harmonic/regenerative drives ATV680/980:** Embedded 3-level AFE (active front end) technology reduces THDi to <4% while improving efficiency, dimensions, and motor reliability compared to traditional 2-level AFE drives. Refer to Altivar Process ATV680/980 drive systems for more information.
4. **Active harmonic filters:** AccuSine PCS+ is a flexible, high performance, cost-effective solution to stabilise electrical networks by providing harmonic mitigation, power factor correction and load balancing. Refer to Section E for more information.

Adaptive passive filters

Adaptive Passive Filter technology for <5% THDi at full load and <8% THDi at 30% load (1), while maintaining excellent overall power factor and efficiency. Compact IP21 floor mounting enclosure, simple wiring and installation, fan-less operation.

Motor kW	ATV630/650... ATV930/950...	Filter A	Frame size	Reference
400V 3-ph 50Hz supply, <5% THDi (2), IP21				
0.75...2.2	075N4...U22N4	6	1	**VW3APFU22NZ**
3	U30N4	8	1	**VW3APFU30NZ**
4	U40N4	11	1	**VW3APFU40NZ**
5.5	U55N4	14	1	**VW3APFU55NZ**
7.5	U75N4	21	1	**VW3APFU75NZ**
11, 15	D11N4, D15N4	27	1	**VW3APFD15NZ**
18.5	D18N4	34	1	**VW3APFD18NZ**
22	D22N4	44	1	**VW3APFD22NZ**
30	D30N4	66	2	**VW3APFD30NZ**
37, 45	D37N4, D45N4	83	2	**VW3APFD45NZ**
55	D55N4	103	2	**VW3APFD55NZ**
75, 90	D75N4, D90N4	165	3	**VW3APFD90NZ**
110	C11N4	208	3	**VW3APFC11NZ**
132	C13N4	240	3	**VW3APFC13NZ**
160	C16N4	320	4	**VW3APFC16NZ**
200, 220	C20N4, C22N4	403	4	**VW3APFC22NZ**
250	C25N4	482	5	**VW3APFC25NZ**

Dimensions and weight (2)

Frame size	H x W x D mm	Weight kg
1	610 x 319 x 582	61
2	818 x 464 x 661	103
3	1303 x 704 x 762	222
4	1930 x 704 x 863	306
5	2224 x 1110 x 1120	335

Notes

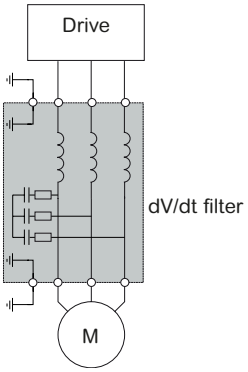
(1) Performance data is typical and relative to the passive filter load, for a supply with less than 2.5% THDv and 1% inbalance. Power Factor: +0.95 to -0.95 for 30...100% load.

(2) Dimensions include lifting lugs. Weight is for the largest unit in the frame size. Please consult the installation manual for full details.

Output filters

Maximum operating cable lengths

Altivar Process drives have been designed to operate with a maximum motor cable length of 150m for shielded cables and 300m for unshielded cables, without the need for additional output filters when 'inverter' rated (1) motors are used. To limit the impact of dV/dt and peak voltages, especially for cable lengths exceeding 50m, it is recommended to check the motor insulation type and use an output filter if necessary. For further information, please consult our white paper 'An improved approach for connecting variable speed drives and electric motors', available on our website.



dV/dt output filters

dV/dt output filters limit the dV/dt and peak voltage at the motor terminals, with the following benefits:

- Increases the maximum shielded cable length to up to 300m (up to 500m with unshielded cable)
- Limits dV/dt to less than 500V/µs
- Limits peak voltage (for a 400V supply) at the motor terminals to:
  - 800V for up to 50m of shielded motor cable
  - 1000V for up to 150m of shielded motor cable
  - 1500V for up to 300m of shielded motor cable
- Reduces stress on motor insulation, reducing instances of '1st turn winding' failures, increasing motor life
- Reduces motor earth leakage current

Floor standing ATV650F/950F drives include dV/dt output filters as standard.

VW3A5301

VW3A53902

Description	For drives kW	ATV630/650… ATV930/950... (2)	IP rating	Max cable length (3) m	Frame Size	Reference
dV/dt output filter	0.75...2.2	U07N4...U22N4	20	300	1	**VW3A5301**
	3...5.5	U30N4...U55N4	20	300	2	**VW3A5302**
	7.5, 11	U75N4, D11N4	20	300	3	**VW3A5303**
	15...22	D15N4...D22N4	20	300	4	**VW3A5304**
	30...45	D30N4...D45N4	20	300	5	**VW3A5305**
	55...90	D55N4...D90N4	00	300	6	**VW3A5306**
	110...160	C11N4...C16N4	00	300	7	**VW3A5307**
	220	C22N4	00	250	8	**VW3A5106**
	250, 315	C25N4, C31N4	00	200	9	**VW3A5107**
Protection kit for dV/dt filter		For dV/dt filter				
Cover for IP21/20 protection		VW3A5301 VW3A5302 VW3A5303	21			**VW3A53902**
		VW3A5304	21			**VW3A53903**
		VW3A5305	21			**VW3A53905**
		VW3A5306	-			**-**
		VW3A5307	-			**-**
		VW3A5106 VW3A5107	20			**VW3A9613**

Dimensions and weight (4)

Frame size	H x W x D mm	Weight kg
1	530 x 295 x 215	11
2	530 x 295 x 215	12
3	530 x 295 x 215	12
4	560 x 300 x 245	18
5	610 x 300 x 245	19
6	380 x 350 x 235	22
7	420 x 360 x 270	40
8	3x (250 x 245 x 200)	58
9	3x (250 x 320 x 220)	93

Notes

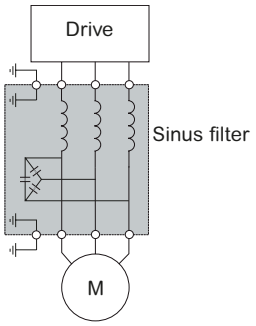
(1) Motors that conform to standards for use with inverter drives, such as IEC 6034-25 and NEMA MG1/31.2006.

(2) When used with IP55 drives, the dV/dt filter may have to be mounted inside a separate enclosure of a suitable IP rating for the installation. Floor standing ATV650/950F drives include dV/dt output filters as standard.

(3) Maximum cable lengths are given as a guide only as they can vary depending on the application. The values are given for shielded cables, at the nominal drive switching frequency - operating at a higher switching frequency or with longer cable lengths may cause the filter to overheat. When several motors are connected in parallel, the sum of the cable lengths must be taken into account.

(4) Dimensions and weight exclude protection kit option.

Output filters



Sinus output filters

Sinus filters allow Altivar Process drives to operate with very long motor cables, while greatly reducing electromagnetic interference emissions. The output waveform is close to a sine wave, eliminating effects of dV/dt and peak voltage on the motor.

Sinus filters have the following benefits:

- Allows the drive to operate with very long motor cable runs (up to 500m screened, up to 1000m unscreened)
- EMC compliance with unscreened motor cables, especially where mechanical restrictions mean screened cables cannot be used
- Elimination of dV/dt and peak voltage effects at the motor terminals, meaning 'non-inverter' rated motors can be used reliably
- Reduction of motor noise, earth leakage and EDM effects
- Use with a step up transformer between the drive and the motor

Sinus filters are only compatible with V/Hz open loop motor control. They are not compatible with open loop or closed loop flux vector motor control, nor applications requiring highly dynamic torque response e.g. hoists. Refer to the programming manual for programming the drive with sinus filter option.

Some special motors, e.g. submersible borehole pumps, may have special requirements for operation with VSDs, including the manditory use of sinus filters. Check with the motor manufacturer and Schneider Electric.

VW3A5405

VW3A53904

Description	For drives kW	ATV630/650 ATV930/950 (1)	IP rating	Frame size	Reference
Sinus output filter	0.75...2.2	U07N4...U22N4	20	1	**VW3A5401**
	3...5.5	U30N4...U55N4	20	2	**VW3A5402**
	7.5, 11	U75N4, D11N4	20	3	**VW3A5403**
	15...22	D15N4...D22N4	20	4	**VW3A5404**
	30...45	D30N4...D45N4	20	5	**VW3A5405**
	55...90	D55N4...D90N4	00	6	**VW3A5406**
	110	C13N4 (2)	00	7	**VW3A5407**
	132	C16N4 (2)			
	160…220	C22N4	00	8	**VW3A5209**
	250, 315	C25N4, C31N4	00	9	**VW3A5210**
Protection kit for sinus filter		For sinus filter			
Cover for IP21 protection		VW3A5401 VW3A5402	21		**VW3A53901**
		VW3A5403	21		**VW3A53902**
		VW3A5404	21		**VW3A53903**
		VW3A5405	21		**VW3A53904**

Dimensions and weight (3)

Frame size	H x W x D mm	Weight kg
1	455 x 220 x 210	10
2	455 x 220 x 210	13.5
3	530 x 295 x 215	20
4	560 x 300 x 245	35
5	760 x 375 x 285	60
6	495 x 430 x 350	90
7	565 x 460 x 370	134
8	340 x 480 x 600	190
9	370 x 480 x 710	260

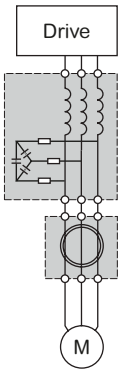
Notes

(1) When used with IP55 drives, the sinus filter may have to be mounted inside a separate enclosure of a suitable IP rating for the installation.

(2) The drive is de-rated by one kW size as the sinus filter has a minimum switching frequency of 4kHz.

(3) Dimensions and weight exclude protection kit option.

Output filters



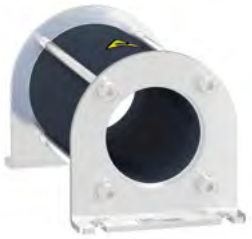
Common mode filters

Common mode filters (ferrite rings) reduce high frequency common mode currents, therefore reducing RFI (radio frequency interference) emissions, while also reducing currents through the motor bearings. They can be used on their own, or with a dV/dt or sinus filter to offer complete motor protection.

The selection of a common mode filter depends on the type and length of motor cable. Refer to the product catalogue and installation instructions for final selection.

Common mode filters do not significantly reduce dV/dt or peak voltages at the motor terminals, therefore do not replace the function of dV/dt or sinus filters in protecting motor insulation.

For drives	ATV630/650...	Screened cable length (1)		
kW	ATV930/950…	150m	300m	500m
0.75…4	U07N4...U40N4	VW3A5501	VW3A5502	2x VW3A5501
5.5…11	U55N4…D11N4	VW3A5502	2x VW3A5501	2x VW3A5502
15…22	D15N4…D22N4	VW3A5503	2x VW3A5503	VW3A5503 + VW3A5504
30…90	D30N4…D90N4	VW3A5504	VW3A5503 + VW3A5504	2x VW3A5504
110	C11N4	VW3A5505	VW3A5506	VW3A5505 + VW3A5506
132, 160	C13N4, C16N4	VW3A5506	2x VW3A5505	2x VW3A5506

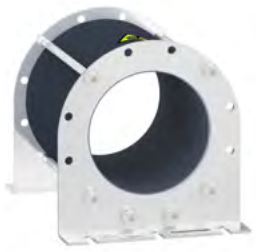


VW3A5501

Description	Internal diameter mm	Frame Size	Reference
Common mode filters	37	1	**VW3A5501**
		2	**VW3A5502**
	75	3	**VW3A5503**
		4	**VW3A5504**
	124	5	**VW3A5505**
		6	**VW3A5506**

Dimensions and weight

Frame size	H x W x D mm	Weight kg
1	119 x 66 x 66	0.5
2	164 x 66 x 66	0.7
3	161 x 128 x 128	2.2
4	210 x 128 x 128	3
5	197 x 191 x 196	6
6	256 x 191 x 196	8.3



VW3A5506

Notes

(1) Lengths provided as a guide only. Lengths longer than 150m require the use of dV/dt or sinus filters. Lengths up to 1000m may be achieved with unscreened cables - refer to the product catalogue. Abnormal temperature rise above 75°C indicates filter saturation, additional filters may be required.

High power LV drive systems 110…1200kW
Compact, robust and reliable for maximum productivity
Customised factory built options

Customised drive solutions

Low-Voltage Drive Systems
Ready-to-use from 0.75 – 1200 kW

Modular and flexible, Altivar Process Drive Systems offer ready to use solutions for your high power motor control needs. With embedded Ethernet connectivity, energy management services, and simplified service concept, our drive systems will increase your process operational efficiency and cut down time.

- **Modular and compact** design leads to lower installation costs and simplified spare parts concept
- Innovative cooling system with separated airflow improves reliability while reducing maintenance and air-conditioning costs
- Low Harmonics option with exclusive **3-level active front end technology** increases efficiency while improving motor life time.
- **Reliability and robustness** with coated circuit boards to 3C3 , IP54 floor standing enclosure, embedded semi-conductor fuses and dV/dt motor filter as standard equipment.

Contact your local Schneider Electric representative to discuss your high power drive application today.

Altivar Process Drive Systems

Low voltage drive systems 110…1200kW

Standard equipment

Altivar Process Drive Systems include the following equipment as standard:

- IP54 floor standing enclosure with separated air flow (3)
- Conformal coating to 3C3/3S3
- Mains disconnection switch with door handle
- Modular power section architecture
- Semi-conductor fuses
- dV/dt output filter (3)
- For ATV660/ATV960, AC line reactors for THDi <48% @ 80% load
- For ATV680/980, 3-level Active Front End for THDi <5%, compliant with IEEE519
- Cable entry/exit via bottom plinth
- Graphic display terminal mounted in the front door
- EMC filter to IEC/EN 61800-3 category C3 (industrial)
- Standard ATV600/900 control and software functions

Options

Customise your drive with the following pre-engineered options:

- Top cable entry/exit enclosure
- STO safety SIL 3 with stop category 0 or 1
- Enclosure lighting
- Indicator lamps on front door
- Enclosure anti-condensation heater
- Motor and/or bearing temperature monitoring
- 'Local/Remote' key switch
- dV/dt output filter 300m
- Ethernet port on front door
- Motor heater
- I/O expansion cards
- Automated mains disconnection
- Communication cards

Further engineered options:

- Modified wiring colours
- Air intake/exhaust from the back
- Customised mains voltage
- Customised enclosure colour
- Multi-pulse supply (e.g. 12-pulse)
- Customised documentation
- Supply Isc increased to 100kA
- Customised labelling
- Connection to IT mains
- Motor contactor
- And many more…

ATV660C16Q4X1

ATV660 Compact Drive Systems 110…800kW

Normal duty (1) 110% overload for 60s		**Heavy duty** (1) 150% overload for 60s			
Motor power	Nominal output current	Motor power	Nominal output current	Frame size	Reference (2) (3)
kW	A	kW	A		
400V 3-ph supply: 380...415V 50/60Hz, IP54 separated air flow (3)					
110	211	90	173	1p	**ATV660C11Q4X1●**
132	250	110	211	1p	**ATV660C13Q4X1●**
160	302	132	250	1p	**ATV660C16Q4X1●**
200	370	160	302	2p	**ATV660C20Q4X1●**
250	477	200	370	2p	**ATV660C25Q4X1●**
315	590	250	477	2p	**ATV660C31Q4X1●**
355	660	280	520	3p	**ATV660C35Q4X1●**
400	730	315	590	3p	**ATV660C40Q4X1●**
450	830	355	660	3p	**ATV660C45Q4X1●**
500	900	400	730	3p	**ATV660C50Q4X1●**
560	1020	450	830	4p	**ATV660C56Q4X1●**
630	1140	500	900	4p	**ATV660C63Q4X1●**
710	1260	560	1020	5p	**ATV660C71Q4X1●**
800	1420	630	1140	5p	**ATV660C80Q4X1●**

Models also available:

- 690V 3-ph supply: 500…690V, 110…1200kW floor standing IP23 or IP54 drive systems

Dimensions and weight (4)

Frame size	Drive ATV660...	Dimensions H x W x D mm	Weight kg
1p	C11…C16Q4X1	2350 x 400 x 600	340
2p	C20…C31Q4X1	2350 x 600 x 600	470
3p	C35…C50Q4X1	2350 x 800 x 600	670
4p	C56…C63Q4X1	2350 x 1200 x 600	880
5p	C71…C80Q4X1	2350 x 1400 x 600	1140

Notes

(1) Normal duty: nominal output current with 110% overload for 60s, suitable for variable torque loads. Heavy duty: nominal output current with 150% overload for 60s, suitable for constant torque loads. Ratings at nominal switching frequency, for an ambient temperature of up to 40°C. Typical kW ratings for a standard AC 3-ph 4-pole motor, 400V 50Hz supply.

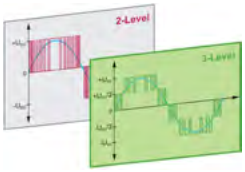
(2) Product reference for technical specification only, not a commercial reference. Contact Schneider Electric drives sales specialist for quotation.

(3) IP54 and embedded dV/dt filter options selected as standard for New Zealand market. Basic unit is IP23.

(4) Dimensions and weights are for the largest drive in the frame size, including IP54 and dV/dt filter options.

Low voltage drive systems 110…1200kW

ATV680C16Q4X1



ATV680 Low Harmonic Drive Systems 110…800kW

Normal duty (1)		**Heavy duty** (1)			
110% overload for 60s		150% overload for 60s			
Motor power	Nominal output current	Motor power	Nominal output current	Frame size	Reference (2) (3)
kW	A	kW	A		
400V 3-ph supply: 380...415V 50/60Hz, IP54 separated air flow (3), THDi <5%					
110	211	90	173	1a	**ATV680C11Q4X1●**
132	250	110	211	1a	**ATV680C13Q4X1●**
160	302	132	250	1a	**ATV680C16Q4X1●**
200	370	160	302	2a	**ATV680C20Q4X1●**
250	477	200	370	2a	**ATV680C25Q4X1●**
315	590	250	477	2a	**ATV680C31Q4X1●**
355	660	280	520	3a	**ATV680C35Q4X1●**
400	730	315	590	3a	**ATV680C40Q4X1●**
450	830	355	660	3a	**ATV680C45Q4X1●**
500	900	400	730	3a	**ATV680C50Q4X1●**
560	1020	450	830	4a	**ATV680C56Q4X1●**
630	1140	500	900	4a	**ATV680C63Q4X1●**
710	1260	560	1020	5a	**ATV680C71Q4X1●**
800	1420	630	1140	5a	**ATV680C80Q4X1●**

Models also available:

> 690V 3-ph supply: 500…690V, 110…1200kW floor standing IP23 or IP54 drive systems

Dimensions and weight (4)

Frame size	Drive ATV680...	Dimensions H x W x D mm	Weight kg
1a	C11…C16Q4X1	2350 x 600 x 600	440
2a	C20…C31Q4X1	2350 x 1000 x 600	730
3a	C35…C50Q4X1	2350 x 1600 x 600	1200
4a	C56…C63Q4X1	2350 x 2000 x 600	1500
5a	C71…C80Q4X1	2350 x 2600 x 600	2000

Notes

(1) Normal duty: nominal output current with 110% overload for 60s, suitable for variable torque loads. Heavy duty: nominal output current with 150% overload for 60s, suitable for constant torque loads. Ratings at nominal switching frequency, for an ambient temperature of up to 40°C. Typical kW ratings for a standard AC 3-ph 4-pole motor, 400V 50Hz supply.

(2) Product reference for technical specification only, not a commercial reference. Contact Schneider Electric drives sales specialist for quotation.

(3) IP54 and embedded dV/dt filter options selected as standard for New Zealand market. Basic unit is IP23.

(4) Dimensions and weights are for the largest drive in the frame size, including IP54 and dV/dt filter options.

Low voltage drive systems 110…1200kW

ATV960C80Q4X1

ATV960 High Performance Drive Systems 110…800kW

Normal duty (1) 120% overload for 60s		**Heavy duty** (1) 150% overload for 60s			
Motor power	Nominal output current	Motor power	Nominal output current	Frame size	Reference (2)(3)
kW	A	kW	A		
400V 3-ph supply: 380...415V 50/60Hz, IP54 separated air flow (3)					
110	211	90	173	1p	**ATV960C11Q4X1●**
132	250	110	211	1p	**ATV960C13Q4X1●**
160	302	132	250	1p	**ATV960C16Q4X1●**
200	370	160	302	2p	**ATV960C20Q4X1●**
250	477	200	370	2p	**ATV960C25Q4X1●**
315	590	250	477	2p	**ATV960C31Q4X1●**
355	660	280	520	3p	**ATV960C35Q4X1●**
400	730	315	590	3p	**ATV960C40Q4X1●**
450	830	355	660	3p	**ATV960C45Q4X1●**
500	900	400	730	3p	**ATV960C50Q4X1●**
560	1020	450	830	4p	**ATV960C56Q4X1●**
630	1140	500	900	4p	**ATV960C63Q4X1●**
710	1260	560	1020	5p	**ATV960C71Q4X1●**
800	1420	630	1140	5p	**ATV960C80Q4X1●**

Models also available:

> 690V 3-ph supply: 500…690V, 110…1200kW floor standing IP23 or IP54 drive systems

Dimensions and weight (4)

Frame size	Drive ATV960...	Dimensions H x W x D mm	Weight kg
1p	C11…C16Q4X1	2350 x 400 x 600	340
2p	C20…C31Q4X1	2350 x 600 x 600	470
3p	C35…C50Q4X1	2350 x 800 x 600	670
4p	C56…C63Q4X1	2350 x 1200 x 600	880
5p	C71…C80Q4X1	2350 x 1400 x 600	1140

Notes

(1) Normal duty: nominal output current with 120% overload for 60s, suitable for variable torque loads. Heavy duty: nominal output current with 150% overload for 60s, suitable for constant torque loads. Ratings at nominal switching frequency, for an ambient temperature of up to 40°C. Typical kW ratings for a standard AC 3-ph 4-pole motor, 400V 50Hz supply.

(2) Product reference for technical specification only, not a commercial reference. Contact Schneider Electric drives sales specialist for quotation.

(3) IP54 and embedded dV/dt filter options selected as standard for New Zealand market. Basic unit is IP23.

(4) Dimensions and weights are for the largest drive in the frame size, including IP54 and dV/dt filter options.

Low voltage drive systems 110…1200kW

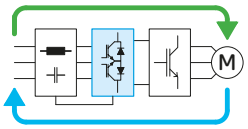
ATV980C16Q4X1

ATV980 Regenerative Drive Systems 110…800kW

Normal duty (1) 120% overload for 60s		**Heavy duty** (1) 150% overload for 60s			
Motor power kW	Nominal output current A	Motor power kW	Nominal output current A	Frame size	Reference (2)(3)
400V 3-ph supply: 380...415V 50/60Hz, IP54 separated air flow (3), THDi <5%					
110	211	90	173	1a	**ATV980C11Q4X1●**
132	250	110	211	1a	**ATV980C13Q4X1●**
160	302	132	250	1a	**ATV980C16Q4X1●**
200	370	160	302	2a	**ATV980C20Q4X1●**
250	477	200	370	2a	**ATV980C25Q4X1●**
315	590	250	477	2a	**ATV980C31Q4X1●**
355	660	280	520	3a	**ATV980C35Q4X1●**
400	730	315	590	3a	**ATV980C40Q4X1●**
450	830	355	660	3a	**ATV980C45Q4X1●**
500	900	400	730	3a	**ATV980C50Q4X1●**
560	1020	450	830	4a	**ATV980C56Q4X1●**
630	1140	500	900	4a	**ATV980C63Q4X1●**
710	1260	560	1020	5a	**ATV980C71Q4X1●**
800	1420	630	1140	5a	**ATV980C80Q4X1●**

Models also available:

> 690V 3-ph supply: 500…690V, 110…1200kW floor standing IP23 or IP54 drive systems



3-level concept

Dimensions and weight (4)

Frame size	Drive ATV980...	Dimensions H x W x D mm	Weight kg
1a	C11…C16Q4X1	2350 x 600 x 600	440
2a	C20…C31Q4X1	2350 x 1000 x 600	730
3a	C35…C50Q4X1	2350 x 1600 x 600	1200
4a	C56…C63Q4X1	2350 x 2000 x 600	1500
5a	C71…C80Q4X1	2350 x 2600 x 600	2000

Notes

(1) Normal duty: nominal output current with 120% overload for 60s, suitable for variable torque loads. Heavy duty: nominal output current with 150% overload for 60s, suitable for constant torque loads. Ratings at nominal switching frequency, for an ambient temperature of up to 40°C. Typical kW ratings for a standard AC 3-ph 4-pole motor, 400V 50Hz supply.

(2) Product reference for technical specification only, not a commercial reference. Contact Schneider Electric drives sales specialist for quotation.

(3) IP54 and embedded dV/dt filter options selected as standard for New Zealand market. Basic unit is IP23.

(4) Dimensions and weights are for the largest drive in the frame size, including IP54 and dV/dt filter options.

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Control and signalling devices

Control and signalling units

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Ø16 black double insulated bezel – Harmony XB6
Pushbuttons, Emergency stops, selector switches and key switches with faston connectors

XB6CA●●B

XB6DA●●B

XB6AA●●B

Pushbuttons

Shape of head	Type of push	Type of contact N/O	Type of contact N/C	Colour	Reference
Oblong	Flush, spring return	1	–	Green	**XB6DA31B**
Square	Flush, spring return	1	–	Green	**XB6CA31B**
			1	Red	**XB6CA42B**
Round	Flush, spring return	1	–	Green	**XB6AA31B**
			1	Red	**XB6AA42B**

XB6AS8349B

XB6AS9349B

Emergency stop trigger action mushroom head

Shape of head	Type of push	Type of contact N/O	Type of contact N/C	Colour	Diameter	Reference
Round	Turn to release	1	2	Red	30	**XB6AS8349B**
Round	Key release (No. 200)	1	2	Red	30	**XB6AS9349B**

Selector switches and key switches (Switching angle: handle: 60°, key: 70°)

Shape of head	Type of push	Type of contact N/O	Type of contact N/C		Reference
Oblong	Handle, black	1	–	2 – stay put	**XB6DD221B**
		1	1	2 – stay put	**XB6DD225B**
				3 – stay put	**XB6DD235B**
Oblong	Key (1)	1	1	2 – stay put	**XB6DGC5B**
				3 – stay put	**XB6DGH5B**

XB6DD●●●B

XB6DG●●●B

Note
(1) Key No. 200, withdrawal from all positions.

Ø16 black double insulated bezel – Harmony XB6
Illuminated pushbuttons and pilot lights

XB6DW●●●B

XB6CW●●●B

XB6A●●●●B

Illuminated Pushbuttons (with 12...24V LED included)

Shape of head	Type of push	Type of contact N/O	Type of contact N/C	Colour	Reference
Oblong	Flush, spring return	1	–	Green	**XB6DW3B1B**
		–	1	Red	**XB6DW4B2B**
Square	Flush, spring return	1	–	Green	**XB6CW3B1B**
		–	1	Red	**XB6CW4B2B**
Square	Flush, latching	1	–	Green	**XB6CF3B1B**
		–	1	Red	**XB6CF4B2B**
Round	Flush, spring return	1	–	Green	**XB6AW3B1B**

XB6DV●BB

XB6CV●BB

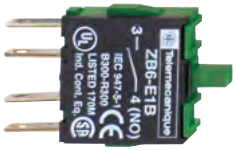
XB6AV●BB

Pilot lights (with 12...24V LED included)

Shape of head	Colour	Reference
Oblong	White	**XB6DV1BB**
	Green	**XB6DV3BB**
	Red	**XB6DV4BB**
	Yellow	**XB6DV5BB**
Square	White	**XB6CV1BB**
	Green	**XB6CV3BB**
	Red	**XB6CV4BB**
Round	White	**XB6AV1BB**
	Green	**XB6AV3BB**
	Red	**XB6AV4BB**
	Yellow	**XB6AV5BB**

J

Ø16 black double insulated bezel – Harmony XB6
Spare and Accessories



ZB6E●B

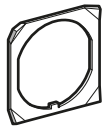
Separate contact blocks (1)

Contact material	For use with bodies	Type of contact N/O	Type of contact N/C	Reference
Silver alloy	Faston connector	1	–	**ZB6E1B**
		–	1	**ZB6E2B**
Gold flashed	Faston connector	1		**ZB6E1E**
		–	1	**ZB6E2E**

Accessories

Description	Application	Reference
Body/fixing collar	For fitting contact blocks	**ZB6Y009**
Anti-rotation plate	Selector switches	**ZB6Y003**
Lock nut	Securing head on support	**ZB6Y002**
Dismantling tool	Removal of contacts blocks from body/fixing collar	**ZB6Y018**
Extractor	Removal of Pushbutton caps	**ZB6Y016**
Bezel tightening tool + bulb extractor	Fixing the switch and changing bulbs	**ZB6Y905**
Dismantling tool kit (3 tools)	Removal of contacts, fixing nuts and Pushbutton caps	**ZB6Y019**
Adaptor	For flush mounting a circular Pushbutton, switch or pilot light in a Ø22 hole	**ZB6YA002**
Protective cover	Protection of contacts against accidental touching	**ZB6Y001**
Protective cover	Circular and square head Pushbuttons and switches	**ZB6YA001**
	Rectangular head Pushbuttons and switches	**ZB6YD001**
Female Faston connector	–	**ZB6Y004**
Blanking plug	–	**ZB6Y005**
Circular legends, Ø45	Yellow colour emergency stop	**ZB6Y7330**
Spare LED lamps Protected LED	White	**ZB6EB1B**
	Green	**ZB6EB3B**
	Red	**ZB6EB4B**
	Orange	**ZB6EB8B**

ZB6Y009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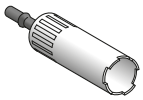
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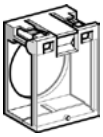
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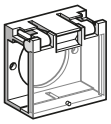
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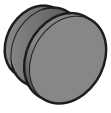

ZB6Y005

ZB6Y7330

Note
(1) Contact ratings: 1.5A at AC15 230V

Product configurator on se.com/nz

Ø22 chromium plated metal bezel – Harmony XB4
Assembly of components

Pushbutton assembly

Body sub-assemblies

Screw clamp terminals

Head sub-assemblies

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

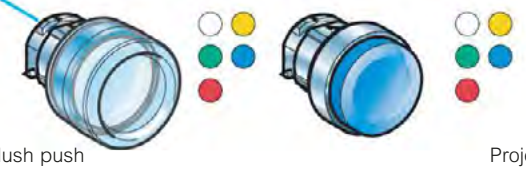
Illuminated pushbutton assembly

Body sub-assemblies with integral LED

Screw clamp terminals

Head sub-assemblies

Flush push | Selector switches with standard handle



Booted flush push | Projecting push

Harmony XB4 delivers extremely robust performance even in severe environments.

- Sealing effectiveness rated up to IP66, IP67, IP68, IP69, IP69K, and type 4X
- High impact resistance up to IK06 rating
- Operating temperature ranging from -40 to +70 °C/-40 to +158 °F
- Compliance with international standards (IEC, UL, CCC, EAC, JIS)
- Marine certified (BV, LROS, BDNV, GL)
- Harmony pushbuttons are designed to perform up to 10 million operations.

Ø22 chromium plated metal bezel – Harmony XB4
Complete pushbuttons and selector switches

Complete spring return pushbuttons

XB4BA51

XB4BP21

XB4BA4322

Type	Marking	Contact type N/O	Contact type N/C	Colour	Reference
Flush		1		White	**XB4BA11**
				Black	**XB4BA21**
				Green	**XB4BA31**
				Yellow	**XB4BA51**
				Blue	**XB4BA61**
			1	Red	**XB4BA42**
Projecting			1	Red	**XB4BL42**
Booted, clear silicon		1		Black	**XB4BP21**
				Green	**XB4BP31**
				Yellow	**XB4BP51**
				Blue	**XB4BP61**
			1	Red	**XB4BP42**
Flush with marking	I	1		Green	**XB4BA3311**
	O		1	Red	**XB4BA4322**
	↑ (Black)	1		White	**XB4BA3341**
	↓ (White)	1		Black	**XB4BA3351**
Projecting with marking	O		1	Red	**XB4BL4325**

Complete mushroom head pushbutton

Type	Contact type N/O	Contact type N/C	Colour	Reference
Mushroom head	1		Black	**XB4BC21**

Complete emergency stops

XB4BT845

Type	Contact type N/O	Contact type N/C	Colour	Reference
Push-pull Ø40mm	1	1	Red	**XB4BT845**
Turn to release Ø40mm	1	1	Red	**XB4BS8445**
Key release Ø40mm (key no. 455)	1	1	Red	**XB4BS9445**

Complete illuminated spring return pushbuttons

XB4BW33B5

Type	Marking	Contact type	Supply voltage	Colour	Reference
Illuminated Flush		1 N/O + 1 N/C	24V AC/DC	White	**XB4BW31B5**
				Green	**XB4BW33B5**
				Red	**XB4BW34B5**
				Orange	**XB4BW35B5**
				Blue	**XB4BW36B5**
			230…240V AC	White	**XB4BW31M5**
				Green	**XB4BW33M5**
				Red	**XB4BW34M5**
				Orange	**XB4BW35M5**
				Blue	**XB4BW36M5**

Complete selector switches

XB4BD33

Type of operator	No. & type of positions		Contacts	Reference
Standard handle, black	2 - stay put		1 N/O	**XB4BD21**
	2 - spring return from right to left		1 N/O	**XB4BD41**
	3 - Stay put		2 N/O	**XB4BD33**
	3 - spring return to center		2 N/O	**XB4BD53**
Key switch with key no. 455	2 - stay put		1 N/O	**XB4BG21**
	2 - spring return to left		1 N/O	**XB4BG61**
	3 - stay put		2 N/O	**XB4BG33**

J

Ø22 chromium plated metal bezel – Harmony XB4
Pushbutton heads
Spring return type

Spring return pushbutton heads

ZB4BA1

ZB4BA18

ZB4BP6

ZB4BP4S

ZB4BL1

ZB4BA36

Type	Colour	Reference
Flush	White	**ZB4BA1**
	Black	**ZB4BA2**
	Green	**ZB4BA3**
	Red	**ZB4BA4**
	Yellow	**ZB4BA5**
	Blue	**ZB4BA6**
	Grey	**ZB4BA8**
Flush with transparent cap, for insertion of legend (2) (3)	White	**ZB4BA18**
	Green	**ZB4BA38**
	Red	**ZB4BA48**
	Yellow	**ZB4BA58**
	Blue	**ZB4BA68**
Projecting booted (clear) colour of Pushbutton unobscured	White	**ZB4BP1**
	Black	**ZB4BP2**
	Green	**ZB4BP3**
	Red	**ZB4BP4**
	Yellow	**ZB4BP5**
	Blue	**ZB4BP6**
Flush booted (coloured) (1)	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**

Pushbutton heads with integrated bellows, metal, IP69k (4)

ZB4BC580

Harsh environment -40˚ to +70˚

Larger head for use with gloves

Shape of head	Symbol	Colour of pushbutton	Reference
Head only, without marking Uses ZB4 22mm components		White	**ZB4BC180**
		Black	**ZB4BC280**
		Green	**ZB4BC380**
		Red	**ZB4BC480**
		Yellow	**ZB4BC580**
		Blue	**ZB4BC680**
Head only, with marking	0	Red	**ZB4BC48021**
	1	Green	**ZB4BC38023**

Notes
(1) Boot replaceable from front.
(2) For legend ordering information, refer to page J36.
(3) For actuation of outer contact only.
(4) For guarding accessories see page J37. (ZBZ1902)

Ø22 chromium plated metal bezel – Harmony XB4
Pushbutton heads
Latching, mushroom head and E-stop switch heads

ZB4BA331

ZB4BL432

Spring return pushbutton heads - marked

Type	Marking	Symbol colour	Colour	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**
	↑, ↓, ← → (1)	Black	White	**ZB4BA334**
		White	Black	**ZB4BA335**
Projecting	O	White	Red	**ZB4BL432**
	STOP	White	Red	**ZB4BL434**

ZB4BH02

Latching heads (2)

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**

ZB4BH6

ZB4BC2

Mushroom heads for spring return Pushbuttons (5)

Diameter	Colour	Reference
Ø40mm (3)	Black	**ZB4BC2**
	Green	**ZB4BC3**
	Red (6)	**ZB4BC4**
	Yellow	**ZB4BC5**
	Blue	**ZB4BC6**

ZB4BS844

Mushroom heads for emergency stop Pushbuttons (4)

Type	Diameter	Colour	Reference
Trigger action turn to release (6)	30	Red	**ZB4BS834**
Trigger action turn to release (6)	40	Red	**ZB4BS844**
Trigger action turn to release (6)	60	Red	**ZB4BS864**
Trigger action push-pull (6)	40	Red	**ZB4BT84**
Trigger action push-pull (6)	60	Red	**ZB4BX84**
Trigger action key release (6)(7)	40	Red	**ZB4BS944**
Trigger action key release (6)(7)	60	Red	**ZB4BS964**

ZB4BT2

Mushroom heads for machine stop Pushbuttons

Type	Diameter	Colour	Reference
Latching action push-pull	40	Black	**ZB4BT2**

Notes

(1) Cap supplied not clipped-in, allowing orientation of arrow in 4 directions: ↑, ↓, ← or →.
(2) Maximum of 1 row of 3 contact blocks on associated body/fixing collar sub-assembly.
(3) Also available in Ø30 and 60mm.
(4) Maximum number of contact blocks: 4.
(5) Not suitable for use as an emergency stop device.
(6) Conforms to ISO13850-IEC/EN60947-5-5.
(7) Comes with key no. 455.

Ø22 chromium plated metal bezel – Harmony XB4
Complete multiple headed pushbuttons
Multiple headed pushbutton heads

XB4BL73415

XB4BW73731●5

Spring return complete double-headed pushbuttons

Type	Marking	Contact type N/O	Contact type N/C	Colour	Supply	Reference
1 flush Black + 1 projecting Red		1	1	White "I" on Green background White "0" on Red background		**XB4BL73415**
1 flush Black push 1 projecting Red push 1 White central pilot light block		1	1	White "I" on Green background White "0" on Red background	24V AC/DC 240V AC	**XB4BW73731B5** **XB4BW73731M5**

Double-headed pushbutton heads, IP66 (1)

Description	Colour and marking of caps	Reference
1 flush black push 1 projecting red push	Green + red background, unmarked	**ZB4BL7340**
	White "I" on green background White "0" on red background	**ZB4BL7341**

ZB4BL7341

Double-headed pushbutton heads with central pilot light, IP66 (1)

Description	Colour and marking of caps	Reference
1 flush black push	Green + red background, unmarked	**ZB4BW7L3740**
1 projecting red push 1 clear central pilot light (2)	White "I" on green background White "0" on red background	**ZB4BW7L3741**

ZB4BW7L3741

Triple-headed pushbutton heads, IP66 (1)

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	**ZB4BA71123**
	Black "↑" on white background White "↓" on black background	**ZB4BA71124**

ZB4BA71114

Triple headed pushbutton heads + 1 white central pilot light, IP66 (1)

Description	Colour and marking of caps	Voltages	Reference
1 flush black push 1 projecting red push 1 clear pilot light	White "I" on green background White "0" on red background	24V	**XB4BW73731B5**
		110V	**XB4BW73731G5 (1)**
		230V	**XB4BW73731M5 (2)**

XB4BW73731

Note
(1) For replacement caps use part number ZBA79 for set of ten mixed caps.
(2) Use suppressor in conjunction with protected LED when connected in parallel to inductive loads 30VA and above.

Ø22 chromium plated metal bezel – Harmony XB4
Selector, toggle and key switch heads

ZB4BD4

ZB4BJ3

ZB4BD28

Selector switch heads

Type of operator	Number and type of positions		Reference
Standard – handle, black	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**
Toggle	stay put		**ZB4BD28**
	spring return		**ZB4BD48**

ZB4BG7

Key switch heads

Type of operators	Number and type of positions (1)		Reference
Key (No. 455)	2 – stay put		**ZB4BG2**
			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

Other key numbers: P.O.A
> Key No. 421E: add the suffix 12 to the ref.
> Key No. 458A: add the suffix 10 to the ref.
> Key No. 520E: add the suffix 14 to the ref.

Example: the reference for a head with key No. 421E for 2 pos sel sw becomes ZB4BG212.

Note
(1) The symbol ⚿ indicates key withdrawal position(s).

Ø22 chromium plated metal bezel – Harmony XB4
Illuminated pushbutton heads
Spring return and latching type

ZB4BW343

ZB4BW563

ZB4BW133

ZB4BH033

ZB4BH53

ZB4BW443

ZB4BW663

Spring return illuminated heads

Type of push	Colour	Reference
Only for use with bodies comprising a light block with Protected LED		
Flush	White	**ZB4BW313**
	Green	**ZB4BW333**
	Red	**ZB4BW343**
	Orange	**ZB4BW353**
	Yellow	**ZB4BW383**
	Blue	**ZB4BW363**
Flush with clear boot	White	**ZB4BW513**
	Green	**ZB4BW533**
	Red	**ZB4BW543**
	Orange	**ZB4BW553**
	Yellow	**ZB4BW583**
	Blue	**ZB4BW563**
Projecting	White	**ZB4BW113**
	Green	**ZB4BW133**
	Red	**ZB4BW143**
	Orange	**ZB4BW153**
	Yellow	**ZB4BW183**
	Blue	**ZB4BW163**

Latching illuminated heads

Type	Colour	Reference
Only for use with bodies comprising a light block with Protected LED		
Flush	White	**ZB4BH013**
	Green	**ZB4BH033**
	Red	**ZB4BH043**
	Orange	**ZB4BH053**
	Yellow	**ZB4BH083**
	Blue	**ZB4BH063**
Projecting	White	**ZB4BH13**
	Green	**ZB4BH33**
	Red	**ZB4BH43**
	Orange	**ZB4BH53**
	Yellow	**ZB4BH83**
	Blue	**ZB4BH63**

Spring return illuminated Ø40 mushroom head

Type	Colour of push	Reference
Only for use with bodies comprising a light source with integral Protected LED		
	White	**ZB4BW413**
	Green	**ZB4BW433**
	Red	**ZB4BW443 (1)**
	Orange	**ZB4BW453**
	Blue	**ZB4BW463**

Latching illuminated Ø40 mushroom head

Type	Colour of push	Reference
Only for use with bodies comprising a light source with integral Protected LED		
Push-pull	White	**ZB4BW613**
	Green	**ZB4BW633**
	Red	**ZB4BW643 (1)**
	Orange	**ZB4BW653**
	Blue	**ZB4BW663**

Note
(1) Pushbutton head cannot be used for an Emergency stop function.

Ø22 chromium plated metal bezel – Harmony XB4
Illuminated selector switch heads

ZB4BK1313

Selector switches illuminated – standard handle heads (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	**ZB4BK1213**
	Green	**ZB4BK1233**
	Red	**ZB4BK1243**
	Yellow	**ZB4BK1253**
	Blue	**ZB4BK1263**
2 – spring return from right to left	White	**ZB4BK1413**
	Green	**ZB4BK1433**
	Red	**ZB4BK1443**
	Yellow	**ZB4BK1453**
	Blue	**ZB4BK1463**
3 – stay put	White	**ZB4BK1313**
	Green	**ZB4BK1333**
	Red	**ZB4BK1343**
	Yellow	**ZB4BK1353**
	Blue	**ZB4BK1363**
3 – spring return to centre	White	**ZB4BK1513**
	Green	**ZB4BK1533**
	Red	**ZB4BK1543**
	Yellow	**ZB4BK1553**
	Blue	**ZB4BK1563**
3 – spring return from right to centre	White	**ZB4BK1813**
	Green	**ZB4BK1833**
	Red	**ZB4BK1843**
	Yellow	**ZB4BK1853**
	Blue	**ZB4BK1863**
3 – spring return from left to centre	White	**ZB4BK1713**
	Green	**ZB4BK1733**
	Red	**ZB4BK1743**
	Yellow	**ZB4BK1753**
	Blue	**ZB4BK1763**

J

Note
(1) See page J17 and J19 for light bodies and contact blocks.

Ø30 chromium plated metal bezel – Harmony XB4
Built in flush - Complete pushbuttons and selector switches

Complete spring return pushbuttons - Ø30

XB4FA51

XB4FA4322

Type	Marking	Contact type N/O	Contact type N/C	Colour	Reference
Flush		1		White	**XB4FA11**
				Black	**XB4FA21**
				Green	**XB4FA31**
				Yellow	**XB4FA51**
				Blue	**XB4FA61**
			1	Red	**XB4FA42**
Projecting			1	Red	**XB4FL42**
Flush with marking	I	1		Green	**XB4FA3311**
	O		1	Red	**XB4FA4322**
	↑ (Black)	1		White	**XB4FA3341**
	↓ (White)	1		Black	**XB4FA3351**
Projecting with marking	O		1	Red	**XB4FL4325**

Complete illuminated spring return pushbuttons - Ø30

XB4FW33B5

Type	Marking	Contact type N/O	Contact type N/C	Supply voltage	Colour	Reference
Illuminated Flush		1	1	24V AC/DC	White	**XB4FW31B5**
					Green	**XB4FW33B5**
					Red	**XB4FW34B5**
					Orange	**XB4FW35B5**
					Blue	**XB4FW36B5**
				230…240V AC	White	**XB4FW31M5**
					Green	**XB4FW33M5**
					Red	**XB4FW34M5**
					Orange	**XB4FW35M5**
					Blue	**XB4FW36M5**

Complete selector switches - Ø30

XB4FD33

Type of operator	No. & type of positions		Contacts	Reference
Standard handle, black	2 - stay put		1 N/O	**XB4FD21**
	2 - spring return from right to left		1 N/O	**XB4FD41**
	3 - Stay put		2 N/O	**XB4FD33**
	3 - spring return to center		2 N/O	**XB4FD53**
Key switch with key no. 455	2 - stay put		1 N/O	**XB4FG21**
	2 - spring return to left		1 N/O	**XB4FG61**
	3 - stay put		2 N/O	**XB4FG33**

Ø30 chromium plated metal bezel – Harmony XB4
Built in flush - Pushbutton heads

New

ZB4FA4

ZB4FA38

ZB4FL1

ZB4FA36

ZB4FA334

ZB4FW333

Spring return pushbutton heads, unmarked - Ø30

Type	Colour	Reference
Flush	White	**ZB4FA1**
	Black	**ZB4FA2**
	Green	**ZB4FA3**
	Red	**ZB4FA4**
	Yellow	**ZB4FA5**
	Blue	**ZB4FA6**
	Grey	**ZB4FA8**
Flush with transparent cap for insertion of legend (page J36)	White	**ZB4FA18**
	Green	**ZB4FA38**
	Red	**ZB4FA48**
	Yellow	**ZB4FA58**
	Blue	**ZB4FA68**
Projecting	White	**ZB4FL1**
	Black	**ZB4FL2**
	Green	**ZB4FL3**
	Red	**ZB4FL4**
	Yellow	**ZB4FL5**
	Blue	**ZB4FL6**
Recessed	White	**ZB4FA16**
	Black	**ZB4FA26**
	Green	**ZB4FA36**
	Red	**ZB4FA46**
	Yellow	**ZB4FA56**
	Blue	**ZB4FA66**

Spring return pushbutton heads, marked - Ø30

Type	Marking	Colour	Reference
Flush	Start	Green	**ZB4FA333**
	I	Green	**ZB4FA331**
	ON	Green	**ZB4FA341**
	Stop	Red	**ZB4FA434**
	O	Red	**ZB4FA432**
	OFF	Red	**ZB4FA435**
	↑ (Black)	White	**ZB4FA334**
	↓ (White)	Black	**ZB4FA335**
Projecting	O	Red	**ZB4FL432**
	Stop	Red	**ZB4FL434**

Latched pushbutton heads, unmarked - Ø30

Type	Colour	Reference
Flush	White	**ZB4FH01**
	Black	**ZB4FH02**
	Green	**ZB4FH03**
	Red	**ZB4FH04**
	Yellow	**ZB4FH05**
	Blue	**ZB4FH06**
Projecting	White	**ZB4FH1**
	Black	**ZB4FH2**
	Green	**ZB4FH3**
	Red	**ZB4FH4**
	Yellow	**ZB4FH5**
	Blue	**ZB4FH6**

Illuminated pushbutton heads, unmarked - Ø30

Type	Colour	Reference
Flush	White	**ZB4FW313**
	Green	**ZB4FW333**
	Red	**ZB4FW343**
	Yellow	**ZB4FW383**
	Blue	**ZB4FW363**
Flush for insertion of legend (legend on page J36)	White	**ZB4FA18**
	Green	**ZB4FA38**
	Red	**ZB4FA48**
	Yellow	**ZB4FA88**
	Blue	**ZB4FA68**

Ø30 chromium plated metal bezel – Harmony XB4
Built in flush – Selector switch heads

Selector switch heads - Ø30

ZB4FD2M178

ZB4FJ3

ZB4FG0

Type	No. & type of positions		Reference
Standard handle, black	2 - stay put		**ZB4FD2**
	2 - stay put with 'O' & 'I' marking		**ZB4FD2M178**
	2 - spring return from right to left		**ZB4FD4**
	3 - Stay put		**ZB4FD3**
	3 - spring return to center		**ZB4FD5**
	3 - spring return from left to center		**ZB4FD7**
	3 - spring return from right to center		**ZB4FD8**
Long handle, black	2 - stay put		**ZB4FJ2**
	2 - spring return from right to left		**ZB4FJ4**
	3 - Stay put		**ZB4FJ3**
	3 - spring return to center		**ZB4FJ5**
	3 - spring return from left to center		**ZB4FJ7**
	3 - spring return from right to center		**ZB4FJ8**

J

Kew switch heads - Ø30

Type	No. & type of positions		Reference
with key no. 455	2 - stay put		**ZB4FG2**
			ZB4FG4
	2 - spring return from right to left		**ZB4FG6**
	3 - Stay put		**ZB4FG0**
			ZB4FG5
			ZB4FG9
			ZB4FG09
	3 - Spring return from left to center		**ZB4FG1**
	3 - Spring return to center		**ZB4FG7**
	3 - Spring return from right to center		**ZB4FG8**

Other key numbers:
> 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.

Example: For a switch head with key no. 421E, 2-position stay put, with key withdrawal from the left-hand position, the reference becomes: ZB4F G212.

Ø22/Ø30 chromium plated metal bezel – Harmony XB4
Bodies, contact blocks and light sources

ZB4BZ101

Pushbutton and selector switch bodies with contacts

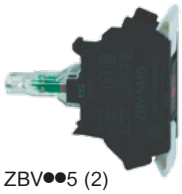
Description	Type of contact N/O	N/C	Reference
Screw clamp terminal connections	1	–	**ZB4BZ101**
	–	1	**ZB4BZ102**
Spring clamp	1	–	**ZB4BZ1015 (2)**
Spring clamp	–	1	**ZB4BZ1025 (2)**
1 early make/1 late break	1	1	**ZB4BZ106**
1 early make/1 normal	2	–	**ZB4BZ107**

ZBE101 ZBE1015 (2)

Additional contact blocks (1)

Description	Type of contact N/O	N/C	Reference
Standard single	1	–	**ZBE101**
	–	1	**ZBE102**
Early make	1	–	**ZBE201**
Late Break	–	1	**ZBE202**
Standard single – Spring clamp terminals	1	–	**ZBE1015 (2)**
	–	1	**ZBE1025 (2)**
Special contact blocks (2) (for low power switching)	1	–	**ZBE1016**
	–	1	**ZBE1026**
Fixing collar			**ZB4BZ009**

ZBVB1



ZBV●●5 (2)

ZBE1015 & ZBV●●5 (2)

Additional light sources

Description	Supply voltage (V)	Colour	Reference
Integral LED (to combine with heads for integral LED)	⎓ 12	White	**ZBVJ1**
		Green	**ZBVJ3**
		Red	**ZBVJ4**
		Orange / Amber	**ZBVJ5**
		Blue	**ZBVJ6**
	⎓ 24 (3)(4)	White	**ZBVB1**
		Green	**ZBVB3**
		Red	**ZBVB4**
		Orange / Amber	**ZBVB5**
		Blue	**ZBVB6**
	⎓ 24 – 120 (3) (5)	White	**ZBVBG1**
		Green	**ZBVBG3**
		Red	**ZBVBG4**
		Orange / Amber	**ZBVBG5**
		Blue	**ZBVBG6**
	~ 110 – 120 (3) (4) (5)	White	**ZBVG1**
		Green	**ZBVG3**
		Red	**ZBVG4**
		Orange / Amber	**ZBVG5**
		Blue	**ZBVG6**
	~ 230 – 240 (3) (4) (5)	White	**ZBVM1**
		Green	**ZBVM3**
		Red	**ZBVM4**
		Orange / Amber	**ZBVM5**
		Blue	**ZBVM6**

ZBVGM4T

Note: Available in Q1 2021

Title?

Description	Supply Voltage (V)	Color of light source	Reference
Integral LED (to combine with heads for integral LED)	110..240 ~ (50/60 Hz)	White	**ZBVGM1T**
		Green	**ZBVGM3T**
		Red	**ZBVGM4T**
		Orange	**ZBVGM5T**
		Blue	**ZBVGM6T**
		Yellow	**ZBVGM8T**

Notes
(1) Maximum amount of contact blocks to be stacked is three deep. For E-stops see page J9 note (4).
(2) It is not possible to fit these contact blocks with supplementary contact blocks.
(3) Add suffix 5 for spring clamp terminals e.g. ZBVJ15.
(4) For flashing led add 18 to reference e.g. ZBV18B3.
(5) Use suppressor in conjunction with protected LED when connected in parallel to inductive loads 30VA and above.
(6) For 3 terminal "test" function, add the suffix 156 to the references.

Ø22/Ø30 chromium plated metal bezel – Harmony XB4
Pilot light complete and pilot light heads

Pilot lights complete with “Protected LED” Ø22

XB4BVB5

Supply voltage(V)	Colour	Reference
⎓ 24	White	**XB4BVB1**
	Green	**XB4BVB3**
	Red	**XB4BVB4**
	Orange / Amber	**XB4BVB5**
	Blue	**XB4BVB6**
~ 110...120 (1)	White	**XB4BVG1**
	Green	**XB4BVG3**
	Red	**XB4BVG4**
	Orange / Amber	**XB4BVG5**
	Blue	**XB4BVG6**
~ 230...240 (1)	White	**XB4BVM1**
	Green	**XB4BVM3**
	Red	**XB4BVM4**
	Orange / Amber	**XB4BVM5**
	Blue	**XB4BVM6**

Pilot light heads to suit “Protected LED” Ø22

ZB4BV053

For use with body comprising light source type	Colour of lens	Reference
Integral LED	White	**ZB4BV013**
	Green	**ZB4BV033**
	Red	**ZB4BV043**
	Orange / Amber	**ZB4BV053**
	Blue	**ZB4BV063**

Pilot lights complete with “Protected LED” - Ø30

XB4FVB5

Type	Supply voltage	Colour	Reference
with integral LED	24V AC/DC	White	**XB4FVB1**
		Green	**XB4FVB3**
		Red	**XB4FVB4**
		Orange	**XB4FVB5**
		Blue	**XB4FVB6**
	230…240V AC	White	**XB4FVM1**
		Green	**XB4FVM3**
		Red	**XB4FVM4**
		Orange	**XB4FVM5**
		Blue	**XB4FVM6**

Pilot light heads to suit “Protected LED” - Ø30

ZB4FV063

For use with body comprising light source type	Colour	Reference
Integral LED	White	**ZB4FV013**
	Green	**ZB4FV033**
	Red	**ZB4FV043**
	Orange	**ZB4FV053**
	Blue	**ZB4FV063**

Notes
(1) Use suppressor in conjunction with protected LED when connected in parallel to inductive loads 30VA and above.

Ø22 chromium plated metal bezel – Harmony XB4
Pilot light and illuminated pushbutton accessories

ZB4BV●●

Pilot light bodies to suit “Protected LED”

Description	Supply voltage (V)	Colour	Reference
Integral LED	⎓ 12	White	**ZB4BVJ1**
		Green	**ZB4BVJ3**
		Red	**ZB4BVJ4**
		Orange / Amber	**ZB4BVJ5**
		Blue	**ZB4BVJ6**
	⎓ 24 (4)	White	**ZB4BVB1**
		Green	**ZB4BVB3**
		Red	**ZB4BVB4**
		Orange / Amber	**ZB4BVB5**
		Blue	**ZB4BVB6**
	⎓ 24...120 (4) (5)	White	**ZB4BVBG1**
		Green	**ZB4BVBG3**
		Red	**ZB4BVBG4**
		Orange / Amber	**ZB4BVBG5**
		Blue	**ZB4BVBG6**
	~ 110...120 (4) (5) (6)	White	**ZB4BVG1**
		Green	**ZB4BVG3**
		Red	**ZB4BVG4**
		Orange / Amber	**ZB4BVG5**
		Blue	**ZB4BVG6**
	~ 230...240 (4) (5) (6)	White	**ZB4BVM1**
		Green	**ZB4BVM3**
		Red	**ZB4BVM4**
		Orange / Amber	**ZB4BVM5**
		Blue	**ZB4BVM6**

LED suppressors and transformer blocks

For use with	Supply voltage (V)	Reference
Transformer block	400V-24V	**ZBV5B (7)**
Dummy contact blocks		**ZBE000**

ZBZG156

ZBZM156

Blocks for “test light” light function

For use with	Supply voltage (V)	Description	Reference
Light blocks	⎓ 12 and 24	Single module,	**ZBZG156**
	⎓ 24…120	1 connecting wire	
Light blocks with integral LED	~ 48…230	Double module, with connecting wires	**ZBZM156**

ZB4BZ009

Body/fixing collar

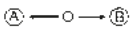
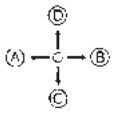
For use with	Reference
Electrical blocks (contact or light)	**ZB4BZ009**

Notes
(1) Maximum amount of contact blocks to be stacked is three deep. For E-stops see page J9 note (4).
(2) It is not possible to fit these contact blocks with supplementary contact blocks.
(3) Add suffix 5 for spring clamp terminals e.g. ZBVJ15.
(4) For flashing led add 18 to reference e.g. ZBV18B3.
(5) Use suppressor in conjunction with protected LED when connected in parallel to inductive loads 30VA and above.
(6) For 3 terminal “test” function, add the suffix 156 to the references.
(7) Select light source LED and transformer plus 2 dummy contact blocks.

Ø22 chromium plated metal bezel – Harmony XB4
Joysticks, potentiometer and miscellaneous devices

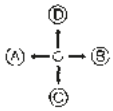
XD4PA12

Ø22 complete units type XD4-P for light duty applications (1)

Description	Operation	Spring return to 'Off' position	Bezel	Reference
2 direction 	1 notch 1 N/O contact per direction	Without	Metal	**XD4PA12**
		With	Metal	**XD4PA22**
4 direction 	1 notch 1 N/O contact per direction	Without	Metal	**XD4PA14**
		With	Metal	**XD4PA24**

XD2GA8241

Ø22 complete units type XD2-G (interchangeable contact blocks) (2) (3) (4)

Description	Operation	Spring return to 'Off' position	Reference
2 direction 90 x 90mm fixing centres	2 notches 2 N/O contacts per direction	With	**XD2GA8241**
		1st notch stayput 2nd notch with spring return to 1st	**XD2GA8251**
4 direction 90 x 90mm fixing centres 	2 notches 2 N/O contacts per direction	With	**XD2GA8441**
		1st notch stayput 2nd notch with spring return to 1st	**XD2GA8451**

J

ZB2BE101

Spare contact blocks

Description	For use with	Reference
1 N/O contact block	XD2-G 2 and 4 direction	**ZB2BE101**

XB4BA861

Manual overload reset buttons, flush push

Travel	Actuation distance (mm)	Colour	Reference
10	6...16	Blue	**XB4BA861**
	6...26	Blue	**XB4BA862**
14	30...130	Blue	**XB4BA961**
	130...257	Blue	**XB4BA962**

XB4BD912R1K

Ø22 complete potentiometer (5)

Description	Resistance (kΩ)	Reference
'+/- 10% linear mode precision complete potentiometer with screw terminals	1	**XB4BD912R1K**
	4.7	**XB4BD912R4K7**
	10	**XB4BD912R10K**
	47	**XB4BD912R47K**
	100	**XB4BD912R100K**
	470	**XB4BD912R470K**

Notes
(1) Standard contact blocks cannot be used.
(2) **ZB2BE101** to be used.
(3) IP66.
(4) Other configurations available by request.
(5) 6mm shaft diameter

Product configurator on se.com/nz

Ø22 black, double insulated bezel (Plastic) – Harmony XB5
Assembly of components

Pushbutton assembly

Body sub-assemblies

Screw clamp terminals

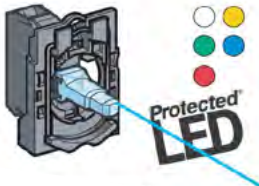
Head sub-assemblies

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

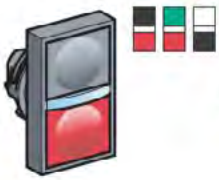
Illuminated pushbutton assembly

Body sub-assemblies with integral LED

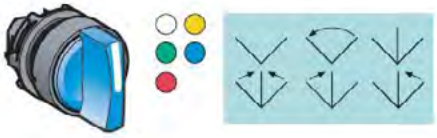
Screw clamp terminals

Head sub-assemblies

Flush push with cap mounted/not mounted



Multiheaded



Standard handle operator

Projecting push

Harmony XB5 delivers extremely robust performance even in severe environments.

- Sealing effectiveness rated up to IP66, IP67, IP68, IP69, IP69K, and type 4X
- High impact resistance up to IK06 rating
- Operating temperature ranging from -40 to +70 °C/-40 to +158 °F
- Compliance with international standards (IEC, UL, CCC, EAC, JIS)
- Marine certified (BV, LROS, BDNV, GL)
- Harmony pushbuttons are designed to perform up to 10 million operations.

Ø22 black, double insulated bezel (Plastic) – Harmony XB5
Complete pushbuttons and selector switches

Complete spring return pushbuttons

XB5AA31

XB5AP51

XB5AA4322

Type	Marking	Contact type N/O	Contact type N/C	Colour	Reference
Flush		1		White	**XB5AA11**
				Black	**XB5AA21**
				Green	**XB5AA31**
				Yellow	**XB5AA51**
				Blue	**XB5AA61**
			1	Red	**XB5AA42**
Projecting			1	Red	**XB4BL42**
Booted, clear silicon		1		Black	**XB5AP21**
				Green	**XB5AP31**
				Yellow	**XB5AP51**
				Blue	**XB5AP61**
			1	Red	**XB5AP42**
Flush with marking	I	1		Green	**XB5AA3311**
	O		1	Red	**XB5AA4322**
	↑ (Black)	1		White	**XB5AA3341**
	↓ (White)	1		Black	**XB5AA3351**
Projecting with marking	O		1	Red	**XB5AL4322**

Complete mushroom head pushbutton

Type	Contact type N/O	Contact type N/C	Colour	Reference
Mushroom head	1		Black	**XB5AC21**

Complete emergency stops

XB5AS8445

Type	Contact type N/O	Contact type N/C	Colour	Reference
Push-pull Ø40mm	1	1	Red	**XB5AT845**
Turn to release Ø40mm	1	1	Red	**XB5AS8445**
Key release Ø40mm (key no. 455)	1	1	Red	**XB5AS9445**

Complete illuminated spring return pushbuttons

XB5AW31B5

Type	Contact type	Supply voltage	Colour	Reference
Illuminated Flush	11N/O + 1N/C	24V AC/DC	White	**XB5AW31B5**
			Green	**XB5AW33B5**
			Red	**XB5AW34B5**
			Orange	**XB5AW35B5**
			Blue	**XB5AW36B5**
		230…240V AC	White	**XB5AW31M5**
			Green	**XB5AW33M5**
			Red	**XB5AW34M5**
			Orange	**XB5AW35M5**
			Blue	**XB5AW36M5**

Complete selector switches

XB5AD33

Type of operator	No. & type of positions		Contacts	Reference
Standard handle, black	2 - stay put		1 N/O	**XB5AD21**
	2 - spring return from right to left		1 N/O	**XB5AD41**
	3 - Stay put		2 N/O	**XB5AD33**
	3 - spring return to center		2 N/O	**XB5AD53**
Key switch with key no. 455	2 - stay put		1 N/O	**XB5AG21**
	2 - spring return to left		1 N/O	**XB5AG61**
	3 - stay put		2 N/O	**XB5AG33**

Ø22 black, double insulated bezel – Harmony XB5
Push-button heads
Spring return, latching and harsh environment type

Spring return pushbutton heads

ZB5AA5

Type – Unmarked	Colour	Reference
Flush	White	**ZB5AA1**
	Black	**ZB5AA2**
	Green	**ZB5AA3**
	Red	**ZB5AA4**
	Yellow	**ZB5AA5**
	Blue	**ZB5AA6**
	Grey	**ZB5AA8**
Flush with transparent cap, for insertion of legend (1) (for actuation of outer contact only)	White	**ZB5AA18**
	Green	**ZB5AA38**
	Red	**ZB5AA48**
	Yellow	**ZB5AA58**
	Blue	**ZB5AA68**
Projecting clear boot, colour of Pushbutton unobscured (3)	Black	**ZB5AP2**
	Green	**ZB5AP3**
	Red	**ZB5AP4**
	Yellow	**ZB5AP5**
	Blue	**ZB5AP6**
Projecting	White	**ZB5AL1**
	Black	**ZB5AL2**
	Green	**ZB5AL3**
	Red	**ZB5AL4**
	Yellow	**ZB5AL5**
	Blue	**ZB5AL6**

ZB5AL3

Type – Marked	Marking Text	Colour	Colour of cap	
Flush (4)	START	White	Green	**ZB5AA333**
	STOP	White	Red	**ZB5AA434**
	UP	Black	White	**ZB5AA343**
	DOWN	White	Black	**ZB5AA344**
	Cap supplied not clipped-in, allowing orientation of arrow in 4 directions: ↑, ↓, ← or →.	Black	White	**ZB5AA334**
		White	Black	**ZB5AA335**

ZB5AA331

Latching pushbutton heads (2)

ZB5AH04

Type	Colour	Reference
Flush	White	**ZB5AH01**
	Black	**ZB5AH02**
	Green	**ZB5AH03**
	Red	**ZB5AH04**
	Yellow	**ZB5AH05**
	Blue	**ZB5AH06**

Pushbutton heads with integrated bellows, plastic, IP69k

ZB5AC680
Harsh environment
-40˚ to +70˚
Larger head for use with gloves

Shape of head	Colour	Reference
Head only, without marking Uses ZB5 22mm components	White	**ZB5AC180**
	Black	**ZB5AC280**
	Green	**ZB5AC380**
	Red	**ZB5AC480**
	Yellow	**ZB5AC580**
	Blue	**ZB5AC680**

Notes
(1) For legend ordering information, see page J36.
(2) Maximum of 1 row of 3 contact blocks.
(3) For coloured boot add S to reference.
(4) For projecting marked button substitute AA with AL in reference.

Ø22 black, double insulated bezel – Harmony XB5
Mushroom pushbutton and Emergency stop heads

ZB5AC2

Mushroom heads for spring return pushbuttons

Diameter	Colour	Reference
Ø40mm (1)	Black	**ZB5AC2**
	Green	**ZB5AC3**
	Red	**ZB5AC4**
	Yellow	**ZB5AC5**

ZB5AS844

ZB5AS944

Emergency stop trigger action mushroom head (2) (3)

Type of reset	Diameter (mm)	Colour	Reference
Trigger action push-pull	40	Red	**ZB5AT84**
Trigger action turn to release	30	Red	**ZB5AS834**
Trigger action turn to release	40	Red	**ZB5AS844**
Trigger action key release	40	Red	**ZB5AS944**
Trigger action key release	60	Red	**ZB5AS964**

ZB5AS842Y

Machine safe stop trigger action mushroom head (2)

Type of reset	Diameter (mm)	Colour	Reference
Trigger action turn to release	40	Black	**ZB5AS842Y**
Trigger action key release	40	Black	**ZB5AS942Y**
Trigger action push pull	40	Black	**ZB5AT82Y**

ZB5AT8643M

Emergency stop trigger action illuminated head with mechanical latching and mechanical state indicator for elevator inspection box applications

Type of reset	Push Ø(mm)	Colour	Reference
Push-pull (4)	40	Red	**ZB5AT8643M**
Legend - Emergency stop			**ZB5AT8643M330**

ZB5AW743

Head for Ø40 latching mushroom head Pushbuttons illuminated

Type of reset	Colour	Reference
Only for use with bodies comprising a light source with integral LED (4)		
Turn to release	White	**ZB5AW713**
	Green	**ZB5AW733**
	Red	**ZB5AW743**
	Yellow	**ZB5AW753**
	Blue	**ZB5AW763**

XB5AS86449B4

Emergency stop with monitoring contacts, trigger action and mechanical latching (complete with contacts)

Type Unmarked	Reference
Turn to release - (1NO & 2NC)	**XB5AS84449**
Illuminated Turn to release - (1NO & 2NC)	**XB5AS86449B4**
Legend - Emergency Stop	**ZBY9142**

ZB5AS84W2B

Illuminated Emergency stop with trigger action and mechanical latching

Type	Signaling type	Supply voltage	Reference
Turn to release heads	Fixed, red	24V AC/DC	**ZB5AS84W2B**
	Fixed, red	230V AC	**ZB5AS84W2M**
	Fixed, white, red, bi-colour	24V AC/DC	**ZB5AS84W3B**
Conatct block with collar	1N/O & 2 N/C		**ZB5AZ141**
	1N/O & 1 N/C		**ZB5AZ105**
Ø90 legend			**ZBY8L330**

Notes
(1) Ø30 and Ø60mm mushroom heads are also available.
(2) Maximum of 4 contact blocks fitted to associated body.
(3) Conforms to EN418, ISO13850-IEC/EN60947-5-5.
(4) Lamp block not included see pages J31 or J33.

Ø22 black, double insulated bezel (Plastic) – Harmony XB5
Complete multiple headed pushbuttons
Multiple headed pushbutton heads

Spring return complete double-headed pushbuttons

XB5AL73415

XB5AW73731●5

Type	Marking	Contact type N/O	Contact type N/C	Colour	Supply	Reference
1 flush Black + 1 projecting Red		1	1	White “I” on Green background White “0” on Red background		**XB5AL73415**
1 flush Black push 1 projecting Red push 1 White central pilot light block		1	1	White “I” on Green background White “0” on Red background	24V AC/DC 240V AC	**XB5AW73731B5** **XB5AW73731M5**

Double-headed pushbutton heads, IP66 (1)

ZB5AL7341

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**

Double-headed pushbutton heads with central pilot light, IP66 (1) (2)

ZB5AW7L3741 + ZB5AZ1●●

Description	Colour and marking of caps	Reference
1 flush black push 1 projecting red push 1 clear central pilot light	Green + red background, unmarked	**ZB5AW7L3740**
	White “I” on green background White “0” on red background	**ZB5AW7L3741**

Triple-headed pushbutton heads, IP66 (1)

ZB5AA71114

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**

Note
(1) For replacement caps use part number ZBA79 for set of ten mixed caps.
(2) Colour of the central pilot lights depends on the colour of the LED light block.

Ø22 black, double insulated bezel – Harmony XB5
Selector, toggle and key switch heads

ZB5AD2

Selector switch heads (IP69K)

Type of operator	Number and type of positions		Reference
Standard handle, black	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**

ZB5AAD28

Toggle switch heads

Description	Lever colour	Type of position	Reference
2 positions	Black	Stay put	**ZB5AD28**
		Spring return	**ZB5AD48**

ZB5AG4

Key switch heads (IP69K)

Type of operator	Number and type of positions (1)		Reference
Key (No. 455) (1)	2 – stay put		**ZB5AG2**
			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**
	3 – spring return to centre		**ZB5AG7**
	3 – spring return from right to centre		**ZB5AG08**

Other key numbers: P.O.A
> Key No. 421E: add the suffix 12 to the ref.
> Key No. 458A: add the suffix 10 to the ref.
> Key No. 520E: add the suffix 14 to the ref.

Example: the reference for a head with key No. 421E for 2 pos sel sw becomes ZB5AG212.

Note
(1) The symbol ⚷ indicates key withdrawal position(s).

Ø22 black, double insulated bezel – Harmony XB5
Illuminated pushbutton heads and selector switch heads

ZB5AW363

ZB5AW333

Spring return illuminated heads – Ø22 (1)

Type	Colour	Reference
Only for use with bodies comprising a light block with "Protected LED"		
Flush	White	**ZB5AW313**
	Green	**ZB5AW333**
	Red	**ZB5AW343**
	Yellow	**ZB5AW353**
	Blue	**ZB5AW363**
Flush for insertion of legend (3)	White	**ZB5AA18**
	Green	**ZB5AA38**
	Red	**ZB5AA48**
	Yellow	**ZB5AA58**
	Blue	**ZB5AA68**

ZB5AH043

Latching illuminated heads – Ø22 (1)

Type	Colour	Reference
Only for use with bodies comprising a light block with "Protected LED"		
Flush	White	**ZB5AH013**
	Green	**ZB5AH033**
	Red	**ZB5AH043**
	Yellow	**ZB5AH053**
	Blue	**ZB5AH063**
Projecting	White	**ZB5AH13**
	Green	**ZB5AH33**
	Red	**ZB5AH43**
	Yellow	**ZB5AH53**
	Blue	**ZB5AH63**

ZB5AK1233

Selector switches illuminated – standard handle heads – Ø22 (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**
	Yellow	**ZB5AK1253**
	Blue	**ZB5AK1263**
2 – spring return from right to left	White	**ZB5AK1413**
	Green	**ZB5AK1433**
	Red	**ZB5AK1443**
	Yellow	**ZB5AK1453**
	Blue	**ZB5AK1463**
3 – stay put	White	**ZB5AK1313**
	Green	**ZB5AK1333**
	Red	**ZB5AK1343**
	Yellow	**ZB5AK1353**
	Blue	**ZB5AK1363**
3 – spring return to centre	White	**ZB5AK1513**
	Green	**ZB5AK1533**
	Red	**ZB5AK1543**
	Yellow	**ZB5AK1553**
	Blue	**ZB5AK1563**

J

Notes
(1) Maximum of 1 row of 2 contact blocks on associated body/fixing collar.

Ø30 black, double insulated bezel (Plastic) – Harmony XB5
Built in flush - Complete pushbuttons and selector switches

Complete spring return pushbuttons - Ø30

XB5FA31

XB5FA4322

Type	Marking	Contact type N/O	Contact type N/C	Colour	Reference
Flush		1		White	**XB5FA11**
				Black	**XB5FA21**
				Green	**XB5FA31**
				Yellow	**XB5FA51**
				Blue	**XB5FA61**
			1	Red	**XB5FA42**
Projecting			1	Red	**XB5FL42**
Flush with marking	I	1		Green	**XB5FA3311**
	O		1	Red	**XB5FA4322**
	↑ (Black)	1		White	**XB5FA3341**
	↓ (White)	1		Black	**XB5FA3351**
Projecting with marking	O		1	Red	**XB5FL4322**

Complete illuminated spring return pushbuttons - Ø30

XB5FW31B5

Type	Contact type N/O	Contact type N/C	Supply voltage	Colour	Reference
Illuminated Flush	1	1	24V AC/DC	White	**XB5FW31B5**
				Green	**XB5FW33B5**
				Red	**XB5FW34B5**
				Orange	**XB5FW35B5**
				Blue	**XB5FW36B5**
			230…240V AC	White	**XB5FW31M5**
				Green	**XB5FW33M5**
				Red	**XB5FW34M5**
				Orange	**XB5FW35M5**
				Blue	**XB5FW36M5**

Complete selector switches - Ø30

XB5FD33

Type of operator	No. & type of positions	Contacts	Reference
Standard handle, black	2 - stay put	1 N/O	**XB5FD21**
	2 - spring return from right to left	1 N/O	**XB5FD41**
	3 - Stay put	2 N/O	**XB5FD33**
	3 - spring return to center	2 N/O	**XB5FD53**
Key switch with key no. 455	2 - stay put	1 N/O	**XB5FG21**
	2 - spring return to left	1 N/O	**XB5FG61**
	3 - stay put	2 N/O	**XB5FG33**

Ø30 black, double insulated bezel (Plastic) – Harmony XB5
Built in flush - Pushbutton heads

New

ZB5FA4

ZB5FL3

ZB5FA331

ZB5FW313

Spring return pushbutton heads, unmarked – Ø30

Type Unmarked	Colour	Reference
Flush	White	**ZB5FA1**
	Black	**ZB5FA2**
	Green	**ZB5FA3**
	Red	**ZB5FA4**
	Yellow	**ZB5FA5**
	Blue	**ZB5FA6**
	Grey	**ZB5FA8**
Flush with transparent cap, for insertion of legend	White	**ZB5FA18**
	Green	**ZB5FA38**
	Red	**ZB5FA48**
	Yellow	**ZB5FA58**
	Blue	**ZB5FA68**
Projecting	White	**ZB5FL1**
	Black	**ZB5FL2**
	Green	**ZB5FL3**
	Red	**ZB5FL4**
	Yellow	**ZB5FL5**
	Blue	**ZB5FL6**

Spring return pushbutton heads, marked - Ø30

Type	Marking	Colour	Reference
Flush	Start	Green	**ZB5FA333**
	I	Green	**ZB5FA331**
	ON	Green	**ZB5FA341**
	Stop	Red	**ZB5FA434**
	O	Red	**ZB5FA432**
	OFF	Red	**ZB5FA435**
	↑ (Black)	White	**ZB5FA334**
	↓ (White)	Black	**ZB5FA335**
Projecting	O	Red	**ZB5FL432**
	Stop	Red	**ZB5FL434**

Latched pushbutton heads, unmarked - Ø30

Type	Colour	Reference
Flush	White	**ZB5FH01**
	Black	**ZB5FH02**
	Green	**ZB5FH03**
	Red	**ZB5FH04**
	Yellow	**ZB5FH05**
	Blue	**ZB5FH06**
Projecting	White	**ZB5FH1**
	Black	**ZB5FH2**
	Green	**ZB5FH3**
	Red	**ZB5FH4**
	Yellow	**ZB5FH5**
	Blue	**ZB5FH6**

Illuminated pushbutton heads, unmarked - Ø30

Type	Colour	Reference
Flush	White	**ZB5FW313**
	Green	**ZB5FW333**
	Red	**ZB5FW343**
	Yellow	**ZB5FW383**
	Blue	**ZB5FW363**
Flush for insertion of legend IP69K (legend on page J37)	White	**ZB5FA18**
	Green	**ZB5FA38**
	Red	**ZB5FA48**
	Yellow	**ZB5FA88**
	Blue	**ZB5FA68**

Ø30 black, double insulated bezel (Plastic) – Harmony XB5
Selector and key switch heads

New

ZB5FD2

Selector switch heads - Ø30

Type of operator	Number and type of positions	Reference
Standard handle, black	2 – stay put	**ZB5FD2**
	2 – spring return from right to left	**ZB5FD4**
	3 – stay put	**ZB5FD3**
	3 – spring return to centre	**ZB5FD5**
	3 – spring return from left to centre	**ZB5FD7**
	3 – spring return from right to centre	**ZB5FD8**

Key switch heads – Ø30

Type of operator	Number and type of positions (1)	Reference
Key (No. 455) (1)	2 – stay put	**ZB5FG2**
		ZB5FG4
	2 – spring return from right to left	**ZB5FG6**
	3 – stay put	**ZB5FG0**
		ZB5FG3
		ZB5FG5
		ZB5FG9
		ZB5FG09
	3 – spring return from left to centre	**ZB5FG1**
	3 – spring return to centre	**ZB5FG7**
	3 – spring return from right to centre	**ZB5FG08**

ZB5FG2

J

Built in flush, illuminated selector switch heads – Ø30

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	**ZB5FK1213**
	Green	**ZB5FK1233**
	Red	**ZB5FK1243**
	Yellow	**ZB5FK1283**
	Blue	**ZB5FK1263**
2 – spring return from right to left	White	**ZB5FK1413**
	Green	**ZB5FK1433**
	Red	**ZB5FK1443**
	Yellow	**ZB5FK1483**
	Blue	**ZB5FK1463**
3 – stay put	White	**ZB5FK1313**
	Green	**ZB5FK1333**
	Red	**ZB5FK1343**
	Yellow	**ZB5FK1383**
	Blue	**ZB5FK1363**
3 – spring return to centre	White	**ZB5FK1513**
	Green	**ZB5FK1533**
	Red	**ZB5FK1543**
	Yellow	**ZB5FK1583**
	Blue	**ZB5FK1563**

ZB5AK1233

Note
(1) The symbol ⚷ indicates key withdrawal position(s).

Ø22/Ø30 black, double insulated bezel – Harmony XB5
Bodies, contact blocks and light sources

ZB5AZ101

Pushbutton and selector switch bodies

Description	Type of contact		Reference
	N/O	N/C	
Screw clamp terminal connections	1	–	**ZB5AZ101**
	–	1	**ZB5AZ102**
Spring clamp terminals	1	–	**ZB5AZ1015**
	–	1	**ZB5AZ1025**
1 early make/1 late break	1	1	**ZB5AZ106**
1 early make/1 normal	2	–	**ZB5AZ107**

ZBE101

ZBE1015

Additional contact blocks (1)

Description	Type of contact		Reference
	N/O	N/C	
Standard single	1	–	**ZBE101**
	–	1	**ZBE102**
Early make	1		**ZBE201**
Late Break		1	**ZBE202**
Standard single – Spring Clamp Terminals	1	–	**ZBE1015**
	–	1	**ZBE1025**
Special contact blocks (2) (for low power switching)	1	–	**ZBE1016**
	–	1	**ZBE1026**
Fixing collar			**ZB5AZ009**

ZBVB1

ZBV●●5

Additional light sources

Description	Supply voltage (V)	Colour	Reference
Integral LED (to combine with heads for integral LED)	⎓ 12	White	**ZBVJ1**
		Green	**ZBVJ3**
		Red	**ZBVJ4**
		Orange / Amber	**ZBVJ5**
		Blue	**ZBVJ6**
	⎓ 24 (3)(4)	White	**ZBVB1**
		Green	**ZBVB3**
		Red	**ZBVB4**
		Orange / Amber	**ZBVB5**
		Blue	**ZBVB6**
	⎓ 24 – 120 (3) (5)	White	**ZBVBG1**
		Green	**ZBVBG3**
		Red	**ZBVBG4**
		Orange / Amber	**ZBVBG5**
		Blue	**ZBVBG6**
	~ 110 – 120 (3) (4) (5)	White	**ZBVG1**
		Green	**ZBVG3**
		Red	**ZBVG4**
		Orange / Amber	**ZBVG5**
		Blue	**ZBVG6**
	~ 230 – 240 (3) (4) (5)	White	**ZBVM1**
		Green	**ZBVM3**
		Red	**ZBVM4**
		Orange / Amber	**ZBVM5**
		Blue	**ZBVM6**

ZBE1015 & ZBV●●5

ZBVGM4T

Note: Available in Q1 2021

Title?

