Ready to install Distribution and control products









Introduction

Schneider Electric's Ready to Install offer brings together the company's range of solutions for the distribution, protection, control and management of electrical systems. As a global specialist in energy management, Schneider Electric offers integrated solutions making energy safer, more reliable, efficient and productive.

The Ready to Install offer includes a comprehensive range of distribution boards, panel boards, switchgear, protection devices, control and command solutions, metering and measurement products and Integrated Installation Solutions.

Our products are highly compatible and complement each other, allowing you to provide your customers with integrated, tailored solutions. For easy identification, products previously known under the Merlin Gerin and Mita brands are now being labelled as Schneider Electric so customers can spot our quality solutions at a glance.

Whether you're specifying equipment for a major project or buying a selection of components for a simple maintenance installation, our range is unequalled. When you choose a system bearing our name you have the reassurance it is of the highest quality. Wherever you are located and whatever your need, we are committed to meeting your requirements.

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Isobar 4c

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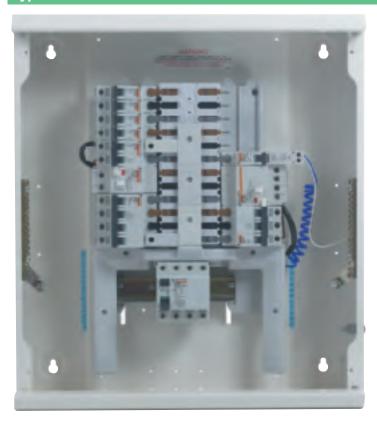
Isobar 4c Type A and Type B distribution boards

Type A distribution board



- Fully type tested conditional short circuit rating of 16kA to BS EN 60439
- High performance MCB 10kA BS EN 60898 15kA BS EN 60947-2 in B, C or D curve single and double pole
- 125A busbar rating
- Isobar disconnection system ensuring unused outgoing ways are isolated
- Option of switching outgoing neutral on all boards using distributed neutral kit
- Terminal block for feeding up to 100A
- Range of incomers: switch disconnectors, residual current devices, terminal blocks
- Single pole RCBO for new or retrofit maintaining device density
- Full range of device accessories and auxiliaries
- Knockouts for cable gland and conduitmixed to suit the installation needs without loss of space
- Split metering option

Type B distribution board with 125A incomer



- High performance MCB 10kA BS EN 60898 15kA BS EN 60947-2 in B, C or D curve 1, 2, 3 and 4 pole
- Fully type tested conditional short circuit rating of 25kA to BS EN 60439 when fed by MCCB
- 250A busbar rating
- Isobar disconnection system ensuring unused outgoing ways are isolated
- Option of switching outgoing neutral using distributed neutral kit
- Range of incomers
- Removable insulated pan assembly
- Fully shrouded neutral
- Split neutral bars
- Removable gland plates
- Optional metering, dual supply, surge protection and contactor on incoming
- Split metering option

Isobar 4c Type A and Type B distribution boards

Type B distribution board with 250A incomer



- High performance MCB 10kA BS EN 60898 15kA BS EN 60947-2 in B, C or D curve 1, 2, 3 or 4 pole
- Fully type tested conditional short circuit rating of 25kA to BS EN 60439 when fed by MCCB
- 250A busbar rating
- Isobar disconnection system ensuring unused outgoing ways are isolated
- Option of switching outgoing neutral using distributed neutral kit
- Range of incomers up to 250A
- Removable insulated pan assembly
- Fully shrouded neutral
- Split neutral bars
- Removable gland plates
- Optional metering, dual supply, surge protection and contactor on incoming
- Split metering option

Isobar 4c SP&N Type A for use only with C60H range

Technical data

Designed, manufactured and tested to	BS EN 60439-3
Isobar disconnection system	m
Busbar rating	125A
Voltage rating	230/240Vac
Optional distributed neutral	Allowing 2 pole switching at any outgoing way using distributed neutral kit
Ingress protection	IP31 to BS EN 60529
Cable capacity neutral and earth bar	25mm²
DIN rail mounting	With fully shrouded busbars
Surface or flush mounting	Using flush mounting kit
5 single pole blanking plate	es es
Colour	RAL 9001 epoxy powder coated
IP2X with covers removed	

125A standard A boards (Incomers not included)							
Part number	Dimension	ions (mm)					
	outgoing ways	Height W	idth Depth				
MGAN6	6	264 2	60 127				
MGAN9	9	264 3	15 127				
MGAN12	12	264 3	70 127				
MGAN15	15	264 4	50 127				
*MGAN23	23	494 3	70 127				

2	row	unit

125A split load A boards (Incomers not included)						
Part number	Unprotected	Protected Dimensions (mm)			m)	
	outgoing ways	outgoing ways	Height	Width	Depth	
MGAN46SL	4	6	264	450	127	
MGAN48SL	4	8	264	450	127	
MGAN66SL	6	6	264	450	127	

125A dual incomer A boards (Incomers not included)						
Part number	Number of outgoing ways Circuit A	Number of outgoing ways Circuit B		sions (m Width	m) Depth	
MGAN46DS	4	6	264	370	127	
MGAN66DS	6	6	264	450	127	
MGAN76DS	7	6	264	450	127	

Loads should be evenly distributed across primary and secondary supplies

125A multi service A boards (Incomers not included)						
Part number	Unprotected outgoing ways	Useable DIN rail SP way	Dimens Height	sions (m Width	m) Depth	
MGAN416MS	4	8	264	370	127	
MGAN520MS	5	10	264	450	127	
MGAN716MS	7	8	264	450	127	
MGAN96MS	9	3	264	370	127	
MGAN912MS	9	6	264	450	127	
MGAN1010MS	10	5	264	450	127	
MGAN126MS	12	3	264	450	127	
*MGAN1228MS	12	14	494	370	127	
*2 row unit						









Distribution boards

Isobar 4c SP&N Type A split metered boards for use only with C60H range



Technical data Designed, manufactured BS EN 60439-3 and tested to Isobar disconnection system Busbar rating 2 row 90A 1 row 90A 2 row 63A rated Direct connected meters with pulsed output 1 row 40A rated Voltage rating 230/240Vac Optional distributed Allowing 2 pole switching at any outgoing way using neutral distributed neutral kit Ingress protection IP31 to BS EN 60529 Cable capacity neutral and earth bar DIN rail mounting With fully shrouded busbars Surface or flush mounting Using flush mounting kit 5 single pole blanking plates Colour RAL 9001 epoxy powder coated IP2X with covers removed

2 row unit 90 amp						
Part number	Outgoing ways	Dimensio	ns			
		Height	Width	Depth		
MGAN12S12	12 +12	494	470	127		

1 row unit 90 amp						
Part number Outgoing ways Dimensions						
		Height	Width	Depth		
MGAN4S5	4 + 5	264	370	127		

Isobar 4 SP&N Type A incomers







Switch disconnectors						
Part number	Rating	Voltage	Number of poles			
MGI1252	125A	230/240V	2			

Technical data

Tested to	BS EN 60947-3
Category of duty	AC22
Positive contact indication	In accordance with BS 7671
Cable capacity	50mm²
Terminal tightening torque	3.5Nm
Lockable in "ON" or "OFF"	Using ref: MGLA

RCCBs			
Part number	Rating	Voltage	Sensitivity
RMG630302	63A	230/240V	30mA
RMG631002	63A	230/240V	100mA
RMG633002	63A	230/240V	300mA
RMG800302	80A	230/240V	30mA
RMG801002	80A	230/240V	100mA
RMG803002	80A	230/240V	300mA
23111	80A	230/240V	100mA Time delayed
RMG1000302	100A	230/240V	30mA
RMG1001002	100A	230/240V	100mA
RMG1001002S	100A	230/240V	100mA Time delayed
RMG1003002	100A	230/240V	300mA
23116	100A	230/240V	300mA Time delayed

Technical data

Tested to	BS EN 61008
Positive contact indication	In accordance with BS 7671
Cable capacity	63A, 80A = up to 35mm ²
	100A = up to 50mm ²
Terminal tightening torque	2Nm (35mm²), 3.5Nm (50mm²)

Terminal block				
Part number	Rating	Voltage	Number of poles	
MGTB1252	125A	230/240V	2	

Technical data

. Joinmour data		
Direct connection	Incoming lug unit, two pole suitable for use in any Isobar 4c A type board	
Cable capacity	50mm²	
Terminal tightening torque	3.5Nm	

Distribution boards

Isobar 4c MGA loose enclosures and board accessories



Application

A range of steel enclosures using the Isobar 4c A type board design suitable for mounting DIN devices including MCBs, RCBOs and control and command products.

Technical data

Enclosure	Folded sheet steel
Ingress protection	IP31 to BS EN 60529
DIN rail	
Colour	RAL 9001 epoxy powder coated
Surface or flush mounting	Using flush mounting kit
Earth bar	
Blanking plates	5 single pole

MGA loose enclosures				
Part number	Useable DIN	Number	Dimensions (mm)	
	rail SP way	of rows	Height Width Depth	
MGN16DE	8	1	264 260 127	
MGN22DE	11	1	264 315 127	
MGN28DE	14	1	264 370 127	
MGN34DE	17	1	264 450 127	
*MGN56DE	28	2	494 370 127	

^{* 2} row unit.

Accessor	ies	
Part number	SP circuits	Description
MGBL		Key lock
BP		Blanking plates 5 off light grey
MGBP25		Blanking plates 5 off light grey (Pack of 25)
MGANWL	15	A board spare outgoing way self adhesive labels (pack of 10)
MGTB1001		100A terminal block for installation in Isobar boards as an outgoing way. Supplied with identification labels. Note: cable must be provided with local protection to comply with BS 7671. Cable capacity 50mm ² .
MGPD		Padlocking kit for door
MGBP		Blanking pole fixed

Distributed neutral bars		
Part number	Description	
MGNA4	Distributed neutral kit for 4 way SP+N	
MGNA6	Distributed neutral kit for 6 way SP+N	
MGNA7	Distributed neutral kit for 7 way SP+N	
MGNA9	Distributed neutral kit for 9 way SP+N	
MGNA12	Distributed neutral kit for 12 way SP+N	
MGNA15	Distributed neutral kit for 15 way SP+N	
MGNA23	Distributed neutral kit for 23 way SP+N	
NKIT	Phase to neutral conversion kit (pack 4)	
	One pack included in a distributed neutral kit	
MGACE	Clean eart h facility for A type boards (6 hole).	
	Or can be used to comply with BS 7671 607-02	
	where the protective conductor ring shall be	
	separately connected at the distribution board.	

Flush mounting kit	
Part number	For use with
MGAN6FK	MGAN6, MGN16DE
MGAN9FK	MGAN9
MGAN12FK	MGAN12, MGAN46DS, MGAN416MS
	MGAN15, MGAN46SL, MGAN48SL, MGAN66SL,
MGAN15FK	MGAN76DS, MGAN912MS,
	MGAN1010MS, MGAN1228MS
MGAN24FK	MGAN23, MGAN1228MS







Isobar 4c TP&N Type B for use only with C60H range









Technical data

Designed, manufactured and tested to BS EN 60439-3 Isobar disconnection system Busbar rating 250A 400/415Vac Voltage rating Optional distributed Allowing 2 or 4 pole switching at any outgoing way neutral using distributed neutral kit Ingress protection IP31 to BS EN 60529 Cable capacity neutral 25mm² 100% rated and earth bar DIN rail mounting with fully shrouded busbars Surface mounting Flush mounting available Blanking plates 5 single pole supplied Colour RAL 9001 epoxy powder coated IP2X With covers removed

Standard B boards				
Part number	Number of TP	Dimensions (mm)		
	outgoing ways	Height Width Depth		
MGBN4	4	484 470 139		
MGBN6	6	484 470 139		
MGBN8	8	538 470 139		
MGBN12	12	700 470 139		
MGBN16	16	808 470 139		
MGBN18	18	808 470 139		
MGBN24	24	970 470 139		

Split load B boards

These are achieved by selecting any 2 Isobar B boards and joining with either MGBNTJKN and feeding the top board via a outgoing 100 amp terminal block MGTB1001 for each phase or use

MGBN63SPL split load kit which is supplied with a 63 amp C curve MCB.

Multi service B boards

Control products can be added to any B type distribution board using a modular

MGBNEX034N which will accept 17 single pole wide control products.

For flush mounting kits, please consult us.

Distribution boards

Isobar 4c with integrated metering







Application

The PowerLogic power meter Series 750 offers all the measurement capabilities required to monitor an electrical installation in a single 96 x 96mm unit extending only 50mm behind the mounting surface. With its large display, you can monitor all three phases and neutral at the same time. The anti-glare display features large 11mm high characters and powerful backlighting for easy reading even in extreme lighting condition and viewing angles.

The PowerMeter Series 750 is available with the following functionality:

- I, V, F, Energy, PF
- THD and min/max readings
- Pulsed and Modbus output for energy metering
- Basic version plus an RS 485 port for Modbus communication
- PM750 two digital inputs, one digital output, alarms and signed power factor

Characteristics

- Voltage measurement: 480V AC direct or external VT
- Requires only 50mm behind mounting surface
- Inputs/Outputs: 2 pulse outputs, 2 digital inputs and 1 digital output
- Communication ports: 1
- Large back lit display with integrated bar charts
- Intuitive user interface
- Power and current demand, THD, min/max
- Energy class 1 as defined by IEC 62053-21 and class 0.5 as defined by IEC 62053-22

MGBNKWH Metering extension enclosure

Supplied with current transformers fitted and wired, voltage protection circuit breaker and a PowerLogic PM750MG meter. Can be fitted to the bottom/top or in-between any isobar 4c B type distribution board.