Description	Supply Voltage (V)	Color of light source	Reference
Integral LED (to combine with heads for integral LED)	110..240 ~ (50/60 Hz)	White	**ZBVGM1T**
		Green	**ZBVGM3T**
		Red	**ZBVGM4T**
		Orange	**ZBVGM5T**
		Blue	**ZBVGM6T**
		Yellow	**ZBVGM8T**

Notes
(1) Maximum amount of contact blocks to be stacked is three deep. For E-stops see page J9 note (4).
(2) It is not possible to fit these contact blocks with supplementary contact blocks.
(3) Add suffix 5 for spring clamp terminals e.g. **ZBVJ15**.
(4) For flashing led add 18 to reference e.g. **ZBV18B3**.
(5) Use suppressor in conjunction with protected LED when connected in parallel to inductive loads 30VA and above.

Ø22/Ø30 black, double insulated bezel – Harmony XB5
Pilot lights and accessories

XB5AVB5

Pilot lights complete with “Protected LED” – Ø22

Supply voltage (V)	Colour	Reference
⎓ 24 (1)	White	**XB5AVB1**
	Green	**XB5AVB3**
	Red	**XB5AVB4**
	Orange / Amber	**XB5AVB5**
	Blue	**XB5AVB6**
~ 110...120 (1) (2)	White	**XB5AVG1**
	Green	**XB5AVG3**
	Red	**XB5AVG4**
	Orange / Amber	**XB5AVG5**
	Blue	**XB5AVG6**
~ 230...240 (1) (2)	White	**XB5AVM1**
	Green	**XB5AVM3**
	Red	**XB5AVM4**
	Orange / Amber	**XB5AVM5**
	Blue	**XB5AVM6**

ZB5AV053

Pilot light heads to suit “Protected LED” – Ø22

For use with body comprising light source type	Colour of lens	Reference
Integrated LED only	White	**ZB5AV013**
	Green	**ZB5AV033**
	Red	**ZB5AV043**
	Orange / Amber	**ZB5AV053**
	Blue	**ZB5AV063**

Pilot lights complete with “Protected LED” – Ø30

Type	Supply voltage	Colour	Reference
with integral LED	24V AC/DC	White	**XB5FVB1**
		Green	**XB5FVB3**
		Red	**XB5FVB4**
		Orange	**XB5FVB5**
		Blue	**XB5FVB6**
	230…240V AC	White	**XB5FVM1**
		Green	**XB5FVM3**
		Red	**XB5FVM4**
		Orange	**XB5FVM5**
		Blue	**XB5FVM6**

ZB5FV043

Pilot light heads to suit “Protected LED” – Ø30

For use with body comprising light source type	Colour	Reference
Integral LED	White	**ZB5FV013**
	Green	**ZB5FV033**
	Red	**ZB5FV043**
	Orange	**ZB5FV053**
	Yellow	**ZB5FV083**
	Blue	**ZB5FV063**

LED suppressors and transformer blocks

For use with	Supply voltage (V)	Reference
Transformer block	400V-24V	**ZBV5B (3)**
Dummy contact blocks		**ZBE000**

Notes
(1) For complete bodies with flashing LED light block,e.g. **ZB5AV18B3**.
(2) Use suppressor in conjunction with protected LED when connected in parallel to inductive loads 30VA and above.
(3) Select light source LED and transformer plus 2 dummy contact blocks.

Ø22/Ø30 black, double insulated bezel – Harmony XB5
Pilot lights, sub-assemblies

ZBZG156

ZBZM156

Blocks for “test light” light function

For use with	Supply voltage (V)	Description	Reference
Light blocks	⎓ 12 and 24 ⎓ 24…120	Single module, 1 connecting wire	**ZBZG156**
Light blocks with integral LED	~ 48…230	Double module, with connecting wires	**ZBZM156**

Body/fixing collar

For use with	Reference
Electrical blocks (contact or light)	**ZB5AZ009**

ZB5AZ009

Bodies

Screw clamp terminal connections

Light source	Supply voltage (V)	Colour of light source	Reference
Integral	⎓ 12	White	**ZB5AVJ1**
		Green	**ZB5AVJ3**
		Red	**ZB5AVJ4**
		Orange / Amber	**ZB5AVJ5**
		Blue	**ZB5AVJ6**
	⎓ 24 (1) (3)	White	**ZB5AVB1**
		Green	**ZB5AVB3**
		Red	**ZB5AVB4**
		Orange / Amber	**ZB5AVB5**
		Blue	**ZB5AVB6**
	⎓ 24...120 (1) (2)	White	**ZB5AVBG1**
		Green	**ZB5AVBG3**
		Red	**ZB5AVBG4**
		Orange / Amber	**ZB5AVBG5**
		Blue	**ZB5AVBG6**
	~ 110...120 (1) (2) (3)	White	**ZB5AVG1**
		Green	**ZB5AVG3**
		Red	**ZB5AVG4**
		Orange / Amber	**ZB5AVG5**
		Blue	**ZB5AVG6**
	~ 230...240 (1) (2) (3)	White	**ZB5AVM1**
		Green	**ZB5AVM3**
		Red	**ZB5AVM4**
		Orange / Amber	**ZB5AVM5**
		Blue	**ZB5AVM6**

ZB5AV●●

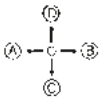
Notes

(1) For 3 terminal “test” function, add the suffix 156 to the references selected above, e.g. **ZB5AVB3156**, complete body with integral LED, with “test” function, colour green.
(2) Use suppressor in conjunction with protected LED when connected in parallel to inductive loads 30VA and above.
(3) Complete bodies with flashing light block, e.g. **ZB5AV18B3**.

Ø22 black, double insulated bezel – Harmony XB5
Joysticks, potentiometer and miscellaneous devices

XD5PA12

Ø22 complete units type XD5-P (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**

XB5DS●

Hour counters

Characteristics	Supply voltage (V)	Reference
Indication 0...9999.9	⎓ 12...24 – 50/60Hz	**XB5DSB**
	∿ 230...240 – 50Hz	**XB5DSM**

XB5KS2B4

Annunciators

Characteristics	Supply voltage (V)	Reference
90dB buzzer continuous or intermittent - Red	⎓ 24 – 50/60Hz	**XB5KS2B4**
	∿ 230...240 – 50Hz	**XB5KS2M4**

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XB5DT1S

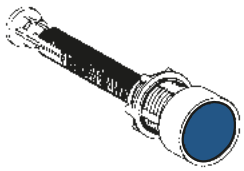
Fuse carrier

Description	For use with	Reference
Fuse carrier	5 x 20mm fuse 6.3A – 250V	**XB5DT1S**

ZB5AD912

Heads and mounting base for potentiometer

Description	Application	Reference
For potentiometer with shaft length 44 to 50mm (potentiometer not included)	For shaft Ø6.35mm (2)	**ZB5AD922**
	For shaft Ø6.0mm (2)	**ZB5AD912**



Manual overload reset buttons (travel 10mm)

Actuation distance (mm)	Marking	Colour	Reference
17...120	R	Blue	**XB5AA86102**
120...257	R	Blue	**XB5AA86202**

Notes

(1) Standard contact blocks cannot be used.

(2) When fitting shaft into potentiometer head back off brass screw at top of head to release the compression and retighten once fitted.

Ø22 black double insulated bezel – Harmony XB5
Joysticks, potentiometer and miscellaneous devices

Complete potentiometer (1)

XB5BD912R1K

Description	Resistance (kΩ)	Reference
+/- 10% linear mode precision complete potentiometer with screw terminals	1	**XB5AD912R1K**
	4.7	**XB5AD912R4K7**
	10	**XB5AD912R10K**
	47	**XB5AD912R47K**
	100	**XB5AD912R100K**
	470	**XB5AD912R470K**

Panel mounted timers

XB5DTB22

Description	Supply voltage (V)	Range	Reference
Timer with LED status & 1 static output - delay on energization	24V ⎓	0.5s -10s	**XB5DTB22**
		3s - 60s	**XB5DTB23**
		3min - 60min	**XB5DTB25**
	100…240V AC/DC 50/60 Hz	0.5s -10s	**XB5DTGM2**
		3s - 60s	**XB5DTGM3**
		3min - 60min	**XB5DTGM5**

Panel mounted USB and RJ45 ports

XB5PUSB3

XB5PRJ45

Description	Reference
USB port 3.0 A-A, upto IP69K with protection cover (2)	**XB5PUSB3**
RJ45 port Cat. 6, upto IP69K with protection cover (2)	**XB5PRJ45**
Black protection cover IP65/67	**ZBSP1**
Rigid transparent protection cover IP65/IP67	**ZBSP2**
Metal protection cover IP65/IP67/IP69K	**ZBSP3**

3-phase pilot lights with integral LED

XB5EV57K4

Description	Supply voltage (V)	Reference
Red,Green,Yellow LEDs	400V ~ 50/60Hz	**XB5EV57K4**
White,White,White LEDs	400V ~ 50/60Hz	**XB5EV57L4**

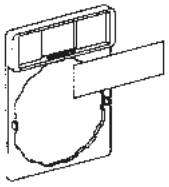
Basic displays

XBH1AA0G4

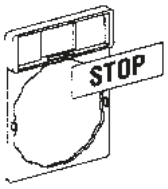
Description	Input current	LED colour	Reference
Digital panel meter LED display, 1 current input , -999…9999	4...20 mA	Green	**XBH1AA0G4**

Notes
(1) 6mm shaft diameter.
(2) Protection cover to be ordered separately.

Harmony XB4 and XB5
Marking accessories for control and signalling units



ZBY2101



ZBY2304

Standard (30 x 40mm) legend holders for 8 x 27mm legends – Ø22

Description	Legend colour	Marking	Reference
With blank legend (for engraving)	Black or red background	–	**ZBY2101**
		Extended 30 x 50	**ZBY6101**
	White or yellow background	–	**ZBY4101**
With marked legend (1)	Black or red	O (black background)	**ZBY2146**
		I	**ZBY2147**
		II	**ZBY2148**
		O-I	**ZBY2178**
		I-II	**ZBY2179**
		I-O-II	**ZBY2186**
		Auto	**ZBY2115**
		Stop	**ZBY2304**
		Auto-hand	**ZBY2364**
		Auto-O-hand	**ZBY2385**
		AUTO-OFF-MAN	**ZBY2385M**
		AUTO-MAN	**ZBY2364M**
		Close	**ZBY2314**
		Down	**ZBY2308**
		Emergency stop	**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	**ZBY2303**
		STOP-Start	**ZBY2366**
		Up	**ZBY2307**

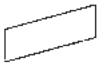
Standard 40x50mm legend holders for 8x27mm legends – for Ø30 built in flush heads

New

ZBYF2101

Type	Legend Colour	Marking	Reference
With blank legend	Black or red		**ZBYF2101**
	White or yellow		**ZBYF4101**
With marked legend	Black or red	O-I	**ZBYF2178**
		STOP	**ZBYF2304**
		START (in white)	**ZBYF2303**
		OFF-ON	**ZBYF2367**
		I-O-II	**ZBYF2186**

Legends for engraving



ZBY010●

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**

Peel-off labels

Application	Reference
Sheets of 66 circular peel-off transparent self-adhesive legends	**ZBY1101**
Sheet of 76 8x27mm peel-off legends (30 x 40mm legend holders ZBZ32 with backing board and protective transparent cover)	**ZBY4100**

Note

(1) "Start" functions: white letters on black background. "Stop" functions: white letters on red background (unless otherwise specified above).

Ø22 Harmony XB4 and XB5
Components and accessories for control and signalling units

ZBY9320

Circular legends for emergency stop mushroom heads

Diameter (mm)w	Marking, on yellow background	Reference
90	EMERGENCY STOP	**ZBY8330**
60	3D Legend EMERGENCY STOP	**ZBY9320**

ZBY9W2B330

New

Illuminated circular legends for emergency stop mushroom heads

Diameter (mm)	Signalling	Colour	Supply voltage	Marking	Reference
60	Fixed, Red	Yellow	24V AC/DC	Emergency stop	**ZBY9W2B330**
	Fixed, White/Red	Yellow	24V AC/DC	Emergency stop	**ZBY9W3B330**
	Fixed, Red	Yellow	230V AC	Emergency stop	**ZBY9W2M330**

ZBP0

Boots

Description	For use with	Reference
Clear single boots	Projecting non-illuminated or illuminated Pushbuttons	**ZBP0**
	Projecting non-illuminated or illuminated Pushbuttons in food industry applications	**ZBP0A**
Boot for control block	Protection against dusty environment ZBE10● and ZBE10●3	**ZBZ60**

ZBA709

Boots for double-headed and triple-headed Pushbuttons

Description	For Pushbuttons	Reference
Clear silicone boots	Triple-headed	**ZBA709**
	Double-headed with 1 flush push + 1 projecting push	**ZBA710**

ZBZ3605

Accessories

Padlocking kit for Emergency Stop

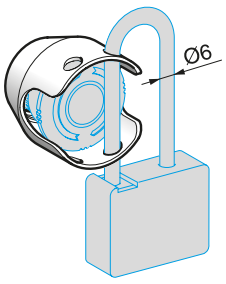
Description	Application	Colour	Reference
Padlocking kit conforming to EN 418/ISO 13850 (1) (2) (padlockable)	For Emergency Stop function only, with the following Ø40 trigger-action Pushbuttons: XB5 AS8● XB4 BT8● XB5 AS9● XB4 BS8● ZB5 AS8● XB4 BS9● ZB5 AS9● ZB4 BT8● ZB4 BS8● ZB4 BS9●	Yellow	**ZBZ3605**

ZBY9330T

Description	Marking	Colour	Reference
Ø60mm legend for padlocking device **ZBZ3605**	EMERGENCY STOP	Yellow	**ZBY9330T**

Guards

Description	Application	Colour	Reference
Metal guards (padlockable) (2)	For Emergency Stop function only, with the following Ø40 trigger-action Pushbuttons: XB5 AS8● XB4 BT8● XB5 AS9● XB4 BS8● ZB5 AS8● XB4 BS9● ZB5 AS9● ZB4 BT8● ZB4 BS8● ZB4 BS9●	Red Blue Yellow	**ZBZ1604** **ZBZ1606** **ZBZ1605**
Plastic guard	Selector switches and key switches	Black	**ZBZ2102**
	For ZB4BC● and ZB5● Pushbuttons Harsh environment		**ZBZ1902**
Legend for ZBZ16.. guards - Emergency stop			**ZBY9330M**

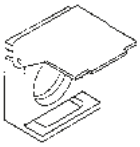


ZBZ 160●

Notes
(1) Standard circular legends are not compatible with this product. Use special legends **ZBY●●T**.
(2) XB5AT8 and ZB5AT8 are not compatible with these guards.

Ø22 Harmony XB4 and XB5
Components and accessories for control and signalling units

ZBZ58



ZB4BZ64

Accessories

Bellows seals for harsh environments (IP69K)

Description	For use with	Colour Material	Reference
Bellows seals for harsh environments (humidity, dust, high-pressure cleaning)	Any Harmony XB5 plastic, and XB4 metal mushroom head Pushbutton (1) (2), Ø40mm or Ø060mm	Black Silicone	**ZBZ28**
		Yellow Silicone	**ZBZ58**

Padlockable flaps

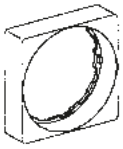
Description	For use with	Colour	Reference
Padlockable flaps	Flush Pushbuttons	Black	**ZB4BZ62 (3)**
		Red	**ZB4BZ64**

Blanking plugs

ZB5SZ3

ZB4SZ3

Description		Reference
Metal blanking plug, chromium plated (4)	For Ø22 control and signalling units	**ZB4SZ3**
Plastic blanking plug, black (5)	For Ø22 control and signalling units	**ZB5SZ3**



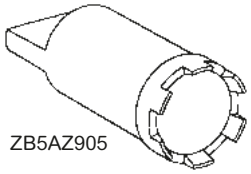
ZB5AZ31

Accessories

Description	Application	Reference
Square insert	To give square appearance to ZB5A round heads	**ZB5AZ31**
Lock nut	Fixing head	**ZB5AZ901**
Tool	For tightening lock nut	**ZB5AZ905**
Plate	Anti-rotation of head	**ZB5AZ902**

Spare key

Description		
Spare key for key operated units (6)	Ronis No. 455	**ZBG455**
Spare key for booted selector switches (6)	Ronis No. 455	**ZBG455P**
Keyhole cover		**ZBGP**



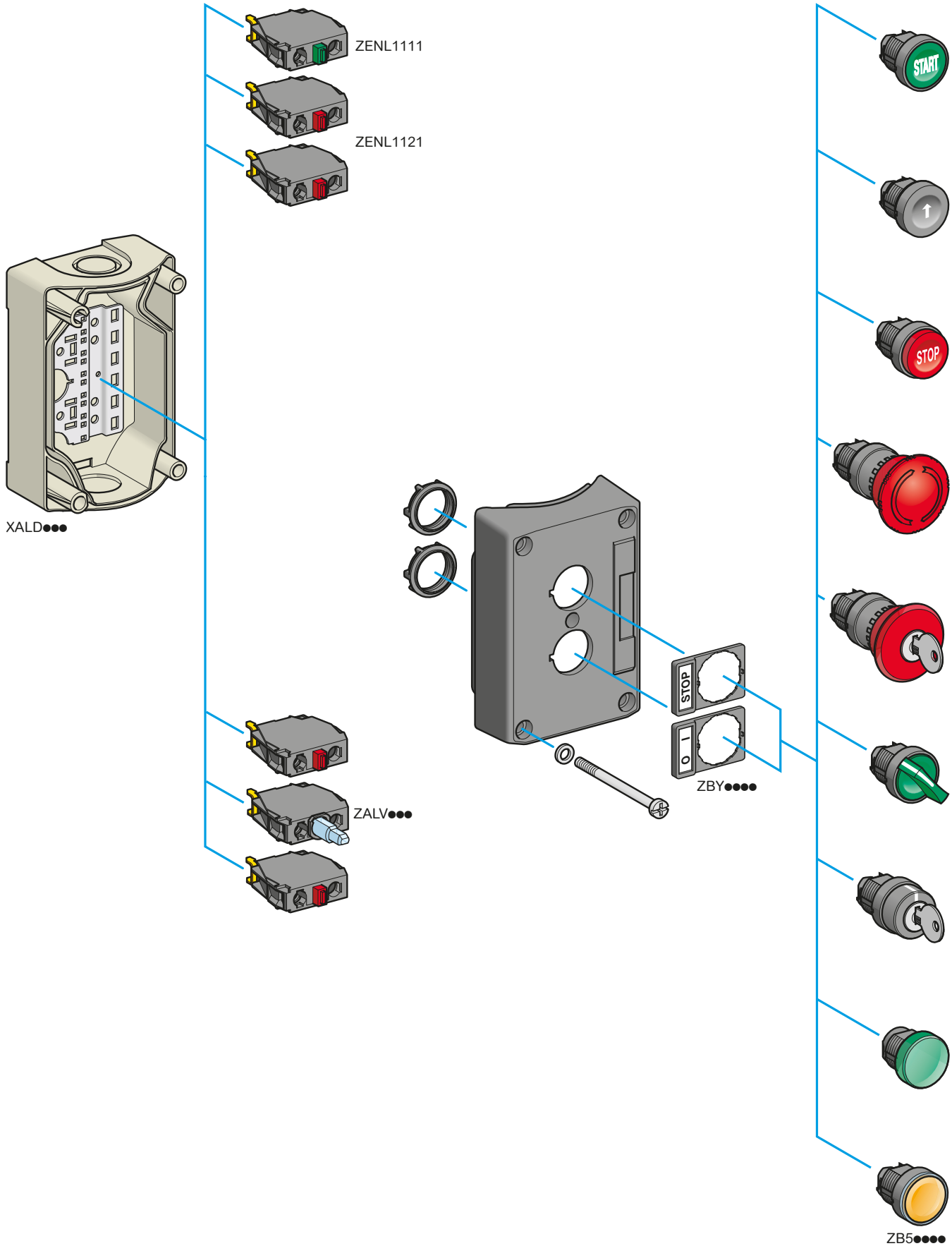
ZB5AZ905

ZBG455

ZBG…P

Notes
(1) Only when mounted on control stations. Use legends **ZBY 9●●●T**.
(2) Except ZB5 AR●16 ØZB4BR●16.
(3) To suit 7mm shank padlock.
(4) Requires a ZB4BZ009 body/fixing collar.
(5) Supplied complete with fixing nut.
(6) Other key types also available reference = **ZBG** followed by key No. e.g. **ZBG421E**.

Double insulated control stations XAL
To suit Ø22 Harmony XB5 control and signalling units
Variable composition – IP65, NEMA 4X and 13



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Double insulated control stations XAL
Complete with Ø22 Harmony XB5 control and signalling units
Factory assembled units – IP65, NEMA 4X and 13

XALK178F

XALK188F

XALK84W3BG

XALK178W3B140G

Emergency stop trigger action station (1) (2)

Description	Contact	Marking	Reference
1 red mushroom head Pushbutton, Ø40mm latching, turn to release	2 N/C	–	**XALK178F**
1 red mushroom head Pushbutton, Ø40mm latching, key to release (Ronis key No. 455)	2 N/C	–	**XALK188F**
Trigger action E-stop turn to release	2 N/C	Emergency Stop	**XALK178FH29**

New

Illuminated Emergency stop with trigger action and mechanical latching station

Description	Signalling type	Contacts	Supply voltage (V)	Reference
Turn to release	Fixed white + fixed red, bi-color	1N/O + 2N/C	24V AC/DC	**XALK84W3BG**
	Fixed white + fixed red, bi-color	1N/O + 2N/C	24V AC/DC	**XALK178W3B140G**

XALD215

Start, stop and start/stop stations (3)

Description	Contact	Marking	Reference
1 green flush Pushbutton spring return	1 N/O	Start	**XALD103**
1 red flush Pushbutton spring return	1 N/C	Stop	**XALD114**
2 flush Pushbuttons 1 green spring return 1 red spring return	1 N/O 1 N/C	Start Stop	**XALD215**

XALD02

Empty enclosures

For normal environments (with stainless steel fixing screws)

Description	Number of ways	Reference
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**
Light grey base “RAL7035” Yellow lid “RAL1012” Emergency stop marking	1	**XALK01H29**

XALK01

XALK01H29

Notes
(1) Conform to EN418, ISO13850 – IEC/EN60947-5-5.
(2) Light grey base RAL7035 yellow lid RAL1012.
(3) Light grey base RAL7035, dark grey lid RAL7016.

Double insulated control stations XAL
To suit Ø22 Harmony XB5 control and signalling units

XALG01

XALG05

ZENL1111

ZALV●●

Control station enclosures XAL G for severe environments (1)

Description	Number of Ø22 cut-outs	Reference
Black “RAL9005” lid and base	1	**XALG01**
	2	**XALG02**
	3	**XALG03**
	4	**XALG04**
	5	**XALG05**

Electrical blocks (for mounting on metal plate at back of enclosure XALD/K)

Electrical blocks with screw clamp terminal connections

Description	Type	Colour	Reference
Standard contact blocks (2)	N/O contact	–	**ZENL1111**
	N/C contact	–	**ZENL1121**
Light blocks with “Protected LED” (2)	⎓ 24V	White	**ZALVB1**
		Green	**ZALVB3**
		Red	**ZALVB4**
		Yellow	**ZALVB5**
		Blue	**ZALVB6**
	∿ 230V	White	**ZALVM1**
		Green	**ZALVM3**
		Red	**ZALVM4**
		Yellow	**ZALVM5**
		Blue	**ZALVM6**

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Notes
(1) Use panel mount XB5 / ZB5 Pushbutton components.
(2) A maximum of 3 electrical blocks may be fitted per associated head.

Metal control stations XAP, XAM and 9001
To suit Ø22 and Ø30 control and signalling units
Empty enclosures and factory assembled units – IP65, NEMA 4 and 13

XAPM1202H29

XAPM2203H29

XAPJ1201H29

9001KY2

Die cast metal enclosures – IP65 (1)

Description	Front face dimensions (mm)	No. of cutouts	No. of rows vertical	No. of rows 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 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**
Yellow lid	80 x 80	1 (Ø22)	1	1	**XAPJ1201H29**

Die cast metal enclosures – IP66 (2)

Description	Front face dimensions (mm)	Number of cutouts	No. of rows vertical	No. of rows horizontal	Reference
With one threaded conduit entry (usable depth 67mm)	92 x 102	1 (Ø30)	1	1	**9001KY1**
	92 x 146	2 (Ø30)	1	2	**9001KY2**
	92 x 191	3 (Ø30)	1	3	**9001KY3**

Notes
(1) Recommended for use with Harmony style 4 panel mounted control and signalling units.
(2) Recommended for use with 9001K panel mounted control and signalling units.

Biometric switches
Harmony pocket remote – wireless remote control system

XB5S●B●●●●

Biometric switch – fingerprint reader

Description	Output type	Voltage	Connection	Reference
Stand alone operation	PNP, latching	24VDC	2m Lead	**XB5S6B2L2**
	PNP, momentary	24VDC	2m Lead	**XB5S7B2L2**
Programmable with database storage	PNP, latching	24VDC	2m Lead	**XB5S8B2L2**
	PNP, momentary	24VDC	2m Lead	**XB5S9B2L2**

ZART03

ZARB05WSP

ZARC620

Harmony pocket remote - Wireless remote control system

Transmitter			
Description	Battery	No. of pushbuttons	Reference
Single-step pushbutton transmitter	2 x 1.5 V AAA	3	**ZART03**
		6	**ZART06**
		8	**ZART08**
Receiver			
Description	Relay out	Supply voltage	Reference
Wired connection (pre-wired with 1.5 m)	5	12-24V DC	**ZARB05WSP**
	11	12-24V DC	**ZARB11WSP**
Accessories			
Description	Use with		Reference
Label kit	ZART03/06/08		**ZARC620**

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Wireless and batteryless pushbuttons

Maximise freedom of movement with Harmony wireless and batteryless pushbuttons

Save time – no cable connection required between pushbutton and control panel.

Save money – no wiring and cable tray costs.

Minimise post-installation maintenance – no battery to recharge or replace.

ZBR RA

Wireless and batteryless pushbutton and rope pull switch receiver (3)

Programmable receivers

Description	Output type	Receiver voltage V	Reference
Monostable Pulse / On-Off / Start stop / Momentary	4 PNP outputs 200 mA/24V (1)	⎓ 24	**ZBRRC (1)**
	2 relay outputs type RT 3A (2)	∿/⎓ 24…240	**ZBRRA (2)**

ZBRN1

60 way wireless and batteryless device receiver – interface to PLC / HMI (3)

Description	Reference
Harmony hub - Base for Modbus TCP (5)	**ZBRN1**
Harmony hub - Base with Modbus RS485 serial	**ZBRN2**
Modbus/TCP network communication card (2 RJ45)	**ZBRCETH**

ZBRCETH

Receiver accessories

Product	Application	Description	Reference
Relay-antenna (4)	Between transmitter and receiver Used to increase the range and/or get round obstacles	∿/⎓ 24…240 - 5m cable - 1 power-ON LED - 2 LEDs	**ZBR A1**
External-antenna	For use with network interface modules	reception/ transmission	**ZBR A2**
External antenna	Passive antenna to pass through a wall must be close to a relay antenna or a receiver	1m cable	**ZBRA3**

ZBR A1

Notes

(1) One shot output function.
(2) Stop start, one shot output or mixed output V2.0 allows use with ZBRT2.
(3) Should not be used for hoisting or safety applications.
(4) Not wired to the receiver.
(5) Blank slot for communication card ZBRCETH (should be ordered separately).

ZB5 RTA4

Wireless and batteryless pushbutton transmitters

Emergency stop pushbutton monitoring

Description	Type of push	Cap colour	Reference
Complete Pushbuttons: Transmitter ZBRT1, fixing collar, and head with clipped in cap (1) (2)	Plastic	White	**ZB5RTA1**
		Black	**ZB5RTA2**
		Green	**ZB5RTA3**
		Red	**ZB5RTA4**
		Yellow	**ZB5RTA5**
		Blue	**ZB5RTA6**
	Metal	White	**ZB4RTA1**
		Black	**ZB4RTA2**
		Green	**ZB4RTA3**
		Red	**ZB4RTA4**
		Yellow	**ZB4RTA5**
		Blue	**ZB4RTA6**

ZBRP1

ZBRT2

Other wireless and batteryless transmitters

Description	Colour	Reference
Rope pull switch transmitter		**ZBRP1**
40mm Mushroom head transmitter (complete)	Black	**ZB5RTC2**
40mm Mushroom head (pushbutton only)	Black	**ZB5RZC2**
Momentary action transmitter (3)		**ZBRT2**

Transmitter accessories IP65

Product	Application	Description	Reference
Mobile box	For mobile wireless and batteryless pushbutton	1 cut-out	**ZBRM21**
		2 cut-out	**ZBRM22**
Holster	For mobile box	Holster M21/M22	**ZBRACS**
Support for ZBRP1			**ZBRAUS2**

ZBRM22

ZBRM21

ZBRACS

Replacement heads

Type of push	Cap colour	Reference
Plastic		**ZB5RZA0**
Metal		**ZB4RZA0**
Set of caps	10 colours	**ZBA79**

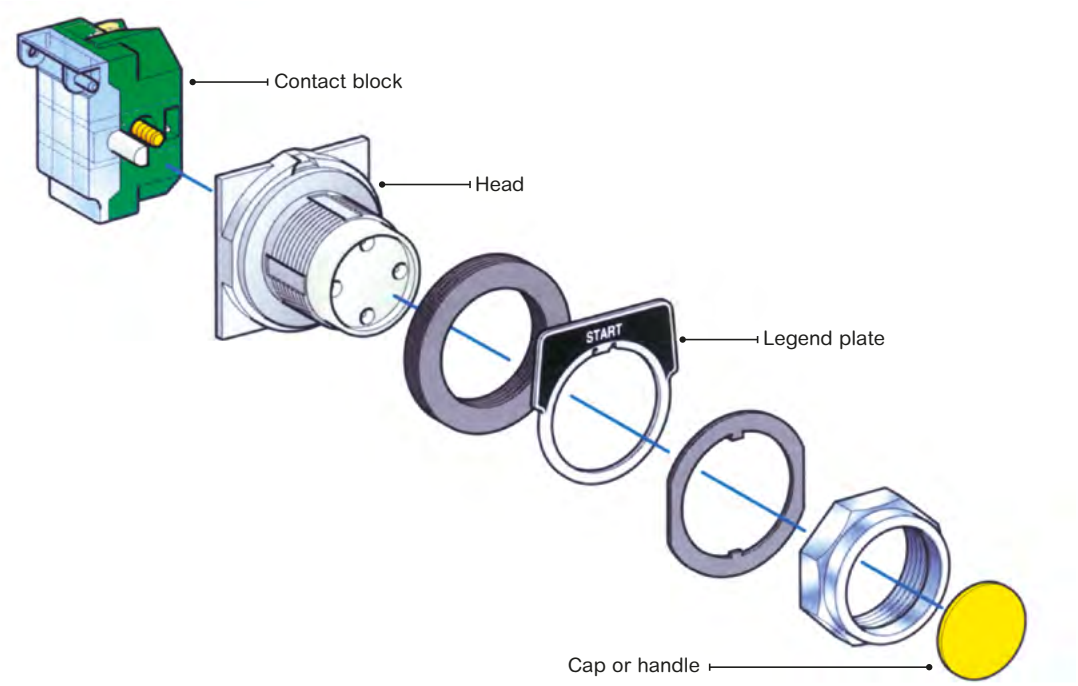
To build momentary transmitter Pushbutton use the following components

ZBRT2 + ZB5AZ009 (4) + ZB5RZA0 (4) + ZBA79

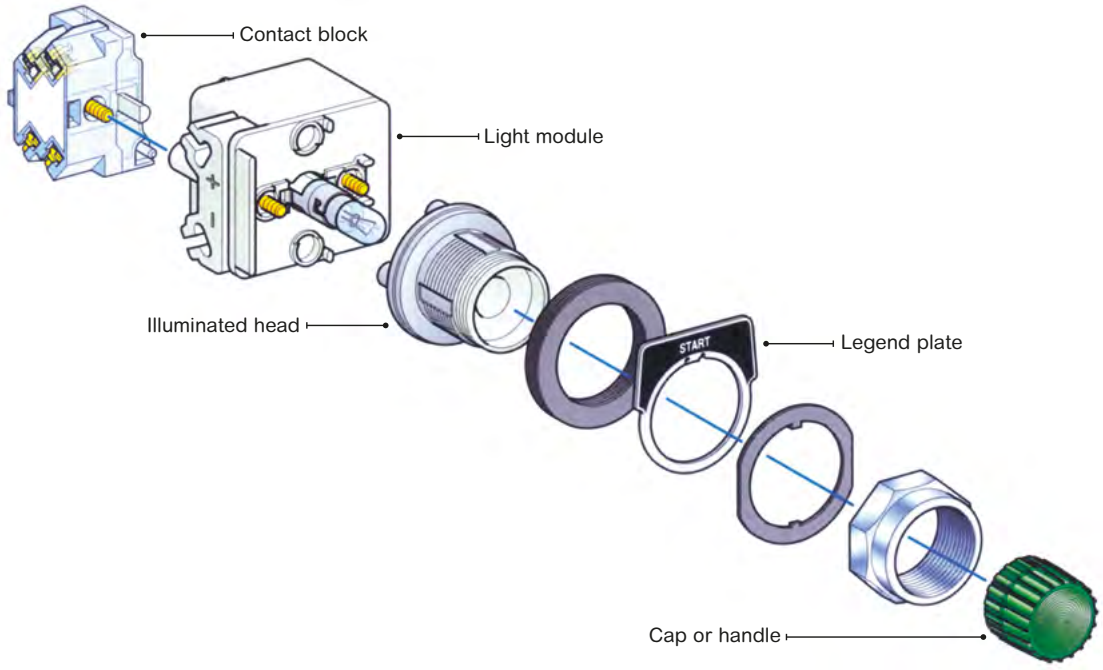
Notes
(1) This cap is fitted by Schneider Electric and cannot be removed (risk of damage).
(2) Maintained / one shot or pulse / start stop.
(3) Use either metal or plastic replacement head and set of caps to complete.
(4) For metal head substitute ZB5AZ for ZB4BZ and ZB5RZ for ZB4RZ.

Square D
Ø30 chromium plated metal bezel - 9001K, IP66
Assembly of components

Pushbutton assembly



Illuminated Pushbutton assembly



Control and signalling units

Square D
Ø30 chromium plated metal bezel - 9001K
Non-illuminated Pushbutton and selector switch heads – IP66, NEMA 4 and 13

9001KR1U

9001KR3U

Spring return heads 30mm

Description	Colour	Reference
Flush	Universal (1)	**9001KR1U**
Recessed	Universal (1)	**9001KR2U**
Projecting	Universal (1)	**9001KR3U**

9001KR20

9001KR9

Mushroom heads (add cap)

Description	Reference
E-Stop trigger action	**9001KR16H2**
Push-pull maintained operator	**9001KR9**
Spring return operator	**9001KR20**

9001K93R

Caps for spring return and latching non-illuminated mushroom heads

Description	Colour	Reference
35mm mushroom cap	Red	**9001K92R**
with locking screw	Green	**9001K92G**
57mm mushroom cap	Red	**9001K93R**
with locking screw	Green	**9001K93G**

9001KS11B

Selector switch heads

Type of operator	No. of positions	Operation	Reference
Standard handle, black (2)	2	Stayput	**9001KS11B**
		Spring return right to left	**9001KS34B**
	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**

CAM B
3 Position selector switch

↖	↑	↗	Contact block guide
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 guide
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)

9001KA2

Additional contact blocks

Description	Type of contact		Reference
	N/O	N/C	
Standard	1	1	**9001KA1**
	1	–	**9001KA2**
	–	1	**9001KA3**
Early make	1	–	**9001KA4**
Late break	–	1	**9001KA5**

Notes
(1) Includes one of each of the following inserts: red, black, green, yellow, orange, blue and white.
(2) Reference for long black handle is 9001 B25.

Square D
Ø30 chromium plated metal bezel - 9001K
Key selector switch heads and illuminated Pushbutton heads – IP66,

9001KS42K10

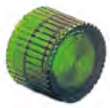
Key selector switch heads

Type of operator	No. of positions	Operation		Reference
E10 key	2	Stayput		**9001KS11K1**
				9001KS11K2
				9001KS11K3
	3 (with CAM B) (1)	Stayput		**9001KS42K10**
				9001KS42K5
				9001KS62K5

9001K1L

Spring return illuminated heads (add cap)

Description	Reference
Flush	**9001K1L**
Projecting	**9001K2L**


9001G7

Caps for illuminated spring return pushbuttons

Description	Colour	Reference
Standard illuminated Pushbutton cap	Red	**9001R7**
	Green	**9001G7**
	Amber	**9001A7**
	Blue	**9001L7**
	Clear	**9001C7**

9001KR9

Mushroom latching illuminated heads (add cap)

Description	Reference
Push-pull maintained operator	**9001KR9**

Caps for latching illuminated mushroom pushbuttons

Description	Colour	Reference
35mm mushroom cap	Red	**9001R22**
	Green	**9001G22**

Note
(1) For 3 position key selector switch with CAM C replace 2K with 3K e.g. **9001KS42K10** becomes **900KS43K10**.

Square D
Ø30 chromium plated metal bezel - 9001K , IP66
Contact blocks and pilot lights – IP66, NEMA 4 and 13

9001R6

Caps for pilot lights

Description	Colour	Reference
Glass lens	Red	**9001R6**
	Green	**9001G6**
	Amber	**9001A6**
	Clear	**9001C6**

9001KP

Pilot light heads (add cap)

Description	Reference
Pilot light operator	**9001KP**

9001KM40

Light modules for pilot lights and illuminated pushbuttons

Description	Light source	Supply voltage	Reference
Via transformer 6V secondary	BA9s incandescent bulb included	110–120V 50Hz	**9001KM1**
		220–240V 50Hz	**9001KM7**
		380–480V 50Hz	**9001KM5**
Direct through resistor	BA9s incandescent 130V bulb included	240VAC/DC	**9001KM25**

9001KP40

Pilot lights (add cap)

Description	Light source	Supply voltage	Reference
Direct supply	BA9s globe not included	–	**9001KP40**
	BA9s incandescent bulb included	120VAC/DC	**9001KP38**
Via transformer 6V secondary	BA9s incandescent bulb included	110–120V 50Hz	**9001KP1**
		220–240V 50Hz	**9001KP7**
		380–480V 50Hz	**9001KP5**
Direct through resistor	BA9s incandescent 130V bulb included	240VAC/DC	**9001KP25**

DL1CE●●●

DL1CJ●●●●

BA9s globes (incandescent and LED)

Description	Supply voltage	Reference
Incandescent filament lamp	6VAC/DC	**DL1CB006**
	12VAC/DC	**DL1CE012**
	24VAC/DC	**DL1CE024**
	48VAC/DC	**DL1CE048**
	130VAC/DC	**DL1CE130**
LED	24VAC/DC	**DL1CJ0241**

J

Square D
Ø30 chromium plated metal bezel - 9001K
Joysticks and 9001K and SK components and accessories

9001K71

Ø30 joystick operators (add contact blocks)

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**

9001KN302

Metal legend plates – 31x44mm

Description	Colour	Reference
Blank	White	**9001KN300**
Start	Black	**9001KN301**
Stop	Red	**9001KN302**
Emergency stop 60mm	Yellow	**9001KN9330**
Emergency stop 90mm	Yellow	**9001KN8330**

9001KU5

Boots

Description	Colour	Reference
Non-illuminated Pushbuttons	Black	**9001KU1**
	Red	**9001KU2**
	Green	**9001KU5**
For standard handle selector switch	Clear	**9001KU17**

30mm blanking plugs

Description	Reference
Metal – grey	**9001K51**
Metal – chrome plated	**9001K52**

Adaptor

Description	Reference
Metal – 30mm to 22mm	**ZB2BZ4**

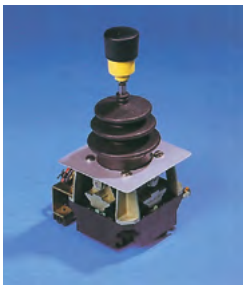
Pendant stations and joysticks

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 unnotched spring return and stayput types. All controllers are available with contacts and potentiometers.

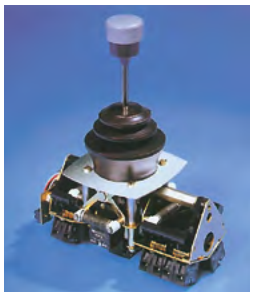
Handle options are as follows:

> Basic handle
> Mechanical interlocked in the centre position — with electrical interlock contact
> "Dead man's" 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.

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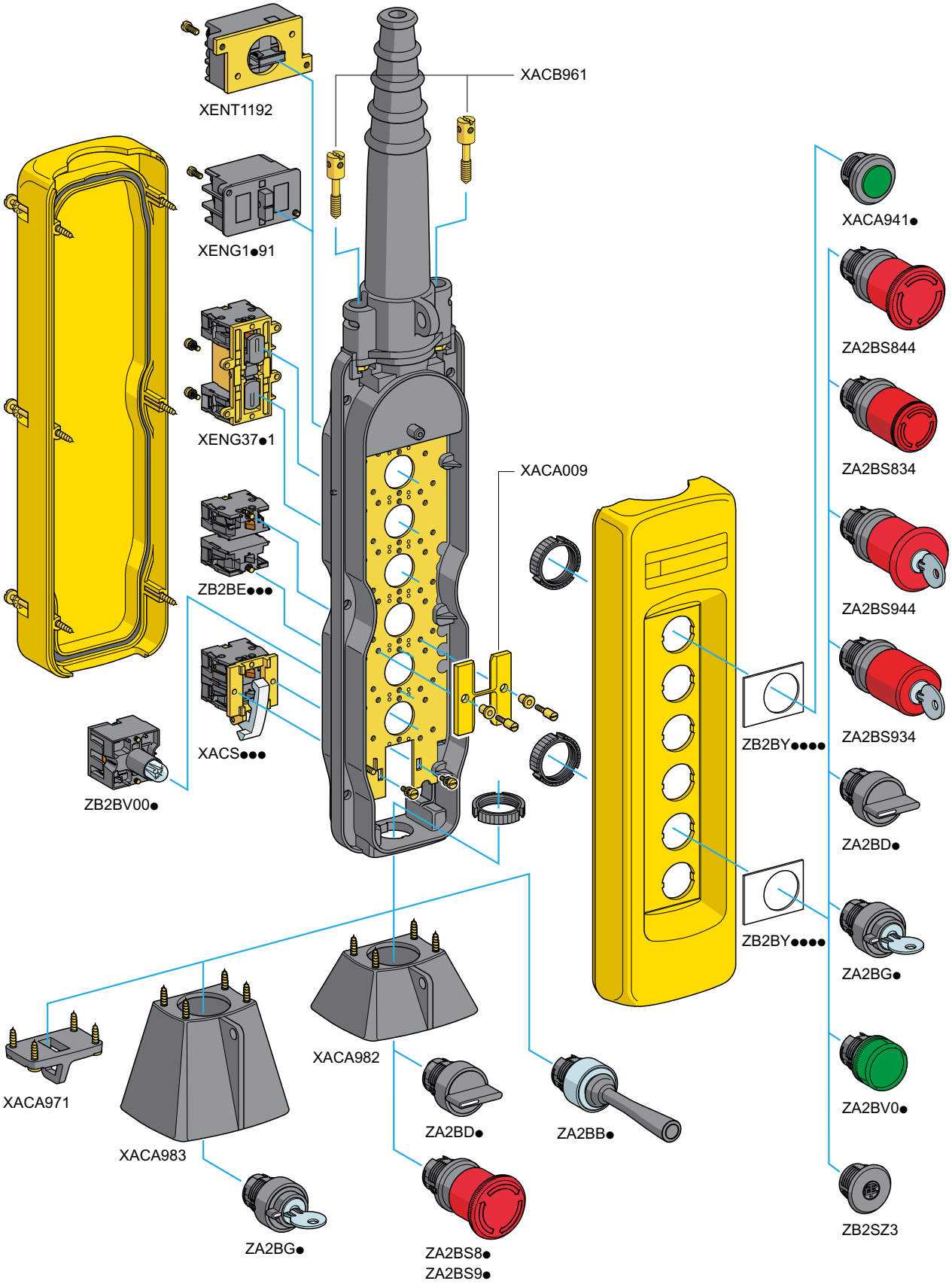
For ordering information please contact our customer care team.

Double insulated pendant stations XAC
For Ø22 control and signalling units
Variable composition units – IP65



Double insulated pendant control stations XAC
For control circuits
Complete stations – IP65

Complete stations

XACA2114

XACA271

XACA471

XACA2714

Description	Number of operators	Reference
Small hoist	2	**XACA211**
Small hoist	2+ E-stop	**XACA2114 (1)**
General purpose	2	**XACA271 (2)**
General purpose	4	**XACA471 (2)**
General purpose	6	**XACA671 (2)**
General purpose	8	**XACA871 (2)**
Small hoist	2 + E-Stop	**XACA2714 (1)**
General purpose	4 + E-Stop	**XACA4714 (1)**
General purpose	6 + E-Stop	**XACA6714 (1)**

Notes
(1) Fitted with front mounted trigger action Emergency stop.
(2) No Emergency stop fitted.

Pendant stations and joysticks

Double insulated pendant stations XAC
For Ø22 control and signalling units
Variable composition units – IP65

XACA02

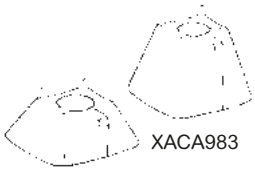
XACA12

Empty enclosures

Description	Number of ways	Reference
These references include: – Internal mounting plate – Cable sleeve for cable Ø8 to 26mm – Internal cable clamp – Suspension ring – Cable tie	2	**XACA02**
	3 (1)	**XACA03**
	4	**XACA04**
	5 (1)	**XACA05**
	6	**XACA06**
	8	**XACA08**
	12	**XACA12**

XACB961

XACA971



XACA983

XACA982

Attachments

Description		Reference
Adaptor for self-supporting cable	Adapts to collar fitted with Ø8 to 26mm cable sleeve	**XACB961**
Lower support ring	–	**XACA971**
Protective guards mounted in base of enclosure	Selector switch and E-stop	**XACA982**
	For key switch	**XACA983**

ZB2BY2101

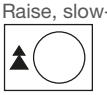
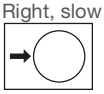
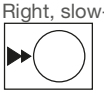
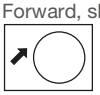
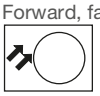
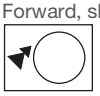
Legend plates 30 x 40mm

"Start" function: white letters, black background. "Stop" function: white letters, red background

Description	Type	Text	Reference
Blank legend plates		Black or red background	**ZB2BY2101**
Pre-engraved legend plates	Pushbuttons	Start	**ZB2BY2303**
		Stop	**ZB2BY2304**
		Forward	**ZB2BY2305**
		Reverse	**ZB2BY2306**
		Up	**ZB2BY2307**
		Down	**ZB2BY2308**
		Right	**ZB2BY2309**
		Left	**ZB2BY2310**
		On	**ZB2BY2311**
		Off	**ZB2BY2312**
		Power on	**ZB2BY2326**
		Slow	**ZB2BY2327**
		Fast	**ZB2BY2328**
	Selector switches	O-I	**ZB2BY2178**
		I-O-II	**ZB2BY2186**

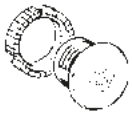
Note
(1) Unable to mount unit in base of enclosure.

Double insulated pendant stations XAC
For Ø22 control and signalling units
Variable composition units – IP65

Function Symbol	Reference	Function Symbol	Reference
Raise, slow	**ZB2BY4901**	Lower, slow	**ZB2BY2904**
Raise, fast	**ZB2BY4902**	Lower, fast	**ZB2BY2905**
Raise, slow-fast 	**ZB2BY4903**	Lower, slow-fast	**ZB2BY2906**
Right, slow 	**ZB2BY4907**	Left, slow	**ZB2BY2910**
Right, fast	**ZB2BY4908**	Left, fast	**ZB2BY2911**
Right, slow-fast 	**ZB2BY4909**	Left, slow-fast	**ZB2BY2912**
Forward, slow 	**ZB2BY4913**	Reverse, slow	**ZB2BY2916**
Forward, fast 	**ZB2BY4914**	Reverse, fast	**ZB2BY2917**
Forward, slow-fast 	**ZB2BY4915**	Reverse, slow-fast	**ZB2BY2918**
Slew right, slow	**ZB2BY4919**	Slew left, slow	**ZB2BY2922**
Slew right, fast	**ZB2BY4920**	Slew left, fast	**ZB2BY2923**
Slew right, slow-fast	**ZB2BY4921**	Slew left, slow-fast	**ZB2BY2924**
Slow	**ZB2BY4933**	Fast	**ZB2BY2934**
Klaxon	**ZB2BY4932**	Start-Klaxon	**ZB2BY2935**
Start	**ZB2BY4930**	Stop	**ZB2BY2931**

Double insulated pendant stations XAC
For Ø22 control and signalling units
Variable composition units – IP65

XACA94●●



ZB2SZ3

Operating heads for front mounting – IP66

Description	Colour	Unit Reference
Complete booted operators	White	**XACA9411**
	Black	**XACA9412**
	Green	**XACA9413**
	Red	**XACA9414**
	Yellow	**XACA9415**
	Blue	**XACA9416**
	Brown	**XACA9419**
Blanking plug complete with seal and fixing nut		**ZB2SZ3**

ZA2BS844

ZA2BD●

Operating heads for front or base mounting – IP65

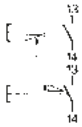
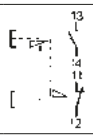
Description	Type	Colour	Reference
Mushroom head latching Turn to release E-stop (1)	Ø30mm	Red	**ZA2BS834**
	Ø40mm	Red	**ZA2BS844**
Selector switches use only with ZB2BE10●	2 position stayput	Black	**ZA2BD2**
	3 position stayput	Black	**ZA2BD3**
Key switches (No. 455) Key withdrawal from left and right	2 position stayput	Black	**ZA2BG4**
	3 position stayput	Black	**ZA2BG5**

ZB2BE10●

XACA009

J

Contact blocks for front mounting

Description	Contacts	Scheme	Reference
Single block spring return	1 N/O		**ZB2BE101**
	1 N/C		**ZB2BE102**
	Mechanical interlock between 2 Pushbuttons		**XACA009**
	2 step (1 N/O + 1 N/C) -+-1 N/O staggered-(1) (2)		**XENG1191**
	1 N/C + 2 N/O simultaneous-(2)		**XENG1491**
Double block latching slow break-(2)	1 N/O 1 N/O		**XENG3781**
	1 N/O 1 N/C		**XENG3791**

XENG1191

XENG37●1

Contact blocks for base mounting

Description	Contacts	Reference
Spring return slow break (2)	1 N/O	**XACS101**
	1 N/C	**XACS102**

XACS10●

Note
(1) Trigger action conforms to ISO13850-IEC/EN60947-5-5/
(2) For use only with XACA9●●● Pushbuttons.

Double insulated pendant stations XAC
For Ø22 control and signalling units
Variable composition units – IP65

ZA2BV0●

Pilot light lenses IP66

Description	Colour	Reference
	Green	**ZA2BV03**
	Red	**ZA2BV04**
	Yellow	**ZA2BV05**
	Blue	**ZA2BV06**
	Clear	**ZA2BV07**

ZB2BV006

ZB2BV007

Pilot light bodies for front mounting

Description	Supply voltage	Reference
Direct supply Bulb not supplied (1)	400V max. (2)	**ZB2BV006**

DL1CE●●●

DL1CJ●●●●

BA9s globes (incandesecnt and LED)

Description	Voltage	Reference
Incandescent lamp 2.6W	6V	**DL1CB006**
	12V	**DL1CE012**
	48V	**DL1CE048**
	130V	**DL1CE130**
LED	24VAC/DC	**DL1CJ0241**

Notes

(1) Bulb type for direct supply: BA-9s base fitting, incandescent bulb U-<-130V, max. power 2.6W, LED types 24, 28, 48V DC and 6V AC max. Ø11mm, max. length 28mm.

(2) Incandescent filament lamp may be used up to 130V only.

Wireless remote control system - hoisting application

Remote control devices

ZART8L ZART12D

Starter kits

Description	Connection type	Reference
ZART8L + ZARB12H + ZARC01 + ZARC02 (1) (2)	Plug	**XARSK8L12H**
ZART8D + ZARB18H + ZARC01 + ZARC02 (1) (2)	Plug	**XARSK8D18H**
ZART12D + ZARB18H + ZARC01 + ZARC02 (1) (2)	Plug	**XARSK12D18H**
ZART8L + ZARB12W + ZARC01 + ZARC02 (1)	Gland	**XARSK8L12W**
ZART8D + ZARB18W + ZARC01 + ZARC02 (1)	Gland	**XARSK8D18W**
ZART12D + ZARB18W + ZARC01 + ZARC02 (1)	Gland	**XARSK12D18W**

Accessories

ZARB12W

		Reference
Software	eXLHoist configuration software	
Remote holder		**ZARC04**
Charger		**ZARC01**
Shoulder harness		**ZARC02**
External antenna		**ZARC03**
Connector cable 3m (2)		**ZARC12**
Adhesive labels B/W		**ZARC07**
Adhesive labels colour		**ZARC08**
Silent block		**ZARC09**
Configuration cable		**TCSMCNAM3M002P**

New

Base station

Relay output	Safety relays	Power supply	Connection type	Reference
12	2	24-48V AC/DC	Plug (3)	**ZARB12H**
18	2	24-48V AC/DC	Plug (3)	**ZARB18H**
10	2	48-240V AC	Pre -wired	**ZARB10WSP (5)**
10	2	48-240V AC	Cable gland	**ZARB10WS (5)**

ZARB10WS

Wireless remote control (4)

Display	Vibration alert	Motion pushbuttons	Auxiliaries pushbuttons	Reference
No	No	6	2	**ZART8L**
Yes	Yes	6	2	**ZART8D**
Yes	Yes	6	6	**ZART12D**
No	No	6	1	**ZART8LS (5)**

ZART8D

Harmony™ eXLhoist

Wireless remote control for hoisting applications

Safety
> Certified to SIL3 according to IEC 62061 and PL"e" according to ISO 13849-1

Battery
> 30 run time
> 15 min charge
> Up to 5 years life

Ergonomics
> Intuitive Pushbuttons positioning

Diagnosis
> Instant alarm notification by vibration
> Automatic discovering of base station

Universal
> Unrestricted worldwide use with global frequency

ZART8LS

Notes
(1) Includes configuration cable.
(2) Connector plug and cable available in 1.5m (ZARC05), 3m (ZARC12), and 5m (ZARC18) lengths.
(3) For gland version change H to W at the end of the reference. Power supply to gland type units is 24-240V AC/DC.
(4) Charge for minimum of 4 hours before first use.
(5) Part of compact range. ZART8LS only compatible with ZARB10WS/ZARB10WSP.

XVSV Panel mount sounder
SVR3 Beacons

Panel mount sounders

XVSV7BBP

Description	Supply voltage	Input	Colour	Reference
6 Channel with 63 selectable sounds and customised voice SD card	24V DC	PNP (1)	Black Din 72	**XVSV7BBP**
	24V DC	PNP (1)	Black Din 96	**XVSV9BBP**

- Sound editable: Friendly interface, and can change comments on site.
- Compact design: Thickness, 24.9mm and 50.1mm.
- High volume: Max 89B (DIN72), Max 97 dB (DIN96), more effective in alerting.
- More choices and longer playback time: 63 sound output, totally 256 seconds.
- Up to IP65.

Panel mount accessories

Description	Reference
Wall mount plate for DIN72 and DIN96	**XVSZ016**

XVR LED
Motorless beacons

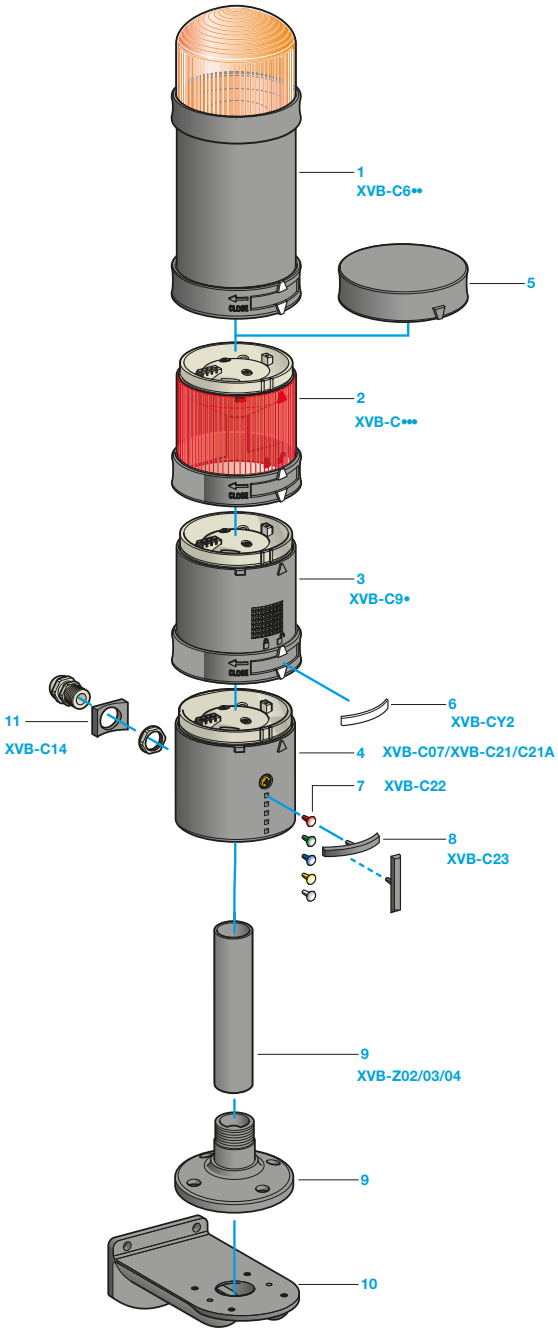
Beacon LED IP65

Description	Supply voltage	Buzzer	Reference
Beacon Green	DC12-24V	No	**XVR3B03**
Beacon Red	DC12-24V	No	**XVR3B04**
Beacon Orange	DC12-24V	No	**XVR3B05**
Beacon Blue	DC12-24V	No	**XVR3B06**
Beacon Green	AC100-230V	No	**XVR3M03**
Beacon Red	AC100-230V	No	**XVR3M04**
Beacon Orange	AC100-230V	No	**XVR3M05**
Beacon Blue	AC100-230V	No	**XVR3M06**
Beacon Green	DC12-24V	Yes	**XVR3B03S**
Beacon Red	DC12-24V	Yes	**XVR3B04S**
Beacon Orange	DC12-24V	Yes	**XVR3B05S**
Beacon Blue	DC12-24V	Yes	**XVR3B06S**
Beacon Green	AC100-230V	Yes	**XVR3M03S**
Beacon Red	AC100-230V	Yes	**XVR3M04S**
Beacon Orange	AC100-230V	Yes	**XVR3M05S**
Beacon Blue	AC100-230V	Yes	**XVR3M06S**
Beacon Multi-functional			**XVR3Z001**

The Schneider Electric Harmony XVR Rotating Mirror Beacons provide long-distance indications of the operation status with lights and buzzers. The new Harmony SVR3 Beacon offer provides you motorless Rotating, Blinking and Flashing modes. The entire XVR3 range meets IP65 (Upright) degree of protection, maintenance free and much longer life time, etc.

Note
(1) Also available by request with NPN input change the last letter from P to N.

XVB indicator beacons and banks – IP65
Assembly of components



Key

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 Support tube and horizontal mounting plate
10 Vertical mounting adaptor
11 Side cable entry adaptor and cable gland

Notes
Combined maximum of five functional units (1-3) can be mounted on one base unit (4).
Only one illuminated lens unit with discharge tube (1) can be mounted per stack and only at the top of stack.
Base units XBVC21 and 21A are supplied complete with one lid (5).
Base unit XVBC07 is supplied without lid (5) and used only when an illuminated lens unit (1) is mounted at the top of the stack.

XVB indicator beacons and banks – IP65
Illuminated lens units for LED and incandescent light sources and audible units
Variable composition units

XVBC2B3

XVBC5B6

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**
Blinking 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**

XVBC33

XVBC4B6

Incandescent illuminated lens units (1)

Description	Supply voltage	Colour	Reference
Steady	Up to 250V 7W globe max. (not included)	Green	**XVBC33**
		Red	**XVBC34**
		Orange	**XVBC35**
		Blue	**XVBC36**
		Clear	**XVBC37**
		Yellow	**XVBC38**
Blinking	~ 24V or ⎓ 24…48V 7W globe max. (not included)	Green	**XVBC4B3**
		Red	**XVBC4B4**
		Orange	**XVBC4B5**
		Blue	**XVBC4B6**
		Clear	**XVBC4B7**
		Yellow	**XVBC4B8**
	~ 48…230V 7W globe max. (not included)	Green	**XVBC4M3**
		Red	**XVBC4M4**
		Orange	**XVBC4M5**
		Blue	**XVBC4M6**
		Clear	**XVBC4M7**
		Yellow	**XVBC4M8**

XVBC6M4

Illuminated lens units with 5 joule “flash” discharge tube (2)

Light source/signalling	Colour	Reference
⎓ 24V “high flash” discharge tube	Green	**XVBC6B3**
	Red	**XVBC6B4**
	Orange	**XVBC6B5**
	Blue	**XVBC6B6**
	Clear	**XVBC6B7**
	Yellow	**XVBC6B8**
~ 230V “high flash” discharge tube	Green	**XVBC6M3**
	Red	**XVBC6M4**
	Orange	**XVBC6M5**
	Blue	**XVBC6M6**
	Clear	**XVBC6M7**
	Yellow	**XVBC6M8**

XVBC9M

Audible signalling units

Description	Supply voltage	Reference
Buzzer unit; 90dB at 1m	⎓ 12…48V	**XVBC9B**
modes: continuous/intermittent	~ 120…230V	**XVBC9M**

Notes
(1) For incandescent globes, see page J56.
(2) 10 joule version also available by replacing “C6” with “C8” e.g. **XVBC6B4** becomes **XVBC8B4**.

J

XVB indicator beacons and banks – IP65
Bases and accessories
Variable composition units

XVBC21

Base units

Description	For use with	Type	Reference
Base unit + lid with bottom or side cable entry	XVBC2 to XVBC5 + XVBC9●	Standard	**XVBC21**
Indicator bank cover only	XVBC2 to XVBC5 XVBC9●	Standard	**XVBC081**

XVBZ02

XVUZ12

XVBZ01

Accessories common to beacons and indicator banks

Description	Height under base unit mm	Colour	Reference
Fixing bases comprising: Ø25mm aluminium support tube glued into black plastic fixing plate	80	Black aluminium	**XVBZ02**
	380	Black aluminium	**XVBZ03**
	780	Black aluminium	**XVBZ04**

Description	For use with	Material	Reference
Fixing plate for use on horizontal support	Ø25mm aluminium support tube (to be glued into plastic fixing plate)	Plastic	**XVBZ01**
Fixing plate for use on vertical support	Base unit (direct mounting), fixing plate XVBZ01 or fixing bases XVBZ0●	Aluminium	**XVUZ12**

J

DL1BE●

DL1BD●●

BA15d incandescent and LED globes

Description	Type	Reference
Set of coloured markers	6 colours	**XVBC22**
Set of 5 legend holders	Identification of stacked units on base	**XVBC23**

Description	Supply voltage	W	Colour	Reference
Incandescent bulbs BA15d base fitting	24V	6.5		**DL1BEB**
	110V	7		**DL1BEG**
	230V	7		**DL1BEM**
Steady protected LED BA15d base fitting	≂ 24V		White	**DL1BDB1**
			Green	**DL1BDB3**
			Red	**DL1BDB4**
			Orange	**DL1BDB5**
			Blue	**DL1BDB6**
			Yellow	**DL1BDB8**
Flashing protected LED BA15d base fitting	≂ 24V		White	**DL1BKB1**
			Green	**DL1BKB3**
			Red	**DL1BKB4**
			Orange	**DL1BKB5**
			Yellow	**DL1BKB8**

Product configurator on se.com/nz

XVU Modular light towers

XVU ASSEMBLY

Presentation

The Harmony® XVU modular range of tower lights are visual and audible signaling units indicating operation sequence of a machine. Their reduced diameter (Ø60 mm/2) makes them suitable for use on small equipment and their aesthetic design distinguishes them from other tower lights. The availability of black and metallic silver body makes them ideal for use in automotive, machine tools, material handling and packaging industry.

This range has an advantage of:

- "Super Bright" LED,
- Easy installation and mounting without use of any tools,
- Simple assembly due to the indicator marks on the units,
- Steady, blinking, flashing, or rotating multi-coloured LED unit for energy-effcient high priority signaling (colours and light patterns can be selected using 2 dip switches on top of the unit),
- Height adjustment tube that solves the need to adjust height of the tower light,
- Flexible mounting option which supports various customer needs for installation (for use on horizontal or vertical support),
- Power integrated base modules with two voltage solutions (z24V and c100 to 240V) which reduces the stock reference for LED units,
- High degree of protection against dust and water.

Illuminated LED units

The XVU range offers the following benefits for illuminated LED units:

- These units are visible throughout 360°,
- Innovative mirror design of LED units improve the brightness,
- Pure colors of LED units avoid confusion between colors,
- The ultra bright LED technology consumes low power and has long life,
- Continuous usage of LEDs up to 40,000 operating hours (1),
- Ultra brightness in 40º vizualization,
- Homogenous light improves luminosity from side view,
- The mixture of homogenous light and pure color improves the aesthetics of tower light and machine,
- Polycarbonate lens material for better shock resistance.

Mounting

- Height adjustable tube with an adjustment from 210 to 385 mm, mounted on a fixing plate for use on a horizontal support.
- Flexible mounting option for use on horizontal or vertical support.
- Direct mounting (with direct mounting plate XVUZ01).

Signaling type

- For illuminated units with green, red, orange, blue or white color: steady
- For illuminated units with multi-color: steady, blinking, flashing (slow or fast) and rotating (slow or fast).
- For audible unit: buzzer sound, 85dB (at 1m, 4 configurations of audible signal).

Environment

- The degree of protection for XVU tower lights are:
- IP 65 for illuminated units,
- IP 54 for audible units,
- IP 55 for flexible mounting option,
- Product certifications:UL, CSA, CE.

The whole range conforms with EN/IEC 60947-5-1 standard. Products are, UL and CSA certified.

J

Note

(1) Until the brightness reduces to 50% of the initial value when lit at complete direct current of the rated voltage in 25 ºC environment.

XVU Modular light towers

XVUC23

XVUC24

XVUC25

XVUC26

XVUC27/9

XVUC9S

XVUC9SQ

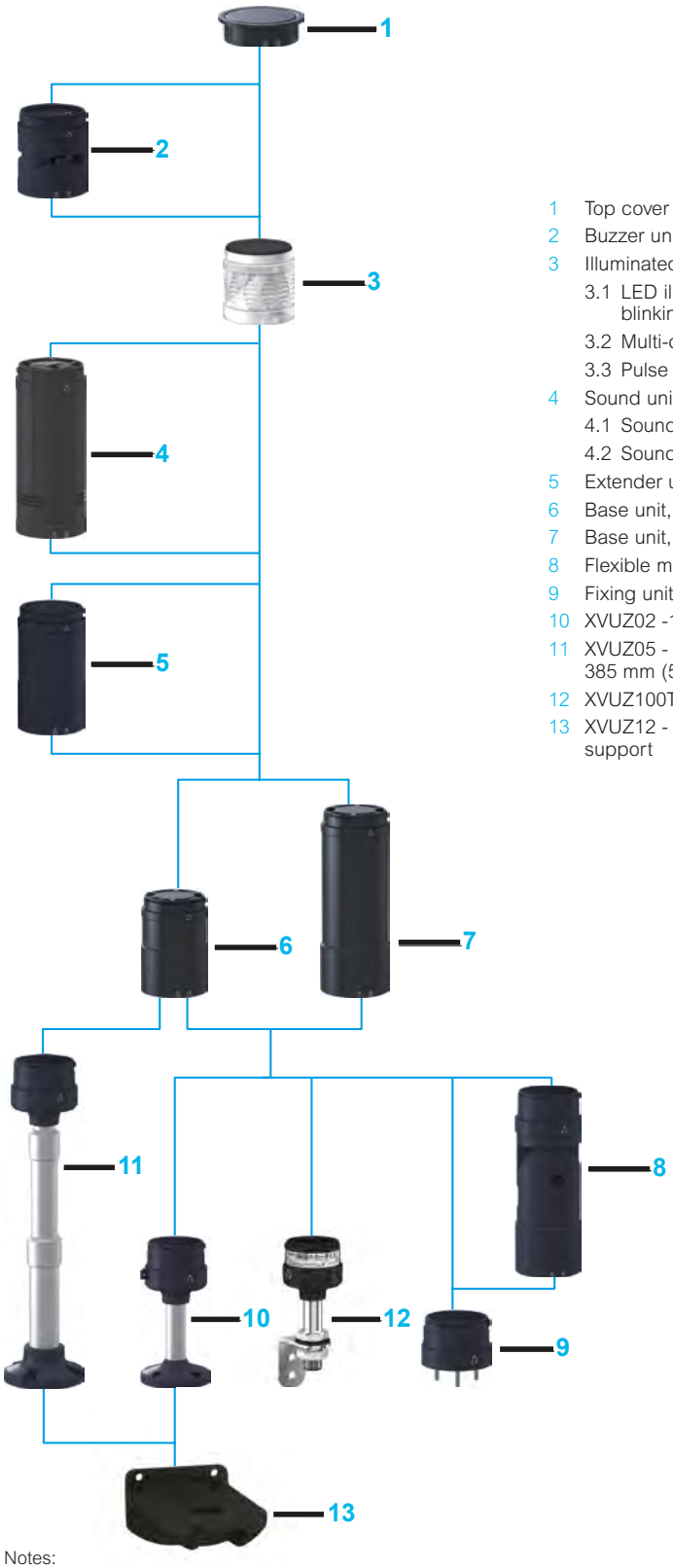
Tower lights for customer assembly

Intergrated LED illuminated lens unit IP65

Description	Compatible with	Colour	Reference
Steady LED high brightness	All base units	Green	**XVUC23**
	All base units	Red	**XVUC24**
	All base units	Orange	**XVUC25**
	All base units	Blue	**XVUC26**
	All base units	White	**XVUC27**
	All base units	Yellow	**XVUC28**
Steady / Rotating / Flashing selectable		Multi colour	**XVUC29**
Blinking LED high brightness	All base units	Green	**XVUC43**
	All base units	Red	**XVUC44**
	All base units	Orange	**XVUC45**
	All base units	Blue	**XVUC46**
	All base units	White	**XVUC47**
	All base units	Yellow	**XVUC48**
Pulse signal LED (1)		Multi colour	**XVUC29P**
High flashing LED	All base units	Green	**XVUC63**
New	All base units	Red	**XVUC64**
	All base units	Orange	**XVUC65**
	All base units	Blue	**XVUC66**
	All base units	White	**XVUC67**
	All base units	Yellow	**XVUC68**

Note
(1) 1 signal wire, 2 power wires. Adaptable for both NPN and PNP. Controlled by PLC dynamically.

XVU Modular light towers



1 Top cover
2 Buzzer unit (1)
3 Illuminated units: (2)
- 3.1 LED illuminated units with steady or blinking light
- 3.2 Multi-color LED unit
- 3.3 Pulse signal multi-color LED unit(3)

4 Sound units (4)
- 4.1 Sound unit
- 4.2 Sound unit, pulse signal

5 Extender unit
6 Base unit, DC
7 Base unit, AC
8 Flexible mounting unit
9 Fixing unit, direct mounting
10 XVUZ02 -100 mm pole
11 XVUZ05 - Height adjustment pole from 210 to 385 mm (5) with integrated fixing plate
12 XVUZ100T- 100mm pole with metal bracket
13 XVUZ12 - Fixing plate for use on vertical support

Notes:
(1) Always mounted on the top
(2) Up to 5 LED illuminated units without sound unit; Up to 4 LED illuminated units with sound unit
(3) Pulse signal multi-color LED unit cannot be combined with standard sound unit (XVUC9V)
(4) Sound unit can work without LED unit
(5) Only for DC body unit
(6) Sound unit cannot be combined with buzzer unit at the same time

XVU Modular light towers

XVUC21B XVUC21BQ

Tower lights for customer assembly base units

Description	Supply Voltage	Colour	Reference
Base unit + top cover	24V AC/DC	Black	**XVUC21B (1)**
	24V AC/DC	Silver	**XVUC21BQ (1)**
	100V-240V AC	Black	**XVUC21MP (1)**

Accessories

XVUC020 XVUC020Q

XVUZ01

XVUZ02Q XVUZ05

XVUZ12

XVUZ06

Description	Voltage	Colour	Reference
Body extenders	24VAC/DC	Black	**XVUC020**
		Silver	**XVUC020Q**
Direct mounting plate for 3 foot mounting		Black	**XVUZ01**
		Silver	**XVUZ01Q**
Fixing plate with 100mm aluminium pole		Black	**XVUZ02**
		Silver	**XVUZ02Q**
Aluminium adjustable pole + fixing plate for height adjustment		Black	**XVUZ05**
Flexible mounting option for use on horizontal or vertical support IP55		Black	**XVUZ06**
Metal bracket with aluminium pole		Black	**XVUZI00T**
Fixing plate for use on vertical support		Black	**XVUZ12**
Fixing plate with aluminium 1/2" NPT adapter		Black	**XVUZ00**

Audible units IP54 (2)

Description	Compatible with	Colour	Reference
Buzzer adjustable 70…85 db at 1m (4 configurations of audible signal)	All base units	Black	**XVUC9S**
	All base units	Silver	**XVUC9SQ**
Voice module 4 channel	All base units	Black	**XVUC9V**
Sound unit, pulse signal(3)	All base units	Black	**XVUC9VP**

Note
(1) XVUZ01 required for direct mounting
(2) Audible units work with the "Playlist builder" software. This software is free and can be downloaded from www.schneider-electric.com
(3) 1 signal wire, 2 power wires. Adaptable for both NPN and PNP. 16 channels can be controlled by PLC.

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Sensors

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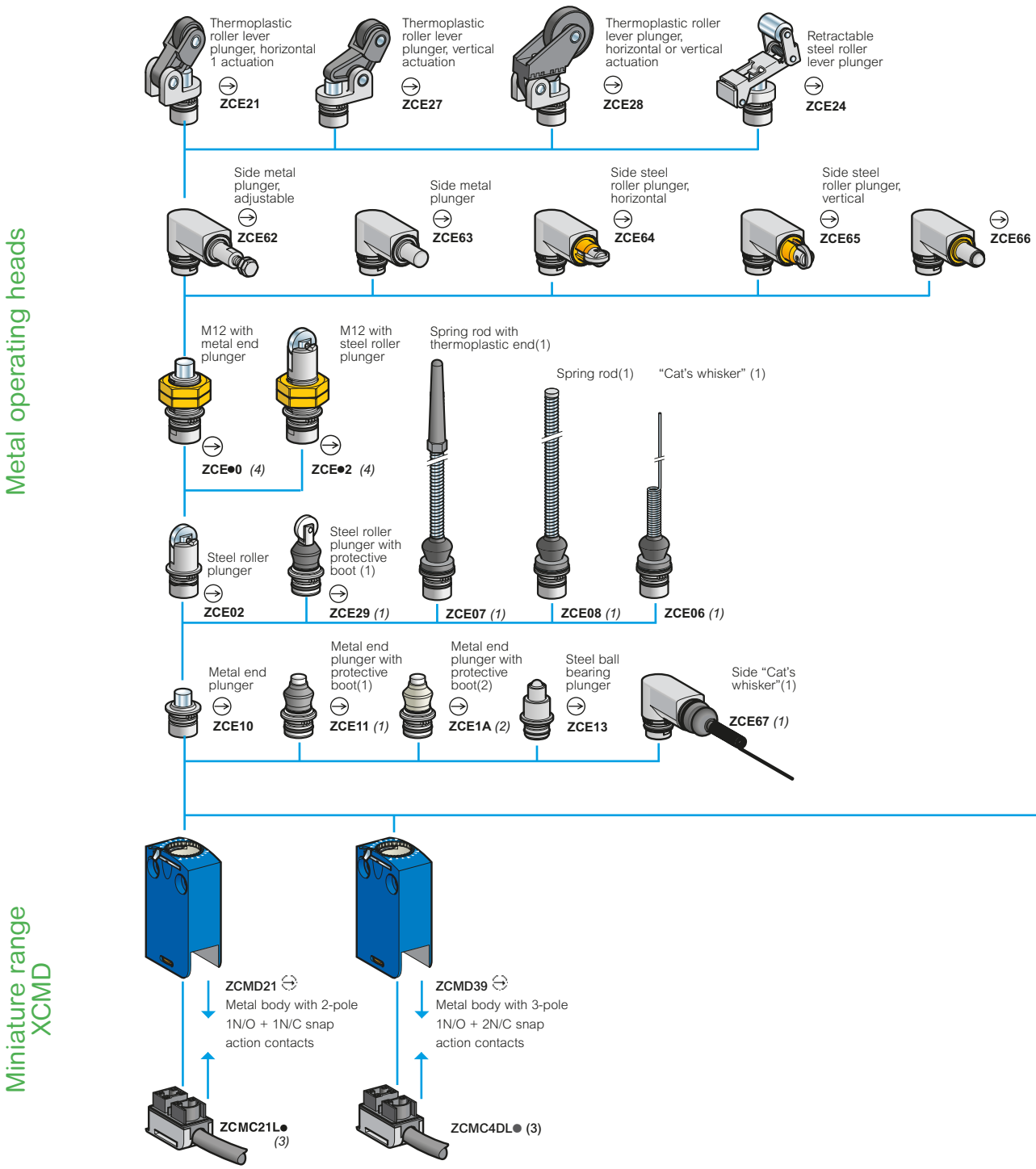
Analogue 4..20mA + Digital output	XMLR	K43

Visit www.tesensors.com for product selection, product substitution or cross reference tools.

K

Notes

XC Standard
Miniature and Compact design



Notes

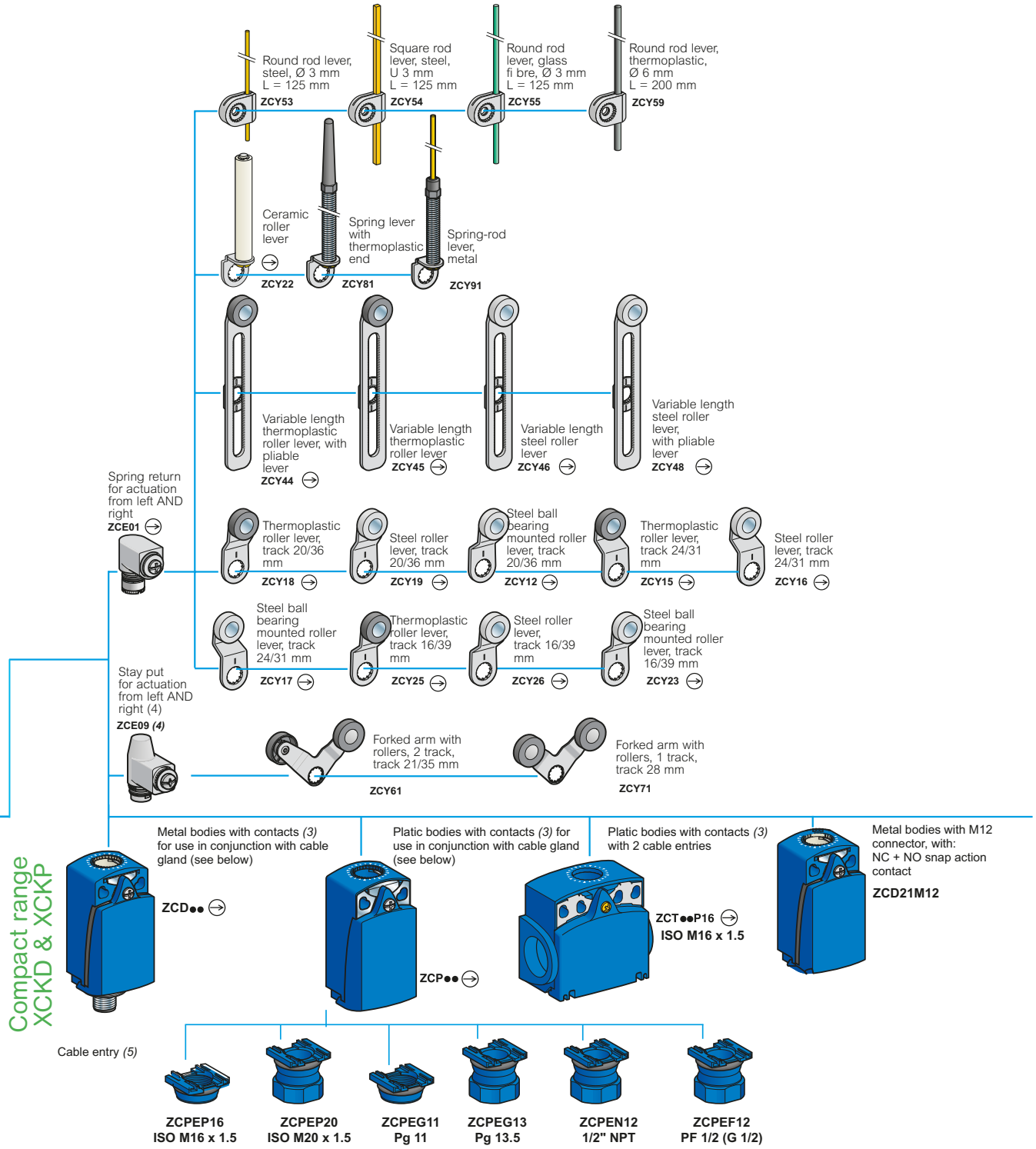
(1) Nitrile boot for indoor use.

(2) Silicone boot for outdoor use.

(3) Pre-cabled connection components: replace the "●" in the reference by the required cable length in metres, either: 1, 2 or 5
Example: ZCMC21L● becomes ZCMC21L2 for a 2 metre long cable.

(4) Replace the "●" in the reference by the required model. For Miniature range replace with 'F' and Compact range with 'H'.
Eg: ZCEF0 / ZCEH0.

XC Standard
Miniature and Compact design



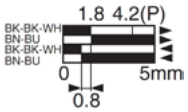
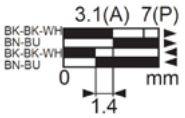
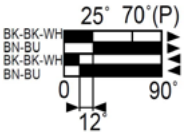
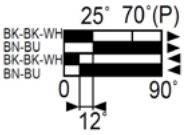
Notes
(1) Nitrile boot for indoor use.
(2) Silicone boot for outdoor use.
(3) For further information, see range pages for XCKP/XCKD.
(4) Cannot be used on bodies ZCMD21, ZCMD39.
(5) Cable gland entries for compact XCKD & XCKP available in metal or plastic.

Limit Switches – General Purpose

XC Standard
Miniature Design - Type XCMD
Medium Duty, Metal Body Switches - IP66/IP67

Contact operation
■ closed
□ open

XCMD Complete limit switches, pre-wired 1m cable

Description		Contact operation		Reference
Plunger head	Metal end plunger (1)	2 pole 1 N/O + 1 N/C, snap action		**XCMD2110L1**
	Steel roller plunger (2)	2 pole 1 N/O + 1 N/C, snap action		**XCMD2102L1**
Rotary head	Roller lever (thermoplastic) (3)	2 pole 1 N/O + 1 N/C, snap action		**XCMD2115L1**
	Variable length roller lever (3)	2 pole 1 N/O + 1 N/C, snap action		**XCMD2145L1**

XCMD2110L1

XCMD2102L1

XCMD2115L1

XCMD2145L1

Body / contact sub-assembly for XCMD (4)(5)

Description	Contact operation	Reference
Pre-wired type	2 pole 1 N/O + 1 N/C, snap action	**ZCMD21**
Pre-wired type	3 pole 1 N/O + 2 N/C, snap action	**ZCMD39**
M12 connector type	2 pole 1 N/O + 1 N/C, snap action	**ZCMD21C12**

ZCMD●●

ZCMD21C12

ZCMC●●L●

Pre-cabled connection accessories

To suit body type	Body reference	Cable length (m)	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	2	**ZCMC39L2**
		5	**ZCMC39L5**
2-pole 1N/O + 1N/C Snap action	ZCMD21C12	2	**XZCP1164L2**

XZCP1164L2

Notes
(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. Operating heads and levers refer to pages K10-11.

XC Standard
Compact Design - Type XCKD
Medium Duty, Metal Body Switches - IP66/IP67

Contact operation
■ closed
□ open

XCKD2102P16

XCKD2121P16

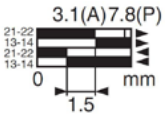
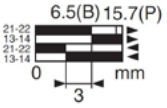
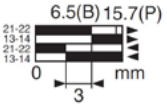
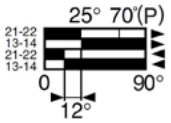
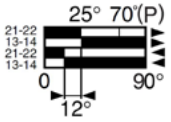
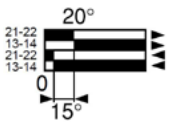
XCKD2127P16

XCKD2118P16

XCKD2145P16

XCKD2106P16

XCKD Complete limit switches, ISO M16 x 1.5 cable entry

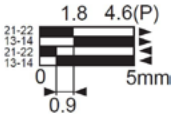
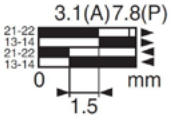
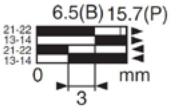
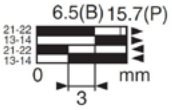
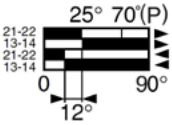
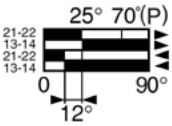
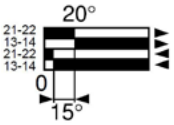
Description		Contact operation		Reference
Plunger head	Steel roller plunger (2)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151)		**XCKD2102P16**
	Thermoplastic roller lever Horizontal actuation plunger (3)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151)		**XCKD2121P16**
	Thermoplastic roller lever Vertical actuation plunger (3)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151)		**XCKD2127P16**
Rotary head	Roller lever (thermoplastic) (4)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151)		**XCKD2118P16**
	Variable length roller lever (thermoplastic) (4)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151)		**XCKD2145P16**
Multi directional head	Cat's whisker (5)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151)		**XCKD2106P16**

Notes
(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.

XC Standard
Compact Design - Type XCKP
Light Duty, Double Insulated Body Switches - IP66/IP67

Contact operation
■ closed
□ open

XCKP Complete limit switches, ISO M16 x 1.5 cable entry

Description		Contact operation	Reference
Plunger head	Metal end plunger (1)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151) 	**XCKP2110P16**
	Steel roller plunger (2)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151) 	**XCKP2102P16**
	Thermoplastic roller lever Horizontal actuation plunger (3)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151) 	**XCKP2121P16**
	Thermoplastic roller lever Vertical actuation plunger (3)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151) 	**XCKP2127P16**
Rotary head	Roller lever (thermoplastic) (4)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151) 	**XCKP2118P16**
	Variable length roller lever (thermoplastic) (4)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151) 	**XCKP2145P16**
Multi directional head	Cat's whisker (5)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151) 	**XCKP2106P16**

XCKP2110P16

XCKP2102P16

XCKP2121P16

XCKP2127P16

XCKP2118P16

XCKP2145P16

XCKP2106P16

Notes
(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.

XC Standard
Compact Design - Type XCKD & XCKP
Body/contacts subassembly

Contact operation
■ closed
□ open

ZCD●●

ZCP●●

ZCT21P16

Body / contact sub-assembly for XCKD & XCKP - conduit entry type (1)

Description	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**
2 pole 1 N/O + 1 N/C snap action (XE2SP2151)	Plastic	**ZCT21P16**

ZCDEP16

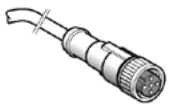
ZCPEP16

Threaded cable glands for XCKD & XCKP - conduit entry type (2)

Description	Body material	Reference
ISO M16 x 1.5	Metal	**ZCDEP16**
	Plastic	**ZCPEP16**
ISO M20 x 1.5	Metal	**ZCDEP20**
	Plastic	**ZCPEP20**

ZCDEP20

ZCPEP20


XZCP1164L2

Body / contact sub-assembly for XCKD & XCKP - M12 connector type

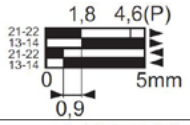
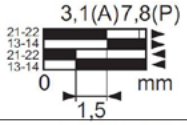
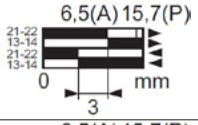
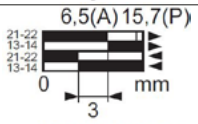
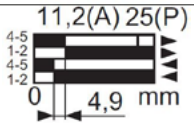
Description	Body material	Reference
2-pole 1N/O + 1N/C Snap action (XE2SP2151)	Metal	**ZCD21M12**
	Plastic	**ZCP21M12**
Suitable M12 5-pin female 2m cable to suit ZC•21M12 bodies		**XZCP1164L2**

Notes
(1) Operating heads and levers refer to pages K10-11.
(2) Other threaded cable glands available in metal and plastic - Pg 13.5, Pg 11, ½" NPT, PF ½ (G½). Metal cable glands not suitable for plastic body/contact sub-assembly and vice versa.

XC Standard
Miniature Design - Type XCMD & Compact Design - Type XCKD/XCKP
Operating heads & levers

Contact operation
■ closed
□ open

Plunger heads (2)

Description	Contact operation with ZCMD21, ZCD21 or ZCP21 (1)	Reference
Metal end plunger		**ZCE10**
Metal end plunger with elastomer boot		**ZCE11**
M12 with metal end plunger (3)		**ZCEF0**
M18 with metal end plunger (4)		**ZCEH0**
Steel roller plunger		**ZCE02**
M12 with steel roller plunger (3)		**ZCEF2**
M18 with steel roller plunger (4)		**ZCEH2**
Thermoplastic roller lever plunger - Horizontal actuation (1 direction)		**ZCE21**
Thermoplastic roller lever plunger - Vertical actuation (1 direction)		**ZCE27**
Retractable steel roller lever		**ZCE24**

ZCE10

ZCE11

ZCEF0

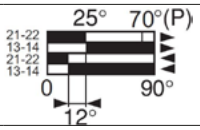
ZCEH0

ZCE02

ZCEF2

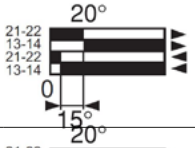
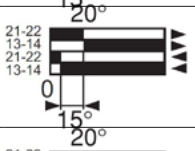
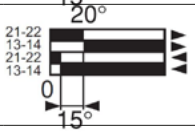
ZCEH2

Rotary heads (2)

Description	Contact operation with ZCMD21, ZCD21 or ZCP21 (1)	Reference
Actuation from left AND right hand side spring return		**ZCE01**

ZCE01

Multi-directional heads (5)

Description	Contact operation with ZCMD21, ZCD21 or ZCP21 (1)	Reference
Spring lever		**ZCE08**
Spring lever with thermoplastic end		**ZCE07**
"Cat's whisker"		**ZCE06**

ZCE08

ZCE07

ZCE06

Notes
(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.

XC Standard
Miniature Design - Type XCMD & Compact Design - Type XCKD/XCKP
Operating heads & levers

Contact operation
■ closed
□ open

ZCY15

ZCY16

ZCY25

ZCY26

ZCY18

ZCY19

ZCY22

ZCY45

ZCY55

ZCY91

ZCY39

ZCY49

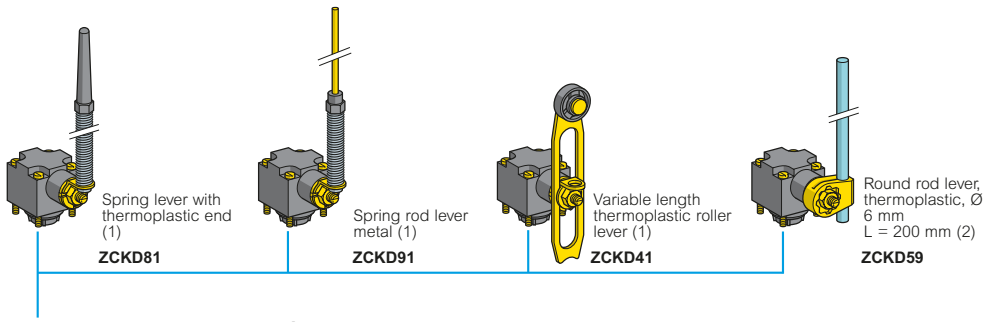
Levers for rotary heads

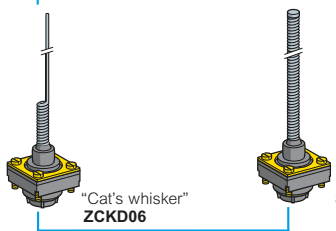
Description		Reference
Thermoplastic roller lever (1)	Track: 24/31mm ZCMD & 29/36mm ZCD/P	**ZCY15**
Steel roller lever (1)	Track: 24/31mm ZCMD & 29/36mm ZCD/P	**ZCY16**
Thermoplastic roller lever (1)	Track: 16/39mm ZCMD & 21/44mm ZCD/P	**ZCY25**
Steel roller lever (1)	Track: 16/39mm ZCMD & 21/44mm ZCD/P	**ZCY26**
Thermoplastic roller lever (1)	Track: 20/36mm ZCM D & 24/40mm ZCD/P	**ZCY18**
Steel roller lever (1)	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 (2)		**ZCY55**
Metal spring lever (2)		**ZCY91**
Thermoplastic roller lever Ø50mm (3)		**ZCY39**
Adjustable thermoplastic roller lever Ø50mm (3)		**ZCY49**

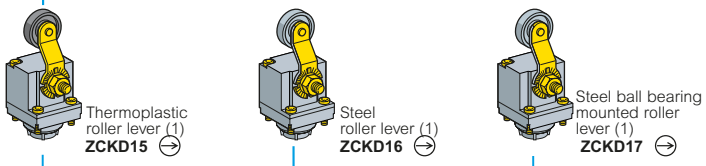
Notes
(1) Track distance is measured from the back of the switch to the centre of the roller.
(2) Flexible operators are not suitable for positive opening applications.
(3) For use only with compact types XCKD & XCKP.
(4) All levers are adjustable in 15° increments throughout 360° in relation to the horizontal axis of the head.

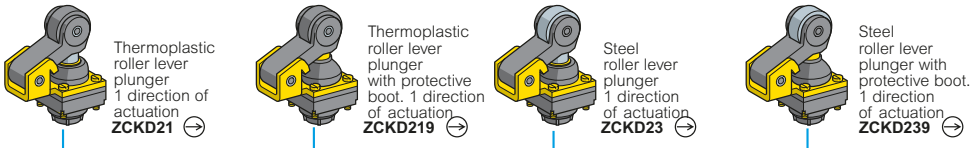
XC Classic format
Classic design - Type XCKM
Medium Duty, metal body switches - IP66

Metal operating heads

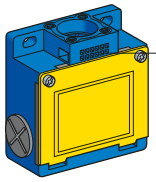








Classic range (metal) XCKM

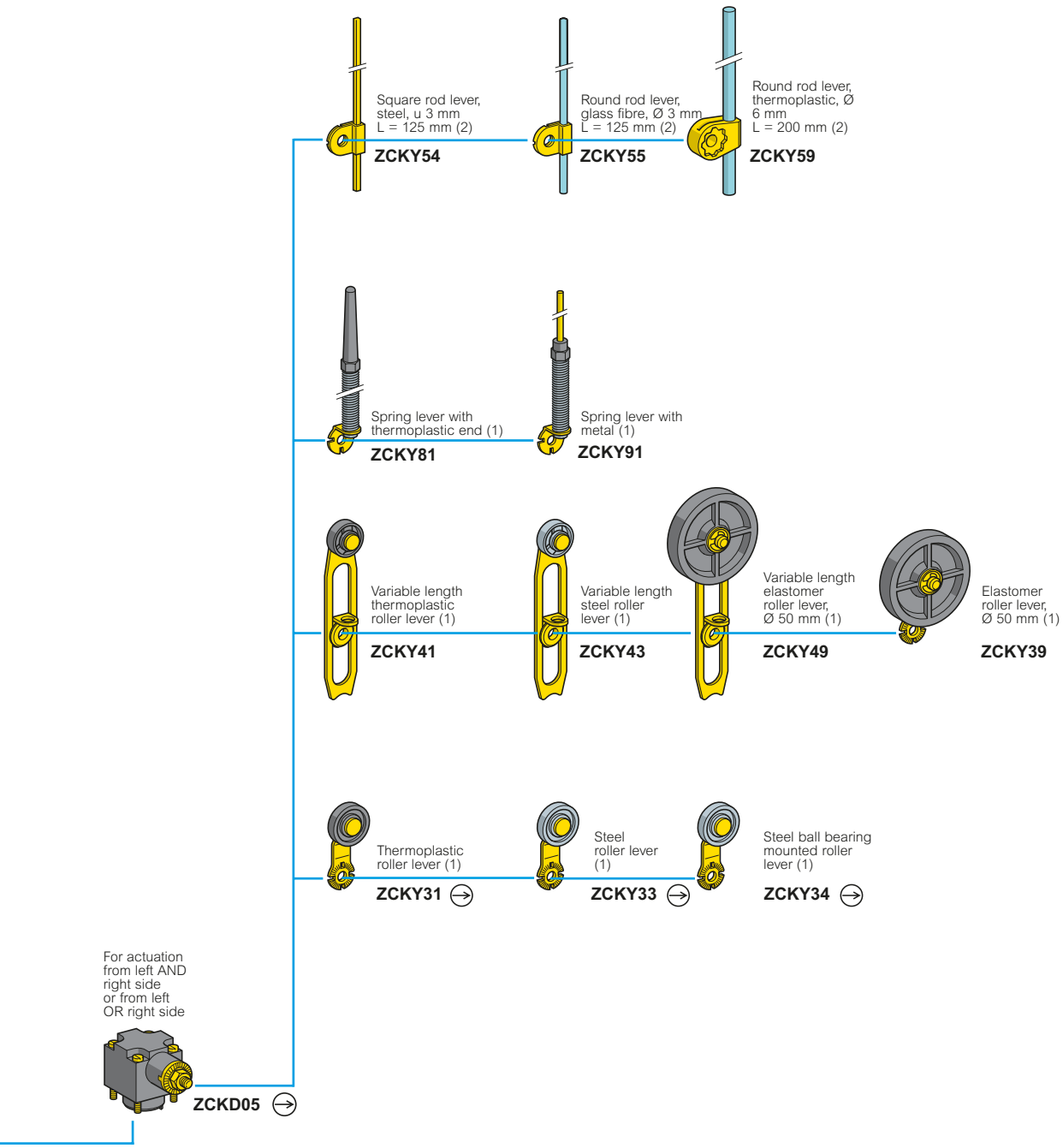


AB1 R11

Body with 2 pole contact, 3 cable entry for ISO M20
Body size (63 x 64 x 30)
ZCKM1H29

Notes
(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.

XC Classic format
Classic design - Type XCKM
Medium Duty, metal body switches - IP66



Notes
(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.

XC Classic format
Classic design - Type XCKM
Medium Duty, metal body switches - IP66

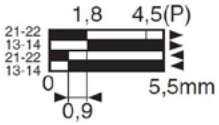
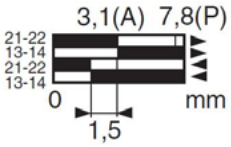
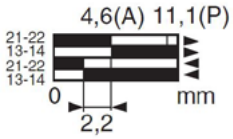
Contact operation
■ closed
□ open

Body / contact sub-assembly for XCKM

Description	Contact operation (1)	Reference
With mechanical indicator (contact state)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151)	**ZCKM1H29**

ZCKM1H29

Plunger heads

Description	Contact operation with ZCKM	Reference
Metal end plunger		**ZCKD10**
Metal end plunger with boot		**ZCKD109**
Steel roller plunger		**ZCKD02**
Steel roller plunger with boot		**ZCKD029**
Roller lever plunger thermoplastic		**ZCKD21**

ZCKD10

ZCKD02

ZCKD21

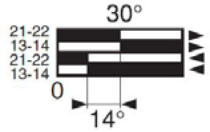
ZCKD05

ZCKD15

Rotary heads

Description	Reference
Without operator	**ZCKD05**
Thermoplastic roller lever	**ZCKD15**
Thermoplastic roller lever (variable length)	**ZCKY41**

Plunger heads

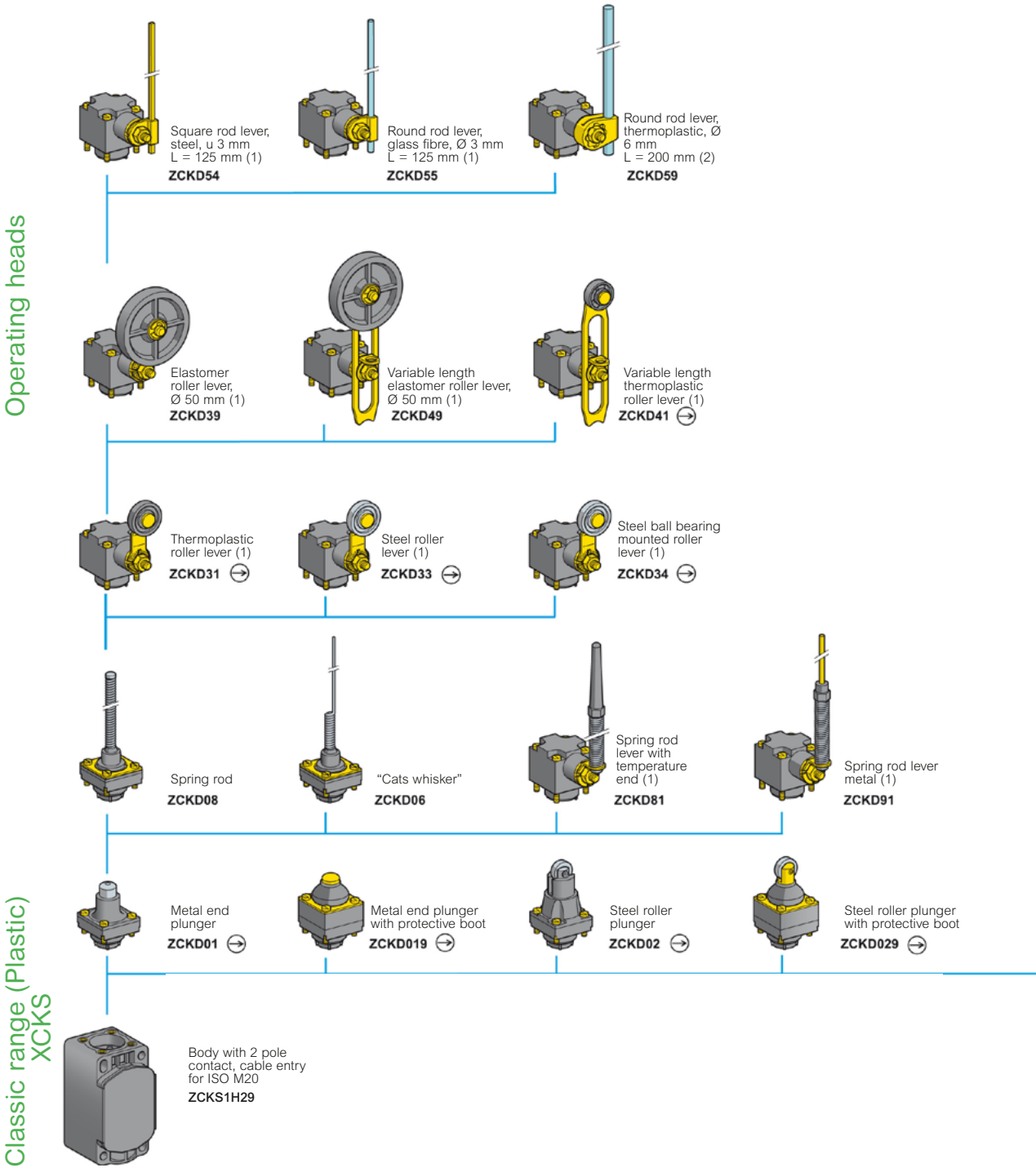
Description	Contact operation with ZCKM	Reference
Cat's Whisker		**ZCKD06**

ZCKD06

Note
(1) Positive operation only when used with a non-flexible lever.

Notes

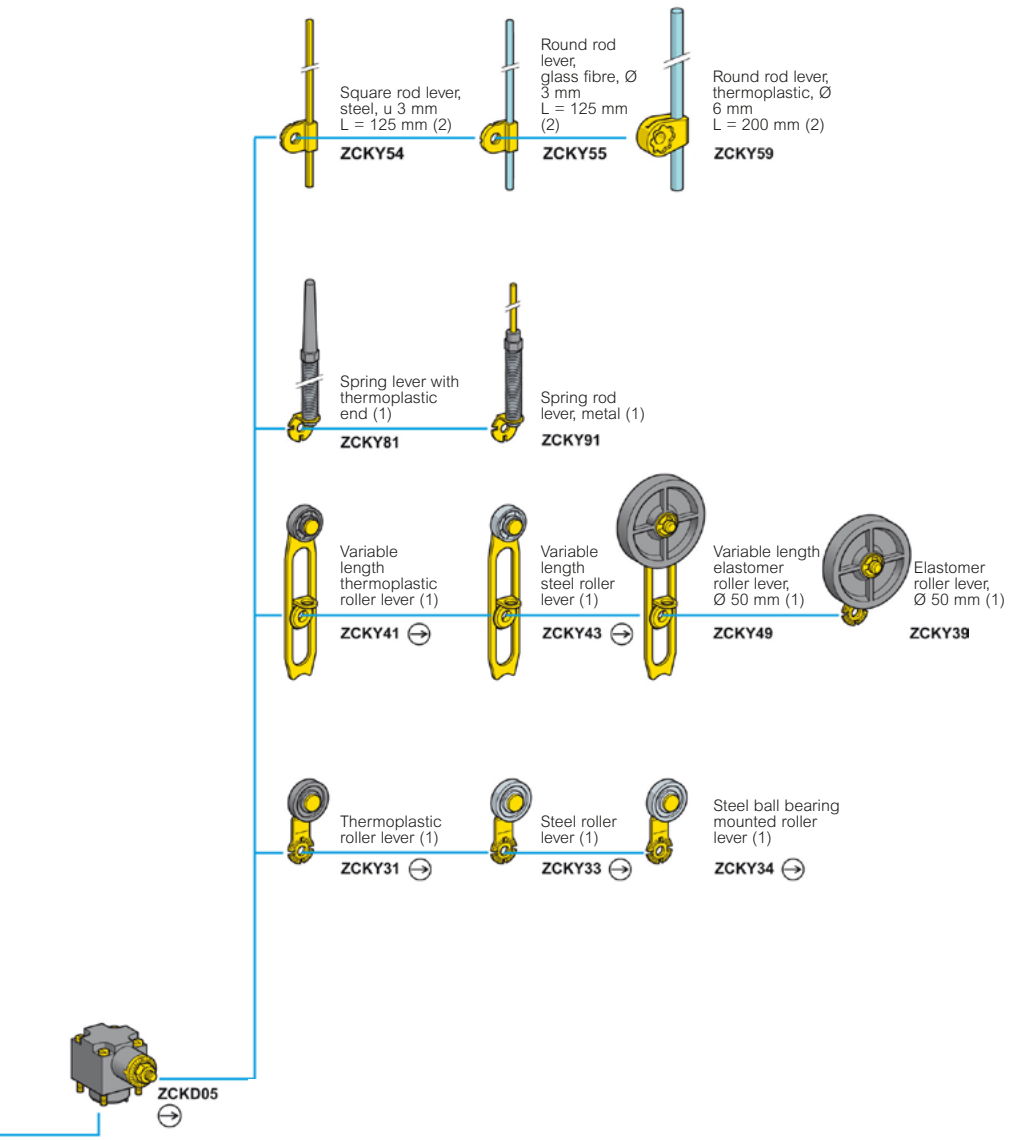
XC Classic format
Classic design (EN 50041) - Type XCKS
Medium Duty, Double insulated switches - IP65



Notes

(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.

XC Classic format
Classic design (EN 50041) - Type XCKS
Medium Duty, Double insulated switches - IP65



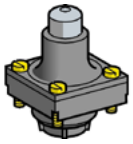
Notes
(1) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.
(2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.

Limit Switches – General Purpose

XC Classic format
Classic design (EN 50041) - Type XCKS
Medium Duty, Double insulated switches - IP65

Contact operation
■ closed
□ open

ZCKS1H29


ZCKD01

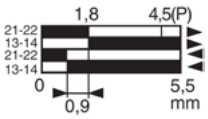
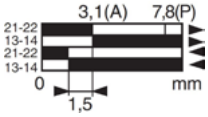
ZCKD02

ZCKD05

Body / contact sub-assembly for XCKS

Description	Contact operation (1)	Reference
With mechanical indicator (contact state)	2 pole 1 N/O + 1 N/C, snap action (XE2SP2151)	**ZCKS1H29**

Plunger heads

Description	Contact operation with ZCKM	Reference
Metal end plunger(2)		**ZCKD01**
Steel roller plunger (3)		**ZCKD02**

Rotary heads

Description	Reference
Without operator (7)	**ZCKD05**

Lever arms

Description	Reference
Roller lever thermoplastic (4)	**ZCKY31**
Variable length roller lever thermoplastic roller (5)	**ZCKY41**
Nylon rod lever Ø 6mm L 200m (6)	**ZCKY59**

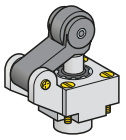
Notes

(1) Positive operation only when used with a non-flexible lever.
(2 Actuation on end. Maximum speed: 0.5m/s.
(3) Actuation by 30° cam. Maximum speed: 0.5m/s.
(4) Lever adjustable throughout 360° in 5° steps or in 90° steps, by reversing the lever mounting. Actuation by 30° cam. Maximum speed: 1.5m/s (1m/s for XCKSi39H29).
(5) Lever adjustable throughout 360° in 5° steps. Actuation by 30° cam. Maximum speed: 1.5m/s.
(6) Rod adjustable throughout 360° in 5° steps or in 90° steps, by reversing the lever mounting. Actuation by cylindrical finger. Maximum speed: 1.5m/s.
(7) The operating head may also be programmed to give actuation from the right OR left.

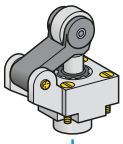
Notes

XC Industrial format
Industrial design (EN50041 format) - Type XCKJ
Heavy Duty, metal body switches - IP66

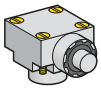
Metal operating heads



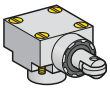
Thermoplastic roller lever plunger, 1 direction of actuation
ZCKE21



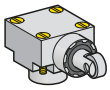
Steel roller lever plunger, 1 direction of actuation
ZCKE23



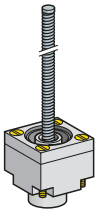
Side metal plunger (1)
ZCKE63



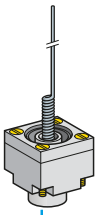
Side steel roller plunger, horizontal (1)
ZCKE64



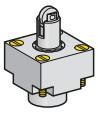
Side steel roller plunger, vertical (1)
ZCKE65



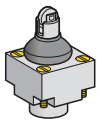
Spring rod (1)
ZCKE08



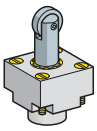
"Cat's whisker" (1)
ZCKE06



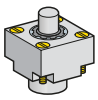
End reinforced steel roller plunger
ZCKE67



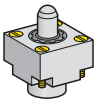
End steel roller plunger with protective boot
ZCKE629



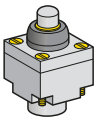
End steel roller plunger
ZCKE62



End metal plunger
ZCKE61

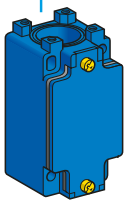


End steel ball bearing plunger
ZCKE66



End metal plunger with protective boot
ZCKE619

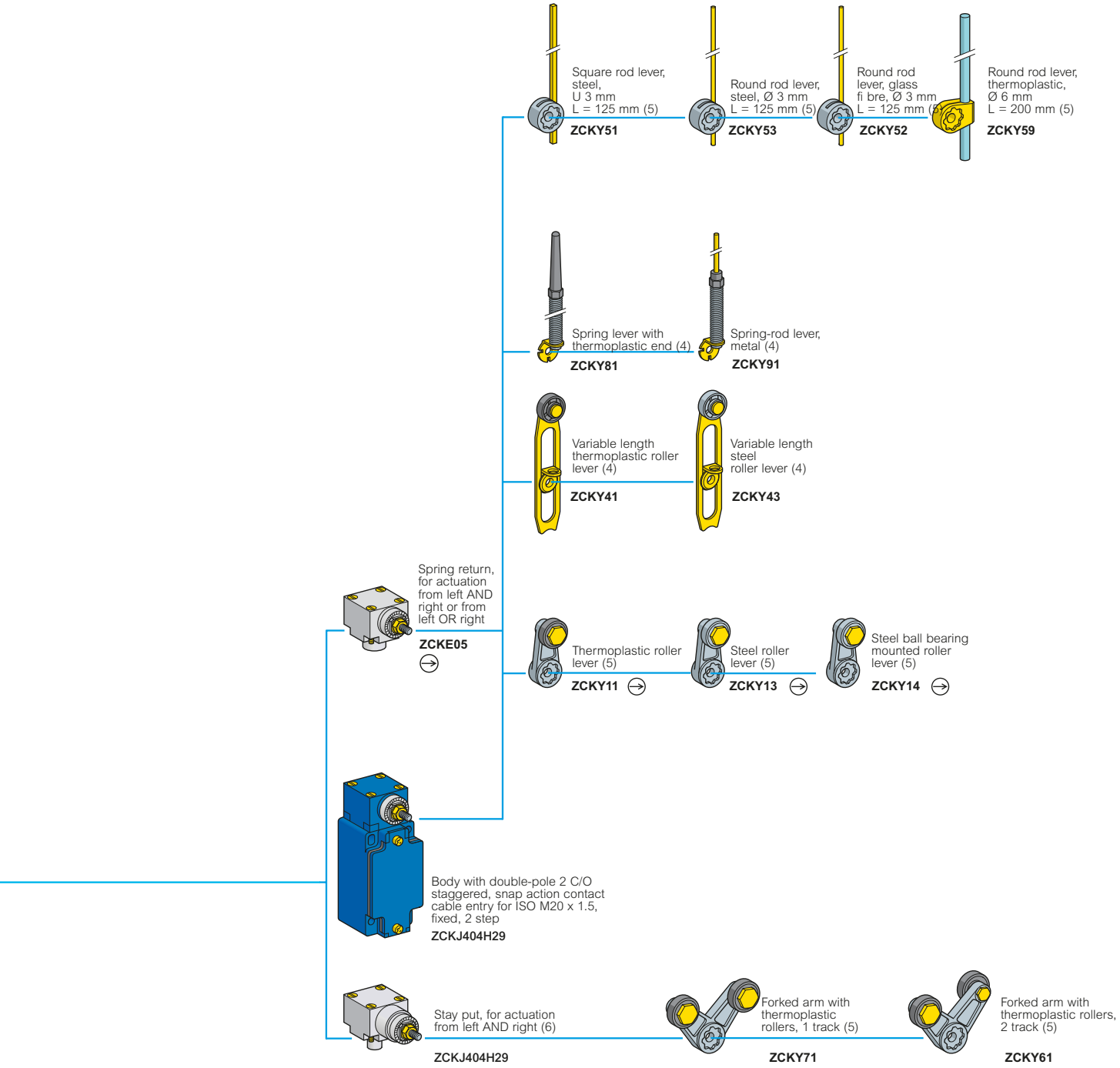
Industrial range XCKJ



Body with contact, cable entry for ISO M20 (2)(3)
ZCKJ1, J2, J4, J5

Notes
(1) Cannot be used on ZCKJ4 and ZCKJ41 bodies.
(2) For further information, see XCKJ range page K22.
(3) For a cable entry tapped ISO M20 x 1.5, add H29 to the reference. Example: ZCKJ1 becomes ZCKJ1H29.
For a cable entry tapped 1/2" NPT, add H7 to the reference. Example: ZCKJ1 becomes ZCKJ1H7.

XC Industrial format
Industrial design (EN50041 format) - Type XCKJ
Heavy Duty, metal body switches - IP66



Notes
(4) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer
(5) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.
(6) Suitable for bodies with contacts ZCKJ1, J2, J31, J39.

XC Industrial format
Industrial design (EN50041 format) - Type XCKJ
Heavy Duty, metal body switches - IP66

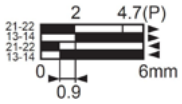
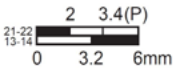
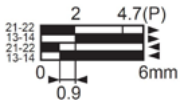
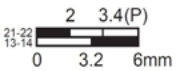
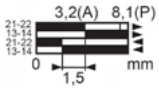
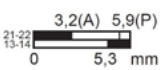
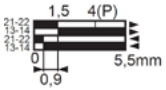
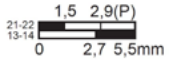
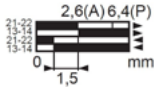
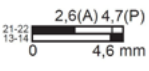
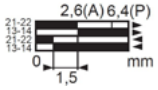
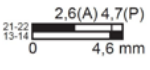
Contact operation
■ closed
□ open

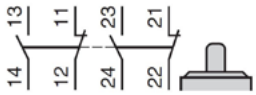
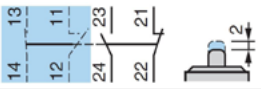
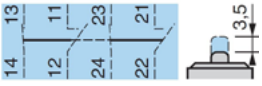
ZCKJ1H29

Body / contact sub-assembly for XCKJ - ISO M20 x 1.5

Description	Positive operation (1)	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	Contact operation with 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**

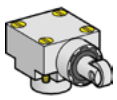
Description	Contact operation with ZCKJ4H29	Reference
2 Step		
Metal end plunger, spring return (1)		**ZCKE61**
End steel ball bearing plunger, spring return (2)		**ZCKE66**
End reinforced steel roller plunger, spring return (3)		**ZCKE67**

ZCKE61

ZCKE66

ZCKE67

ZCKE63



ZCKE65

ZCKE21

ZCKE23

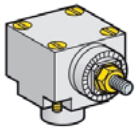
Notes

(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 ZCKJ1H29 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).

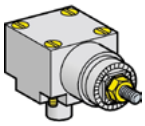
XC Industrial format
Industrial design (EN50041 format) - Type XCKJ
Heavy Duty, metal body switches - IP66

Contact operation
■ closed
□ open

ZCKJ404H29

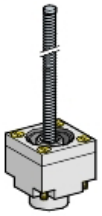


ZCKE05



ZCKE09

ZCKE06

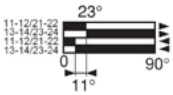
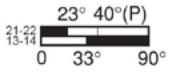
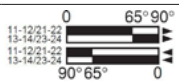


ZCKE08

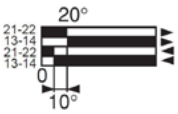
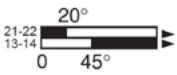
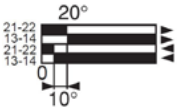
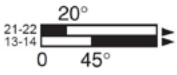
Body / contact sub-assembly for XCKJ with rotary head fitted

Description	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**

Rotary heads with nut and lock washer (without operator)

Description	Contact operation with ZCKJ1H29 & ZCKJ2H29	Contact operation with 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 with ZCKJ4H29		**Reference**
2 Step			
2 step 2 step from right AND left, spring return (1) OR 2 step from right OR left, spring return (1)			**ZCKE05**

Multi-directional heads (flexible operators are not suitable for positive opening operation applications)

Description	Contact operation with ZCKJ1H29 & ZCKJ2H29	Contact operation with ZCKJ5H29	Reference
1 Step			
"Cat's whisker" (3)			**ZCKE06**
Spring rod lever (4)			**ZCKE08**

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.

XC Industrial format
Industrial design (EN50041 format) - Type XCKJ
Heavy Duty, metal body switches - IP66

Contact operation
■ closed
□ open

ZCKY11

ZCKY13

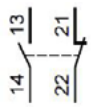
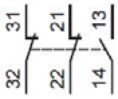
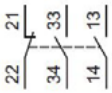
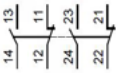
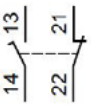
ZCKY41

ZCKY43

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	Schematic	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**

XC Industrial format
Wireless and Battery-less limit switches - Type XCMW
Industrial design - IP66 & IP67

Wireless and battery-less limit switches

The OsiSense™ XCMW wireless limit switches are breakthrough devices serving a vast number of applications, using ZigBee® Green Power technology at 2.4 GHz (IEEE 802.15.4). Up to 25m distance in industrial environment, extendable with relay antenna. Simplify machine communication where cabling is difficult, expensive, or unwanted. It's also the perfect way to give mobile machines more freedom of movement.

XCMW110

XCMW102

XCMW Miniature transmitters

Description	Reference
Metal end plunger	**XCMW110**
Metal roller plunger	**XCMW102**
Plastic roller lever	**XCMW115**
Metal roller lever	**XCMW116**
Adjustable length plastic roller lever	**XCMW145**

ZBRRD

ZBRN1

ZBRCETH

ZBRA1

Receivers

Output	Power supply	No. of transmitters	Reference
4 x PNP 200mA/24V outputs (3)	24V DC	32	**ZBRRC**
2 x C/O 3A relay outputs (3)	24-240V AC/DC	32	**ZBRRD**
Modbus/TCP (4)	24-240V AC/DC	60	**ZBRN1**
Modbus Serial (2 RS485 connectors)	24-240V AC/DC	60	**ZBRN2**
Modbus TCP communication card (4)			**ZBRCETH**

Accessories

Product	Application	Description	Reference
External antenna	Between transmitter & receiver ZBRR• , used to increase transmission distance	24..240 VAC/DC, 5m cable, 1 power on LED & 2 LED's for Rec/Trans indication	**ZBRA1**
External antenna	Connected to ZBRN1 or ZBRN2 harmony hub receiver to increase the transmission distance	Antenna with cable 2 m	**ZBRA2**
Passive antenna	Passive antenna to pass through a wall, must be close to a relay antenna or a receiver	Antenna with cable 0.9 m	**ZBRA3**

Notes

(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 XB•RTA wireless pushbuttons (with a software version above or equal to V2.0).
(4) ZBRN1 harmony hub must be plugged with a communication card ZBRCETH to support Modbus connection.
(5) XCMW wireless and batteryless limit switches are not suitable for hoisting or safety applications. For these applications and machines, the XC Standard range of cabled switches is ideal.

XU Universal
Multifunction & Single function
Cylindrical Ø18mm - plastic & metal

For cables and mounting accessories, see page K38-40

XUB0APSNL2

Ø 18 plastic, 3 wire, 12…24VDC, multifunction

Sensing mode	Sensing distance	Connection	Output function	Reference
Diffuse with BS	0.12m	Pre-wired (2m) (2)	PNP N/O or N/C	**XUB0APSNL2**
Diffuse	0.3m		NPN N/O or N/C	**XUB0ANSNL2**
Polarised reflex	2m	M12 connector	PNP N/O or N/C	**XUB0APSNM12**
Thru-beam	15m		NPN N/O or N/C	**XUB0ANSNM12**
Thru-beam transmitter		M12 connector (1)		**XUB0AKSNM12T**

XUB0APSNM12

Ø 18 plastic, 3 wire, 12…24VDC, single function

Sensing mode	Sensing distance	Connection	Output function	Reference
Diffuse	0.6m	M12 connector (1)	PNP N/O (3)	**XUB5APANM12** (5)
Polarised reflex	2m (4)	M12 connector (1)	PNP N/O (3)	**XUB9APANM12** (5)
Reflex	4m (4)	M12 connector (1)	PNP N/O (3)	**XUB1APANM12** (5)
Thru-beam	15m	M12 connector (1)	PNP N/O (3)	**XUB2APANM12R** (5)
Thru-beam transmitter		M12 connector (1)		**XUB2AKSNM12T** (5)

XUB0BPSNL2

Ø 18 metal, 3 wire, 12…24VDC, multifunction

Sensing mode	Sensing distance	Connection	Output function	Reference
Diffuse with BS	0.12m	Pre-wired (2m) (2)	PNP N/O or N/C	**XUB0BPSNL2**
Diffuse	0.3m		NPN N/O or N/C	**XUB0BNSNL2**
Polarised reflex	2m	M12 connector	PNP N/O or N/C	**XUB0BPSNM12**
Thru-beam	15m			
Thru-beam transmitter		M12 connector (1)		**XUB0BKSNM12T**

XUB0BPSNM12

Ø 18 metal, 3 wire, 12…24VDC, single function

Sensing mode	Sensing distance	Connection	Output function	Reference
Diffuse	0.6m	M12 connector (1)	PNP N/O (3)	**XUB5BPANM12** (5)
Polarised reflex	2m (4)	M12 connector (1)	PNP N/O (3)	**XUB9BPANM12** (5)
Reflex	4m (4)	M12 connector (1)	PNP N/O (3)	**XUB1BPANM12** (5)
Thru-beam	15m	M12 connector (1)	PNP N/O (3)	**XUB2BPANM12R** (5)
Thru-beam transmitter		M12 connector (1)		**XUB2BKSNM12T** (5)

XU2M18MA230

Universal – classic Ø 18 metal, 2 wire, 24…240VAC/DC

Description	Sensing range	Output function	Light/dark	Reference
Through beam (emitter and receiver supplied together in the XU2 kit)				
E + R	15m	Solid state N/O	D	**XU2M18MA230**
Diffuse				
E/R	400mm	Solid state N/O	L	**XU5M18MA230**

Notes
(1) Pre-wired models also available.
(2) **P**re-wired versions available with 5m long cable, to order replace L2 with L5 at the end of the reference.
(3) NPN and N/C output models also available.
(4) With reflector XUZC50 to be ordered separately.
(5) For 90 degree head sustitute the N for W in the reference example NM12 becomes NW12.

XU Universal
Multifunction & Single function
Miniature & Compact design - plastic

For cables and mounting accessories, see page K38-40

XUM0APSAL2

Miniature, 3 wire, 12…24VDC, multifunction

Sensing mode	Sensing distance	Connection	Output function	Reference
Diffuse with BS	0.1m	Pre-wired (2m) (2)	PNP N/O or N/C	**XUM0APSAL2**
Diffuse	0.4m		NPN N/O or N/C	**XUM0ANSAL2**
Polarised reflex	3m	M8 Connector	PNP N/O or N/C	**XUM0APSAM8**
Thru-beam	10m		NPN N/O or N/C	**XUM0ANSAM8**
Thru-beam transmitter		M8 Connector (1)		**XUM0AKSAM8T**

XUK9ARCNL2

Compact 50x50, 5 wire, 24...240V AC/DC, single function

Sensing mode	Sensing distance	Connection	Output function	Reference
Diffuse	1m	Pre-wired (2m)	1 C/O Relay	**XUK5ARCNL2**
Polarised reflex	4m	Pre-wired (2m)	1 C/O Relay	**XUK9ARCNL2**
Thru-beam	20m	Pre-wired (2m)	1 C/O Relay	**XUK2ARCNL2R**
Thru-beam transmitter		Pre-wired (2m)	1 C/O Relay	**XUK2ARCNL2T**

XUK1APANM12

Compact 50 x 50, 3 wire, 12V....24V DC, PNP output, single function

Sensing mode	Sensing distance	Connection	Output function	Reference
Diffuse	1m	M12 Connector (1)	PNP N/O (3)	**XUK5APANM12**
Polarised reflex	5m (4)	M12 Connector (1)	PNP N/O (3)	**XUK9APANM12**
Reflex	7m (4)	M12 Connector (1)	PNP N/O (3)	**XUK1APANM12**
Thru-beam	30m	M12 Connector (1)	PNP N/O (3)	**XUK2APANM12R**
Thru-beam transmitter		M12 Connector (1)		**XUK2AKSNM12T**

XUX0AKSAM12T

Compact 92x71, 5 wire, 24...240V AC/DC, single function

Sensing mode	Sensing distance	Connection	Output function	Reference
Diffuse	2m	Screw terminal	1 C/O Relay	**XUX5ARCNT16**
Polarised reflex	11m	Screw terminal	1 C/O Relay	**XUX9ARCNT16**
Thru-beam	40m	Screw terminal	1 C/O Relay	**XUX2ARCNT16R**
Thru-beam transmitter		Screw terminal	1 C/O Relay	**XUX0ARCTT16T**

Compact 92 x 71, 3 wire, 12…24VDC and 0…264VAC, PNP output

Sensing mode	Sensing distance	Connection	Output function	Reference
Diffuse	2.1m	M12 Connector	PNP N/O (3)	**XUX5APANM12**
Polarised reflex	11m (4)	M12 Connector	PNP N/O (3)	**XUX9APANM12**
Reflex	14m (4)	M12 Connector	PNP N/O (3)	**XUX1APANM12**
Thru-beam	40m	M12 Connector	PNP N/O (3)	**XUX2APANM12R**
Thru-beam transmitter		M12 Connector		**XUX0AKSAM12T**

Notes

(1) Pre-wired models also available.
(2) Pre-wired versions available with 5m long cable, to order replace L2 with L5 at the end of the reference.
(3) NPN and N/C output models also available.
(4) With reflector XUZC50 to be ordered separately.
(5) For 90 degree head substitute the N for W in the reference example NM12 becomes NW12.

XU
Application
Food and beverage series - upto IP69K

For cables and mounting accessories, see page K38-40

Food & Beverage series - Cylindrical, stainless steel 304, 3 wire, 12…24VDC, single function, IP67

Sensing mode	Sensing distance	Size(mm)	Connection	Output function	Reference
Diffuse (3)	0.1m	ø18	M12 connector	PNP NO/NC	**XU5N18PP341D**
Reflex polarised (1)(3)	2m	ø18	M12 connector	PNP NO/NC	**XU9N18PP341D**
Reflex (1)(3)	4m	ø18	M12 connector	PNP NO/NC	**XU1N18PP341D**
Thru-beam (2)(3)	15m	ø18	M12 connector	PNP NO/NC	**XU2N18PP341D**

XU5N18PP341D

Food & Beverage series - Cylindrical, stainless steel 304, 3 wire, 12…24VDC, multi function(4)

Sensing mode	Sensing distance	Size(mm)	Connection	Output function	Reference
Diffuse (3)	0.12m	ø18	M12 connector	PNP NO/NC	**XUB0SPSNM12**
Diffused adjustable	0.3m				
Reflex polarised	3m				
Thru-beam	20m				
Thru-beam transmitter					**XUB0SKSNL12T**

XUK9LAPSMM12

Food & Beverage series - Compact, 4 wire, 10…30VDC, single function(4)

Sensing mode	Sensing distance	Size(mm)	Connection	Output function	Reference
Background suppression(6)	0.8m	50x50	M12 connector	PNP NO/NC	**XUK8LAPPNM12**
Diffuse(6)	1.2m	50x50	M12 connector	PNP NO/NC	**XUK5LAPSMM12**
Reflex polarised(5)(6)	12m	50x50	M12 connector	PNP NO/NC	**XUK9LAPSMM12**
Thru-beam receiver (6)	25m	50x50	M12 connector	PNP NO/NC	**XUK2LAPSMM12R**
Thru-beam transmitter		50x50	M12 connector		**XUK2LAKSMM12T**

Notes
(1) With reflector XUZC50 included. For IP69K reflector refer to mounting accessories
(2) Transmitter and receiver included.
(3) NPN version also available.
(4) IP67 (IP69K conforming to DIN 40050)
(5) With high precision reflector XUZC50HP to be ordered separately.
(6) Fixing bracket: XUZA51S to be ordered separately.

XS
General purpose
Cylindrical - metal

For cables and mounting accessories, see page K38-40

XS608B1PAM12

Cylindrical metal – universal, 3 wire, 12…48VDC

Body	Sensing Z distance (mm)	Size (mm)	Connection	Output function	Reference
Shielded	0…2	Ø 8 x 62	M12 (1)	PNP N/O (2)	**XS608B1PAM12**
	0…3.2	Ø 12 x 62	M12 (1)	PNP N/O (2)	**XS612B1PAM12**
	0…6.4	Ø 18 x 74	M12 (1)	PNP N/O (2)	**XS618B1PAM12**
	0…12	Ø 30 x 74	M12 (1)	PNP N/O (2)	**XS630B1PAM12**
Unshielded	0…5.6	Ø 12 x 65	M12 (1)	PNP N/O (2)	**XS612B4PAM12**
	0…9.6	Ø 18 x 74	M12 (1)	PNP N/O (2)	**XS618B4PAM12**
	0…17.6	Ø 30 x 74	M12 (1)	PNP N/O (2)	**XS630B4PAM12**

XS118B3PAM12

Cylindrical metal – optimum, 3 wire, 12…24VDC

Body	Sensing distance (mm)	Size (mm)	Connection	Output function	Reference
Shielded	0…2	Ø 8 x 42	M12 (1)	PNP N/O (2)	**XS108B3PAM12**
	0…3.2	Ø 12 x 50	M12 (1)	PNP N/O (2)	**XS112B3PAM12**
	0…6.4	Ø 18 x 50	M12 (1)	PNP N/O (2)	**XS118B3PAM12**
	0…12	Ø 30 x 55	M12 (1)	PNP N/O (2)	**XS130B3PAM12**

XS1N05PA310S

Cylindrical metal – miniature, 3 wire, 12…24VDC

Body	Sensing distance (mm)	Size (mm)	Connection	Output function	Reference
Shielded	0…0.8	Ø 4 x 29	M8 (1)	PNP N/O (3)	**XS1L04PA310S**
	0…2	Ø 6.5 x 33	M8 (1)	PNP N/O (2)	**XS106B3PAM8**

XS130B3PCM12

Cylindrical metal – universal, multifunction, 4 wire, 12…24VDC

Body	Sensing distance (mm)	Size (mm)	Connection	Output function	Reference
Shielded (5)	0…1.6	Ø 12 x 61	M12 (1)	Selectable (4)	**XS1M12KP340D**
	0…4	Ø 18 x 72	M12 (1)	Selectable (4)	**XS1M18KP340D**
	0…8	Ø 30 x 72	M12 (1)	Selectable (4)	**XS1M30KP340D**
	0…1.2	Ø 8 x 61	M12 (1)	PNP NO+NC (3)	**XS1M08PC410D**
	0…4	Ø 12 x 48	M12 (1)	PNP NO+NC (3) (5)	**XS112B3PCM12**
	0…8	Ø 18 x 49	M12 (1)	PNP NO+NC (3) (5)	**XS118B3PCM12**
	0…15	Ø 30 x 53	M12 (1)	PNP NO+NC (3) (5)	**XS130B3PCM12**

XS618B1MAL2

Cylindrical metal – multivoltage, 2 wire, 24…240VAC/DC (6)

Body	Sensing distance (mm)	Size (mm)	Connection	Output function	Reference
Shielded	0…3.2	Ø 12 x 50	Pre-wired (2m)	N/O	**XS612B1MAL2**
	0…6.4	Ø 18 x 60	Pre-wired (2m)	N/O	**XS618B1MAL2**
	0…12	Ø 30 x 60	Pre-wired (2m)	N/O	**XS630B1MAL2**

Notes
(1) Pre-wired models also available.
(2) NPN and N/C output models also available.
(3) NPN models also available.
(4) Programmable NO or NC output. PNP/NPN selectable (4 wire).
(5) Sil2 safety rated and E2 certified for use with adapted vehicles and equipment.
(6) Unshielded and models with short circuit protection also available.

XS
General purpose
Cylindrical - plastic

For cables and mounting accessories, see page K38-40

XS4P30PA370D

Cylindrical plastic – universal, 3 wire, 12…48VDC

Sensing distance (mm)	Size (mm)	Connection	Output function	Reference
0…2	Ø 8 x 42	Pre-wired (2m)	PNP N/O (2)	**XS4P08PA370**
0…3.2	Ø 12 x 48	M12 connector (1)	PNP N/O (2)	**XS4P12PA370D**
0…6.4	Ø 18 x 48	M12 connector (1)	PNP N/O (2)	**XS4P18PA370D**
0…12	Ø 30 x 50	M12 connector (1)	PNP N/O (2)	**XS4P30PA370D**

XS4P12PC410D

Cylindrical plastic – universal, multifunction, 4 wire, 12…24VDC

Sensing distance (mm)	Size (mm)	Connection	Output function	Reference
0…3.2	Ø 12 x 61	M12 connector (1)	Selectable (4)	**XS4P12KP340D**
0…6.4	Ø 18 x 72	M12 connector (1)	Selectable (4)	**XS4P18KP340D**
0…12	Ø 30 x 72	M12 connector (1)	Selectable (4)	**XS4P30KP340D**
0…3.2	Ø 12 x 48	M12 connector (1)	PNP NO+NC (3)	**XS4P12PC410D**
0…6.4	Ø 18 x 48	M12 connector (1)	PNP NO+NC (3)	**XS4P18PC410D**
0…12	Ø 30 x 50	M12 connector (1)	PNP NO+NC (3)	**XS4P30PC410D**

XS4P08MA230

Cylindrical plastic – multivoltage, 2 wire, 24…240VAC/DC

Sensing distance (mm)	Size (mm)	Connection	Output function	Reference
0…2	Ø 8 x 50	Pre-wired (2m)	N/O	**XS4P08MA230**
0…3.2	Ø 12 x 50	Pre-wired (2m)	N/O	**XS4P12MA230**
0…6.4	Ø 18 x 60	Pre-wired (2m)	N/O	**XS4P18MA230**
0…12	Ø 30 x 60	Pre-wired (2m)	N/O	**XS4P30MA230**

Notes
(1) Pre-wired models also available.
(2) NPN and N/C output models also available.
(3) NPN models also available.
(4) Programmable NO or NC output. PNP/NPN selectable (4 wire).

XS
General purpose
Rectangular - plastic

XS8C1A1PAM8

XS7F1A1PAL01M8

XS8C2A1PCM12

XS8E1A1MAL2

Factor
XS9C2A1PCM12

XSZPSC2

For cables and mounting accessories, see page K38-40

Rectangular plastic – universal, flush/non-flush mountable, 12…24VDC

Sensing distance (mm)	Size (mm)	Connection	Output function	Reference
0…8 (4)	26 x 26 x 13	M8 connector (1)	PNP N/O (2)	**XS8E1A1PAM8**
0…12 (4)	40 x 40 x 15	M8 connector (1)	PNP N/O (2)	**XS8C1A1PAM8**
0…32 (4)	80 x 80 x 26	M12 connector (1)	PNP N/O (2)	**XS8D1A1PAM12**

Rectangular plastic – optimum, 3 wire, 12…24VDC

Sensing distance (mm)	Size (mm)	Connection	Output function	Reference
0…2	8 x 22 x 8	M8 connector (1) (3)	PNP N/O (2)	**XS7J1A1PAL01M8**
0…4	15 x 32 x 8	M8 connector (1) (3)	PNP N/O (2)	**XS7F1A1PAL01M8**
0…8	26 x 26 x 13	M8 connector (1)	PNP N/O (2)	**XS7E1A1PAM8**
0…12	40 x 40 x 15	M8 connector (1)	PNP N/O (2)	**XS7C1A1PAM8**
0…32	80 x 80 x 26	M12 connector (1)	PNP N/O (2)	**XS7D1A1PAM12**

Rectangular plastic, ‘block’ style, flush mountable, IP69K, 12...24VDC (2) (5)

Sensing distance (mm)	Size (mm)	Connection	Ouput function	Reference
0...12	40x40x70	M12 Connector	PNP N/O	**XS7C2A1PAM12**
0...16	40x40x70	M12 Connector	PNP N/O+N/C (6)	**XS8C2A1PCM12**

Rectangular plastic – multivoltage, flush/non-flush mount, 24…240VAC/DC

Sensing distance (mm)	Size (mm)	Connection	Output function	Reference
0…8 (4)	26 x 26 x 13	Pre-wired (2m)	N/O	**XS8E1A1MAL2**
0…12 (4)	40 x 40 x 15	Pre-wired (2m)	N/O	**XS8C1A1MAL2**
0…32 (4)	80 x 80 x 26	Pre-wired (2m)	N/O	**XS8D1A1MAL2**
0...16	40x40x70	1/2” - 20 UNF	NO	**XS8C2A1MAU20**

Factor 1 magnetic field immune sensors 24VDC (7) (8)

Sensing distance (mm)	Size (mm)	Connection	Output function	Reference
0...20	40x40x70	M12	PNP NO+NC	**XS9C2A1PCM12**
0...20	40x40x117	ISO M20	PNP NO+NC	**XS9C4A1PCP20**
0...20	40x40x70	M12	NPN NO+NC	**XS9C2A1NCM12**

Accessories

Description	Reference
Stainless steel cover	**XSZPSC2**

Notes
(1) Pre-wired models also available.
(2) NPN and N/C output models also available.
(3) M8 Connector on flying lead (0.15M).
(4) Extended range available via teach mode and non-flush mounting.
(5) Non-flush mountable models also available.
(6) Certified for SIL 2 safety applications.
(7) Factor 1 is weld, transformer, motor, VSD immune measured resistance is 250 mT 60kA up to 50mm from source of emission.
(8) Ferrous and non ferrous metals are detected at the same distance.

XS
Application
Food and beverage series - upto IP69K

For cables and mounting accessories, see page K38-40

XS218SAPAL2

F & B, stainless steel body, IP69K, non-flush mount, 12…24VDC (1)

Sensing distance (mm)	Size (mm)	Connection	Output function	Reference
0…5.6	Ø12 x 55	Pre-wired (2m) (2)	PNP NO (3)	**XS212SAPAL2**
0…9.6	Ø18 x 60	Pre-wired (2m) (2)	PNP NO (3)	**XS218SAPAL2**
0…17.6	Ø30 x 62	Pre-wired (2m) (2)	PNP NO (3)	**XS230SAPAL2**

XS218AAPAL2

F & B, plastic body, IP69K, non-flush mount, 12…24VDC (1)

Sensing distance (mm)	Size (mm)	Connection	Output function	Reference
0…5.6	Ø12 x 55	Pre-wired (2m) (2)	PNP NO (3)	**XS212AAPAL2**
0…9.6	Ø18 x 60	Pre-wired (2m) (2)	PNP NO (3)	**XS218AAPAL2**
0…17.6	Ø30 x 62	Pre-wired (2m) (2)	PNP NO (3)	**XS230AAPAL2**

XS912R1PAM12

Stainless steel body, 303, IP69K, flush mount (1)

Sensing distance (mm)	Size (mm)	Connection	Ouput function	Reference
0...4.8	Ø12x60	M12 Connector	NO PNP	**XS912R1PAM12**
0...8	Ø18x64	M12 Connector	NO PNP	**XS918R1PAM12**
0...16	Ø30x64	M12 Connector	NO PNP	**XS930R1PAM12**
0...4.8	Ø12x60	M12 Connector	NO PNP	**XS912RWPAM12** (4)
0...8	Ø18x64	M12 Connector	NO PNP	**XS918RWPAM12** (4)

XS930S1PAM12

Stainless steel body, 316L, IP69K, flush mount, Ecolab certified (1)

Sensing distance (mm)	Size (mm)	Connection	Ouput function	Reference
0...4.8	Ø12x60	M12 Connector	NO PNP	**XS912S1PAM12**
0...8	Ø18x64	M12 Connector	NO PNP	**XS918S1PAM12**
0...16	Ø30x64	M12 Connector	NO PNP	**XS930S1PAM12**

Notes
(1) Refer to the Detection catalogue for the full range of products available IP67 and IP69K conforming to DIN 40050.
(2) Models with M12 connector also available.
(3) For NPN substitute "N" for "P" or for N/C "B for "A".
(4) Weld field immune.

Proximity Sensors

XS & XT
Rotational control - Flat & Cylindrical
Analogue output for position control
Capacitive Proximity sensors

XS9C11RPBL01M12

For cables and mounting accessories, see page K38-40

Rotational monitoring, 3 wire, 1 2…24VDC(1)

Sensing distance (mm)	Size	Adj. frequency range(impulses/ min)	Connection	Output function	Reference
Ultra-Flat					
10	26x26x13	6…6000	M12 connector	PNP NC	**XS9E11RPBL01M12**
15	40x40x15	6…6000	M12 connector	PNP NC	**XS9C11RPBL01M12**
Cylindrical					
10	Cylindrical - ø18	6…150	Pre wired (2m)	PNP NC	**XSAV11373**
10	Cylindrical - ø30	120…3000	Pre wired (2m)	PNP NC	**XSAV12373**

Rotational monitoring, 2 wire, 24…240VAC/DC(1)(2)

Sensing distance (mm)	Size	Adj. frequency range(impulses/ min)	Connection	Output function	Reference
Cylindrical					
10	ø30	6…150	Pre wired (2m)	NC	**XSAV11801**
10	ø30	120…3000	Pre wired (2m)	NC	**XSAV12801**

XS1M18AB120

Analogue output, 12…24VDC(3)

Sensing distance (mm)	Size	Mount	Connection	Output function	Reference
Ultra-Flat					
5	15x32x8		Pre wired (2m)	4…20mA	**XS9F111A2L2**
10	26x26x13		Pre wired (2m)	4…20mA	**XS9E111A2L2**
15	40x40x15		Pre wired (2m)	4…20mA	**XS9C111A2L2**
40	80x80x26		Pre wired (2m)	4…20mA	**XS9D111A2L2**
Cylindrical					
2	ø12	Flush	Pre wired (2m)	4…20mA	**XS1M12AB120**
5	ø18	Flush	Pre wired (2m)	4…20mA	**XS1M18AB120**
10	ø30	Flush	Pre wired (2m)	4…20mA	**XS1M30AB120**

XT218A1PCM12

XT118B1PCM12

Capacitive, Non flush mount, 4 wire, 24VDC

Sensing distance (mm)	Size(mm)	Connection	Output function	Reference
Stainless steel				
2	ø12	M12 connector	PNP NO/NC	**XT112S1PCM12**
5	ø18	M12 connector	PNP NO/NC	**XT118B1PCM12**
10	ø30	M12 connector	PNP NO/NC	**XT130B1PCM12**
Plastic				
8	ø18	M12 connector	PNP NO/NC	**XT218A1PCM12**
15	ø30	M12 connector	PNP NO/NC	**XT230A1PCM12**

Notes

(1) Sensors for rotation monitoring, slip detection, shaft overload detection.
(2) For short circuit protection connect a 0.4A "quick blow" fuse in series with the load.
(3) 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.

Ultrasonic sensors

XX
General purpose
Flat & Cylindrical design

For cables and mounting accessories, see page K38-40

XX7F1A2PAL01M12

XX7V1A1PAM12

XX6V3A1PAM12

XX930A1A1M12

Flat format, plastic, 12...24VDC

Operating zone	Size (mm)	Connection	Output function	Reference
5.1...25.4cm	74x30x16	M12 Connector	PNP NO	**XX7K1A2PAM12**
5.1...50.8cm	M18/ 18x33x60	M12 Connector	PNP NO	**XX7V1A1PAM12**
		M12 Connector	0...10V	**XX9V1A1F1M12**
		M12 Connector	4...20mA	**XX9V1A1C2M12**
10...100cm	80x80x34	M12 Connector	PNP NO	**XX8D1A1PAM12**
		M12 Connector	0...10V	**XX9D1A1F1M12**
		M12 Connector	4...20mA	**XX9D1A1C2M12**

Cylindrical format, plastic, 12...24VDC

Operating zone	Size (mm)	Connection	Output function	Reference
0.64...10.2cm	Ø12x50	M8 Connector	PNP NO	**XX512A2PAM8**
5.1...50.8cm	Ø18x65	M12 Connector	PNP NO	**XX518A3PAM12**
		M12 Connector	0...10V	**XX918A3F1M12**
		M12 Connector	4...20mA	**XX918A3C2M12**
10...100cm	Ø30x78	M12 Connector	PNP NO	**XX6V3A1PAM12**
		M12 Connector	0...10V	**XX9V3A1F1M12**
		M12 Connector	4...20mA	**XX9V3A1C2M12**
		M12 Connector	0...10V	**XX930A1A1M12**
20.3...800cm	Ø30x106	M12 Connector	PNP NO/NC	**XX630A3PCM12**
		M12 Connector	0...10V	**XX930A3A1M12**
		M12 Connector	4...20mA	**XX930A3A2M12**

XX Ultrasonic sensor, Cylindrical format, Plastic (1)

The new range of XX Ultrasonic Sensors offers a wide variety of sensing distances, outputs and operating modes to provide the flexibility and capabilities required for demanding industrial applications. Easy configuration using XX configuration software XXZKIT01 or XXZPB100 remote accessory (1)

Sensing distance (m)	Size	Connection	Output function	Reference
1m	ø18	M12 connector (5pin)	PNP, NO/NC	**XXS18P1PM12**
			4...20 mA	**XXS18P1AM12**
			0...10 V	**XXS18P1VM12**
1m	ø30	M12 connector (5pin)	PNP, NO/NC	**XXS30P1PM12**
			4...20 mA	**XXS30P1AM12**
			0...10 V	**XXS30P1VM12**
4m	ø30	M12 connector (5pin)	PNP, NO/NC	**XXS30P4PM12**
			4...20 mA	**XXS30P4AM12**
			0...10 V	**XXS30P4VM12**

XXZPB100

Accessories

Description	Reference
Distance setting remote teach Pushbutton – For use with XX518A3, XX7V1A1, XX918A, XX9V3A, XX9D1A	**XXZPB100**

Note

(1) Offer avaialble in Q2 2020.

XX
Application
Food and beverage

For cables and mounting accessories, see page K38-40.

XX630S1PCM12

Food and beverage stainless steel

Operating zone	Size (mm)	Connection	Output function	Reference
5...100mm	Ø30x85	M12 Connector	PNP NO	**XX630S1PCM12**
		M12 Connector	0...10V	**XX930S1A2M12**
		M12 Connector	4...20mA	**XX930S1A1M12**

Food and beverage full body stainless steel

Operating zone	Size (mm)	Connection	Output function	Reference
10...100mm	Ø30x85	M12 Connector	PNP/NPN NO	**XX630T1KA000M12**
		M12 Connector	4...20mA	**XX930T1A4303M12**

XX Ultrasonic sensor, Cylindrical format, Stainless steel SS316L (1)

The new range of XX Ultrasonic Sensors offers a wide variety of sensing distances, outputs and operating modes to provide the flexibility and capabilities required for demanding industrial applications. Easy configuration using XX configuration software XXZKIT01 or XXZPB100 remote accessory (1)

Sensing distance (m)	Size	Connection	Output function	Reference
1m	ø18	M12 connector (5pin)	PNP, NO/NC	**XXS18S1PM12**
			4...20 mA	**XXS18S1AM12**
			0...10 V	**XXS18S1VM12**
1m	ø30	M12 connector (5pin)	PNP, NO/NC	**XXS30S1PM12**
			4...20 mA	**XXS30S1AM12**
			0...10 V	**XXS30S1VM12**
4m	ø30	M12 connector (5pin)	PNP, NO/NC	**XXS30S4PM12**
			4...20 mA	**XXS30S4AM12**
			0...10 V	**XXS30S4VM12**

Note
(1) Offer avaialble in Q2 2020.

Notes

Standard Mounting Accessories & Reflectors

XUZB2003

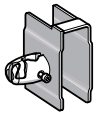
XUZM2003

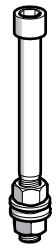
XUZM2004

XUZK2003

XUZK2004

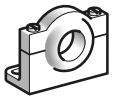
XUZX2003


XUZX2004


XUZ2001

XUZ2003

XUZA118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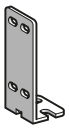
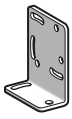
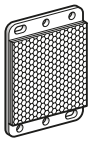

XUZA50

XUZA51


XUZX2000

XSAZ118

XUZC80


XUZC50

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**
Fixing bracket for XS - saddle type for ø18mm sensors	**XSAZ118**

Reflectors

Description	Reference
Ø 16mm	**XUZC16**
Ø 21mm	**XUZC21**
Ø 39mm	**XUZC39**
Ø 80mm	**XUZC80**
100mm x 100mm	**XUZC100**
50mm x 50mm (suitable for very close distance)	**XUZC50**
50mm x 50mm (suitable for IP69K Food & Bev application)	**XUZC50CR**
25mm x 5m (reflective tape)	**XUZB05**

K

OsiSense
Cables

Cable type

- PVC cable for general use: Recommended for machines in non demanding environments and subject only to moderate mechanical stress.
- PUR cable for severe industrial environment : Designed for the most demanding industrial requirements, they are halogen free, UL certified and have high degrees of protection (IP67 and IP69K).
- PUR shielded cable for distributed electromagnetic environments : This range also includes shielded PUR cables especially suitable for analogical signals in very disturbed electromagnetic environments.
- F&B cable for food & beverage environments : Featuring hygienic design stainless steel 316L connectors with smooth clamping ring, these products are resistant to withstand high pressure washing and disinfection using aggressive products.

XZCPV1241L2

XZCPV1141L2

Pre-wired female connectors – PVC

Connector type	No. of Wires	Voltage	Length	Reference
M8 Straight	3	60VAC/75VDC	2m (1)	**XZCPV0566L2**
M8 Elbow	3	60VAC/75VDC	2m (1)	**XZCPV0666L2**
M8 Straight	4/	60VAC/75VDC	2m (1)	**XZCPV0941L2**
M8 Elbow	4	60VAC/75VDC	2m (1)	**XZCPV1041L2**
M12 Straight	4	250VAC/300VDC	2m (1)	**XZCPV1141L2**
M12 Elbow	4	250VAC/300VDC	2m (1)	**XZCPV1241L2**
M12 Straight	5	250VAC/300VDC	2m (1)	**XZCPV1164L2**
M12 Elbow	5	250VAC/300VDC	2m (1)	**XZCPV1264L2**
1/2" 20UNF Straight	3	250VAC/300VDC	2m (1)	**XZCPV1865L2**
1/2" 20UNF Elbowed	3	250VAC/300VDC	2m (1)	**XZCPV1965L2**

XZCP1141L2

Pre-wired female connectors – PUR

Connector type	No. of Wires	Voltage	Length	Reference
M8 Straight	3	60VAC/75VDC	2m (1)	**XZCP0566L2**
M8 Elbow	3	60VAC/75VDC	2m (1)	**XZCP0666L2**
M8 Straight	4	60VAC/75VDC	2m (1)	**XZCP0941L2**
M8 Elbow	4	60VAC/75VDC	2m (1)	**XZCP1041L2**
M12 Straight	4	250VAC/300VDC	2m (1)	**XZCP1141L2**
M12 Elbow	4	250VAC/300VDC	2m (1)	**XZCP1241L2**
M12 Straight	5	250VAC/300VDC	2m (1)	**XZCP1164L2**
M12 Elbow	5	250VAC/300VDC	2m (1)	**XZCP1264L2**
1/2" 20UNF Straight	3	250VAC/300VDC	2m (1)	**XZCP1865L2**
1/2" 20UNF Elbowed	3	250VAC/300VDC	2m (1)	**XZCP1965L2**

XZCPA1164L5

Pre-wired female connectors – PUR shielded

Connector type	No. of Wires	Voltage	Length	Reference
M12 Straight	4	250VAC/300VDC	2m (1)	**XZCPB1141L2**
M12 Elbow	4	250VAC/300VDC	2m (1)	**XZCPB1241L2**

Pre-wired female connectors – Food and beverage applications IP67/69K

Connector type	No. of Wires	Voltage	Length	Reference
M8 Straight	3	60VAC/75VDC	5m (1)	**XZCPA0566L5**
M8 Straight	4	60VAC/75VDC	5m (1)	**XZCPA0941L5**
M12 Straight	4	250VAC/300VDC	5m (1)	**XZCPA1141L5**
M12 Elbow	4	250VAC/300VDC	5m (1)	**XZCPA1241L5**
M12 Elbow	5	250VAC/300VDC	5m (1)	**XZCPA1164L5**
1/2" 20UNF Straight	3	250VAC/300VDC	5m (1)	**XZCPA1865L5**
1/2" 20UNF Elbowed	3	250VAC/300VDC	5m (1)	**XZCPA1965L5**

Note
(1) Cable also available in 10m lengths add the required length after the reference for example XZCP1141L10 is a 10m cable.

Connectors
Cable selection guide

XZCC12FCM40B

Female connectors

Connector type	No. of Pins	Voltage	LED	Reference
M8 Straight	4	60 V AC/75V DC	-	**XZCC8FDM40V**
M8 Elbow	4	60 V AC/75V DC	-	**XZCC8FCM40V**
M12 Straight	4	125VAC/150VDC	-	**XZCC12FDM40B**
M12 Elbow	4	125VAC/150VDC	-	**XZCC12FCM40B**

XZCC12FDM40B

XZCC12MCM40B

Male connectors

Connector type	No. of Pins	Voltage	LED	Reference
M12 Straight	4	125VAC/150VDC	-	**XZCC12MDM40B**
M12 Elbow	4	125VAC/150VDC	-	**XZCC12MCM40B**
PVR sheath cable 4 wire 50 metres for making extended leads				**XZCB4L0050**

XZCC12MDM40B

Cable selection guide

Type	Range	Straight lead (1)(2)	Elbow lead(1)(2)
Photo-electric	XU - M8	XZCP0941L	**XZCP1041L**
	XU - M12	XZCP1141L	**XZCP1241L**
Proximity	XS1 - M12	XZCP1141L	**XZCP1241L**
	XS2 - M12	XZCP1141L	**XZCP1241L**
	XS2 - U20	XZCP1865L	**XZCP1965L**
	XS4 - M12	XZCP1141L	**XZCP1241L**
	XS4 - U20	XZCP1865L	**XZCP1965L**
	XS5 - M12	XZCP1141L	**XZCP1241L**
	XS6 - M12	XZCP1141L	**XZCP1241L**
	XS6 - U20	XZCP1865L	**XZCP1965L**
	XS7 - M8	XZCP0566L	**XZCP0666L**
	XS7 - M12	XZCP1141L	**XZCP1241L**
	XS8 - M8	XZCP0566L	**XZCP0666L**
	XS8 - U20	XZCP1865L	**XZCP1965L**
	XS9 - M8	XZCP0566L	**XZCP0666L**
	XS9 - M12	XZCP1141L	**XZCP1241L**
	XS9 - U20	XZCP1865L	**XZCP1965L**
	XT - M12	XZCP1141L	**XZCP1241L**
Ultrasonic	XX - M8 3 wire	XZCP0166L	**XZCP0266L**
	XX - M12 3/4 wire	XZCP1141L	**XZCP1241L**

K

Notes

(1) Also available in 5m & 10m lengths. Replace reference last digit to required length. Eg: XZCPV0566L5 for 5m cable.

(2) For a PVC cable insert the letter V after the letter P in the reference or for food grade add the letter A Examples XZCPV (PVC) XZCPA (Food grade).

(3) Cable available in 2, 5 and 10m lengths add the required length after the reference for example XZCP1141L2 is a 2m cable.

Pressure Switches

Electromechanical

For direct switching of single-phase or 3-phase motors
For control of contactors, relays, power valves, PLC inputs, etc (IP66)

> Switches for power circuits: Switches with power electrical contacts, either 2-pole or 3-pole, designed for direct switching of single-phase or 3-phase motors (pumps, compressors, etc.).

9013FYG2J21B7M4PU2

Water Pump Pressure Switches, 2-Pole NC with Adjustable Differential

Description	Motor rating 1-ph, 230VAC (kW)	Range (1) (PSIG)	Differential (PSIG)	Reference
Standard action	2	20-65 (9)	15-30	**9013FSG2J20B7PU2**
Standard action (1)(2)	2	20-65	15-30	**FSG2**
Standard action with low pressure cut-out (2)	2	25-80 (10)	20-30	**9013FYG2J21B7M4PU2**

XMPA12B2131

Water Pump or Air Compressor Pressure Switches, 2 or 3-Pole NC with Adjustable Differential

Description	Motor rating 1-ph, 230VAC (kW)	Range (1) (PSIG)	Differential (PSIG)	Reference
Standard action (3)	1.5 (1 Phase)	19-174	15-121	**XMPA12B2131**
Standard action with two-way pressure relief valve (4)	3.0 (3 Phase)	19-174	15-121	**XMPE12C2242**

> Switches for control circuits: Switches with standard electrical contacts, designed for control of contactors, relays, power valves, PLC inputs, etc.

9012GAW24

Heavy Duty Diaphragm Actuated - 2N/O+2N/C: Single Stage with Adjustable Differential (7)(8)

Air, water, gases, steam (Nitrile (Buna-N) diaphragm, zinc-plated steel housing).

Type	Operating range (5)		Adjustable differential (6)		Reference
Low Pressure	Min. (PSIG)	Max (PSIG)	Low (PSIG)	High (PSIG)	
	0	10	1	2	**9012GAW21**
	1	40	2	8	**9012GAW22**
	2	75	4	15	**9012GAW24**
	5	250	10	49	**9012GAW26**
	20	675	27	130	**9012GBW22**

9012GCW2

Heavy Duty Piston Actuated - 2N/O+2N/C: Single Stage with Adjustable Differential (7)(8)

Air, water, gases, steam (Nitrile (Buna-N) diaphragm, zinc-plated steel housing).

Type	Operating range (5)		Adjustable differential (6)		Reference
Low Pressure	Min. (PSIG)	Max (PSIG)	Low (PSIG)	High (PSIG)	
	20	1000	89	200	**9012GCW21**
	90	2900	255	560	**9012GCW22**

Notes

(1) Range for FSG represents falling pressure (PB). Range for XMP represents rising pressure (PH).
(2) FSG has G 1/4 (internal) BSP female fluid entry.
(3) G 1/4 (internal) BSP female fluid entry and 2 tapped PG 13.5 conduit entries.
(4) G 3/8 (internal) BSP female fluid entry and 2 tapped PG 13.5 conduit entries.
(5) Range represents the falling pressure switch point (PB).
(6) Differential determines rising pressure switching point (PH), i.e. PH = PB + Differential.
(7) Fluid entry 1/4" - 18NPTF. Conduit entry 1/2" NPTF.
(8) Class 9012 pressure switches supplied standard with 1/2 " NPT conduit entry.

		(9)	(10)
Factory setting:	contacts close	20 PSIG	30 PSIG
	contacts open	40 PSIG	50 PSIG

Pressure Transmitters

XMLP Pressure transmitters : Hydraulic oils, fresh water, air, gases, refrigerants (0° to +120°C fresh water)
XMLK Pressure transmitters : Air, fresh water (0 to + 80°C)
XMLG Pressure transmitters : Hydraulic oils, fresh water, air, gases, refrigerants (0° to +120°C fresh water)

For plug in cable selection see page K39-40.

XMLP250BD21F

Analogue pressure sensors for hydraulic and general purpose applications, 24VDC, 4...20mA output (1) (2) (3) (4)

Fluid entry	Electrical connection	Operating range (bar)	Operating range (bar)	Operating range (psi)	Destruction pressure (bar)	Reference
G 1/4A Male	M12 Connector 4 pin	0...10	0...145	30	60	**XMLP010BD21F**
		0...16	0...232	48	96	**XMLP016BD21F**
		0...25	0…362.5	75	150	**XMLP025BD21F**
		0...40	0…580	120	240	**XMLP040BD21F**
		0...60	0…870	180	360	**XMLP060BD21F**
		0...100	0…1450	300	600	**XMLP100BD21F**
		0...160	0…2320	480	960	**XMLP160BD21F**
		0...250	0…3625	750	1500	**XMLP250BD21F**

XMLP060BD270

Analogue pressure sensors for HVAC applications, 24VDC, 4...20mA output (1) (2) (3) (4)

Fluid entry	Electrical connection	Operating range (bar)	Operating range (psi)	Max allowable surge pressure (bar)	Destruction pressure (bar)	Reference
7/16 20 UNF Male	M12 Connector 4 pin	0...10	0…145	30	60	**XMLP010BD270**
		0...16	0...232	48	96	**XMLP016BD270**
		0...25	0…362.5	75	150	**XMLP025BD270**
		0...40	0…580	120	240	**XMLP040BD270**
		0...60	0…870	180	360	**XMLP060BD270**

XMLK010B2D21

Analogue pressure sensors for pumping applications, 24VDC, 4...20mA output (1) (3) (5)

Fluid entry	Electrical connection	Operating range (bar)	Operating range (psi)	Max allowable surge pressure (bar)	Destruction pressure	Reference
G 1/4A Male	M12 Connector 4 pin	0…6	0…87	12 bar	18 bar	**XMLK006B2D21**
		0…10	0…145	20 bar	30 bar	**XMLK010B2D21**
		0…16	0…232	32 bar	48 bar	**XMLK016B2D21**
		0…25	0…362.5	50 bar	75 bar	**XMLK025B2D21**
		0…6.9	0….100	13.7 bar	20.6 bar	**XMLK100P2D23**
		0…10.3	0…150	20.6 bar	30.6 bar	**XMLK150P2D23**
		0…13.8	0…200	27.5 bar	41.3 bar	**XMLK200P2D23**
		0…20.7	0…300	41.3 bar	62 bar	**XMLK300P2D23**

XMLG●●●●●

Analogue vacuum sensor general purpose, 24VDC, 4...20mA

Fluid entry	Electrical connection	Operating range (bar)	Operating range (psi)	Max allowable surge pressure (bar)	Destruction pressure	Reference
G 1/4A Male	M12 Connector	-1...0 bar	-14.5…0	2.7 bar	3 bar	**XMLGM01D21**

Notes
(1) 0...10V output models also available.
(2) Female fluid connection models also available.
(3) DIN electrical connector models also available.
(4) Fluids controlled: hydraulic oils, air, fresh water, sea water, gas, refrigeration fluids, -20...120 deg C.
(5) Fluids controlled: air, fresh water, 0...80 deg C.