MGBNMETE Metering extension enclosure

Supplied with current transformers fitted and wired, voltage protection circuit breaker and mounting for a 96 x 96 power meter. Can be fitted to the bottom/top or in-between and Isobar 4c B type distribution board.

Lighting and power metered B boards

Technical data 125amp

125A 3P+N switch disconnector fitted

Connections shrouded to IP2X

All Isobar features are retained

Standard incoming and outgoing devices may be fitted

Metering of total load plus separate metering of section 2, all control wiring current transformers and protection for meters included and fitted, outputs wired to terminals

Ethernet gateway and dc power supply can be supplied for retro-fit

PM750MG meters have pulsed output and modbus connections

Split neutral bars

Split earth bars

Size H = 1290 x W = 470 x Depth = 139

Part number		Section 1 - Total load outgoing TP ways	Section 1 - Sub load outgoing TP ways
125A	MGBN12516S4	16	4
	MGBN12514S6	14	6
	MGBN12512S8	12	8
	MGBN1254S6	4	6
	MGBN1246S8	6	8
250A	MGBN25016S4	16	4
	MGBN25014S6	14	6
	MGBN25012S8	12	8

Isobar 4c with integrated metering



Combined metering units

Assembled from standard catalogue separate lighting and power supplie	
2 x 12 way B boards	MGBN12
2 x 125A incomers	MGI1253N
2 x metering extension enclosure	MGBNKW
1 x side joining kit	MGBNSJKN



One incoming supply with separate monitoring of lighting and power on a symmetrical layout		
2 x 12 way B boards	MGBN12	
2 x 125A incomers	MGI1253N	
2 x metering extension enclosure	MGBNKWH	
1 x extension enclosure with DIN rail	MGBNEX034N	
1 x extension enclosure plain	MGBNEXN	
1 x side joining kit	MGBNSJKN	
1 x 125A incomers	MGI1253N	
2 x terminal blocks 4 pole	MGTB1254	
1 x linking busbar	14884	



One incoming supply with separ	rate monitoring of
lighting and power on a assymm	netrical layout
2 x 12 way B boards	MGBN12
1 x 8 way board	MGBN8
2 x 125A incomers	MGI1253N
2 x metering extension enclosure	MGBNKWH
1 x extension enclosure with DIN rail	MGBNEX034N
1 x side joining kit	MGBNSJKN
1 x 125A incomers	MGI1253N
2 x terminal blocks 4 pole	MGTB1254
1 x linking busbar	14884

Technical Section 9 Dimensions Section 10

Distribution boards

Isobar 4c TP&N Type B for use only with C60H range

Technical data Designed, manufactured	
and tested to	BS EN 60439-3
Isobar disconnection system	1
Busbar ratings	125A
Voltage rating	400/415Vac
Optional distributed neutral	Allowing 2 or 4 pole switching at any outgoing way
	using distributed neutral kit
Ingress protection	IP55 to BS EN 60529
Cable capacity neutral	25mm ²
and earth bar	
DIN rail mounting with fully	
Additional earth stud provide	ed
Blanking plates	5 single pole
Colour	RAL 9001 epoxy powder coated
Door	Can be left or right handed
Key lockable enclosure	As standard



Heavy duty IP55 (125A) with plain door				
Part number	Number of	Dimens	sions (m	ım)
	outgoing ways	Height	Width	Depth
MGBN6HDGR	6	650	600	330
MGBN8HDGR	8	650	600	330
MGBN12HDGR	12	850	600	330
MGBN16HDGR	16	850	600	330

Heavy duty IP55 (125A) with transparent door			
Part number	Number of	Dimensions (mm)	
	outgoing ways	Height Width Depth	
MGBN6HDGK	6	650 600 330	
MGBN8HDGK	8	650 600 330	
MGBN12HDGK	12	850 600 330	
MGBN16HDGK	16	850 600 330	

Isobar 4c TP&N Type B incomers







Switch disc	onnectors	125A	
Part number	Rating	Voltage	Number of poles
MGI1253N	125A	415V	3+N
MGI1254	125A	415V	4

Technical data

Tested to	BS EN 60947-3
Category of duty	AC22
Positive contact indication	In accordance with BS 7671
Cable capacity	50mm ²
Terminal tightening torque	3.5Nm
Lockable in "ON" or "OFF"	Using ref: MGLA
nosition	

Switch disconnectors 160A - 250A			
Part number	Rating	Voltage	Number of poles
MGNI1603	160A	415V	3+N
MGNI2003	200A	415V	3+N
MGNI2503	250A	415V	3+N
MGNI1604	160A	415V	4
MGNI2004	200A	415V	4
MGNI2254	225A	415V	4
MGNI2504	250A	415V	4
LV429243	Bare cable	connector set 95mm ² 16	SOA set of 4
LV429260	Bare cable	connector set 185mm ² 2	250A set of 4
MGALK	Allen key k	it for fitting devices >160	A

Devices fit directly into distribution board and are supplied with 270mm extension box.

Technical data

Tested to	BS EN 60947-3
Copper pad for M8 lugs,	15Nm
tightening torque	
Lockable in "ON" or "OFF"	position
Category of duty	AC22
Positive contact indication	BS 7671
in accordance with	

Residual cui	rrent circuit b	reakers	RCCBs 60	3A - 160A
Part number	Rating	Voltage	Sensitivity	Number of poles
RMG630304	63A	415V	30mA	4
RMG631004	63A	415V	100mA	4
RMG633004	63A	415V	300mA	4
23146	63A	415V	300mA TD**	4
16261	80A	415V	30mA	4
23213	100A	415V	300mA	4
23227	100A	415V	300mA TD**	4
MGNI160RCCB*	160A	415V	Adjustable	4

^{*} Item is supplied with 270mm extension box, non-auto MCCB and Vigi.

Technical data

Tested to	BS EN 61008
Positive contact indication	In accordance with BS 7671
Lockable in "ON" or "OFF" p	position
Trip free mechanism	
Cable capacity	63A/80A - 35mm², 100A - 50mm², 160A - 50-185mm²
Terminal tightening torque	2Nm (63/80A), 3.5Nm (100A), 15Nm (160A)

^{**} Time delay as an element of discrimination.

Distribution boards

Isobar 4c TP&N Type B incomers





Terminal blo	cks 125/250A		
Part number	Rating	Voltage	Notes
MGTB1254	125A	415V	
MGNTB2504	250A	415V	With extension box

Technical data

Cable capacity	125A - 50mm ² , 250A - M8 copper pad
Terminal tightening torque	125A - 3.5Nm, 250A - 15Nm

Moulded ca	se circu	it breakers MCCBs 100	A - 250A
Part number	Rating	Voltage	Number of poles
MGNCB1004	100A	415V	4
MGNCB1604	160A	415V	4
MGNCB2004	200A	415V	4
MGNCB2504	250A	415V	4
MGALK	Allen key k	kit for fitting devices >160A	

- Devices fit directly into distribution board and are supplied with 270mm extension box and terminal shield
- Can be fitted with shunt trip, UVR and auxiliary switch
- Distribution boards fitted with a MCCB are suitable for installations with fault levels up to 25kA

Technical data	
Tested to	BS EN 60947-2
Category of duty	AC22
Positive contact indication	In accordance with BS 7671
Cable capacity	50mm² - 185mm²
Terminal tightening torque	100A - 10Nm, 160, 200 and 250A - 15Nm

Incoming devices without extension enclosure				
Part number	Description	Rating	Voltage	Number of poles
MGBNI160SD	Switch disconnector	160	415V	3+N
MGBNI200SD	Switch disconnector	200	415V	3+N
MGBNI250SD	Switch disconnector	250	415V	3+N
MGBNCB1603	MCCB	160	415V	4
MGBNCB2003	MCCB	200	415V	4
MGBNCB2503	MCCB	250	415V	4
MGNPB250TB	Terminal block	250	415V	4

Dual sourc	e incomer		
Part number	Rating	Voltage	Number of poles
MGNDSI	<125A	415V	4

To be used in dual source applications, with standby being a portable/fixed generator set or second transformer. Mechanically interlocks any combination of the following incoming 4P devices:

- MGI1254
- C120
- C60

To be ordered separately.

A padlocking facility enables either one or both to be locked in the OFF position or using MGLA for locking ON.

Front cover is lockable using MGBL.

Cable capacity 50mm².

Supplied complete with board connection.

Contactor i	ncomer 100A
Part number	Description
MGBN100CCI	Provides contactor control and isolation of Isobar 4c
	B type boards

Kit includes:

- 100A contactor 240Vac coil (Part number **15978**)
- Switch disconnector 100 amp 4 pole
- Extension box 270mm
- Interconnections
- 100A terminal block





Isobar 4c MGB loose enclosures



Application

MGB loose enclosures are designed to accommodate DIN rail mounted products, primarily for control and metering. They may be mounted individually or attached to the side of an MGB board of equivalent height using the side joining kit MGBNSJK.

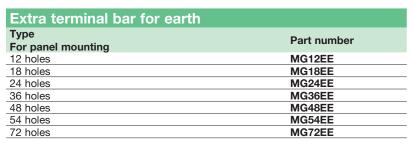
Alternatively they may be attached to the top or bottom of an MGB board using the top/bottom joining kit **MGBNTJKN**.

Supplied wi	th DIN rail, doo	r and slotte	d front	cover	
Part number	Number of 18mm SP ways	Number of rows	Dimens Height	ions (m	m) Depth
MGBN4SXS	34	2	484	470	138
MGBN8SXS	34	2	538	470	138
MGBN12SXS	51	3	700	470	138
MGBN16SXS	68	4	808	470	138
MGBN24SXS	85	5	970	470	138

Supplied wi	Supplied with DIN rail, door and plain front cover				
Part number	Number of 18mm SP ways	Number of rows	Dimens Height	ions (m Width	m) Depth
MGBN4SXP	34	2	484	470	138
MGBN8SXP	34	2	538	470	138
MGBN12SXP	51	3	700	470	138
MGBN16SXP	68	4	808	470	138
MGBN24SXP	85	5	970	470	138

Technical data

Ingress protection	IP31 to BS EN 60529
Earth bar capacity	25mm²
Surface or flush mounting	Using flush mounting kit
Colour	RAL 9001 epoxy powder coated







Distribution boards

Isobar 4c B board extension boxes and metering



Application

The range of B boards are manufactured in a 270mm modular height, to allow the user greater flexibility, so enabling the inclusion of single phase distribution boards, multi service units, larger cabling arrangements etc.

Enclosure	extension
Part number	Description
MGBNEXN	Extension box with plain front cover. Provides additional wiring
	space or a housing for control or metering equipment.



Multi servic	e unit
Part number	Description
MGBNEX034N	Extension box with DIN rail, slotted front cover and door.
	Provides space for up to 17 SP DIN mounted products.
	Includes gland plate and joining kit.



Single phase extension		
Part number	Description	
MGBNEXA15N	A 15 way Isobar 4c A type distribution board designed for fixing direct on to any Isobar 4c B type board.	

Isobar 4c TP&N Type B distribution boards



Way labels		
Part number	Description	SP circuits
MGBNWL	B board front cover way labels	72



Terminal block	100A
Part number	Description
MGTB1001	100A terminal block for installation in Isobar boards as an outgoing way. Supplied with identification labels. Note: cable must be provided with local protection to comply with BS 7671. Cable capacity 50mm ² .



Door lock	
Part number	Description
MGBL	Door lock for A and B boards square sliding catch
MGK33	2 off spare keys for MGBL
MGPD	Padlock kit for door
MGSDC	Replacement clear catch



Blanking plate	
Part number	Description
BP	5 pole blanking plates (light grey).
MGBP25	Pack of 25 blanking plates



Blanking pole	
Part number	Description
MGBP	Single pole spare way blank

Spare gland plates	
Part number	Description
MGBNGPN	Gland plate plain for B type distribution board
MGBNGPEXN	Gland plate for Isobar extension box
MGBNGPNKO	Gland plate for B board with knock out
08961	Touch up paint - brush
08962	Touch up paint - spray
MGBNCBK	Cross brace

Isobar 4c TP&N Type B distribution boards



Single phasi	ng kit 125/2	250A	
Part number	Rating	Voltage	Description
MG125SPEV	125A	415V	For 4P incomers up to 125A
MG250SPEV	250A	415V	For 4P incomers up to 250A
Converts a TP&N	B board income	r into single p	hase applications when used in

Converts a TP&N B board incomer into single phase applications when used in conjunction with the terminal blocks and switch disconnectors.



Joining kits	
Part number	Description
MGBNTJKN	Joining kit for two type B distribution boards mounted above or below each other.
MGBNSJKN	Joining kit for two type B distribution boards mounted side by side.
MGBN63SPL	63amp split load kit kit.

Flush mounting kits	
Part number	Description
MSIS954	Suitable for MGBN4, MGBN6
MSIS955	Suitable for MGBN8
MSIS956	Suitable for MGBN12
MSIS957	Suitable for MGBN16, MGBN18
MSIS958	Suitable for MGBN24



Distributed neutral bars		
Part number	Description	
MGNB4	Distributed neutral kit for 4 way TP+N	
MGNB6	Distributed neutral kit for 6 way TP+N	
MGNB8	Distributed neutral kit for 8 way TP+N	
MGNB12	Distributed neutral kit for 12 way TP+N	
MGNB16	Distributed neutral kit for 16 way TP+N	
MGNB18	Distributed neutral kit for 18 way TP+N	
MGNB24	Distributed neutral kit for 24 way TP+N	
NKIT	Phase to neutral conversion kit (pack 4)	
	Note: One pack included in a distributed neutral kit	

Clean earth	
Part number	Description
MGBNCE7	For type B boards provides 7 clean earth or extra neutral/earth holes
MGBNCE25	For type B boards provides 25 clean earth or extra neutral/ earth holes

Isobar 4c Pan assemblies, doors and covers



A board par	assembly for C60 MCBs
Part number	Description
MGAN6P	6 way SP&N pan assembly
MGAN9P	9 way SP&N pan assembly
MGAN12P	12 way SP&N pan assembly
MGAN15P	15 way SP&N pan assembly



B board par	assembly for C60 MCBs
Part number	Description
MGBN4P	4 way TP&N pan assembly
MGBN6P	6 way TP&N pan assembly
MGBN8P	8 way TP&N pan assembly
MGBN12P	12 way TP&N pan assembly
MGBN16P	16 way TP&N pan assembly
MGBN418P	18 way TP&N pan assembly
MGBN24P	24 way TP&N pan assembly



A board door and cover			
Part number	Description		
MGAN6C	Suitable for MGAN6		
MGAN9C	Suitable for MGAN9		
MGAN12C	Suitable for MGAN12		
MGAN15C	Suitable for MGAN15		
MGAN23C	Suitable for MGAN23		



B board door and cover			
Part number	Description		
MGBN4C	Suitable for MGBN4		
MGBN6C	Suitable for MGBN6		
MGBN8C	Suitable for MGBN8		
MGBN12C	Suitable for MGBN12		
MGBN16C	Suitable for MGBN16		
MGBN18C	Suitable for MGBN18		
MGBN24C	Suitable for MGBN24		

Circuit protection

C60H circuit breakers B, C and D curves BS EN 60898: 1000A, BS EN 60947-2: 15kA









Function

- The circuit-breakers combine the following functions:
- □ Protection of circuits against short-circuit currents
- □ Protection of circuits against overload currents
- □ Control
- □ Isolation
- □ Protection of persons against indirect contact with TN and IT neutral systems C60H circuit-breakers are used in the tertiary and industrial sectors

Tripping curves

B curve

When the short-circuit currents are weak (generators, long cables)

- Power circuit:
- $\hfill\Box$ Ratings: 1 to 63 A set at 30 $^{\circ}\text{C}$
- $\hfill\Box$ Tripping curve: the magnetic trip units operate between 3 and 5 In

C curve

Cables feeding conventional loads

- Power circuit:
- $\hfill\Box$ Ratings: 1 to 63 A set at 30 $^{\circ}\text{C}$
- ☐ Tripping curve: the magnetic trip units operate between 5 and 10 In

D curve

Loads with high inrush currents (motors, transformers)

- Power circuit:
- $\hfill\Box$ Ratings: 1 to 63 A set at 40 $^{\circ}\text{C}$
- □ Tripping curve: the magnetic trip units operate between 10 and 14 In

Technical data according to BS EN 60898

- Power circuit:
- □ Voltage rating (Ue): 440 V AC
- ☐ Breaking capacity:
- According to BS EN 60898, Icn ultimate breaking capacity (O-CO cycle):

Rating (A)	Туре	Voltage (V)	Breaking capacity Icn (A)
163	1P	230/400	10000
	1P+N	230	10000
	2P, 3P, 4P	400	10000

 $[\]hfill\Box$ limitation class (BS EN 60898): 3.

Technical data according to BS EN 60947-2

- Power circuit:
- $\hfill \Box$ Voltage rating (Ue): 440 V AC
- □ Impulse voltage (Uimp): 6 kV
- □ Insulation voltage (Ui): 500 V AC
- □ Breaking capacity:
- According to BS EN 60947-2, Icu ultimate breaking capacity (O-CO cycle):

Rating (A)	Туре	Voltage (V)	Breaking capacity Icu (kA)
163	1P	130	30
		230240	15
		400415	4 ⁽¹⁾
	1P+N, 2P, 3P, 4P	230240	30
		400415	15
		440	10

⁽¹⁾ Breaking capacity for 1 pole with IT isolated neutral system (case of double fault).

General technical data

- Fast closing: allows the high inrush currents of some loads to be better held.
- Isolation with positive break indication: opening is indicated by a green strip on the device operating handle. This indicator shows opening contacts of all the poles
- Number of cycles (O-C): 20000
- Environment:
- $\hfill\Box$ Tropicalisation: treatment 2 (relative humidity: 95 % at 55 °C) according to IEC 60068-1
- □ Weight (g):

Туре	1P	2P	3P	4P
	120	240	360	480

- Connection: tunnel terminals for the following cables:
- ☐ 16 mm² flexible or 25 mm² rigid up to 25 A ratings
- □ 25 mm² flexible or 35 mm² rigid for 32 to 63 A ratings

C60H circuit breakers B, C and D curves BS EN 60898: 1000A, BS EN 60947-2: 15kA

Order refer	ences			
		Part numbers		
Туре	Rating (A)	B curve	C curve	D curve
1P		D cui ve	O Gai ve	D our ve
	1	C60HB 101	C60HC 101	C60HD 101
1	2	C60HB 102	C60HC 102	C60HD 102
<u>*</u>	4	C60HB 104	C60HC 104	C60HD 104
	6	C60HB 106	C60HC 106	C60HD 106
5	10	C60HB 110	C60HC 110	C60HD 110
2	16	C60HB 116	C60HC 116	C60HD 116
	20	C60HB 120	C60HC 120	C60HD 120
	25	C60HB 125	C60HC 125	C60HD 125
	32	C60HB 132	C60HC 132	C60HD 132
	40	C60HB 140	C60HC 140	C60HD 140
	50	C60HB 150	C60HC 150	C60HD 150
	63	C60HB 163	C60HC 163	C60HD 163
2P		300115 100	200110 100	200112 100
	1	C60HB 201	C60HC 201	C60HD 201
1 3 * *	2	C60HB 202	C60HC 202	C60HD 202
\\	4	C60HB 204	C60HC 204	C60HD 204
<u> </u>	6	C60HB 206	C60HC 206	C60HD 206
5 5	10	C60HB 210	C60HC 210	C60HD 210
2 4	16	C60HB 216	C60HC 216	C60HD 216
	20	C60HB 220	C60HC 220	C60HD 220
	25	C60HB 225	C60HC 225	C60HD 225
	32	C60HB 232	C60HC 232	C60HD 232
	40	C60HB 240	C60HC 240	C60HD 240
	50	C60HB 250	C60HC 250	C60HD 250
	63	C60HB 263	C60HC 263	C60HD 263
3P	03	C00FIB 203	C0011C 203	C0011D 203
OI .	1	C60HB 301	C60HC 301	C60HD 301
1 3 5	2	C60HB 302	C60HC 302	C60HD 302
* * *	4	C60HB 304	C60HC 304	C60HD 304
	6	C60HB 306	C60HC 306	C60HD 306
555	10	C60HB 310	C60HC 310	C60HD 310
	16	C60HB 316	C60HC 316	C60HD 316
	20	C60HB 320	C60HC 320	C60HD 320
	25	C60HB 325	C60HC 325	C60HD 325
	32	C60HB 332	C60HC 332	C60HD 332
	40	C60HB 340	C60HC 340	C60HD 340
	50	C60HB 350	C60HC 350	C60HD 350
	63	C60HB 363	C60HC 363	C60HD 363
4P	· •	200.12000		
	1	C60HB 401	24872	25211
1 3 5 7 * * * * *	2	C60HB 402	24873	25212
///	4	C60HB 404	24875	25214
7777	6	C60HB 406	24876	25215
5555	10	C60HB 410	24877	25216
2 4 6 8	16	C60HB 416	24878	25217
	20	C60HB 420	24879	25218
	25	C60HB 425	24880	25219
	32	C60HB 432	24881	25220
	40	C60HB 440	24882	25221
	50	C60HB 450	24883	25222
	63	C60HB 463	24884	25223

C60 Vigi modules Instantaneous 10 to 300mA



Function

- They are used with C60 1P, 2P, 3P and 4P circuit breakers to provide:
- □ Protection for users against indirect contacts
- □ Additional protection for users against direct contacts (10 mA and 30 mA)
- □ Protection for electrical installations against insulation faults (fire hazard, etc.)
- Basic C60 circuit breakers retain their characteristics

Description

The Vigi earth leakage module is electromagnetic. It operates without an auxiliary power supply. The C60 Vigi module combines the relay and toroid in a single unit.

Vigi C60 modules		AC type
Applications		
For current uses		
Environnement		
Disturbed networks with:	Risk of nuisance tripping due to transient voltage Lightning stroke, switchgear operating on the network surges	
Tripping		
Due to sinusoidal AC residual currents	Whether they are applied quickly or increased slowly	

Instantaneous

It ensures instantaneous tripping (without time-delay).

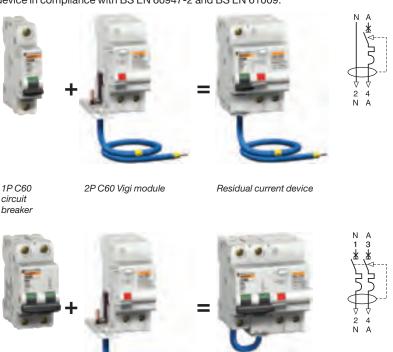
2P C60 Vigi module

Combination

2P C60

circuit breaker

The C60 circuit breaker + C60 Vigi module combination constitutes a residual current device in compliance with BS EN 60947-2 and BS EN 61009.



Residual current device

C60 Vigi modules Instantaneous 10 to 300mA





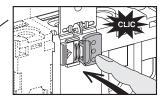


Fig. 1

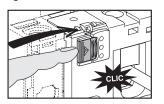


Fig. 2

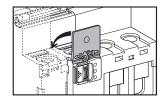
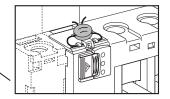


Fig. 3







Vigi C60



Fig. 5

Possible combinations				
	Vigi C60 < 25 A	Vigi C60 < 63 A		
C60 ≤ 25 A		•		
C60 ≤ 63 A	-	•		

Note: guaranteed by foolproof mechanical mounting.

- Combined C60 circuit breaker + C60 Vigi module:
- □ Non-locking installation (disassembly possible) (fig. 1)
- □ Mounting with locking (disassembly possible but with visible trace of disassembly as per appendix G of standard EN 61009-1) (fig. 2)
- □ Disassembly after locking, visible trace of disassembly by breaking the lock as per appendix G of standard EN 61009-1 (fig. 5)
- Hinged captive screw shield that can be sealed with a wire, used for checking and retightening the connection terminals if required (fig. 3-4)

Technical data

recililical data				
Voltage rating		2P: 127240 V AC ±10 %		
		4P: 220	.415 V AC ±10 %	
Current rating		I _n ≤ 25 A a	and I _n ≤ 63 A	
Operating frequency		50/60 Hz		
Trip unit, Instantaneous		Fixed ser	nsitivities for all ratings	
Test button: minimum oper	ating voltage	Vigi C60	2P 127/240 V: 105 V	
at 50 Hz		Vigi C60	4P 220/415 V: 189 V	
Manual control, by means	of a handle	Either wit	h a single action	
providing two reset modes circuit breaker + C60 Vigi n		Or separa	ately	
assembly	lodule	The C60 Vigi module resets before the circuit breaker		
Mechanical indication		Indication of the earth fault on the front face by a red mechanical indicator on the C60 Vigi module operating handle		
Electrical indication		By the SD indicating auxiliary switch (supplied separately)		
Operating temperature		-5 °C to +60 °C		
Storage temperature		-40 °C to +70 °C		
Connection by tunnel terminals		Flexible 16 mm² cables or rigid 25 mm² cables for C60 Vigi modules with ratings ≤ 25 A		
		Flexible 25 mm² cables or rigid 35 mm² cables for C60 Vigi modules with ratings ≤ 40 A or ≤ 63 A		
Weight (g) Type Vigi ≤ 25 A		2P	4P	
		120	180	
	Vigi ≤ 63 A	150	210	

Accessories

- Screw shield: prevents all contact with the C60 Vigi module output terminal
- Spare lock: to replace the lock, after removing a C60 Vigi module previously secured to a C60 circuit breaker

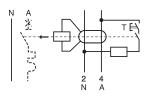
C60 Vigi modules Instantaneous 10 to 300mA

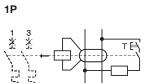


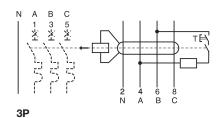


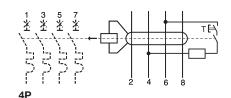
Order references					
AC Type of C60 Vigi modules					
Туре	Voltage (V AC)	Rating (A)	Sensitivity (mA)	Part number	Width in poles
2P					
	127240	≤ 25	10	MGV250102	2
		≤ 63	30	MGV630302	2
			100	MGV631002	2
			300	MGV633002	2
4P					
	220415	≤63	30	MGV630304	3
			300	MGV633004	3

Connection









C60 Vigi modules Instantaneous 10 to 1000mA Selective S: 300mA and 1000mA



Function

- They are used with C60 2P, and 4P circuit breakers to provide:
- □ Protection for users against indirect contacts
- ☐ Additional protection for users against direct contacts (10 mA and 30 mA)
- □ Protection for electrical installations against insulation faults (fire hazard, etc.)
- Basic C60 circuit breakers retain their characteristics

Description

The Vigi earth leakage module is electromagnetic. It operates without an auxiliary power supply. The C60 Vigi module combines the relay and toroid in a single unit. These may not be fitted to 1 pole or 3 pole MCBs.