XMLR pressure sensors

For cabling accessories, see page K38-40.

XMLR pressure sensors

XMLR electronic pressure sensors are used for pressure control of hydraulic oils, fresh water, air and refrigeration fluids, between -1 and 600 bar.

- Compact and robust: 100x41x42mm, stainless steel 316L fluid entry, IP65/67 degree of protection
- Rotating body: can be rotated 300° to orientate front face of the product as required
- Flip over display function: display can be inverted vertically to adapt to sensor's installation position
- Easy to setup: navigation using just two pushbuttons
- Pressure unit of measurement (bar, psi, kPa or MPa)

XMLR●●●G●●●5

XMLR pressure sensor, 24V DC - 4 - 20mA analogue out and 1 digital out (1)(2)(3)

Operating range (bar)	Max allowable pressure (bar)	Connection	Output	Reference
-1 to 0	3	4 wire M12	1 PNP & 4...20mA	**XMLRM01G1P25**
0 to 1	7	4 wire M12	1 PNP & 4...20mA	**XMLR001G1P25**
0 to 10	40	4 wire M12	1 PNP & 4...20mA	**XMLR010G1P25**
0 to 16	62	4 wire M12	1 PNP & 4...20mA	**XMLR016G1P25**
0 to 40	150	4 wire M12	1 PNP & 4...20mA	**XMLR040G1P25**
0 to 250	750	4 wire M12	1 PNP & 4...20mA	**XMLR250M1P25**
0 to 400	1200	4 wire M12	1 PNP & 4...20mA	**XMLR400M1P25**
0 to 600	1500	4 wire M12	1 PNP & 4...20mA	**XMLR600M1P25**

XMLR Accessories

Description	Length	Reference
Cooler with G 1/4 A (male) connections 150°C max. for the fluid, 50°C for the ambient air		**XMLZL009**
Fixing bracket aluminum		**XMLZL017**
M12-M12 5 pin jumper cable (PUR)	2m	**XZCR1511064D2**

Notes

(1) Fluid entry: G1/4" female. Also available with ¼"-18NPT Female fluid entry.

(2) For 0-10V output, replace "25" at the end of reference with "75". e.g. XMLR010G1P25 becomes XMLR010G1P75.
For 2 PNP outputs, replace "1P25" at the end of reference with "2P05". e.g. XMLR010G1P25 becomes XMLR010G2P05.

(3) Pressure UOM in bar, psi, kPa or Mpa.

Notes

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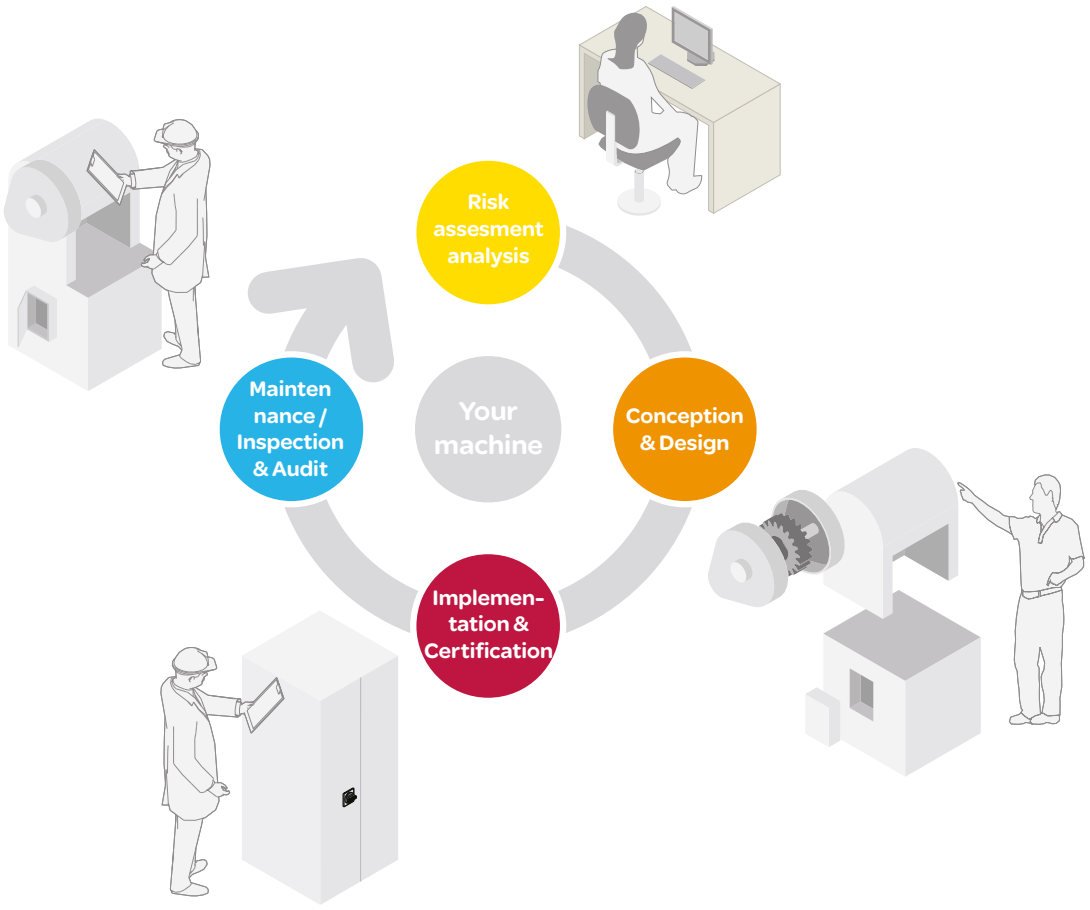
Preventa, the safety attitude around your machine life cycle

The Preventa range enhances safety throughout a machine's entire life cycle from design, manufacture, installation, adjustment, operation and servicing right through to decommissioning.

In addition to moral obligation and economic consequences, the law requires that machinery is safe in the interests of accident prevention. Preventa offers an extensive range of safety products, compliant with international standards, designed to provide the most comprehensive protection for personnel and equipment.



> New machines – the Machinery Directive

The previous Machinery Directive 98/37/EC was elaborated to help manufacturers ensuring a minimum safety level for machinery and equipment sold within the EU (European Union).

From 29 December 2009 on, the new European Machinery Directive 2006/42/EC is effective. Machines must comply with the Essential Health and Safety Requirements (EHSRs) listed in Annex 1 of the Directive, thus setting a common minimum level of protection across the EEA (European Economic Area).

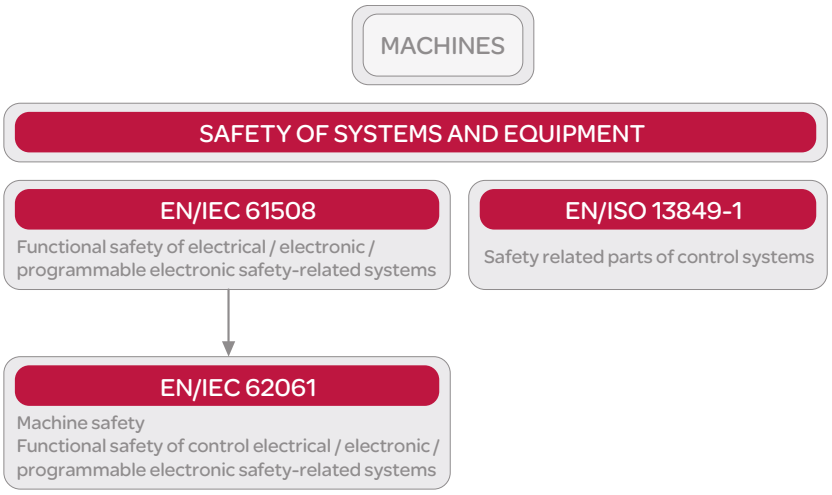
Machine manufacturers, or their authorised representatives within the EU, must ensure that the machine is compliant with all requirements from this Directive. This technical file is available to reinforce authorities requests as well as the CE marking must be affixed and a Declaration of Conformity has been signed before the machine may be placed on the market within the EU.

Risk Assessment

Making each risk investigation determines an appropriate level of safety and well being to the operators of the machinery. When considering what standard to use ISO 13849-1 or EN62061, either standard must be used in its entirety and the two systems cannot be mixed in a single system.

Functional safety

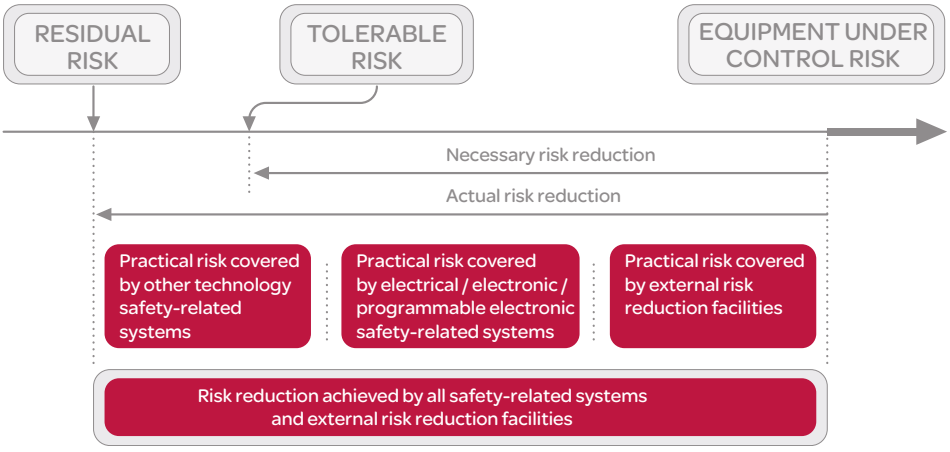
> Safety integrity level (SIL), Performance level (PL)



Risk reduction according to EN/IEC 61508 and EN/ISO 13849-1

> Safety is achieved by risk reduction (for those hazards that cannot be designed-out).
> Residual risk is the risk remaining after protective measures have been taken.
> Protective measures realised by E/E/PE* safety related systems contribute to risk reduction.

* Electric / Electronic / Programmable electronic



L

Functional safety of machinery

> Approach according to EN/IEC 62061

Risk estimation for SIL assignment

Risk related to the identified hazard	=	Severity of the possible harm	+	Frequency and duration of exposure Fr Probability of occurrence of a hazardous event Pr Probability of avoiding or limiting harm Av	Probability of occurrence of that harm

Example of SIL assignment

This assignment should be carried by determining the risk parameters that are shown below in an example.

In this example the SIL 3 must be achieved by the safety-related control function intended to reduce the risk related to the identified hazard.

Consequences	Severity (Se)
Irreversible: death, losing an eye or arm	4
Irreversible: broken limb(s), losing a finger(s)	3
Reversible: requiring attention from a medical practitioner	2
Reversible: requiring first aid	1

Frequency and duration of exposure (Fr)	
Frequency of exposure	> 10 min
1 h	5
> 1 h to 1 day	5
> 1 day to 2 weeks	4
> 2 weeks to 1 year	3
> 1 year	2

Probability of occurrence	Probability (Pr)
Very high	5
Likely	4
Possible	3
Rarely	2
Negligible	1

Probability of avoiding or limiting harm (Av)	
Impossible	5
Rarely	3
Probable	1

Serial no.	Hazard	Se	Fr		Pr		Av		Cl
1	Hazard X	4	5	+	4	+	3	=	12
2									

Consequences	(Se)	Class Cl				
		3-4	5-7	8-10	11-13	14-15
Death, losing an eye or arm	4	SIL 2	SIL 2	SIL 2	SIL 3	SIL 3
Permanent, losing fingers	3		OM	SIL 1	SIL 2	SIL 3
Reversible, medical attention	2			OM	SIL 1	SIL 2
Reversible, first aid	1				OM	SIL 1

Frequency and duration Fr	
<= 1 hour	5
> 1 h to <= 1 day	5
> 1 day to <= 2 wks	4
2 wks to <= 1 year	3
> 1 year	2

Probability of hzd. Event Pr	
Common	5
Likely	4
Possible	3
Rarely	2
Negligible	1

Avoidance Av	
Impossible	5
Possible	3
Likely	1

Determination of the SIL level achieved by the safety-related control function (SRCF)

According to standard EN/IEC 62061 for each safety related control function, the SIL level is linked to:

- a target failure value for the probability of dangerous failure by hour of the SRCF: PFHD
- architectural constraints (hardware fault tolerance, diagnosis)
- a set of requirements related to the lifecycle of the safety related electrical control system
- The rate of failures λ can be expressed as follows: $\lambda = \lambda_s + \lambda_{dd} + \lambda_{du}$
- The calculation of the PFHD fora system or subsystem depends on several parameters:
  - the dangerous failure rate (λ_d) of the subsystem elements
  - the fault tolerance (e.g. redundancy) of the system
  - the diagnostic test interval (T2)
  - the proof test interval (T1) or lifetime whichever is smaller
  - the susceptibility of common cause failures (β)
  - For each of the four different logical architectures A to D there is a different formula to calculate the PFHD. (See EN/IEC 62061)
  - For a simple system without redundancy and without diagnostic: PFHD = λ_d x 1/h

Safety integrity level (SIL)	Probability of a dangerous Failure per Hour PFHD
3	$>10^{-8}$ to $<10^{-7}$
2	$>10^{-7}$ to $<10^{-6}$
1	$>10^{-6}$ to $<10^{-5}$

λ_s = rate of safe failures,
λ_{dd} = rate of detected dangerous failures,
λ_{du} = rate of undetected dangerous failures
$\lambda_d = \lambda_{dd} + \lambda_{du}$

In practice, detected dangerous failure are dealt with by fault

> Tested, Validated, and Documented Architectures

Our safety chain solutions are ready-to use and simple to adapt, architectures provided with the safety calculation and certification. The safety chain solutions are TüV certified safety architectures based upon the most common safety functions required on and around a machine. The safety chain solutions enable you to save time and costs when designing and manufacturing your machine in accordance with the European Machinery Directive. For more information please visit Safety Chain Solutions Selector at http://industryproducts.schneider-electric.us/msxselector

Machine guard interlocks (safety interlock switches) – Metal

XCSA502

XCSB502

XCSC502

XCSLF3737612

XCSZ01

XCSZ02

XCSZ03

XCSZ05

XCSA, XCSB, XCSC metal guard monitoring switches (1)

For guard monitoring on machines with fast run down time

Function	Contact arrangement (1)	Reference(2)
Without locking of actuator	2 N/O + 1 N/C	**XCSA502**
	1 N/O + 2 N/C	**XCSA702**
With locking, manual release by push-button	2 N/O + 1 N/C	**XCSB502**
	1 N/O + 2 N/C	**XCSB702**
With locking, manual release by key operated lock (3)	2 N/O + 1 N/C	**XCSC502**
	1 N/O + 2 N/C	**XCSC702**

XCSLF metal solenoid interlocks (1)

Unlocking for high inertia machines, extended run down time

Function	Safety contacts with actuator inserted in head	Solenoid auxiliary contacts	Solenoid Voltage cable entries	Reference (4)
Unlocking on energisation of solenoid (6 contacts)	1 N/C + 2 N/O	1 N/C + 2 N/O	24V AC/DC	**XCSLF3535312**
	2 N/C + 1 N/O	2 N/C + 1 N/O	24V AC/DC	**XCSLF3737312**
Unlocking on de-energisation (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**
With manual turn to release pushbutton	2 N/C + 1 N/O	2 N/C + 1 N/O	24V AC/DC	**XCSLF3737412**
With manual key to release pushbutton	2 N/C + 1 N/O	2 N/C + 1 N/O	24V AC/DC	**XCSLF3737612**

Accessories

Description	Compatible with	Reference
Padlocking device to prevent insertion of actuator (up to 3 padlocks)	XCSA, XCSB, XCSC, XCSLF	**XCSZ90**
Direct operating key	XCSA, XCSB, XCSC, XCSLF	**XCSZ01**
Direct wide operating key	XCSA, XCSB, XCSC, XCSLF	**XCSZ02**
Flexible operating key	XCSA, XCSB, XCSC, XCSLF	**XCSZ03**
Sliding door latch	XCSA, XCSB, XCSC, XCSLF	**XCSZ05**

Notes

(1) Operating key to be ordered seperately. All N/O contacts on both the metal and plastic versions are break before make.
(2) For 24V AC/DC 'LED indication on opening' version, relplace 6th digit '0' to '1'. Eg: XCSA512
(3) 2 keys included with switch
(4) To order a switch with a solenoid voltage of 220/240 V, replace the 11th digit in the selected reference with 4. Example: XCSLF3535312 becomes XCSLF3535342.

Machine guard interlocks (safety interlock switches) - Plastic

XCSPA592 XCSTA592

XCSPA, XCSTA plastic guard monitoring switches (1)

For guard monitoring on machines with fast run down time

Function	Contact arrangement (1)	Reference
Without locking of actuator (30Wx93Hx30D)	1 N/O + 1 N/C	**XCSPA592**
	2 N/C	**XCSPA792**
Without locking of actuator (52Wx115Hx30D)	2 N/O + 1 N/C	**XCSTA592**
	1 N/O + 2 N/C	**XCSTA792**

XCSLE2727312

XCSLE plastic solenoid interlocks (1)

Unlocking for high inertia machines, extended run down time

Function	Safety contacts with actuator inserted in head	Solenoid auxiliary contacts	Solenoid Voltage cable entries	Reference (2)
Unlocking on energisation of solenoid (6 contacts)	2 N/C + 1 N/O	2 N/C + 1 N/O	24V AC/DC	**XCSLE3737312**
Unlocking on de-energisation (6 contacts)	1 N/C + 2 N/O	1 N/C + 2 N/O	24V AC/DC	**XCSLE3535512**
	2 N/C + 1 N/O	2 N/C + 1 N/O	24V AC/DC	**XCSLE3737512**

Accessories

Description	Compatible with	Reference
Padlocking device to prevent insertion of actuator (up to 3 padlocks)	XCSLE	**XCSZ90**
Direct operating key	XCSLE	**XCSZ01**
Direct wide operating key	XCSLE	**XCSZ02**
Flexible operating key	XCSLE	**XCSZ03**
Sliding door latch	XCSLE	**XCSZ05**
Padlocking device (up to 3 padlocks)	XCSPA, XCSTA	**XCSZ91**
Direct operating key	XCSPA, XCSTA	**XCSZ11**
Direct wide operating key	XCSPA, XCSTA	**XCSZ12**
Flexible operating key	XCSPA, XCSTA	**XCSZ13**
Angled operating key	XCSPA, XCSTA	**XCSZ14**

XCSZ11

XCSZ13

XCSZ12 XCSZ14

Notes

(1) Operating key to be ordered seperately. All N/O contacts on both the metal and plastic versions are break before make.

(2) To order a switch with a solenoid voltage of 220/240 V, replace the 11th digit in the selected reference with 4. Example: XCSLE3535312 becomes XCSLE3535342.

Coded magnetic safety switches
Contactless RFID safety switches

XCSDMC5912

XCSDMP5012

XCSDMR5912

Coded magnetic safety switches, 24V DC supply

Type	Contact arrangement	Cable length (1)	Reference
Compact (51x16x7), Rectangular	1N/O + 1N/C	2m	**XCSDMC5902**
	2 N/C (3)	2m	**XCSDMC7902**
	2 N/C (3)	5m	**XCSDMC7905**
Compact (51x16x7), Rectangular with integrated LED	1N/O + 1N/C	2m	**XCSDMC5912**
	2 N/C (3)	2m	**XCSDMC7912**
	2 N/C (3)	10m	**XCSDMC79110**
Standard (88x25x13), Rectangular	2N/O + 1N/C	2m	**XCSDMP5002**
	1N/O + 2N/C (3)	2m	**XCSDMP7002**
	1N/O + 2N/C (3)	5m	**XCSDMP7005**
Standard (88x25x13), Rectangular with integrated LED	2N/O + 1N/C	2m	**XCSDMP5012**
	1N/O + 2N/C (3)	2m	**XCSDMP7012**
	1N/O + 2N/C (3)	5m	**XCSDMP7015**
Cylindrical (Dia 30x40)	1 N/O + 1 N/C	2m	**XCSDMR5902**
	2 N/C (3)	2m	**XCSDMR7902**
Cylindrical (Dia 30x40) with integrated LED	1 N/O + 1 N/C	2m	**XCSDMR5912**
	2 N/C (3)	2m	**XCSDMR7912**

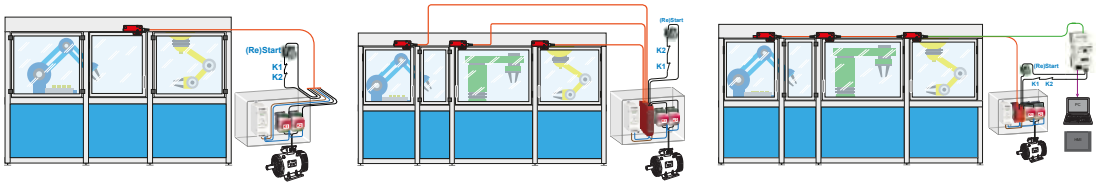
Accessories for coded magnetic switches

Description	Compatible with	Reference
Spare magnet	XCSDMC	**XCSZC1**
	XCSDMP	**XCSZP1**
	XCSDMR	**XCSZR1**

XCSR Contactless RFID safety switches

XCSRC31AM12

- High certified safety level PIe/SIL3
- Tamper-proof design with unique pairing
- Easy to install – multiple mounting options with adjustable transponder sensing face
- 2 safety outputs
- 3 connection types available: Standalone, Series and Single.



Standalone Single Series/ Daisy chain

Description	Reference
Standalone model, EDM, automatic restart (4)	**XCSRC31AM12**
Standalone model, EDM, monitored manual restart (4)	**XCSRC31MM12**
Single models for point-to-point connections (4)	**XCSRC30M12**
Daisy-chain models for series connection (max switches in series = 20) (4)	**XCSRC32M12**

XCSRD210MDB

XCSRK2A3

XCSRZE

Accessories for XCSR

Description	Compatible with	Length	Reference
Modbus RTU diagnostic module (2x RJ45 outputs) for daisy chain version	XCSRC32M12		**XCSRD210MDB**
Loopback device, required for daisy chain version	XCSRC32M12		**XCSRZE**
Mounting accessories (for mounting the switch on the support)	Reader		**XCSRZSRC1**
	Transponder		**XCSRZSTK1**
Cables	XCSRC31AM12/ XCSRC31MM12	5m	**XZCP29P12L5 (5)**
	XCSRC30M12/XCSRC32M12	5m	**XZCP11V12L5 (5)**
	Jumper for XCSRC32M12	5m	**XZCR1111064D5 (5)**
Blank transponder			**XCSRK2A3**

Notes

(1) Complete with actuator and 2m cable for references ending in 2 and 5m cable for references ending in 5. For 10m cable replace last digit of the reference with '10'. e.g. XCSDMP7005 becomes XCSDMP70010.
(2) Versions with connector on flying lead also available.
(3) Only to be wired in conjunction with XPSAF relay.
(4) Two new paring possible: For these switches, the reader and transponder are supplied together, already paired in factory with a unique code. However, the reader can be re-paired (twice only) with a new (blank) transponder. Once the new transponder has been paired, the previous transponder is no longer usable. A new, blank transponder can only be paired once.
(5) For 2m or 10m cable replace the last digit of the reference with 2 or 10. Example: XZCP11V12L10 for 10m

Safety limit switches - IP67

XCSPR552

Rotary spindle operated safety switches

Contact arrangement	Number of cable entries	Reference
1 N/O + 1 N/C (break before make)	1	**XCSPR552**

XCSPL962

Rotary lever operated safety switches

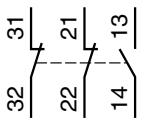
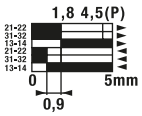
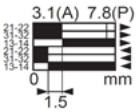
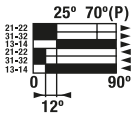
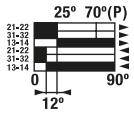
Contact arrangement	Orientation	Reference
2NC + 1NO	Lever centred	**XCSPL981**
	Left or right	**XCSPL962**

XCSD3910P20

XCSD3918P20

Plunger or rotary head limit switches

Compact design, metal EN50047, ISO M20 cable entry

Type of operator	Description	Contact operator	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**

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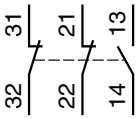
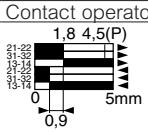
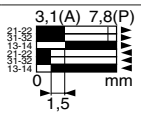
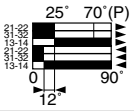
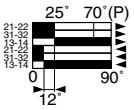
Safety limit switches - IP67

XCSP3910P20

Compact design, plastic EN50047, ISO M20 cable entry

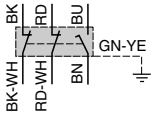
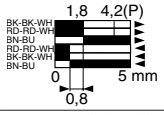
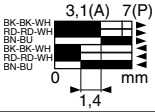
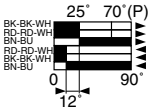
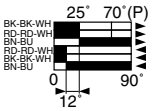
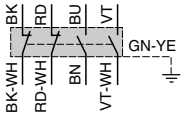
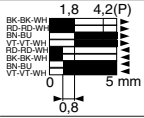
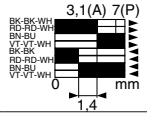
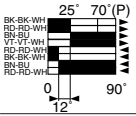
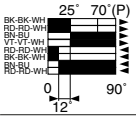
Type of operator	Description	Contact operator	Reference
3 pole N/C+N/C+N/O snap action contact 	Metal end plunger		**XCSP3910P20**
	Steel roller plunger		**XCSP3902P20**
	Thermoplastic roller lever		**XCSP3918P20**
	Steel roller lever		**XCSP3919P20**

XCSM●●02L1

XCSM●●15L1

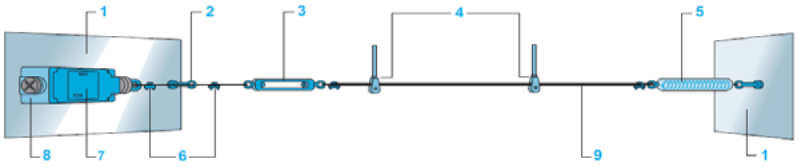
XCSM●●16L1

Miniature design, metal, pre-cabled 1m (1)

Type of operator	Description	Contact operator	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**

Note
(1) For a 2m long cable, replace L1 in the reference with L2. For a 5m long cable, replace L1 in the reference with L5.

Emergency stop rope pull switches (IP65)



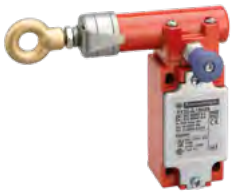
1 Mounting support
2 First cable support
3 Turnbuckle
4 Pulleys and pulley supports
5 End spring
6 Cable grips
7 Switch adjustment
8 Emergency stop
9 Cable

Typical installation for XY2CJ, XY2CH and XY2CE rope pull switches (5)

XY2CJS15H29

Operating cable length <20 metres (Distance between supports: 5 metres)

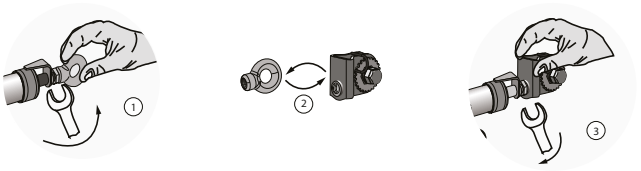
Reset	Contacts	Mounting	Reference
Pushbutton	1 NC + 1 NO (1)	ambidextrous	**XY2CJS15H29** (1)
Pushbutton	1 NC + 1 NC (1)	ambidextrous	**XY2CJS17H29** (1)
Pushbutton	2 NC + 1 NO (1)	ambidextrous	**XY2CJS19H29** (1)



XY2CJL19H29

Operating cable length <30 metres (Distance between supports: 5 metres)

Reset	Contacts	Mounting	Reference
Pushbutton	1 NC + 1 NO (1)	RHS	**XY2CJR15H29** (1)
Pushbutton	1 NC + 1 NC (1)	RHS	**XY2CJR17H29** (1)
Pushbutton	2 NC + 1 NO (1)	RHS	**XY2CJR19H29** (1)
Pushbutton	1 NC + 1 NO (1)	LHS	**XY2CJL15H29** (1)
Pushbutton	1 NC + 1 NC (1)	LHS	**XY2CJL17H29** (1)
Pushbutton	2 NC + 1 NO (1)	LHS	**XY2CJL19H29** (1)



Converting XY2CJ from ring to ratchet tensioner using XY2CZ210

XY2CH13270

Operating cable length < 30 metres (Distance between cable supports: 5 metres)

Reset/signalling	Contacts	Mounting	Reference
Reset by booted pushbutton	1N/O + 1N/C (slow break)	Either direction	**XY2CH13250** (2)(3)
Reset by booted pushbutton	2N/C (slow break)	Either direction	**XY2CH13270** (2)(3)
Reset by 30mm diameter key operated pushbutton	1N/O + 1 N/C (slow break)	Either direction	**XY2CH13450** (2)(3)

XY2CE2A270

XY2CE2A297

Operating cable length < 70 metres (Distance between cable supports: 5 metres)

Reset/Signalling	Contacts	Mounting	Reference
Reset by booted pushbutton	1N/O + 1 N/C (slow break)	RHS	**XY2CE1A250** (2)(4)
		LHS	**XY2CE2A250** (2)(4)
Reset by booted pushbutton	1N/C + 1 N/C (slow break)	RHS	**XY2CE1A270** (2)(4)
		LHS	**XY2CE2A270** (2)(4)
Reset by booted pushbutton c/w indicator light 240V (trip indicator) (bulb supplied)	2N/O + 2 N/C (slow break)	RHS	**XY2CE1A297** (2)(4)
		LHS	**XY2CE2A297** (2)(4)
Reset by booted pushbutton c/w indicator light ≤ 130V (trip indicator) (bulb not supplied)	2N/O + 2 N/C (slow break)	RHS	**XY2CE1A296** (2)(4)
		LHS	**XY2CE2A296** (2)(4)

Notes
(1) To change to a tensioner fitting unscrew ring fitting and replace with XY2CZ210 tensioner.
(2) For accessories see page L11-12.
(3) Other versions with pilot light unit for trip indication also available.
(4) Other versions with cable tension indicator also available.
(5) See the description of a typical Preventa XY2CED installation on our website www.tesensors.com

Emergency stop rope pull switches (IP65)

XY2CEDA290

XY2CEDA296

XY2CZ96140
XY2CZ96200

Rope pull switch with double anchor points

Cable length	Colors and materials	Reset	Contact arrangement	Supply voltage	Reference (1)
Without pilot light					
L >= 2 x 35 m L <= 2 x 70 m (L >= 2 x 35 m L <= 2 x 100 m with pulleys and pulley supports)	Zamak red RAL 3000 body Stainless steel cover Nitrile bellows	By booted pushbutton	2 N/O + 2 N/C		**XY2CEDA290**
		By key-operated pushbutton (key no. 455)	2 N/O + 2 N/C		**XY2CEDA590**
With pilot light for indication					
L >= 2 x 35 m L <= 2 x 70 m (L >= 2 x 35 m L <= 2 x 100 m with pulleys and pulley supports)	Zamak red RAL 3000 body Stainless steel cover Nitrile bellows	By booted pushbutton	2 N/O + 2 N/C	24 to 130 V AC/DC	**XY2CEDA296**
		By key-operated pushbutton (key no. 455)	2 N/O + 2 N/C	24 to 130 V AC/DC	**XY2CEDA596**

Cables kits

Description	Diameter (mm)	For use with	Length (m)	Reference
1 spring + 1 notched washer + 1 circlip		XY2CH		**XY2CZ918**
1 galvanized cable + 1 cable grip XY2CZ523 + 1 end spring XY2CZ703	3.2	XY2CJ and XY2CH	10.5	**XY2CZ9310**
			20.5	**XY2CZ9320**
			30.5	**XY2CZ9330**
1 galvanized cable + 1 cable grip XY2CZ523 + 1 tensioner XY2CZ210 + 12 cable supports XY2CZ601 + 1 end spring XY2CZ703	3.2	XY2CJ	30.5	**XY2CZ9425**
1 galvanized cable + 4 cable grips XY2CZ524 + 1 turnbuckle XY2CZ404 + 11 cable supports XY2CZ601 + 2 cable end protectors XY2CZ704 + 1 end spring XY2CZ702	5	XY2CE	25.5	**XY2CZ9525**
1 galvanized cable + 4 cable grips XY2CZ524 + 1 turnbuckle XY2CZ404 + 19 cable supports XY2CZ601 + 2 cable end protectors XY2CZ704 + 1 end spring XY2CZ702	5	XY2CE	50.5	**XY2CZ9550**
1 galvanized cable + 4 cable grips XY2CZ524 + 1 turnbuckle XY2CZ404 + 26 cable supports XY2CZ601 + 2 cable end protectors XY2CZ704 + 1 end spring XY2CZ702	5	XY2CE	70.5	**XY2CZ9570**
2 galvanized cables + 2 cable grips XY2CZ524 + 2 quick tensioners XY2CZ213	5	XY2CED	2 x 50.5	**XY2CZ96100**
			2 x 70.5	**XY2CZ96140**
			2 x 100.5	**XY2CZ96200**

Note
(1) XY2CED emergency stop rope pull switches are supplied with an adjustment shim XY2CZ713 and 2 end springs XY2CZ712

Emergency stop rope pull switches (IP65)

Spare cables

Description	Diameter (mm)	For use with	Length (m)	Reference
Galvanized cables with red sheath	3.2	XY2CJ and XY2CH	10.5	**XY2CZ301**
			20.5	**XY2CZ3020**
			30.5	**XY2CZ303**
	5	XY2CE and XY2CED	50.5	**XY2CZ105**
			70.5	**XY2CZ107**
			100.5	**XY2CZ110**

Spare parts

Description	Type	For use with	Reference
Quick tensioner		XY2CJ	**XY2CZ210**
		XY2CE and XY2CED	**XY2CZ213**
Shim for adjusting cable tension		XY2CED	**XY2CZ713** (1)
Turnbuckle	M6 x 60 + locknut	XY2CJ	**XY2CZ402**
	M8 x 70 + locknut	XY2CE, XY2CH and XY2CJ (2)	**XY2CZ404**
Set of 2 turnbuckles	M8 x 180 + locknut	XY2CED	**XY2CZ403**
Set of 10 cable grips	Clamp	Cable Ø 3.2 mm	**XY2CZ523**
		Cable Ø 5 mm	**XY2CZ524**
Cable support	Fixed	All models	**XY2CZ601**
Swiveling		All models	**XY2CZ602**
Pulley support		All models	**XY2CZ705**
Pulley		All models	**XY2CZ708**
End spring		XY2CJ and XY2CH	**XY2CZ703**
		XY2CE	**XY2CZ702**
		XY2CED	**XY2CZ712** (3)

Note

(1) XY2CED emergency stop rope pull switches are supplied with an adjustment shim XY2CZ713 and 2 end springs XY2CZ712

(2) XY2CH13●●● and XY2CH14●●● emergency stop rope pull switches incorporate a quick cable tensioner as standard. Therefore, there is no need to order a turnbuckle.

(3) An adjustment shim XY2CZ713 and 2 end springs XY2CZ712 are supplied with XY2CED switches.

Two hand control units
Foot switches

XY2SB71

Two hand control station

Description	Contacts	Reference
2 control Pushbuttons and 1 Emergency Stop mushroom head Pushbutton	N/C + N/C slow break	**XY2SB71**

XPEA110

Double insulated foot switch

Description	Operation	Contacts	Reference
IP43, unguarded without trigger	1 Step	1 N/C + 1 N/O	**XPEA110**

XPEM110

Standard duty, metal foot switches

Description	Operation	Contacts	Reference
Unguarded without trigger	1 Step	1 N/C + 1 N/O	**XPEM110**
Guarded with trigger	1 Step	1 N/C + 1 N/O	**XPEM510**

9002AW1M11

Heavy duty, oil tight, metal foot switches (1)

Description	Operation	Contacts	Reference
Unguarded without latch 1N/O+1N/C per step	1 Step	1 N/O + 1 N/C	**9002AW1M11**
		2 N/O + 2 N/C	**9002AW13M11**
	2 Step (2)	2 N/O + 2 N/C	**9002AW5M11**
Guarded without latch	1 Step	1 N/O + 1 N/C	**9002AW2M11**
	2 Step (2)	2 N/O + 2 N/C	**9002AW6M11**
Guarded with latch	1 Step	1 N/O + 1 N/C	**9002AW7M11**
		2 N/O + 2 N/C	**9002AW15M11**
Latches in second stage only	2 Step (2)	2 N/O + 2 N/C	**9002AW10M11**

9002AW2M11

Spare parts foot switches

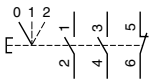
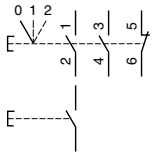
Description	Operation	Contacts	Reference
Contact block	XPE		**XE2SP4151**
	AW11/12		**2620202030**
	AW1/2/5/6/7/9/10		**9007AO2**
	AW13/14/15		**9007CO3**
	AW21/22		**9007CO7**
Pedal spring			**2502D8X1**
Cover			**9002AC8**

Notes
(1) ISO M20 cable entry.
(2) 1 N/O + 1 N/C per step.

Validation control – enabling switches

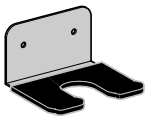
XY2AU●

Validation control – enabling switches (1)

Number of contacts	Contact type	Contact blocks and scheme	Reference
3 3 positions	2 validations + 1 "NC"		**XY2AU1**
	2 validations 3 positions + 1 "NC + NO"		**XY2AU2**

Accessories and spare parts

Number	Reference
Stainless steel handle support brackets	**XY2AZ1**



XY2AZ1

Note
(1) To be used with XPS-VC safety module.

Safety light curtains - IP67

Directives and standards

Conformity to Standards

XUSL4 safety light curtains conform to the following standards:

- European Machinery Directive 2006/42/EC and European Use of Work Equipment Directive 2009/104/EC
- Low Voltage Directive 2006/95/EC and the Electromagnetic Compatibility Directive 2004/108/EC
- EN/IEC 61496-1 and EN/IEC 61496-2
- IEC 62061 and IEC 61508 (electro-sensitive protective equipment (ESPE))
- EN/ISO 13849-1
- EN/ISO 13855 (installation conditions, safety distances)

These light curtains are cULus and TUV certified.

XUSL4

XUSL4

Functions and definitions

Type 4

Type 4 safety light curtains are designed based on an automatic self-monitoring redundant architecture.

This architecture allows the immediate detection of a failure within a given response time.

Type 4 safety light curtains are suitable for applications where the risk assessment has identified moderate or high risk of injury to operators. Type 4 safety light curtains are capable of providing finger, hand, and body detection. XUSL4 light curtains offer a shorter response time and a narrower beam aperture angle.

XUSL4 light curtains are type 4 (IEC 61496-1), SIL 3 (IEC 61508), SILCL3 (IEC 62061), and PLe-Cat. 4 (EN/ISO 13849-1) compatible.

Muting function available now

Muting is the temporary suspension of the protection function provided by the safety light curtain.

Activation or deactivation is achieved by means of standard sensors (OsiSense XU “dark on” photoelectric sensors with PNP output).

When activated, a signal is sent to the control system. This function is used to allow objects to access the hazardous zone during the process. Signalling informs the operator or operators that they are not protected.

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Type 4 IP69K suitable for Food and Beverage applications!

Safety light curtains are supplied mounted and prewired. The sealed tubes provide additional protection to the light curtains against humidity, condensation, cleaning products and certain other chemical products.

Operating temperature with heating system -25 to +55°C without -10 to +55°C

Safety light curtains

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
- SIL 3 (IEC 61508), SILCL3 (IEC 62061), and PLe - Cat. 4 (EN/ISO 13849-1) compatible
- Operating temperature range: -20 °C…+55 °C

XUSL4E30H031L

Transmitter-receiver pairs for hand protection - up to 20m sensing (1)(2)

Protected height (mm)	Total height (mm)	Number of light beams	Response time (ms)	Alarm output	Reference
160	213	8	3	2 x PNP	**XUSL4E30H016L**
310	363	16	4	2 x PNP	**XUSL4E30H031L**
460	513	23	5	2 x PNP	**XUSL4E30H046L**
610	663	31	6	2 x PNP	**XUSL4E30H061L**
760	813	38	7	2 x PNP	**XUSL4E30H076L**
910	963	46	8	2 x PNP	**XUSL4E30H091L**
1,060	1,113	53	9	2 x PNP	**XUSL4E30H106L**
1,210	1,263	61	10	2 x PNP	**XUSL4E30H121L**
1,360	1,413	68	10	2 x PNP	**XUSL4E30H136L**
1,510	1,563	76	11	2 x PNP	**XUSL4E30H151L**
1,660	1,713	83	12	2 x PNP	**XUSL4E30H166L**
1,810	1,863	91	13	2 x PNP	**XUSL4E30H181L**

Transmitter-receiver pairs for body protection - up to 20m sensing (1)(2)

Protected height (mm)	Total height (mm)	Light beams Number/ spacing	Response time (ms)	Alarm output	Reference
510	677	2 / 500mm	2.5	2 x PNP	**XUSL4E2BB051L**
810	977	3 / 400mm	2.5	2 x PNP	**XUSL4E3BB081L**
910	1,077	4 / 300mm	2.5	2 x PNP	**XUSL4E4BB091L**

Notes

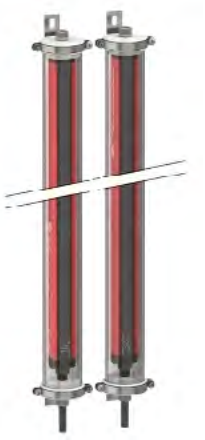
(1) The safety light curtain is supplied with mounting brackets and screws.
(2) Connection cables and test rods must be ordered separately.
(3) These safety light curtains are supplied mounted in a sealed protection tube and pre-wired (10 m PVC cable). Mounting brackets are included. Light curtains with protection tube can be mounted on XUSZSS... rails.
(4) Other versions such as muting type, finger protection type available on request or consult te.sensors.com

Safety light curtains

New

Type 4 Safety Light Curtains – XUSL4E IP69K degree of protection

> Resistance to acidic and alkaline cleaning agents, and aliphatic hydrocarbons



XUSL4E30H031L

Transmitter-receiver pairs for hand detection without heating system – IP69K (1)(2)(3)

Protected height (mm)	Total height (mm)	Number of light beams	Response time (ms)	Alarm output	Reference
460	620	23	7.5	2x PNP	**XUSL4E30H046LWC**
610	770	31	9	2x PNP	**XUSL4E30H061LWC**
760	920	38	10.5	2x PNP	**XUSL4E30H076LWC**
910	1070	46	12.5	2x PNP	**XUSL4E30H091LWC**
1060	1220	53	14	2x PNP	**XUSL4E30H106LWC**

Transmitter-receiver pairs for hand detection with heating system – IP69K (1)(2)(3)

Protected height (mm)	Total height (mm)	Number of light beams	Response time (ms)	Alarm output	Reference
460	620	23	7.5	2x PNP	**XUSL4E30H046LWH**
610	770	31	9	2x PNP	**XUSL4E30H061LWH**
760	920	38	10.5	2x PNP	**XUSL4E30H076LWH**
910	1070	46	12.5	2x PNP	**XUSL4E30H091LWH**
1060	1220	53	14	2x PNP	**XUSL4E30H106LWH**

Transmitter-receiver pairs for body detection without heating system – IP69K (1)(2)(3)

Protected height (mm)	Total height (mm)	Light beams Number/ spacing	Response time (ms)	Alarm output	Reference
510	677	2 / 500 mm	3	2x PNP	**XUSL4E2BB051LWC**
810	977	3 / 400 mm	3	2x PNP	**XUSL4E3BB081LWC**
910	1,077	4 / 300 mm	3	2x PNP	**XUSL4E4BB091LWC**

Transmitter-receiver pairs for body detection with heating system – IP69K (1)(2)(3)

Protected height (mm)	Total height (mm)	Light beams Number/ spacing	Response time (ms)	Alarm output	Reference
510	677	2 / 500 mm	3	2x PNP	**XUSL4E2BB051LWH**
810	977	3 / 400 mm	3	2x PNP	**XUSL4E3BB081LWH**
910	1,077	4 / 300 mm	3	2x PNP	**XUSL4E4BB091LWH**

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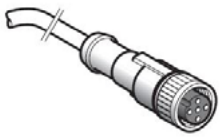
Notes

(1) Safety light curtains are supplied with mounting brackets and screws.
(2) Connection cables and test rods must be ordered separately.
(3) These safety light curtains are supplied mounted in a sealed protection tube and pre-wired (10 m PVC cable). Mounting brackets are included. Light curtains with protection tube can be mounted on XUSZSS... rails.
(4) Other versions such as muting type, finger protection type available on request or consult te.sensors.com

Safety light curtains

Pre wired cable for XUSL4E



XZCP29P11L●

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**

Protective cover

XUSZWPE●●●
+
XUSZWPEFC

Description	Height (mm)	Suitable for	Reference
Polycarbonate protective covers (sold in lots of 4) Mounting not included	195	XUSL.E...016	**XUSZWPE015**
	345	XUSL.E...031	**XUSZWPE030**
	495	XUSL.E...046	**XUSZWPE045**
	795	XUSL.E...076	**XUSZWPE075**
	945	XUSL.E...091	**XUSZWPE090**
	1,095	XUSL.E...106	**XUSZWPE105**
	1,245	XUSL.E...121	**XUSZWPE120**
	1395	XUSL.E...136	**XUSZWPE1350**
	1545	XUSL.E...151	**XUSZWPE150**
	1,845	XUSL.E...181	**XUSZWPE180**

Mounting clamps for protective covers (for transmitter and receiver)

XUSZBSS4

Description		Reference
Stainless steel clamps	4 end clamps + 4 retaining clamps	**XUSZWPEFC**

Mounting and anti vibrations accessories (3)

XUSZBSC●

Description		Height Protected (mm)	Set of	Reference
Brackets sets	Curved	160…1,060	4 brackets	**XUSZBSC4**
	Curved	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**

Notes:
(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
(3) More accessories such as mirrors, brackets, columns are available on request or consult te.sensors.com

Safety logic
Preventa XPSU safety modules
Selection guide

Safety functions

Emergency stop		•	•	•	•	•	
Guard switch		•	•	•	•	•	
Magnetic switch		•	•	•	•	•	
Proximity switch		•	•	•	•	•	
RFID switch		•	•	•	•	•	
Light curtain		•	•	•	•	•	
Two-hand control station				• (1)			
Enabling switch				• (1)			
Sensing mat/edges					•	•	
Time delay						•	
Safety output expansion							•
XPS Universal model		XPSUAF	XPSUDN	XPSUS	XPSUAK	XPSUAT	XPSUEP

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Note
(1) One function - either two-hand control station (type IIIA and IIIC with automatic start only) or enabling switch.

Safety logic
Preventa XPSU safety modules

Selection guide

		XPSUAF	XPSUDN	XPSUS	XPSUAK	XPSUAT	XPSUEP
Number of safety functions		1	6 similar functions	2 similar functions	1	1	-
Number of outputs	Safety - immediate	3 NO	3 NO + 1 NC	2 NO	2 NO + 1 NC	3 NO	4 NO + 2 NC
	Safety - delayed	-	-	-	-	3 NO + 1 NC	-
	Diagnostic	1 solid state	1 solid state	1 solid state	1 solid state	2 solid state	1 solid state
	Delay time	-	-	-	-	0.1s…15mins	If using XPSUAT
Input channels		2	12	4	2	3	-
Module width		22.5 mm	45mm	22.5mm	22.5mm	45mm	22.5mm
Display		6 LEDs	16 LEDs	8 LEDs	6 LEDs	8 LEDs	3 LEDs
Supply voltage		24V AC/DC and 48-240V AC/DC					
Maximum achievable safety level		• PL e/Category 4 conforming to ISO 13849-1 • SILC L 3 conforming to IEC 62061 • SIL 3 conforming to IEC 61508					
Conformity to standards		• IEC 60947-5-1 • IEC 61508-1 (functional safety standard) • IEC 61508-2 (functional safety standard) • IEC 61508-3 (functional safety standard) • ISO 13849-1 (functional safety standard) • IEC 62061 (functional safety standard)					
Product certifications		• cULus • TÜV					
Replacing previous XPS range		XPSAF, XPSAFL	XPSDME	XPSVC, XPSBCE, XPSBF, XPSDMB, XPSFB	XPSAK	XPSAR, XPSATE, XPSATR, XPSAV	XPSECME, XPSECPE (1)

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Note
(1) Partial subsitution, since new XPSUEP cannot be operated standalone.

Safety logic
Preventa XPSUAF, XPSUDN safety modules

Product configurator on se.com/nz

Category 4/PL e, SILCL 3, SIL 3

New

Advanced safety diagnosics meets user simplicity

Preventa XPS Universal safety modules (relays) bring smarter diagnostics and preventative maintenance to single-function, hard-wired safety monitoring applications.

More diagnostics and status information without extensive wiring:

Preventa XPS Universal safety modules provide more than 40 different status messages via a single hardwired connection to the digital input of the machine controller. This is in response to the growing demand for more advanced and detailed diagnostic information, even for simple machines.

Ready for use within predictive maintenance:

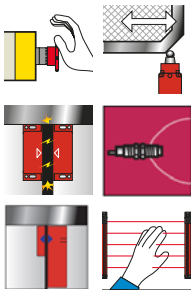
With a smart auxiliary output the safety modules with function blocks provide information about upcoming test cycles and when they will reach the end of their lifetime.

Simplified spare parts logistics:

Multi-functional modules are reducing the number of necessary product references. Set the module function using the rotary dials. Once configured, lock down the front cover with coded sealing strip to prevent tampering. Ultra wide supply tolerances allow full coverage with only two supply variants.

Easy integration/simplified certification:

Certified Safety Chain Solutions – ready-to-use architectures – Preventa XPS Universal safety modules speed up the certification of safety functions. Common form factor in 22.5mm or 45mm widths, and available in removable screw or spring terminal versions.



XPSUAF, XPSUDN safety modules

For monitoring:	- Emergency stop circuits - Safety switches: - Mechanical guard switches - Coded magnetic switch with antivalent (1) or 2 NC contacts - Proximity safety switch with antivalent (1) contacts - PNP sensor - RFID safety switch - Type 4 safety light curtains
Maximum achievable safety level	• PL e/Category 4 conforming to ISO 13849-1 • SILC L 3 conforming to IEC 62061 • SIL 3 conforming to IEC 61508

XPSUAF13AP

Features	XPSUAF	XPSUDN
Start input	Automatic, manual & monitored start	Automatic, manual & monitored start
Safety inputs	2	6
Control outputs	3 ON/OFF config. pulsed outputs	7 ON/OFF config. pulsed outputs
Safety outputs	3 NO	3 NO + 1 NC
Diagnostic outputs	1 solid state diagnostic output	1 solid state diagnostic output
Connection type	Removable terminal blocks	Removable terminal blocks
Safe expansion connection	Yes	Yes
Module width	22.5 mm	45 mm

XPSUDN33AC

References

Description	Supply voltage	Safety inputs	Safety outputs	Type of terminals	Reference
Safety modules conforming to Cat 4, PLe, SILCL3, SIL3, stop cat 0	24V ∿/⎓	2	3 NO	Spring	**XPSUAF13AC**
				Screw	**XPSUAF13AP**
		6	3 NO + 1 NC	Spring	**XPSUDN13AC**
				Screw	**XPSUDN13AP**
	48-240V ∿/⎓	2	3 NO	Spring	**XPSUAF33AC**
				Screw	**XPSUAF33AP**
		6	3 NO + 1 NC	Spring	**XPSUDN33AC**
				Screw	**XPSUDN33AP**

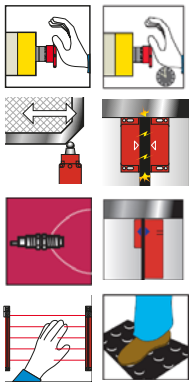
Notes

(1) Safety sensors with antivalent (change-over) contacts include both NC and NO contacts.

Safety logic
Preventa XPSUAK, XPSUAT safety modules

Product configurator on se.com/nz

Category 4/PL e, SILCL 3, SIL 3
Stop category 0 for XPSUAK, stop category 1 for XPSUAT (time delay)



XPSUAK, XPSUAT safety modules

For monitoring:	- Emergency stop circuits
	- Safety switches:
	  - Mechanical guard switches
	  - Coded magnetic switch with antivalent (1) or 2 NC contacts
	  - Proximity safety switch with antivalent (1) contacts
	  - Sensor pair 1 PNP + 1 NPN sensor
	  - RFID safety switch
	- Type 4 safety light curtains
	- 4-wire sensing mats or edges

Maximum achievable safety level	• PL e/Category 4 conforming to ISO 13849-1 • SILC L 3 conforming to IEC 62061 • SIL 3 conforming to IEC 61508

XPSUAK12AC

Features	XPSUAK	XPSUAT
Start input	Automatic, manual & monitored start	Automatic, manual & monitored start
Safety inputs	2	2 positive safety inputs, 1 negative safety input
Control outputs	3 ON/OFF config. pulsed outputs	4 ON/OFF configurable pulsed outputs
Safety outputs	2 NO + 1 NC	3 NO immediate + 3 NO configurable delay + 1 NC configurable delay
Diagnostic outputs	1 solid state diagnostic output	1 solid state output to indicate end of time delay 1 solid state diagnostic output
Connection type	Removable terminal blocks	Removable terminal blocks
Safe expansion connection	Yes	Yes
Module width	22.5 mm	45 mm
Time delay setting	No	0.1 s to 15 min by 10 steps of 0.1 s which can be multiplied by 1, 10, 100 and 1000

XPSUAT33A3AC

References

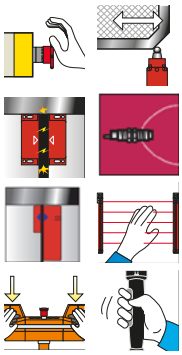
Description	Supply voltage	Safety inputs	Safety outputs (2)	Time delayed safety outputs (3)	Type of terminals	Reference
Safety modules conforming to Cat 4, PLe, SILCL3, SIL3, stop cat 0 or cat 1 (time delay)	24V ∿/⎓	2	2 NO + 1 NC	-	Spring	**XPSUAK12AC**
					Screw	**XPSUAK12AP**
		3 (4)	3 NO	3 NO + 1 NC	Spring	**XPSUAT13A3AC**
					Screw	**XPSUAT13A3AP**
	48-240V ∿/⎓	2	2 NO + 1 NC	-	Spring	**XPSUAK32AC**
					Screw	**XPSUAK32AP**
		3 (4)	3 NO	3 NO + 1 NC	Spring	**XPSUAT33A3AC**
					Screw	**XPSUAT33A3AP**

Notes
(1) Safety sensors with antivalent (change-over) contacts include both NC and NO contacts.
(2) Outputs switch immediately
(3) Outputs switch after configurable time delay
(4) 2x positive safety inputs 24 VDC, 1x negative safety input

Safety logic
Preventa XPSUAS safety modules

Product configurator on se.com/nz

Category 4/PL e, SILCL 3, SIL 3



XPSUAS safety modules

For monitoring:	- 2x emergency stop circuits
	- Safety switches:
	  - 2x mechanical guard switches
	  - 2x coded magnetic switches with antivalent (1) or 2 NC contacts
	  - 2x proximity safety switch with antivalent (1) contacts
	  - 2x independent PNP sensors
	  - 2x RFID safety switches
	- Type 4 safety light curtains
	- With automatic start only: a two-hand control station (type IIIA, type IIIC) or enabling switch

Maximum achievable safety level	• PL e/Category 4 conforming to ISO 13849-1 • SILC L 3 conforming to IEC 62061 • SIL 3 conforming to IEC 61508
Features	**XPSUAS**
Start input	Automatic, manual & monitored start
Safety inputs	2
Control outputs	3 ON/OFF config. pulsed outputs
Safety outputs	2 NO
Diagnostic outputs	1 solid state diagnostic output
Connection type	Removable terminal blocks
Safe expansion connection	Yes
Module width	22.5 mm

XPSUS12AC

References

Description	Supply voltage	Safety inputs	Safety outputs	Type of terminals	Reference
Safety modules conforming to Cat 4, PLe, SILCL3, SIL3, stop cat 0	24V ∿/⎓	2	2 NO	Spring	**XPSUS12AC**
				Screw	**XPSUS12AP**
	48-240V ∿/⎓	2	2 NO	Spring	**XPSUS32AC**
				Screw	**XPSUS32AP**

Notes

(1) Safety sensors with antivalent (change-over) contacts include both NC and NO contacts.

Safety logic
Preventa XPSU safety modules accessories

Product configurator on se.com/nz

XPSUEP14AC

XPSUEP safety expansion modules

Maximum achievable safety level	• PL e/Category 4 conforming to ISO 13849-1 • SILC L 3 conforming to IEC 62061 • SIL 3 conforming to IEC 61508
Start input	Follows the host module
Safety inputs	0
Safety outputs	4 NO + 2 single NC
Diagnostic outputs	1 solid state diagnostic output
Connection type	Connector to base module, removable terminal blocks
Module width	22.5 mm
Time delay	When connected to XPSUAT base module, configurable to follow immediate or time delayed outputs

References

Description	Supply voltage	Safety inputs	Safety outputs	Type of terminals	Reference
Safety expansion modules conforming to Cat 4, PLe, SILCL3, SIL3	24V ~/⎓	-	4 NO + 2 single NC	Spring	**XPSUEP14AC**
				Screw	**XPSUEP14AP**
	48-240V ~/⎓	-	4 NO + 2 single NC	Spring	**XPSUEP34AC**
				Screw	**XPSUEP34AP**

XPSEC

XPSES

Accessories

Description	Reference
Terminal block coding bit For coding the terminal blocks, sold in lots of 30.	**XPSEC**
Sealing strips A set of uniquely coded sealing strips, used to seal the transparent cover of XPSU safety modules. Sold in lots of 10.	**XPSES**

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XPS to XPSU substitution

XPS (old)	XPSU (new)		
Reference	**Reference**	**Type**	**Comment**
XPSAF5130	**XPSUAF13AP**	Direct	-
XPSAF5130P	**XPSUAF13AP**	Direct	-
XPSAFL5130	**XPSUAF13AP**	Direct	-
XPSAFL5130P	**XPSUAF13AP**	Direct	-
XPSAK311144	**XPSUAK12AP**	Direct	One less NO output
XPSAK311144P	**XPSUAK12AP**	Direct	One less NO output
XPSAK331144P	**XPSUAK32AP**	Direct	One less NO output
XPSAK351144	**XPSUAK32AP**	Direct	One less NO output
XPSAK351144P	**XPSUAK32AP**	Direct	One less NO output
XPSAK361144	**XPSUAK32AP**	Direct	One less NO output
XPSAK361144P	**XPSUAK32AP**	Direct	One less NO output
XPSAK371144	**XPSUAK32AP**	Direct	One less NO output
XPSAK371144P	**XPSUAK32AP**	Direct	One less NO output
XPSAR311144	**XPSUAF13AP + XPSUEP14AP**	Direct	If <=6 NO, XPSUAT13A3AP may be used
XPSAR311144P	**XPSUAF13AP + XPSUEP14AP**	Direct	If <=6 NO, XPSUAT13A3AP may be used
XPSAR351144	**XPSUAF33AP + XPSUEP14AP**	Direct	If <=6 NO, XPSUAT33A3AP may be used
XPSAR351144P	**XPSUAF33AP + XPSUEP14AP**	Direct	If <=6 NO, XPSUAT33A3AP may be used
XPSAR371144	**XPSUAF33AP + XPSUEP14AP**	Direct	If <=6 NO, XPSUAT33A3AP may be used
XPSAR371144P	**XPSUAF33AP + XPSUEP14AP**	Direct	If <=6 NO, XPSUAT33A3AP may be used
XPSATE3410	**XPSUAT33A3AP**	Direct	-
XPSATE3410P	**XPSUAT33A3AP**	Direct	-
XPSATE3710	**XPSUAT33A3AP**	Direct	-
XPSATE3710P	**XPSUAT33A3AP**	Direct	-
XPSATE5110	**XPSUAT13A3AP**	Direct	-
XPSATE5110P	**XPSUAT13A3AP**	Direct	-
XPSATR11530C	**XPSUAT13A3AC**	Direct	-
XPSATR11530P	**XPSUAT13A3AP**	Direct	-
XPSATR1153C	**XPSUAT13A3AC**	Direct	-
XPSATR1153P	**XPSUAT13A3AP**	Direct	-
XPSATR39530C	**XPSUAT33A3AC**	Direct	-
XPSATR39530P	**XPSUAT33A3AP**	Direct	-
XPSATR3953C	**XPSUAT33A3AC**	Direct	-
XPSATR3953P	**XPSUAT33A3AP**	Direct	-
XPSAV11113	**XPSUAT13A3AP**	Direct	-
XPSAV11113P	**XPSUAT13A3AP**	Direct	-
XPSAV11113T050	**XPSUAT13A3AP**	Direct	-
XPSAV11113Z002	**XPSUAT13A3AP**	Direct	-
XPSBAE3920C	**XPSUAB31CC**	Direct	-
XPSBAE3920P	**XPSUAB31CP**	Direct	-
XPSBAE5120C	**XPSUAB11CC**	Direct	-
XPSBAE5120P	**XPSUAB11CP**	Direct	-
XPSBCE3110C	**XPSUS12AC**	Direct	-
XPSBCE3110P	**XPSUS12AP**	Direct	-
XPSBCE3410C	**XPSUS32AC**	Direct	-
XPSBCE3410P	**XPSUS32AP**	Direct	-
XPSBCE3710C	**XPSUS32AC**	Direct	-
XPSBCE3710P	**XPSUS32AP**	Direct	-
XPSBF1132	**XPSUS12AP**	Direct	-
XPSBF1132P	**XPSUS12AP**	Direct	-
XPSDMB1132	**XPSUS12AP**	Direct	-
XPSDMB1132P	**XPSUS12AP**	Direct	-
XPSDME1132	**XPSUDN13AP**	Direct	-
XPSDME1132P	**XPSUDN13AP**	Direct	-
XPSDME1132TS220	**XPSUDN13AP**	Direct	-
XPSECME5120C	**XPSUEP14AC**	Indirect	Only in combination with XPSU host
XPSECME5120P	**XPSUEP14AP**	Indirect	Only in combination with XPSU host
XPSECME5131C	**XPSUEP14AC**	Indirect	Only in combination with XPSU host
XPSECME5131P	**XPSUEP14AP**	Indirect	Only in combination with XPSU host
XPSFB3411	**XPSUS12AP**	Direct	-
XPSFB3711	**XPSUS12AP**	Direct	-
XPSFB5111	**XPSUS12AP**	Direct	-
XPSVC1132	**XPSUS12AP**	Direct	-
XPSVC1132P	**XPSUS12AP**	Direct	-

Safety logic
Preventa XPS safety modules

Safety modules
Category 3 and category 4 applications

XPSMP11123

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 per function	–	3	24VDC	**XPSMP11123**

XPSAC●●●●

XPSAFL5130

XPSVNE●●●●

Category 3 applications

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	Supply voltage	Reference
Emergency stop and limit switch monitoring				
3	–	1	24VACDC	**XPSAC5121**
			230VAC	**XPSAC3721**
Emergency stop, limit switch and light curtain monitoring (2)				
3	–	–	24VACDC	**XPSAFL5130**
Safety timer with delay on energisation				
1 delay	2	2	24VACDC	**XPSTSA5142P**
			230VAC	**XPSTSA3742P**
Safety timer with impulse on				
1 impulse	2	2	24VACDC	**XPSTSW5142P**
			230VAC	**XPSTSW3742P**
Zero speed detection using back – EMF				
1	1	2	24VDC	**XPSVNE1142P**
1	1	2	230VAC	**XPSVNE3742P**

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XPSMP11123

Category 4 applications

Dual limit switches monitoring

No. of N/O safety outputs	No. of N/C additional outputs	No. of PLC signalling outputs	Supply voltage	Reference
3	–	3	24VDC	**XPSMP11123**
Muting of type 4 light curtains (3)				
2 PNP		1 PNP + 1 NPN	24VDC	**XPSLCMUT1160**

Notes

(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, ISO 13849-1 and EN 62061.

(3) Light curtains with solid state outputs.

Modular safety controller - XPSMCM

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
- Position Monitoring
- Guard Monitoring
- Speed Monitoring
- Perimeter Guarding
- 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

XPSMCMMX0802

XPSMCMER0004

XPSMCMEN0100SC

XPSMCMCO0000S2

Safety Controller

Description	Inputs	Outputs	Reference
Safety Controller CPU	8 digital + 2 for start/stop interlock	2 OSSD pairs + 4 test + 2 Status	**XPSMCMCP0802**

Safe expansion modules

Description	Inputs	Outputs	Reference
Safe mixed I/O	8 digital + 2 for start/stop interlock	2 OSSD pairs + 4 test + 2 Status	**XPSMCMMX0802**
Safe input	8 digital	4 test outputs	**XPSMCMDI0800**
	16 digital	4 test outputs	**XPSMCMDI1600**
	12 digital	8 test outputs	**XPSMCMDI1200MT**
Safe output	2 for start/restart interlock	2 OSSD pairs + 2 Status	**XPSMCMDO0002**
	4 for start/restart interlock	2 OSSD pairs + 4 Status	**XPSMCMDO0004**

Safe relay output modules

Safe output (without backplane expansion connection)	1 for start/restart interlock	2 relays (2NO + 1NC)	**XPSMCMER0002**
	2 for start/restart interlock	4 relays (2NO + 1NC)	**XPSMCMER0004**
Safe output (wiring with the expansion bus connector)	4 for start/restart interlock	4 relays	**XPSMCRO0004**
	4 for start/restart interlock	4 relays with 8 status outputs	**XPSMCRO0004DA**

Safe speed monitoring modules

Safe speed monitoring	1 Sin/Cos encoder and 2 proximity 1 RJ45 (ENC1) Proximity sensor via terminal block	**XPSMCMEN0100SC**
	Up to 2 Sin/Cos encoders and 2 proximity 2 x RJ45 (ENC1) Proximity sensor via terminal block	**XPSMCMEN0200SC**
	2 inputs for proximity Proximity sensor via terminal block	**XPSMCMEN0200**

Safe communication modules

Safe RS485 bus expansion module for remote extention	1 connection interface: 1 input or 1 output network connection	**XPSMCMCO0000S1**
	2 connection interface: 1 input and 1 output network connection	**XPSMCMCO0000S2**

Safety logic
Preventa XPSMCM safety controller
Accessories

Modular safety controller – XPSMCM
Accessories

XPSMCMCO0000EI

Non-safe fieldbus

Description	Field bus / Network type connector	Reference
Non-safe communication modules	Ethernet IP 1 RJ45 (in/out)	**XPSMCMCO0000EI**
	Universal Serial Bus Mini USB	**XPSMCMCO0000UB**
	Modbus TCP 1 x RJ45 (in/out)	**XPSMCMCO0000EM**

Accessories

Description	Application		Reference
Memory card	For saving configuration data for subsequent transfer to a new device without using a PC		**XPSMCMME0000**
Configuration cable	To be used for software configuration between a PC and the safety controller CPU Equipped with 2 x USB (And mini B)		**TCSXCNAMUM3P**
RS 485 sheilded cable	To be used between two communication expansion modules	10 metre	**TSXSCMCN010**
		25 metre	**TSXSCMCN025**
		50 metre	**TSXSCMCN050**
Encoder splitter cable	To be used between safe speed monitoring modules and PacDrive M	1 metre	**TSXESPPM001**
		3 metre	**TSXESPPM003**
		5 metre	**TSXESPPM005**
Expansion bus connector	For connecting expansion modules to the safety controller CPU		**XPSMCMCN0000SG**
Software	SoSafe configurable		**XPSMCMSW0000V10** (1)

Note

(1) Download free software from Schneider website
https://www.schneider-electric.co.nz/en/download/document/SoSafe_Configurable/

Ex, IEC explosive atmospheres zone 0, 1, 2, 20, 21 and 22

Explosive atmosphere and ignition sources

A potentially explosive atmosphere is the mixture of air with flammable substances in the form of gas, vapour, and/or dust, that when exposed to an ignition source under normal atmospheric conditions can completely or partially catch fire and explode.

The types of ignition sources that can create an explosive atmosphere are:

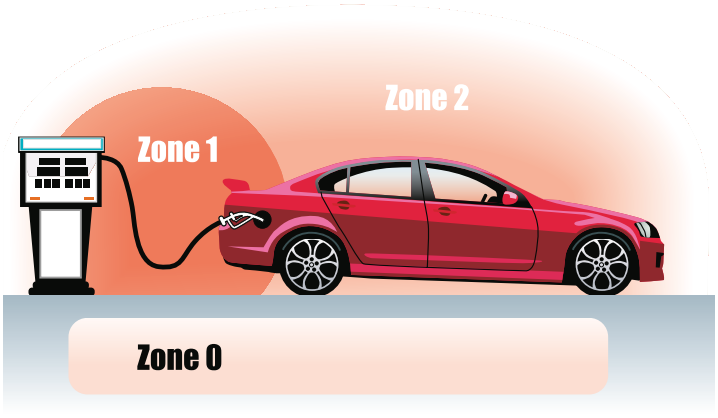
> Hot surfaces
> Flames and hot gases
> Mechanically produced sparks
> Electrical equipment
> Transient currents
> Static electricity
> Lightning strikes
> Electromagnetic waves
> Optical radiation
> Ultrasound
> Chemical reactions
> People (indirectly)

Explosive atmospheres are found in areas like:

> Metal surface grinding, especially aluminium dust and particles
> Oil refineries, rigs and processing plants
> Gas pipelines and distribution centres
> Printing industries, paper and textiles
> Aircraft refuelling and hangars
> Chemical processing plants
> Grain handling and storage
> Sewage treatment plants
> Surface coating industries
> Underground coal mines
> Wood working areas
> Sugar refineries
> Vessels/ships
> Power plants

Categories and zones

Category		Group	Level of protection	Zones
Gas	Ga	II	Very high	0
	Gb		High	1
	Gc		Enhanced	2
Dust	Da	III	Very high	20
	Db		High	21
	Dc		Enhanced	22



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Ex, IEC explosive atmosphere
Dust (zone 21 & 22)

Inductive proximity sensors
Rotation monitoring

XS612B1PAL10EX

3 wire DC flush mount

Sensing distance	Size	Connection	Output function	Reference
0....3.2mm	M12	Cable PvR 10m	N/O	**XS612B1PAL10EX**
0....3.2mm	M12	Cable PvR 10m	N/C	**XS612B1PBL10EX**
0....6.4mm	M18	Cable PVR 10m	N/O	**XS618B1PAL10EX**
0....6.4mm	M18	Cable PVR 10m	N/C	**XS618B1PBL10EX**
0....12mm	M30	Cable PVR 10m	N/O	**XS630B1PAL10EX**
0....12mm	M30	Cable PVR 10m	N/C	**XS630B1PBL10EX**

XSAV11373EX

Rotation monitoring

Sensing distance	Size	Connection	Output function	Reference
0...8mm	M30	Cable PvR 2m	N/C slow	**XSAV11373EX**
0...8mm	M30	Cable PvR 2m	N/C fast	**XSAV12373EX**

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Ex, IEC explosive atmosphere
Dust (zone 21 & 22)

Limit switches prewired
Metal bodies IP67

XCMD4110L5EX XCMD4102L5EX

XCMD4124L5EX XCMD4115L5EX

XCMD4117L5EX XCMD4145L5EX

XCMD41F0L5EX XCMD41F2L5EX

Miniature fixing by the body

Body + Head	Connection	Output function	Reference
Metal end plunger	Cable 5m	2 N/O 2 N/C	**XCMD4110L5EX**
Metal end plunger booted	Cable 5m	2 N/O 2 N/C	**XCMD4111L5EX**
Steel roller plunger	Cable 5m	2 N/O 2 N/C	**XCMD4102L5EX**
Retractable steel roller lever plunger	Cable 5m	2 N/O 2 N/C	**XCMD4124L5EX**
Steel roller lever	Cable 5m	2 N/O 2 N/C	**XCMD4116L5EX**
Thermoplastic roller lever	Cable 5m	2 N/O 2 N/C	**XCMD4115L5EX**
Variable length thermoplastic roller lever	Cable 5m	2 N/O 2 N/C	**XCMD4145L5EX**

Miniature, Fixing by the head

Body + Head	Connection	Output function	Reference
M12 with metal end plunger	Cable 5m	2 N/O 2 N/C	**XCMD41F0L5EX**
M16 with metal end plunger booted	Cable 5m	2 N/O 2 N/C	**XCMD41G1L5EX**
M12 with steel roller plunger	Cable 5m	2 N/O 2 N/C	**XCMD41F2L5EX**

L

Ex, IEC explosive atmosphere
Dust (zone 21 & 22) & Gas (zone 1 & 2)

Product configurator on se.com/nz

Control and signalling units
Pushbuttons and selector switches - metal

XB4BPS●●GEX

22mm pushbuttons

Type	Colour	Output function	Reference
Booted flush, clear silicon	Black	N/O	**XB4BPS21GEX**
	Green	N/O	**XB4BPS31GEX**
	Red	N/C	**XB4BPS42GEX**
	Yellow	N/O	**XB4BPS51GEX**
	Blue	N/O	**XB4BPS61GEX**

XB4BS8445GEX

Emergency stop

Type	Colour	Output function	Reference
Emergency stop trigger action 40mm red turn to release (1)		N/C+NO	**XB4BS8445GEX**

XB4BD●●GEX

Selector switches

Type	Colour	Output function	Reference
Selector switches black (1)	2 - stay put	N/C + N/O	**XB4BD25GEX**
	3 - stay put	N/O + N/O	**XB4BD33GEX**
	3 spring return	N/O + N/O	**XB4BD53GEX**

XB4BP●83●5GEX

Illuminated pushbuttons

Type	Colour	Output function	Reference
Illuminated pushbuttons 24-254 VAC/DC	White	N/O	**XB4BP183BM5GEX**
	Green	N/O	**XB4BP383BM5GEX**
	Red	N/C	**XB4BP483BM5GEX**
	Yellow	N/O	**XB4BP583BM5GEX**
	Blue	N/O	**XB4BP683BM5GEX**

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Notes
(1) Also available as key switch.

Ex, IEC explosive atmosphere
Dust (zone 21 & 22) & Gas (zone 1 & 2)

Control and signalling units
Pilot lights and control stations

XB4BV●●●GEX

22mm pilot lights

Type	Colour	Reference
Plain lens Voltage 24…254VAC/DC	White	**XB4BVBM1GEX**
	Green	**XB4BVBM3GEX**
	Red	**XB4BVBM4GEX**
	Yellow	**XB4BVBM5GEX**
	Blue	**XB4BVBM6GEX**

XAWF210EX

Control stations (For Dust - zone 21-22)

Type	Colour	Contact	Reference
Metal	Green	N/O	**XAWF100EX**
	Stop start	N/O + N/C	**XAWF210EX**
	3 Function	N/O + N/C + NO	**XAWF310EX**
	Selector (1)	N/O + N/C	**XAWF130EX**
	E-Stop trigger	N/C + N/C	**XAWF178EX**
Plastic	Green	N/O	**XAWG100EX**
	Red	N/C	**XAWG110EX**
	Stop start	N/O + N/C	**XAWG210EX**
	3 Function	N/O + N/C + NO	**XAWG310EX**
	Selector (1)	N/O + N/C	**XAWG130EX**
	E-Stop trigger	N/C + N/C	**XAWG178EX**

XAWF178EX

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Note
(1) Keyed version available.

Ex, IEC explosive atmosphere
Dust (zone 21 & 22)

Foot switches
Trip wire
Coded magnetic switches
Safety switches

XPEM110EX

Foot switches IP66

Colour	Contacts	step	Reference
Blue	1NC+NO	1 step	**XPEM110EX**
	2NC+NO	1 step	**XPEM111EX**
	2NC+NO	2 step	**XPEM211EX**

XY2CE2A270EX

Cable (tripwire) operated emergency stops IP65 (1) (2) (3)

Distance	contacts	Cable anchoring point	Reference
≤ 70M	NC+NO slow break	Left	**XY2CE2A250EX**
≤ 70M	NC+NO slow break	Right	**XY2CE1A250EX**
≤ 70M	NC+NC slow break	Left	**XY2CE2A270EX**
≤ 70M	NC+NC slow break	Right	**XY2CE1A270EX**

XCSDMC5902EX

Coded magnetic switches IP67

Description	Contact arrangement with magnet present	Reference
Miniature (51 x 16 x 7) rectangular	1 N/O + 1 N/C	**XCSDMC5902EX** (1)
	2 N/C	**XCSDMC7902EX** (1)

XCSA502EX

Safety switches

	Reference
Without locking	
2 N/O + 1 N/C (break before make)	**XCSA502EX**
2 N/C + 1 N/O (break before make)	**XCSA702EX**
With locking, manual release by button	
2 N/O + 1 N/C (break before make)	**XCSB502EX**
2 N/O + 1 N/O (break before make)	**XCSB702EX**
With locking, manual release by key	
2 N/O + 1 N/C (break before make)	**XCSC502EX**
2 N/C + 1 N/O (break before make)	**XCSC702EX**

XCSZ05

XCSZ03

Safety switches accessories

Type	Reference
Pivoting actuator	**XCSZ03**
Door latch	**XCSZ05**

Notes
(1) 10m cable versions also available.
(2) For accessories see page L11-12.
(3) Operating cable length <70 metres – distance between cable supports 5 metres.