		, ,					
C60 Vigi modules			Type	AC	Α	A si	A SiE
				\sim	\sim	\sim	\sim
Applications							
Current uses				-			
Electronic loads, rectifiers, in	struments, switch mode	power supplies, variable speed control	llers, etc			•	•
Environment							
Disturbed networks with:	Risk of nuisance tripping due to transient voltage surges	Lightning stroke, switchgear operating on the network					•
	High risk of nuisance tripping	Close lightning strokes, IT earthing system, equipment incorporating interference filters (lighting, computer systems), variable speed controllers, frequency converters, electronic lighting ballasts	Enhanced continuity of supply	-	-	•	•
	Sources of blindness	Presence of harmonics or high frequency rejections	Enhanced earth leakage protection	-	-		•
		Presence of DC components: equipment incorporating diodes, thyristors, triacs		-	-	•	•
Low temperatures	Use: -25 °C			-		•	
Humid atmospheres and/or atmospheres polluted by aggressive agents	Swimming pools, marinas, agri-food industries, water treatment plants, industrial production sites, etc				-	-	•
Tripping							
Due to sinusoidal AC residual currents	Whether they are appli	ed quickly or increased slowly		•		•	•
Due to continuous pulsed residual currents				-			

Instantaneous

It ensures instantaneous tripping (without time-delay).

Selective S

Complete vertical discrimination is ensured if the following two conditions occur simultaneously:

- The downstream device is an instantaneous device and the upstream device is a selective ⑤ or time-delay device
- The sensitivity IDn of the downstream device is less than IDn/2 of the upstream device

Combination

The C60 circuit breaker + C60 Vigi module combination constitutes a residual current device in compliance with BS EN 60947-2 and BS EN 61009.



C60 circuit breaker

C60 Vigi module

Residual current device

Technical Section 9 Dimensions Section 10

C60 Vigi modules Instantaneous 10 to 1000mA Selective S: 300mA and 1000mA

Possible combinations							
	Vigi C60 ≤ 25 A	Vigi C60 ≤ 40 A	Vigi C60 ≤ 63 A				
C60 < 25 A	•	•	•				
C60 < 40 A	-	•	•				
C60 < 63 A	-	-	•				

Note: guaranteed by foolproof mechanical mounting

- Combined C60 circuit breaker + C60 Vigi module:
- □ Non-locking installation (disassembly possible) (fig. 1)
- ☐ Mounting with locking (disassembly possible but with visible trace of disassembly as per appendix G of standard EN 61009-1) (fig. 2)
- □ Disassembly after locking, visible trace of disassembly by breaking the lock as per appendix G of standard EN 61009-1 (fig. 5)
- Hinged captive screw shield that can be sealed with a wire, used for checking and retightening the connection terminals if required (fig. 3-4)

Technical data

roommour data						
Voltage rating	130 V AC ±10 %					
		230400 V AC ±10 %				
Current rating		I ≤ 25 A, I ≤ 40 A and I ≤ 63 A				
Operating frequency	AC type:	50/60 Hz				
		A, A si, A	SiE types: 50 H	-lz		
Trip unit, instantaneous or	selective	Fixed ser	nsitivities for all	ratings		
Test button: minimum ope	rating voltage	Vigi C60	130 V: 105 V			
at 50 Hz	Vigi C60 230/400 V: - 10/30/100/300 mA: 189 V - 500/1000 mA: 193 V					
Manual control, by means		Either wit	h a single actio	on		
providing two reset mode circuit breaker + C60 Vigi	s for the C60	Or separately				
assembly	The C60 Vigi module resets before the circuit breaker					
Mechanical indication	Indication of the earth fault on the front face by a red mechanical indicator on the C60 Vigi module operating handle.					
Electrical indication		By the SD indicating auxiliary switch (supplied separately)				
Operating temperature		AC type:	-5 °C to +60 °C	;		
		A, A si, A SiE types: -25 °C to +60 °C				
Storage temperature		-40 °C to +70 °C				
Connection by tunnel terminals		Flexible 16 mm² cables or rigid 25 mm² cables for C60 Vigi modules with ratings ≤ 25 A				
		Flexible 25 mm² cables or rigid 35 mm² cables for C60 Vigi modules with ratings ≤ 40 A or ≤ 63 A.				
Weight (g)	Туре	2P	3P	4P		
	Vigi ≤ 25 A	120	180	180		
	Vigi ≤ 40 A	120	180	180		
	Vigi ≤ 63 A	150	210	210		

Accessories

- Screw shield: prevents all contact with the C60 Vigi module output terminal screws
- Spare lock: to replace the lock, after removing a C60 Vigi module previously secured to a C60 circuit breaker

C60 Vigi modules Instantaneous 10 to 1000mA Selective S: 300mA and 1000mA









Order references								
Туре	of C60	Vigi mo	odules:	AC	Α	A si	A SiE	
Туре	Voltage (V AC)	Rating (A)	Sensitivity (mA)	Part nu	mbers			Width in poles
2P								
	130	≤25	30	26502	-	-	-	1.5
			300	26503	-	-	-	1.5
		≤ 40	30	26504	-	-	-	2
			300	26505	-	-	-	2
		≤63	30	26506	-	-	-	2
			300	26507	-	-	-	2
	230-400	≤25	10	26580	-	-	-	1.5
			30	26581	26743	26747	26700	1.5
			100	26582	26680	-	-	1.5
			300	26583	26745	-	-	1.5
			500	26584	26746	-	-	1.5
			1000	26585	-	-	-	1.5
		≤ 40	30	26600	26683	26761	26701	2
		300	26601	26685	-	-	2	
		300 🗉	-	-	-	26716	2	
		500	26602	-	-	-	2	
		1000	26615	-	-	-	2	
		≤63	30	26611	26773	26774	26702	2
		100	26612	-	-	-	2	
			300	26613	26775	-	-	2
			300 🗟	-	26616	26779	26706	2
			500	26614	26776	-	-	2
			1000 🗉	-	26618	26806	-	2
4P								
	230-400	≤25	30	26595	26757	26756	26703	3
			100	26596	26694	-	-	3
			300	26597	26759	-	-	3
			500	26598	26760	-	-	3
		≤ 40	30	26606	26697	26767	26704	3.5
			300	26607	26699	-	-	3.5
			300 🗉	-	-	-	26730	3.5
			500	26608	-	-	-	3.5
		≤63	30	26643	26798	26799	26705	3.5
			100	26644	-	-	-	3.5
			300	26645	26800	-	-	3.5
			300 🗉	-	26648	26804	26707	3.5
			500	26646	26801	-	-	3.5
			1000 🗉	-	26650	26808	26708	3.5

C60 Vigi modules Instantaneous 10 to 1000mA Selective S: 300mA and 1000mA







Accessory

Screw shield		
Туре		Part number
Single-pole, sealable	Bag of 20	26982

Spare

Spare lock		
Туре		Part number
Spare lock	Bag of 10	26487

Circuit protection

C60H RCBO 10, 30 and 100 mA instantaneous IEC 61009-2-2: 10 kA

The single-phase C60H RCBO's selfcontained residual current device carries out complete protection of final circuits (overcurrents and insulation faults). The neutral is not interrupted. Protection of persons against direct and

Protection of persons against direct and indirect contact (10 mA and 30 mA). Protection of installations against fire hazard (100 mA).

A class C60H RCBO's are sensitive to the pulsed type DC component.



Technical data

- Voltage rating:
- □ 110 V AC, +10 %, -15 % for 110 V devices
- □ 240 V AC, +10 %, -15 % for 240 V devices
- Frequency: 50...60 Hz.
- Breaking capacity as per BS EN 61009:
- □ Rated nominal breaking capacity (Icn): 10 000 A
- □ Phase/earth rated residual breaking and making capacity (I m): 10 000 A.
- Ratings: 6...45 A at **30°C**.
- Mechanical durability (O-C cycle): 20 000.
- Trip-free handle through an over-center toggle mechanism that ensure tripping even when the handle is held or locked in the ON position.
- Overload, short circuit and earth fault currents are indicated by location of the handle in the OFF position.
- A push-test button "T" is positioned on the front of the device for testing that product is operational:
- □ C60H RCBO 110 V devices with a white test button,
- ☐ C60H RCBO 240 V devices with a black test button.
- Limitation class: 3.
- Connection:
- □ L in: tunnel terminals for 16 mm² flexible or 25 mm² rigid cables
- □ L out and N out: tunnel terminals for 1 to 16 mm² flexible or rigid cables.
- Operating temperature: -5°C...40°C.
- Storage temperature: -25°C...80°C.
- Degree of protection: IP20 at the terminals.
- Environment: tropicalisation, treatment 2 (relative humidity: 95 % at 55°C).
- Weight: 240 g.
- Standards: IEC 61009-2-2, BSEN 61009-1.

C curve

■ Tripping curve: the magnetic trip units operate between 5 and 10 In.

Auxiliaries

The same auxiliary functions as the C60 circuit-breaker can be added to the C60 RCBO's.

- Indication:
- □ **OF**: C60H RCBO ON-OFF position
- □ SD: tripped position due to fault.
- Tripping:
- □ MX + OF: shunt trip
- □ MN: undervoltage release.

Accessory

Padlocking device

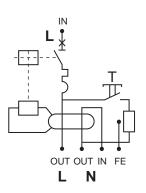
■ Used to lock the toggle of C60H RCBO in the "open" or "closed" position by 8 mm diameter padlock (not supplied).

Note: check compatibility with earthing system, do not use on installations which require double pole switching eg. IT or TT systems.

Circuit protection

C60H RCBO 10, 30 and 100mA instantaneous IEC 61009-2-2: 10kA



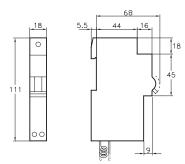


Time	Voltogo	Sensibility	Rating	Width	Part numbers
Туре	Voltage rating	Sensibility	nauiig	in poles	Partificinibers
	(V)	(mA)	(A)		
C60H RCBO AC type					
\sim	110	30	10	1	26445
			16	1	26446
			20	1	26447
			25	1	26448
			32	1	26449
	240	30	6	1	C60HC6R30
			10	1	C60HC10R30
			16	1	C60HC16R30
			20	1	C60HC20R30
			32	1	C60HC32R30
			45	1	C60HC45R30
		100	6	1	C60HC6R100
			10	1	C60HC10R100
			16	1	C60HC16R100
			20	1	C60HC20R100
			32	1	C60HC32R100
			45	1	C60HC45R100
C60H RCBO A type					
	240	10	6	1	C60HC6RA10
			10	1	C60HC10RA10
$\widehat{\Lambda}$			16	1	C60HC16RA10
<u></u> ,			20	1	C60HC20RA10
			32	1	C60HC32RA10
			45	1	C60HC45RA10
		30	6	1	C60HC6RA30
			10	1	C60HC10RA30
			16	1	C60HC16RA30
			20	1	C60HC20RA30
			32	1	C60HC32RA30

Accessory

Туре	Part numbers
Padlocking device (bag of 5 pieces)	MGPLA

Dimensions



Isobar 4 Electrical auxiliaries for C60

Function

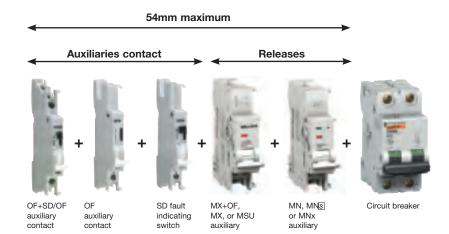
They remotely trip or indicate circuit breakers, with or without Vigi module.

Description

- They are mounted to the left of the circuit-breaker within a maximum width of 54mm
- Fixed using clips (no tools) onto the left side of the circuit breaker

Auxiliary combination

- A maximum of 3 indication auxiliaries OF, SD on the same circuit breaker
- A maximum of 2 changeover auxiliaries (OF+SD/OF) on the same circuit breaker
- A maximum of 1 OF+SD/OF switchover auxiliary and 1 indication auxiliary OF or SD on the same circuit breaker
- A maximum of 2 tripping auxiliaries (MX+OF, MX, MN, MNs, MNx) on the same circuit breaker
- A maximum of 3 tripping auxiliaries MSU on the same circuit breaker without other auxiliary



Protection

Electrical auxiliaries For C60



MX+OF



MX



MN



MN selectives



MNx



MSU

Tripping

Tripping indication on front panel by means of a red indicator.

■ Auxiliaries conforme standard IEC 60947-1

MX + OF shunt trip release

Controls tripping of the device with which it is combined when energised. It is fitted out with a changeover contact (O + C) to indicate the circuit-breaker's position.

It is fitted with a self-interrupting contact allowing the control circuit to remain on (latching emergency stop).

MX shunt release

Controls tripping of the device with which it is combined at power-up. It is fitted with a self-interrupting contact allowing the control circuit to remain on (latching emergency stop).

MN release

Controls tripping of the device with which it is combined when its supply voltage drops (threshold between 70 and 35 % of the Un).

It allows the device to be manually closed if the voltage exceeds 85 % of the nominal voltage.

- Use:
- ☐ Emergency stop pushbutton
- ☐ Safety on supply circuits of several machines by preventing the "non-controlled" restart of all the motors

MN selective s release

Undervoltage release that controls the opening of the device with which it is combined.

0.3 s time-delay on voltage dip: avoids tripping on brownouts or momentary voltage drops.

MNx release for pushbutton with opening

Completely insensitive to supply circuit interruptions.

It is recommended to connect it upstream of the circuit-breaker it protects in the event of fail-safe emergency stops.

MSU voltage threshold release

Especially designed to monitor the voltage between the neutral and phase(s) conductors.

It cuts off the supply by opening the protected device when a threshold level for overvoltages lasting more than a few tenths of a second is exceeded.

Connection

- Using screw clamp terminals:
- \square For 1 or 2 cables of a max. of 2.5mm²
- ☐ 1.5mm² with end
- Visible markers near the terminals

Electrical auxiliaries For C60

Remote indication

- All auxiliary contacts conform to standard IEC 60947-5-1
- The auxiliary contacts OF, SD, OF+SD/OF are also conform with standard EN 62019 for C60, C120 and i DPN (DPN)

OF open/closed contact

- Changeover contact that indicates the "open" or "closed" position of the device
- Test button on front panel enables verification of the indication circuit, without having to operate the device

SD fault indicating switch

- Changover contact that indicates the "tripped" position of the device
- Fault indication (SD) on front panel by means of a mechanical indicator
- Always mount to the left of one or more tripping auxiliaries

OF+SD/OF changeover contact

- Double changeover contact indicates:
- ☐ The "open" or "closed" position of the circuit-breaker (OF)
- ☐ The "tripped" position of the device (SD)
- 2 circuits:
- ☐ Upper: OF
- ☐ Lower: SD or OF
- Function choice using the rotary changeover switch on the right side
- Selected function is indicated on the front panel
- Fault indication (SD) on front panel by means of a mechanical red indicator
- Always mount to the left of one or more tripping auxiliaries
- Can not be mounted in Isobar boards

OF.S contact for ID

- Use of the OF.S auxiliary contact is mandatory when adding tripping and indication functions on a residual current circuit-breaker
- This contact is mounted to the left and indicates the "open" or "closed" position of the residual current circuit-breaker

Connection

- Using screw clamp terminals:
- ☐ For 1 or 2 cables of a max. of 2.5mm²
- ☐ 1.5mm² with end
- Visible markers near the terminals





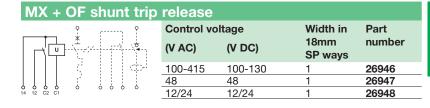




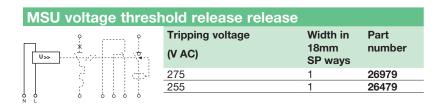
OF+SD/OF



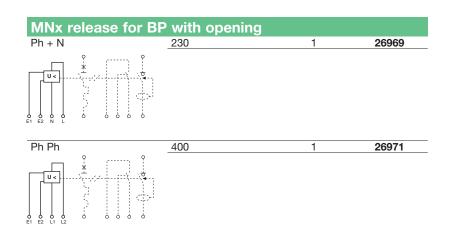
Electrical auxiliaries For C60



MX shunt trip release									
0 0	100-415	100-130	1	26476					
*	48	48	1	26477					
	12/24	12/24	1	26478					



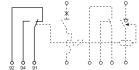
MN undervoltage release								
	(V AC)	tage (V DC)	Width in 18mm SP ways	Part number				
Selective S	220-240		1	26963				
Instantaneous	220-240		1	26960				
φ φ	48	48	1	26961				
*	_115 (400Hz)		1	26959				



Dimensions Section 10

Electrical auxiliaries For C60

SD fault indicating switch



Width in Part 18mm number SP ways 1/2 26927

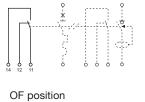
OF contact auxiliary



Width in Part number SP ways 1/2 26924

OF+SD/OF changeover contact

Width in	Part
18mm	number
SP ways	
1/2	26929



SD position

OF.S (ID) auxiliary contact



Width in 18mm number SP ways 1/2 26923



Breaker C60>25A Width Part number 9mm 27062



Technical Section 9 Dimensions Section 10

Accessories for C60











Padlocking facility		
Breaker	Quantity	Part number
C60	Pack of 5	MGLA
Description		Part number
	Padlock 4mm hasp for MGLA*	MGLAP
	For MCBs/RCDs (pack of 2)	26970

Note: MGLA is suitable for use with C60 MCBs/RCBOs mounted in Isobar 4 distribution boards.

^{*} Supplied with a common key number

Screw shield		
Breaker	Quantity	Part number
C60	Sealable and dividable	
	2 x strips of 4	26981
C60 Vigi	Sealable	
	1P shields 20 off	26982

Terminal s	hield	
Breaker	Pole	Part number
C60 pair	1	26975
	2	26976
	3	26975 + 26976
	4	26978

	ub distribution terminal p to 16mm² each	
Breaker	Quantity	Part number
C60>25A	Pack of 4	19091

* Aluminium cable terminal For cables of 16 - 50mm ²		
Breaker	Quantity	Part number
C60>25A	Pack of 1	27060

^{*} Not for use in Isobar 4 distribution boards



* Rear connection terminal For cables up to 50mm²		
Quantity	Part number	
Pack of 2	18528	
	Quantity	

* Not	for use	in Isohar	4 distribution	hoards



Inter-pole	barrier	
Breaker	Pole	Part number
C60	Pack of 10	27001



Replacement cover for vigibloc		
Breaker	Pole	Part number
C60	2	26483
Pack of 5	3	26484
replacements	4	26485

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Boards	
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Motor operator module	
Rotary handles with inbuilt padlocking facilities	
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Spreaders	
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Voltage releases to fit all MCCBs 16/630A	
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Powerpact 4 panelboards



The range of wall and floor mounted Powerpact 4 panelboards is designed, manufactured and tested to BS EN 60439-1. The structures are rigid sheet steel finished in a cream colour epoxy powder (RAL 9001).

All the boards contain a unique connection system which ensures that all busbar/ breaker connections are tightened to the correct torque. The system comprises a tightening bolt head which shears off when the correct torque is reached. Facilities are provided to enable the breaker to be repositioned at a later time if so required.

The breaker range comprises single pole, single pole with switched neutral, double pole, triple pole and three pole with switched neutral and four pole. Incoming device ratings up to 1600A and outgoing ratings up to 630A.

The extremely flexible board design allows 1, 2, 3 and 4 pole breakers to be positioned in any order on the busbar stack thus allowing maximum use of the available space and also allowing breakers feeding associated loads to be positioned together.

For this reason the number of outgoing ways in the selection tables is expressed in single pole ways as well as three pole ways.

Full discrimination simply by missing a frame size.

Special breakers

Details of the standard breakers that may be fitted into the various sizes of panelboard are given on the following pages.

The full range of Compact NSX moulded case circuit breakers includes a wide range of breakers for special applications, higher breaking capacities, additional ratings and adaptations including rotary handles and motor mechanisms for remote operation. Most of these breakers, of ratings up to 630A, can be adapted for use in the Powerpact 4 panelboards.

To order these special breakers add the words 'for use in Powerpact 4 panelboard' to your ordering description of the breaker.

Application

The Powerpact 4 is the straight forward answer to all power requirements. It provides an off-the-shelf solution for most standard distribution applications.

Range

Powerpact 4 is available in many styles to suit various applications in wall mounted and floor standing up to 1600 amps incoming

- Style A is a wall mounted Powerboard with 250amp main bars up to 17 single pole outgoing ways.

 There is no dedicated incomer position giving complete flexibility in the use of the board: splitter board, 2 incomers/1 outgoing or as a conventional board
- Style C is a wall mounted Panelboard with 250 amp main bars and side mounted incomer up to 13 outgoing triple pole ways
- Style D is a wall mounted Panelboard with up to 630 amp main bars and vertically mounted incomer up to 18 triple pole outgoing ways
- Style E is a wall mounted Panelboard with 800 amp main bars and vertically mounted incomer up to 18 triple pole outgoing ways
- Style G is a floor standing Panelboard with 1600 amp main bars and the incomer mounted in its own cubicle 14 outgoing triple pole ways extendible to 28 TP ways

Technical data

icommodi data	
Incoming	Up to 1600A
Outgoing	Up to 28 triple pole ways (84 single pole ways)
Main cable entry	Top or bottom
Metering	Incoming metering and Outgoing metering as an option (incoming standard on
	style G)
Manufactured and tested to	BSEN60439-1
Busbars rated	Up to 1600A at 415V, 50Hz
Short circuit withstand	36 or 50kA for .5 or 1s
Construction	Rigid folded sheet steel with removable gland plates and end covers
Finish	Steelwork in polyester epoxy powder, cream colour RAL9001
Degree of protection	IP3X
Form 3b type 2	As standard
Form 4 type 2 & 6	Can be achieved by use of individual disconnectable neutral links adjacent to
	breakers or by the use of 4 pole breakers. Tunnel terminals are to be fitted on the
	breaker outgoing terminals and shrouded by short terminal shields. The main neu-
	tral bar either side of the incomer should be removed and discarded together with
	the connecting copper bar. The incoming breaker should be a 4 pole breaker
Extension cubicles	Side/top/bottom extension cubicle is available as an addition
	•

Technical Dimensions Section 9 Section 10

Powerpact 4 panelboards

NSX moulded case circuit breakers

Powerpact 4 panelboards have a unique interconnection system which automatically gives the correct torque settings. 1, 2, 3, and 4 pole devices may be mixed to suit the installation needs without loss of space.

Metering

- A PowerLogic PM750MG multi-function digital meter is fitted as standard to monitor the incoming supply on style G and as an option on other styles. It is also used for all outgoing metering. Readings available voltage, current, frequency, power, energy, demand values and harmonic distortion. The meter also provides a pulse output for kWh and kVArh.
- A side extension cubicle may be fitted on styles D/E/G which has provision for metering outgoing circuits, refer to metering on page 2/18. This cubicle also acts as a cable extension box.

Technical data for circuit breakers

Manufactured and tested to BS EN 60947-2

Ics	100% Icu 16 - 630A, 75% Icu 800 - 1600A
Calibration temperature	40°C
Thermal adjustment	16 - 250A = 0.7 - 1 x ln
(3 and 4 pole)	400 - 630A = 0.4 - 1 x In
	800 – 1600A = 0.4 x In

MCCB Icu & terminal size

16 - 100A 36kA 6mm bolt 160 - 250A 36kA 8mm bolt 400 - 630A 50kA 10mm bolt

800 - 1600 50kA 2 x 12mm bolts

Earth fault protection

- May be added to any 4 pole MCCB
- Sensitivities 30, 300mA 1, 3, 10A
- Time delay 0, 60, 150, 310 milli seconds

800/1250/1600A breakers

800/1250/1600A breakers are fitted with Micrologic 5.0 control units to enable full discrimination with the outgoing breakers to be obtained. Alternative control units may be fitted if required.

250A panelboards

The main incoming device is side mounted at the bottom right hand side. If a 4 pole incomer is used the number of outgoing ways available is reduced by one single pole way. The incoming terminal shroud can be positioned to suit a 3 or 4 pole incoming breaker.

250A powerboard

One 3 pole terminal shield for a 250A breaker is supplied as standard for the main incoming terminals. Two adjacent 3 or 4 pole toggle operated breakers may be mechanically interlocked using Part number LV429354.

400/630A panelboard

The line (supply) terminals on the incoming device must be suitably shrouded. The board is supplied with 1 or 3 pole shroud for a 400/630A breaker. For other breakers suitable terminal shields should be ordered separately:

250A 3 pole LV429323 250A 4 pole LV429324 400/630A 4 pole LV432565

These terminal shields are supplied singly.

Selection table

Powerpact 4 panelboards

		250A	250A	400/630A	800A	1600A
		Powerboard	Panelboard	Panelboard	Panelboard	panelboard
Busbar short circuit withst	and					
		36kA, 1s	36kA, 1s	36kA, 1s	50kA, 1s	50kA, 1s
Number of outgoing ways						
	13SP inc incomer					
	17SP inc incomer					
	15SP (5TP)					
	18SP (6TP)					
	21SP (7TP)					
	27SP (9TP)					
	36SP (12TP)					
	39SP (13TP)					
	42SP (14TP)					
	54SP (18TP)					
	84SP (28 TP)					
Incoming device						
	100A MCCB					
	160A MCCB					
	250A MCCB					
	400A MCCB					
	630A MCCB					
	800A MCCB					
	1250A MCCB					
	1600A MCCB					
	250A fuse switch					
Incomer - field installable						
Two incomers, mechanica	lly interlocked					
Main incoming cable entry	,					
	Тор					
	Bottom					
Incoming metering						
Outgoing metering						
Top/bottom extension box	es					
Side extension boxes						
Integrated control and dist	tribution unit					
Earth leakage protection of	n outgoing circuits	;				
-						
Standard Option						

Standard \blacksquare Option \square

Circuit breaker installation

Powerpact 4 panelboards



The 4 pole busbar system ready to accept the circuit breaker.