Ex, IEC explosive atmosphere
Dust (zone 21 & 22)

Human-machine interface
Touch sensitive graphic terminals

HMIGTO1300

HMIGTO3510

HMIGTO6315

Advance panels

Description / version	Display type	App Mem	Flash card slot	Multi-media video	Comm ports	Reference
3.5”	Function keys QVGA (320x240)	64MB		No	2 serial 2 USB	**HMIGTO1300**
3.5”	Function keys QVGA (320x240)	96MB		No	2 serial 2 USB 1 ethernet	**HMIGTO1310**
5.7”	Function keys QVGA (320x240)	64MB		No	2 serial 2 USB	**HMIGTO2300**
5.7”	Function keys QVGA (320x240)	96MB	SD Card	No	2 serial 2 USB 1 ethernet	**HMIGTO2310**
7.0”	Wide screen function keys WVGA (800x400)	96MB	SD Card	No	2 serial 2 USB 1 ethernet	**HMIGTO3510**
7.5”	Wide screen function keys VGA (640x480)	96MB	SD Card	No	2 serial 2 USB 1 ethernet	**HMIGTO4310**
10.4”	Wide screen function keys VGA (640x480)	96MB	SD Card	No	2 serial 2 USB 1 ethernet	**HMIGTO5310**
12.1”	Wide screen function keys SVGA (800x600)	96MB	SD Card	No	2 serial 2 USB 1 ethernet	**HMIGTO6310**
Stainless steel bezel	Food grade panel					
5.7”	Function keys QVGA (320x240)	96MB	SD Card	No	2 serial 2 USB 1 ethernet	**HMIGTO2315**
10.4”	Wide screen function keys VGA (640x480)	96MB	SD Card	No	2 serial 2 USB 1 ethernet	**HMIGTO5315**
12.1”	Wide screen function keys SVGA (800x600)	96MB	SD Card	No	2 serial 2 USB 1 ethernet	**HMIGTO6315**

Linergy TR terminal blocks

IEC Ex rated 2.5mm-16mm for spring terminals
IEC Ex rated 2.5mm-50mm for screw terminals
For reference information see section F

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M

Modicon power supplies

Modicon power supplies
Modular power supplies 10W to 60W
Optimum power supplies 50W, 480W
Universal power supplies 72W to 960W
AC Transformers

Product configurator on se.com/nz

ABLM1A05036

ABLM1A12010

ABLM1A12042

ABLS1A24021

ABLS1A24100

ABL8RPS24100

ABL6TS06B

Modicon ABLM Modular power supply (1)

Input voltage 50/60Hz	Secondary			Reset after overload or short circuit (4)	Output voltage adjustment potentiometer	Width 18mm modules	Reference
	Output voltage (2)	Nominal power (3)	Nominal current				
100…240 Vac +/- 10%	5 Vdc	18 W	3.6A	Automatic	With	1	**ABLM1A05036**
	12 Vdc	12 W	1A	Automatic	Without	1	**ABLM1A12010**
		25 W	2.1A	Automatic	With	2	**ABLM1A12021**
		50 W	4.17A	Automatic	With	3	**ABLM1A12042**
	24 Vdc	10 W	0.42A	Automatic	Without	1	**ABLM1A24004**
		15 W	0.625A	Automatic	Without	1	**ABLM1A24006**
		30 W	1.25A	Automatic	With	2	**ABLM1A24012**
		60 W	2.5A	Automatic	With	3	**ABLM1A24025**

Modicon ABLS Optimized power supply (1)

Input voltage 50/60Hz	Secondary			Reset after overload or short circuit (4)	Output voltage adjustment potentiometer	Reference
	Output voltage (2)	Nominal power (3)	Nominal current			
	12 Vdc	75 W	6.25A	Automatic	With	**ABLS1A12062**
		120 W	10A	Automatic	With	**ABLS1A12100**
100…240 Vac 140…340 Vdc (5) -15%, +10%	24 Vdc	50 W (2)	2.1A	Automatic	With	**ABLS1A24021**
		75 W (2)	3.13A	Automatic	With	**ABLS1A24031**
		91.2 W (2)	3.8A	Automatic	Without	**ABLS1A24038**
		120 W	5A	Automatic	With	**ABLS1A24050**
		240 W	10A	Automatic	With	**ABLS1A24100**
		480 W	20A	Automatic	With	**ABLS1A24200**
	48 Vdc	120 W	2.5A	Automatic	With	**ABLS1A48025**

Modicon ABL8RP/WP Universal power supply

Input voltage 50/60Hz	Secondary			Reset	Reference
	Output voltage (2)	Nominal power (3)	Nominal current		
Single-phase (N-L1) or 2-phase (L1-L2) connection					
100…120 Vac/ 200…500 Vac -15%, +10%	24 Vdc	72 W	3A	Auto/man	**ABL8RPS24030**
		120 W	5A	Auto/man	**ABL8RPS24050**
		240 W	10A	Auto/man	**ABL8RPS24100**
100…120 Vac/ 200…240 Vac -15%, +10%	24Vdc	480 W	20A	Auto/man	**ABL8RPM24200**
3-phase connection (L1-L2-L3)					
380…500 Vac +/- 10%		480 W	20A	Automatic	**ABL8WPS24200**
		960 W	40A	Automatic	**ABL8WPS24400**

Transformers 230/400V AC – single winding

Input voltage	VA	Reference (6)
230/400V AC	25VA	**ABL6TS02●**
	40VA	**ABL6TS04●**
	63VA	**ABL6TS06●**
	100VA	**ABL6TS10●**
	160VA	**ABL6TS16●**
	250VA	**ABL6TS25●**
	400VA	**ABL6TS40●**
	630VA	**ABL6TS63●**

Standard supply voltage outputs (1)

Volts	24V	115V	230V
AC 50/60Hz	B	G	U

Note

(1) Refer to datasheet for recommended Acti9 protection
(2) Limited Power Source conforming IEC 62368-1 and NEC Class 2.
(3) Nominal power given for mounting on horizontal rail and +55°C (131°F) ambiant temperature. For other temperaturesand mounting positions, Consult the product data sheet.
(4) In case of overtemperature or overvoltage the input power must be cycled to reset the detected error.
(5) Except ABLS1A24021 and ABLS1A24038.
(6) Complete the reference with the appropriate output voltage

Modicon power supplies

Product configurator on se.com/nz

Panel Mount power supplies 100W to 240W
DC to DC converters for ABL8RPS24 and ABL8WPS24 power supplies
Function modules

Modicon ABLP Panel mount single phase regulated power supply

ABLP1A24100

ABLPA02

Input voltage 50/60Hz	Secondary Output voltage (VDC)	Nominal power (W)	Nominal current (A)	Reset after overload or short circuit	Output voltage adjustment potentiometer	Reference
100…240 Vac +/- 10%	12 Vdc	100 W	8.5 A	Automatic	With	**ABLP1A12085**
	24 Vdc	100 W	4.5 A	Automatic	With	**ABLP1A24045**
		150 W	6.2 A	Automatic	With	**ABLP1A24062**
		240 W	10 A	Automatic	With	**ABLP1A24100**
Mounting Accessories			ABLP1A12085, ABLP1A24045, ABLP1A24062			**ABLPA01**
Mounting plate for Din Rail 35mm			ABLP1A24101			**ABLPA02**

DC to DC converters for ABL8RPS4 and ABL8WPS24 power supplies

Input voltage (VDC)	Output voltage (VDC)	Nominal power (W)	Nominal current (A)	Reference
24	5 – 6.5	30	6	**ABL8DCC05060**
	7 – 15	30	2	**ABL8DCC12020**

Function modules for ABL8 power supplies

Selective protection

Tripping current	Remote diagnostics	Reset	Breaking	Reference
0.5 – 10A (4 channels)	Yes	Auto/manual	Two pole	**ABL8PRP24100**

Use in conjunction with any power supply up to 40A to split the supply 4 ways and individually protect / isolate each circuit

Redundancy module

Automatic change over between two power supplies, in the event of power supply failure

Total output current (A)	Reference
40	**ABL8RED24400**

Battery back-up solution

Control module

Interface between supply and battery module in the event of power failure. Battery optimiser to condition and monitor battery life. Use with ABL8 power supply and ABL8 batteries

Output current (A)	Reference
20	**ABL8BBU24200**
40	**ABL8BBU24400**

Batteries

Discharge load (A)	Time (S)	Battery Capacity	Reference
5	20	3.2Ah	**ABL8BPK24A03**
	50	7Ah	**ABL8BPK24A07**
	120	12Ah	**ABL8BPK24A12**

Battery back up solutions

ABL8RPS24100

Control module

Batteries

M

Zelio electromechanical relays

Selection Guide

Electromechanical Plug-In Relays

Reference family	RSL Slim Relay	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	8-16A	5-10A	6-10-12A	10A	15A
Mounting	DIN rail	DIN rail	DIN rail	DIN rail	DIN rail	DIN rail or Panel
Width	6.2mm	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

Benefits

> 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.

M

Zelio solid state relays

Selection Guide

Solid State Relays

Reference family	SSL Slim SSR	SSM Modular SSR	SSP Panel mount SSR
Phase	1	1 or 3	1 or 3
Number of contacts	1 NO	1 or 2 NO	1 or 3 NO
Load current	up to 2A	up to 12A	up to 125A
DC Load voltage	1…48V DC	1...100VDC	1...150VDC
AC Load voltage	24…250VAC	24...600VAC	24...660VAC
Mounting	DIN rail	DIN rail	Panel Mount
Width	6.2mm	12mm / 18mm	Refer to individual model

Benefits

> 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.

M

Product configurator on se.com/nz

RSL slim interface relays

RSLZ2

Slim interface relays, pre-assembled (1)

Type of contacts	Ith	Socket type	Operating voltage	Control voltage	Part contains	Reference
1 C/O	6A	Screw connector	12VAC/DC	12VDC	RSL1AB4JD + RSLZVA1)	**RSL1PVJU**
			24VAC/DC	24VDC	(RSL1AB4BD + RSLZVA1)	**RSL1PVBU**
			48VAC/DC	48VDC	(RSL1AB4ED + RSLZVA2)	**RSL1PVEU**
			110VAC/DC	60VDC	(RSL1AB4ND + RSLZVA3)	**RSL1PVFU**
			230VAC/DC	60VDC	(RSL1AB4ND + RSLZVA4)	**RSL1PVPU**
		Spring terminal	12VAC/DC	12VDC	(RSL1AB4JD + RSLZRA1)	**RSL1PRJU**
			24VAC/DC	24VDC	(RSL1AB4BD + RSLZRA1)	**RSL1PRBU**
			48VAC/DC	48VDC	(RSL1AB4ED + RSLZRA2)	**RSL1PREU**
			110VAC/DC	60VDC	(RSL1AB4ND + RSLZRA3)	**RSL1PRFU**
			230VAC/DC	60VDC	(RSL1AB4ND + RSLZRA4)	**RSL1PRPU**

RSLZ3

Accessories

Description	use with	Reference
Clip in legends (2 sheets of 64 legends)	All sockets	**RSLZ5**
Bus jumper (20-pole jumper)	All sockets	**RSLZ2**
Partition plate (10 partition plates)	All sockets	**RSLZ3**

Notes

(1) Separate relays and sockets also available, see Zelio Relay catalogue for details.

Zelio electromechanical relays

Product configurator on se.com/nz

RSB interface relays

RSB2A080F7PV

RSB relays, pre-assembled with sockets

Type of contacts	Ith	Reference (1)
1 C/O	16A	**RSB1A160●●PV**
2 C/O	8A	**RSB2A080●●PV**

RSB2A080P7

RSB relays

Type of contacts	Ith	Reference (1)
1 C/O	16A	**RSB1A160●●**
2 C/O	8A	**RSB2A080●●**

RSZE1S48M

Sockets

Relay to suit	Reference
RSB1A160 / RSB2A080	**RSZE1S48M**

Accessories

Description	Use with	Voltage	Reference
Plastic Maintaining Clamp	RSB Sockets		**RGZR215**
Diode	RSB Sockets	6-230 VDC	**RZM040W**
RC Circuit	RSB Sockets	24-60 VAC	**RZM041BN7**
	RSB Sockets	110-240 VAC	**RZM041FU7**
Diode + Green Light	RSB Sockets	6-24 VDC	**RZM031RB**
	RSB Sockets	24-60 VDC	**RZM031BN**
	RSB Sockets	110-230 VDC	**RZM031FPD**
Varistor + Green LED	RSB Sockets	6-24 VAC/DC	**RZM021RB**
	RSB Sockets	24-60 VAC/DC	**RZM021BN**
	RSB Sockets	110- 240 VAC/DC	**RZM021FP**
Legends	RSB Sockets		**RSZL300**
Bus Jumper (8 pole jumper)	For inputs(A1,A2) of RSZE socket		**RGZS08**

Standard coil voltage code (1)					
AC Supply 50/60Hz	Volts		24	110	230
	Code		B7	F7	P7
DC Supply	Volts	12	24	110	
	Code	JD	BD	FD	

Notes

(1) "●●" Complete reference with coil voltage code. e.g. **RSB2A080BD** for 24VDC.
(2) See "Wiring diagrams" on www.schneider-electric.com.
(3) All sockets have an attached carrier.

M

Zelio electromechanical relays

Product configurator on se.com/nz

RXG interface relays

RXG12BDPV

RXG relays, pre-assembled with sockets

Type of contact	Ith	Reference (1)
1 C/O	10A	**RXG12●●PV**
2 C/O	5A	**RXG22●●PV**

RXG12●●

RXG relays

Type of contact	Ith	Reference (1)
1 C/O	10A	**RXG12●●**
2 C/O	5A	**RXG22●●**

RGZE1S35M

Sockets

Use with	Ith	Reference
RXG12••	10A	**RGZE1S35M**
RXG22••	5A	**RGZE1S48M**

Accessories

Description	Use with	Voltage	Reference
Replacement hold down clamp	RGZ Sockets		**RGZR215**
Diode	RGZ Sockets	6-230 VDC	**RZM040W**
RC Circuit	RGZ Sockets	24-60 VAC	**RZM041BN7**
	RGZ Sockets	110-240 VAC	**RZM041FU7**
Diode + Green Light	RGZ Sockets	6-24 VDC	**RZM031RB**
	RGZ Sockets	24-60 VDC	**RZM031BN**
	RGZ Sockets	110-230 VDC	**RZM031FPD**
Varistor + Green LED	RGZ Sockets	6-24 VAC/DC	**RZM021RB**
	RGZ Sockets	24-60 VAC/DC	**RZM021BN**
	RGZ Sockets	110- 240 VAC/DC	**RZM021FP**
Legends	RGZ Sockets		**RSZL300**
Bus Jumper (8 pole jumper)	For inputs(A1,A2) of RSZE socket		**RGZS08**

Standard coil voltage code (1)					
AC Supply	Volts		24	110	230
50/60Hz	Code		B7	F7	P7
DC Supply	Volts	12	24	110	
	Code	JD	BD	FD	

Notes

(1) Complete reference with coil voltage e.g. RXG12BD for 24VDC.

(2) All relays have LED on indication and lockable test button.

Zelio electromechanical relays

Product configurator on se.com/nz

RXM miniature relays

RXM4AB1BDPVS

RXM relays, pre-assembled with sockets (segregated terminal)

Type of contacts	Ith	Reference (1)(5)
2 C/O	12A	**RXM2AB2●●PVS**
4 C/O	6A	**RXM4AB2●●PVS**

RXM2AB2●●

RXM relays

Type of contacts	Ith	Reference (1)
2 C/O	12A	**RXM2AB2●●**
3 C/O	10A	**RXM3AB2●●**
4 C/O	6A	**RXM4AB2●●**
4 C/O (2)	3A	**RXM4GB2●●**

RXZE2S108M

Sockets

Relay to suit	Terminals	Contact terminal arrangement (3)	Reference
RXM2	Screw	Segregated	**RXZE2S108M**
RXM3	Screw	Segregated	**RXZE2S111M**
RXM4	Screw	Segregated	**RXZE2S114M**
RXM2/RXM4	Spring clamp	Mixed	**RXZE2M114**
RXM2/RXM4	Screw	Mixed	**RXZE2M114M**
RXM2/RXM4	Spring clamp	Segregated	**RXZE2S114S**

RXZS2

RXZE2DA

Accessories

Description	Use with	Voltage	Reference
Relay retaining clip - metal	RXM sockets		**RXZ400**
Relay retaining clip - plastic	RXM sockets		**RXZR335**
Diode	RXM sockets	6-250 VDC	**RXM040W**
RC circuit	RXM sockets	24-60 VAC	**RXM041BN7**
	RXM sockets	110-240VAC	**RXM041FU7**
Varistor	RXM sockets	6-24 VAC/DC	**RXM021RB**
	RXM sockets	24-60 VAC/DC	**RXM021BN**
	RXM sockets	110-240 VAC/DC	**RXM021FP**
Legend (sheet of 108 legends)			**RXZL520**
2-pole bus jumper (Ith: 5 A)	Segregated contact sockets only		**RXZS2**
Mounting adapter with panel mounting lugs	RXM relay		**RXZE2FA**

M

Standard coil voltages (1)					
AC supply	Volts		24	110	230
50/60Hz	Code		B7	F7	P7
DC supply	Volts	12	24	110	
	Code	JD	BD	FD	

Notes

(1) "●●" Complete reference with coil voltage code, e.g. **RXM2AB2BD** for 24VDC.
(2) Low level contacts for signal level switching as low as 2mA 5V.
(3) Segregated terminal bases have coil terminals separated on one side. Mixed have control and signalling terminals evenly distributed.
(4) All relays have LED on indication and lockable test button. All sockets have an attachment carrier.
(5) To order relay with mixed terminal sockets replace "PVS" to "PVM" eg: RXM2AB2BDPVM.

Zelio electromechanical relays

Product configurator on se.com/nz

RUM universal relays

RUMC22BD

RUZC2M

RUM relays

Type of contacts	Ith	No of Pins	Reference (1)
2 C/O	10A	8	**RUMC22●●**
3 C/O	10A	11	**RUMC32●●**

Sockets

Relay to suit	Contact arrangement (2)	Reference
RUMC22●●	mixed	**RUZC2M**
RUMC32●●	mixed	**RUZC3M**

Accessories

Description	Use with	Voltage	Reference
Relay retaining clip - metal	RUM sockets		**RUZC200**
Diode	RUM sockets	6-250 VDC	**RUW240BD**
RC circuit	RUM sockets	110-240VAC	**RUW241P7**
Multifunction timer	RUM sockets	24-240 VAC/DC	**RUW101MW**
Varistor	RUM sockets	24V AC/DC	**RUW242B7**
	RUM sockets	240V AC/DC	**RUW242P7**

Standard coil voltages (1)					
AC supply	Volts		24	110	230
50/60Hz	Code		B7	F7	P7
DC supply	Volts	12	24	110	
	Code	JD	BD	FD	

Notes

(1) "●●" Complete reference with coil voltage code, e.g. RUMC22BD for 24VDC.

(2) Segregated terminal bases have coil terminals separated on one side. Mixed have control and signalling terminals evenly distributed.

(3) All relays have LED on indication and lockable test button.

Product configurator on se.com/nz

RPM universal relays
RPF power relay

RPM22F7

RPM relays

Type of contacts	Ith	Reference (1)
1 C/O	15A	**RPM12●●**
2 C/O	15A	**RPM22●●**
4 C/O	15A	**RPM42●●**

RPZF1

Sockets

Relay to suit	Contact arrangement (2)	Reference
RPM1	mixed	**RPZF1**
RPM2	mixed	**RPZF2**
RPM4	mixed	**RPZF4**

Accessories

Description	Use with	Voltage	Reference
Relay retaining clip - metal	RPZF1		**RPZR235**
Diode	RPZF1/2	6-250 VDC	**RXM040W**
	RPZF4	6-250 VDC	**RUW240BD**
RC circuit	RPZF1/2	110-240VAC	**RXM041FU7**
	RPZF4	110-240VAC	**RUW241P7**
Multifunction timer	RPZF4	24-240 VAC/DC	**RUW101MW**
Varistor	RPZF1/2	24-60V AC/DC	**RXM021BN**
		110-240V AC/DC	**RXM021FP**
	RPZF3/4	24V AC/DC	**RUW242B7**
		240V AC/DC	**RUW242P7**
Clip-in 108 legends	All RPM relays		**RXZL520**
Mounting adapters for panel	RPM12 relay		**RPZ1FA**
	RPM22 relay		**RXZE2FA**
	RPM42 relay		**RPZ4FA**

RPF2BP7

RPF relays

Type of contacts	Ith	Reference (1)
2 C/O	30A (2)	**RPF2B●●**

Standard coil voltages				
AC supply	Volts	24	110	230
50/60Hz	Code	B7	F7	P7
DC supply	Volts	12	24	
	Code	JD	BD	

Standard coil voltages (1)					
AC supply	Volts		24	110	230
50/60Hz	Code		B7	F7	P7
DC supply	Volts	12	24	110	
	Code	JD	BD	FD	

Notes

(1) "●●" Complete reference with coil voltage code, e.g. RPM12BD for 24VDC.
RPZF4 socket has attachment carrier for multifunction timer only.

(2) Segregated terminal bases have coil terminals separated on one side. Mixed have control and signalling terminals evenly distributed.

(3) All relays have LED on indication and lockable test button.

Zelio solid state relays

Product configurator on se.com/nz

SSL slim relays

SSL1A12JDRPR

SSL1 Slim solid state relays, pre-assembled, screw terminals

Switching	Voltage control input	Load output	Load current	Part contains	Reference
DC switching	4…12VDC	1…24VDC	3.5A	SSL1D03JD + SSLZVA1	**SSL1D03JDPV**
		1…48VDC	0.1A	SSL1D101JD+SSLZVA1	**SSL1D101JDPV**
	16…30VDC	1…24VDC	3.5A	SSL1D03BD+SSLZVA1	**SSL1D03BDPV**
		1…48VDC	0.1A	SSL1D101BD+SSLZVA1	**SSL1D101BDPV**
Zero voltage switching	4…12VDC	24…250VAC	2A	SSL1A12JD+SSLZVA1	**SSL1A12JDPV**
	16…30VDC	24…250VAC	2A	SSL1A12BD+SSLZVA1	**SSL1A12BDPV**
Random switching	4…12VDC	24…250VAC	2A	SSL1A12JDR+SSLZVA1	**SSL1A12JDRPV**
	16…30VDC	24…250VAC	2A	SSL1A12BDR+SSLZVA1	**SSL1A12BDRPV**

SSL1 Slim solid state relays, pre-assembled, spring terminals

Switching	Voltage control input	Load output	Load current	Part contains	Reference
DC switching	4…12VDC	1…24VDC	3.5A	SSL1D03JD+SSLZRA1	**SSL1D03JDPR**
		1…48VDC	0.1A	SSL1D101JD+SSLZRA1	**SSL1D101JDPR**
	16…30VDC	1…24VDC	3.5A	SSL1D03BD+SSLZRA1	**SSL1D03BDPR**
		1…48VDC	0.1A	SSL1D101BD+SSLZRA1	**SSL1D101BDPR**
Zero voltage switching	4…12VDC	24…250VAC	2A	SSL1A12JD+SSLZRA1	**SSL1A12JDPR**
	16…30VDC	24…250VAC	2A	SSL1A12BD+SSLZRA1	**SSL1A12BDPR**
Random switching	4…12VDC	24…250VAC	2A	SSL1A12JDR+SSLZRA1	**SSL1A12JDRPR**
	16…30VDC	24…250VAC	2A	SSL1A12BDR+SSLZRA1	**SSL1A12BDRPR**

RSLZ2

RSLZ3

Accessories

Description	Compatibility	Reference
Clip in legend (2 sheets of 64)	SSL socket	**RSLZ5**
Bus jumper (20 pole)	SSL socket	**RSLZ2**
Partition plate	SSL socket	**RSLZ3**

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Zelio solid state relays

Product configurator on se.com/nz

SSM modular solid state relays

SSM1A36BD

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 for AC resistive loads*	4...32VDC	24...280VAC	6A	**SSM1A16BD**
			12A	**SSM1A112BD**
		48...600VAC	6A	**SSM1A36BD**
			12A	**SSM1A312BD**
	18...36VAC	24...280VAC	6A	**SSM1A16B7**
		48...600VAC	12A	**SSM1A312B7**
	90...140VAC	24...280VAC	6A	**SSM1A16F7**
			12A	**SSM1A112F7**
		48...600VAC	12A	**SSM1A312F7**
	200...265VAC	24...280VAC	6A	**SSM1A16P7**
			12A	**SSM1A112P7**

*For random switching SSR, add "R" at the end of the part number i.e. SSM1A16BD**R**

SSM1A120M7

SSM1 single phase solid state relays (22.5 and 45mm)

Switching	Voltage control input	Load output	Load current	Reference
Zero voltage switching for AC resistive loads	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	48...660VAC	55A	**SSM1A455F7**

SSM1A445BD

SSM2 single phase solid state relays, dual channel

Switching	Voltage control input	Load output	Load current	Reference
Zero voltage switching for AC resistive loads	4...32VDC	24...280VAC	6A	**SSM2A16BD**
		48...600VAC	6A	**SSM2A36BD**
Random switching for AC inductive loads	4...32VDC	24...280VAC	6A	**SSM2A16BDR**
		48...660VAC	6A	**SSM2A36BDR**

SSM3A325F7

SSM3 three phase solid state relays

Switching	Voltage control input	Load output	Load current	Reference
Zero voltage switching for AC resistive loads	4...32VDC	48...600VAC	25A	**SSM3A325BD**
	90...140VAC	48...600VAC	25A	**SSM3A325F7**
	180...280VAC	48...600VAC	25A	**SSM3A325P7**
Random switching for AC inductive loads	4...32VDC	48...660VAC	25A	**SSM3A325BDR**

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Zelio solid state relays

Product configurator on se.com/nz

SSP panel mount solid state relays

SSP1 panel mount single phase solid state relays with embedded thermal pad

SSP1D425BDT

SSP1A125BDS

Switching	Voltage control input	Load output	Load current	Reference
DC switching	3...32VDC	1...150VDC	12A	**SSP1D412BDT**
			25A	**SSP1D425BDT**
			40A	**SSP1D440BDT**
Zero voltage switching for AC resistive loads	3...32VDC	24...300VAC	10A	**SSP1A110BDT**
			25A	**SSP1A125BDT**
			50A	**SSP1A150BDT**
			75A	**SSP1A175BDT**
	4...32VDC	48...600VAC	50A	**SSP1A450BDT**
			75A	**SSP1A475BDT**
			90A	**SSP1A490BDT**
			125A	**SSP1A4125BDT**
	90...280VAC	24...300VAC	10A	**SSP1A110M7T**
			25A	**SSP1A125M7T**
			50A	**SSP1A150M7T**
			75A	**SSP1A175M7T**
	90...280VAC	48...600VAC	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	48...600VAC	50A	**SSP1A450BDS**
			75A	**SSP1A475BDS**
			90A	**SSP1A490BDS**
			125A	**SSP1A4125BDS**

SSP3 panel mount three phase solid state relay with embedded thermal pad

SSP3A225P7T

Switching	Voltage control input	Load output	Load current	Reference
Zero voltage switching for AC resistive loads	4...32VDC	48...530VAC	25A	**SSP3A225BDT**
			50A	**SSP3A250BDT**
	18...36VAC	48...530VAC	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

SSRHP07

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**
DIN rail mount	Up to 3 units of SSP1 1 unit of SSP3	1425	1	**SSRHD10**

Accessories

SSRAL1

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

Zelio timing relays

Selection Guide

Timing Relays

Reference family	RE22 Industrial	RENF NFC configured	RE48 Plug in
Time range	0.6s…300h	0.1s…999h	1.2s…300h
No. of functions	24	28 in single product	10
Width	22.5mm	22.5mm	48mm
Display type	Mechanical & LED	LED	Mechanical
Supply	24VDC, 24…240VAC		

Benefits

> Single or multifunction ranges.
> Wide power supply range.
> High autonomy and low power consumption.
> Dial pointer LED indicator and diagnostic button to assist setup and troubleshooting

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Function definitions

Main timing functions	Complementary functions(1)(4)	Definitions
A		Power on-delay relay
	Ac	On-delay and off-delay relay with control signal
	Act	On-delay and off-delay relay with control signal and pause/summation control signal
	Ad	Pulse delayed relay with control signal
	Ah	Pulse delayed relay (single cycle) with control signal
	Ak	Asymmetrical on-delay and off-delay relay with control signal
	Akt	Asymmetrical on-delay and off-delay relay with control signal and pause/summation control signal
	At	Power on-delay relay with pause/summation control signal
	Aw	Power on-delay relay with retrigger/restart control signal
B		Single interval relay with control signal
	Bw	Double interval relay with control signal
C		Off-delay relay with control signal
	Ct	Off-delay relay with control signal and pause/summation control signal
D		Symmetrical flashing relay (starting pulse-off)
	Di(2)	Symmetrical flashing relay (starting pulse-on)
	Dit	Symmetrical flashing relay (starting pulse-on) with pause/summation control signal
	Diw	Symmetrical flashing relay (starting pulse-on) with retrigger/restart control signal
	Dt	Symmetrical flashing relay (starting pulse-off) with pause/summation control signal
	Dw	Symmetrical flashing relay (starting pulse-off) with retrigger/restart control signal
H		Interval relay
	He	Pulse-on de-energization
	Ht	Interval relay with pause/summation control signal
	Hw	Ineterval relay with retrigger/restart control signal
K		Delay on de-energization (without auxiliary supply)
L		Asymmetrical flashing relay (starting pulse-off)
	Li(2)	Asymmetrical flashing relay (starting pulse-on)
	Lt	Asymmetrical flashing relay (starting pulse-on) with pause/summation control signal
		Asymmetrical flashing relay (starting pulse-off) with pause/summation control signal
N		Safe-guard relay
O		Delayed Safe-guard relay
P		Pulse delayed relay with fixed pulse length
	Pt	Pulse delayed relay with fixed pulse length and pause/summation control signal
Q		Star-delta relay (2 NO outputs with same common)
	Qc	Star-delta relay (1 CO output)
	Qe	Star-delta relay (1 NC + 1 NO outputs with split common)
	Qg	Star-delta relay (2 CO outputs with same common)
	Qgt	Star-delta relay (2 CO outputs with same common) with pause/summation control signal
	Qt	Star-delta relay (2 CO outputs with split common)
	Qtt	Star-delta relay (2 CO outputs with split common) with pause/summation control signal
T	Tl	Bistable relay with control signal on
	Tt	Retriggerable bistable relay with control signal on
W		Interval relay with control signal off
	Wt	Interval relay with control signal off and pause/summation control signal

Notes

"(1) Complementary functions enhance the main timing functions. Example: AC: timing after closing and opening of control contact."

(2) The most commonly used timing functions.

(3) If the letter i is in the timing function then the timer starts with pulse on.

(4) To view timing functions refer to se.com or DIA5ED2130103EN global catalogue.

Product configurator on se.com/nz

RE22 Modular relays & NFC timer relay

RE22R1MAMR

On delay timer

Function	No. of relay outputs	Timing range	Supply voltages	Reference
A, At, Aw	1 C/O 8A	0.05s - 300h	24…240 VAC/DC	**RE22R1MAMR**
A, Aw	2 C/O 8A	0.05s - 300h	24…240 VAC/DC	**RE22R2AMR**

RE22R2MYMR

Off delay timer

Function	No. of relay outputs	Timing range	Supply voltages	Reference
C, Ct	1 C/O 8A	0.05s - 300h	24…240 VAC/DC	**RE22R1CMR**
C	2 C/O 8A	0.05s - 300h	24…240 VAC/DC	**RE22R2CMR**
K	2 C/O 5A	0.05s - 10min	24…240 VAC/DC	**RE22R2KMR**

RE22R2KMR

On/Off delay timer

Function	No. of relay outputs	Timing range	Supply voltages	Reference
Ak, Akt	1 C/O 8A	0.05s - 300h	24…240 VAC/DC	**RE22R1AKMR**
Ac	2 C/O 8A	0.05s - 300h	24…240 VAC/DC	**RE22R2ACMR**

Multifunction timer

Function	No. of relay outputs	Timing range	Supply voltages	Reference
A, At, B, C, H, Ht, Di, D, Ac, Bw	2 C/O 8A	0.1s - 100h	24VDC / 24…240 VAC	**RE22R2MMU**
Ad, Ah, N, O,P, Pt, Tl, Tt, W	2 C/O 8A	0.1s - 100h	24VDC / 24…240 VAC	**RE22R2MXMU**
A, At, Aw, Ac, Act, C, Ct, D, Dt, Dw, Di, Dit, Diw, H, Ht, Hw, W, Wt,	2 C/O 8A	0.05s - 300h	24…240 V AC/DC	**RE22R2MYMR**
K, He	2 C/O 5A	0.05s - 300h	24…240 VAC/DC	**RE22R1MKMR**

RENF22

Star Delta relay

Function	No. of relay outputs	Timing range	Supply voltages	Reference
Qc	1 C/O 8A	1s - 300s	24VDC / 24…240 VAC	**RE22R1QCMU**
Qe	2 C/O 8A	0.3s-30s	380…415VAC	**RE22R2QEMT**

Asymmetrical flashing relay

Function	No. of relay outputs	Timing range	Supply voltages	Reference
L, Li, Lt, Lit	1 C/O 8A	1s - 300h	24…240 VAC/DC	**RE22R1MLMR**

NFC timing relay (1)

Function	No. of relay outputs	Timing range	Supply voltages	Reference
A, Ac, Ad, Ah, Ak, At, B, Bw, C, D, Di, Dt, Di, H,Ht, L, Li, Lt, Lit, N, O, P, Pt, Qt, Qtt, Tl, Tt,W	2 C/O 8A	0.1s - 999h	24…240 VAC/DC	**RENF22R2MMW**

Notes (special features)

(1) Configured using an Android phone (Version 4.1 and above). Download Zelio NFC app from Google Play to configure.

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Acti9 time delay relays

Time delay relays – 0.1s to 100h (1)

A9E16065

A9E16070

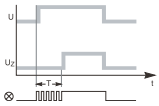
Type	No. of contacts	Rating	Width in mod. of 9mm	Coil voltage	Reference
iRTA	1C/O	8A	2	24VDC or 24–240VAC	**A9E16065**
iRTB	1C/O	8A	2	24VDC or 24–240VAC	**A9E16066**
iRTC	1C/O	8A	2	24VDC or 24–240VAC	**A9E16067**
iRTH	1C/O	8A	2	24VDC or 24–240VAC	**A9E16068**
iRTL	1C/O	8A	2	24VDC or 24–240VAC	**A9E16069**
iRTMF	1C/O	8A	2	12–240VAC/DC	**A9E16070**

Notes

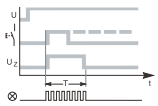
Function and use

- 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: energises a load at the closing of an auxiliary pushbutton. The time delay starts at the closing of the command pushbutton.
- RTC delay on break: energises a load as soon as a contact is closed. Mini impulse duration: ≥ 200ms. At the end on the time delay, the load is de-energised. Able to re-start time period without breaking the load.
- 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-energised.
- RTL repeat cycle timer: repetitive cycle which alternatively energises and de-energises a load. From the energisation of RTL, the load is switched on.
- RTMF multifunction timer: one relay providing functions A, B, C and H via a selector switch located in front.

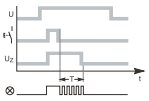
RTA



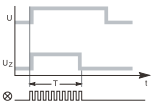
RTB



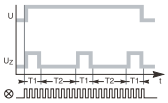
RTC



RTH



RTL



U: supply voltage Uz: load voltage ⊗ LED on relay

Note

(1) Resistive load, if you require any other load please consult your Schneider Electric sales representative.

Analogue electronic relays
Counters

RE48A●●●

RUZC2M

RE48 panel or base mount timer 1.2s…300h

Functions	Contact type	Pins	Supply voltages	Reference
A	1 C/O 5A	8	24-240V AC/DC	**RE48ATM12MW**
L, Li	2 C/O 5A	11	24-240V AC/DC	**RE48ACV12MW**
A, B C, Di	2 C/O 5A	11	24-240V AC/DC	**RE48AML12MW**
A1, A2 H1, H2	2 C/O 5A	8	24-240V AC/DC	**RE48AMH13MW**
Bases to suit		8		**RUZC2M**
		11		**RUZC3M**

XBKP61230G30E

Electronic counters, 48x48, 6 digit, LCD

Supply Voltage (V)	No. of display digits	Counting frequency (kHz)	Number of presets	Reference
24V DC	6	5	2	**XBKP61230G30E**
230V AC	6	5	2	**XBKP61230G32E**

M

Zelio measurement and control relays

Product configurator on se.com/nz

Rotational direction
Presence of phases
Overvoltage and undervoltage

RM17TG20

RM22TG20

Rotational direction and presence of phases (1)

Time Delay	Rated mains voltage	Output relay	Reference
None	208...480V AC 50/60Hz	2 C/O 5A	**RM17TG20**
		2 C/O 8A	**RM22TG20**

Rotational direction and presence of phases and undervoltage (1)

Time Delay	Rated mains voltage	Control threshold	Output relay	Reference
None	380...480V AC 50/60Hz	Undervoltage 300...430	2 C/O 8A	**RM22TU23**

RM22TR33

Rotational direction and presence of phases and undervoltage and overvoltage (1)

Relays with adjustable voltage thresholds				
Time Delay	Rated mains voltage	Control threshold	Output relay	Reference
0.1...30s	380...480V AC 50/60Hz	Undervoltage 300...430 Overvoltage 420...580	2 C/O 8A	**RM22TR33**

Rotational direction and presence of phases and asymmetry (2)

Time Delay on de-energisation	Rated mains voltage	Control threshold	Output relay	Reference
Adjustable 0.1...30s	380...480V AC 50/60Hz	Asymmetry 5...15%	2 C/O 8A	**RM22TA33**

RM22TU23

Voltage measurement: overvoltage without memory (3)

Adjustable Time Delay	Rated mains voltage	Measurement range	Output relay	Reference
0.05...30s	24-240 AC/DC	1...100V AC/DC	2 C/O 8A	**RM22UA32MR**

Voltage measurement: overvoltage and undervoltage (4)

Adjustable Time Delay	Rated mains voltage	Measurement range	Output relay	Reference
0.1...30s	380-415V AC	15...500V AC	2 C/O 8A	**RM22UA33MT**

RM22UA33MT

Phase fail = presence of phases
Rotational direction = phase sequence
Phase asymmetry = phase unbalance

Notes
(1) Non-motor applications.
(2) Motor application.
(3) Single phase sensing.
(4) Overvoltage and undervoltage with/without memory.

Zelio measurement and control relays

Product configurator on se.com/nz

Overcurrent and undercurrent
Liquid level

RM22JA21MR

RM35JA32MR

Current measurement: overcurrent without memory (1)

Time Delay	Supply voltage	Measurement range	Output relay	Reference insert volt code
0.1...30s	24…240V AC/DC	4mA...1A	2 C/O 8A	**RM22JA31MR**
0.1...30s	24…240V AC/DC 380…415V AC/DC	150mA...15A	2 C/O 8A	**RM35JA32MR** **RM35JA32MT**

RM17JC00MW

Over current measurement: relay with integrated current transformer

Rated supply voltage	Measurement range	Output	Reference insert volt code
24...240V AC/DC	2...20A	1 C/O 5A	**RM17JC00MW**

RM22LA32MT

LA9RM201

Liquid level control relays (Level 1/level 2, Fill/empty operation)

Time Delay	Supply voltage	Sensitivity scale Ohms	Output relay	Reference insert volt code
None	24…240V AC/DC	5...100k	1 C/O 8A	**RM22LG11MR**
None	380...415V AC	5...100k	1 C/O 8A	**RM22LG11MT**
Adjustable				
0.1...30s On/Off delay	24…240 AC/DC	250…1M	2 C/O 8A	**RM22LA32MR**
	380-415 AC		2 C/O 8A	**RM22LA32MT**

Liquid level control probe

	Maximum operating temp.	Reference
Suspended by cable	100°C	**LA9RM201**

RM35BA10

Pump control relay

Function	Current range controlled A	Supply voltage V	Output	Reference
3-phase: Phase sequence Phase loss Overcurrent and undercurrent control **1-phase:** Overcurrent and undercurrent control	1…10	208…480 ~, 3-phase 230 ~, 1-phase	1 CO 5A	**RM35BA10**

RMNF22TB30

Multifunction 3 Phase monitoring relay - NFC (2)

Function	No. of relay outputs	Measurement range	Time Delay	Reference
Sequence of phases (L1, L2, L3, N), Phase loss, Asymmetry, Undervoltage, Overvoltage, Under-frequency, Over-frequency	2 C/O 8A	208-480 AC	0.1s-60min (Phase loss & Phase sequence instant trigger)	**RMNF22TB30**

Note

(1) Single phase sensing.

(2) Configured using an Android phone (Version 4.4 and above). Download Zelio NFC app from Google Play to configure.

M

Universal analogue converters

RMCN22BD

Universal analogue converters

Input range	Output range	Voltage	Reference
0…10V or 4…20mA	0..10V or 4…20mA	24VDC non isolated	**RMCN22BD**
0…10V / -10…+10V 0…20mA 4…20mA	0…10V /-10…+10V 0…20mA 4…20mA switchable	24VDC isolated	**RMCL55BD**
0…1.5A / 0....5A 0…15A	0....10V or 0…20mA 4…20mA 0…20mA 4…20mA	24VDC isolated	**RMCA61BD (1)**
	0…10V / -10…=10V 0…20mA 4…20mA switchable		

Note
(1) Double width.

Zelio Logic smart relays

Compact SR2 and Modular SR3
Simply smart!

Simple to select, install and program, Zelio Logic smart relays provide a unique combination of value and ease of use for simple automation systems up to 40 I/O. Two ranges are available in a range of supply voltages, programmed using Zelio Soft 2 PC software in FBD (function block diagram) or ladder languages:

> Compact SR2 range with fixed configurations 10...20 I/O
> Modular SR3 range with 10...26 I/O allows the use of extension modules for up to 40 I/O

A range of extension modules for the Modular SR3 range are available:

> Discrete I/O extension modules with 6, 10, or 14 I/O
> Analogue I/O extension module with 4 I/O
> Modbus serial or Ethernet Modbus/TCP communication extension modules

Both SR2 and SR3 ranges include an LCD display for basic visualisation and programming (ladder only). A remote HMI can be connected for improved visualisation, while remote connection is available using the 2G/3G modem communication option.

Recent updates (1):

> **2x more program memory:** up to 240 ladder lines or up to 500 FBD blocks. +75% more timers (up to 28), counters (up to 28), and internal bits (up to 56) can be used
> New **PID** function blocks (analogue or PWM output)
> Expanded modem with 2G and **3G** connectivity
> New remote HMI in monochrome or colour touch screen options
> PC software compatible with Windows® 7, 8, and 10, 32 or 64 bit OS

System components

Harmony colour HMI
> HMISTO705 4.3" colour touch screen
> Program with EcoStruxure Operator Terminal Expert software

> Compact SR2 smart relay

Zelio Logic Communication module
> Modem GSM/UMTS

Zelio Soft 2
Programming software

> Modular SR3 smart relay

Zelio Logic I/O extension modules
> Analog I/Os
> Digital I/Os

Zelio Logic communication modules
> Modem GSM/UMTS
> Modbus serial line
> Ethernet Modbus/TCP

Notes:
(1) Requires Zelio Soft 2 V5.1 or higher, free to download. Compatible with older Zelio smart relays - firmware update will be required.

Product configurator on se.com/nz

Compact SR2 and Modular SR3

SR2B121BD

SR2B201BD

Compact SR2 smart relays with display

Total discrete I/O	Discrete inputs	Analogue inputs 0-10V⎓	Relay outputs	Transitor outputs	Clock	Reference
12V ⎓ supply						
12	8	4	4	0	Yes	**SR2B121JD**
20	12	6	8	0	Yes	**SR2B201JD**
24V ⎓ supply						
10	6	0	4	0	No	**SR2A101BD (1)**
12	8	4	4	0	Yes	**SR2B121BD**
			0	4	Yes	**SR2B122BD**
20	12	2	8	0	No	**SR2A201BD (1)**
		6	8	0	Yes	**SR2B201BD**
			0	8	Yes	**SR2B202BD**
24V ∿ supply						
12	8	0	4	0	Yes	**SR2B121B**
20	12	0	8	0	Yes	**SR2B201B**
100…240V ∿ supply						
10	6	0	4	0	No	**SR2A101FU (1)**
12	8	0	4	0	Yes	**SR2B121FU**
20	12	0	8	0	No	**SR2A201FU (1)**
					Yes	**SR2B201FU**

Models also available:

> Compact SR2 smart relay with display 48V ∿ supply 20 I/O
> Compact SR2 smart relays without display, 24V ⎓ supply 10…20 I/O, 24V ∿ supply 12 or 20 I/O, 100…240V ∿ supply 10…20 I/O

SR3B101B

SR3B262BD

Modular extendable SR3 smart relays with display

Total discrete I/O	Discrete inputs	Analogue inputs 0-10V⎓	Relay outputs	Transitor outputs	Clock	Reference
12V ⎓ supply						
26	16	6	10 (2)	0	Yes	**SR3B261JD**
24V ⎓ supply						
10	6	4	4	0	Yes	**SR3B101BD**
			0	4	Yes	**SR3B102BD**
26	16	6	10 (2)	0	Yes	**SR3B261BD**
			0	10	Yes	**SR3B262BD**
24V ∿ supply						
10	6	0	4	0	Yes	**SR3B101B**
26	16	0	10 (2)	0	Yes	**SR3B261B**
100…240V ∿ supply						
10	6	0	4	0	Yes	**SR3B101FU**
26	16	0	10 (2)	0	Yes	**SR3B261FU**

Notes

(1) Programming in ladder language only

(2) Including 8 outputs at maximum current of 8A and 2 outputs at maximum current of 5A.

Accessories

SR2USB01

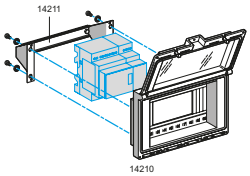
Programming accessories (1)

Description	Reference
Zelio Soft 2 programming software – free to download For PC Windows 7, 8.1, and 10, 32 or 64 bit operating system. Available to download for free from our website.	**SR2SFT01**
USB programming cable PC USB port to smart relay programming port, length: 3m	**SR2USB01**
Back-up memory cartridge EEPROM back-up memory	**SR2MEM02**

SR2MEM02

Mounting accessories

Description	Reference
Door mounting enclosure IP55 Enclosure with hinged window and split blanking plate for mounting through an enclosure door. Compatible with various smart relay configurations up to 170mm in width: • Up to 2x SR2 10 or 12 I/O smart relays • 1x SR2 20 I/O smart relay • 1x SR3 10 I/O smart relay + 1x 6…14 I/O extension • 1x SR3 26 I/O smart relay + 1x 6 I/O extension	**14210**
Enclosure mounting bracket Mounting bracket and DIN rail support for mounting enclosure 14210	**14211**



Door mounting enclosure + bracket

SR3 I/O extension modules

Total I/O	Discrete inputs	Analogue inputs	Relay outputs	Analogue outputs 0-10V ⎓	Reference
12V ⎓ supply (for smart relay SR3B261JD)					
6	4	-	2	-	**SR3XT61JD**
10	6	-	4	-	**SR3XT101JD**
14	8	-	6 (3)	-	**SR3XT141JD**
24V ⎓ supply (for smart relays SR3B●●●BD)					
4	-	2 (2)	-	2	**SR3XT43BD (4)**
6	4	-	2	-	**SR3XT61BD**
10	6	-	4	-	**SR3XT101BD**
14	8	-	6 (3)	-	**SR3XT141BD**
24V ∿ supply (for smart relays SR3B●●●B)					
6	4	-	2	-	**SR3XT61B**
10	6	-	4	-	**SR3XT101B**
14	8	-	6 (3)	-	**SR3XT141B**
100…240V ∿ supply (for smart relays SR3B●●●FU)					
6	4	-	2	-	**SR3XT61FU**
10	6	-	4	-	**SR3XT101FU**
14	8	-	6 (3)	-	**SR3XT141FU**

SR3XT43BD

Notes
(1) Only one device can be connected to Zelio smart relay communication slot at a time
(2) 2x analogue inputs 0-10V or 0-20mA, including 1x PT100 input for temperature sensor (-25°C…125°C)
(3) Including 4 outputs at maximum current of 8A and 2 outputs at maximum current of 5A
(4) Can only be used in FBD language

Modular smart relays
SR3

SR3NET01BD

TWDXCAISO

SR2COM01

SR2COM02

SR3 communication modules

Description	Reference
24V ⎓ supply (for smart relays SR3B●●●BD)	
Modbus RS485 communication extension module RJ45	**SR3MBU01BD**
Ethernet Modbus/TCP extension module RJ45	**SR3NET01BD**

Connection accessories

Description	Length m	Reference
Modbus serial link		
Modbus tap with 2x RJ45 female, 1x RJ45 on lead	0.3	**VW3A8306TF03**
	1	**VW3A8306TF10**
Junction with isolation, screw terminals for trunk, 2x RJ45 for tap, 24V DC supply		**TWDXCAISO**
Modbus cable, 2x RJ45	0.3	**VW3A8306R03**
	1	**VW3A8306R10**
	3	**VW3A8306R30**
RC line terminator RJ45		**VW3A8306RC**
Modbus splitter box, screw terminals for trunk, 10x RJ45		**LU9GC3**
Ethernet network		
Ethernet patch lead, STP, 2x RJ45	2	**490NTW00002**
	5	**490NTW00005**
	12	**490NTW00012**

Modem communication modules (1)

Description	Reference
Modem communication interface Provides communication link between SR●B●●●●●● smart relays to GSM/UMTS modem, 12…24V ⎓ supply. Includes connection cable to modem, length 0.5m	**SR2COM01**
GSM (2G) / UMTS (3G) modem Modem and antenna for remote communications via 2G/3G network (excludes SIM card). Refer to product catalogue and manual for compatible functions depending on network connection. 12…24V ⎓ supply, includes antenna cable, length 2.5m	**SR2MOD02 (2)**

Remote HMI accessories (1) (3)

Description	Reference
Harmony small panel with colour TFT touch screen 4.3" colour screen, 26 MB memory, programmed using EcoStruxure Operator Terminal Expert	**HMISTO705 (4)**
HMI STO connection cable Connection cable Harmony HMISTO501 or HMISTO705 9-way terminal block to smart relay programming port, length 2.5m	**SR2CBL09**

HMISTO705 Small Panel

Zelio Logic compact smart relay + SR2CBL09 cable

Notes

(1) Only one device at a time can be connected to Zelio smart relay communication slot.

(2) 2G/3G modem capability from modem hardware version HW1103B4 onwards which includes a SUB-D15 connector instead of a SUB-D9 connector on old 2G modem (connection cable included with modem). Check with network provider for 2G/3G area coverage. Modem automatically detects available 2G or 3G network. Full functionality (including remote program transfer, monitoring, firmware update) requires 2G network and data enabled SIM. Functions on 3G only network are limited to send alarm/receive command via SMS to mobile phone.

(3) Refer to section N for selection of Harmony HMI screens.

(4) The SR2CBL09 cable used to connect an HMISTO705 must be equipped with a shunt between terminals marked CTS and RTS (included from date code 1722).

Machine controllers

Selection Guide

		Logic controllers			Logic/motion controllers
		Modicon M221	**Modicon M241**	**Modicon M251**	**Modicon M262**
		For hardwired architectures, simple machines	For performance-demanding machines	For distributed architectures	IIoT ready high-performance machines with motion
Characteristics	Performance	0.2 µs/inst	22 ns/inst	22 ns/inst	3...5 ns/inst
	Memory	640 KB RAM, 2 MB Flash	64 MB RAM, 128 MB Flash	64 MB RAM, 128 MB Flash	256 MB RAM, 256 MB Flash
	Synchronised axis	-	-	-	Up to 16
	Supply Voltage	24 V⎓ or 100...240 V∿	24 V⎓ or 100...240 V∿	24 V⎓	24 V⎓
Embedded I/O	Input types	Up to 40 logic inputs inc. 4 high-speed inputs Up to 2 analogue inputs	Up to 24 logic inputs, inc. 8 high-speed inputs	-	4 fast digital inputs
	Output types	Up to 16 relay outputs Up to 16 transistor outputs inc. 2 high-speed outputs	Up to 16 outputs, inc. 4 high-speed outputs	-	4 fast digital outputs
Communication fieldbus and networks	Embedded	• EtherNet/IP • Modbus TCP • Serial link • USB mini-B programming port	• Ethernet • Modbus TCP • CANopen (master) • 2x serial links • USB mini-B programming port	• Ethernet/IP • Modbus TCP • CANopen (master) • 2x serial links • USB mini-B programming port	• EtherNet/IP • Sercos III • Modbus TCP • Serial link • USB mini-B programming port
	With option	• 1x serial link	• Ethernet • Profibus DP	• Ethernet • Profibus DP	• Ethernet • CANopen
Configuration software		EcoStruxure Machine Expert-Basic (1)	EcoStruxure Machine Expert (2)	EcoStruxure Machine Expert (2)	EcoStruxure Machine Expert (2)
Compatible ranges of I/O expansion modules	Local I/O	Modicon TM3	Modicon TM3	Modicon TM3	Modicon TM3
	Remote I/O	Modicon TM3	Modicon TM3	Modicon TM3	Modicon TM3
	Distributed Ethernet I/O	Modicon TM3	Modicon TM3, TM5	Modicon TM3, TM5	Modicon TM3, TM5
	Distributed CANopen I/O	-	-	-	Modicon TM5, TM7
	Distributed SERCOS I/O	-	-	-	Modicon TM5
	Safety I/O	Modicon TM3	Modicon TM3	Modicon TM3	Modicon TM3, TM5, TM7

Notes

(1) Formerly known as SoMachine Basic

(2) Formerly named SoMachine, EcoStruxure Machine Expert merges both former software ranges, SoMachine and SoMachine Motion

M

Modicon M221 logic controllers

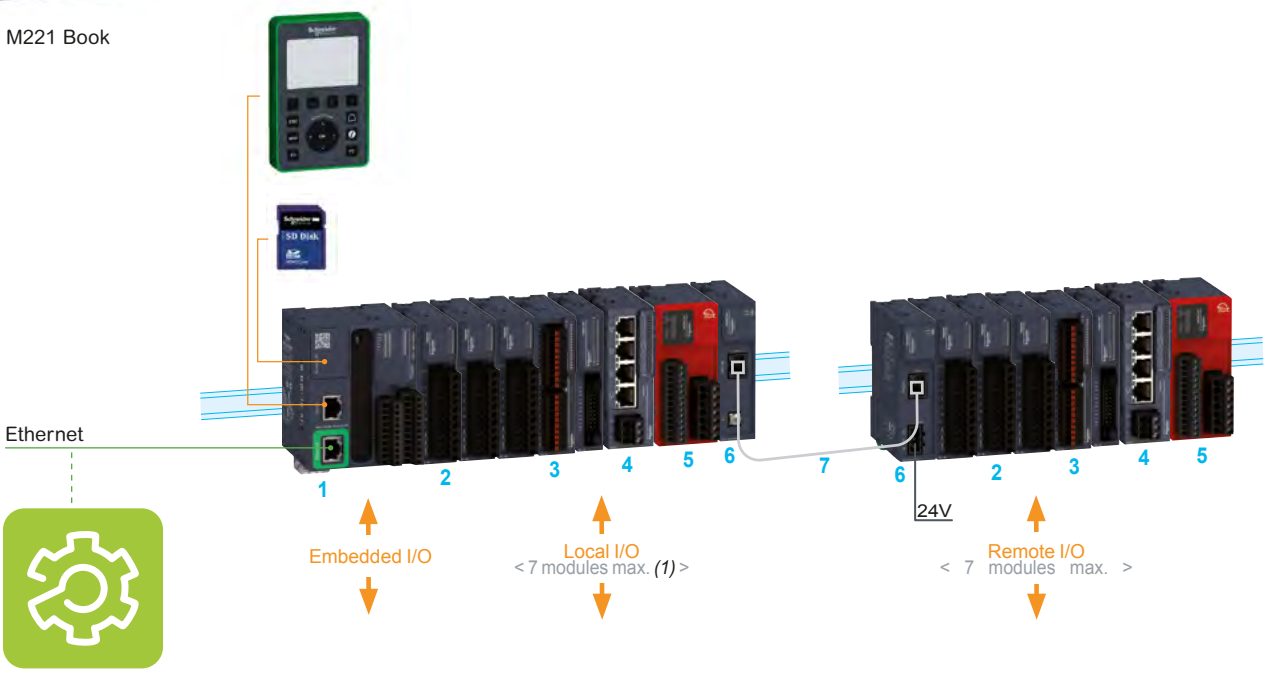
Modicon M221 Compact

Modicon M221 Book

Part of the next-generation EcoStruxure™ Machine automation platform, Modicon M221 logic controllers offer best in class performance for simple, connected smart machines. Available in two formats with embedded Ethernet, Modicon M221 requires minimal installation and yet offers tremendous flexibility and versatility with a complete range of expansion modules. Intuitive machine programming software EcoStruxure™ Machine Expert - Basic (formerly know as SoMachine Basic), is free to download and provides intuitive navigation, configuration and visualisation, delivering a more efficient engineering process.

The Modicon M221 range consists of:

- M221 Compact controllers (TM221C••• references) offer excellent connection capacity and customisation options without increasing the controller size, using I/O, communication, or application cartridges. Versions for 230VAC and 24VDC supply voltages are available.
- M221 Book controllers (TM221M••• references) offer very small dimensions and a wide choice of connections options. Supply voltage 24VDC
- TM3 I/O expansion modules for various I/O functions:
  - Digital I/O expansion modules with 8...32 inputs/outputs
  - Analogue I/O expansion modules with 2...8 inputs/outputs
  - Expert module for control of up to 4x TeSys motor starters
  - Functional safety modules up to SIL3
  - Bus expansion modules



EcoStruxure Machine Expert - Basic

1 Modicon M221/M221 Book logic controller
2 Modicon TM3 digital I/O modules
3 Modicon TM3 analog 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 modules (transmitter and receiver)
7 TM3 bus expansion cable

Note
(1) Depending on the type of TM3 expansion modules used
(2) The majority of previous generation TM2 modules can also be used - refer to the M221 product catalogue for compatibility

Modicon M221 logic controllers

Product configurator on se.com/nz

Compact and Modular logic controllers

TM221CE16R

TM221CE40T

Compact M221 logic controllers

Total logic I/O	Logic inputs (1)	Analogue inputs (2)	Logic outputs (3)	Communication ports (4)		Reference
				Ethernet	Serial	
100…240V ∿ supply						
16	9	2	7 relay	-	1	**TM221C16R**
				1	1	**TM221CE16R**
24	14	2	10 relay	-	1	**TM221C24R**
				1	1	**TM221CE24R**
40	24	2	16 relay	-	1	**TM221C40R**
				1	1	**TM221CE40R**
24V ⎓ supply						
16	9	2	7 source	-	1	**TM221C16T**
				1	1	**TM221CE16T**
			7 sink	-	1	**TM221C16U**
				1	1	**TM221CE16U**
24	14	2	10 source	-	1	**TM221C24T**
				1	1	**TM221CE24T**
			10 sink	-	1	**TM221C24U**
				1	1	**TM221CE24U**
40	24	2	16 source	-	1	**TM221C40T**
				1	1	**TM221CE40T**
			16 sink	-	1	**TM221C40U**
				1	1	**TM221CE40U**

TM221M16RG

TM221ME32TK

Modular M221 logic controllers

Total logic I/O	Logic inputs (1)	Analogue inputs (2)	Logic outputs (3)	Communication ports (4)		I/O connector type	Reference
				Ethernet	Serial		
24V ⎓ supply							
16	8	2	8 relay	-	2	Screw	**TM221M16R**
						Spring	**TM221M16RG**
				1	1	Screw	**TM221ME16R**
						Spring	**TM221ME16RG**
			8 source	-	2	Screw	**TM221M16T**
						Spring	**TM221M16TG**
				1	1	Screw	**TM221ME16T**
						Spring	**TM221ME16TG**
32	16	2	16 source	-	2	HE10	**TM221M32TK (5)**
				1	1	HE10	**TM221ME32TK (5)**

I/O expansion modules

Description	Function	Reference
I/O expansion modules	Refer to Modicon TM3 I/O expansion modules	-

Note

(1) Sink/source 24V ⎓, including 4 high-speed inputs
(2) 0…10V analogue input
(3) Sink/source transistor output versions include 2 high-speed outputs
(4) Each M221 logic controller also has an embedded USB mini-B programming port
(5) Supplied without HE10 I/O connectors. Refer to Telefast Modicon ABE7 pre-wired connection cables and sub-bases

M

Accessories

TMC2AI2

Cartridges for Compact M221 logic controllers (1)

Description	Function	Reference
I/O	2x analogue inputs 0…10V or 4…20mA	**TMC2AI2**
	2x analogue outputs 0…10V	**TMC2AQ2V**
	2x analogue outputs 4…20mA	**TMC2AQ2C**
	2x temperature inputs type K, J, R, S, B, E, T, N, C, PT100, PT1000, NI100, NI1000	**TMC2TI2**
Communication	1x serial link	**TMC2SL1 (2)**
Specific application	Hoisting with 2x analogue inputs	**TMC2HOIS01**
	Packaging with 2x analogue inputs	**TMC2PACK01**
	Conveyor with 1x serial link	**TMC2CONV01 (2)**

TMASD1

Programming accessories

Description	Reference
EcoStruxure™ Machine Expert - Basic Formerly known as SoMachine Basic. For Windows® Professional Edition 7,8, 8.1, and Windows 10, 32 or 64 bit operating system. Available to download for free from our website www.se.com/nz/en/download/document/Machine_Expert_Basic/	**-**
Programming cable PC USB Type A to M221 USB Mini-B port, 3m	**TCSXCNAMUM3P**
Memory card 256Mb SD memory card for application backup and program transfer	**TMASD1**

TMH2GDB

A9A15151

TMAM2

Remote graphic display (3)

Description	Length	Reference
Remote graphic display Multi-function HMI for M221 controller via SL/SL1 serial port. Backlit monochrome LCD display, 5 lines of 20-35 characters or graphics, 4x service keys, up to 100 HMI pages. Panel mount via 22mm hole IP65, or inside a panel with accessory.		**TMH2GDB (4)**
Connection cables	1m	**VW3A1104R10**
Used between TMH2GDB remote display unit and M221 controller	2.5m	**XBTZ9980**
Base for mounting graphic display inside a panel Base with 22mm hole for mounting graphic display on 35mm DIN rail		**A9A15151**

Accessories and replacement parts

Description		Qty	Reference
Panel mounting kit for M221 or TM3 modules		10 pcs	**TMAM2**
Replacement terminal blocks	Power supply terminals	8 pcs	**TMAT2PSET**
	M221 Compact I/O terminals	8 pcs	**TMAT2CSET**
	M221 Modular and TM3 I/O screw terminals	8 pcs	**TMAT2MSET**
	M221 Modular and TM3 I/O spring terminals	8 pcs	**TMAT2MSETG**
Spare battery holder		2 pcs	**TMAHOL02**
Replacement battery - replace with Panasonic BR2032 only		-	**-**

Notes

(1) Maximum of one cartridge for 16 and 24 I/O controllers, and two cartridges for 40 I/O controllers, only one of which can be a communication cartridge.
(2) One cartridge per controller.
(3) Also refer to Section N for Magelis HMIs.
(4) Remote graphic display must be connected to embedded serial link SL/SL1 port on M221 controller - no other serial devices can be connected to this port at the same time. Neither the serial link on the TMC2SL1 cartridge, nor the SL2 embedded serial link, can be used to connect the graphic display unit.

Modicon M241/251 logic controllers

Product configurator on se.com/nz

Dedicated high performance machine controllers
Programming via EcoStruxure Machine Expert software

M241 logic controllers

TM241CE24R

TM241CE40T

Total logic I/O	Logic inputs (1)	Analogue inputs	Logic outputs (2)	Communication ports (3)			Reference
				Ethernet	CANopen	Serial	
100…240V ∿ supply							
24	14	-	4 source, 6 relay	-	-	2	**TM241C24R**
				1	-	2	**TM241CE24R**
				1	1	2	**TM241CEC24R**
40	24	-	4 source, 12 relay	-	-	2	**TM241C40R**
				1	-	2	**TM241CE40R**
24V ⎓ supply							
24	14	-	10 source	-	-	2	**TM241C24T**
				1	-	2	**TM241CE24T**
				1	1	2	**TM241CEC24T**
			10 sink	-	-	2	**TM241C24U**
				1	-	2	**TM241CE24U**
				1	1	2	**TM241CEC24U**
40	24	-	16 source	-	-	2	**TM241C40T**
				1	-	2	**TM241CE40T**
			16 sink	-	-	2	**TM241C40U**
				1	-	2	**TM241CE40U**

M241 options and replacement parts

TMC4AI2

Description	Function	Reference
I/O cartridges	2x analogue inputs 0…10V or 4…20mA	**TMC4AI2**
	2x analogue outputs 0…10V or 4…20mA	**TMC4AQ2**
	2x temperature inputs RTD, TC temperature probes	**TMC4TI2**
Specific application	Hoisting with 2x analogue inputs	**TMC4HOIS01**
	Packaging with 2x analogue inputs	**TMC4PACK01**
Memory card	Industrial SD memory card 256MB	**TMASD1**
Replacement terminal blocks	M241 I/O connectors	**TMAT4CSET**
	M241 power supply terminals	**TMAT2PSET**
Replacement battery	Replace with Panasonic BR2032 only	**-**

M251 logic controllers

TMASD1

Total logic I/O	Logic inputs	Analogue inputs	Logic outputs	Communication ports (4)			Reference
				Ethernet	CANopen	Serial	
24V ⎓ supply							
-	-	-	-	3	-	1	**TM251MESE**
				2	1	1	**TM251MESC**

M251 options and replacement parts

TM251MESC

Description	Function	Reference
Memory card	Industrial SD memory card 256MB	**TMASD1**
Replacement terminal blocks	M251 power supply terminals	**TMAT2PSET**
Replacement battery	Replace with Panasonic BR2032 only	**-**

Notes

(1) Sink/source 24V⎓, including 8 high-speed inputs.
(2) Sink/source transistor output versions include 4 high-speed outputs.
(3) Each M241 logic controller also has an embedded USB mini-B programming port.
(4) Ethernet 1 (2x RJ45 ports with switch). For TM251MESE: Ethernet 2 (1x RJ45). For TM251MESC: CANopen (1x SUB-D9). Each M251 logic controller also has an embedded USB mini-B programming port.

M

Dedicated high performance machine controllers
Programming via EcoStruxure Machine Expert software

EcoStruxure
Machine Expert

Programming software

Description		Reference
EcoStruxure™ Machine Expert V1.1	Digital download	-
New generation single software environment to automate machines. Available to download from our website or on USB drive. 42 day trial period, after which a license is required for most functions.	Physical USB drive	**ESEMACS11**
EcoStruxure™ Machine Expert Licenses		-
Please contact Schneider Electric to discuss your licensing requirements		
Programming cable		**TCSXCNAMUM3P**
PC USB Type A to USB Mini-B port, 3m		

I/O expansion modules

Description	Function	Reference
I/O expansion modules	Refer to Modicon TM3 I/O expansion modules	-

TM4ES4

Communication modules

Description	Function	Reference
Ethernet switch module	Ethernet switch 4x RJ45 ports	**TM4ES4**
Profibus DP slave module	Profibus DP slave with 1x SUB-D9 connector	**TM4PDPS1**

M

Modicon M262 logic/motion controllers

IIoT ready machine controllers for high performance machines
Programming via EcoStruxure Machine Expert software

As a Machine Builder, manufacturing machines with logic or motion control and moving into the Industry 4.0 era, you are looking for a controller with embedded cloud connectivity that offers cybersecurity capability and supports monitoring, analytics, and predictive maintenance.

As the latest polyvalent controller for Logic and Motion with cloud protocols (MQTT, HTTP, JSON, OPC UA) and encryption (TLS), the Modicon M262 is made for you. Modicon controllers are a key part of our EcoStruxure Machine that provides complete architecture from Connected Products, Edge Control to Apps, Analytics, and services. Modicon M262 controllers embed Industrial Internet of Things (IIoT) protocols and encryption to provide direct cloud connectivity and digital services.

Digitisation

> Integrate your machine in any cloud and on-premise environment
> Structured networking with up to 5 separate Ethernet ports (2 embedded in the M262, and up to 3 additional ports with TMSES4) to allow easy integration into your plant, production line, ERP, MES, SCADA with open protocols like OPC UA, PackML or SQL.

Machine to Plant
> Easily integrate machines into the production line and plant, thanks to open protocols
> Allow direct communication with the IT system: Connect to SCADA, MES, ERP, CMMS, Web browser, etc.

Via OPC UA, SQL, FTPs, HTTPs, SNMP, SNTP, and PackML

Machine to Machine
> Improve machine interaction with bi-directional exchange between machines

OPC UA, NVL with Machine Expert protocol

Direct Machine to Cloud
> Without additional gateway, benefit from cloud apps, analytics, and services with EcoStruxure Machine Advisor
> MQTT and HTTP protocols, JSON and TLS encryption allow connection to other Schneider platforms or third-party cloud platforms

Use the Modicon M262 APIs and take advantage of IT capabilities such as email exchange, event management in the calendar, interaction with social networks, weather information, etc.

Machine to Human
> Improve and reduce commissioning and maintenance times

Web visu and Machine Assistant running on the Web server

> Structured networking with up to 5 separate Ethernet ports (2 embedded in the M262, and up to 3 additional ports with TMSES4) to allow easy integration into your plant, production line, ERP, MES, SCADA with open protocols like OPC UA, PackML or SQL

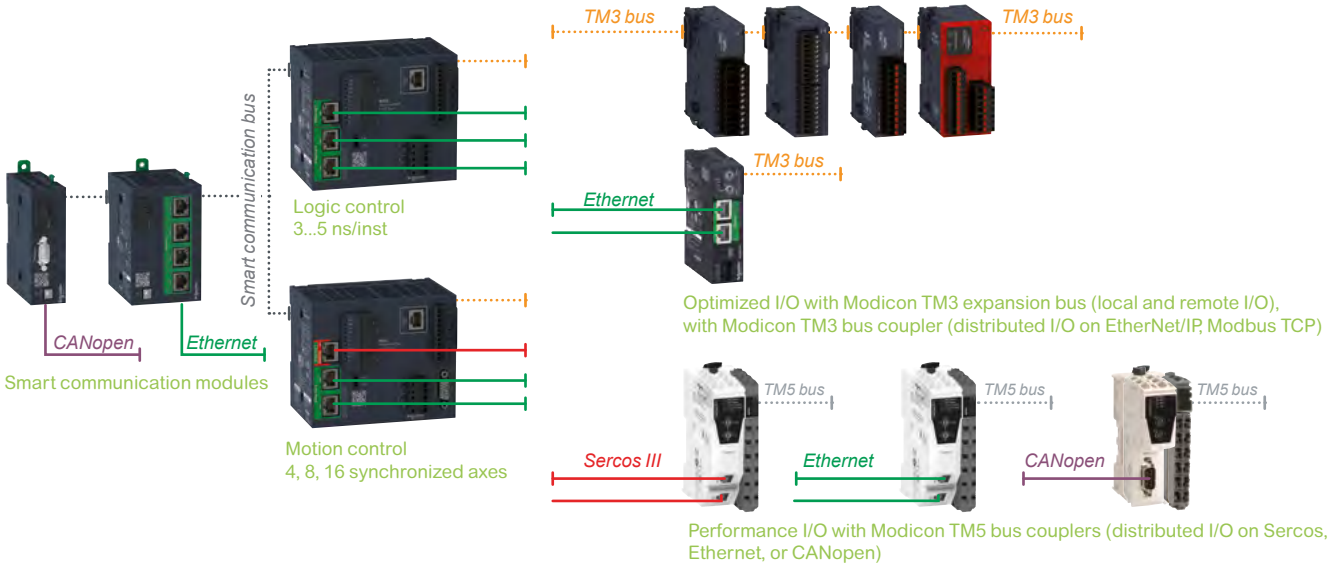
M

Modicon M262 logic/motion controllers

IIoT ready machine controllers for high performance machines
Programming via EcoStruxure Machine Expert software

Flexibility and scalability

> Automation 'à la carte' with smart communication modules
> Scalable performance - manage logic applications, synchronised motion, embedded safety, and cloud connectivity all in one controller
> I/O system adjusted to your needs, Optimised (Modicon TM3) for just enough architecture, or Performance (Modicon TM5) with high resolution, hot swap capability, etc.



Efficiency through smart engineering design

> Benefit from real-time automation fieldbus with Sercos for fast motion control, safety functions, and openess to other devices.
> One cable simplifies the architecture and fieldbus wiring. Manage EtherNet/IP and Sercos devices on the same cable.
> Simplified commissioning and diagnostics without software installation – “Machine Assistant”.

Protection, safety, and security

> Meet safety regulations with embedded safety motion controller and safety logic controller.
> Cybersecurity, including encrypted communications, network separation, Achilles certification, user access/ rights management, etc.
> Green Premium certified, our ecolabel compliant with environmental regulations.

M

Modicon M262 logic/motion controllers

IIoT ready machine controllers for high performance machines
Programming via EcoStruxure Machine Expert software

TM262L•0MESE8T

M262 logic/motion controllers

I/O	Execution speed ns/bool.inst. (1)	Synchronised axes (2)	Communication networks (3) Ethernet	Sercos	Serial	Reference
Logic controllers 24V ⎓ supply						
4 fast inputs, 4 fast outputs	5	-	2	-	1	**TM262L10MESE8T**
	3	-	2	-	1	**TM262L20MESE8T**
Motion controllers 24V ⎓ supply						
4 fast inputs, 4 fast outputs, 1 encoder input (4)	5	4 axes	2	1	1	**TM262M15MESS8T** (2)
	3	8 axes	2	1	1	**TM262M25MESS8T** (2)
	3	16 axes	2	1	1	**TM262M35MESS8T** (2)

TM262M•5MESE8T

M262 options and replacement parts

Description	Function	Reference
Memory card	Industrial SD memory card 256MB	**TMASD1**
Replacement terminal blocks	M262 set of screw connectors	**TMA262SET8S**
	M262 set of spring connectors	**TMA262SET8G**

TMSES4 TMSCO1

TMS smart communication modules

Description		Reference
Ethernet smart communication module	For adding an Ethernet network. Equipped with 4x RJ45 switched ports: -- IIoT-ready -- Network isolation -- Ethernet Gigabyte exchange -- Cybersecurity Achilles L1	**TMSES4**
CANopen smart communication module	For adding a CANopen master network, 1x SUB-D9 connector	**TMSCO1**

I/O expansion modules

Description		Reference
Modicon TM3 I/O expansion modules	Refer to Modicon TM3 I/O expansion modules	-
Modicon TM5 high-performance and safe IP20 modular I/O system (5)	Refer to Modicon TM5 catalogue	-
Modicon TM7 high-performance and safe IP67 distributed I/O system (5)	Refer to Modicon TM7 catalogue	-

EcoStruxure
Machine Expert

Programming software

Description		Reference
EcoStruxure™ Machine Expert V1.1	Digital download	-
New generation single software environment to automate machines. Available to download from our website or on USB drive. 42 day trial period, after which a license is required for most functions.	Physical USB drive	**ESEMACS11**
EcoStruxure™ Machine Expert Licenses		-
Please contact Schneider Electric to discuss your licensing requirements		
Programming cable		**TCSXCNAMUM3P (6)**
PC USB Type A to USB Mini-B port, 3m		

Notes

(1) Execution speed: nano seconds / boolean instruction.
(2) Contact Schneider Electric for motion control applications, not all offers are available in New Zealand. Servo axes co-ordinated over Sercos III motion bus, 4 axes (1ms), 8 or 16 axes (2ms).
(3) For Logic models: Eth. 1 (1x RJ45) 100 Mb/s with EtherNet/IP and Modbus TCP, Eth. 2 (2x RJ45) 1 Gb/s with EtherNet/IP and Modbus TCP. For Motion models: Eth. 1 (1x RJ45) 100 Mb/s with EtherNet/IP, Modbus TCP, and Sercos III (one cable), Eth. 2 (2x RJ45) 1 Gb/s with EtherNet/IP and Modbus TCP. For EtherNet/IP and Modbus TCP only one master allowed. Each M262 logic controller also has an embedded USB mini-B programming port.
(4) Incremental/SSI, 5 VDC/24 VDC encoder interface.
(5) Contact Schneider Electric. Not all TM5/TM7 offers are available in New Zealand.
(6) Unshielded, non-grounded cable, for temporary connections only. For permanent connections, use cable reference BMXXCAUSBH018.

Modicon TM3 I/O expansion modules

Digital I/O modules

TM3DI8

TM3DI8

TM3 digital input modules

Number of inputs	Input type	I/O connector type	Reference
8	24V ⎓ sink/source	Screw	**TM3DI8**
		Spring	**TM3DI8G**
	120V ∿	Screw	**TM3DI8A**
16	24V ⎓ sink/source	Screw	**TM3DI16**
		Spring	**TM3DI16G**
		HE10	**TM3DI16K (1)**
32	24V ⎓ sink/source	HE10	**TM3DI32K (1)**

TM3DQ8R

TM3DQ32TK

TM3 digital output modules

Number of outputs	Output type	Output current	I/O connector type	Reference
8	Relay	2A	Screw	**TM3DQ8R**
			Spring	**TM3DQ8RG**
	Transistor source	0.5A	Screw	**TM3DQ8T**
			Spring	**TM3DQ8TG**
	Transistor sink	0.5A	Screw	**TM3DQ8U**
			Spring	**TM3DQ8UG**
16	Relay	2A	Screw	**TM3DQ16R**
			Spring	**TM3DQ16RG**
	Transistor source	0.5A	Screw	**TM3DQ16T**
			Spring	**TM3DQ16TG**
		0.1A	HE10	**TM3DQ16TK (1)**
	Transistor sink	0.5A	Screw	**TM3DQ16U**
			Spring	**TM3DQ16UG**
		0.1A	HE10	**TM3DQ16UK (1)**
32	Transistor source	0.1A	HE10	**TM3DQ32TK (1)**
	Transistor sink	0.1A	HE10	**TM3DQ32UK (1)**

TM3DM24R

TM3 mixed digital I/O modules

Number of I/O	Input type	Output type	I/O connector type	Reference
8	4x 24V ⎓ sink/source	4x relay 2A	Screw	**TM3DM8R**
			Spring	**TM3DM8RG**
24	16x 24V ⎓ sink/source	8x relay 2A	Screw	**TM3DM24R**
			Spring	**TM3DM24RG**

M

Notes

(1) Supplied without HE10 I/O connectors. Refer to Telefast Modicon ABE7 pre-wired connection cables and sub-bases.

Analogue I/O modules

TM3AI4

TM3 analogue input modules

Type of input	Input range	Number of inputs	Resolution	I/O connector type	Reference
V/mA	-10…+10VDC 0…10VDC 0…20mA, 4…20mA	2	16 bit	Screw	**TM3AI2H**
				Spring	**TM3AI2HG**
		4	12 bit	Screw	**TM3AI4**
				Spring	**TM3AI4G**
		8	12 bit	Screw	**TM3AI8**
				Spring	**TM3AI8G**
Temperature or V/mA (1)	Thermocouple (2) Thermistor -10…+10VDC 0…10VDC 0…20mA, 4…20mA	4	16 bit	Screw	**TM3TI4**
				Spring	**TM3TI4G**
Differential temperature	Thermocouple (non-isolated)	4	16 bit	Screw	**TM3TI4D**
				Spring	**TM3TI4DG**
Temperature	Thermocouple (2) PTC and NTC thermistors	8	16 bit	Screw	**TM3TI8T**
				Spring	**TM3TI8TG**

TM3AQ4

TM3 analogue output modules

Type of output	Output range	Number of outputs	Resolution	I/O connector type	Reference
V/mA	-10…+10VDC 0…10VDC 0…20mA, 4…20mA	2	12 bit	Screw	**TM3AQ2**
				Spring	**TM3AQ2G**
		4	12 bit	Screw	**TM3AQ4**
				Spring	**TM3AQ4G**

TM3AM6

TM3 mixed analogue I/O modules

Type of I/O	Input range	Output range	Resolution	I/O connector type	Reference
2x inputs: temp. or V/mA (1), 1x output: V/mA	Thermocouple (2) Thermistor -10…+10VDC 0…10VDC 0…20mA, 4…20mA	-10…+10VDC 0…10VDC 0…20mA, 4…20mA	16 bit input, 12 bit output	Screw	**TM3TM3**
				Spring	**TM3TM3G**
4x inputs: V/mA, 2x outputs: V/mA	-10…+10VDC 0…10VDC 0…20mA, 4…20mA	-10…+10VDC 0…10VDC 0…20mA, 4…20mA	12 bit	Screw	**TM3AM6**
				Spring	**TM3AM6G**

Notes

(1) Each input can be configured independently for temperature or voltage/current.

(2) For use with isolated thermocouples only. Use differential temperature input module TM3TI4D for non-isolated thermocouples.

Modicon TM3 I/O expansion modules

Expert modules

TM3XHSC202

TM3 expert counter modules (M262)

Description	Inputs	Outputs	"I/O connector type"	Reference
High speed counter module	10 fast inputs	8 fast outputs	Screw	**TM3XHSC202**
			Spring	**TM3XHSC202G**
High speed counter module with event management	10 fast inputs	8 fast outputs	Screw	**TM3XFHSC202**
			Spring	**TM3XFHSC202G**

TM3XTYS4

TM3 expert TeSys motor starter module (1)

Description		Reference
TM3 TeSys motor starter expert module RJ45 Expert module for control of up to 4x TeSys motor starters via RJ45 cables to TeSys U parallel wiring modules		**TM3XTYS4**
Parallel wiring module for TeSys U		**LUFC00**
Connection cables RJ45	0.3m	**LU9R03**
	1m	**LU9R10**
	3m	**LU9R30**

TM3SAFL5R

TM3 functional safety modules

Number of safety functions	Functions	Maximum safety level	I/O connector type	Reference
1	E-stop, guard/limit switches	Cat 3, PLd, SIL2	Screw	**TM3SAC5R**
			Spring	**TM3SAC5RG**
1	E-stop, guard/limit switches	Cat 4, PLe, SIL3	Screw	**TM3SAF5R**
			Spring	**TM3SAF5RG**
2	E-stop, guard/limit switches, light curtains (without muting)	Cat 3, PLd, SIL2	Screw	**TM3SAFL5R**
			Spring	**TM3SAFL5RG**
3	E-stop, guard/limit switches, light curtains, safety mats/edges	Cat 4, PLe, SIL3	Screw	**TM3SAK6R**
			Spring	**TM3SAK6RG**

TM3XTRA1

TM3XREC1

TM3 bus expansion modules

Description		Reference
TM3 bus transmitter module		**TM3XTRA1**
TM3 bus receiver module		**TM3XREC1**
TM3 bus expansion cables	2m	**490NTW00002**
	5m	**490NTW00005**

TM3BCEIP

TM3 bus coupler modules (2)

Description	Reference
TM3 Ethernet bus coupler module Create remote TM3 I/O islands via EtherNet/IP or Modbus TCP network. Embedded webserver with cybersecurity Achilles L1. Compatible with TM3 expansion modules, except counter modules. Compatible controllers: M221 (2), M241/251/262 controllers configured via EcoStruxure Machine Expert.	**TM3BCEIP**

Remote Ethernet TM3 I/O island with TM3BCEIP bus coupler and up to 7 TM3 I/O modules

Notes

(1) Refer to Section H to complete the TeSys motor starter solution.

(2) Available Q1 2020: compatibility with M241/251/262 controllers, configuration via EcoStruxure Machine Expert. Available Q2 2020: compatibility with M221 controllers, embedded web server, bus couplers for CANopen and Modbus serial networks.

M

IP20 sub-bases and cables

ABFTE20EP100

Connection cables M221/TM3•••K HE10 to sub-bases

Description	Compatibility	Connector	Length	Reference
Cables for digital I/O to flying leads	TM221M•••TK TM3D•••TK	HE10 - flying lead	3m	**TWDFCW30K**
			5m	**TWDFCW50K**
Cables for digital inputs to 16 channel input bases	TM221M•••TK TM3DI••K	HE10 - HE10	1m	**ABFTE20EP100**
			2m	**ABFTE20EP200**
			3m	**ABFTE20EP300**
Cables for digital outputs to 16 channel output bases	TM221M•••TK TM3DQ••TK	HE10 - HE10	1m	**ABFTE20SP100**
			2m	**ABFTE20SP200**
			3m	**ABFTE20SP300**

ABE7H20E000

Passive connection sub-bases for discrete I/O

Function	Compatibility	Channels	Terminals per channel	Polarity distribution	LED status	Reference
Input (1) or output (2)	TM221M•32TK TM3D•••TK	16	1	No	No	**ABE7H20E000**
			1	No	Yes	**ABE7H16C11**
			2	0 or 24V	Yes	**ABE7H16C21**
			3	0 or 24V	Yes	**ABE7H16C31**
Input with isolator and fuse per channel	TM3DI••TK	16	2	24V	Yes	**ABE7H16S43**
Output with isolator and fuse per channel	TM3DQ••TK	16	2	0V	Yes	**ABE7H16F43**

ABE7H16S43

Electromechanical relay output sub-bases for discrete outputs (3)

Description	Compatibility	Channels	Number of contacts	Polarity distribution	Output current / relay size	Reference
Soldered relay output	TM221M•32TK TM3D•••TK	16	1 N/O	1 common per 8 channels	2A	**ABE7R16S111**
				Volt-free	5A	**ABE7R16S210**
Plug-in relay output (4)	TM221M•32TK TM3D•••TK	16	1 N/O	1 common per 4 channels	5A / 5mm	**ABE7R16T111**
				Volt-free	5A / 10mm	**ABE7R16T210**
	TM3DQ••TK	16	1 N/C	Volt-free	5A / 10mm	**ABE7R16T230**

ABE7R16T230

Replacement plug-in electromechanical and solid state relays

Description	Relay size	Control voltage	Number of contacts	Output current	Qty	Reference
Electromechanical relays	5mm	24VDC	1 N/O	5A	4	**ABR7S11**
	10mm	24VDC	1 N/O	5A	4	**ABR7S21**
		24VDC	1 N/C	5A	4	**ABR7S23**
Solid state relays	5mm	24VDC	-	2A	4	**ABS7SC1B**
	10mm	24VDC	-	0.5A	4	**ABS7SC2E**

Notes

(1) For inputs use ABFTE20EP•••• cables.