The circuit breaker is placed in the panelboard and pushed up to the busbars. 1P, 2P, 3P and 4 pole breakers may be mixed in any order on the busbars.



The circuit breaker fixing screw is fitted and tightened to retain the breaker in the board.



The connections to the busbars are tightened until the tops of the connection bolts shear off. This ensures that the correct torque has been applied to the connections.



The circuit breaker is now mechanically & electrically connected in the panel board. It is now ready for the outgoing cables.

Note how the breaker cassette fully shrouds the busbars. Unused positions must be fitted with blanking plates.

Selection table

Powerpact 4 panelboards Bottom entry boards











Main cable entry at bottom						
Busbar short circuit withstand	Number of outgoing ways Part numb					
	Single pole	Triple pole				
250A Powerboard						
Style A	13	3	MG25C2			
36kA, 1s	17	4	MG25C4			
	13		MG25C2M			
	17		MG25C4M			

Style C	15	5	MG2C5
36kA, 1s	21	7	MG2C7
	27	9	MG2C9
	39	13	MG2C13

400/630A Panelboar	rd .		
Style D	18	6	MG6C6
36kA, 1s	36	12	MG6C12
	54	18	MG6C18

800A Panelboard			
Style E	18	6	MG8C6
50kA, 1s	36	12	MG8C12
	54	18	MG8C18

1600A Panelboard			
Style G	42	14	MG16C14
50kA, 1s	42	14 Extension cubicle	MG16CE14

Incoming devices

Powerpact 4 panelboards Bottom entry moulded case circuit breakers



Incoming devices				
Current rating	Number of poles	Style of board	Part number	
Circuit breaker				
100	3	A,C,D	MGP1003X	
160	3	A,C,D	MGP1603X	
250	3	A,C,D	MGP2503X	
400	3	D	MGP4003X	
630	3	D	MGP6303X	
800	3	E	MGP8003B5	
1250	3	G	33564	
1600	3	G	33568	
100	4	A,C,D	MGP1004X	
160	4	A,C,D	MGP1604X	
250	4	A,C,D	MGP2504X	
400	4	D	MGP4004X	
630	4	D	MGP6304X	
800	4	E	MGP8004B5	
1250	4	G	33566	
1600	4	G	33570	

If specifying alternative breakers for the 800A panelboard, one long terminal shield and one set of phase separators must also be ordered.

Switch disc	connector		
100	3	A,C,D	MGP1003NAX
160	3	A,C,D	MGP1603NAX
250	3	A,C,D	MGP2503NAX
400	3	D	MGP4003NAX
630	3	D	MGP6303NAX
800	3	Е	MGP8003NAX
1250	3	G	33489
1600	3	G	33490
100	4	A,C,D	MGP1004NAX
160	4	A,C,D	MGP1604NAX
250	4	A,C,D	MGP2504NAX
400	4	D	MGP4004NAX
630	4	D	MGP6304NAX
800	4	Е	MGP8004NAX
1250	4	G	33494
1600	4	G	33495
Fuse switch	h		
250	3	С	MG2C250FS
This incomi	na unit is an additio	nal enclosure that fits abo	ve or helow the

This incoming unit is an additional enclosure that fits above or below the standard panelboard. It is supplied with all connections and accessories to electrically and mechanically join the enclosures.

Direct conr	nection		
250	3	С	MGP2503LL
250	4	С	MGP2504LL
630	4	D	MGPCIN

Protection must be provided upstream by a suitably rated breaker.

Disconnectable neutral link				
250	1	A,C,D	MGP250NL	
630	1	D	MGP630NL	

Selection table

Powerpact 4 panelboards Top entry boards



Main cable entry at top					
Busbar short	nort Number of outgoing ways				
circuit withstand	Single pole	Triple pole			
250A Panelboard					
Style C	15	5	MG2C5		
36kA, 1s	21	7	MG2C7		
	27	9	MG2C9		
	39	13	MG2C13		



400/630A Panelboard			
Style D	18	6	MG6C6
36kA, 1s	36	12	MG6C12
	54	18	MG6C18



800A Panelboard			
Style E	18	6	MG8C6T
50kA, 1s	36	12	MG8C12T
	54	18	MG8C18T



1600A Panelboard			
Style G	42	14	MG16C14T
50kA, 1s	42	14 Extension cubicle	MG16CE14T

Incoming devices

Powerpact 4 panelboards Top entry moulded case circuit breakers

Incoming devices				
Current rating	Number of poles	Style of board	Part number	
Circuit breaker				
100	3	С	MGP1003X	
160	3	С	MGP1603X	
250	3	С	MGP2503X	
100	3	D	MGP1003TX	
160	3	D	MGP1603TX	
250	3	D	MGP2503TX	
400	3	D	MGP4003TX	
630	3	D	MGP6303TX	
800	3	E	MGP8003B5	
1250	3	G	33564	
1600	3	G	33568	
100	4	С	MGP1004X	
160	4	С	MGP1604X	
250	4	С	MGP2504X	
100	4	D	MGP1004TX	
160	4	D	MGP1604TX	
250	4	D	MGP2504TX	
400	4	D	MGP4004TX	
630	4	D	MGP6304TX	
800	4	E	MGP8004B5	
1250	4	G	33566	
1600	4	G	33570	

If specifying alternative breakers for the 800A panelboard, one long terminal shield and one set of phase separators must also be ordered.

Switch dis	connector		
100	3	С	MGP1003NAX
160	3	С	MGP1603NAX
250	3	С	MGP2503NAX
100	3	D	MGP1003NATX
160	3	D	MGP1603NATX
250	3	D	MGP2503NATX
400	3	D	MGP4003NATX
630	3	D	MGP6303NATX
800	3	E	MGP8003NAX
1250	3	G	33489
1600	3	G	33490
100	4	С	MGP1004NAX
160	4	С	MGP1604NAX
250	4	С	MGP2504NAX
100	4	D	MGP1004NATX
160	4	D	MGP1604NATX
250	4	D	MGP2504NATX
400	4	D	MGP4004NATX
630	4	D	MGP6304NATX
800	4	E	MGP8004NAX
1250	4	G	33494
1600	4	G	33495
If specifying	n alternative break	ers for the 800A panelboard, one	e long terminal

If specifying alternative breakers for the 800A panelboard, one long terminal shield

I use swit	LOTT		
250	3	С	MG2C250FS
TI. 1. 1		Latter and the same of the sam	alle access and be all access the analysis and a second

This incoming unit is an additional enclosure that fits above or below the standard

Direct con	nection		
250	3	С	MGP2503LL
250	4	С	MGP2504LL
630	4	D	MGPCIN
Protection r	must be provided up	ostream by a suitably rate	d breaker.

Trotoctor muct be provided apolican by a canabi, raise broater.

Disconnect	table neutral link		
250	1	C,D	
630	1	D	

Outgoing devices

Powerpact 4 panelboards Moulded case circuit breakers







Rating	Module	Part Number		
	width (35mm)			
Singl	e pole			
Breakir	ng capacity 25kA a	t 230V		
		L1	L2	L3
16	1	MGP0161L1	MGP0161L2	MGP0161L3
25	1	MGP0251L1	MGP0251L2	MGP0251L3
30	1	MGP0301L1	MGP0301L2	MGP0301L3
40	1	MGP0401L1	MGP0401L2	MGP0401L3
63	1	MGP0631L1	MGP0631L2	MGP0631L3
80	1	MGP0801L1	MGP0801L2	MGP0801L3
100	1	MGP1001L1	MGP1001L2	MGP1001L3
125	1	MGP1251L1	MGP1251L2	MGP1251L3
160	1	MGP1601L1	MGP1601L2	MGP1601L3

Two pole phase to neutral						
Break	Breaking capacity 85kA at 230V					
		L1 - N	L2 - N	L3 - N		
16	2	MGP0162L1N	MGP0162L2N	MGP0162L3N		
25	2	MGP0252L1N	MGP0252L2N	MGP0252L3N		
30	2	MGP0302L1N	MGP0302L2N	MGP0302L3N		
40	2	MGP0402L1N	MGP0402L2N	MGP0402L3N		
63	2	MGP0632L1N	MGP0632L2N	MGP0632L3N		
80	2	MGP0802L1N	MGP0802L2N	MGP0802L3N		
100	2	MGP1002L1N	MGP1002L2N	MGP1002L3N		
125	2	MGP1252L1N	MGP1252L2N	MGP1252L3N		
160	2	MGP1602L1N	MGP1602L2N	MGP1602L3N		

Iwo	I wo pole phase to phase					
Breaki	Breaking capacity 25kA at 415V					
		L1 - L2	L2 - L3	L3 - L1		
16	2	MGP0162L12	MGP0162L23	MGP0162L31		
25	2	MGP0252L12	MGP0252L23	MGP0252L31		
30	2	MGP0302L12	MGP0302L23	MGP0302L31		
40	2	MGP0402L12	MGP0402L23	MGP0402L31		
63	2	MGP0632L12	MGP0632L23	MGP0632L31		
80	2	MGP0802L12	MGP0802L23	MGP0802L31		
100	2	MGP1002L12	MGP1002L23	MGP1002L31		
125	2	MGP1252L12	MGP1252L23	MGP1252L31		
160	2	MGP1602L12	MGP1602L23	MGP1602L31		

Outgoing devices

Powerpact 4 panelboards Moulded case circuit breakers





Rating	Module	Part Number
Three p	width (35mm) ole	
Breaking of	apacity 36kA at 415V	3 phase
16	3	MGP0163X
25	3	MGP0253X
32	3	MGP0323X
40	3	MGP0403X
63	3	MGP0633X
80	3	MGP0803X
100	3	MGP1003X
125	3	MGP1253X
160	3	MGP1603X
200	3	MGP2003X
250	3	MGP2503X
400	4 (1) (2)	MGP4003X
630	4 (1) (2)	MGP6303X

Four p	oole	
Breaking	capacity 36kA at 415V	3 phase + neutral
16	4	MGP0164X
25	4	MGP0254X
32	4	MGP0324X
40	4	MGP0404X
63	4	MGP0634X
80	4	MGP0804X
100	4	MGP1004X
125	4	MGP1254X
160	4	MGP1604X
200	4	MGP2004X
250	4	MGP2504X
400	6 (1) (2)	MGP4004X One MGPBB25 also required
630	6 (1) (2)	MGP6303X One MGPBB25 also required

Disconnectable neutral links				
250	1	MGP250NL		
630	2	MGP630NL One MGPBB25 also required		

⁽¹⁾ If fitted in 630 or 800A board a shrouding kit is required.

⁽²⁾ Breaking capacity 50kA at 415V.

Technical data

Powerpact 4 panelboards

Dimensions					
Туре	Height mm	Width mm	Depth mm	(1)	Weight kg
Style A - 250	DA powerboa	rd			
3 way	650	600	268		32
4 way	650	778	268		57

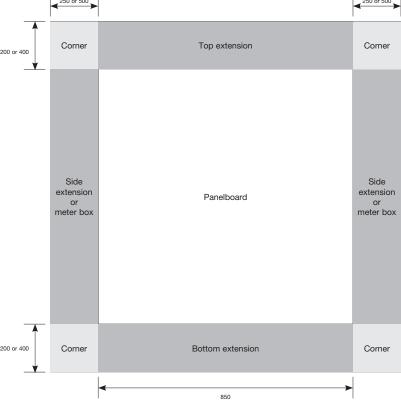
Style C -	250A panelb	oard				
5 way	680	853	270	198	40	
7 way	785	853	270	198	44	
9 way	890	853	270	198	50	
13 way	1075	853	270	198	60	

Style D - 400/620A panelboard						
6 way	1178	850	270	290	66	
12 way	1493	850	270	290	89	
18 way	1808	850	270	290	98	

Style E - 800A panelboard						
6 way	1580	850	270	490 (3)	86	
12 way	1896	850	270	490 (3)	104	
18 way	2210	850	270	490 (3)	122	

Style G - 10	600A panel	board				
14 way	2106	1256	450	708 (2)	375	
14 way extension	2106	850	450		200	

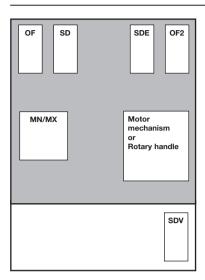
- (1) Distance from gland plate to incoming terminals
- (2) Terminals will accept up to 3 lugs 400mm² per phase
- (3) Main connection M12 bolt



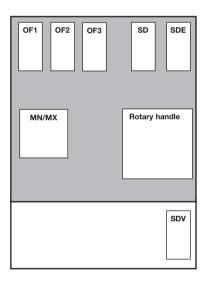
Note: Side extensions and corner units cannot be fitted to 250A panelboards

Moulded case circuit breakers

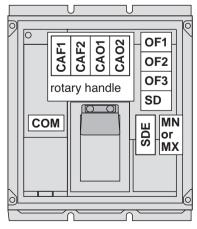
Powerpact 4 panelboards Auxiliary function options



NSX100/160/250



NSX400/630



Manually operated device

NS800/1600

OF Changeover auxiliary contact SD Changeover alarm switch

MX Shunt trip

MN Undervoltage release

SDE Fault alarm
SDV Earth fault alarm

CAF Early make auxiliary contacts (with rotary handle) **CAO** Early break auxiliary contacts (with rotary handle)

COM Communications function

All accessories are capable of being fitted on site. Full details may be obtained from the Compact NSX moulded case circuit breaker catalogue.

Technical Section 9 Dimensions Section 10

Powerpact 4 panelboards



Shrouding kit (400/630A and 800A panelboards only)

Provides additional support for device and shrouding for front cover. One shrouding kit must be used per side when fitting either outgoing 400/630A MCCBs or outgoing ammeter and/or earth leakage protection. In addition to the shrouding kit an additional 25mm three stage filler piece is required when 4 pole 400A or 630A circuit breakers are fitted on the outgoing pan assembly **MGPTSF25**.

Number of outgoing ways		Part number
SP	ТВ	
18	6	MGPCH6
36	12	MGPCH12
54	18	MGPCH18

	Extension enclosure				
250A powerb	oard style A side extension				
TP ways	Mounting arrangement	Part number			
Side	Top/bottom				
3	W600	MG25EXC			
4	W600	MG25EXC			

250A panelboard style C top or botto	m extension	
5,7,9,13	H200	MG6CEX

More than one extension can be added if required.

400/630A pa	anelboard style D and	d 800A panelboard s	style E top or bottom
6,12.18		H200	MG6CEX
6	W250		MGPXC206
12	W250		MGPXC212
18	W250		MGPXC218
6	W500		MGPXC506
12	W500		MGPXC512
18	W500		MGPXC518

For side extensions with metering facility see page 2/19.

More than one extension can be added if required. Side extensions are recommended when 400A and 630A outgoers are fitted or when outgoing circuit breakers have earth fault protection.

Corner units style D/E				
W250	H200	MGPC2025		
W500	H200	MGPC2050		
W250	H400	MGPC4025		
WEOO	⊔ 400	MGCD4050		

For squaring off a panelboard when a top or bottom extension and side extension are used together.and side extension are used together.

1600A panelboard style G side extension		
14	W400	MG16CEX4

More than one extension can be added if required.



Accessories



Integrated control and distribution systems (ICDS)

Side mounted on 400 - 800A panelboards. The ICDS unit offers the facility to incorporate MCBs, and command and control products into a single integrated unit.

The ICDS has mounting rails to accept:

- An Isobar 4 TP&N pan assembly
- An Isobar 4 SP&N pan assembly or a DIN rail to accept 34 x 9mm modules
- A tray for control gear

Order references		
To fit 6 way panelboard		
Enclosure		MGPXCA6
Pan assemblies	8 way TP&N	MGBN8E
	8 way TP&N	MGAN15P
To fit 12 way panelboard		
Enclosure		MGPXCB12
Pan assemblies	16 way TP&N	MGBN16E

MGAN15P

The Isobar 4c pan assemblies need to be ordered seperately

15 way SP&N

Replacement items				
Door and cover assembly				
250A powerboard	9 way	MG25FCC2		
•	13 way	MG25FCC4		
	9 way + metering	MG25FCC2M		
	13 way + metering	MG25FCC4M		
400/630A	18 way	MG6FCC6		
panelboard	36 way	MG6FCC12		
·	54 way	MG6FCC18		
800A	18 way	MG8FCC6		
panelboard	36 way	MG8FCC12		
•	56 way	MG8FCC18		
Gland plate for 400/630/800	0A panelboard	MGPGPC8		
Door lock kit up to 800A	•	MGPP4S007		
2 spare door keys		MGK33		
Touch up paint RAL9001	Spray	08962		
	Brush	08961		
Adhesive drawing pocket	RAL9001	08963		

Residual current protection modules

Using 4 pole residual current add-on modules (Vigi block) for incoming or outgoing ways (requires a 4 pole MCCB).

outgoing ways (i	oquiroo a 1 polo moob).		
Frame rating	Earth leakage tripping current options (A)	Current rating MCCB	Vigi module Part number
Up to 160A	0.03 - 0.3 - 1 - 3 - 10*	NSX100/160	LV429211
200 - 250A	0.03 - 0.3 - 1 - 3 - 10*	NSX250	LV431536
400 - 630A	0.3 - 1 - 3 - 10 - 30*	NSX400/630	LV432456

^{*} Time delay settings (ms) 0 - 60 - 150 and 310 (30mA - instantaneous only). (i) For combinations of items of RCD's, metering and remote metering please contact us for further information.

Ammeter

3 phase ammeter complete with CT's (mounted on the breaker). Can be fitted on incoming or outgoing device.

Current rating	Part number		
	3 pole	4pole	
NSX100	LV429455	LV429456	
NSX160	LV430555	LV430556	
NSX250	LV431565	LV431566	
NSX400	LV432655	LV432656	
NSX630	LV432855	LV432856	









Metering facility

- 3 phase current transformer module with voltage measurement outputs.
- Fits directly on the terminals of the breaker.
- The voltage measurement outputs have inbuilt protection with automatic reset.
- Suitable for use with the PowerLogic range of meters.

Breaker	CT ratio	VA output	Class at VA	Part number	
			output	3 pole	4 pole
NS100	125/5	1.1	1.0	LV429461	LV429462
NS160	150/5	1.1	1.0	LV430561	LV430562
NS250	250/5	1.1	0.5	LV431569	LV431570
NS400	400/5	2.0	0.5	LV432653	LV432654
NS630	600/5	2.0	0.5	LV432861	LV432862

Current transformer module nt transformer module

- 3 phase current transformer module.
- Fits directly on the terminals of the breaker.

Breaker	CT ratio	VA output	Class at VA	Part number	
			output	3 pole	4 pole
NS100	125/5	1.6	3.0	LV429457	LV429458
NS160	150/5	3.0	3.0	LV430557	LV430558
NS250	250/5	5.0	3.0	LV431567	LV431568
NS400	400/5	8.0	3.0	LV432657	LV432658
NS630	600/5	8.0	3.0	LV432857	LV432858

Motor operator module

All 3 pole and 4 pole breakers up to 250A can be fitted with a motor operator mechanism allowing remote opening and closing of the circuit breaker.

Operatin	Operating voltages				
50Hz	a.c.	48 - 415V			
	d.c.	24 - 250V			

Specify requirements at time of ordering the breaker.

Rotary handles with inbuilt padlocking facilities		
Current rating Part number		
	Black	Red/yellow
Up to 250A	LV429337	LV429339
400/630A	LV432597	LV432599

Toggle padlocking attachments Locking in OFF position		
Current rating Part number		
	Removable	Fixed
250A	LV429370	LV429371
630A	LV429370	LV432631
800A	LV444936	LV432631

Powerpact 4 panelboards













	Connection accessorie			
Bare cable connectors Capacity Breaker			Part numb	
			Set of 3	Set of 4
	1.5 - 95mm ²	160	LV429242	LV429243
	10 - 185mm²	250	LV429259	LV429260
	35 - 300mm ²	630	LV432479	LV432480
	2 x 95 - 240mm ²	630	LV432481	LV432482

Crimp cable lugs supplie		
120mm ² copper	250	LV429252 LV429256
150mm ² copper	250	LV429253 LV429257
185mm ² copper	250	LV429254 LV429258
240mm ² copper	630	LV432500 LV432501
300mm ² copper	630	LV432502 LV432503
150mm ² aluminium	250	LV429504 LV429505
185mm ² aluminium	250	LV429506 LV429507
240mm² aluminium	630	LV432504 LV432505
300mm ² aluminium	630	LV432506 LV432507

Spreaders					
Α	Pole pitch mm	Quantity	Part number		
250	45	Set of 3	LV431563		
250	45	Set of 4	LV431564		
630	52.5	Set of 3	LV432490		
630	52.5	Set of 4	LV432491		

Auxiliary switch for 3 or 4 pole devices only

- For all MCCBs
- $\hfill \blacksquare$ Used to indicate open, closed or tripped status
- SDE adaptor required for trip unit devices up to 250A TM or MA (to indicate trip on overcurrent). Two auxiliary switches will be needed to indicate open, closed and tripped status

	Part number
Auxiliary changeover switch	LV429450
SDE adaptor	LV429451

Voltage releases to fit a	III MCCBs 16/63	OA for 3 or pole
devices only		
AC 50/60Hz		
Voltage	Part number	
(V)	Shunt trip	Undervoltage release
	(MX)	(MN)
200/240	LV429387	LV429407
380//15	I V/20388	I V/20/08

Other voltages available - refer to Compcat NS catalogue.

Terminal shields	
Current rating (A)	Part number
Up to 160A single pole and 250A neutral link	29320
Up to 160A 2 pole	29320 x 2
Up to 250A 3 pole (single)	LV429517
Up to 250A 4 pole (single)	LV429518
Up to 400/630A 3 pole (single)	LV432593
Up to 400/630A 4 pole (single)	LV432594
For shielding a TP MCCB with neutral lnik use the 4	pole terminal shield.

Single pole shrouding	olates
MGPBBP	MGPBB25
Single pole shrouding plates are required for each unoccupied outgoing way.	In addition a 25mm shrouding plate is always required when 4 pole 400A or 630A circuit breakers are mounted on the outgoing pan assembly.

Boards up to 800A are supplied with 3 x MGPBBP. 1600A board is supplied with 6 x MGPBBP.

Metering facilities for incoming and outgoing circuits

Metering facilities for Powerpact 4 panelboards



The PowerLogic PM700 series power meter offers all the measurement capabilities required to monitor an electrical installation in a single 96 x 96 mm unit extending only 50 mm behind the mounting surface. With its large display, you can monitor all three phases and neutral at the same time. The anti-glare display features large 11 mm high characters and powerful backlighting for easy reading even in extreme lighting conditions and viewing angles.

The PowerLogic PM700 series meters are available in four versions:

- PM700, basic metering with THD and min/max readings
- PM700P, same functions as the PM700, plus two solid-state pulse outputs for energy metering
- PM710, same functions as the PM700, plus one RS 485 port for Modbus communication
- PM750, same functions as the PM710, plus two digital inputs, one digital output and alarms

Applications

Panel instrumentation.

Sub-billing and cost allocation.

Remote monitoring of an electrical installation.

Harmonic monitoring (THD).

Alarming with under/over conditions and I/O status (PM750)

Characteristics

Requires only 50 mm behind mounting surface

The Power Meter Series 700 can be mounted on switchboard doors to maximise free space for electrical devices.

Large back lit display with integrated bar charts

Displays 4 measurements at a time for fast readings.

Intuitive use

Easy navigation using context-sensitive menus.

Power and current demand, THD and min/max reading in basic version

A high-performance solution for trouble-free monitoring of your electrical installation.

Active energy IEC 62053-22 class 0.5S (PM750) and IEC 62053-21 class 1 (PM700, PM700P, PM710)

Suitable for sub-billing and cost-allocation applications.

Performance measuring and monitoring devices

Meet IEC 61557-12 PMD/S/K55/0.5 (PM750) and IEC61557-12 PMD/S/K55/1 (PM700, PM700P, PM710) that specifies requirements for combined $\bf P$ erformance $\bf M$ easuring and monitoring $\bf D$ evices (PMD)

Innovative Power Meter

RS 485 communications, alarming and digital I/O in a single Power Meter (PM750).

Power meter inputs

The NSX moulded case circuit breakers up to 630A have current transformer modules that fit directly on to the load terminals of the breaker. As well as the current transformer coils they also have self protected voltage connections off each phase. This eliminates the need to have additional overcurrent protection on these circuits. The meter is wired direct from this CT module without the need for any intermediate devices.



250A Powerboard

There are two versions of this equipment, basic or with the facility to have metering. The meter versions allow metering to be added to any 3 or 4 pole MCCB fitted in the board. All components are easily fitted; there are no extension boxes to fit or apertures to cut. The meters are positioned behind the overall lockable door preventing unauthorised access to the meters. MG25P2M has 4 apertures, MG25P4M has 5.

Note: the meters and CT modules must be ordered separately. The wiring looms to link the CT modules to the meters are included with the panelboards.

Metering options are not available for the 250A panelboard. It is recommended that a MG6Pxx board is used with a 250A incomer.

Ordering references

250A powerboard with metering facility

13 SP positions	MG25C2M
17 SP positions	MG25C4M

630 & 800A Panelboards

Incoming metering

This is easily added to a board when it is first being installed. The kit comprises an extension box that houses the meter and, when fitted to the same end of the board as the incomer, provides additional space for the main incoming cables. All components including the meter, CTs and wiring is included in the kit. The meter is fully set up for the CT ratio and the voltage configuration.

Outgoing circuit metering

Metering can be fitted to some or all of the three phase outgoing circuits on 630A & 800A boards whether the boards are fitted with incoming metering or not.