(2) For source outputs use ABFTE20SP•••• cables. Not compatible with sink outputs.

(3) Other versions are available, please refer to the Telefast ABE7 catalogue.

(4) Supplied with plug-in electromechanical relays. Relays can be replaced with solid state relays of the same width. It is possible to have both electromechanical and solid state relays in the same sub-base.

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Modicon CPUs

Product configurator on se.com/nz

M340 – Complex machines and mid sized infrastructures

Modicon M340

Extremely compact-shaped, the new PLC Modicon M340 brings in a small box the flexibility and services of a high-end PLC. In the heart of your application, it will give you integrated Plug&Work solutions with other Schneider Electric devices. At your desk, the great capacity of the Unity offer will ease and shorten your programming time. Modicon M340 is really the smallest giant…

Key applications:

- Complex machines (packaging, textile, material handling, hoisting…)
- Manufacturing
- Infrastructures (water/wastewater, etc)
- Hardened versions with conformal coatings and extended operating range of -25 to +70 Deg C. Contact your sales representative for more information.

BMXP341000

BMX P34 processor modules

Modicon M340 processor modules are supplied with the BMX RMS 008MP Flash memory card. This card can be replaced by another card featuring a file storage option.

Standard BMX P340 10

I/O capacity	Memory capacity	Max. no. of network and bus modules	Integrated communication ports	Reference
512 discrete I/O 128 analogue I/O 20 application-specific channels	2,048Kb integrated	2 Ethernet networks 2 AS-Interface buses	Modbus serial link	**BMXP341000**

Note: 2 racks maximum with BMXP341000 processor in multi rack configuration.

BMXP342020

BMXP3420102

Performance BMX P340 20

I/O capacity	Memory capacity	Max. no. of network and bus modules	Integrated communication ports	Reference
1,024 discrete I/O 256 analogue I/O 36 application-specific channels	4,096Kb integrated	2 Ethernet networks 4 AS-Interface buses	Modbus Serial link	**BMXP342000**
			Modbus Serial link CANopen bus	**BMXP3420102**
			Modbus serial link Ethernet TCP/IP network	**BMXP342020**
			Ethernet TCP/IP network CANopen bus	**BMXP3420302**

Note: 4 racks maximum with BMXP3420●●●● processor in multi rack configuration.

BMXXCAUSB0●●

Separate parts

Description	Use		Length	Reference
	From	To		
Terminal port/USB cordsets	Mini B USB port on the Modicon M340 processor	Type A USB port on: > PC terminal > HMI terminal	1.8m	**BMXXCAUSBH018**
			4.5m	**BMXXCAUSBH045**

BMXRMS008MP/MPF

Replacement parts

Description	Use	Processor compatibility	Reference
Memory card 8Mb	Supplied as standard with each processor, used for: > Back-up of program, constants, symbol and data > Activation of class B10 web server	BMXP341000/20●0	**BMXRMS008MP**

N

M340 specific X80 modules

BMXNOE0100

BMXNOC0401

M340 Specific network modules

Description	Data rate	Reference
Ethernet TCP/IP network module	10/100Mbps	**BMXNOE0100**
		BMXNOE0110
Ethernet IP and Modbus TCP module	10/100Mbps	**BMXNOC0401**

Presentation

The modules are standard size occupying a single slot in the rack of the M340 platform.
BMXNOC0401 has a built in 4 port switch.

Characteristics

		BMXNOE0100	BMXNOE0110	BMXNOC0401
		Rack viewer access for diagnostics		
Configurable web server		Yes	–	–
Advanced Ethernet services include:	I/O Scanning	Yes	Yes	Yes
	Global Data	Yes	Yes	–
	FDR Server	Automatic assignment of IP Address and network parameters		
	SNMP network Administrator	Yes	Yes	Yes
	SOAP/XML Web Servers	–	Server	–
	Bandwidth Management	Yes	Yes	Yes
IGMP		–	–	Yes
QOS tagging		–	–	Yes
RSTP		–	–	Yes
Port Mirroring		–	–	Yes
Physical interface		10BASE-T/100BASE-T (RJ45)		
Data Rate		10/100Mbits auto sensing		
Medium		Twisted pair		
Conformity to standards		UL 508, CSA 22.2- 142, CSA 22.2- 213, IEC61131-2, OVDA		

N

Modicon CPUs

Product configurator on se.com/nz

M580 – Advanced machines and large infrastructures

Modicon M580

The world's first ePAC, with Ethernet built into its core. The PAC is designed for medium to large process control systems. The ethernet backplanes allow for transparent communication from the field to the control room. Based on open industry standard protocols. The M580 utilises the robust and proven X80 hardware. Memory ranges from 4Mb to 64Mb RAM.

All CPUs support Distributed I/O (DIO) communications such as I/O scanning Advantys islands or drives. Selected CPUs also support Ethernet Remote I/O (RIO) which guarantees updates per PAC scan. RIO uses the X80 I/O platform.

A 4GB SD card can also be installed to allow additional data storage. Hardened versions are available.

Key Applications/Customers:

- > Mining and metals
- > Infrastructure
- > Automotive
- > Substation automation
- > Food and beverage
- > Pharmaceutical
- > Petrochemical

BMEP586040
Processor

Processors

Type of processor	Memory	Max local racks	Integrated coms	Reference
Level 1	4Mb, 384K Data	4	USB, Ethernet, DIO	**BMEP581020**
Level 2	8Mb, 768K Data	4	USB, Ethernet, DIO	**BMEP582020**
Level 2	8Mb, 768K Data	4	USB, Ethernet, DIO, RIO	**BMEP582040**
Level 3	12Mb, 1024K Data	8	USB, Ethernet, DIO	**BMEP583020**
Level 3	12Mb, 1024K Data	8	USB, Ethernet, DIO, RIO	**BMEP583040**
Level 4	16Mb, 2048K Data	8	USB, Ethernet, DIO	**BMEP584020**
Level 4	16Mb, 2048K Data	8	USB, Ethernet, DIO, RIO	**BMEP584040**
Level 5	24Mb,4096K Data	8	USB, Ethernet, DIO, RIO	**BMEP585040**
Level 6	64Mb,4096K Data	8	USB, Ethernet, DIO, RIO	**BMEP586040**

BMXRMS004GPF

Memory card

Description	Use	Reference
4Gb SD card	Additional user data storage	**BMXRMS004GPF**

M580 Specific network modules

Description	Reference
3 port dual protocol ethernet module	**BMENOC0301**
	BMENOC0311

Characteristics

	BMENOC0301	BMENOC0311
MB TCP	Yes	Yes
Ethernet IP	Yes	Yes
I/O Scanning	Yes	Yes
IGMP	Yes	Yes
QOS	Yes	Yes
RSTP	Yes	Yes
Port Mirroring	Yes	Yes
Factorycast web server		Yes
Backplane communications	Ethernet	Ethernet

Note: M580 BME Ethernet modules require an Ethernet back plane BMEXBP●●●●●

BMENOC0301

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M580 Hot Standby redundancy

High-availability system with M580 HotStandby redundancy

The high-availability system is used for more demanding applications, in terms of the availability of their control/command system, as no interruption of the process can be tolerated. This system helps to ensure global availability of the redundant CPU and Ethernet I/O devices.

2 PLC racks (“Primary” and “Standby”) with identical hardware configurations, based on BMEH58**40 Unity redundant CPUs, connected via a high-speed (1Gbps) link (copper or fiber optic) via SFP sockets.

The “Primary” PLC executes the application program and controls the I/O, while the “Standby” PLC remains in the background. In the event of a detected error affecting the “Primary” PLC, the “Standby” system switches over automatically, changing over execution of the application program and control of the I/O to the “Standby” PLC with an up-to-date data context. Once the changeover is complete, the “Standby” PLC becomes the “Primary” PLC. Once the detected error has been cleared on the other PLC and it has been reconnected to the standby system, it acts as the “Standby” PLC.The changeover is performed smoothly at the outputs and is completely transparent to the process.

The high-availability system with Unity Pro software increases productivity by minimising process downtime.

BMEH●●●●●● Processor

Modicon M580 redundant processors

Type of processor	Memory	Max RIO drops	Integrated coms	Reference
Level 2	8Mb,768K Data	8	USB, Ethernet, DIO, RIO	**BMEH582040**
Level 4	16Mb,4096K Data	16	USB, Ethernet, DIO, RIO	**BMEH584040**
Level 6	64Mb,4096K Data	31	USB, Ethernet, DIO, RIO	**BMEH586040**

490NAC0100 490NAC0201

Accessories

Description	Use	Cable medium	Reference
HSBY link SFP Socket	To be inserted in pair of 2 redundant processor	RJ45 Copper	**490NAC0100**
		Single mode fiber	**490NAC0201**

Note: SFP sockets are used to choose the medium of the Hot Standby link with 1 Gbps speed.

BMEH58●040K Kit

HotStandby kits

Description	Composition	Reference
HSBY kits with 2 HSBY processors and 2 SFP sockets	2 BMEH582040 redundant M580 processors 2 490NAC0100 RJ45 SFP sockets	**BMEH582040K**
	2 BMEH584040 redundant M580 processors 2 490NAC0100 RJ45 SFP sockets	**BMEH584040K**

Note: M580 BME modules require an Ethernet back plane BMEXBP●●●●

Redundant AC power supply BMXCPS4002 & Dual power supply backplane BMEXBP0602/1002 are also available for higher system availability. Please refer M580 Specific Modules Page 20 for more details.

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M580 specific X80 modules

M580 Remote I/O adapters

Description	Version	Support	Reference
BusX X80 drop adapter	Standard	Quantum / M580	**BMXCRA31200**
	Performance	Quantum / M580	**BMXCRA31210**
Ethernet backplane X80 drop adapter	Performance	M580	**BMECRA31210**

Note: M580 BME modules require an Ethernet back plane BMEXBP●●●●

Characteristics

	BMXCRA31200	BMXCRA31210	BMECRA31210
Max analogue I/O	16	256	256
Max Digital I/O	128	1024	1024
Service port	No	Yes	Yes
CCOTF	No	Yes	Yes
Bus X rack	Yes	Yes	No
Ethernet rack	Yes	Yes	Yes
Timestamping	No	Yes	Yes
Expert modules	No	Yes	Yes
Ethernet only Module	No	No	Yes

Note For online configuration use BMXCRA31210 or BMECRA31210

Fibre Remote I/O modules

Fibre modules are used when the connections between drops is greater than 100m.
2 models are available, Multimode for up tp 2000m and Single mode for distances upto 15Km

Description	Characteristics	Reference
X80 I/O Fibre Module	Multimode	**BMXNRP0200**
	Singlemode	**BMXNRP0201**

Note: Coated version of NRP modules are also available.

M580 Profibus DP Master module

Description	Usage	Connection type	Reference
X80 Profibus DP Master Module	Profibus master module used for M580 platform fieldbus communication	Profibus DP 1 SUB-D 9-pin female	**PMEPXM0100***

Note: *Hardened ATEX version PMEPXM0100H also available.
This module require Control Expert software V14 & above for configuration along with Prosoft PCM Tool.

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Product configurator on se.com/nz

M580S- High End Safety ePAC

Unity V13 XLS

EcoStruxure Control Expert

Modicon M580 Safety configuration with a mix of standard X80 & Safety I/O

The Modicon M580 Safety is a M580 programmable automation controller (PAC) with embedded safety modules and functions. A standalone PAC includes a single CPU with a safety coprocessor that is mandatory for dual execution.

It is based on the X80 platform, and the Unity Pro / CE environment:

1. M580 safety CPU and coprocessor (SIL3 / PLe)
2. Redundant safety power supplies
3. Safety local and remote I/Os
4. Safety communications
5. Software libraries for process and machine safety

X80 safety modules are compatible with the M580 safety only. Safety I/O modules can be installed in the local backplane or in RIO drops.

All safety I/O modules supports SIL3 standards according to IEC61508.

M580 Safety Processor

Local I/O capacity	Maximum number of Ethernet modules	Device ports	Service port	Reference
2048 discrete I/O 512 analog I/O 64 application specific channels 8 MB (memory program)	2 Ethernet Networks	2 RIO/DIO	1	**BMEP582040S**
4,096 discrete I/O	4 Ethernet Networks	2 RIO/DIO	1	**BMEP584040S**
1,024 analog I/O 64 application-specific channels 16MB (memory program)	–	–	–	**BMEP58CPROS3**

BMEP584040S

(1) DRS: Dual ring switches. Supported ConnecXium switches TCSESM083F23F1/063F2CU1/063F2CS1

(2) The BMEP584040S has a door, which can be locked to prevent theft of the SD card.

Modicon M580 Hot Standby (HSBY) processors

Local I/O capacity (safety/non safety memory program)	Maximum no. of Ethernet modules	Device ports	Service port	Reference
8MB integrated	2	2 RIO/DIO	1	**BMEH582040S**
16MB integrated	4	2 RIO/DIO	1	**BMEH584040S**
64MB integrated	4	2 RIO/DIO	1	**BMEH586040S**

BMEP58CPROS3

Safety power supply module (1)

Line supply	Available power (2)			Nominal current	Reference
	3.3 V ⎓ (3)	24 V ⎓ rack (3)	Total	24 V ⎓ rack (3)	
100...240V ∿	18W	40W	40 W	1.67 A	**BMXCPS4002S**
100...150V ∿	18W	40W	40 W	1.67 A	**BMXCPS3522S**
24...48V ⎓	18W	40W	40 W	1.67 A	**BMXCPS4022S**

BMXSCPS4002S Redundant Safety Power supply

Description	Type	Composition	Reference
Set of two removable connectors	Spring-type	One 5-way terminal block and one 2-way terminal block	**BMXXTSCPS20**
	Cage clamp	One 5-way terminal block and one 2-way terminal block	**BMXXTSCPS10**

(1) Include a set of 2 cage clamp removable connectors. Spring-type connectors available seperately under reference BMXXTSCPS20.

(2) The sum of the power consumed on each voltage (3.3 V ⎓ and 24 V ⎓) must not exceed the total power of the module. See the power consumption table available on our website www.schneider-electric.com.

(3) 3.3 V ⎓ and 24 V ⎓ rack voltages for powering modules in the Modicon X80 I/O rack.

Unity V13 XLS

Note
Modicon M580 Safety requires at least Unity Pro XLS V13 for programming and configuration.

Product configurator on se.com/nz

X80 I/O Modules

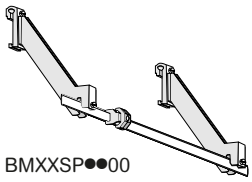
BMXCPS2010/3020

BMXCPS2000/3500

BMXXBP0400

BMXXBP0800

BMEXBP0400



BMXXSP●●00

STBXSP30●0

Power supply modules

Line supply	Available power (1)				Reference
	3.3V ⎓ (2)	24V ⎓ (2)	24V ⎓ (3)	Total	
24V ⎓ isolated	8.3W	16.5W	–	16.5W	**BMXCPS2010**
24…48V ⎓ isolated	15W	31.2W	–	31.2W	**BMXCPS3020**
100…240V ∿	8.3W	16.5W	10.8W	20W	**BMXCPS2000**
	15W	31.2W	21.6W	36W	**BMXCPS3500**
100…150 ⎓				36W	**BMXCPS3540T**

Separate parts

Description	Composition	Type	Reference
Pack of 2 removable connectors	One 5-way terminal block and one 2-way terminal block	Cage clamp	**BMXXTSCPS10**
		Spring-type	**BMXXTSCPS20**

Supplied as standard with each power supply.

X80 Standard racks (5)

Description	Type of module to be inserted	No. of slots (4)	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 Ethernet racks (6)

Description	Types of modules to be inserted	No of slots	Reference
Ethernet Rack	X80 I/O, expert and BMExxx modules	4	**BMEXBP0400**
		8	**BMEXBP0800**
		12	**BMEXBP1200**

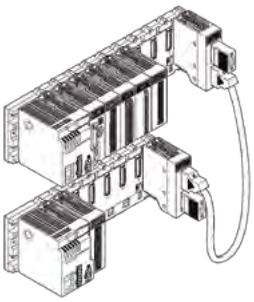
Accessories

Description	For use with	Reference
Shielding connection kits comprising: > a metal bar > two sub-bases > one set of spring clamping rings	BMXXBP0400 rack	**BMXXSP0400**
	BMXXBP0600 rack	**BMXXSP0600**
	BMXXBP0800 rack	**BMXXSP0800**
	BMXXBP1200 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 BMXXBP●●00 rack	**BMXXEM010**

Notes

(1) The sum of the absorbed power on each voltage (3.3V ⎓ and 24V ⎓) should not exceed the total power of the module.
(2) 3.3V ⎓ and 24V ⎓ voltages for powering Modicon M340 PLC modules.
(3) 24V ⎓ voltage for powering the input sensors (voltage available via the 2-way removable connector on the front panel).
(4) Number of slots taking the processor module, I/O modules and application-specific modules (excluding power supply module).
(5) X80 standard racks need to be PV02 or greater to be compatible with the M580 CPU.
(6) BME modules require an Ethernet back plane BMEXBP●●●●.
(7) Check X80 module for compatibility with selected CPU & backplane.

X80 I/O Modules



The M340 / X80 configurations

The M340 can support multi-rack systems comprising of:
2 racks for a station with BMX P34 1000 processor
4 racks for a station with BMX P34 2●●0 processor

Each rack must be equipped with :
A BMX CPS ●●●0 power supply.
A BMX XBE 1000 extension rack module. This module is inserted on the right of the rack in the slot marked XBE

The BMX XBE 1000 extension rack modules are connected to each other by bus X extension cordsets. Maximum total length is 30m.
The two extension modules located at the ends of the line must have a TSX TLY EX line terminator fitted on the unused connectors.

Note The processor module is always positioned in the rack address 0. However on a bus X the order of racks does not affect the operation. For example, the chaining order can be 0-1-2-3, 2-0-3-1, 3-1-2-0, …

BMXXBE1000

Extension rack

Description	Use	Reference
Extension rack module for Modicon M340	Standard module for each rack (XBE slot), allows the connection of extension racks	**BMXXBE1000**
Extension rack kit	Kit for configuration with 2 racks including: 2 BMX XBE 1000 extension rack modules 1 BMX XBC 008K daisy chaining cordset length 0.8 m 1 set of TSX TLY EX line terminators (lot of 2)	**BMXXBE2005**

Cordsets

Description	Use	Composition	Type of connector	Length	Reference
Daisy chaining cordsets bus X (total length 30 m max.)	Between BMX XBE 1000 extension rack modules	2 x 9-way SUB-D 9 connectors	Bent	0.8m	**BMXXBC008K**
				1.5m	**BMXXBC015K**
				3m	**BMXXBC030K**
				5m	**BMXXBC050K**
				12m	**BMXXBC120K**
			Straight	1m	**TSXCBY010K**
				3m	**TSXCBY030K**
				5m	**TSXCBY050K**
				12m	**TSXCBY120K**
				18m	**TSXCBY180K**
				28m	**TSXCBY280KT**

TSXTLYEX

Connecting accessories

Description	Use	Composition	Sold in lots of	Reference
Line terminators	Compulsory	Compulsory on both ends of Bus X network	2	**TSXTLYEX**

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X80 I/O Modules

BMXD●I160●

BMXDDI3202K
BMXDDI6402K

Discrete input modules

Type of current	Input voltage	Connection by (1)	IEC 1131-2 conformity	Modularity (No. of channels)	Reference
⎓	24V (positive logic)	Screw or spring-type 20-way removable terminal block	Type 3	16 isolated inputs	**BMXDDI1602**
		One 40-way connector	Type 3	32 isolated inputs	**BMXDDI3202K**
		Two 40-way connectors	Non-IEC	64 isolated inputs	**BMXDDI6402K**
	24V (negative logic)	Screw or spring-type 20-way removable terminal block		16 isolated inputs	**BMXDAI1602**
	48V (positive logic)	Screw or spring-type 20-way removable terminal block	Type 1	16 isolated inputs	**BMXDDI1603**
	125	Screw or spring-type 20-way removable terminal block		16 inputs	**BMXDDI1604T**
∿	24V	Screw or spring-type 20-way removable terminal block	Type 1	16 isolated inputs	**BMXDAI1602**
	48V	Screw or spring-type 20-way removable terminal block	Type 3	16 isolated inputs	**BMXDAI1603**
	100…120V	Screw or spring-type 20-way removable terminal block	Type 3	16 isolated inputs	**BMXDAI1604**
	100…120V	Caged or Spring type New 40 pin terminal block		16 Isolated inputs high form factor	**BMXDAI1614**
	200-240V	Caged or Spring type New 40 pin terminal block		16 Isolated inputs high form factor	**BMXDAI1615**
	220	Screw or spring-type 20-way removable terminal block	Type 2	8 inputs	**BMXDAI0805**

Note: Hardened & Coated versions of discrete input modules are also available.

BMXDDO16●2
BMXDRA0805/1605

Discrete output modules

Type of current	Output voltage	Connection by (1)	IEC 1131-2 conformity	Modularity (No. of channels)	Reference
⎓ solid state	24V/0.5A (positive logic)	Screw or spring-type 20-way removable terminal block	Yes	16 protected outputs	**BMXDDO1602**
	24V/0.5A (negative logic)	Screw or spring-type 20-way removable terminal block	Non-IEC	16 protected outputs	**BMXDDO1612**
	24V/0.1A (positive logic)	One 40-way connector	Yes	32 protected outputs	**BMXDDO3202K**
		Two 40-way connectors	Yes	64 protected outputs	**BMXDDO6402K**
	220	Screw or spring-type 20-way removable terminal block		8 outputs	**BMXDRA0804T**
∿ triac	100…240	Screw or spring-type 20-way removable terminal block	–	16 outputs	**BMXDAO1605**
∿ triac	24-240V	Caged or Spring type New 40 pin terminal block	–	16 Isolated Outputs High form factor	**BMXDAO1615**
⎓ or ∿ relay	12…24V⎓/ 3A, 24… 240V∿/3A	Screw or spring-type 20-way removable terminal block	Yes	8 non-protected outputs	**BMXDRA0805**
	24V⎓/2A 240V∿/2A	Screw or spring-type 20-way removable terminal block	Yes	16 non-protected outputs	**BMXDRA1605**
	12…240V∿/ 2A, 24… 125V⎓/0.3A	20-way removable terminal block, caged, screw or spring-type	Yes	8 normally open isolated relay outputs	**BMXDRA0815**
	24…240V∿/ 2A, 5… 125V⎓/0.3A	40-way removable terminal block, caged or spring-type	Yes	8 normally open/ nomrally closed isolated relay outputs	**BMXDRC0805**

BMXDDO3202K
BMXDDO6402K

Note: Hardened version of discrete output module's are also available.

Note
(1) By connector, module supplied with cover(s).

X80 I/O Modules

BMXDDM1602●
BMXDDM3202K

Discrete mixed I/O modules

Number of I/O	Connection via	No. and type of inputs	No. and type of outputs	IEC 1131-2 conformity	Reference
16	Screw or spring-type 20-way removable terminal block	8 (positive logic)	8, solid state 24V ⎓ /0,5A	Inputs, type 3	**BMXDDM16022**
			8, relay 24V ⎓ or 24…240V ∿	Inputs, type 3	**BMXDDM16025**
32	One 40-way connector	16 (positive logic)	16, solid state 24V ⎓ /0,1A	Inputs, type 3	**BMXDDM3202K**

BMXFTB20●0

Removable connection blocks

Description		Use	Reference
20-way removable terminal blocks	Cage clamp	For module with 20-way removable terminal block	**BMXFTB2000**
	Screw clamp	For module with 20-way removable terminal block	**BMXFTB2010**
	Spring-type	For module with 20-way removable terminal block	**BMXFTB2020**
40-way removable terminal blocks	Cage Clamp	For high form factor module with 40-way terminal block	**BMXFTB4000**
	Screw Clamp	For high form factor module with 40-way terminal block	**BMXFTB4020**

BMXFTW●01

Preformed cordsets for I/O modules with removable terminal block

Description	Composition	Length	Reference
Preformed cordsets with one end with flying leads	One 20-way terminal block One end with colour-coded flying leads	3m	**BMXFTW301**
		5m	**BMXFTW501**
		10m	**BMXFTW1001**
	One 40-way terminal block	3m	**BMXFTW305**
	One end with colour coded flying leads (1 x 40 wires,unshielded)	5m	**BMXFTW505**

BMXFCW●01

BMXFCW●03

BMXFCC●01

Preformed cordsets for I/O modules with 40-way connectors

Description	No. of sheaths	Composition	Cross-section	Length	Reference
Preformed cordsets with one end with flying leads	1x20 wires (16 channels)	One 40-way connector One end with colour-coded flying leads	0.324mm²	3m	**BMXFCW301**
				5m	**BMXFCW501**
				10m	**BMXFCW1001**
	2x20 wires (32 channels)	One 40-way connector Two ends with colour-coded flying leads	0.324mm²	3m	**BMXFCW303**
				5m	**BMXFCW503**
				10m	**BMXFCW1003**
Preformed cordsets for Telefast Advantys ABE 7 sub-bases	1x20 wires (16 channels)	One 40-way connector One HE 10 connector	0.324mm²	0.5m	**BMXFCC051**
				1m	**BMXFCC101**
				2m	**BMXFCC201**
				3m	**BMXFCC301**
				5m	**BMXFCC501**
				10m	**BMXFCC1001**
	2x20 wires (32 channels)	One 40-way connector Two HE 10 connectors	0.324mm²	0.5m	**BMXFCC053**
				1m	**BMXFCC103**
				2m	**BMXFCC203**
				3m	**BMXFCC303**
				5m	**BMXFCC503**
				10m	**BMXFCC1003**

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X80 I/O Modules

BMXAM●0●●0

BMXART0414

Analogue input modules

Input type	Input signal range	Resolution	Connection	No. of channels	Reference
Isolated high-level inputs	± 10V, 0…10V, 0…5V, 1…5V, ± 5V 0…20mA, 4…20mA, ± 20mA	16 bits	Via cage clamp, screw clamp or spring-type removable terminal block	4 fast	**BMXAMI0410**
Non-isolated high-level fast inputs	± 10V, 0…10V, 0…5V, 1…5V, ± 5V 0…20mA, 4…20mA, ± 20mA	16 bits	28-way connector	8	**BMXAMI0800**
Isolated high-level fast inputs	± 10V, 0…10V, 0…5V, 1…5V, ± 5V 0…20mA, 4…20mA, ± 20mA	16 bits	28-way connector	8	**BMXAMI0810**
Isolated low-level inputs	Temperature probe, thermocouple ± 40mV, ± 80mV, ± 160mV, ± 320mV, ± 640mV, ±1.28V 0…400 Ω 0…4000 Ω	15 bits + sign	40-way connector	4	**BMXART0414**
				8	**BMXART0814**

Analogue output module

Output type	Output signal range	Resolution	Connection	No. of channels	Reference
Isolated high-level outputs	± 10V, 0…20mA, 4…20mA	16 bits	Via cage clamp, screw clamp or spring-type removable terminal block	2	**BMXAMO0210**
Isolated high-level fast outputs	± 10V, 0…20mA, 4…20mA	16 bits	20-way connector	4	**BMXAMO0410**
Non isolated high-level fast outputs	0-20mA, 4-20mA	16 bits	20-way connector	8	**BMXAMO0802**

Mixed analogue I/O module

Channel type	Signal range	Resolution	Connection	No. of channels	Reference
Mixed I/O, non-isolated	± 10V, 0…10V, 0…5V, 1…5V, 0…20mA, 4…20mA	12 bits or 10 bits depending on the range	Via cage clamp, screw clamp or cage spring-type removable	I: 4 Q: 2 terminal block	**BMXAMM0600**

Notes

The shielding on the cordsets carrying the analogue signals must always be connected to the **BMXXSP●●00** shielding connection kit mounted under the rack holding the analogue modules.

The **BMXART0814** 8-channel module requires two **ABE7CPA412** sub-bases and two **BMXFCA●●2** cordsets.

X80 I/O Modules

BMXFTB20●0

BMXFTW●01S

Connection accessories for analogue modules (1)

Description	For use with modules	Type, composition	Length	Reference
20-way removable terminal blocks	BMXAMI0410	Cage clamp	–	**BMXFTB2000**
	BMXAMO0210	Screw clamp	–	**BMXFTB2010**
	BMXAMM0600	Spring-type		**BMXFTB2020**
28-way removable terminal blocks	BMXAMI0800	Spring-type		**BMXFTB2820**
	BMXAMI0810	Cage clamp		**BMXFTB2800**
Preformed cordsets	BMXAMI0410 BMXAMO0210 BMXAMM0600	One 20-way removable terminal block One end with colour-coded flying leads	3m	**BMXFTW301S**
			5m	**BMXFTW501S**
	BMXART0414 BMXART0814 (2)	One 40-way connector One end with colour-coded flying leads	3m	**BMXFCW301S**
			5m	**BMXFCW501S**
	BMXAMI0800 BMXAMI0810 BMXAMI0800 BMXAMI0810	One FTB2820 and 1 DB 25 for connection to telefast ABE7CPA02/03/31/31E	1.5m	**BMXFTA150**
			3.0m	**BMXFTA300**
	BMXAMO0802	One FTB2020 and 1DB25 for connection to telefast ABE7CPA02	1.5m	**BMXFTA152**
			3.0m	**BMXFTA302**

BMXETM0200H

Unity V11

TMC Expert frequency input module

The new module is available on Modicon M340 and M580 platforms designed for frequency monitoring of the turbine shaft and diesel engines etc., and provides the following benefits to user for TMC applications:

- Fast and accurate frequency measurement
- Frequency measurement range from minimum 1Hz up to maximum 500 KHz with input filters
- Support to a variety of sensor and signal input types, including MPU, APU, PT and Encoder
- Dedicated functions such as Pattern Recognition, Jerk and Acceleration Detection, Phase Angle and Ratio Detection etc.
- Easy to use with Scaling of Frequency Input for RPM measurement, Reflex Output and Broken Wire Detection etc.

Description	Input/output	Frequency measurement range	Reference
H Turbomachinery Frequency Input 2 Channel	2 Channels of frequency Input/24VDC reflex digital Output per channel	1 Hz to 500KHz with input filters	**BMXETM0200H**

Note: Unity Software Version 11 & above is used for programming this module.

Time Stamping Input Module

BMXERT1604T

Description	Input Type	Resolution	Reference
Multifunction time stamping input module	16 Discrete Inputs	1ms (Between two different inputs in the same source module)	**BMXERT1604T**

Note : This module can be placed either in an RIO drop or in a local rack equipped with BM*CRA31210 module. CRA module is synchronized via the DCF 77 or IRIG-B standards.

Motion Control Module

BMXMSP0200

Description	Number of channels	Description per channel	Reference
PTO module (PTO = Pulse Trian Output)	2	2 x 200 kHz max. PTO outputs 2 x 24 V ⎓/50 mA auxilliary outputs 4 x 24 V auxiliary inputs	**BMXMSP0200**

Notes

(1) The shielding on the cordsets carrying the analogue signals must always be connected to the **BMXXSP●●00** shielding connection kit mounted under the rack holding the analogue modules.

(2) The **BMXART0814** 8-channel module requires two **ABE7CPA412** sub-bases and two **BMXFCA●●2** cordsets.

X80 I/O Modules

ABE7CPA41●

BMXFCA●●0

BMXFCA●●2

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 BMXART0814	Connection and provision of cold junction compensation for thermocouples Direct connection of 4 inputs	–	**ABE7CPA412**
Preformed cordsets for ABE7CPA●●● sub-bases	BMXAMI0410	One 20-way removable terminal block 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**

BMXEHC0200

BMX EHC 0200/0800 counter modules

Description	No. of channels	Characteristics	Reference (1)
Counter modules for 2 and 3-wire 24V ⎓ sensors and 10/30V ⎓ incremental encoders with push-pull outputs	2	Counting at 60kHz	**BMXEHC0200**
	8	Counting at 10kHz	**BMXEHC0800**

BMXEHC0800

Connection accessories (1)

Description	Composition use	Reference
Connector kit	Two 16-pin connectors and one 10-pin connector for BMXEHC0200 module	**BMXXTSHSC20**
20-way removable terminal blocks For BMXEHC0800 module	Cage clamp	**BMXFTB2000**
	Screw clamp	**BMXFTB2010**
	Spring-type	**BMXFTB2020**
Electromagnetic compatibility kits For BMXEHC0200/0800 modules	Comprising: a metal bar, two sub-bases and one set of spring clamping rings	See page N8

BMXEAE0300

BMXEAE0300 SSI encoder module

Description	No. of channels	Characteristics	Reference (1)
Absolute SSI encoder	3	Up to 1Mhz 8-31 data bits	**BMXEAE0300**

Note

(1) The shielding on the cordsets carrying the analogue signals must always be connected to the **BMXXSP●●00** shielding connection kit mounted under the rack holding the analogue modules.

X80 I/O Modules

BMXNOM0200

Modbus serial module

Description	Channels	Reference
Modbus Serial Link	2	**BMXNOM0200**

Presentation

The **BMXNOM0200** Modbus Serial link module is standard format (1 Slot), for the Modicon M340 platform

Characteristics

Protocol		Modbus		Character mode	
Module channels		COM Port 0	COM Port 0 and Port 1	COM Port 0	COM Port 0 and Port 1
Structure	Physical interface	RS 232, 8-wire (1)	RS 485, 2-wire	RS 232, 8-wire (1)	RS 485, 2-wire
Serial link type		Non-isolated	Isolated	Non-isolated	Isolated
Access method		Master/slave type, switchable online		–	
Peripheral power supply		–		–	
Connection		RJ45 female connector	Two female RJ45 connectors	RJ45 female connector	Two female RJ45 connectors
Transmission	Mode	Asynchronous in baseband			
Frame		RTU/ASCII, Full duplex	RTU/ASCII, Half duplex	Full duplex	Half duplex
Data rate		0.3…115.2 Kbps	0.3…57.6 Kbps	0.3…115.2 Kbps	0.3…57.6 Kbps
Medium		Shielded twisted pair	Shielded twisted pair	Shielded twisted pair	Shielded twisted pair
Line polarization		–	Automatic	–	Configurable with Unity Pro software
Configuration	Number of devices	2 (point-to-point)	Up to 32 per segment	2 (point-to-point)	Up to 32 per segment
Maximum number of link addresses		248		248	
Maximum length of bus		15m	1000m	15m	1000m
Maximum length of a tap link		-	40m Isolated link	-	40m Isolated link
Services	Frame	252 bytes of data per RTU request 504 characters per ASCII request		1 KB of data per request	
Safety, check parameter		One CRC on each frame (RTU) One LRC on each frame (ASCII)		One LRC on each frame (ASCII)	
Monitoring		Diagnostics counters, event counters		-	

(1) Manages the RXD, TXD, TRS, DTR, DSR, CTS and DCD signals; does not manage the RI Signal.

Cordsets

Description	Channels	Reference
RJ45 DB9 female RS232 crossed		**TCSMCN3M4F3C2**
RJ45 DB9 male RS232 straight		**TCSMCN3M4M3S2**
RJ45 DB9 male serial cable Modbus port to a RS-232 DCE equipment (e.g. modem).		**TCSXCN3M4F3S4**

For full product details – refer to product catalogue

X80 I/O Modules

BMXEIA0100

ASI-interface module

Description	Slave Devices	Reference
ASI Module V3	max 62	**BMXEIA0100**

Presentation

The **BMXEIA0100** AS-Interface master module is standard format (1 Slot), for the Modicon M340 platform

Characteristics

ASI-interface profile	Master profile	M4 (ASI-interface V3) Full extended master
	Slave profiles	S-7.3, S-7.A.7, S-7.A.A, S-7.A.8, S-7.A.9, S-6.0.p supported (S-7.4 and Combined transaction type 2 not documented)
Type of addressing		Standard and extended
Cycle time		5 ms for 31 slaves in standard or extended addressing
		10 ms for 62 slaves in extended addressing
Maximum length of an AS-Interface segment		100 m
		200 m with a TCS AAR011M line extension
		300 m with 2 ASI RPT01 repeaters
		500 m with 2 ASI RPT01 repeaters and the master placed in the middle of the network
Product certification		AS-Interface no. 86601
Ambient air temperature	Operation	0…+ 60°C
	Storage	- 40…+ 70°C
Degree of protection		IP 20
Module hot swapping		Yes
Number of interfaces (or slaves) that can be connected	In standard addressing	124 discrete inputs and outputs or 124 analog inputs and outputs
	In extended addressing	496 discrete inputs and outputs or 124 analog inputs and outputs, depending on profiles used
Fallback on faulty slaves		User-configurable for each slave
Line connection		By 3-way SUB-D connector (connector supplied with the module)
Consumption	3.3 V typical	Refer to the product catalogue for the power consumption table
	External	30 V (AS-Interface) 60 mA

N

X80 I/O Modules

BMXNOR0200H

BMENOR2200H

X80 RTU module

Description	Reference
M340 RTU Module	**BMXNOR0200H**
M580 RTU Module	**BMENOR2200H**

Presentation

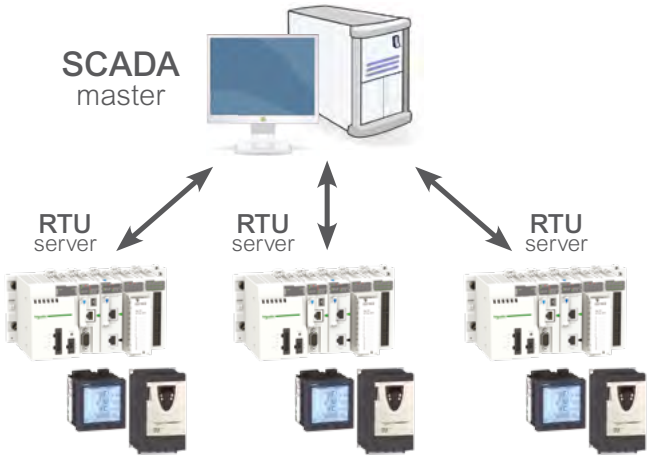
The **BMXNOR0200H** module is a standard module occupying a single slot in the Modicon M340 platform.
BMENOR2200H is an advanced RTU module for Modicon M580 Platform with Ethernet backplane.

Characteristics

Module Channels	1 Ethernet	1 Serial Port, RS232, 485
Connection	RJ45	RJ45
Protocols	DNP3, IEC 104, MB TCP	DNP3, IEC 101, external modem management
Master/Slave	All protocols	
Webserver	Yes	
Datalogging	Yes, on SD memory card	
SMS/Email	Yes	

Server architecture

- Upstream communication with the SCADA based on report by exception
- Automatic backfill of time stamped events
- Remote Access for Control Expert and remote monitoring/ diagnostic (over IP)



PMXNOW0300

X80 Acksys wifi module

Description	Reference
3 Port Wifi module	**PMXNOW0300**

Presentation

The **PMXNOW0300** is a standard module ocupying a single slot in X80 platform. WiFi Accesspoint, Ethernet bridge and repeater, it allows direct connection to the M340 and M580 range.

Characteristics

Standards	WiFi 802.11 a/b/g
Connection	3 copper - 10/100Mbps
Protocols	Modbus TCP, Ethernet IP
Freq	(2.4/5/5.4Ghz)
Speed	upto 108Mbps
Range	5Km with ext antenna, 300m with standard antennna
Security	WEP, WPA-PSK, WPA2-PSK & 802.1X RADIUS
SMS/Email	Yes

X80 I/O Modules

TCSEGDB23F24FA

Modbus plus proxy module

Description	Reference
M340 and M580	**TCSEGDB23F24FA**

Presentation

The **TCSEGDB23F24FA** Modbus Plus Proxy Module is a network gateway allowing the M340 and M580 PLC to communicate with existing Modbus Plus devices. The module provides a migration path to ethernet.

Characteristics

Module type			**TCS EGD B23 F24 FA**
Conforming to standards			UL 508, CSA 22.2 No. 142 (cUL), EMI EN 55011, EN 61131-2, C-Tick
Operating conditions			
Temperature		°C	0…+60
Relative humidity		%	0…95 non-condensing at 60°C
Altitude		m	2000
Vibration	Panel mounted	Hz	5…11.9 at ± 3.5mm
			11.9…150 at 2 g
	DIN rail mounted		5…8.4 Hz at ± 3.5mm
			8.4…150 Hz at 1 g
Storage conditions			
Temperature		°C	-40…+85
Relative humidity		%	0…95 non-condensing at 60°C
Free fall		m	1 (without packaging)
Shocks		g	+/- 15 g, 11 ms, semi-sinusoidal wave
General characteristics			
Communication ports			Two 10/100Base-T ports with shielded twisted pair cable (RJ45 connector) and automatic detection Two DB9 Modbus Plus ports (9-pin connectors)
External power supply voltage		VDC	19.2…31.2
Consumption		mA	300 maximum
Power dissipation		W	6.2
External fuse			None

For full product details – refer to product catalogue

Modicon I/O Modules

M580 specific X80 modules

M580 Specific I/O modules

Input type	Input signal range	Connection	No of channels	Reference
Isolated Hart	4-20mA	28-way connector	8	**BMEAHI0812**

Output type	Output signal range	Connection	No of channels	Reference
Isolated Hart	4-20mA	20 way connector	4	**BMEAHO0412**

Connection accessories

BMEAHI0812	One 28 way and 1DB25 for connection to Telefast ABE7CPA02/03/31/31E	1.5m	**BMXFTA1522**
		3m	**BMXFTA3022**
BMEAHO0412	One 20 way and 1DB25 for connection to Telefast ABE7CPA410/CPA21	1.5m	**BMXFCA150**
		3m	**BMXFCA300**
		5m	**BMXFCA500**

Weighing module

- Designed for use with the M580 and ethernet backplane
- Can be used with Scaime load cells
- Easy integration, improved resolution, calibration
- Static Weighing, low speed dynamic weighing and check weighing
- Filling, dosing, material transfer from silos and tanks

Input type	Signal range	Connection	No of channels	Reference
		Terminal block	1	**PMESWT0100**

BMXCPS4002

Redundant power supply (1)

Line Supply	Available Power (2)				Reference
	3.3V ⎓ (3)	24V ⎓ (3)	24V ⎓ Sensors (4)	Total	
100…240V ∿	18W	40W	-	40W	**BMXCPS4002**
100…150V ⎓	180W	40W	-	40W	**BMXCPS3522**
24...48V ⎓	18W	40W	-	40W	**BMXCPS4022**

Note: single redundant power supply can be plugged into the standard backplane but 2 power supplies can only be mounted in dual power supply back plane.

* Hardened versions BMXCPS4002H, BMXCPS3522H, BMXCPS4022H also available.

BMEXBP0602

BMEXBP1002

Dual power supply back planes

Description	Types of modules to be inserted	No. of slots	Reference
Ethernet Rack	X80 I/O, BMExxx, BMXCPS4002	6	**BMEXBP0602**
Ethernet Rack	X80 I/O, BMExxx, BMXCPS4002	10	**BMEXBP1002**

Note: It is not possible to plug a standard power supply into a dual power supply backplane, the dual power supply backplane is only compatible with the redundant power supply.

* Hardened versions also available.

Note

M580 BME modules require an Ethernet back plane BMEXBP●●●●

(1) Include a set of 2 cage clamp removable connectors. Spring-type connectors available seperately under reference BMXXTSCPS20.

(2) The sum of the power consumed on each voltage (3.3 V ⎓ and 24 V ⎓) must not exceed the total power of the module. See the power consumption table available on our website www.schneider-electric.com.

(3) 3.3 V ⎓ and 24 V ⎓ rack voltages for powering modules in the Modicon X80 I/O rack.

(4) 24 V ⎓ sensor voltage for powering the input sensors.

M580 specific X80 modules

BMENOS0300

Ethernet network option switch

Description	Service port	Device network port	Reference
Ethernet Switch	1	2	**BMENOS0300**

BMXNGD0100

Ethernet global data module

Communication Service	Integrated connection type	Memory	Reference
Global data Modbus TCP messaging Security	1 Ethernet RJ45 10/100 Mbit/s	Supplied Flash memory card (BMXRWSC016M)	**BMXNGD0100**

Note: NGD module can only be programmed by Unity Version 11 and above.

BMECXM0100

M580 CANopen master module

Description	Integrated connection type	Type of module	Reference
CANopen X80 Master Module	Serial (Supports up to 63 slaves)	Single Slot on Ethernet backplane	**BMECXM0100**
CANopen X80 Master hardened (+ATEX certification)	Serial (Supports up to 63 slaves)	Single Slot on Ethernet backplane	**BMECXM0100H**

Note: M580 BME modules require an Ethernet back plane BMEXBP●●●●.

BMENOC0321

M580 Specific network router module

Description	Reference
3 port dual protocol Ethernet module Provides routing feature to provide transparency when separating control and device networks, up to 3 different subnets (own broadcast domain)	**BMENOC0321**

Note: M580 BME modules require an Ethernet backplane BMEXBP●●●●.

BMENOP0300

M580 IEC61850 communication module

Communication Protocol	Data rate	Connection Type	Reference
IEC 61850 standard	10/100mbps	3 Ethernet port 10/100BASE-TX (2 ports for ring topology plus Ethernet backplane connection)	**BMENOP0300**

Note: This module can only be programmed by Unity Version 12 & above, conformal coating version is also available BMENOP0300C

X80 Safety I/O modules

Unity V13 XLS

Rely on a X80 powerful, proven solution to integrate an homogeneous automation architecture with a process and safety unique platform.In the Modicon X80 offer, a safety project can include both safety modules and non-safety modules:

a. Safety modules in the SAFE task.

b. Non-safety modules only for the non-safe tasks (MAST, FAST, AUX0, and AUX1).

Only non-safety modules that do not interfere with the safety function can be added to a shared rack with safety modules.

Safety I/O modules can be used to connect the safety PAC to the sensors and actuators that are part of the safety loop. Each safety I/O module incorporates a dedicated safety processor.

Safety I/O modules can be installed in the local backplane or in RIO drops.

All safety I/O modules supports SIL3 standards according to IEC61508.

Safety discrete input module

Type of current	Input voltage	Connection via	IEC/EN 61131-2 conformity	No of channels (common)	Reference
DC	24 V (logic positive)	Cage, screw or spring-type 20-way removable terminal block	Type 3	16 non-isolated inputs (1x16)	**BMXSDI1602**

BMXSDI1602

Safety discrete output module

Type of current	Input voltage	Connection via	IEC/EN 61131-2 conformity	No of channels (common)	Reference
DC	24 V (logic positive)	Cage, screw or spring-type 20-way removable terminal block	Yes	8 non-isolated outputs (1x8)	**BMXSDO0802**
AC/DC Relay	24 V ⎓/ 24...230 V ∿	Cage, screw or spring-type 20-way removable terminal block	Yes	4 isolated outputs (1x4)	**BMXSRA0405**

BMXSDO0802

BMXSRA0405

Safety analog input modules

Type of input	Input signal range	Resolution	Connection	No of channels	Reference
Isolated high level input	4-20mA	16 bits	Removable terminal block, 20-way cage clamp, screw clamp, or spring-type	4	**BMXSAI0410**

BMXSAI0410

Connection accessories for safety analog input module

Description	For use with modules	Type composition	Reference
20-way removable terminal blocks	BMXSAI0410 BMXSDO0802 BMXSDI1602 BMXSRA0405	Cage clamp Screw clamp Spring	**BMXFTB2000** **BMXFTB2010** **BMXFTB2020**

BMXFTB2000

Unity V13 XLS

EcoStruxure Control Expert

Note: Modicon M580 Safety requires at least Unity Pro XLS V13 or Control Expert for programming and configuration.

Smart terminal block
Advantys STB IP20

Advantys STB kits

Advantys modules now come packaged with the base and connectors.

Kit part number scheme

> STB xxx xxx K = kit contains module, base and appropriate number of both spring and screw type connectors

For the 16 Channel High Density Modules only, there will be 2 kits available, one for screw type connectors and one for spring type connectors:

> STB xxx xxx KS = kit contains module, base and appropriate number of “screw type” connectors
> STB xxx xxx KC = kit contains module, base and appropriate number of “spring clamp type” connectors

The Network Interface Modules (NIMS) will now include power connectors:

> STB NIMs = no change in part number, but box will now each contain 1 spring and screw power connectors

Communication modules

Description	Binary speed	Protocol	Max. number of addressable I/O modules	Reference
Ethernet TCP/IP Embedded Web server	10Mbps	Modbus TCP/IP	32 per island	**STBNIP2212**
		Ethernet/IP	32 per island	**STBNIC2212**
		Dual port 10/100Mbps Modbus TCP/IP	32 per island	**STBNIP2311**

Description	Type of module	Reference
Machine bus and fieldbus	CANopen	**STBNCO2212**
	Fipio	**STBNFP2212**
	Interbus	**STBNIB2212**
	Profibus DP	**STBNDP2212**

Description	Type of module	Reference
Other networks	Modbus Plus	**STBNMP2212**
	DeviceNet	**STBNDN2212**

Connection accessories

Description	Use	Type of accessory	Reference
Removable terminals for 24VDC power supply Both screw and spring terminals are supplied with module	All modules	Screw terminals	**STBXTS1120**
		Spring terminals	**STBXTS2120**
DeviceNet	DeviceNet module	Screw terminals	**STBXTS1111**
		Spring terminals	**STBXTS2111**

For full product details – refer to product catalogue.

Smart terminal block
Advantys STB IP20

Power distribution modules

Description	Supply voltage	Maximum current inputs	Maximum current outputs	Type	Reference
PDM	24VDC	4A at 30°C, 2.5A at 60°C	8A at 30°C, 5A at 60°C	Module	**STBPDT3100K**
	115…230 VAC	5A at 30°C, 2.5A at 60°C	10A at 30°C, 2.5A at 60°C	Module	**STBPDT2100K**

Bus extension modules

Description	Use	Type	Reference
End of segment	For placing at end of segment (except for the last)	Module	**STBXBE1100K**
Beginning of segment	For placing at head of each extension segment	Module	**STBXBE1300K**
Connection of CANopen devices	For placing at end of last segment	Module	**STBXBE2100K**

Digital input modules

Description	Number of channels	Input voltage	Type	Reference
Discrete inputs	4	24VDC	Kit	**STBDDI3420K**
	6	24VDC	Kit	**STBDDI3610K**
	16	24VDC	Kit	**STBDDI3725KS**
				STBDDI3725KC
	2	115VAC	Kit	**STBDAI5260K**

Digital output modules

Description	Number of channels	Output voltage	Output current	Type	Reference
Discrete solid state outputs	6	24VDC	0.5A	Kit	**STBDDO3600K**
	16	24VDC	0.5A	Kit	**STBDDO3705KS**
					STBDDO3705KC
Discrete outputs Triac	2	115…230 VAC	2A at 30°C, 1A at 60°C	Kit	**STBDAO5260K**
Relay	2 NC/NO	24VDC or 115…230 VAC	2A per contact	Kit	**STBDRC3210K**
	2 NC+NO	24VDC or 115…230 VAC	7A per contact	Kit	**STBDRA3290K**

Software and memory card

Description	Use	Memory size	Reference
Advantys configuration software	Single station*	–	**STBSPU1000**
Removable memory card	–	32Kb	**STBXMP4440**

* Multi-user packs available on request.

Connection accessories

Description	Length	Reference
Island bus extension cable	0.3m	**STBXCA1001**
	1m	**STBXCA1002**
	4.5m	**STBXCA1003**
	10m	**STBXCA1004**
	14m	**STBXCA1006**

For full product details – refer to product catalogue.

Smart terminal block
Advantys STB IP20

Analogue I/O modules

Description	Number of channels	Input signal	Resolution	Type	Reference
Analogue inputs	2	- 10…+10V	11 bits + sign	Kit	**STBAVI1255K**
		0…20mA single end	12 bits	Kit	**STBACI1230K**
		Multi-range isolated	16 bits	Kit	**STBART0200K**
	4	0/4…20mA differential/ isolated	16 bit	Kit	**STBACI0320K**
			16 bit (1)	Kit	**STBACI8320K**
		- 10…+10V isolated	16 bits	Kit	**STBAVI0300K**
	8	0…20 or 4…20mA single end	16 bits	Kit	**STBACI1400K**
		- 10…+10V single end	16 bits	Kit	**STBAVI1400K**
Hart Interface Multiplexer	4				**STBAHI8321KC**

Description	Number of channels	Output signal	Resolution	Type	Reference
Analogue outputs	2	0…+10V, -10…+10V	11 bits + sign or 12 bits	Kit	**STBAVO1250K**
		0…20mA	12 bits	Kit	**STBACO1210K**
		4…20mA isolated	16 bits	Kit	**STBACO0220K**
		-10…+10V	16 bits	Kit	**STBAVO0200K**

Application-specific modules

Description	Connection by connector	Number of inputs	Number of outputs	Input voltage	Number of channels	Type	Reference
TeSys model U	4 RJ45	12	8	24VDC	–	Kit	**STBEPI2145K**
						Connection cables	**490NTW00002 (L= 2m)**
						Connection cables	**490NTW00005 (L= 5m)**
Counter	Spring	4	2	24VDC	1 counter channel 40kHz	Kit	**STBEHC3020KC**

For full product details – refer to product catalogue.

Note
(1) STBACI8320 is HART compatible.

EcoStruxure™ Control Expert Software
Formerly Unity Software

PLC programming software
Specialist tools

EcoStruxure
Control Expert

For Modicon M340 and M580

Control Expert is the common programming, debugging and operating software for the M340, M580 and legacy PLCs. It is based on the standards set by PL7 and Concept software and provides a comprehensive set of new functions for greater productivity and openness to other software.

The five IEC61131-3 languages are supported as standard in Control Expert with all the debugging functions, on the simulator or directly online with the PLC.

Thanks to independent symbolic memory variables, structured data and user function blocks, the application objects directly reflect the application-specific components of the automated process.

Using graphic libraries, the Control Expert operator screens are configured in the application by the user. Operator access is simple and direct. Debugging and maintenance are made simple by animated graphic objects.

For diagnostics, a display window provides a clear display in chronological order (time-stamped at source) of all system and application faults. The navigation function for finding the causes of faults traces missing conditions back to the source.

The standard XML Web format for exchanging data has been adopted as the source format for CE applications. All or part of the application can be exchanged with other software in the project simply by using the Import/Export function.

Modernisation – Control Expert allows the user to automatically open PL7, Concept and Modicon 984LL into a Control Expert Application, thus reducing engineering costs and risk.

Compatibility matrix for M340, M580 & legacy PLCs

Controllers family	Small	Large	Large (L) + M580 Safety Add on	X large (XL)	X Large (XL) + M580 Safety Add on
Momentum	All models	All models	All models	All models	All models
Modicon M340	All models	All models	All models	All models	All models
Premium		TSX P 57 00	TSX P 57 00	TSX P 57 00	TSX P 57 00
		TSX P 57 10	TSX P 57 10	TSX P 57 10	TSX P 57 10
		TSX P 57 20	TSX P 57 20	TSX P 57 20	TSX P 57 20
		TSX H 57 20	TSX H 57 20	TSX H 57 20	TSX H 57 20
		TSX P 57 30	TSX P 57 30	TSX P 57 30	TSX P 57 30
		TSX P 57 40	TSX P 57 40	TSX P 57 40	TSX P 57 40
		TSX H 57 40	TSX H 57 40	TSX H 57 40	TSX H 57 40
				TSX P 57 50	TSX P 57 50
				TSX P 57 60	TSX P 57 60
M580 Standalone		BMEP 58 10••	BMEP 58 10••	BMEP 58 10••	BMEP 58 10••
		BMEP 58 20••	BMEP 58 20••	BMEP 58 20••	BMEP 58 20••
		BMEP 58 30••	BMEP 58 30••	BMEP 58 30••	BMEP 58 30••
				BMEP 58 40••	BMEP 58 40••
				BMEP 58 5040	BMEP 58 5040
				BMEP 58 6040	BMEP 58 6040
M580 Hot-Standby		BMEH 58 2040	BMEH 58 2040	BMEH 58 2040	BMEH 58 2040
				BMEH 58 4040	BMEH 58 4040
				BMEH 58 6040	BMEH 58 6040
M580 Safety		/	BME P582040S	/	BME P582040S
			BME H582040S		BME P584040S
					BME H582040S
					BME H584040S
					BME H586040S
Quantum		CPU 311 10	CPU 311 10	CPU 311 10	CPU 311 10
		CPU 434 12 U	CPU 434 12 U	CPU 434 12 U	CPU 434 12 U
		CPU 534 14 U	CPU 534 14 U	CPU 534 14 U	CPU 534 14 U
				CPU 651 50	CPU 651 50
				CPU 651 60	CPU 651 60
				CPU 652 60	CPU 652 60
				CPU 670 60	CPU 670 60
				CPU 671 60	CPU 671 60
				CPU 672 60	CPU 672 60
				CPU 672 61	CPU 672 61
				CPU 658 60	CPU 658 60
				CPU 678 61	CPU 678 61

Note: Unity V13 XLS & above support M580 Safety configuration.

Legacy software migration

Software migration to Control Expert (Unity) platform

Unity Pro now has a 6th editor to allow migrations from older 984LL platforms and when used with the Quick wiring systems provides a cost effective and low risk upgrade path.

984LL / Concept

Old platform	New platform	Software	Hardware
Momentum	New Momentum Unity CPUs	Unity Import	
	M340	Unity Import with engineering	
Compacts (A140 series)	M340	Unity Import	Quick wiring arms
984A (800 series)	Quantum	Unity Import	Quick wiring arms and racks

PL7

TSX Micro	M340	Unity import	
TSX Premium	M580	Unity import	Existing I/O on Bus X

Note: As with all migrations nothing is 100% and there will be in some cases a small amount of engineering and recommissioning required.

Time Saving Options

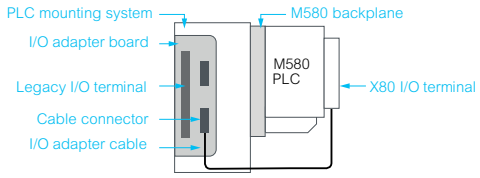
Our Quick Wiring adaptors let you change out legacy I/O while retaining the original field wiring.

Quick wiring adaptors for the below platform conversion are available:

1. TSX Premium I/O to Modicon X80 I/O platform
2. TSX7 PLCs to Modicon X80 I/O platform
3. 984-800 I/O to Modicon X80 I/O platform
4. Modicon Compact PLCs to Modicon X80 I/O platform
5. Rockwell SLC500 I/O to Modicon X80 I/O platform
6. 984-800 I/O to Modicon Quantum I/O Platform
7. Rockwell PLC5 1171 I/O to Modicon Quantum I/O Platform
8. Quantum I/O to Modicon X80 I/O Platform

Premium to X80 I/O

Wiring adapter



The I/O Wiring System adapts Legacy I/O Terminals to X80 I/O

Note: Please contact your sales representative for more information.

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Legacy PAC migration

Migration to M580 from legacy CPU

Why switch to M580?

5x Controller scan time → Increase your process efficiency

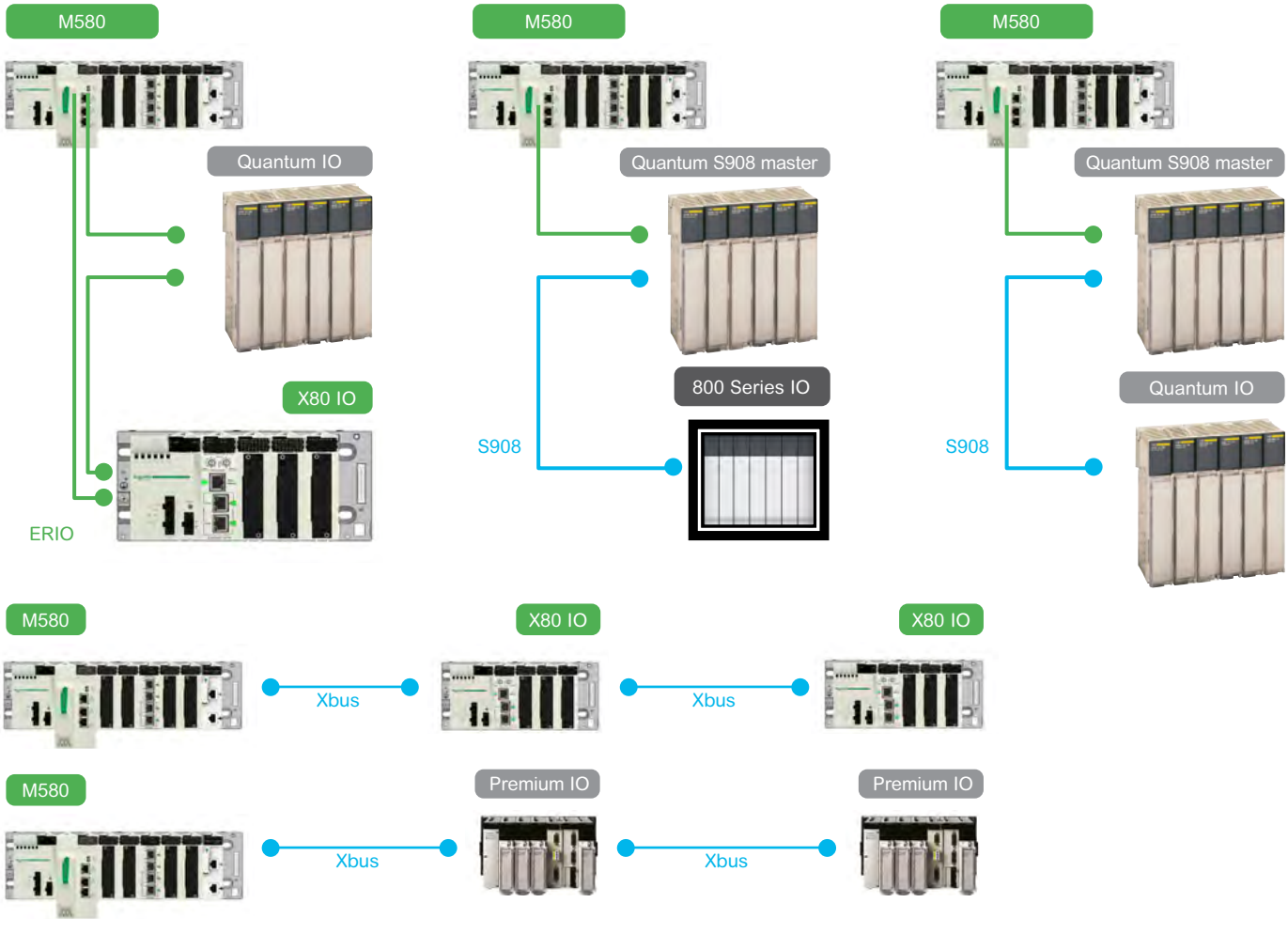
8x Larger memory → Process more data to optimise your process

5x Bandwidth capability → Near real time monitoring and control with incredible bandwidth capabilities

99.9996% → Maximise process uptime and reliability

→ Extended cybersecurity capabilities

Easily extend current and future performance and capability



Note:
Please contact your sales representative for more information on wiring options for migration to latest PAC platform.

OFS Software

OPC factory server

Based on the OPC protocol, Schneider Electric's OFS software (OPC Factory Server) enables OPC client applications to access Schneider Electric devices and PLC data in real time.

The communication between your software applications and your automation devices becomes simple and unlimited access to key information, an open interface, and a transparent architecture are just some of the advantages providing seamless interoperability at the heart of your process.

The OPC protocol – a universally recognised standard

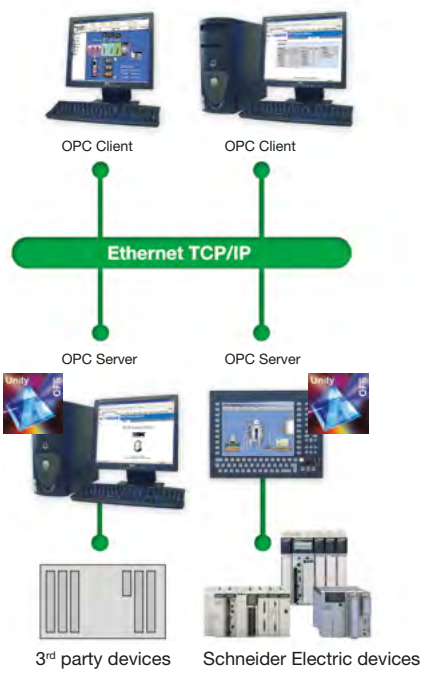
OPC is an open and standardised communication interface defined by the OPC Foundation which includes over 300 members. OPC interfaces make possible the direct interoperability between automation systems and information management applications.

Leading companies in automation have chosen OPC, including Fisher-Rosemount, Siemens, Rockwell, Wonderware, etc.

OFS: Even more open!

OFS, the OPC server from Schneider Electric, developed with the latest specifications from the OPC foundation including OPC DA, OPC .NET API and OPC XML DA, offers greater freedom when sharing data.

- **Native Microsoft.NET compatibility**
  Now any Microsoft.NET client application can access the OFS server with complete interoperability.
- **OPC XML – DA**
  The latest specifications from OPC ensures compatibility with both Windows and non-Windows environments and Web based applications via the internet (through firewalls).
- **A scaleable offer**
  A new low cost, entry level version of OPC Factory Server (OFS Small) is now available for users with smaller systems.
- **Your production data in real time!**
  OPC is essential for client applications that need real-time access to key production data: OFS is the interface between your client applications and the hardware in your automation architecture.



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ConneXium
Ethernet infrastructure hardware

ConneXium

ConneXium products are the industrial Ethernet-ready network devices that can provide you with integrated Ethernet solutions to unite everything in your plant, from the device level all the way to your corporate intranet.

The Connexium range consists of Managed, Unmanaged and Wi-Fi switches

Managed or Unmanaged?

Unmanaged switches are suitable for simple plug and play networks such as small machines, where there is no connection to an IT network. Basic managed switches provide single redundant ring connection recommended for distributed I/O. Standard Managed switches are designed to be used as part of the control system backbone, with features such as redundant rings, Vlans and port filtering. Extended Managed switches allow for faster network reconfiguration where a higher availability is required.

Note
It is recommended that managed switches that support IGMP port filtering be used in an Ethernet IP network. Managed switches also provide better network diagnostics.

Type	Cost of downtime	IT Network connection	Network size	Redundancy	Multicast traffic	Diagnosis
Unmanaged switch	Inexpensive	Not required	Small	Not required	No	Not required
Managed switch	Expensive	Required	Medium to large	Required	Yes	Required

Low Cost Unmanaged Switches

Size	Type	Ports	Reference
3 port	Copper	3TX	**TCSESU033FN0**
5 port	Copper	5TX	**TCSESU053FN0**
	Multi-mode Fibre/Cu	4TX/1FX-MM	**TCSESU043F1N0**
8 port	Copper	8TX	**TCSESU083FN0**
10 port	Multi-mode Fibre/Cu	8 TX + 2 FX-MM	**TCSESU103F2CU0**
10 port	Single mode Fibre/Cu	8 TX + 2 FX-SM	**TCSESU103F2CS0**

TX = 10/100 BASE-TX ports (RJ45 connectors)
FX = 100 BASE-FX multi-mode (SC duplex connector)

TCSESPU & TCSESSU Unmanaged Switches

The 6 new models expand the range of unmanaged switches which are Industrialized switches and feature an extended operating range on the TCSESPU switches (-40 to 70˚C). With the Connexium Switch Tool certain parameters of the TSCESPU switches can be customized to allow for some network optimization if necessary. These parameters include:

- Power supply unit alarm
- Aging time
- QoS 802.1p mapping
- Flow control
- Broadcast & Multicast storm protection/threshold
- Port based priority
- Link alarm;
- Auto-negotiation & port speed
- Duplex mode
- Auto-crossing

Size	Type	Ports	Reference
5 port	Mutimode Fibre/Cu	4TX/1FX-MM	**TCSESPU053F1CU0**
	Fibre/Cu	4TX/1FX-SM	**TCSESPU053F1CS0**
8 port	Copper	8TX	**TCSESPU083FN0**
	Copper	8TX	**TCSESSU083FN0 ***
9 port	Mutimode Fibre/Cu	7TX/2FX-MM	**TCSESPU093F2CU0**
	Fibre/Cu	7TX/2FX-SM	**TCSESPU093F2CS0**

* Note: TCSESSU083FN0 switch has a standard operating temperature range of 0° to +60° C.

Unmanaged Switch – IP67

Size	Type	Ports	Reference
5 port	Copper	5TX*	**TCSESU051F0**

*10/100 BASE-TX ports, M12 type D female connector

ConneXium
Ethernet infrastructure hardware

Lost cost managed switch

Size	Type	Ports	Reference
4 port	Copper	4TX	**TCSESL043F23F0**

Basic managed switches

Size	Type	Ports	Reference
8 port	Copper	8TX	**TCSESB083F23F0**
	Multi-mode fibre	6TX/2FX-MM	**TCSESB083F2CU0**
9 port	Multi-mode fibre	6TX/3FX-MM	**TCSESB093F2CU0**

TX = 10/100 BASE-TX ports (RJ45 connectors)
FX = 100 BASE-FX multi-mode (SC duplex connector)

Standard managed switches

Size	Type	Ports	Reference
4 port	Copper	4TX	**TCSESM043F23F0**
	Multi-mode fibre	3TX/1FX-MM	**TCSESM043F1CU0**
		2TX/2FX-MM	**TCSESM043F2CU0**
	Single-mode fibre	3TX/1FX-SM	**TCSESM043F1CS0**
		2TX/2FX-SM	**TCSESM043F2CS0**
8 port	Copper	8TX	**TCSESM083F23F0**
	Multi-mode fibre	7TX/1FX-MM	**TCSESM083F1CU0**
		6TX/2FX-MM	**TCSESM083F2CU0**
	Single-mode fibre	7TX/1FX-SM	**TCSESM083F1CS0**
		6TX/2FX-SM	**TCSESM083F2CS0**
	Single & multi-mode fibre	6TX / 1FX-MM/1FX-SM	**TCSESM083F2CX0**
16 port	Copper	16TX	**TCSESM163F23F0**
	Multi-mode fibre	14TX/2FX-MM	**TCSESM163F2CU0**
	Single-mode fibre	14TX/2FX-MM	**TCSESM163F2CS0**
24 port	Multi-mode fibre	22TX/2FX-MM	**TCSESM243F2CU0**

TX = 10/100 BASE-TX ports (RJ45 connectors)
FX = 100 BASE-FX multi-mode (SC duplex connector)

Extended managed switches

Size	Type	Ports	Reference
8 port	Copper	8TX	**TCSESM083F23F1**
	Multi-mode fibre	6TX/2FX-MM	**TCSESM063F2CU1**
	Single-mode fibre	6TX/2FX-SM	**TCSESM063F2CS1**

Network remote masters and gateways

Description	Reference
Profibus Remote Master	**TCSEGPA23F14F**
Modbus/Ethernet Gateway	**EGX150**
MEBII001 MB+ to Ethernet gateway	**140MEBII001**

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ConneXium
Ethernet infrastructure hardware

Managed switches – gigabit versions

Size	Type	Ports	Reference
10 port Gigabit	Copper	8TX/2TX-Gbit	**TCSESM103F23G0**
	Fibre	8TX/2SFP-Gbit	**TCSESM103F2LG0** *

TX = 10/100 BASE-TX ports (RJ45 connectors)
FX = 100 BASE-FX multi-mode (SC duplex connector)
TX-Gbit = 10/100/1000 BASE-TX (RJ45 connectors)
FP-Gbit = 2 1000 (SFP socket)

Note
This product ships with open sockets (SFP) on the fibre ports. In order to use these ports, order 1 or 2 fibre modules in any combination.

Fibre (SFP) modules – (SFP Gigabit switch only)

Size	Type	Ports	Reference
275m / 550m	Multi-mode	SFP-SX/LC	**TCSEAAF1LFU00**
550m 20km	Multi-mode Single mode	SFP-LX/LC	**TCSEAAF1LFS00**
72km	Single mode	SFP-LH/LC	**TCSEAAF1LFH00**

Firewalls

An industrial firewall is designed to control access to your automation network and should form part of your IT security strategy.

The Firewall provides physical separation between your control and corporate network.

It is recommended that you also use firewalls to divide your control network into zones.

Two types are available.

Hardware Firewall – fully featured but doesn't require additional software or licences.

Software Firewall – Utilises the hardware firewall and adds a software layer offering greater security and advanced features.

Hardware Firewall

Size	Type	Ports	Reference
2 ports 10/100MB	Copper	1 TX Internal 1 TX External	**TCSEFEC23F3F21**
	Copper / Fibre	1 TX Internal 1 FX MM External	**TCSEFEC23FCF21**

Hardware with Tofino Software Firewall

Size	Type	Packet enforcer	Ports	Reference
2 ports 10/100MB	Copper	MB TCP	1 TX Internal 1 TX External	**TCSEFEA23F3F22**

The Tofino software includes features such as network traffic analysis, event logger, MB TCP and Ethernet IP packet enforcer.

The firewall allows the user more control of the network's security.

The software has built-in templates for Schnieder Electric devices.

Loadable licenses

Description	Reference
ConneXium Tofino OPC-LSM Loadable (OPC Deep Packet Inspection)	**TCSEFM0000**
ConneXium Tofino EIP-LSM Loadable (Ethernet IP Deep Packet Inspection)	**TCSEFM0001**

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CANopen
Machine bus components

TSXCANTDM4

VW3CANTAP2

Standard tap junctions and connectors

Designation	Description	Length	Reference
IP20 CANopen tap junction	4 SUB-D ports. Screw terminal block for connection of trunk cables Line term	–	**TSXCANTDM4**
IP20 connectors CANopen female 9-way SUB-D. Switch for line termination	90° angled	–	**TSXCANKCDF90T**
	Straight (1)	–	**TSXCANKCDF180T**
	90° angled with 9-way SUB-D for connecting a PC or diagnostic tool	–	**TSXCANKCDF90TP**
IP20 CANopen tap junctions for Altivar and Lexium 05	2RJ45 ports	–	**VW3CANTAP2**

IP20 standard cables and preformed cordsets

TSXCANKCDF90T

TSXCANKCDF180T

TSXCANKCDF90TP

Designation	Description	Length	Unit Reference
CANopen cables (AWG 24)	Standard, CE marking: low smoke. Halogen-free. Flame-retardant (IEC 60332-1)	50m	**TSXCANCA50**
		100m	**TSXCANCA100**
		300m	**TSXCANCA300**
	Standard, U certification, CE marking: flame-retardant (IEC 60332-1)	50m	**TSXCANCB50**
		100m	**TSXCANCB100**
		300m	**TSXCANCB300**
	For harsh environments (2) or mobile installation, CE marking: low smoke. Halogen-free. Flame-retardant (IEC 60332-1). Resistance to oils	50m	**TSXCANCD50**
		100m	**TSXCANCD100**
		300m	**TSXCANCD300**
CANopen preformed cordsets One 9-way female SUB-D connector at each end (AWG 24)	Standard, CE marking: low smoke. Halogen-free. Flame-retardant (IEC 60332-1)	0.3m	**TSXCANCADD03**
		1m	**TSXCANCADD1**
		3m	**TSXCANCADD3**
		5m	**TSXCANCADD5**
	Standard, UL certification, CE marking: flame-retardant (IEC 60332-2)	0.3m	**TSXCANCBDD03**
		1m	**TSXCANCBDD1**
		3m	**TSXCANCBDD3**
		5m	**TSXCANCBDD5**
Cordsets with one 9-way female SUB-D connector and one RJ45 connector		0.5m	**TCSCCN4F3M05T**
		1m	**TCSCCN4F3M1T**
		1m	**VW3M3805R010**
		3m	**VW3M3805R030**
		3m	**TCSCCN4F3M3T**
CANopen preformed cordsets	Two 9-way SUB-D connectors, one male and one female	0.5m	**TLACDCBA005**
		1.5m	**TLACDCBA015**
		3m	**TLACDCBA030**
		5m	**TLACDCBA050**

Notes
(1) For connection to controller inside programmable card, the **VW3CANKCDF180T** connector can also be used.
(2) **Standard environment:**
Without any particular environmental constraints
Operating temperature between +5° and +60°
Fixed installation
Harsh environment:
Resistance to hydrocarbons, industrial oils, detergents, solder splashes
Relative humidity up to 100%
Saline atmosphere
Significant temperature variations
Operating temperature between -10°C and +70°C
Mobile installation

CANopen
Machine bus components

IP20 connection accessories

Designation	Description	No. (1)	Length	Unit Reference
CANopen connector for Altivar 71 drive (2)	9-way female SUB-D. Switch for line termination. Cables exit at 180°	–	–	**VW3CANKCDF180T**
Adaptor for Altivar 71 drive	CANopen adaptor SUB-D to RJ45	–	–	**VW3CANA71**
Performed CANopen cordsets for Altivar and Lexium 05 drives	Open RJ45 connector at each end	10	0.3m	**VW3CANCARR03**
			1m	**VW3CANCARR1**
CANopen bus adaptor for Lexium 15 servo	Hardware interface for a link conforming to the CANopen standard + one connector for a PC terminal	14	–	**AM02CA001V000**
Y-connector	CANopen/Modbus	–	–	**TCSCTN011M11F**

Notes
(1) For numbers, see product catalogue.
(2) For connection to controller inside programmable card, the **VW3CANKCDF180T** connector can also be used.

Harmony HMI

Product configurator on se.com/nz

Human-machine interface
STO / STU Compact touch operator panels

Operator Terminal Expert

STO7●●

STO5●●

Compact small panel terminals

The Harmony STO and STU panels are ideal for machine manufacturer solutions in industry and infrastructure, with their touch screens, simple mounting system and programmed with Vijeo Designer/Operator Terminal Expert feature rich software.

The new Harmony STO7 is panel mounted and fits into same cutout of STO5 models to migrate to 64k color TFT 4.3" touch screen & configured by Operator Terminal Expert Software which allows to use Vector graphics.

The STU panels mount via a 22mm pushbutton hole, as a cost effective solution. The small panels are programmed with Vijeo Designer, the common platform for Schneider Electric's HMI.

The software offers the full benefits of Vijeo Designer's advanced functions, such as Web Gate, recipes, graphic object library and downloads via a USB stick.

With the arrival of an embedded ethernet connection the panels are more open.

Harmony panels offer a wide range of protocols to make communicating to other equipment easier and at no extra cost.

STO7●●

Operator Terminal Expert

Harmony small touch operator panels

Compact full graphic terminal

Description	Display resolution	Display type	Comm Ports	Supply voltage	Reference
4.3" color	480 x 272 pixels	64k color	RS-232C Terminal block 9 pin, 2 USB ports	24VDC	**HMISTO705**
4.3" color	480 x 272 pixels	64k color	RS-232C/485 RJ-45 8 pin, 2 USB ports	24VDC	**HMISTO715**
4.3" color	480 x 272 pixels	64k color	Ethernet RJ45, 2 USB ports	24VDC	**HMISTO735**

Note: STO7 can only be configured by Operator Terminal Expert Software.

STU●55

Vijeo Designer

Small panel with 22mm mounting hole

Description	Display resolution	Display type	Comm ports	Supply voltage	Reference
3.5" Colour touch screen	QVGA 320x240 pixels	65k Colour screen	1 serial 2 USB 1 Ethernet	24VDC	**HMISTU655**
5.7" Colour touch screen	QVGA 320x240 pixels	65k Colour screen	1 serial 2 USB 1 Ethernet	24VDC	**HMISTU855**

Accessories

Description	Reference
3.5" STU front panel	**HMIS65**
5.7" STU front panel	**HMIS85**
STU rear module	**HMIS5T**

Connection cable

From	To	Reference
HMISTO, STU	Twido, TSX Micro, Premium 8-way mini DIN	**XBTZ9780**
XBTGT	M340	**XBTZ9980**
HMISTO501	Zelio Smart Relay	**SR2CBL09**

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New

Product configurator on se.com/nz

Human machine interface
ST6 / STW6 Basic HMI Panels

EcoStruxure Operator Terminal Expert

Ranging from 4" to 15", the Harmony ST6 & Harmony STW6 is quick and easy to install, with secure dual IP connections for effective integration into the overall operating system, enabling operators to be more efficient. Basic HMI, Harmony ST6 provides best in class user interface for multi-device connection: 2 x Ethernet ports with Dual IP, 2 x COM (except 4" model), USB host and device.

Basic Web HMI, Harmony STW6 provides 2 x Ethernet ports with one IP address for daisy chain connection (except 4'' model).

Front view

Rear view

More Efficient

- The high resolution screen is powered by EcoStruxure Operator terminal Expert software, with multi-screen and Layout Objects (Dock Panel) functions to combine more information in one page for easy operation
- Tool free fastener for fast and easy mounting
- Low maintenance thanks to the 1,000,000 times resistive touch panel, 50,000+ hours LED backlight, replaceable RTC battery designed for 5+ years long term use

More Flexible

- Batch conversion of themes and color setting functions make customisation easy
- Support for situational awareness using Theme and Color set function
- Electronic manual via QR code for easy in-field maintenance without PC or paper
- Able to access all HTML5 Servers with Basic Web HMI, Harmony STW6 version

More Secure

- The falling preventive hook makes mounting safe and easy
- Enhanced cybersecurity from application to firmware level
- Meets environmental regulations (European and Chinese ROHS, REACH, WEEE)

EcoStruxure Operator Terminal Expert

Magelis ST6 Basic HMI panels

Size	Resolution (pixels)	Colors	App Memory	Number of ports	Reference
4.3"W	480 x 272	16M	512MB (Flash EPROM)	1 x Ethernet,1 x RS-232C/485, 2 x USB	**HMIST6200**
7 "W	800 x 480 WVGA	16M	1GB (Flash EPROM)	2 x Ethernet, 2 x USB 1 x RS-232C, 1 x RS-485	**HMIST6400**
10.1 "W	1024 x 600 WSVGA	16M	1GB (Flash EPROM)	2 x Ethernet, 2 x USB 1 x RS-232C, 1 x RS-485	**HMIST6500**
12.1"W	1280 x 800 WXGA	16M	1GB (Flash EPROM)	2 x Ethernet, 2 x USB 1 x RS-232C, 1 x RS-485	**HMIST6600**
15.6"W	1366 x 768 FWXGA	16M	1GB (Flash EPROM)	2 x Ethernet, 2 x USB 1 x RS-232C, 1 x RS-485	**HMIST6700**

Magelis STW6 Basic WebHMI panels

With development of HTML5 technology in Industry, more and more products provide embedded HTML5 Server with data that can be easy visualise on multiple devices like PC, Tablet, Smartphone using different OS. Basic Web HMI STW6 is expected for same operation powered by Linux Browser HTML5.

Size	Resolution (pixels)	Colors	Number of ports	Reference
4.3"W	480 x 272	16M,Resistive	1 x Ethernet,1USB	**HMISTW6200**
7 "W	800 x 480	16M,Resistive	2 x Ethernet,1USB	**HMISTW6400**
10 "W	1024 x 600	16M,Resistive	2 x Ethernet,1 USB	**HMISTW6500**
12.1"W	1280 x 800	16M,Resistive	2 x Ethernet,1 USB	**HMISTW6600**
15.6"W	1366 x 768	16M,Resistive	2 x Ethernet,1 USB	**HMISTW6700**

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Product configurator on se.com/nz

Human-machine interface
GTO Advanced panels

Advanced panels

Description/ version	Display type		App mem	Flash card slot	Multi-media video	Comm. ports	Reference
3.5"	Function keys	QVGA (320 x 240)	64MB		No	2Serial 2USB	**HMIGTO1300**
			96MB		No	2Serial 2USB 1Ethernet	**HMIGTO1310**
5.7"		QVGA (320 x 240)	64MB		No	2Serial 2USB	**HMIGTO2300**
			96MB	SD Card	No	2Serial 2USB 1Ethernet	**HMIGTO2310**
7.0"	WideScreen Function keys	WVGA (800 x 400)	96MB	SD Card	No	2Serial 2USB 1Ethernet	**HMIGTO3510**
7.5"		VGA (640 x 480)	96MB	SD Card	No	2Serial 2USB 1Ethernet	**HMIGTO4310**
10.4"		VGA (640 x 480)	96MB	SD Card	No	2Serial 2USB 1Ethernet	**HMIGTO5310**
12.1"		SVGA (800 x 600)	96MB	SD Card	No	2Serial 2USB 1Ethernet	**HMIGTO6310**

Stainless steel bezel food grade panels

Description/ version	Display type	App mem	Flash card slot	Multi-media video	Comm. ports	Reference
5.7"	QVGA (320 x 240)	96MB	SD Card	No	2Serial 2USB 1Ethernet	**HMIGTO2315**
10.4"	VGA (640 x 480)	96MB	SD Card	No	2Serial 2USB 1Ethernet	**HMIGTO5315**
12.1"	SVGA (800 x 600)	96MB	SD Card	No	2Serial 2USB 1Ethernet	**HMIGTO6315**

HMIGK2310

HMIGK5310

Advanced touchscreen keypad panels

Description	Display type	App mem	Flash card slot	Comm. ports	Reference
5.7" Color TFT LCD	QVGA (320 x 240) 65K colors	128 MB Flash EPROM	SD Card	2 Serial 2 USB 1 Ethernet	**HMIGK2310**
10.4" Color TFT LCD	QVGA (640 x 480) 65K colors	128 MB Flash EPROM	SD Card	2 Serial 2 USB 1 Ethernet	**HMIGK5310**

Note: HMIGK range is new replacement for XBTGK keypad panels range.

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Product configurator on se.com/nz

Human-machine interface
GTU High performance touchscreen with box module

The HMIGTU is a high performance, modular touchscreen.
Navigate your HMI like a smartphone.
Standard 4:3 and Wide screen 16:9 options.
Operate through gloves.
Runtime or Windows embedded enviroments.
Can be used with Vijeo Designer or Operator Terminal Expert for the intuitive smartphone features.
Choose your box and then add the screen.

Vijeo Designer

Operator Terminal Expert

BOX modules (rear module)

Description/ version	Display Type	App Mem	Storage type	Multimedia Interface *	Comm. ports	Reference
Standard Box	Real time OS-HMI runtime	256MB	1xInternal Flash and 1xSDcard	No	2 Serial 2 USB 2 Ethernet	**HMIG2U***
Premium box	Realtime OS - HMI runtime	256MB	2 SD Cards	Sound Output	2Serial 2USB 2Ethernet	**HMIG3U**
Open box	Windows 7 embedded	2GB	2 CFast cards 1 SD card	Sound output,DVI output,Mic	2Serial 3USB 2Ethernet	**HMIG5U2**

* Note: Sound output interface connector HMIZGAUX need to be ordered separately. HMIG2U is configured by Vijeo designer V6.2 SP8 & above only.

HMI screen (front module)

Smart Display

Description	Display Type	Auto Brightness	Multi-touch	Comm. ports	Reference
10.4" format 4:3	SVGA (800 x 600) 16M Colours	Yes	Resistive,Yes	2Front USB	**HMIDT542**
12.1" format 4:3	XGA (1024 x 768) 16M Colours	Yes	Resistive,Yes	2Front USB	**HMIDT642**
12.1" format 4:3	XGA (1024 x 768) 16M Colours	Yes	Resistive,Yes	2Front USB Integrated Wifi	**HMIDT643**
15" format 4:3	XGA (1024 x 768) 16M Colours	Yes	Resistive,Yes	2Front USB	**HMIDT732**
15" format 16:9	FWXGA (1366 x 768) 16M colors	Yes	Capacitive,Yes	2Front USB	**HMIDT752**
19" format 16:9	FWXGA (1366 x 768) 16M colors	Yes	Capacitive,Yes	2Front USB	**HMIDT952**

Advanced Display

Description	Display Type	Auto Brightness	Multi-touch	Comm. ports	Reference
7" format 16:9	WVGA (800 x 480) 262K Colours	No	No	Rear USB	**HMIDT351**
10" format 16:9	WXGA (1200 x 800) 262K Colours	No	No	Rear USB	**HMIDT551**
12" format 16:9	WXGA (1200 x 800) 262K Colours	No	No	Rear USB	**HMIDT651**

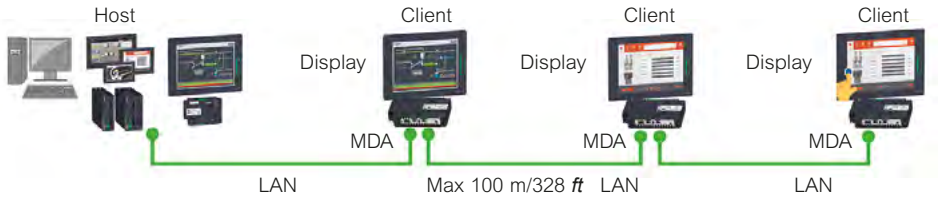
Note: For front mount USB order XBTZGUSB. Just change screen on existing box module for switching to large or small screen.

Accessories

Description	Host type compatible	Display compatible	Reference
Magelis GTU Universal Smart System Adapter	HMIG5U2 Magelis iPC General PC	HMIDT●●●	**HMIZMDARX**

Magelis GTU Display with Multi-display adapter HMIZMDARX

The multi-display adapter is mounted on the rear of Magelis GTU Display to extend up to 3 remote displays for one host station. The host station (1) can be a Magelis GTU Open, a Magelis iPC, or a general PC. Configuration software is provided with the adapter (MDA configuration tool) to install on the host station for complete architecture configuration.



N

Harmony HMI

New

Product configurator on se.com/nz

Human-machine interface
GTUX eXtreme Panels Rugged Outdoor HMI

Vijeo Designer

Harmony GTUX is a modularly designed robust terminal suitable for harsh outdoor environments. Features like high brightness and UV protection to direct sunlight,protection against water and dust, and supporting a wide range of temperatures make it an ideal choice for direct outdoor operation in O&G, WWW, and MMM segments.

Harmony eXtreme panels can be used in applications like smart energy generation (solar, wind turbine, biomass, hydropower genset, etc.), hoisting, compressor,pumping, and car charging/washing.

Harmony GTUX eXtreme panels can be configured using Vijeo Designer software. This software has an advanced user interface with many configurable windows enabling projects to be developed quickly and easily.

Front view

Sunlight readable

- Clear visibility and resistant under direct sunlight
- High brightness LCD (1,000 cd/m2)
- Anti-reflection (anti-glare surface)
- Maximum brightness (no overlay, glass touch panel)

Robustness

- UV protected surface design and gasket
- Dust proof and water proof (IP66F)
- Wide temperature range (7” and 12” W: -30 ºC...+70 ºC, 15” W: -20 ºC…+60 ºC)
- Resistant against shocks (40G) and vibrations (2G)

Front view

Environment adaptability

- Atmospheric resistance with conformal coating (fully coated, corrosive gas class 3C3). This treatment increases the isolation capability of the circuit boards and their resistance to condensation, dusty atmospheres, and chemical corrosion.
- Environmental standards: UL Haz Loc (Class 1 Div. 2)
- Low-voltage range of 12 V…24 V dc (10.8 V...28.8 V ac)

Easy maintenance

- Modular design (Box + Display)
- Removable system card
- Batteryless design

Box Module

Harmony GTUX eXtreme Box modules

Operating System	App memory	Backup memory	Number of ports	Class 3C3	Reference
Real time OS	1 x GB SD card	512KB (NVRAM)	2 x Ethernet, 2 x USB (Type A), 2 x Serial, 1 x USB (Mini-B)	Yes	**HMIG3XFH**

Note: GTUX is configured by only Vijeo Designer V6.2 SP8 & above in standalone mode.

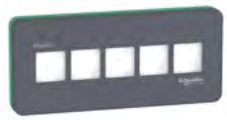
Display Screen

Harmony GTUX eXtreme Display panels

Display Size	Resolution (pixels)	Colors	Touch type	Conformal Coating Class 3C3	Reference
7 “W	800 x 480 (WVGA)	262K	Single touch analog resistive	Yes	**HMIDT35XFH**
12.1”W	1280 x 800 (WXGA)				**HMIDT65XFH**
15.6”W	1366 x 768 (FWXGA)				**HMIDT75XFH**

N

USB accessories



USB accessories can be configured and controlled from the Harmony HMI but please check compatibility of specific accessories with specific Harmony HMI Range before selection.

Illuminated switch annunciator

Description	Power supply	Mounting	Reference
5 Push Button switches and LED backlights	5VDC (via USB)	Ø 22mm PB Hole	**HMIZRA1**
Label insert - 3 pack			
Accessories kit - Installation Nut, anti rotation tee USB cable clamp - 5 pack			**HMIZKITRA1**
Switch gasket - 5 pack			**HMIZU50**

Biometric switch

Stores up to 200 fingerprints configurable from the HMI.

Description	Power supply	Mounting	Reference
Bistable USB Biometric switch with PNP output RGPD	24VDC	Ø 22mm PB Hole	**XB5S8B2L2**

Accessories such as protective covers, locking nuts and USB extension cables are available.

Towerlight

Configurable tower light, 60mm, multi colour, with buzzer.

Description	Power supply	Reference
With 100mm aluminium mounting tube	5VDC (via USB)	**XVGU3SHAV**
With direct base mounting	5VDC (via USB)	**XVGU3SWV**

Keyboard

Alpha numeric with configurable function keys and user legends.

Description	Power supply	Mounting	Reference
USB Keyboard	5VDC (via USB)	Ø 22mm PB Hole	**HMIZKB1**

Accessories such as protective covers, locking nuts and USB extension cables are available.

N

Product configurator on se.com/nz

Industrial panel PC's
S-Panel PC

Harmony panel PC's

> The panel PCs are an all-in-one PC with touchscreen. They are designed as true industrial PCs with certifications such as UL, ATEX, marine and C-tick.
> The PCs are rugged with options for harsh environments and maintenance free operation.
> 240VAC options available

Operator Terminal Expert

Vijeo Citect

Optimum S-Panel PC HMIPSO

Operator Terminal Expert

Description	Resolution	CPU	RAM	Storage	Expansion slots	Power supply	Comm ports	OS	Reference
10.1" Panel PC (LED Colour TFT LCD)	HD WSVGA 1280 x 800 Wide Multi touch capacitive screen 267k colors	ATOM E3827 dual core 1.75Ghz	4GB DDR3	HDD 500GB	1 optional full-size mini PCIe slot with optional interface slot	24V DC Supply	1 RS232 1 RS485/RS422 2 USB 2 Ethernet HDMI	Win 10 IoT Enterprise 64 bits	**HMIPSOH552D1801**
				SSD 80GB				Win 10 IoT Enterprise 64 bits	**HMIPSOS552D1801**
				CFAST 16GB				WES7 64 Bits	**HMIPSOC552D1W01**
				No Storage				No OS	**HMIPSO0552D1001**
15.6" Panel PC (LED Colour TFT LCD)	HD FWXGA 1366 x 768 Wide Multi touch capacitive screen 16M colors	ATOM E3827 dual core 1.75Ghz	4GB DDR3	HDD 500GB	1 optional full-size mini PCIe slot with optional interface slot	24V DC Supply	1 RS232 1 RS485/RS422 2 USB 2 Ethernet HDMI	Win 10 IoT Enterprise 64 bits	**HMIPSOH752D1801**
				SSD 80GB				Win 10 IoT Enterprise 64 bits	**HMIPSOS752D1801**
				CFAST 16GB				WES7 64 Bits	**HMIPSOC752D1W01**
				No Storage				No OS	**HMIPSO0752D1001**

Note: Operator Terminal Expert RT Demo to be installed and activated by unlimited license. Vijeo Citect DVD is only for installation. Software activation license to be ordered separately.

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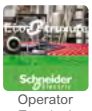
Industrial panel PC's
S-Panel PC


Operator Terminal Expert

Performance S-Panel PC HMIPSP

Description	Resolution	CPU	RAM	Storage	Expansion slots	Power supply	Comm ports	OS	Reference
15.6" Panel PC (LED Colour TFT LCD)	HD WFXGA 1366 x 768 Wide Multi touch capacitive screen 16M colors	Intel Core i3 4010U @ 1.7 GHz	8GB DDR3	HDD 500GB	1 full-size mini PCIe slot with optional interface slot	24V DC Supply	1 RS232 1 RS485/ RS422 2 USB 2 Ethernet HDMI	Win 10 IoT Enterprise 64 bits	**HMIPSPH752D1801**
				SSD 80GB					**HMIPSPS752D1801**
				SSD 160GB					**HMIPSPS752D180L**
				CFAST 16GB				WES 7 64 bits	**HMIPSPC752D1W01**
				No Storage				No OS	**HMIPSP0752D1001**
18.5" Panel PC (LED Colour TFT LCD)	HD WFXGA 1366 x 768 Wide Multi touch capacitive screen 16M colors	Intel Core i3 4010U @ 1.7 GHz	8GB DDR3	HDD 500GB	1 full-size mini PCIe slot with optional interface slot	24V DC Supply	1 RS232 1 RS485/ RS422 2 USB 2 Ethernet HDMI	Win 10 IoT Enterprise 64 bits	**HMIPSPH952D1801**
				SSD 80GB					**HMIPSPS952D1801**
				SSD 160GB					**HMIPSPS952D180L**
				No Storage				WES 7 64 bits	**HMIPSPC952D1W01**
				SSD 160GB				No OS	**HMIPSP0952D1001**

Note: OTE RT Demo to be installed and activated by unlimited license. Vijeo Citect DVD is only for installation. Software activation license to be ordered separately.

Enclosed S-Panel Performance PC HMIPEP

Description	Resolution	CPU	RAM	Storage	Expansion slots	Power supply	Comm ports	OS	Reference
18.5" Panel PC (LED Colour TFT LCD)	HD WFXGA 1366 x 768 Wide Multi touch capacitive screen 16M colors	Intel Core i3 4010U @ 1.7 GHz	8GB DDR3	SSD 80GB	1 full-size mini PCIe slot	24V DC Supply	1 RS232 M12 Male 1 USB 2.0 Type A M12 female 2 Ethernet M12 female	Win 10 IoT Enterprise 64 bits	**HMIPEPS952D1801**
				No Storage				No OS	**HMIPEP0952D1001**

Note: Operator Terminal Expert RT Demo to be installed and activated by unlimited license. Vijeo Citect DVD is only for installation. Software activation license to be ordered separately.

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Vijeo Citect

Rack PC

Magelis HMIR Rack PCs are industrial PCs that can be easily installed in a 19" rack enclosure of an automation control room. The HMIRs have embedded fan speed control for reduced noise, hot-swappable drive trays, optional redundant RAID hard drive & remote system monitor for remote access. The Harmony HMIR comprises the following UL60950-certified PCs for various requirements of a plant solution:

- Optimised Rack PC for operator stations
- Universal Rack PC for local SCADA and operator stations
- Performance Rack PC for Engineering and SCADA servers with redundant power supply and server operating system as per model.

HMIRSOHPA3W01

Optimum HMIRSO rack PC

Description	Screen compatibility	CPU	RAM	Storage	Slots	Power supply	Comm ports	OS	Reference
RackPC 2U	iDisplay Range or Modular HMIDM Display with adaptor HMIDADP11	Intel iCore G850 2.9GHz	2GB DDR3	HDD 500GB	1 PCI 2 PCIe	240V AC Supply	2 RS232, 4 RS485/422 6 USB 2 Ethernet	No OS	**HMIRXOHCA3001**
								Windows Embedded 7 Premium 32bits	**HMIRXOHCA3W01**
								Windows Embedded 7 Premium 64bits	**HMIRSOHPA3W01**

HMIRSPFXA6701

Performance HMIRSP rack PC

Description	Screen compatibility	CPU	RAM	Storage	Power supply	Comm ports	OS	Reference
Rack PC 4U	iDisplay Range	Intel Xeon quad-core 1225 @ 3.1 GHz - L3 cache 8 MB	8GB ECC	2 x RAID hard disk 500 GB	240V AC Supply redundant	2 RS232 4 RS485/422 Optional 6 USB 2 Ethernet	Windows Server 2008 R2	**HMIRSPSXR6S01**
							Windows Server 2012 R2	**HMIRSPSXR6T01**

Note: Vijeo Designer RT/Operator Terminal Expert RT demo/ Vijeo Citect can be installed from DVD,license to be ordered separately but with risk to lose data in case of power loss (No SRAM onboard)

Accessories

The Box & Rack PC also has a wide range of accessories, including Hard Disks, CF cards, Flash disks, DVD drive, RAID cards, serial ports, UPS Kit and DV-I interface. Please contact your local sales representative for more details.

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Industrial PC displays
iDisplay Screens

Harmony iDisplay

HMIDID64DTD1

Harmony iDisplay screens are monitors with industrial flat screens designed for use in conjunction with PCs.

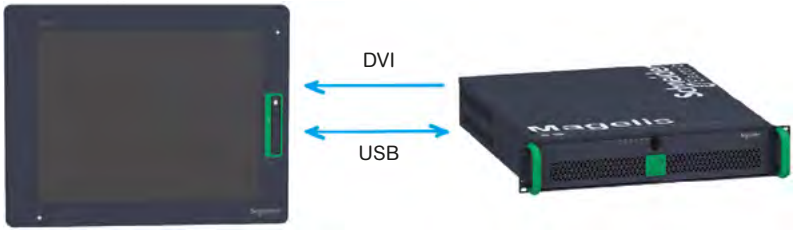
Harmony HMIDID enhances user experience and efficiency by multi-touch support like a smartphone. The 4:3 auto-scaler format screens of iDisplay adapt to screen definition.

Certified in accordance with PLC product standards, designed for use in severe industrial environments and offering an excellent screen size/dimensions ratio, they can be installed easily on any machine and in any equipment. They are suitable for use in any type of environment

Size	Resolution	Monitor input	Touch panel connection	Power supply	Comm ports	Reference
12.1" TFT HD LCD	XGA resistive 1024 x 768 Multi touch 16M colors	DVI-D	USB	12-24V DC	1 USB 2.0 (Type A front) 1 DVI-D 1 USB 2.0 (Type B)	**HMIDID64DTD1**
15" TFT HD LCD						**HMIDID73DTD1**

Note: Supplied with 5 m/16.40 ft DVI-D and USB cables.

*Mounting options - Panel on front enclosure or VESA 100 x 100 on the rear of iDisplay.
*iDisplay adaptation plate from 19" to 15" HMIYAD1915D1 is also available.
DVI-D cable for connecting Magelis iDisplay to HMIG5U2 Open Box is available HMIYCABDVI1011.
For 19" Display screen, Modular display HMIDM9521 with Display adaptor HMIDADP11 option available, Display and USB cable have to be ordered separately for display & touch signal.



Harmony iDisplay

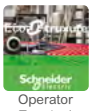
Harmony Rack PC

HMIDAD Display Adapter
+
HMIDM Modular Display
=
Panel Monitor

N

New

Industrial Box PC
IIoT Edge Box & HMIBM Box PC



Operator Terminal Expert

Node-RED

Harmony IIoT Edge Box

The new Harmony Edge Box & iPC offer meets IIoT challenges at the Edge Control level of EcoStruxure, the Schneider Electric IIoT architecture.They enable secured communication from connected products on the shop floor to the required software and applications on the top floor improving profitability and offering new business opportunities through enhanced asset performance for more efficient operation and maintenance of capital assets. They offer smart application design and engineering to leverage asset performance, with end-to-end cybersecurity.

The comprehensive range of intuitive Edge Box and industrial PCs provides solutions to applications that need to run on Windows or Linux operating systems in industrial environments. Harmony HMIBSC/HMIBMI/HMIBMO can be used for IIoT at the edge for direct connection to Cloud applications (running Node-RED to wire from OT (Operational technology) to IT (Internet technology)) with enhanced cybersecurity by design. Harmony iPC (Formerly Magelis iPC) and Edge Box runs Node-RED to wire devices on the Industrial Internet of Things. Node-RED is a simple, open source graphical programming tool for designing the communication data flow from OT to IT.

HMIBSC Edge Box

Node-RED

HMIBSC Core Edge Box

Software & interface	CPU	RAM	Storage	Slots	Power Supply	Comm Ports & Interface	OS	Reference
Node-red Pre-installed. Secure boot, TPM (Trusted platform module) for cyber-security	Qual-comm ARM Cortex-A53 fanless processor Quad core (upto 1.2GHz)	1GB DDR3 (not user expand-able)	8GB eMMC (soldered and not user-expand-able)	1x full-size mini PCIe slot ,1x M.2 slot for extension (Celullar 4G and Analog I/Os), 1x SD card slot	24 VDC Supply or 100...240 VAC with power adapter HMIYPSOMAC1	2x Ethernet, 1x Serial, 2x USBs, 1x DP,1x HDMI, Wifi & Bluetooth embed-ded, 1x for WLAN antenna, 1x for GPRS antenna,8x GPIO (Digital General Purpose I/O)	Linux Yocto	**HMIBSCEA53D1L0T**
Secure Boot, Node-red pre-installed, Connector for optional TPM module*		2GB	64GB eMMC					**HMIBSCEA53D1L01** **HMIBSCEA53D1L0A***

Note*: HMIBSCEA53D1L0A is conformally coated core Edge Box. TPM module to be ordered separately HMIYBINLTPM201

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New

Industrial Box PC
IIoT Edge Box & HMIBM Box PC

HMIBMI Edge Box

HMIBMO Edge Box

Node-RED

HMIBMI Basic / HMIBMO Optimised Modular Edge Box

Software & interface	CPU	RAM	Storage	Slots	Power Supply	Comm Ports	OS	Reference
Secure Boot, Node-red pre-installed, Connector for optional TPM module*	Intel Atom Apollo Lake E3930 Dual core (1.8 GHz)	4GB DDR3 (not user expand-able)	64GB eMMC (soldered)	1x mini PCIe full slot with optional interface	DC Supply or 100...240 VAC with power adapter HMIYPSOMAC1	2 Gigabit Ethernet, 1x Serial, 2x USBs, 1x display port, 1x HDMI, ,2x for WLAN antenna, 1x for GPRS antenna	Win10 IoT enter-prise 64 bit	**HMIBMIEA5DD1E01**
Secure boot, Connector for optional TPM module*			128GB eMMC					**HMIBMIEA5DD1101**
			64GB eMMC					**HMIBMIEA5DD110L**
			128GB eMMC				No OS	**HMIBMIEA5DD1001**
Node-red Pre-installed. Secure boot, TPM module			64GB M.2 SSD	1x mini PCIe full slot without optional interface				**HMIBMIEA5DD100A***
Secure boot, Connector for optional TPM module*							Win10 IoT enter-prise 64 bit	**HMIBMOMA5DD1E01**
			No Storage					**HMIBMOMA5DD1101**
			250GB M.2 SSD	1x mini PCIe full slot with optional interface				**HMIBMO0A5DD1001**
			No Storage				No OS	**HMIBMOMA5DDF10L**
		8GB DDR3						**HMIBMO0A5DDF101**
								HMIBMO0A5DDF10A

Note*: HMIBMI / HMIBMO edge box can be mounted on HMIDM Display Screens (12"W to 22"W) for panel PC option. HMIBMIEA5DD100A is conformally coated edge box.

N

Industrial Box PCs
IIoT Edge Box & Modular HMIBM Box PC

HMIBM Box PC

HMIDM Display

Harmony HMIBM modular box PC

Magelis HMIBM Modular Box PCs support advanced automation applications requiring Windows operating systems, with powerful CPUs, expansion capabilities, high-availability options (RAID HDD, UPS), and advanced certifications.

Their modularity means that HMIBM Box PCs can be converted to Panel PCs by combining them with HMIDM Displays.

Universal Box PC
2 mini PCIe slots

Universal Box PC
2 mini PCIe + 2
PCI/PCIe slots

Universal HMIBMU box PC

Description	CPU	RAM	Storage	Slots	Power supply	Comm ports	OS	Reference
Box PC Universal	Intel Celeron 2980U @1.6 GHz	4GB DDR3	HDD 500GB	2 (2 mini PCIe slots)	DC Supply	1 Serial 2 USB 2.0 Type A 2 USB 3.0 Type A 2 Ethernet	Win 10 IoT Enterprise 64 bits	**HMIBMUHI29D2801**
			SSD 80GB					**HMIBMUSI29D2801**
			Cfast 16GB				WES7 64 Bits	**HMIBMUCI29D2W01**
			No Storage				No OS	**HMIBMU0I29D2001**
Conformal coated		8GB DDR3	No Storage					**HMIBMU0I29D200A**
		4GB DDR3	HDD 500GB	4 (2 mini PCIe slots, 1PCI, 1PCIe slots)			Win 10 IoT Enterprise 64 bits	**HMIBMUHI29D4801**
			SSD 80GB					**HMIBMUSI29D4801**
			Cfast 16GB				WES7 64 Bits	**HMIBMUCI29D4W01**
			No Storage				No OS	**HMIBMU0I29D4001**
		8GB DDR3						**HMIBMU0I29D400A**
				4 (2 mini PCIe slots, 2 PCIe slots)				**HMIBMU0I29DI00A**
								HMIBMU0I29DE00A

Note: (Operator Terminal Expert) OTE RT demo/ Vijeo Citect can be installed from DVD,license to be ordered separately.

Performance Box PC
2 mini PCIe slots

Performance HMIBMP box PC

Description	CPU	RAM	Storage	Slots	Power supply	Comm ports	OS	Reference
Box PC Performance	Intel Core i7 4650U @1.7 GHz	8GB DDR3	HDD 500GB	2 (2 mini PCIe slots)	DC Supply	1 Serial 2 USB 2.0 Type A 2 USB 3.0 Type A 2 Ethernet	Win 10 IoT Enterprise 64 bits	**HMIBMPHI74D2801**
			SSD 80GB					**HMIBMPSI74D2801**
			No Storage				No OS	**HMIBMP0I74D2001**
Conformal coated		16GB DDR3						**HMIBMP0I74D200A**
Box PC Performance		8GB DDR3	HDD 500GB	4 (2 mini PCIe slots, 1PCI, 1PCIe slots)			Win 10 IoT Enterprise 64 bits	**HMIBMPHI74D4801**
			SSD 80GB					**HMIBMPSI74D4801**
			No Storage				No OS	**HMIBMP0I74D4001**
Box PC Performance Conformal Coated		16GB DDR3						**HMIBMP0I74D400A**
				4 (2 mini PCIe slots, 2 PCIe slots)				**HMIBMP0I74DI00A**
								HMIBMP0I74DE00A

Note: (Operator Terminal Expert) OTE RT demo/Vijeo Citect can be installed from DVD, license to be ordered separately.

Industrial Displays
HMIDM display screens

HMIBM Box PC

HMIDM Display

Harmony HMIDM display screen

Harmony HMIDM Modular Displays are monitors designed to be easily integrated with Harmony HMIBM Modular Box PCs to make a Panel PC. In addition to multiple choices, the modularity feature reduces maintenance as the Display or the Box PC can be independently replaced without changing the complete Panel PC.

Harmony HMIDM7421 4:3 15" and HMIDM7521 16:9 15" screens are cULus Industrial Control and Hazardous Locations, IECEX ATEX, and Marine DNV certified. When mounted with HMIBM Modular Box PCs with similar certifications, these displays can be used for advanced automation applications.

HMIDM Display screens

Size	Resolution	Screen properties	Power supply	Reference
12" LED Colour TFT LCD	4:3 display ratio XGA 1024x768	Single touch resistive	24V DC Supply	**HMIDM6421**
12" LED Colour TFT LCD	Wide 16:9 display ratio WHD/WXGA 1280 x 800	Multi touch capacitive		**HMIDM6521**
15" LED Colour TFT LCD	Wide 4:3 display ratio XGA 1024 x 768	Single touch resistive		**HMIDM7421**
15.6" LED Colour TFT LCD	Wide 16:9 display ratio WHD/FWXGA 1366 x 768	Multi touch capacitive		**HMIDM7521**
18.5" LED Colour TFT LCD				**HMIDM9521**
21.5" LED Colour TFT LCD	Wide 16:9 display ratio Full HD /FWXGA 1920 x 1080			**HMIDMA521**

Note: HMIDM display can only be used with HMIBM Box PC.
Display Adaptor HMIDADP11 is also available for remote mounting HMIDM Screen with HMIBM Box PC.

N

HMI Configuration Software

Vijeo Designer
for Harmony touchscreen HMIs and industrial PC's

Vijeo Designer

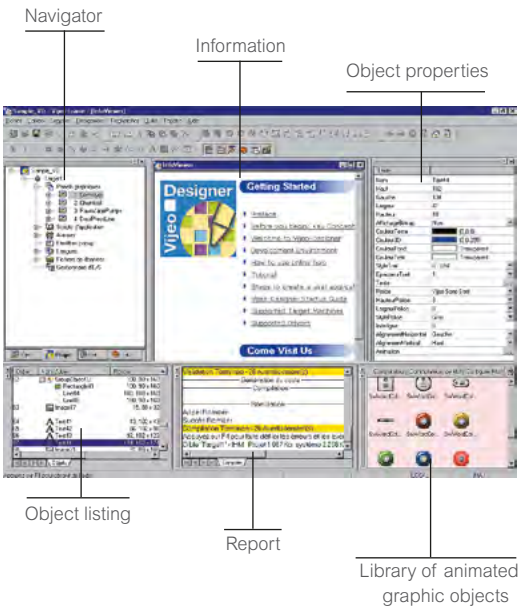
Vijeo Designer configuration software enables creation of automated system control operator dialogue applications for all Harmony terminals (except N, R, RT models). It also enables management of the multimedia functions of Smart & Compact i PC (video and audio) and offers users of Ethernet terminals and iPC remote access via a Web browser (WEB Gate function).

Configuration

Vijeo Designer configuration software enables fast, simple processing of operator dialogue projects thanks to its ergonomics, developed around 6 configurable windows.

It also offers comprehensive application management tools:

- Project creation; projects comprising one or several applications.
- Recipe editor (32 groups of 64 recipes of max. 1024 ingredients).
- User action list (eg. script) for application adaptability.
- Application variable cross-referencing.
- Vectorial graphic library for more attractive graphic screens.
- Application block diagram documentation.
- Simulation mode for simple design office application testing.
- High-performance graphic editor for simple block diagram creation (over 30 animated preconfigured objects).
- Support of layers and masks for faster development.
- Data sharing (up to 300 variables on 8 terminals).
- Management of 40 languages (including simplified Chinese, Korean, Arabic and Hebrew).
- Programmable controller database sharing (Unity, PL7, Concept, ProWORX, ModSoft).
- Advanced traceability function (periodic, at event or on request).
- Project backup on terminal for simple maintenance.
- User-friendly data recovery tool.
- Support of standard USB peripherals (USB key up to 2 GB).
- Support of external USB keyboards and mice.
- Integration with Schneider Electric equipment (buffer diag., variables access...)
- Over 35 third party protocols
- Multilingual software: English, French, German, Italian, Spanish and Chinese.



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HMI Configuration Software

EcoStruxure Operator Terminal Expert – Formerly Vijeo XD for Harmony HMI and industrial PC's

Operator Terminal Expert

Operator Terminal Expert is an HMI configuration software developed to create and edit application screens that control automation systems for Harmony GTU terminals (Standard,Open & Premium Box), STO7,ST6 and Magelis industrial PCs (Panel and BOX).

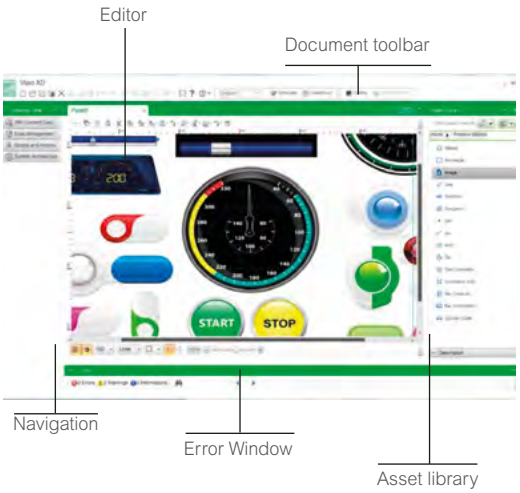
OTE software supports features like intuitive and simple-to-use user interface, easy access to functions and information, multi-platform working environment, and reduced down-time. This software also reduces the design time by reusing the existing operations.

Configuration

OTE is an intuitive configuration software that enables operator dialogue projects to be processed quickly and easily using the 5 configurable windows:

The software also offers a complete set of application management tools for:

- Recipe management (256 family groups of 256 groups of 256 recipes with up to 1024 ingredients) - (data size can be used as needed)
- A full simulation mode for testing the application from the design office
- Retrieval of symbol files for PLC variables generated by TwidoSuite, PL7, Concept, ProWORX 32 and Control Expert Software (1)
- Intuitive and simple-to-develop user interface
- Templates and theme design selection
- Online modification of project
- Multi-touch, zoom in/zoom out, slide, stretch like a tablet
- Vector Graphic engine
- Zoom in/out for more or less detail
- Animation features with rotating objects and dynamic drawings.



Note

(1) DDT structured types and "unlocated" variables are supported.

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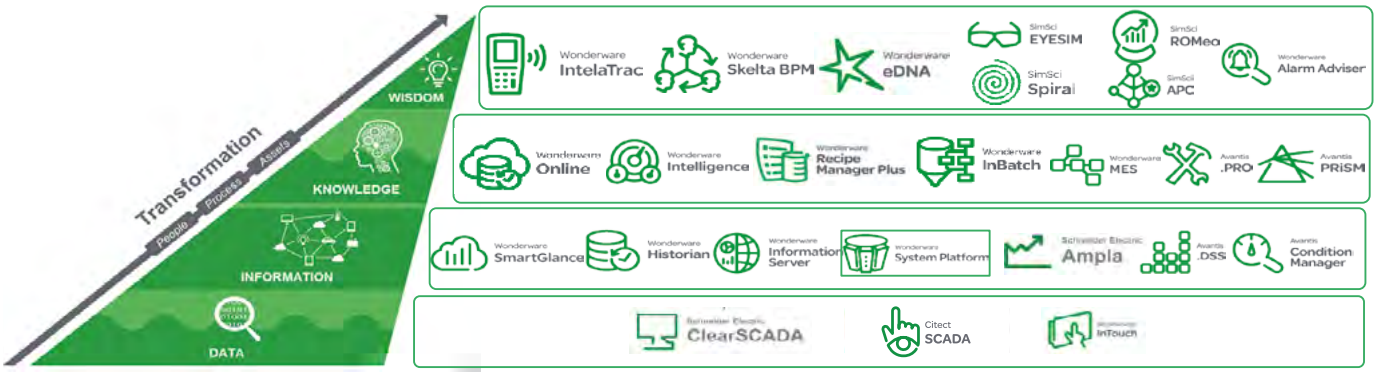
SCADA software solutions

Industrial software solutions

Optimise your process & drive increased operational value with a suite of Wonderware software solutions

Software application map



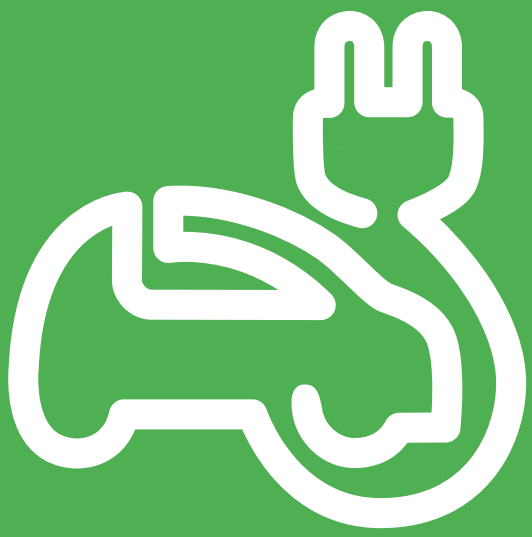
Schneider Electric ClearSCADA	**Geo SCADA Expert (ClearSCADA)** Your new go to solution for efficient management of remote assets spread across geographically dispersed infrastructure, with secure and reliable capabilities and easy connectivity to business and IT systems.
Citect SCADA	**CitectSCADA (Vijeo Citect)** Citect SCADA is a fully integrated industrial control solution that will help you increase your return on assets by delivering a reliable, flexible and high performance control and monitoring system. Easy to use configuration tools and powerful graphic features enable you to quickly develop & deploy solutions for any size application.
Wonderware InTouch	**Wonderware InTouch** InTouch SCADA enables users to quickly create and centrally manage standardized, reusable, industrial applications, maximising return on engineering, shortening project times, reducing risk and significantly reducing cost of ownership.
Wonderware System Platform	**Wonderware System Platform** Connect your existing SCADA (ClearSCADA, Citect SCADA / Vijeo Citect or Wonderware InTouch) to System platform and build on your current installations with applications from the wonderware software suite to better manage, improve processes and drive increased operational value.

Maintain your investment throughout the lifecycle through Schneider Electric's commitment to providing technology updates and on going, high quality support.

Note: Please contact your sales representative for more information on these solutions.

N

EVlink



Electric Vehicle Charging Solutions

How it works

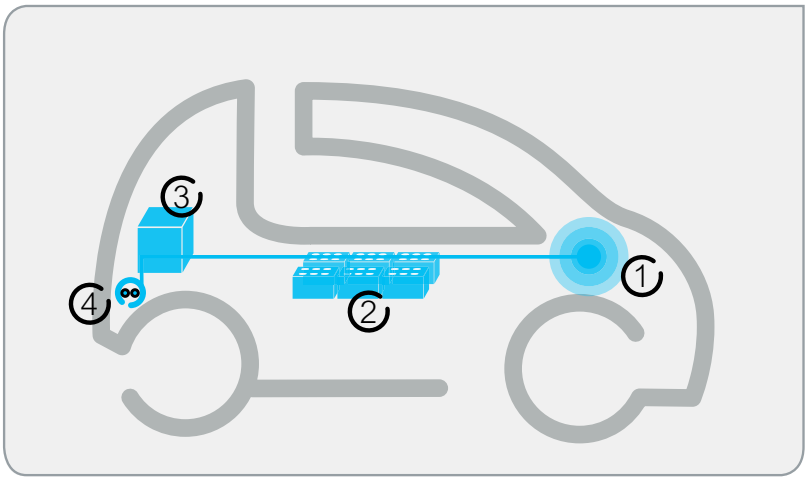
Focus on technology

The batteries

Battery technology has made very significant progress in recent years. Lead has gradually been replaced by other, more efficient compounds. Research continues with a view to improving capacity and reducing weight and heating during power inrush.

The most common technology at present is lithium-ion. These new batteries have no memory effect and can therefore be charged without having to be completely empty. They are present in telephones, laptop computers, and some aircraft, as well as in electric vehicles.

4 major items:



1 The motor

The vehicle has one or more motors. Depending on size and performance, the total power ranges between 15 and 200 kW.

Example: 48 kW (65 hp) for a small 4-seater sedan.

2 The battery set

The battery set provides the energy necessary for the motor to operate. Charging takes place either during vehicle deceleration (motor in generator mode) or upon connection to a charging station.

The battery capacity is approximately 5 to 90 kWh at a voltage of 300 to 500 V.

Battery and distance range

The vehicle's distance range depends on battery capacity, as well driving style, road configuration, and use of accessories (headlights, heating, etc.).

3 The charger

The charger converts the alternating current from the charging station into direct current and limits the inrush current to the maximum acceptable by the cable + charging station combination.

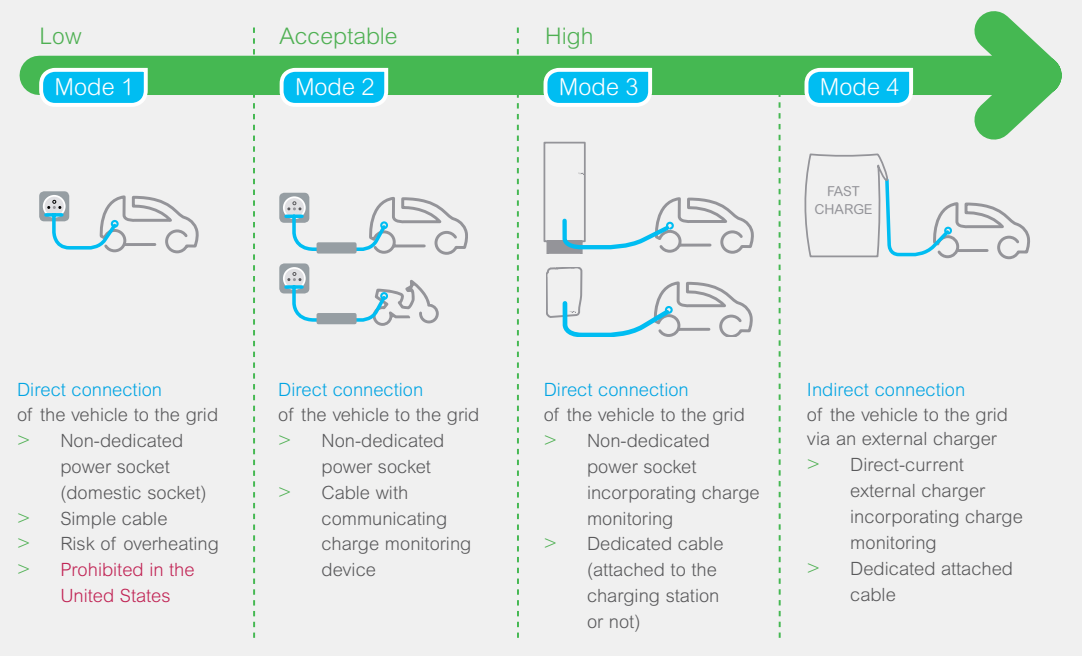
4 The charging inlet

The vehicle is equipped by the manufacturer with one or two socket inlets, depending on the type of charging required:

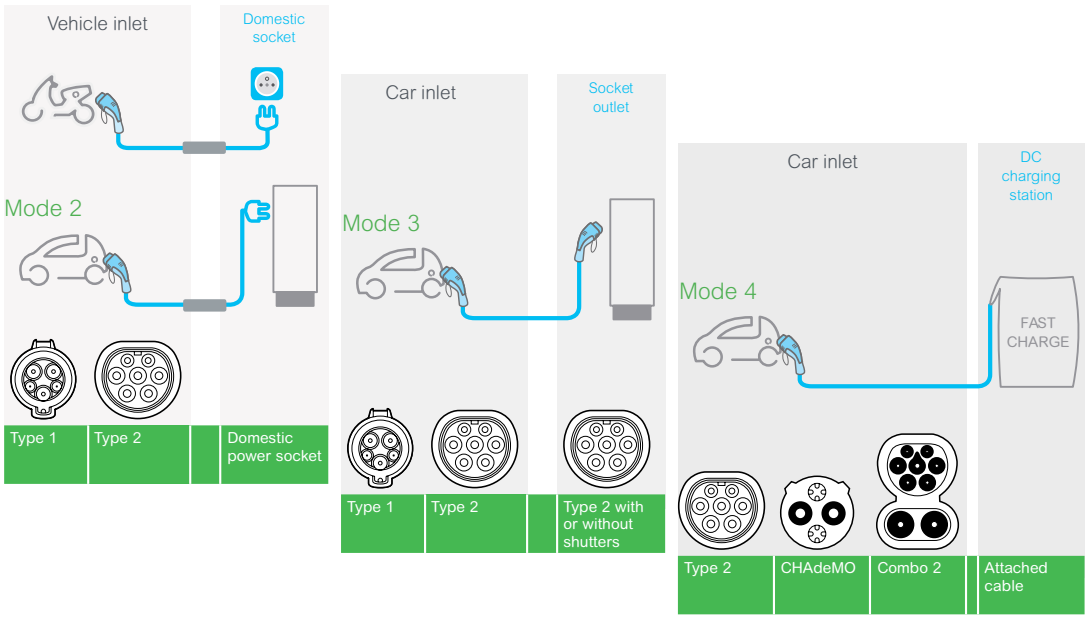
- At least one inlet for "normal" or "accelerated" charging on the AC network.
- Possibly a second inlet for charging at a fast charging station.

How it works

The charging mode determines the protection level



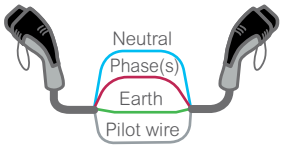
Mode 2 or Mode 3 determines the type of charging connectors



How it works

Focus on technology

The charging cable



A “pilot” wire allows data communication between the vehicle and the charging station. The charging process starts only if the following information is OK:

- Vehicle connection
- Vehicle earthing
- Indication of the maximum power allowed by the charger

The effective charging capacity is that of the weakest “link”, for example

Vehicle charger	Cable/charging mode	Charging point	Effective charging capacity
7 kW	2.3 kW (Mode 2)	Domestic power socket 2.3 kW (Mode 2)	2.3 kW
7 kW	7.4 kW (Mode 3)	Charging station 22.1 kW	7.4 kW

The power of the source determines the charging speed*

Example: for a vehicle with a 24 KWh battery.

Source used	Domestic power socket	Dedicated AC power socket		Dedicated DC power socket
Power	Single-phase: 2.3 kW	Single-phase: 7.4 kW	Three-phase: 22.1 kW	Three-phase: 43kW
Time to "fill up"	12 h	5 h	1h 30 min	30 min
% of charge reached in 30 min	4%	10%	34%	100%

* Subject to the use of a suitable cable.

> Overview of EVLink product offer

EVlink wallbox

- Outdoor or Indoor installation
- Wall-mounted or floor standing*
- Power Range: 3.7 kW to 22.1 kW with permanent derating option
- Socket outlet (T2/T2S) or attached cable (T2/T1)
- Keylock to limit socket outlet access and/or limit access while charging

*pole as an accessory

EVlink smart wallbox

Cloud-connectable

- Outdoor or Indoor installation
- Wall-mounted or floor standing*
- Power Range: 7.4 kW or 22.1 kW with permanent derating option
- Socket outlet (T2/T2S) or attached cable (T2/T1)
- Key lock to limit socket outlet access and/or limit access while charging
- RFID badge authentication
- Energy metering capacity
- Optional 3G/4G modem or Ethernet to connect to a 3rd party back-end system

*pole as an accessory

EVlink parking

Cloud-connectable

- Outdoor or Indoor installation
- Wall-mounted or floor standing
- Power Range: 7.4 kW to 22.1 kW with permanent derating option
- 1 or 2 socket outlet (T2/T2S)
- Free access or RFID badge authentication
- Energy metering capacity with automatic load balancing
- Optional 3G/4G modem or Ethernet to connect to a 3rd party back-end system

EVlink Wallbox (for homes)
EVlink Smart Wallbox (for commercial parking spaces)

EVlink wallbox

Description	Reference
EVlink wallbox with attached 4m cable (right side)	
7.4 kW, 1-phase, with 4m cable & type 1 connector	**EVH2S7P0AK**
7.4 kW, 1-phase, with 4m cable & type 2 connector	**EVH2S7P0CK**
11 kW, 3-phase, with 4m cable & type 2 connector	**EVH2S11P0CK**
22.1 kW, 3-phase, with 4m cable & type 2 connector	**EVH2S22P0CK**
Evlink wallbox - no cable, socket for cable on right side (cable sold as separate item)	
7.4 kW, 1-phase, with type 2 socket with shutters	**EVH2S7P04K**
11 kW, 3-phase, with type 2 socket with shutters	**EVH2S11P04K**
22.1kW, 3-phase, with type 2 socket with shutters	**EVH2S22P04K**

Cloud-connectable

EVlink smart wallbox

Description	Reference
EVlink smart wallbox with attached 4.5m cable (right side) + key lock	
7.4 kW, 1-phase, with 4.5m cable & Key Lock & Type 1 connector	**EVB1A7PAKI**
7.4 kW, 1-phase, with 4.5m cable & Key Lock & Type 2 connector	**EVB1A7PCKI**
22.1 kW, 3-phase, with 4.5m cable & Key Lock & Type 2 connector	**EVB1A22PCKI**
EVlink smart wallbox with attached 4.5m cable (right side) + RFID (1) (2)	
7.4 kW, 1-phase, with 4.5m cable & RFID & type 1 connector	**EVB1A7PARI**
7.4 kW, 1-phase, with 4.5m cable & RFID & type 2 connector	**EVB1A7PCRI**
22.1 kW, 3-phase, with 4.5m cable & RFID & type 2 connector	**EVB1A22PCRI**
EVlink smart wallbox with socket outlet (right side)	
7.4 kW (1-phase) / 22.1 kW (3-phase), with socket outlet with shutters on right side + key lock	**EVB1A22P4KI**
7.4 kW (1-phase) / 22.1 kW (3-phase), with socket outlet with shutters on right side + RFID	**EVB1A22P4RI**

Protection devices kits

Description	Reference
Protection devices kit for 7.4 kW EVlink Wallbox and Smart Wallbox	**KITWALLBOX7**
Protection devices kit for 11/22.1 kW EVlink Wallbox and Smart Wallbox	**KITWALLBOX22**

Note: Depending on the reference, each kit would have an MCB and RCD (or RCBO), and under-voltage release

Accessories

Description	Reference
Pack of 10 RFID badges	**EVP1BNS**
Pedestal 1 Wallbox	**EVP2PBSSG1**
Pedestal 2 Wallbox	**EVP2PBSSG2**
Kit to upgrade from 1 to 2 Wallbox	**EVP2PBSSGC**
EVlink charging cables	
Type 2 to type 1, 1 -phase (5m)	**EVP1CNS32121**
Type 2 to type 2, 1 -phase (5m)	**EVP1CNS32122**
Type 2 to type 2, 3 -phase (5m)	**EVP1CNS32322**
Type 2 to type 1, 1-phase (7m)	**EVP1CNL32121**
Type 2 to type 2, 1-phase (7m)	**EVP1CNL32122**
Type 2 to type 2, 3-phase (7m)	**EVP1CNL32322**

Notes
(1) Charger with RFID reader includes 5 x RFID badges
(2) EVlink Smart Wallbox has embedded Webserver (Cloud-connectable)

EVlink parking
On street charging solutions

EVlink parking (floor standing)

With
RFID reader

Description	Reference
Floor standing with 1 x socket (mode 3)	
7.4kW, 1 phase with 1 X T2 sockets with shutters	**EVF2S7P04**
22.1kW, 3 phase with 1 X T2 sockets with shutters	**EVF2S22P04**
Floor standing with 2 x socket (mode 3)	
7.4kW, 1 phase with 2 X T2 sockets with shutters	**EVF2S7P44**
22.1kW, 3 phase with 2 X T2 sockets with shutters	**EVF2S22P44**
Floor standing with 1 x socket + RFID reader (mode 3) (1) (2)	
7.4kW, 1 phase with 1 X T2 sockets with shutters + RFID reader	**EVF2S7P04R**
22.1kW, 3 phase with 1 X T2 sockets with shutters + RFID reader	**EVF2S22P04R**
Floor standing with 2 x socket + RFID reader (mode 3) (1) (2)	
7.4kW, 1 phase with 2 X T2 sockets with shutters + RFID reader	**EVF2S7P44R**
22.1kW, 3 phase with 2 X T2 sockets with shutters + RFID reader	**EVF2S22P44R**

EVlink parking (wall mounted)

With
RFID reader

Description	Reference
Wall mounting with 1 x socket (mode 3)	
7.4kW, 1 phase with 1 X T2 sockets with shutters	**EVW2S7P04**
22.1kW, 3 phase with 1 X T2 sockets with shutters	**EVW2S22P04**
Wall mounting with 2 x socket (mode 3)	
7.4kW, 1 phase with 2 X T2 sockets with shutters	**EVW2S7P44**
22.1kW, 3 phase with 2 X T2 sockets with shutters	**EVW2S22P44**
Wall mounting with 1 x socket + RFID reader (mode 3) (1) (2)	
7.4kW, 1 phase with 1 X T2 sockets with shutters + RFID reader	**EVW2S7P04R**
22.1kW, 3 phase with 1 X T2 sockets with shutters + RFID reader	**EVW2S22P04R**
Wall mounting with 2 x socket + RFID reader (mode 3) (1) (2)	
7.4kW, 1 phase with 2 X T2 sockets with shutters + RFID reader	**EVW2S7P44R**
22.1kW, 3 phase with 2 X T2 sockets with shutters + RFID reader	**EVW2S22P44R**

Protection devices kits

Description	Reference
Protection devices kit for 7.4 kW EVlink Parking, 1-socket	**KITPARKING7-1**
Protection devices kit for 7.4 kW EVlink Parking, 2-sockets	**KITPARKING7-2**
Protection devices kit for 22.1 kW EVlink Parking, 1-socket	**KITPARKING22-1**
Protection devices kit for 22.1 kW EVlink Parking, 2-sockets	**KITPARKING22-2**

Note: Depending on the reference, each kit would have an MCB and RCD (or RCBO), RCCB, under-voltage release, and auxiliary contacts

Notes
(1) Charger with RFID reader includes 5 x RFID badges
(2) EVlink Parking has embedded Webserver (Cloud-connectable)

Accessory

Description	Reference
Pack of 10 RFID badges	**EVP1BNS**
Cable holder for Evlink parking units	**EVP1PH**
Protective cover for cable entry in wall mounting unit	**EVP1WPSC**
DIN rail mounting kit (for floor-standing model only)	**EVP1FKC**

EVlink charging cables	
Type 2 to type 1, 1 -phase (5m)	**EVP1CNS32121**
Type 2 to type 2, 1 -phase (5m)	**EVP1CNS32122**
Type 2 to type 2, 3 -phase (5m)	**EVP1CNS32322**
Type 2 to type 1, 1-phase (7m)	**EVP1CNL32121**
Type 2 to type 2, 1-phase (7m)	**EVP1CNL32122**
Type 2 to type 2, 3-phase (7m)	**EVP1CNL32322**

EVlink Load Management System

Description	
EVlink Load Management System 5 CS dynamic	**HMIBSCEA53D1EDB**
EVlink Load Management System 15 CS dynamic	**HMIBSCEA53D1EDS**
EVlink Load Management System 50 CS dynamic	**HMIBSCEA53D1EDM**
EVlink Load Management System 100 CS dynamic	**HMIBSCEA53D1EDL**
EVlink Load Management System 15 CS static	**HMIBSCEA53D1ESS**
EVlink Load Management System 50 CS static	**HMIBSCEA53D1ESM**
EVlink Load Management System Master LMS dynamic	**HMIBSCEA53D1EML**

Accessories

DIN rail mounting kit

EVP1FKC

For EVlink Parking floor-standing only
For using the floor standing charging station as an electrical enclosure.

Step 1:

Wire protection devices on the adapted rail.

Step 2:

Insert wired protection kit in the floor base.

Step 3:

Finish the wiring.

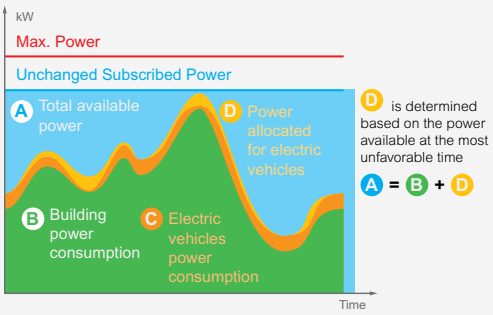
Step 4:

Install the prewired floor base on site.

Two possible implementations

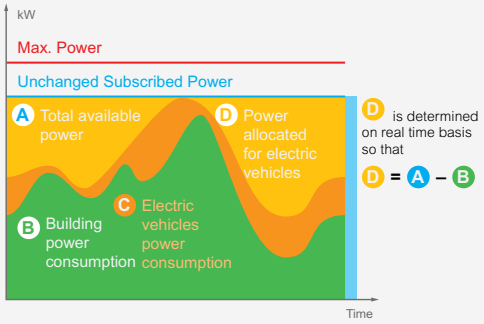
Schneider Electric solutions

Static energy management



Setpoint "D" is fixed. The power is distributed between all connected vehicles.

Dynamic energy management



Setpoint "D" is adjusted in real time according to the consumption of the rest of loads in the building, to maximize the power allocated to charging electric vehicles.

Technical reference charts

Technical information

Reference charts

Calculating short circuit current	P3
Determination of short circuit current	P4
Cascading, network 380/415V	P5-6
Type 1 co-ordination	P7-8
Type 2 co-ordination	P9-10
Direct current distribution	P12-13
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Motor circuit breaker co-ordination	P16
Soft starter co-ordination	P16-19
Variable speed drive co-ordination	P20-23
Star Delta and contactor selection chart	P24
Average full load motor currents	P25
Technical data	P26

P

Calculating short circuit current

Maximum short circuit current downstream of an MV/LV transformer
Selecting CBs supplied by one or more MV/LV transformers

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.

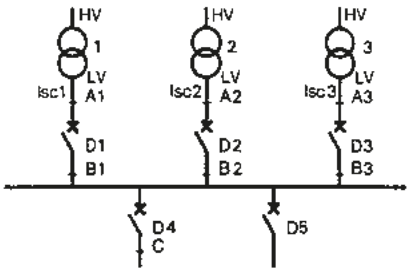
	transformer kVA rating														
433 V (1)	50	100	160	250	315	400	500	630	750	1000	1250	1500	2000	2500	3150
In (A)	66.7	133.3	213.3	333.3	420.0	533.3	666.7	840	1000	1333	1667	2000	2667	3333	4200
Isc (kA)	1.7	3.3	5.3	8.3	10.5	13.3	16.7	21.0	22.2	26.7	30.3	33.3	41.0	47.6	60.0
Usc (%)	4	4	4	4	4	4	4	4	4.5	5	5.5	6	6.5	7	7

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



E.g. If transformers 1, 2 & 3 were rated at 630kVA each, circuit breakers D1, D2 & D3 must have a breaking capacity u 42kA.

Circuit breakers D4 & D5 must have a breaking capacity u 63kA.

(**Note**: Special precautions to be taken when cascading with several transformers in parallel).

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 two 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.

Notes

(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 Usc, the same transformation ratio and the same coupling.
The power ratio between the two transformers should be a maximum of 2.

Determination of short circuit current

Using cable data and 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, 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 Isc=25kA, gives the required short circuit current value: 7kA.

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

P

Cascading, network 380/415 V

Upstream: NG160, Compact NSX100-160
Downstream: Multi 9, Compact NSX100-160

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 act 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 switchgear 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 CBs and the maximum permissible thermal stress for the downstream device),
- verified experimentally.

The tables indicate cascading possibilities between circuit breakers on 415V distribution networks.

Upstream Breaking capacity (kA rms)	NG160H 36	NSX100F 36	NSX100N 50	NSX100H 70	NSX100S 100	NSX100L 150
Downstream	**Reinforced breaking capacity (kA rms)**					
iC60N 32 A	25 kA	25 kA	30 kA	30 kA	30 kA	30 kA
iC60N 40 A	25 kA	25 kA	30 kA	30 kA	30 kA	30 kA
iC60H 32 A	25 kA	30 kA	40 kA	40 kA	40 kA	40 kA
iC60H 40 A	25 kA	30 kA	40 kA	40 kA	40 kA	40 kA
C120N	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
C120H	25 kA	25 kA	25 kA	25 kA	25 kA	25 kA
NG125H			40 kA	50 kA	70 kA	100 kA
NSX100F			50 kA	70 kA	100 kA	150 kA
NSX100N				70 kA	100 kA	150 kA
NSX100H					100 kA	150 kA
NSX100S						150 kA

Upstream Breaking capacity (kA rms)	NSX160F 36	NSX160N 50	NSX160H 70	NSX160S 100	NSX160L 150
Downstream					
iC60N 32 A	25 kA	25 kA	25 kA	25 kA	25 kA
iC60N 40 A	25 kA	25 kA	25 kA	25 kA	25 kA
iC60H 32 A	30 kA	30 kA	30 kA	30 kA	30 kA
iC60H 40 A	30 kA	30 kA	30 kA	30 kA	30 kA
C120N	25 kA	25 kA	25 kA	25 kA	25 kA
C120H	25 kA	25 kA	25 kA	25 kA	25 kA
NG125H		40 kA	50 kA	70 kA	100 kA
NG160N		36 kA	50 kA	50 kA	50 kA
NG160H		50 kA	50 kA	50 kA	50 kA
NSX100F		50 kA	70 kA	100 kA	150 kA
NSX100N			70 kA	100 kA	150 kA
NSX100H				100 kA	150 kA
NSX100S					150 kA
NSX160F		50 kA	70 kA	100 kA	150 kA
NSX160N			70 kA	100 kA	150 kA
NSX160H				100 kA	150 kA
NSX160S					150 kA

Upstream Breaking capacity (kA rms)	NSX250F 36	NSX250N 50	NSX250H 70	NSX250S 100	NSX250L 150
Downstream					
iC60N 32 A	25 kA	30 kA	30 kA	30 kA	30 kA
iC60N 40 A	20 kA	20 kA	20 kA	20 kA	20 kA
iC60H 32 A	30 kA	30 kA	30 kA	30 kA	30 kA
iC60H 40 A	25 kA	25 kA	25 kA	25 kA	25 kA
C120N	25 kA	25 kA	25 kA	25 kA	25 kA
C120H	25 kA	25 kA	25 kA	25 kA	25 kA
NG125H		40 kA	50 kA	70 kA	100 kA
NG160H		50 kA	50 kA	50 kA	50 kA
NSX100F		50 kA	70 kA	100 kA	150 kA
NSX100N			70 kA	100 kA	150 kA
NSX100H				100 kA	150 kA
NSX100S					150 kA
NSX160F		50 kA	70 kA	100 kA	150 kA
NSX160N			70 kA	100 kA	150 kA
NSX160H				100 kA	150 kA
NSX160S					150 kA
NSX250F		50 kA	70 kA	100 kA	150 kA
NSX250N			70 kA	100 kA	150 kA
NSX250H				100 kA	150 kA
NSX250S					150 kA

Notes

- Refer Compact Catalogue (LVPED208012EN) for more information on cascading and discrimination.

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 co-ordination with overload protective devices.

Cascading, network 380/415 V

Upstream: Compact NSX400-630, NS630b-3200N, Masterpact NT/MTZ1, NW/MTZ2
Downstream: NG160, Compact NSX100-630, NS630b-1600

Upstream Breaking capacity (kA rms)	NSX400N 50	NSX400H 70	NSX400S 100	NSX400L 150	NSX630N 50	NSX630H 70	NSX630S 100	NSX630L 150
Downstream	**Reinforced breaking capacity (kA rms)**							
NG160H	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
NSX100F	50 kA	70 kA	100 kA	150 kA	50 kA	70 kA	100 kA	150 kA
NSX100N		70 kA	100 kA	150 kA		70 kA	100 kA	150 kA
NSX100H			100 kA	150 kA			100 kA	150 kA
NSX100S				150 kA				150 kA
NSX160F	50 kA	70 kA	100 kA	150 kA	50 kA	70 kA	100 kA	150 kA
NSX160N		70 kA	100 kA	150 kA		70 kA	100 kA	150 kA
NSX160H			100 kA	150 kA			100 kA	150 kA
NSX160S				150 kA				150 kA
NSX250F	50 kA	70 kA	100 kA	150 kA	50 kA	70 kA	100 kA	150 kA
NSX250N		70 kA	100 kA	150 kA		70 kA	100 kA	150 kA
NSX250H			100 kA	150 kA			100 kA	150 kA
NSX250S				150 kA				150 kA
NSX400N		70 kA	100 kA	150 kA		70 kA	100 kA	150 kA
NSX400H			100 kA	150 kA			100 kA	150 kA
NSX400S				150 kA				150 kA
NSX630N						70 kA	100 kA	150 kA
NSX630H							100 kA	150 kA
NSX630S								150 kA

Upstream	NS630bN to NS1600N	NS630bH	NS630bL	NS800H	NS800L	NS1000H	NS1000L	NS1250H NS1600H	NS2000N NS2500N NS3200N
Breaking capacity (kA rms)	50	70	150	70	150	70	150	70	70
Downstream	**Reinforced breaking capacity (kA rms)**								
NSX100F	50 kA	70 kA	150 kA	70 kA	150 kA	70 kA	150 kA	70 kA	
NSX100N		70 kA	150 kA	70 kA	150 kA	70 kA	150 kA	70 kA	
NSX100H			150 kA		150 kA		150 kA		
NSX100S			150 kA		150 kA		150 kA		
NSX160F	50 kA	70 kA	150 kA	70 kA	150 kA	70 kA	150 kA	70 kA	
NSX160N		70 kA	150 kA	70 kA	150 kA	70 kA	150 kA	70 kA	
NSX160H			150 kA		150 kA		150 kA		
NSX160S			150 kA		150 kA		150 kA		
NSX250F	50 kA	70 kA	150 kA	70 kA	150 kA	70 kA	150 kA	70 kA	
NSX250N		70 kA	150 kA	70 kA	150 kA	70 kA	150 kA	70 kA	
NSX250H			150 kA		150 kA		150 kA		
NSX250S			150 kA		150 kA		150 kA		
NSX400N		70 kA	150 kA	70 kA	150 kA	70 kA	150 kA	70 kA	
NSX400H			150 kA		150 kA		150 kA		
NSX400S			150 kA		150 kA		150 kA		
NSX630N		70 kA	150 kA	70 kA	150 kA	70 kA	150 kA	70 kA	
NSX630H			150 kA		150 kA		150 kA		
NSX630S			150 kA		150 kA		150 kA		
NS630bN		70 kA	150 kA	70 kA	150 kA	70 kA	150 kA	70 kA	70 kA
NS630bH			150 kA		150 kA		150 kA		
NS800N				70 kA	150 kA	70 kA	150 kA	70 kA	70 kA
NS800H					150 kA		150 kA		
NS1000N						70 kA	150 kA	70 kA	70 kA
NS1000H							150 kA		
NS1250N								70 kA	70 kA
NS1600N									70 kA

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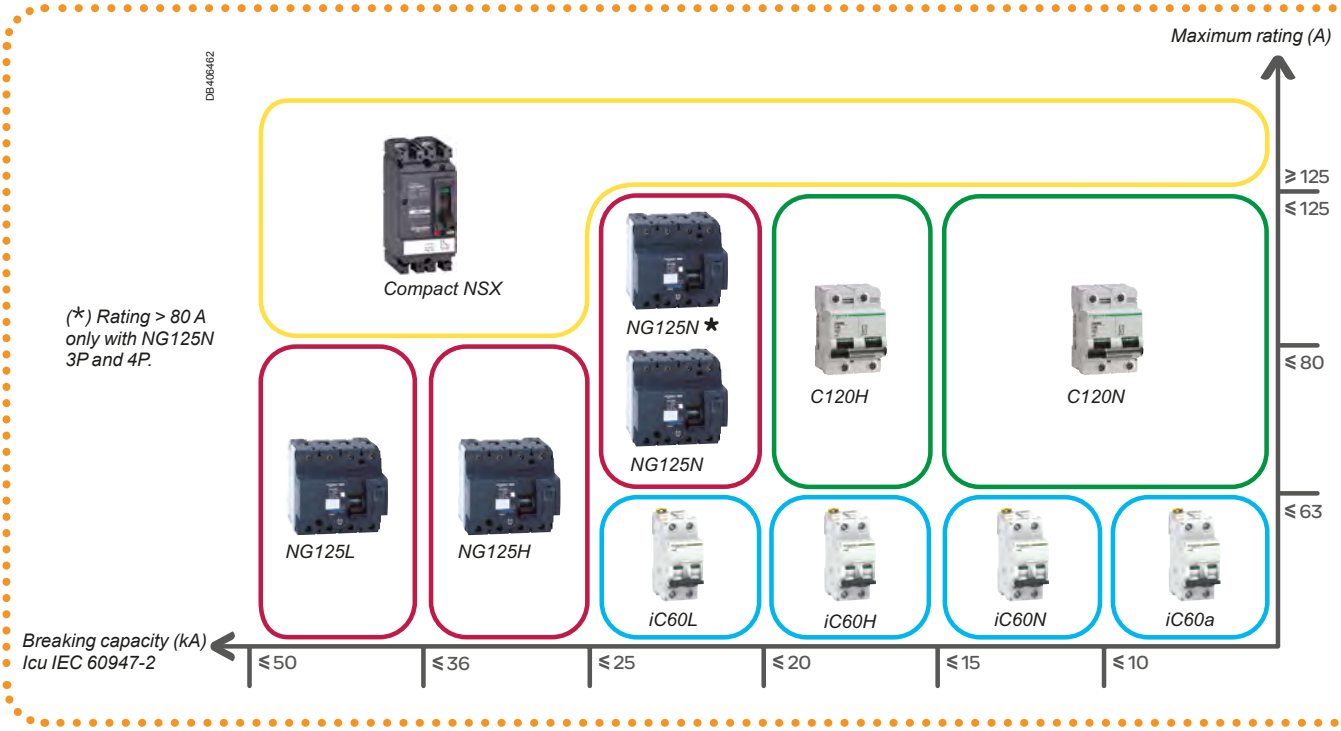
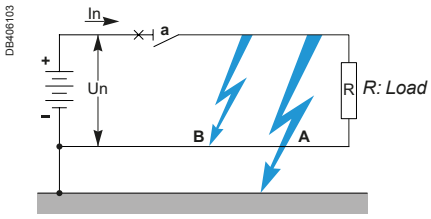
Direct current distribution

Choosing and implementing circuit breakers
Complementary technical information
iC60, C120, NG125 offer

Choosing circuit breakers for distribution with earthed polarity

The following tables show the number of poles connected in series according to the DC network voltage, and the circuit breaking performance of our circuit breaker range.
Breaking capacity for a maximum voltage per pole of: 60 V DC for the iC60 offers and 125 V DC for the C120 and NG125 offers.





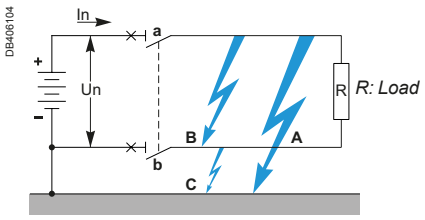
1 *The figure shows a source with the negative polarity earthed.*

Fault condition analysis 1

Fault	Fault current (max.)	Voltage	Poles involved in breaking	Breaking characteristics
A, B	Isc	Un	a	Isc at Un on the poles connected to the positive polarity

Isc: presumed short-circuit current.
Un: rated network voltage.

> All the circuit-breaker poles must be on the non-earthed polarity.



2 *The figure shows a source with the negative polarity earthed.*

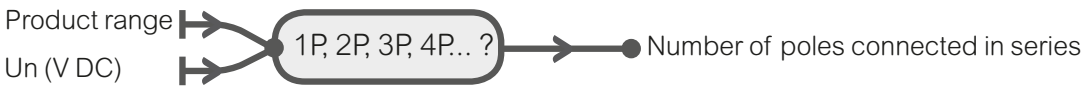
Fault condition analysis 2

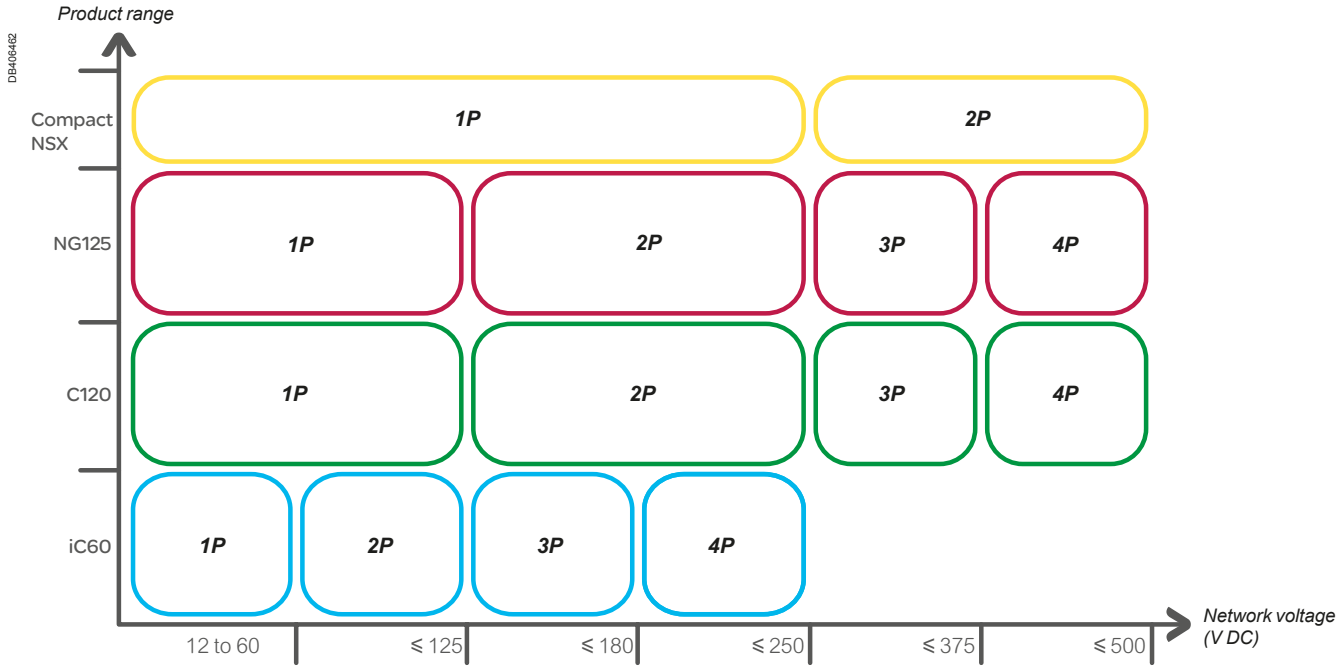
Fault	Fault current (max.)	Voltage	Poles involved in breaking	Breaking characteristics
A	Isc	Un	a	Isc at Un on the poles connected to the positive polarity
B	Isc	Un	a + b	Isc at Un on all the poles connected in series
C	-	-	b	No breaking needed

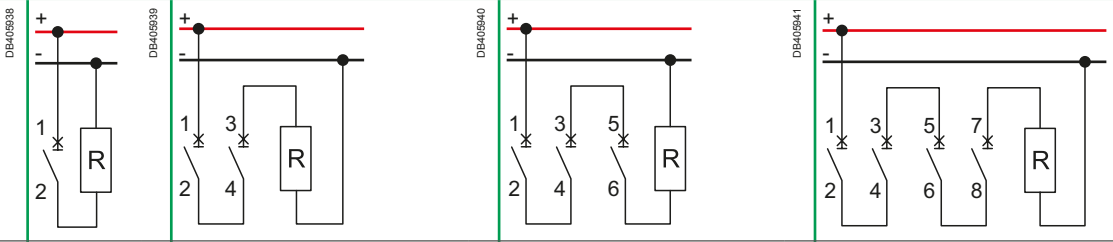
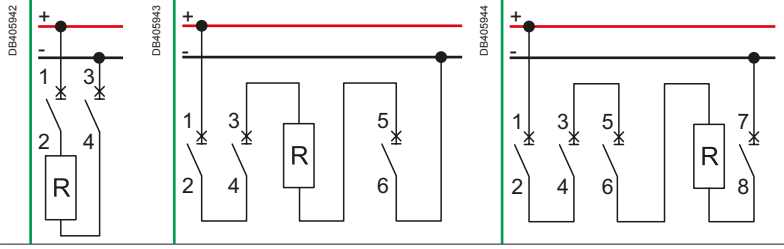
Isc: presumed short-circuit current.
Un: rated network voltage.

> All the circuit-breaker poles must be on the non-earthed polarity.
> One pole on the earthed polarity will allow isolation to be performed.

P





Isolation	Number of poles and connection diagram			
	1P	2P	3P	4P
Not required 1				
Required 2				

R: Load.

iCT contactors selection

Lighting application

> The following tables concern all the contactors from the iCT range, with or without manual control, for 230V 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.
  > 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 230V single phase circuit Power (W)	Maximum number of lamps for a given rating iCT contactors 16A	25A	40A	63A	100A
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
12V 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)					
2x18	30	46	80	123	180
2x20	30	46	80	123	180
2x36	17	25	43	67	100
2x40	17	25	43	67	100
2x58	10	16	27	42	63
2x65	10	16	27	42	63
2x118	6	10	16	25	37
2x140	6	10	16	25	37
26mm fluorescent tube (4 tubes, serial correction)					
4x18	15	23	46	69	100
Electronic ballast (1x26mm tube)					
18	74	111	222	333	500
35	38	58	117	176	260
58	25	37	74	111	160
Electronic ballast (2x26mm tubes)					
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

iCT contactors selection

Type of lighting application 230V single phase circuit Power (W)	Maximum number of lamps for a given rating iCT contactors 16A	25A	40A	63A	100A
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	5	7	
180	1	2	4	6	
High pressure sodium vapour lamp (without correction)					
70	8	12	20	32	
150	4	7	13	18	
250	2	4	8	11	
400	1	3	5	8	
1000	–	1	2	3	
High pressure sodium vapour lamp (with parallel correction)					
70	6	9	16	25	
150	4	6	10	15	
250	3	4	7	10	
400	2	3	5	7	
1000	1	2	3	5	

Heating application

> The following table concerns all the contactors in the iCT range, with or without manual control, for 230V single phase and 400V 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 iCT contactors 25A	40A	63A	100A
230V heating				
25	5.4	8.6	14	21.6
50	5.4	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
400V heating				
25	16	26	41	63
50	16	26	41	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

The following table concerns all the contactors in the iCT range, with or without manual control, for 230V single-phase and 400V three-phase circuits.

> It indicates the contactor rating to be chosen according to the power of the motor to be controlled.

Small motor application type Voltage	Maximum power (kW) for a given rating iCT contactors 25A	40A	63A
Asynchronous single phase motor with capacitor			
230V	1.4	2.5	4
Asynchronous three-phase motor			
400V	4	7.5	15
Universal motor			
230V	0.9	1.4	2.2

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DOL motor starter co-ordination

Selection charts according to IEC60947-4-1
TeSys Direct On Line starters (DOL)

Type 1 Co-ordination: Type 1 coordination requires that in a short-circuit condition, the contactor or starter must not present any danger to personnel or installations and must not be able to resume operation without repair or the replacement of parts.

Type 2 Co-ordination: Type 2 coordination requires that In a short-circuit condition, the contactor or starter must not present any danger to personnel or installations and must subsequently be able to resume operation. The risk of contact welding is permissible; in this case, the manufacturer must indicate measures to be taken regarding maintenance of the equipment.

GV2ME16

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LC1D12B7

Type 1 co-ordination – 2 product solution

Circuit breaker with built in overload protection + contactor

Power rating of 3 phase motor 400V		Fault level	Motor circuit breaker (in built overload)		Contactor
(kW)	AC3 (A)	(kA)	Reference	Thermal setting	Reference (2)
0.06	0.2	50	GV2ME02	0.16…0.25	LC1K06 or LC1D09
0.09	0.3	50	GV2ME03	0.25…0.40	LC1K06 or LC1D09
0.18	0.6	50	GV2ME04	0.40…0.63	LC1K06 or LC1D09
0.37	1.1	50	GV2ME05	0.63…1	LC1K06 or LC1D09
0.55	1.5	50	GV2ME06	1…1.6	LC1K06 or LC1D09
0.75	1.9	50	GV2ME07	1.6….2.5	LC1K06 or LC1D09
1.5	3.6	50	GV2ME08	2.5…4	LC1K06 or LC1D09
2.2	4.9	50	GV2ME10	4…6.3	LC1K06 or LC1D09
4	8.5	50	GV2ME14	6…10	LC1K09 or LC1D09
5.5	11.5	15	GV2ME16	9…14	LC1K12 or LC1D12
7.5	15.5	15	GV2ME20	13…18	LC1D18
9	18.1	15	GV2ME21	17…23	LC1D25
11	22	15	GV2ME22	20…25	LC1D25
15	29	10	GV2ME32	24…32	LC1D32
18.5	35	50	GV3P40	30…40	LC1D40A
22	41	50	GV3P50	37…50	LC1D50A
30	55	50	GV3P65	48…65	LC1D65A
37	66	50	GV4P80N	40…80	LC1D80
45	80	50	GV4P115N	65...115	LC1D95
55	97	50	GV4P115N	65...115	LC1D115

GV2P16

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LC1D25

Type 2 co-ordination (high performance) – 2 product solution

Circuit breaker with built in overload protection + contactor

Power rating of 3 phase motor 400V		Fault level	Motor circuit breaker (in built overload)		Contactor
(kW)	AC3 (A)	(kA)	Reference	Thermal setting	Reference (2)
0.06	0.2	130	GV2P02 or GV2ME02	0.16…0.25	LC1D09
0.09	0.3	130	GV2P03 or GV2ME03	0.25…0.40	LC1D09
0.18	0.6	130	GV2P04 or GV2ME04	0.40…0.63	LC1D09
0.37	1.1	130	GV2P05 or GV2ME05	0.63…1	LC1D09
0.55	1.5	130	GV2P06 or GV2ME06	1…1.6	LC1D09
0.75	1.9	130	GV2P07 or GV2ME07	1.6….2.5	LC1D09
1.5	3.6	130	GV2P08 or GV2ME08	2.5…4	LC1D09
2.2	4.9	130	GV2P10 or GV2ME10	4…6.3	LC1D09
4	8.5	130	GV2P14 or GV2ME14	6…10	LC1D09
5.5	11.5	130	GV2P16 or GV2ME16	9…14	LC1D25
7.5	15.5	50 or 15	GV2P20 or GV2ME20	13…18	LC1D25
9	18.1	50 or 15	GV2P21 or GV2ME21	17…23	LC1D25
11	22	50 or 15	GV2P22 or GV2ME22	20…25	LC1D25
15	29	50 or 10	GV2P32 or GV2ME32	25…40	LC1D32
18.5	35	50	GV3P40	30…40	LC1D50A
22	41	50	GV3P50	37…50	LC1D50A
30	55	50	GV3P65	48…65	LC1D65A
37	66	50	GV4P80N	40…80	LC1D80
45	80	50	GV4P115N	65...115	LC1D115 or LC1F115
55	97	50	GV4P115N	65...115	LC1D115 or LC1F115

Notes

(1) Refer to TeSys product catalogue for DOL starter co-ordination above 55kw

(2) Complete the part reference by adding the control voltage code at the end. For control voltage code refer to section H or contact customer care centre

P

DOL motor starter co-ordination

Selection charts according to IEC60947-4-1
TeSys Direct On Line starters (DOL)

GV2L16

+

LC1K

+

LR2K0321

Type 1 co-ordination – 3 product solution

Circuit breaker + contactor + overload

Power rating of 3 phase motor 400V		Fault level	Motor circuit breaker	Contactor	Overload
(kW)	AC3 (A)	(kA)	Reference	Reference (2)	Reference
0.06	0.2	50	GV2L03	LC1K06	LR2K0302
0.09	0.3	50	GV2L03	LC1K06	LR2K0304
0.12	0.44	50	GV2L04	LC1K06	LR2K0304
0.18	0.6	50	GV2L04	LC1K06	LR2K0305
0.37	1.1	50	GV2L05	LC1K06	LR2K0306
0.55	1.5	50	GV2L06	LC1K06	LR2K0307
1.1	2.7	50	GV2L07	LC1K06	LR2K0308
1.5	3.6	50	GV2L08	LC1K06	LR2K0310
2.2	4.9	50	GV2L10	LC1K06	LR2K0312
3	6.5	50	GV2L14	LC1K09	LR2K0314
4	8.5	50	GV2L14	LC1K09	LR2K0316
5.5	11.5	15	GV2L16	LC1K12	LR2K0321
7.5	15.5	15	GV2L20	LC1D18	LRD21
9	18.1	15	GV2L22	LC1D25	LRD22
11	22	15	GV2L22	LC1D25	LRD22
15	29	10	GV2L32	LC1D32	LRD32
18.5	35	50	GV3L40	LC1D40A	LRD340
22	41	50	GV3L50	LC1D50A	LRD350
30	55	50	GV3L65	LC1D65A	LRD365
37	66	50	GV4L80N	LC1D80	LRD3361
45	80	50	GV4L115N	LC1D95	LRD3365
55	97	50	GV4L115N	LC1D115	LRD4367

GV2L16

+

LC1D25

+

LRD16

Type 2 co-ordination (high performance) – 3 product solution

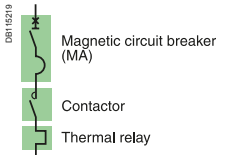
Circuit breaker + contactor + overload

Power rating of 3 phase motor 400V		Fault level	Motor circuit breaker	Contactor	Overload
(kW)	AC3 (A)	(kA)	Reference	Reference (2)	Reference
0.06	0.2	130	GV2L03	LC1D09	LRD02
0.09	0.3	130	GV2L03	LC1D09	LRD03
0.18	0.6	130	GV2L04	LC1D09	LRD04
0.37	1.1	130	GV2L05	LC1D09	LRD05
0.55	1.5	130	GV2L06	LC1D09	LRD06
0.75	1.9	130	GV2L07	LC1D09	LRD07
1.5	3.6	130	GV2L08	LC1D09	LRD08
2.2	4.9	130	GV2L10	LC1D09	LRD10
3	6.5	130	GV2L14	LC1D09	LRD12
4	8.5	130	GV2L14	LC1D09	LRD14
5.5	11.5	130	GV2L16	LC1D25	LRD16
7.5	15.5	50	GV2L20	LC1D25	LRD21
11	22	50	GV2L22	LC1D25	LRD22
15	29	50	GV3L32	LC1D40A	LRD332
18.5	35	50	GV3L40	LC1D50A	LRD340
22	41	50	GV3L50	LC1D50A	LRD350
30	55	50	GV3L65	LC1D65A	LRD365
37	66	50	GV4L80N	LC1D80	LRD3363
45	80	50	GV4L115N	LC1D115/F115	LR9D5367/LR9F5367
55	97	50	GV4L115N	LC1D115/F115	LR9D5369/LR9F5369

Notes

(1) Refer to TeSys product catalogue for DOL starter co-ordination above 55kw

(2) Complete the part reference by adding the control voltage code at the end. For control voltage code refer to section H or contact customer care centre



NSX100 circuit breakers, contactors and thermal relays

Direct-on-line starting

Reverser

"Iq" breaking performance: equal to the breaking capacity of the circuit breaker alone.

Starting (1): normal LR2 class 10 A, LR9 class 10.

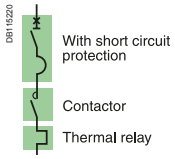
Motors						Circuit breakers		Contactors (2)	Thermal relays	
220/230 V		380 V		415 V		Type	Rating	Type	Type	Irth (1)
P (kW)	I (A)	P (kW)	I (A)	P (kW)	I (A)			(A)		(A)
				0.37	1.1	NSX100B/F/N/H/S/L-MA	2.5	LC1-D09	LRD-06	1/1.6
				0.55	1.5	NSX100B/F/N/H/S/L-MA	2.5	LC1-D09	LRD-06	1/1.6
0.37	1.8			0.75	1.8	NSX100B/F/N/H/S/L-MA	2.5	LC1-D09	LRD-07	1.6/2.5
						NSX100B/F/N/H/S/L-MA	2.5	LC1-D09	LRD-07	1.6/2.5
0.55	2.8			1.1	2.5	NSX100B/F/N/H/S/L-MA	6.3	LC1-D09	LRD-08	2.5/4
				1.5	3.5	NSX100B/F/N/H/S/L-MA	6.3	LC1-D09	LRD-08	2.5/4
1.1	4.4			2.2	4.8	NSX100B/F/N/H/S/L-MA	6.3	LC1-D09	LRD-10	4/6
1.5	6.1			3	6.5	NSX100B/F/N/H/S/L-MA	12.5	LC1-D09	LRD-33 12	5.5/8
2.2	8.7			4	8.2	NSX100B/F/N/H/S/L-MA	12.5	LC1-D09	LRD-33 14	7/10
						NSX100B/F/N/H/S/L-MA	12.5	LC1-D12	LRD-33 14	7/10
3	11			5.5	11	NSX100B/F/N/H/S/L-MA	12.5	LC1-D12	LRD-33 16	9/13
4	14.5			7.5	14	NSX100B/F/N/H/S/L-MA	25	LC1-D18	LRD-33 21	12/18
				9	17	NSX100B/F/N/H/S/L-MA	25	LC1-D18	LRD-33 21	12/18
						NSX100B/F/N/H/S/L-MA	25	LC1-D18	LRD-33 16	9/13
5.5	20			11	21	NSX100B/F/N/H/S/L-MA	25	LC1-D25	LRD-33 22	16/24
						NSX100B/F/N/H/S/L-MA	25	LC1-D25	LRD-33 21	12/18
						NSX100B/F/N/H/S/L-MA	50	LC1-D32	LRD-33 22	16/24
7.5	28			15	28	NSX100B/F/N/H/S/L-MA	50	LC1-D32	LRD-33 32	23/32
						NSX100B/F/N/H/S/L-MA	50	LC1-D40A	LRD-340	30/40
11	39			22	40	NSX100B/F/N/H/S/L-MA	50	LC1-D40A	LRD-350	37/50
				25	47	NSX100B/F/N/H/S/L-MA	50	LC1-D50A	LRD-350	37/50
						NSX100B/F/N/H/S/L-MA	50	LC1-D65A	LRD-350	37/50
15	52			30	55	NSX100B/F/N/H/S/L-MA	100	LC1-D65A	LRD-365	48/65
18.5	64					NSX100B/F/N/H/S/L-MA				
						NSX100B/F/N/H/S/L-MA	100	LC1-D80	LRD-33 57	37/50
22	75			37	72	NSX100B/F/N/H/S/L-MA	100	LC1-D80	LRD-33 63	63/80
				45	80	NSX100B/F/N/H/S/L-MA				
25	85					NSX100B/F/N/H/S/L-MA	100	LC1-D95	LRD-33 65	80/104
						NSX100B/F/N/H/S/L-MA	100	LC1-D115	LR9-D53 63	48/80
30	100			55	100	NSX100B/F/N/H/S/L-MA	100	LC1-D115	LR9-D53 67	60/100

Notes

(1) For installation with a class 30 relay, a derating of 20% must be applied on circuit breakers.

(2) Reversers: replace LC1 by LC2.

Where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association should be applied.



NSX160 to NS1250 circuit breakers, contactors and thermal relays

Direct-on-line starting

Reverser

"Iq" breaking performance: equal to the breaking capacity of the circuit breaker alone.

Starting (1): normal class 10.

Motors				Circuit breaker	Contactors (2)	Thermal relays (1)		
220/230 V		415 V						
P (kW)	I (A)	P (kW)	I (A)	Type	Rating (A)	Type	Type	Irth (A)
37 45	125 150	75	135	NSX160B/F/N/H/S/L MA	150	LC1-D150 LC1-F150	LR9-D53 69 LR9-F53 69	90/150 100/160
55	180	90	160	NSX250B/F/N/H/S/L MA	220	LC1-F185	LR9-F53 71	132/220
		110	200	NSX250B/F/N/H/S/L MA	220	LC1-F225	LR9-F53 71	132/220
				NSX250B/F/N/H/S/L MA	220	LC1-F265	LR9-F53 71	132/220
75	250	132	230	NSX400F/N/H/S/L Micrologic 1.3M	320	LC1-F265	LR9-F73 75	200/330
90	312	160	270	NSX400F/N/H/S/L Micrologic 1.3M	320	LC1-F330	LR9-F73 75	200/330
110	360	220	380	NSX630F/N/H/S/L Micrologic 1.3M	500	LC1-F400	LR9-F73 79	300/500
				NSX630F/N/H/S/L Micrologic 1.3M	500	LC1-F400	LR9-F73 75	200/330
				NSX630F/N/H/S/L Micrologic 1.3M	500	LC1-F500	LR9-F73 79	300/500
150	480	250	430	NSX630F/N/H/S/L Micrologic 1.3M	500	LC1-F500	LR9-F73 79	300/500
				NSX630F/N/H/S/L Micrologic 1.3M	500	LC1-F630	LR9-F73 81	380/630
160	520	300	510	NS800N/H-NS1000L Micrologic 5.0 - LR off	800 1000	LC1-F630	LR9-F73 81	380/630
200	630	335	580	NS800N/H-NS1000L Micrologic 5.0 - LR off	800 1000	LC1-F630	LR9-F73 81	380/630
220	700	375	650	NS800N/H-NS1000L Micrologic 5.0 - LR off	800 1000	LC1-F800	LR2-F83 83	500/800
		400	690	NS800N/H-NS1000L Micrologic 5.0 - LR off	800 1000	LC1-F800 LC1-BL33	LR2-F83 83	500/800
				NS800N/H-NS1000L Micrologic 5.0 - LR off	800 1000	LC1-BL33	LR2-F83 83	500/800
250	800	450	750	NS1000N/H Micrologic 5.0 - LR off	1000	LC1-BM33	LR2-F83 83	500/800
		500	830	NS1000N/H Micrologic 5.0 - LR off	1000	LC1-BM33	LR2-F83 85	630/1000
300	970	560 600	920 1000	NS1250N/H Micrologic 5.0 - LR off	1250	LC1-BP33	LR2-F83 85	630/1000

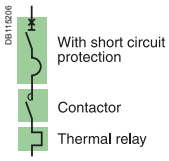
Notes

(1) For long starting (class 20), see the correspondence table for thermal relay.

(2) Reversers: replace LC1 by LC2.

Where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association should be applied.

Type 2 co-ordination (IEC 60947-4-1) 380/415 V



Circuit breakers, contactors and thermal relays

Performance: U = 380/415 V

Circuit breakers	B	F	N	H	S	L
NSX100/160/250-MA	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NSX400/630 Micrologic 1.3M	25 kA	36 kA	50 kA	70 kA	100 kA	130 kA
NS800L/NS1000L Micrologic 5.0	-	-	-	-	-	130 kA
Starting(2): normal	LRD class 10 A, other classes 10					

Motors				Circuit breakers			Contactors(1)	Thermal relays	
P (kW)	I (A) 380 V	I (A) 415 V	Ie max (A)	Type	Rating (A)	Irm (A)(3)	Type	Type	Irth(2)
0.37	1.2	1.1	1.6	NSX100-MA	2.5	22.5	LC1-D09	LRD-06	1/1.6
0.55	1.6	1.5	2.5	NSX100-MA	2.5	32.5	LC1-D09	LRD-07	1.6/2.5
0.75	2	1.8	2.5	NSX100-MA	2.5	32.5	LC1-D09	LRD-07	1.6/2.5
1.1	2.8	2.6	4	NSX100-MA	6.3	57	LC1-D32	LRD-08	2.5/4
1.5	3.7	3.4	4	NSX100-MA	6.3	57	LC1-D32	LRD-08	2.5/4
2.2	5.3	4.8	6	NSX100-MA	6.3	82	LC1-D32	LRD-10	4/6
3	7	6.5	8	NSX100-MA	12.5	113	LC1-D38	LRD-33 12	5.5/8
4	9	8.2	10	NSX100-MA	12.5	138	LC1-D38	LRD-33 14	7/10
5.5	12	11	12.5	NSX100-MA	12.5	163	LC1-D40A	LRD-313	9/13
7.5	16	14	18	NSX100-MA	25	250	LC1-D40A	LRD-318	12/18
10	21	19	25	NSX100-MA	25	325	LC1-D40A	LRD-325	17/25
11	23	21	25	NSX100-MA	25	325	LC1-D40A	LRD-325	17/25
15	30	28	32	NSX100-MA	50	450	LC1-D80	LRD-33 53	23/32
18.5	37	34	40	NSX100-MA	50	550	LC1-D80	LRD-33 55	30/40
22	43	40	50	NSX100-MA	50	650	LC1-D80	LRD-33 57	37/50
30	59	55	63	NSX100-MA	100	900	LC1-D80	LRD-33 59	48/65
37	72	66	80	NSX100-MA	100	1100	LC1-D80	LRD-33 63	63/80
45	85	80	100	NSX100-MA	100	1300	LC1-D115 LC1-F115	LR9-D53 67 LR9-F53 67	60/100
55	105	100	115	NSX160-MA	150	1500	LC1-D115 LC1-F115	LR9-D53 69 LR9-F53 69	90/150
75	140	135	150	NSX160-MA	150	1950	LC1-D150 LC1-F150	LR9-D53 69 LR9-F53 69	90/150
90	170	160	185	NSX250-MA	220	2420	LC1-F185	LR9-F53 71	132/220
110	210	200	220	NSX250-MA NSX400 Micrologic 1.3M	220 320	2860 2880	LC1-F225 LC1-F265	LR9-F53 71	132/220
132	250	230	265	NSX400 Micrologic 1.3M	320	3500	LC1-F265	LR9-F73 75	200/330
160	300	270	320	NSX400 Micrologic 1.3M	320	4160	LC1-F330	LR9-F73 75	200/330
200	380	361	400	NSX630 Micrologic 1.3M	500	5700	LC1-F400	LR9-F73 79	300/500
220	420	380	500	NSX630 Micrologic 1.3M	500	6500	LC1-F500	LR9-F73 79	300/500
250	460	430	500 630	NSX630 Micrologic 1.3M NS800L Micrologic 5.0 - LR off	500 800	6500 8000	LC1-F500 LC1-F630	LR9-F73 79 LR9-F73 81	300/500 380/630
300	565	500	630	NS800L Micrologic 5.0 - LR off	800	8000	LC1-F630	LR9-F73 81	380/630
335	620	560	630	NS800L Micrologic 5.0 - LR off	800	8000	LC1-F630	LR9-F73 81	380/630
375	670	620	710	NS800L Micrologic 5.0 - LR off	800	9600	LC1-F780	TC800/5 + LRD-10	630/1000
400	710	660	710	NS800L Micrologic 5.0 - LR off	800	9600	LC1-F780	TC800/5 + LRD-10	630/1000
450	800	750	800	NS1000L Micrologic 5.0 - LR off	1000	10000	LC1-F780	TC800/5 + LRD-10	630/1000

Notes

(1) Reversers: replace LC1 by LC2; star-delta starter: replace LC1 by LC3.

(2) For long starting (class 20), see the correspondence table for thermal relay.

(3) Ii for Micrologic 5.0 control unit.

Where more than one association is possible for a rated power, if the motor starting current is high or unknown, the highest association should be applied.

Soft starter co-ordination

Altistart 01 soft start/stop units
400V power supply
Type 1 co-ordination

Components for use together in accordance with IEC/EN 60647-4-2, as per the wiring diagrams in the product catalogue and user manual.

Motor kW	A	Starter Class 10	Type of circuit breaker	Rating A	Type of contactor
M1		A1	Q1		KM1, KM2, KM3
0.37	0.98	ATS01N103FT	GV2ME05	1	LC1K06 or LC1D09
0.55	1.5	ATS01N103FT	GV2ME06	1.6	LC1K06 or LC1D09
0.75	2	ATS01N103FT	GV2ME07	2.5	LC1K06 or LC1D09
1.1	2.5	ATS01N103FT	GV2ME08	4	LC1K06 or LC1D09
		ATS01N206QN	GV2ME08	4	LC1K06 or LC1D09
1.5	3.5	ATS01N106FT	GV2ME08	4	LC1K06 or LC1D09
		ATS01N206QN	GV2ME08	4	LC1K06 or LC1D09
2.2	5	ATS01N106FT	GV2ME10	6.3	LC1K06 or LC1D09
		ATS01N206QN	GV2ME10	6.3	LC1K06 or LC1D09
3	6.5	ATS01N106FT	GV2ME14	9	LC1K06 or LC1D09
		ATS01N206QN	GV2ME14	9	LC1K06 or LC1D09
4	8.4	ATS01N109FT	GV2ME14	9	LC1K06 or LC1D09
		ATS01N209QN	GV2ME14	9	LC1K06 or LC1D09
5.5	11	ATS01N112FT	GV2ME16	13	LC1K12 or LC1D12
		ATS01N212QN	GV2ME16	13	LC1K12 or LC1D12
7.5	14.8	ATS01N222QN	GV2ME20	17	LC1D18
9	18.1	ATS01N222QN	GV2ME21	21	LC1D25
11	21	ATS01N222QN	GV2ME22	23	LC1D25
15	28.5	ATS01N232QN	GV2ME32	32	LC1D32

P

Soft starter co-ordination

Altistart 22 soft start/stop units
400…440V power supply
Type 1 co-ordination

GV3L32

LC1D32●●

ATS22D32Q

Altistart 22 - motor starter protection co-ordination table

Components for use together in accordance with IEC/EN 60947-4-2, as per the wiring diagrams in the product catalogue and user manual.

Motor (1) kW	A	Starter Class 10	Circuit breaker (2)	Rating A	Max Icu (2) kA	Line contactor (3)
M1		A1	Q1			KM1
Three-phase supply voltage: 400…440V 50/60Hz Type 1 co-ordination						
7.5	14.8	ATS22D17Q	GV3L20	-	50	LC1D18●●
15	28.5	ATS22D32Q	GV3L32	-	50	LC1D32●●
22	42	ATS22D47Q	GV3L50	-	50	LC1D50A●●
30	57	ATS22D62Q	GV3L65	-	50	LC1D65A●●
37	69	ATS22D75Q	GV4L80N	80	(4)	LC1D80●●
45	81	ATS22D88Q	NSX100●MA	100	(4)	LC1D115●●
55	100	ATS22C11Q	NSX160●MA	150	(4)	LC1D115●●
75	131	ATS22C14Q	NSX160●MA	150	(4)	LC1F150●●
90	162	ATS22C17Q	NSX250●MA	220	(4)	LC1F185●●
110	195	ATS22C21Q	NSX250●MA	220	(4)	LC1F225●●
132	233	ATS22C25Q	NSX400●Micrologic 1.3M	320	(4)	LC1F265●●
160	285	ATS22C32Q	NSX400●Micrologic 1.3M	320	(4)	LC1F330●●
220	388	ATS22C41Q	NSX630●Micrologic 1.3M	500	(4)	LC1F400●●
250	437	ATS22C48Q	NSX630●Micrologic 1.3M	500	(4)	LC1F500●●
315	560	ATS22C59Q	NS630b● Micrologic 5	500	(4)	LC1F630●●

Notes

(1) Standard power rating for 4-pole motors 400V 50/60Hz
(2) Breaking capacity of the circuit breaker according to IEC 60947-2
(3) Replace '●●' with required coil voltage code to complete the contactor reference
(4) Replace the '●' in the circuit breaker reference with the letter corresponding to the required breaking performance (F, N, H, S or L)

P

Soft starter co-ordination

Altistart 48 soft start/stop units
400V power supply
Type 1 co-ordination

Altistart 48 - IEC motor starter Type 1 co-ordination

Motor (1)		Starter		Circuit breaker		Contactor
kW	A	Class 10 Standard applications	Class 20 Severe applications	Reference (2)	Rating A	Reference (3)
M1		A1		Q1		KM1, KM2, KM3
Supply voltage: 380...415V 3-ph 50/60Hz						
5.5	11	-	ATS48D17Q	GV2L20	18	LC1D18●●
7.5	14.8	ATS48D17Q	ATS48D22Q	GV2L20	18	LC1D18●●
11	21	ATS48D22Q	ATS48D32Q	GV2L22	25	LC1D25●●
15	28.5	ATS48D32Q	ATS48D38Q	GV3L32	32	LC1D32●●
18.5	35	ATS48D38Q	ATS48D47Q	GV3L40	40	LC1D38●●
22	42	ATS48D47Q	ATS48D62Q	GV3L65	65	LC1D50A●●
30	57	ATS48D62Q	ATS48D75Q	GV3L65	65	LC1D65A●●
37	69	ATS48D75Q	ATS48D88Q	GV4L80N	80	LC1D80●●
45	81	ATS48D88Q	ATS48C11Q	NSX100●MA100	100	LC1D115●●
55	100	ATS48C11Q	ATS48C14Q	NSX160●MA150	150	LC1D115●●
75	131	ATS48C14Q	ATS48C17Q	NSX160●MA150	150	LC1D150●●
90	162	ATS48C17Q	ATS48C21Q	NSX250●MA220	220	LC1F185●●
110	195	ATS48C21Q	ATS48C25Q	NSX250●MA220	220	LC1F225●●
132	233	ATS48C25Q	ATS48C32Q	NSX400● Micrologic 1.3-M	320	LC1F265●●
160	285	ATS48C32Q	ATS48C41Q	NSX400● Micrologic 1.3-M	320	LC1F330●●
220	388	ATS48C41Q	ATS48C48Q	NSX630● Micrologic 1.3-M	500	LC1F400●●
250	437	ATS48C48Q	ATS48C59Q	NSX630● Micrologic 1.3-M	500	LC1F500●●
315	560	ATS48C59Q	ATS48C66Q	NS630b● Micrologic 5.0	630	LC1F630●●
355	605	ATS48C66Q	ATS48C79Q	NS800● Micrologic 5.0	800	LC1F780●●
400	675	ATS48C79Q	ATS48M10Q	NS800● Micrologic 5.0	800	LC1F780●●
500	855	ATS48M10Q	ATS48M12Q	NS1000● Micrologic 5.0	1000	LC1BM33●●
630	1045	ATS48M12Q	-	NS1250● Micrologic 5.0	1250	LC1BP33●●

Maximum prospective short-circuit current of the starter according to IEC 60947-4-2

Starter	Icu (kA)
ATS48D17Q…C32Q	50
ATS48C41Q…M12Q	70

Notes

(1) Standard power ratings for a 4-pole 400V 50Hz motor.

(2) Replace the '•' in the circuit breaker reference with the letter corresponding to the required breaking performance (F,N, H, S, L, or LB).

(3) Replace '••' with the required coil voltage code to complete the contactor reference. LC1F... coils sold separately.

Soft starter co-ordination

Altistart 48 soft start/stop units
400V power supply
Type 2 co-ordination

Altistart 48 - IEC motor starter Type 2 co-ordination

Motor (1)		Starter		Circuit breaker		Contactor
kW	A	Class 10 Standard applications	Class 20 Severe applications	Reference (2)	Rating A	Reference (3)
M1		A1		Q1		KM1, KM2, KM3
Supply voltage: 380...415V 3-ph 50/60Hz						
5.5	11	-	ATS48D17Q	GV2L20	18	LC1D25●●
7.5	14.8	ATS48D17Q	ATS48D22Q	GV2L20	18	LC1D25●●
11	21	ATS48D22Q	ATS48D32Q	GV2L22	25	LC1D25●●
15	28.5	ATS48D32Q	ATS48D38Q	GV3L32	32	LC1D32●●
18.5	35	ATS48D38Q	ATS48D47Q	GV3L40	40	LC1D50A●●
22	42	ATS48D47Q	ATS48D62Q	GV3L50	50	LC1D50A●●
30	57	ATS48D62Q	ATS48D75Q	GV3L65	65	LC1D65A●●
37	69	ATS48D75Q	ATS48D88Q	GV4L80N	80	LC1D80●●
45	81	ATS48D88Q	ATS48C11Q	NSX100●MA100	100	LC1D115●●
55	100	ATS48C11Q	ATS48C14Q	NSX160●MA150	150	LC1D115●●
75	131	ATS48C14Q	ATS48C17Q	NSX160●MA150	150	LC1D150●●
90	162	ATS48C17Q	ATS48C21Q	NSX250●MA220	220	LC1F185●●
110	195	ATS48C21Q	ATS48C25Q	NSX250●MA220	220	LC1F225●●
132	233	ATS48C25Q	ATS48C32Q	NSX400● Micrologic 1.3-M	320	LC1F265●●
160	285	ATS48C32Q	ATS48C41Q	NSX400● Micrologic 1.3-M	320	LC1F330●●
220	388	ATS48C41Q	ATS48C48Q	NSX630● Micrologic 1.3-M	500	LC1F500●●
250	437	ATS48C48Q	ATS48C59Q	NSX630● Micrologic 1.3-M	500	LC1F500●●
315	560	ATS48C59Q	ATS48C66Q	NS630b● Micrologic 5.0	630	LC1F630●●
355	605	ATS48C66Q	ATS48C79Q	NS800● Micrologic 5.0	800	LC1F780●●
400	675	ATS48C79Q	ATS48M10Q	NS800● Micrologic 5.0	800	LC1F780●●
500	855	ATS48M10Q	ATS48M12Q	NS1000● Micrologic 5.0	1000	LC1BM33●●
630	1045	ATS48M12Q	-	NS1250● Micrologic 5.0 (4)	1250	LC1BP33●●

Maximum prospective short-circuit current of the starter according to IEC 60947-4-2

Starter	Icu (kA)
ATS48D17Q	50
ATS48D22Q…D47Q	40
ATS46D62Q…C79Q	50
ATS48M10Q, M12Q	85

Fast-acting fuses - essential for type 2 co-ordination

Starter	Fast-acting fuses (5)	
	A	kA2.s
ATS48D17Q	50	2.3
ATS48D22Q, D32Q	80	5.6
ATS48D38Q, D47Q	100	12
ATS48D62Q, D75Q	125	45
ATS48D88Q, C11Q	160	82
ATS48C14Q, C17Q	400	120
ATS48C21Q, C32Q	700	490
ATS48C41Q	800	490
ATS48C48Q, C59Q	1000	900
ATS48C66Q	1400	1200
ATS48C79Q	1600	1600
ATS48M10Q, M12Q	2200	4100

Notes

(1) Standard power ratings for a 4-pole 400V 50Hz motor.
(2) Replace the '●' in the circuit breaker reference with the letter corresponding to the required breaking performance (F,N, H, S, L, or LB).
(3) Replace '●●' with the required coil voltage code to complete the contactor reference. LC1F... coils sold separately.
(4) 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.
(5) Contact Schneider Electric for suitable fuse references.

Altivar 12

Altivar 12 - motor starter protection co-ordination table

Two types of combination are possible:
Drive + circuit-breaker: Minimum combination
Drive + circuit-breaker + contactor: Minimum combination with contactor for control and isolation on stop

Single-phase supply voltage: 200…240V 50/60Hz

Motor kW	Drive	Circuit breaker Modular circuit breaker	Rating A	Max Icu (1) kA	Line contactor (2)
M1	A1	Q1			KM1
0.18	ATV12H018M2	GV2L08 2-pole C60N	4 6	>100 10	LC1K09●●
0.37	ATV12H037M2	GV2L10 2-pole C60N	6.3 10	>100 10	LC1K09●●
0.55	ATV12H055M2	GV2L14 2-pole C60N	10 10	>100 10	LC1K09●●
0.75	ATV12H075M2	GV2L16 2-pole C60N	14 16	>100 10	LC1K12●●
1.5	ATV12HU15M2	GV2L20 2-pole C60N	18 20	>100 10	LC1D18●●
2.2	ATV12HU22M2	GV2L22 2-pole C60N	25 32	50 10	LC1D25●●

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Altivar Machine ATV320

Altivar Machine ATV320 IEC motor starter co-ordination

ATV320B/GV2
direct mounting:
GV2L08
+
(VW3A9921 + GV2AF5)
+
ATV320U07N4B

Two types of combination are possible:

- Drive + circuit breaker: minimum combination. The GV2 circuit breaker can be mounted directly on ATV320B drives up to 4kW using a bracket (VW3A9921) and an adaptor (GV2AF5).
- Drive + circuit breaker + contactor: minimum combination with contactor for control and isolation on stop.

The circuit breaker provides protection against accidental short circuits, disconnection, and, if necessary, isolation.

For ATV320W IP66, the combination table of circuit breaker, rotary handle kit (GVAPB65S or GV2APN03), and base plate (VW3A9922) is required.

For ATV320WS IP65, the circuit breaker can't be integrated.

GV2L14
+
LC1D09
+
ATV320U15N4B /
ATV320U15N4C /
ATV320U15N4W

Altivar 320 motor starters: drive + circuit breaker + contactor

Motor kW (1)	Drive reference (2)	Circuit breaker reference	Contactor reference (3)	Circuit breaker mounted directly on ATV320B (4)
Supply voltage: 200…240V 1-ph 50/60Hz				
0.18	ATV320U02M2●	GV2L08	LC1D09●●	With accessories VW3A9921 + GV2AF5 (5)
0.37	ATV320U04M2●	GV2L10	LC1D09●●	
0.55	ATV320U06M2●	GV2L14	LC1D09●●	
0.75	ATV320U07M2●	GV2L16	LC1D09●●	
1.1	ATV320U11M2●	GV2L16	LC1D09●●	
1.5	ATV320U15M2●	GV2L20	LC1D09●●	
2.2	ATV320U22M2●	GV2L22	LC1D09●●	
Supply voltage: 380…500V 3-ph 50/60Hz				
0.37	ATV320U04N4●	GV2L07	LC1D09●●	With accessories VW3A9921 + GV2AF5 (5)
0.55	ATV320U06N4●	GV2L08	LC1D09●●	
0.75	ATV320U07N4●	GV2L08	LC1D09●●	
1.1	ATV320U11N4●	GV2L10	LC1D09●●	
1.5	ATV320U15N4●	GV2L14	LC1D09●●	
2.2	ATV320U22N4●	GV2L14	LC1D09●●	
3	ATV320U30N4●	GV2L16	LC1D09●●	
4	ATV320U40N4●	GV2L16	LC1D09●●	
5.5	ATV320U55N4●	GV2L22	LC1D09●●	-
7.5	ATV320U75N4●	GV3L32	LC1D18●●	-
11	ATV320D11N4●	GV3L40	LC1D25●●	-
15	ATV320D15N4●	GV3L50	LC1D32●●	-

Notes

(1) Standard power ratings for a 4-pole 400V 50Hz/60Hz motor.
(2) Complete the reference by replacing ● with 'B', 'C', 'W' or 'WS' according to the version of ATV320.
(3) Replace '●●' with the required coil voltage code to complete the contactor reference.

Contactor	Coil Voltage					
	VAC	24V	48V	110V	240V	415V
	50/60Hz	B7	E7	F7	U7	N7

For other coil voltages please refer to section H, or contact our Customer Care Centre.
(4) Direct mounting of circuit breaker is possible on ATV320U●●M2B and ATV320U04N4B…U40N4B.
(5) To be ordered separately

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Altivar Process
ATV630/930 IP21 wall mounting 0.75…315kW

NSX100●MA100
+
LC1D80●●
+
ATV630D45N4

Altivar Process ATV630/930 - IEC motor starter co-ordination

Motor (1)	Drive reference	Circuit breaker			Line contactor
	ATV630/930…	Reference (2)	Rating	Irm (3)	Reference (4)
kW			A	A	
Supply voltage: 380...415V 3-ph 50/60Hz					
0.75	U07N4	GV2L07	2.5	33.5	LC1D09●●
1.5	U15N4	GV2L08	4	51	LC1D09●●
2.2	U22N4	GV2L10	6.3	78	LC1D09●●
3	U30N4	GV2L14	10	138	LC1D09●●
4	U40N4	GV2L14	10	138	LC1D09●●
5.5	U55N4	GV2L16	14	170	LC1D18●●
7.5	U75N4	GV2L20	18	223	LC1D18●●
11	D11N4	GV2L22	25	327	LC1D25●●
15	D15N4	GV3L32	32	448	LC1D25●●
18.5	D18N4	GV3L40	40	560	LC1D40A●●
22	D22N4	GV3L50	50	700	LC1D50A●●
30	D30N4	GV3L65	65	910	LC1D50A●●
37	D37N4	GV4L80N	80	480	LC1D65A●●
45	D45N4	GV4L115N	115	690	LC1D80●●
55	D55N4	GV4L115N	115	690	LC1D115●●
75	D75N4	NSX160●MA150	150	1350	LC1D115●●
90	D90N4	NSX250●MA220	220	1980	LC1F185●●
110	C11N4	NSX250●MA220	220	1980	LC1F185●●
132	C13N4	NSX400● Micrologic 1.3-M	320	1600	LC1F265●●
160	C16N4	NSX400● Micrologic 1.3-M	320	1600	LC1F265●●
220	C22N4	NSX630● Micrologic 1.3-M	500	3000	LC1F400●●
250	C25N4	NSX630● Micrologic 1.3-M	500	3000	LC1F500●●
315	C31N4	NS800L Micrologic 2 or 5	800	1600	LC1F630●●

Notes

(1) Standard power ratings for a 4-pole 400V 50Hz motor.

(2) Replace the '●' in the circuit breaker reference with the letter corresponding to the required breaking performance (F,N, H, S, or L). Breaking capacity of circuit breakers according to IEC 60947-2.

Circuit breaker	Icu (kA) for 380...415V					
		F	N	H	S	L
GV2L07…L14	100	-	-	-	-	-
GV2L16…L65	50	-	-	-	-	-
GV4L80N, L115N	-	-	50	-	-	-
NSX100●MA100	-	36	50	70	100	150
NSX160●MA150	-	36	50	70	100	150
NSX250●MA220	-	36	50	70	100	150
NSX400●, NSX630●	-	36	50	70	100	150
NS800L Micrologic 2 or 5	-	-	-	-	-	150

(3) Irm: current setting for magnetic trip.

(4) Replace '●●' with the required coil voltage code to complete the contactor reference. LC1F... coils sold separately.

Contactor	Coil Voltage					
	VAC	24V	48V	110V	240V	415V
LC1D09...D115	50/60Hz	B7	E7	F7	U7	N7
LC1F185	40-400Hz	LX9FG024	-	LX9FG110	LX9FG240	LX9FG415
LC1F265	40-400Hz	-	-	LX1FH1102	LX1FH2402	LX1FH3802
LC1F400	40-400Hz	-	-	LX1FJ110	LX1FJ240	LX1FJ415
LC1F500	40-400Hz	-	-	LX1FK110	LX1FK240	LX1FK415
LC1F630	40-400Hz	-	-	LX1FL110	LX1FL240	LX1FL415

For other coil voltages please refer to section H, or contact our Customer Care Centre.

Altivar Process
ATV650/950 IP55 wall mounting 0.75...90kW

NSX100●MA100
+
LC1D80●●
+
ATV650D45N4

Altivar Process ATV650/950 - IEC motor starter co-ordination

Motor (1)	Drive reference	Circuit breaker			Line contactor
	ATV650/950…	Reference (2)	Rating	Irm (3)	Reference (4)
kW			A	A	
Supply voltage: 380...415V 3-ph 50/60Hz					
0.75	U07N4	GV2L07	2.5	33.5	LC1D09●●
1.5	U15N4	GV2L08	4	51	LC1D09●●
2.2	U22N4	GV2L10	6.3	78	LC1D09●●
3	U30N4	GV2L14	10	138	LC1D09●●
4	U40N4	GV2L14	10	138	LC1D09●●
5.5	U55N4	GV2L16	14	170	LC1D18●●
7.5	U75N4	GV2L20	18	223	LC1D18●●
11	D11N4	GV2L22	25	327	LC1D25●●
15	D15N4	GV3L32	32	448	LC1D25●●
18.5	D18N4	GV3L40	40	560	LC1D40A●●
22	D22N4	GV3L50	50	700	LC1D50A●●
30	D30N4	GV3L65	65	910	LC1D50A●●
37	D37N4	GV4L80N	80	480	LC1D65A●●
45	D45N4	GV4L115N	115	690	LC1D80●●
55	D55N4	GV4L115N	115	690	LC1D115●●
75	D75N4	NSX160●MA150	150	1350	LC1D115●●
90	D90N4	NSX250●MA220	220	1980	LC1F185●●

Notes

(1) Standard power ratings for a 4-pole 400V 50Hz motor.

(2) Replace the 'i' in the circuit breaker reference with the letter corresponding to the required breaking performance (F,N, H, S, or L). Breaking capacity of circuit breakers according to IEC 60947-2.

Circuit breaker	Icu (kA) for 380...415V					
		F	N	H	S	L
GV2L07…L14	100	-	-	-	-	-
GV2L16…L65	50	-	-	-	-	-
GV4L80N, L115N	-	-	50	-	-	-
NSX100●MA100	-	36	50	70	100	150
NSX160●MA150	-	36	50	70	100	150
NSX250●MA220	-	36	50	70	100	150

(3) Irm: current setting for magnetic trip.

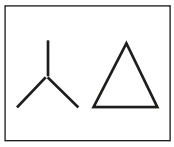
(4) Replace '●●' with the required coil voltage code to complete the contactor reference. LC1F... coils sold separately.

Contactor	Coil Voltage					
	VAC	24V	48V	110V	240V	415V
LC1D09...D115	50/60Hz	B7	E7	F7	U7	N7
LC1F185	40-400Hz	LX9FG024	-	LX9FG110	LX9FG240	LX9FG415

For other coil voltages please refer to section H, or contact our Customer Care Centre.

Star-delta starters co-ordination

Selection charts according to IEC60947-4-1
TeSys range



Type 1 co-ordination (3)

Maximum operating rate: LC1D: 30starts/hour; LC1K:12starts/hour

Maximum starting time: LC1D & LC1K: 30seconds

Power rating of 3 phase motor 400V		Fault level	Motor circuit breaker	Contactor	Overload	
(kW)	AC3 (A)	(kA)	Reference	Reference (2)	Reference	Thermal setting
2.2	4.9	50	GV2L10	3 x LC1K06	LR2K0310	2.6…3.7
3	6.5	50	GV2L14	3 x LC1K06	LR2K0312	3.7…5.5
4	8.5	50	GV2L14	3 x LC1K06	LR2K0312	3.7…5.5
5.5	11.5	15	GV2L16	3 x LC1K06	LR2K0314	5.5…8
7.5	15.5	15	GV2L20	3 x LC1K09	LR2K0316	8…11.5
9	18.1	15	GV2L22	3 x LC1K12	LR2K0321	10…14
11	22	15	GV2L22	3 x LC1K12	LR2K0321	10…14
15	29	10	GV3L32	3 x LC1D18	LRD21	12…18
18.5	35	50	GV3L40	3 x LC1D18	LRD22	16…24
22	41	50	GV3L50	3 x LC1D32	LRD32	23…32
30	55	50	GV3L65	3 x LC1D32	LRD35	30…38
37	66	50	GV4L80N	3 x LC1D40A	LRD340	30…40
45	80	50	GV4L115N	2 x LC1D50A + 1 x LC1D40A	LRD350	30…40
55	97	50	GV4L115N	2 x LC1D50A + 1 x LC1D40A	LRD350	30…40

Type 2 co-ordination (high performance) (3)

Maximum operating rate: LC1D: 30starts/hour; Maximum starting time: LC1D: 30 seconds

Power rating of 3 phase motor 400V		Fault level	Motor circuit breaker	Contactor	Overload	
(kW)	(A)	(kA)	Reference	Reference (2)	Reference	Thermal setting
1.5	3.6	130	GV2L08	3 x LC1D09	LRD08	2.5…4
2.2	4.9	130	GV2L10	3 x LC1D09	LRD10	4…6
3	6.5	130	GV2L10	3 x LC1D09	LRD10	4…6
4	8.5	130	GV2L14	3 x LC1D18	LRD16	9…13
5.5	11.5	50	GV2L16	3 x LC1D25	LRD16	9…13
7.5	15.5	50	GV2L20	3 x LC1D25	LRD21	12…18
9	18.1	50	GV2L22	3 x LC1D25	LRD22	16…24
11	22	50	GV2L22	3 x LC1D25	LRD22	16…24
15	29	50	GV3L32	3 x LC1D40A	LRD332	23…32
18.5	35	50	GV3L40	2 x LC1D50A+ 1 x LC1D40A	LRD340	30…40
22	41	50	GV3L50	2 x LC1D50A+ 1 x LC1D40A	LRD350	37…50
30	55	50	GV3L65	2 x LC1D65A+ 1 x LC1D40A	LRD365	48…65
37	66	50	GV4L80N	3 x LC1D80	LRD3363	63…80
45	80	50	GV4L115N	3 x LC1D115	LR9D5367	60…100
55	97	50	GV4L115N	3 x LC1D115	LR9D5369	90…150

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Notes

(1) Refer to TeSys product catalogue for Star delta starter co-ordination above 55kw

(2) Complete the part reference by adding the control voltage code at the end. For control voltage code refer to section H or contact customer care centre

(3) To complete star delta starter, also order interlock kit and timer (see section H star delta starters).

Average full load motor currents

Single phase motors

1 phase

kW	hp	220V A	240V 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

3 phase motors

3 phase 4 pole 50/60Hz motors

kW	hp	220-240 V A	380V A	415V A	440V A	500V A	660V A	690V A	1000V 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
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160	220	520	300	280	256	220	170	165	115
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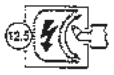
220	300	700	408	385	353	310	235	224	160
250	340	800	460	425	401	360	274	253	200
257	350	826	475	450	412	365	280	-	203
280	380	900	510	475	450	400	305	-	220
295	400	948	546	500	473	416	320	-	227
300	410	980	656	510	481	420	325	-	230
315	430	990	584	535	505	445	337	721	239
335	450	1100	620	550	518	472	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.

P

IP	1st numeral	2nd numeral

1st numeral: conforming to AS1939 protection against ingress of solid bodies

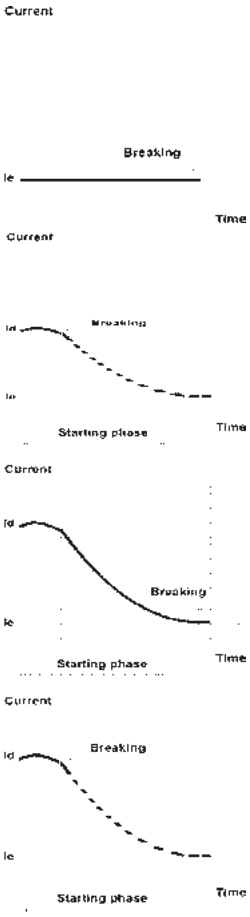
0	No protection.	
1	Full penetration of 50mm diameter sphere not allowed. Contact with hazardous parts not permitted.	
2	Full penetration of 12.5mm diameter sphere not allowed. The jointed test finger shall have adequate clearance from hazardous parts.	
3	The access probe of 2.5mm diameter shall not 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 AS1939 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.	

IP69K for High temperature, high pressure wash down and steam clean.

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 ø ≥ 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 7xIe). On opening, it breaks this same current which varies according to motor speed. Breaking is severe.
Application Example:
Hoists, printing machines, wire drawing machines.

3 Phase Current Ratings (AS/NZS3008.1.1:1998)

Table 6: Three single core V75 PVC or PVC/PVC 0.6/1kV cables

Current Carrying Capacity A						
	Unenclosed			Enclosed	Buried Direct	Underground Ducts
Conductor Size	Spaced	Spaced from surface	Touching	Conduit in air		
mm²	Cu	Cu	Cu	Cu	Cu	Cu
1	16	14	13	11	21	16
1.5	20	17	16	14	27	20
2.5	29	25	23	20	37	28
4	38	33	31	26	49	37
6	49	42	40	34	61	46
10	67	58	54	47	81	61
16	89	77	72	62	105	80
25	120	105	97	87	135	105
35	150	125	120	100	160	125
50	180	155	145	125	190	150
70	230	195	185	155	235	185
95	285	245	230	185	280	225
120	335	285	265	220	315	260
150	385	330	310	250	355	290
185	445	385	355	285	400	335
240	540	455	425	340	465	390

Table 3: Two single core V75 PVC or PVC/PVC 0.6/1kV Cables

Current Carrying Capacity A						
	Unenclosed			Enclosed	Buried Direct	Underground Ducts
Conductor Size	Spaced	Spaced from surface	Touching	Conduit in air		
mm²	Cu	Cu	Cu	Cu	Cu	Cu
1	16	16	13	13	24	18
1.5	21	21	16	16	31	24
2.5	30	29	23	22	43	33
4	40	39	31	30	56	42
6	51	49	40	38	71	53
10	69	67	54	53	94	71
16	92	89	72	71	120	91
25	125	120	97	97	160	120
35	155	145	120	115	190	145
50	185	175	145	140	225	170
70	240	225	185	175	275	210
95	295	275	230	210	330	260
120	345	320	265	250	380	295
150	395	365	310	280	425	335
185	460	425	360	325	480	380
240	550	510	430	385	560	450

These ratings are based on 40°C ambient air temperature and 25°C ambient soil temperature.

P

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> Equipment upgrades
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> Operational testing of all equipment
> Commissioning of all equipment and associated systems

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> Spare parts
> Technical support
> Service updates

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> Test facilities
> Technical documentation

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> Energy efficiency

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1 OVERVIEW OF AGREEMENT

1.1 Unless otherwise expressly agreed in writing, all Products, Services and Projects are supplied on the following terms and conditions which shall include:
(a) The proposal or quote ("Quote") provided by Schneider Electric;
(b) The Credit Terms (if applicable);
(c) these Terms and Conditions;
(d) Each purchase order submitted by the Customer and accepted by Schneider Electric.
For the purposes of these terms a reference to "Agreement" shall mean the above documents in clause 1.1(a) to 1.1(d).

1.2 If there is any conflict or inconsistency between the above documents the documents will rank in order of precedence with the order in which they are listed in clause 1.1 above.

1.3 Each Order issued by the Customer and accepted by Schneider Electric will be accepted on these Terms and Conditions, to the exclusion of all other terms including any terms and conditions referenced or set forth on the face or reverse side of any Order or other document presented by Customer.

1.4 No amendment or variation of the Agreement is valid or binding on a Party unless made in writing and signed by both Parties.

2 DEFINITIONS

2.1 The following capitalised terms will be defined as follows:
Acceptance Tests means tests agreed between the Customer and Schneider Electric which are based on agreed objective criteria.
Agreement has the meaning given to that term in clause 1.1 of these Terms and Conditions.
Consumer Law means the Consumer Guarantees Act 1993 NZ as amended from time to time.
Background IP means with respect to both parties Intellectual Property owned by that party existing at the date the Order is made including any modifications made during the course of the Agreement to such Background IP.
Confidential Information means any information of a confidential nature which relates to the business, affairs or activities of a Party including information comprised in Intellectual Property Rights of any Party, process or operational information, calculations or analysis, financial and business information and information of third parties which is required to be kept confidential.
Credit Terms means the Credit terms and conditions referred to in the Credit Application completed by the Customer with Schneider Electric.
Customer means the party who Schneider Electric will supply the Products, Services and Projects, as specified in the Order.
Date of Acceptance has the meaning given to that term in clause 21.2 of the Addendum for the Supply of Projects
Delivery Date has the meaning given to that term in clause 21.1 of these Terms and Conditions.
Delivery Point has the meaning given to that term in clause 4.2 of these Terms and Conditions.
Effective Date means the date of acceptance of an Order by Schneider Electric in accordance with clause 1.3 of these Terms and Conditions.
Energy Consulting Services means Services to support customers in managing financial risks purchasing energy and energy consumption and/or generation.
Fixed Price means the lump sum amount quoted by Schneider Electric for the supply of specified Products, Services and Projects.
Force Majeure has the meaning given to that term in clause 16.2 of these Terms and Conditions.
GST Act means Goods and Services Tax Act 1985 (NZ).
Intellectual Property Rights means all and any rights in issued patents and patent applications, rights to inventions, design rights, utility models, copyright and related rights, trademarks, service marks, trade, business and domain names, moral rights, rights in confidential information (including know-how and trade secrets).
Law means any statute, regulation, order, rule, subordinate legislation or other document enforceable under any statute, regulation, rule or subordinate legislation and includes a modification or re-enactment of it.
Order means the Quote submitted by Schneider Electric and the purchase order issued by the Customer and accepted by Schneider Electric in accordance with clause 1.3 of these Terms and Conditions.
Party means a party to the Agreement.
Personal Information means all information about a person that is "personal information" as defined in the Privacy Act, which is collected and/or handled by any of the Parties in connection with this Agreement.
PPSA means the Personal Property Securities Act 1999.
Price means the aggregate amount payable by the Customer to Schneider Electric in relation to the Products, Services and Projects, as specified in the Order.
Privacy Act means the NZ Privacy Act 1993 as amended from time to time.
Privacy Policy means Schneider Electric privacy policy which may be found at http://www.schneider-electric.co.nz/en/about-us/legal/privacy-policy.jsp
Products means any Schneider Electric Products or such other third-party products, equipment, materials, supplies or items, as specified in the Order including Software.
Project means a set of activities including the development, provision, modification, configuration, enhancement and integration of the Products and Services, by Schneider Electric to meet the Specifications.
Project Deliverable means the Products and other deliverables required to be developed or integrated by Schneider Electric pursuant to a particular Project in accordance with agreed Specifications.
Quote means a proposal or quote provided by Schneider Electric relating to the Products, Services and Projects referred to in the Order.
Schneider Electric Products or Schneider Electric Project Deliverables means Schneider Electric's proprietary products, including any and all products manufactured or developed by Schneider Electric
Schneider Electric Software means Schneider Electric's proprietary software, including any and all software developed and owned by Schneider Electric or its Affiliates.
Schneider Electric means any of the following entities which will be listed on the Order:
Schneider Electric (NZ) Limited and or Schneider Electric Systems New Zealand Limited (formerly Invensys Process Systems New Zealand Limited).
Services means any services Schneider Electric agrees to perform, as specified in the Order.
Site means the Customer's site where the Products are to be delivered and or installed, the Services are to be performed, or the Project is to be implemented as specified in the Order.
Software means machine readable (i) computer programs that comprise a series of instructions, rules, routines, or statements, regardless of the media in which recorded, that allow or cause a computer, or other machine, to perform a specific operation or series of operations;
Software Documentation means the printed materials supplied with the Software.
Specifications means the drawings, specifications and/or plans for the Products, Services and Projects as specified in the Order or as otherwise agreed by the Parties in accordance with clause 18 of the Addendum for the Supply of Projects.
Terms and Conditions means these terms and conditions of Sale.
Timetable means the document setting out the dates by which the Products, Services and Projects are to be supplied, as specified in the Order or as otherwise agreed between the Parties in accordance with clause 19.1 of the Addendum for the Supply of Projects.
Time and Materials means Services supplied in accordance with the Order where (i) all labour time utilised and (ii) expenses incurred are payable by the Customer at the prices set out in Schneider Electric's schedule of rates and (iii) all products supplied are payable by the Customer in accordance with Schneider Electric's price list, unless indicated otherwise by Schneider Electric in writing.
Use shall have the same meaning as set out in clause 6.2.
Variation has the meaning given to that term in clause 20.1 of the Addendum for the Supply of Projects.
Warranty Period means:
(a) For all Schneider Electric Products (excluding Software), the earlier of:
(i) eighteen (18) months from the Delivery Date; and
(ii) the date that is twelve (12) months from commercial or operational use of the Products by the Customer; and
(b) For all Services, a period of ninety (90) days from the date of delivery of the Services; and

(c) For all Schneider Electric Software not supplied under the terms of a EULA and media that such Software is supplied on, a period of ninety (90) days from the date of delivery of Schneider Electric Software; and
(d) For all Projects, a period of ninety (90) days from the date of acceptance of the Project.

3 QUOTES AND ORDERING

3.1 Any quotes provided by Schneider Electric are subject to the Products, Services and Projects being available at such time when the Customer places an Order.

3.2 Unless indicated otherwise by Schneider Electric in writing, all Prices referred to in any Quotes are based on the quantity of Products, Services, Software, Projects and delivery timetable described in the Quote and will only be valid for thirty (30) days from the date the Quote is submitted. In the event the Customer changes the time required for delivery or the volume or scope of Products, Services and Projects required or places an Order more than thirty (30) days after the Quote is submitted, Schneider Electric reserves the right to vary its Prices.

3.3 Unless otherwise indicated in an Order or Quote in writing, an Order will not be considered binding on Schneider Electric or come into force until Schneider Electric has received from the Customer a cash deposit or a bank guarantee or other security acceptable to Schneider Electric for 10% of the Price set out in the Order.

4 DELIVERY, RISK AND TITLE

4.1 Schneider Electric agrees to supply the Products, Services and Projects in accordance with the terms of the Agreement and in consideration of payment of the Price by the Customer.

4.2 Unless specified otherwise it will be presumed that delivery of;
(a) Products manufactured in New Zealand will occur ex works at the place of manufacture
(b) Products which are manufactured outside New Zealand will occur ex works at a warehouse of Schneider Electric's choosing
(c) Software supplied via physical media will occur ex works at a warehouse of Schneider Electric's choosing
(d) Software supplied electronically will occur when Schneider Electric has delivered the Software to any carriage service or network.

(Delivery Point)

4.3 Schneider Electric will deliver the Products to the Delivery Point. Risk of any loss or damage to the Products passes to the Customer upon delivery to the Customer at the Delivery Point.

4.4 Title in the Products (excluding Software) does not pass to the Customer until the Customer has made payment in full for the Products and, further, until the Customer has made payment in full of all the other money owing by the Customer to Schneider Electric (whether in respect of money payable under a specific contract or on any other account whatsoever).Whilst the Customer has not paid for the Products supplied in full at any time, the Customer agrees that property and title in the Products will not pass to the Customer and Schneider Electric retains the legal and equitable title in those Products supplied and not yet sold.

4.5 The Customer grants Schneider Electric a security interest in all goods supplied by Schneider Electric as security for all indebtedness owed whatsoever to Schneider Electric. The Customer agrees: (i) to promptly give Schneider Electric all assistance and information (including signing any documents) as the Schneider Electric requests to ensure that the Schneider Electric has a perfected first ranking security interest in all goods (and the proceeds thereof) supplied by the Schneider Electric; (ii) that the Schneider Electric may register a financing statement on the Personal Property Securities Register against the Customer; (iii) not to change its name without notifying the Schneider Electric in writing of the Customer's intention to change its name at least 10 business days prior to doing so; (iv) it waives the right to receive a copy of any verification statement under s148 of the Personal Property Securities Act 1999 (NZ)(PPSA (NZ)); and (v) it has no rights under sections 114(1)(a), 116, 120(2), 121, 125, 129, 131, 133 and 134 of the PPSA (NZ).

5 PROVISION OF SERVICES

5.1 Schneider Electric will provide suitably qualified, experienced and competent personnel to carry out the Services and related tasks in accordance with these Terms and Conditions and any Specifications in a professional manner with due skill and care.

5.2 Schneider Electric will follow all reasonable directions provided by the Customer when delivering the Services which are necessary and incidental to the performance of the Services under this Agreement.

5.3 Schneider Electric will ensure the Services are provided in accordance with all applicable laws and regulations and general industry practice.

5.4 If an Order indicates that Schneider Electric is to perform Services at the Site, then:
(a) the Customer will at its cost prepare the Site and provide Schneider Electric with reasonable access to the Site and other associated necessary facilities to allow Schneider Electric to perform its obligations under this Agreement; and
(b) The Customer will also ensure that Schneider Electric's representatives attending the Site receive (where appropriate) all necessary safety site induction and personal protection equipment.
(c) at the Customer's cost, in a timely manner and so as to avoid any delay to Schneider Electric, provide all information, approvals, permits, authorisations, licenses, customs clearances, instructions, materials, civil works, reports, drawings, geotechnical and survey information, access and other things which may be required in relation to the performance of Schneider Electric's obligations and which are not expressly stated to be Schneider Electric's responsibility.
(d) The Customer shall provide to Schneider Electric any approval or comment with respect to drawings submitted by Schneider Electric to the Customer within five (5) days from the date of the submission by Schneider Electric of such drawings unless some other time is provided for in the Order.
(e) If Schneider Electric considers the information, documents and other particulars made available to Schneider Electric by the Customer are not sufficient to enable Schneider Electric to provide the services in accordance with the contract and the provision of which is not reasonably to be considered within the responsibility of Schneider Electric under the contract, Schneider Electric may advise the Customer who shall then provide such further assistance, information or other particulars as necessary in the circumstances or as requested by Schneider Electric as the case may be.

5.5 If the Customer is ordering Energy Consulting Services, the following additional conditions will apply:
(a) the Customer shall make all necessary information regarding electrical utilities ("Utility Information") available to Schneider Electric within 14 days of the request. Schneider Electric reserves the right to alter its Price if there is a substantial material change between the information which it has based its Price on and the information provided by the Customer pursuant to this clause
(b) The Customer acknowledges that Schneider Electric is acting as its agent to analyse and interpret the Utility Information that it provides for the purposes of providing the Energy Consulting Services;
(c) The Customer warrants that in providing such Utility Information it is not breaching the terms of any contract it has with the Utility Provider or any other third party for the Energy Consulting Services.
(d) The Customer warrants that it is the owner or lessee of the premises the subject of the Utility Information.

5.6 If Schneider Electric is providing the Customer Services which are cloud based and hosted by Schneider Electric then the following terms and conditions will apply in addition to any terms and conditions of use which the Customer may be required to agree to when accessing the cloud based services:
(a) Any Personal Information will be collected and used in accordance with the terms of Schneider Electric's Privacy Policy and the terms set out in section 11. By accessing the Services, the Customer signifies its consent to the collection and use of the personal information in accordance with Schneider Electric's Privacy Policy including receiving marketing communications and agreeing to the personal information being used in accordance with this Policy.
(b) The Customer represents and warrants that if any

data provided by it includes other parties Personal Information that they have obtained all the necessary consents to disclose such Personal Information to Schneider Electric in accordance with these Terms and Conditions and the Privacy Act.

6 SOFTWARE LICENCE

6.1 If Schneider Electric has agreed to provide Software which has an end user licence agreement (EULA), the Software will be licensed on the terms of the EULA applying to that Software.

6.2 For all other Schneider Electric Software which is not supplied with a EULA, Schneider Electric grants the Customer a non-exclusive, non-transferable license to "Use", in object code form, the version or release of the Schneider Software described in the Order, For the purposes of this clause "Use" means to install, store, load, execute, and display one copy of the Software on one device at a time for the Customer's internal business purposes. The Customer's Use of such Software is subject to the following restrictions:

(a) The Customer may not exceed the number of users, or client access licences that are paid for by the Customer and noted on the quote or Order;

(b) The Customer may not copy the Software (other than or one (1) backup copy of the Software and a reasonable limited number of the user manuals related to the Software).

(c) The Customer may only use the Software for its internal business processes and shall not use it for the benefit of any third party.

(d) The Customer acknowledges that such Software is confidential and shall not make it available to any third parties and shall only disclose to those of its employees that need to use it for the purposes of its internal business who have agreed to comply with the terms of this clause 5.

(e) The Customer may not decompile, disassemble, reverse assemble, reverse engineer, translate or emulate the Software;

(f) Unless otherwise agreed, the Customer may transfer the Software from one computer to another (which may be operated by a third party) provided it is not used on more than one computer at a time. The Customer shall not sublicense, assign or transfer the Software without the prior written consent of Schneider Electric.

(g) Unless specifically agreed otherwise in writing by Schneider Electric, the licence of the Software does not include any right to any updated versions of the Software.

(h) Schneider Electric's Software licensed to Customer may contain components that are owned by third parties. The third party owner shall retain exclusive right to its firmware and software. Use of such third party components may be subject to restrictions contained in the third party's end-user licence agreement in addition to the conditions set forth herein. Schneider Electric shall make available to Customer on request the third party's end-user licence agreement applicable. Copyright and other proprietary rights notices of Schneider Electric and third parties are contained in the Software and Customer must not modify, delete or obfuscate such notices.

(i) Customer shall maintain complete and accurate records documenting the location and use of the licensed Software in Customer's possession. No later than thirty (30) days on receipt of Schneider Electric's written request, Customer must provide Schneider Electric with a signed certification of compliance with the Software licensing conditions. Schneider Electric has the right to conduct an audit of Customer's use of the Software. Any such audit shall be conducted during regular business hours at Customer's facilities. If an audit reveals any underpayment of licence fees, Customer shall be invoiced for additional licence fees consistent with Schneider Electric's then current price list for the Software, without any discount being applicable in that instance. Customer shall then immediately pay the invoiced amount together with interest at a rate of one and one-half percent (1.5%) per month or partial month during which such amount was due and unpaid. The assessment of additional licence fees is without prejudice to Schneider Electric's other remedies under this Agreement.

6.3 For non-Schneider Electric Software, the third party supplier's license terms that may accompany that Software will solely govern its Use.

7 WARRANTIES

7.1 Schneider Electric warrants that:

(a) All Schneider Electric Products (excluding third party Product) will operate in accordance with their published specifications for the duration of the Warranty Period; and

(b) All Services will be performed in a professional manner with due skill and care, using appropriately skilled and qualified personnel and in accordance with all applicable laws and regulations; and

(c) All Schneider Electric Software licensed under clause 6.2, will during the Warranty Period operate in accordance with the Software Documentation and the media upon which such software is supplied will be free for defects; and

(d) Provided a separate Project Deliverable warranty is indicated in the Order, then all Project Deliverables provided pursuant to the Addendum for the Supply of Projects shall perform in accordance with the Specification agreed with the Customer for the Warranty Period defined in the Order. For the avoidance of doubt where there is no reference to an additional warranty period for Project Deliverables in the Order then this Project Deliverable warranty shall not apply.

7.2 If the Customer makes a claim during the Warranty Period it will be handled as follows:

(a) In the case of Schneider Electric Products and Project Deliverables (where relevant), where there is a defect in such Products, Schneider Electric will replace or repair (at its discretion and cost). Schneider Electric will not be responsible for the cost of retrieving, removing, reinstalling, retesting or transporting the Products or Project Deliverables to and from the location where the Products are located.

(b) In the case of Services, where there is a defect in the Services, Schneider Electric will re-perform the Services at a mutually agreed time.

(c) For the avoidance of doubt if Services were delivered on a Time and Materials basis Schneider Electric will not provide any additional warranties for any deliverables provided pursuant to those Services other than the standard warranties referred to in clause 7.1.

(d) In the case of a Project, if it is not practical to return the defective Product to Schneider Electric in accordance with clause 6.2(a), Schneider Electric will bear the cost of correcting the defects, by either attending the Customer's Site where the Project is located or by remote means, as determined at the sole discretion of Schneider Electric and at a mutually agreed time.

(e) All warranties for any Products repaired or replaced or Services resupplied during the Warranty Period will expire at the same time as the original warranty of the products and services that were replaced or resupplied.

7.3 The Customer agrees that, unless otherwise agreed in writing by Schneider Electric, any warranty on any third party Products is limited to the warranty given by the manufacturer of those Products and, to the maximum extent permitted by law, Schneider Electric gives no additional warranties in relation to any third party Products or Software.

7.4 Schneider Electric will not be responsible for any defect arising out of or in connection to:

(a) Misuse, abuse, neglect, errors or any other act or omission of or by the Customer or third party not contracted by Schneider Electric; or

(b) Alteration (improper or otherwise) or installation of the Products and Projects by the Customer or any person other than Schneider Electric; or

(c) Power failure, power surge, lightning, flood, fire, accidental breakage or other events outside of Schneider Electric's reasonable control; or

(d) The Products not being maintained, installed or energised in accordance with Schneider Electric's instructions or in the absence of such instructions, in accordance with generally accepted practices for maintenance of such Products; or

(e) Improper environmental conditions where the Products are used or installed; or

(f) The Products being stored for more than twelve (12) months prior to being put into operation; or
(g) Any consumables; or
(h) Following a direction from the Customer where Schneider Electric has recommended to the Customer against following such direction.

7.5 Certain legislation, including the Consumer Law, may imply warranties or conditions or impose guarantees or obligations upon Schneider Electric which cannot be excluded, restricted or modified or cannot be excluded, restricted or modified except to a limited extent. Any Order and these terms including this clause 7.5 must be read subject to these statutory provisions. If these statutory provisions apply, to the extent to which Schneider Electric is entitled to do so, Schneider Electric limits its liability in respect of any claim under the provisions to:
(a) in the case of Products, at Schneider Electric's option:
(i) the replacement of Products or the supply of equivalent Products;
(ii) the repair of the Products;
(iii) the payment of the cost of replacing the Products or of acquiring equivalent Products; or
(iv) the payment of the cost of having the Products repaired; and
(b) in the case of services, at Schneider Electric's option:
(i) the supply of the services again; or
(ii) the payment of the cost of having the services supplied again.

8 PRICE AND PAYMENT

8.1 The Customer must pay the Price mutually agreed by the Parties in the Order.

8.2 Unless specifically set out in the Order, Schneider Electric will issue all invoices for the Products, Services and Projects as follows:
(a) For Services provided on a Time and Materials basis, Schneider Electric will invoice monthly in arrears.
(b) For Services provided at a Fixed Price, Schneider Electric will invoice in advance.
(c) For Products, Schneider Electric will invoice on or after delivery to the Delivery Point.
(d) For all other Products and Projects delivered, Schneider Electric will invoice in accordance with agreed payment milestones set out in the Order. If no milestones are set out in the order, invoicing will be monthly in arrears in accordance with the work completed.

8.3 Customer may buy and pay in U.S. Dollars, European Euros or such other currency as Customer and Schneider Electric may agree. If any expenses, charges or any other amounts to be paid to Schneider Electric by Customer under this Agreement were incurred by Schneider Electric in a currency other than the currency agreed in an Order, these expenses, charges or other amounts shall be invoiced in such other currency. If the Parties agree that these expenses, charges or other amounts are to be paid in the currency indicated in the Order, the amounts to be paid shall be calculated using the official spot rate on the date of payment between the currency indicated in the Order and the other currency. Where the price of quoted Products is stated to be based in whole or in part on a conversion between two currencies, Customer shall indemnify Schneider Electric against any loss incurred by Schneider Electric which results from any variation in the rates of exchange between the date of the quotation of the Products and the date upon which payment becomes due to Schneider Electric.

8.4 The Customer must pay the amount shown on any invoice rendered by Schneider Electric within twenty five (25) days from the date of issue of the invoice.

9 INTELLECTUAL PROPERTY

9.1 Each party will retain all Intellectual Property Rights in their respective Background IP. Subject to payment in full for the Products, Services and Projects, Schneider Electric will grant to Customer a royalty free, non-exclusive, irrevocable and perpetual license to use Schneider Electric's Background IP necessary for Customer to enjoy the benefit of the Products, Services and Projects for the purposes of or in connection with Customer's business.

9.2 The Customer acknowledges that Schneider Electric retains ownership of the Intellectual Property Rights of Schneider Electric used or created under the Agreement. Schneider Electric acknowledges that the Customer retains ownership of the Intellectual Property Rights of any Customer Background. To enable each party to perform their obligations under each Order and for the Customer to enjoy the benefit of the Products, Services and Projects for the purpose of or in connection with its business, each party grants to the other Party a non-exclusive, royalty free, irrevocable and perpetual licence to use its Intellectual Property Rights for that purpose.

9.3 In the event that any claim is made against the Customer for infringement of any person's Intellectual Property Rights arising of the Customer's use of Schneider Electric Products supplied under the Agreement, Schneider Electric will, at its own expense, conduct any ensuing litigation and all negotiations for a settlement of the claim. Schneider Electric will bear the costs of any payment made in settlement, or as a result of an award in a judgment provided that:
(a) The Customer promptly notifies Schneider Electric in writing of any such claim being made or action threatened or brought against the Customer;
(b) The Customer grants Schneider Electric the right to assume sole authority to conduct the defence or settlement of such claim or any related negotiations; and
(c) The Customer provides Schneider Electric with all reasonable information, co-operation and assistance.

9.4 Notwithstanding any other provision of the Agreement, Schneider Electric will not be liable in any case whatsoever where the claim is based on:
(a) Specifications that the Customer provided to Schneider Electric;
(b) Where the Customer has combined Schneider Electric Products with non-Schneider Electric Products, data or business processes; and
(c) Where the Customer has altered or modified the Products.

10 CONFIDENTIALITY

10.1 Each Party agrees to hold in strict confidence all Confidential Information and not to disclose or permit or cause the disclosure of any Confidential Information to any person except and solely to the extent necessary for the performance of that Party's obligations under the Agreement, unless that Party has obtained the prior written consent of the other Party.

10.2 Clause 10.1 does not apply to:
(a) Information after it becomes generally available to the public other than as a result of the breach of this clause 10.2 or any other obligations of confidentiality imposed on a Party; or
(b) The disclosure of information in order to comply with any applicable law or legally binding order of any court, government agency or recognised stock exchange, provided that prior to such disclosure the disclosing Party gives notice to the other Party with full particulars or the proposed disclosure.

11 COMPLIANCE WITH PRIVACY LAWS

11.1 Each Party agrees to comply with its obligations under the Privacy Act in respect of Personal Information obtained by or disclosed to it pursuant to this Agreement.

11.2 Each Party must only collect, use and disclose Personal Information for the purpose of fulfilling its obligations under this Agreement.

11.3 A Party must notify the other Party as soon as possible when it becomes aware of:
(a) a complaint alleging an interference with privacy; or
(b) any breach, or possible breach of this clause 11,
(c) in relation to any Personal Information collected and/or handled by any of the Parties in connection with this Agreement.

11.4 Customer acknowledges that Schneider Electric is a global company with legal entities, business processes, management structures and technical systems that cross borders. As such, personal information may be collected and stored on servers located in other countries including the United States and in addition Schneider Electric may share information about Customer within the organisation and may need to disclose such Personal Information to other countries in which Schneider Electric does business for the purposes or uses outlined in Schneider Electric Privacy Policy provided that at all times Schneider Electric will comply with its obligations under the Privacy Law and its Privacy Policy.

12 LIMITATION OF LIABILITY

12.1 Notwithstanding any other term of the Agreement, Schneider Electric's total liability under the Agreement whether in contract, tort (including negligence) or otherwise arising out of Schneider Electric's performance of the Agreement, will not exceed in the aggregate the Price actually paid to Schneider Electric pursuant to the Order giving rise to such liability.

12.2 Notwithstanding any other term of the Agreement, to the maximum extent permitted by law, in no event will either Party, its affiliates, or their officers, directors, employees or their subcontractors be liable for any form of indirect, special or consequential loss or damage (including loss of profits, revenue, loss of use and data, loss production), howsoever caused, irrespective of fault, negligence or strict liability.

13 TAXES

13.1 Unless otherwise stated, all amounts referred to under or in connection with the Agreement are exclusive of GST or any other value added or withholding taxes. In relation to any GST payable for a taxable supply (under GST Law) by a Party, the recipient of the supply will pay the GST subject to the supplier providing a tax invoice (as defined under GST Law). Terms used in this clause 13 which are defined in the GST Act have the same meaning as in the GST Act.

14 SUSPENSION AND TERMINATION

14.1 If the Customer fails to pay any sum due under the Agreement by the due date, Schneider Electric may by notice, in addition to any other rights it may have, suspend supplying the Products, Services and Projects until all overdue amounts are paid. The Customer will be liable to Schneider Electric for all expenses, including reasonable legal fees, relating to the collection of overdue amounts.

14.2 A Party may terminate the Agreement by providing notice to the other Party if any of the following events or circumstances occurs:

(a) A Party goes into liquidation, has a receiver or receiver and manager appointed to it or any part of its assets, enters into a scheme of arrangement with creditors or suffers any other form of external administration (or the equivalent under the laws of another jurisdiction); or

(b) A Party fails to remedy any breach of an essential obligation under the Agreement within thirty (30) days after receipt of written notice from the other Party of details of the breach.

14.3 Any termination of the Agreement will not affect any rights or obligations which by their nature continue beyond the effective date of termination, including this clause 12, clause 9 (Confidentiality) and clause 10 (Limitation of liability).

15 DISPUTE RESOLUTION

15.1 The parties will attempt in good faith to resolve all disputes, disagreements or claims between the parties relating to an Order. The preferred method of determination of unresolved disputes shall be by amicable agreement at the senior management level of the Customer and Schneider Electric.

15.2 If the parties cannot resolve the dispute themselves they may agree to appoint an expert or mediator to help them resolve the dispute. In such event both parties agree to jointly bear the costs of such mediator or expert and be bound by the determination of such person.

15.3 In the event the parties cannot resolve the dispute and:

(a) The parties cannot agree upon a mediator or expert;

(b) A mediator or expert has been appointed but resolution has not been reached within six weeks of appointment of the mediator or expert; then either party may initiate legal proceedings.

16 MISCELLANEOUS

16.1 Nothing contained or implied in the Agreement will create a relationship of partnership or agency between the Parties and neither Party has any authority to bind the other Party to any obligations.

16.2 A Party will not be liable to the other if performance of its obligations to the other Party is delayed, impeded or prevented by any act or event beyond the control of a Party, whether foreseen or not, which delays, interrupts or prevents such Party from performing its obligations under the Agreement (Force Majeure). If Schneider Electric is delayed in the supply of Products, Services and Projects due to Force Majeure which continues for more than one (1) month, either Party may terminate the Order by written notice to the other Party. For the purposes of this clause Force Majeure may also include but not be limited to hostilities, revolution, acts of war or terrorism, civil commotion, epidemic, accident or quarantines or regional medical crisis, fire, flood, wind, earthquake or storms, strikes and lockouts or shortage of materials or transport facilities or any other acts of god or act of any government or governmental agency including laws regulation or ordinance and proclamation affecting the parties or the Products or Project Deliverables.

16.3 The Customer agrees that during the term of any Order and for a period of six months after expiry of that Order it will not solicit or hire directly or indirectly any employees that Schneider Electric used to provide any Services or Project under that Order to the Customer.

16.4 Neither Party may assign its rights and obligations under the Agreement without the prior written approval of the other Party (such approval not to be unreasonably be withheld) provided that either Party may assign its rights and obligations to a related body corporate within the meaning of the *Corporations Act 2001 (Cth)* provided that the related body corporate is of similar financial standing and has the ability to discharge its obligations under the Agreement.

16.5 Each Order will be governed by and will be construed in accordance with the laws of New Zealand. Each Party irrevocably and unconditionally submits to the exclusive jurisdiction of the courts of New Zealand and its appellate courts and waives any right to object to proceedings being brought in those courts for any reason.

16.6 If any provision of the Agreement, or the application thereof to any person, place or circumstance, will be held by a court or tribunal of competent jurisdiction to be invalid, unenforceable, or void, the remainder of the Agreement and such provisions as applied to other persons, places or circumstances will remain in full force and effect.

16.7 For the purposes of each Order, the Order together with these Terms and Conditions and the Credit Terms will form the entire agreement between the parties and as such both parties exclude all statements, representations, warranties, conditions, promises, undertakings, covenants and other provisions, express or implied (and whether implied by law including Act of Parliament or otherwise) relating to that Order.

17 COMPLIANCE

17.1 Neither party shall comply with any foreign boycott laws or requirements, which are in violation of any law, rule, or regulation of New Zealand.

17.2 Customer acknowledges that each Product and any related software and technology, including technical information supplied by Seller or contained in documents (collectively "Items"), is subject to export controls of the U.S. government. Software is licensed for use in the specific location identified in the Orders and licences attached. Customer may not export the "Items" to another country without Seller's written permission and payment of any applicable country specific surcharges. Customer agrees to comply fully with all relevant export laws and regulations of the United States and foreign nations in which the "Items" will be used ("Export Laws") to ensure that neither the "Items" nor any direct product thereof are

(i) exported, directly or indirectly, in violation of any Export Laws; or

(ii) are intended to be used for any purposes prohibited by the Export Laws. Without limiting the foregoing, Customer will not export or re-export the "Items":

(iii) to any country to which the United States has embargoed or restricted the export of Products or services or to any national of any such country, wherever located;

(iv) to any end user who Customer knows or has reason to know will utilise the "Items" in the design, development or production of nuclear, chemical or biological weapons; or

(v) to any end-user who has been prohibited from participating in U.S. export transactions by federal agency of the U.S. government.

17.3 Each party shall execute and deliver to the other any documents as may be required to effect or evidence compliance.

Addendum for the Supply of Projects

18 AGREEMENT ON SPECIFICATIONS AND PROVISION OF INFORMATION

18.1 If the Products, Services and Projects involve preparing and agreeing the Specifications with the Customer, Schneider Electric will prepare the necessary Specifications in conjunction with the Customer in accordance with the Timetable, or if there is no Timetable, within thirty (30) days of acceptance of the Order or such other time as is agreed between the Parties. The Customer will review and either provide amendments or approve the Specifications within five (5) working days of receipt of the Specifications. In the absence of any written comments within five (5) working days the Customer will be deemed to have approved the Specifications. Any changes to the approved Specifications will be considered Variation in accordance with clause 20.

18.2 The Customer will respond to any requests for further information or instructions from Schneider Electric within five (5) working days after the receipt of such request for further information or instructions by the Customer. If the Customer does not respond within that period (or such other period identified by Schneider Electric), Schneider will have the right to claim an extension of time relating to such failure to provide the necessary information.

19 DELAY AND EXTENSION OF TIME

19.1 Unless there is a Timetable specified in an Order, Schneider Electric will, if so requested by the Customer, submit a Timetable to the Customer for approval prior to commencing the supply of the Products, Services and Projects.

19.2 Any Timetable submitted by Schneider Electric pursuant to clause 19.1 as requiring the Customer's approval will be approved or commented on in writing by the Customer within five (5) working days after the receipt of such Timetable by the Customer. If the Customer does not respond within that period (or such other period agreed with Schneider Electric), it will be deemed to have approved the Timetable.

19.3 Schneider Electric will, at all times, take all reasonable steps to ensure that the Products, Services and Projects are supplied in accordance with the Timetable. If the supply of the Products, Services and Projects will be delayed by an act or omission of the Customer or by an event beyond Schneider Electric's reasonable control, and the delay was not contributed to by Schneider Electric, Schneider Electric will promptly submit a claim to the Customer for an extension of time to the Timetable setting out the details of the cause of the delay, the activities affected and the extension time needed. The Customer will, acting reasonably, consider Schneider Electric's claim and grant the extension of time requested or such other mutually acceptable period of time as an extension to the Timetable.

19.4 Any changes to the approved Timetable including those pursuant to clause 19.3 will be considered Variation in accordance with clause 20.

20 VARIATIONS

20.1 If the Customer wishes to alter, amend, omit, add to or otherwise vary an Order or Timetable including suspend the delivery of the Order, it will issue Schneider Electric with a written Variation request. **(Variation)** Schneider Electric will review the Variation request and provide a quote to the Customer setting out the cost of the Variation and the impact on the Timetable.

20.2 As soon as practicable after receipt of the quote from Schneider Electric, the Customer will either accept the quote by signing and returning it to Schneider Electric or reject the quote in writing. If the Customer and Schneider Electric are unable to agree upon the amount of the difference in cost or impact on the Timetable the provisions of clause 20.3 shall apply.

20.3 If the parties can agree upon the variation to the Timetable and the only outstanding item is pricing, the Customer may direct Schneider Electric to proceed with the Variation request on a Time and Materials basis in accordance with Schneider Electric's standard schedule of rates. Unless Schneider Electric reaches agreement with the Customer under clause 20.2 or it receives a direction under this clause, Schneider Electric will not be required to proceed with the Variation request.

21 TESTING AND ACCEPTANCE

21.1 For Products, the Customer will be deemed to have accepted the Products on the date that the Products are delivered to the Customer at the Delivery Point **(Delivery Date).**

21.2 For all Project Deliverables, the following provisions will apply:

(a) Schneider Electric will notify the Customer in writing when the Project Deliverables are ready to be submitted for Acceptance Tests and within ten (10) days after receiving such notice, the Customer will conduct Acceptance Tests on the Project Deliverables and advise Schneider Electric in writing of whether the Project Deliverables have passed the Acceptance Tests or the Project Deliverables have failed the Acceptance Tests.

(b) If the Project Deliverables fail to pass the Acceptance Tests then the Customer must notify Schneider Electric in writing setting out details of the known defects in the Project and permit Schneider Electric, within a reasonable period of time taking into account the nature of the defects and the likely time it will take to remedy the defects, which period shall not be less than ten (10) working days, to correct the defects and resubmit the Project to the Customer to conduct Acceptance Tests again.

(c) The Project Deliverables will be deemed accepted upon the occurrence of the earlier of:

(i) The date that the Customer gives written notice to Schneider Electric that the Project Deliverables have passed the Acceptance Tests; or

(ii) The date that is fourteen (14) days after completion of the Acceptance Tests, provided that during the fourteen (14) day period after completion of the Acceptance Tests the Customer did not notify Schneider Electric in writing of any defects in the Project Deliverables; or

(iii) The date the Customer makes commercial or operational use of the Project Deliverables other than for the purposes of conducting the Acceptance Tests.

(Date of Acceptance).

Notes

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EcoStruxure is our IoT-enabled open and interoperable system architecture and platform. EcoStruxure delivers enhanced values around safety, reliability, efficiency, sustainability and connectivity for our customers.

EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity technologies to deliver Innovation At Every Level from Connected Products; Edge Control; and Apps, Analytics & Services: our IoT technology Levels.

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