Technical Section 9 Dimensions Section 10

Metering facilities for incoming and outgoing circuits

Powerpact 4 panelboards

The arrangement consists of side extension boxes that house the meters and also provide additional cabling space. Meters and current transformers are ordered separately to meet the needs of the installation. The necessary cable looms are included with the steelwork. The meters are mounted on hinged doors. The box also contains the auxiliary busbar that provides the 240V control supply for the meters. The left hand extensions have sufficient meter positions for half the number of outgoing ways. The right hand extensions have positions for half the number of outgoing ways plus three additional positions. These extra positions may be used for additional metering or mounting surge arresters, control fuses etc. The lower two positions have a transparent window and DIN rail. This can be removed if not required.

Note: the meters, CT modules and surge arresters must be ordered separately

Incoming and outgoing metering for boards up to 630A

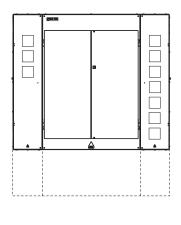
(This arrangement is not applicable for boards fitted with MGPINC direct connections).

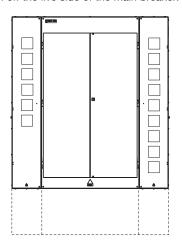
When both incoming and outgoing metering is required there is a very cost effective solution by incorporating the incoming metering into the right hand side extension box. Components required are:

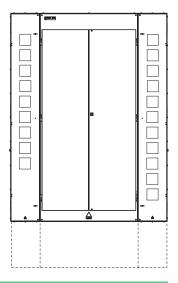
- Standard extension box MG6CEX to provide the required cable spreading space
- Current transformer module to fit on line side of incoming breaker.
- PM750MG meter.
- Two MGPC2025 corner units, optional

The meter should be cabled to the CT module according to the diagram supplied. (loom not supplied). The auxiliary supply to the meter should be taken from one phase and neutral and must be suitably fused.

Note. A warning notice should be placed in the board as the voltage connections are taken off the live side of the main breaker.







MG6Cxx 630A	board	
Incoming metering kit	400A	MG64M
	630A	MG66M

MG8Cxx 800A	ooard	
Incoming metering kit	800A	MG88M

630A & 800A outgoing metering side extension boxes					
6 way board	Left hand side (*)	3 meter positions	MGPCM6L		
	Right hand side (*)	7 meter positions	MGPCM6R		
12 way board	Left hand side (*)	6 meter positions	MGPCM12L		
	Right hand side (*)	9 meter positions	MGPCM12R		
18 way board	Left hand side (*)	9 meter positions	MGPCM18L		
	Right hand side (*)	11 meter positions	MGPCM18R		

(*) When the board is inverted for top entry main cables these side extensions fit on the other side of the board.

Metering facilities for incoming and outgoing circuits

Powerpact 4 panelboards

1600A Panelboards

Incoming metering

A PM750MG meter is fitted as standard in the board. The meter is fully set up for use on a 415V 3ph 4 wire system and for use with the 1600/5 current transformers that are installed on the busbars.

Outgoing circuit metering

Metering can be fitted to some or all of the three phase outgoing circuits in these boards. The arrangement consists of a side extension cubicle that houses the meters and also provides additional cabling space. Meters and current transformers are ordered separately to meet the needs of the installation. The necessary cable looms are included with the cubicle.

The meters are mounted on the front, hinged cover of the cubicle and can be aligned with their associated breaker. The cubicle also contains the auxiliary busbar that provides the 240V control supply for the meters

1600A panelboard

Side extension cubicle

MG16CEM4

Current transformer modules for direct fitting to NS breakers in all boards **Breaker Poles CT** ratio Part number NS100X LV429461 125/5 3 NS100X 4 125/5 LV429462 NS160X 3 150/5 LV430561 NS160X 4 150/5 LV430562 3 NS250X 250/5 LV431569 NS250X 4 250/5 LV431570 NS400X 3 400/5 LV432653 NS400X 4 400/5 LV432654 NS630X 3 600/5 LV432861 NS630X 4 600/5 LV432862

Unused 92 \times 92 metering apertures can be blanked off using Part number **03908** All these CT modules have voltage connections.



Intelligent panelboard system

Powerpact 4 panelboards

The intelligent panelboard system utilises the advanced features of the Compact NSX range with Micrologic 5 trip units for integrated protection, metering, measuring and monitoring.

With no requirement for external current transformers and an advanced plug and play communication cable system, on site adaptation is tool free, simple and quick to install.

This system is available in 4 levels for incoming and outgoing devices.

- 1 Local display on the NSX breaker only
- 2 Local display plus data available via Modbus
- 3 Local display and remote functional display on the panelboard
- 4 Local display and remote functional display on the panelboard plus data available via Modbus

All devices are 4 pole and may be configured into a form 4b type 2 or 6 to BSEN 61439-1



Key

- A Main incomer
- B Interface kit
- C Outgoing devices area
- D Display modules

Functions and characteristics

Power Meter functions Electronic Micrologic 5E

In addition to protection functions, Micrologic 5 offers all the functions of Power Meter products as well as operating assistance for the circuit breaker:

- Display of settings
- Measurement functions:
 - Energy (E)
- Alarms
- Time stamped histories and event tables
- Maintenance indicator
- Communication













Micrologic E measurement functions are made possible by Micrologic intelligence and the accuracy of the sensors. They are handled by a microprocessor that operates independent of protection functions.



Display

Micrologic LCD

The user can display all the protection settings and the main measurements on the LCD screen of the trip unit.

- Instantaneous rms current measurements
- Micrologic E voltage, frequency and power measurements and energy metering To make the display available under all conditions and increase operating comfort, an external power supply is recommended.

It is indispensable to:

- Display faults and interrupted current measurements
- Use all the functions of Micrologic E (e.g. metering of low power and energy values)
- Ensure operation of the communication system

The external power supply can be shared by several devices.

FDM121 display unit

An FDM121 switchboard display unit can be connected to a Micrologic trip unit using a prefabricated cord to display all measurements on a screen. The result is a veritable 96 x 96 mm Power Meter.

In addition to the information displayed on the Micrologic LCD, the FDM121 screen shows demand, power quality and maximeter/minimeter values along with alarms, histories and maintenance indicators.

The FMD121 display unit requires a 24 V DC power supply. The Micrologic trip unit is supplied by the same power supply via the cord connecting it to the FDM121.

PC screen

When the Micrologic, with or without an FDM121 switchboard display unit, is connected to a communication network, all information can be accessed via a PC.



Measurements

Instantaneous rms measurements

The Micrologic E continuously display the RMS value of the highest current of the three phases and neutral (Imax). The navigation buttons • can be used to scroll through the main measurements.

In the event of a fault trip, the current interrupted is memorised.

Measures phase, neutral, ground fault currents plus voltage, frequency and power measurements

Maximeters / minimeters

Every instantaneous measurement provided by Micrologic E can be associated with a maximeter/minimeter. The maximeters for the highest current of the 3 phases and neutral, the demand current and power can be reset via the trip unit keypad, the FDM121 display unit or the communication system.

Energy metering

The Micrologic E also measures the energy consumed since the last reset of the meter. The active energy meter can be reset via the keypad and the FDM121 display unit or the communication system.

Demand and maximum demand values

Micrologic E also calculates demand current and power values. These calculations can be made using a block or sliding interval that can be set from 5 to 60 minutes in steps of 1 minute. The window can be synchronised with a signal sent via the communication system. Whatever the calculation method, the calculated values can be recovered on a PC via Modbus communication.

Ordinary spreadsheet software can be used to provide trend curves and forecasts based on this data. They will provide a basis for load shedding and reconnection operations used to adjust consumption to the subscribed power.

Power quality

Micrologic E calculates power quality indicators taking into account the presence of harmonics up to the 15th order, including the total harmonic distortion (THD) of current and voltage.

Technical Section 9 Dimensions Section 10

Functions and characteristics

Power Meter functions Electronic Micrologic 5E





Micrologic 5 / 6	integrated Power Meter fu	nctions		Display	
			E	Micrologic LCD	FDM121 display
Display of prote	ection settings				
Pick-ups (A) and delays	All settings can be displayed	Ir, tr, Isd, tsd, Ii, Ig, tg	•	•	
Measurements					
Instantaneous rms n	neasurements				
Currents (A)	Phases and neutral	I1, I2, I3, IN	•	•	
	Average of phases	lavg = (l1 + l2 + l3) / 3		-	
	Highest current of the 3 phases and neutral	Imax of I1, I2, I3, IN	•	•	•
	Ground fault (Micrologic 6)	% Ig (pick-up setting)		•	
	Current unbalance between phases	% lavg		-	
Voltages (V)	Phase-to-phase	U12, U23, U31			
	Phase-to-neutral	V1N, V2N, V3N	•		
	Average of phase-to-phase voltages	Uavg = (U12 + U21 + U23) / 3		-	
	Average of phase-to-neutral voltages	Vavg = (V1N + V2N + V3N) / 3	•	-	•
	Ph-Ph and Ph-N voltage unbalance	% Uavg and % Vavg		-	•
	Phase sequence	1-2-3, 1-3-2		•	•
Frequency (Hz)	Power system	f		•	
Power	Active (kW)	P, total / per phase		•	
	Reactive (kVAR)	Q, total / per phase			•
	Apparent (kVA)	S, total / per phase			
	Power factor and cos φ (fundamental)	PF and $cos\phi$, total and per phase		-	•
Maximeters / minime	eters				
	Associated with instantaneous rms measurements	Reset via Micrologic or FDM121 display unit	•	-	•
Energy metering					
Energy	Active (kW), reactive (kVARh),	Total since last reset	•		
	apparent (kVAh)	Absolute or signed mode (1)			
Demand and maximi	um demand values				
Demand current (A)	Phases and neutral	Present value on the selected window		-	•
Demand Current (A)	Fridses and neutral	Maximum demand since last reset		_	
Demand power	Active (kWh), reactive (kVAR),	Present value on the selected window	•	-	
	apparent (kVA)	Maximum demand since last reset		_	
Calculation window	Sliding, fixed or com-synchronised	Adjustable from 5 to 60 minutes in 1 minute steps	•	-	(2)
Power quality					
Total harmonic distortion (%)	Of voltage with respect to rms value	THDU,THDV of the Ph-Ph and Ph-N voltage		-	•
distortion (%)	Of current with respect to rms value	THDI of the phase current	•	-	

⁽¹⁾ Absolute mode: E absolute = E out + E in; Signed mode: E signed = E out - E in. (2) Available via the communication system only.

Additional technical characteristics

Measurement accuracy
Accuracies are those of the entire measurement system, including the sensors:
■ Current: Class 1 as per IEC 61557-12
■ Voltage: 0.5 %
■ Power and energy: Class 2 as per IEC 61557-12
■ Frequency: 0.1 %

Fechnical	Dimensions
Section 9	Section 10

Functions and characteristics

Switchboard display functions Micrologic 5E trip units

Micrologic measurement capabilities come into full play with the FDM121 switchboard display. It connects to Compact NSX via a simple cord and displays Micrologic information. The result is a true integrated unit combining a circuit breaker and a Power Meter. Additional operating assistance functions can also be displayed.







Surface mount accessory.



Connection with FDM121 display unit.

FDM121 switchboard display

The FDM121 is a switchboard display unit that can be integrated in the Compact NSX100 to 630 A system. It uses the sensors and processing capacity of the Micrologic trip unit. It is easy to use and requires no special software or settings. It is immediately operational when connected to the Compact NSX by a simple cord. The FDM121 is a large display, but requires very little depth. The anti-glare graphic screen is backlit for very easy reading even under poor ambient lighting and at sharp angles.

Display of Micrologic measurements and alarms

The FDM121 is intended to display Micrologic 5 measurements, alarms and operating information. It cannot be used to modify the protection settings. Measurements may be easily accessed via a menu.

All user-defined alarms are automatically displayed. The display mode depends on the priority level selected during alarm set-up:

- High priority: a pop-up window displays the time-stamped description of the alarm and the orange LED flashes
- Medium priority: the orange "Alarm" LED goes steady on
- Low priority: no display on the screen

All faults resulting in a trip automatically produce a high-priority alarm, without any special settings required.

In all cases, the alarm history is updated.

If power to the FDM121 fails, all information is stored in the Micrologic non-volatile memory. The data can be consulted via the communication system when power is restored.

Status indications and remote control

When the circuit breaker is equipped with the BSCM module, the FDM121 display can also be used to view circuit breaker status conditions:

- O/F: ON/OFF
- SD: trip indication
- SDE: Fault-trip indication (overload, short-circuit, ground fault)

Main characteristics

- \blacksquare 96 x 96 x 30 mm screen requiring 10 mm behind the door (or 20 mm when the 24 volt power supply connector is used)
- White backlighting
- Wide viewing angle: vertical ±60°, horizontal ±30°
- High resolution: excellent reading of graphic symbols
- Alarm LED: flashing orange for alarm pick-up, steady orange after operator reset if alarm condition persists
- Operating temperature range -10 °C to +55 °C
- CE / UL marking
- \blacksquare 24 V DC power supply, with tolerances 24 V -20 % (19.2 V) to 24 V +10 % (26.4 V) When the FDM121 is connected to the communication network, the 24 V is supplied by the communication system wiring system
- Consumption 40 mA

Mounting

The FDM121 is easily installed in a switchboard.

- Standard door cut-out 92 x 92 mm
- Attached using clips

To avoid a cut-out in the door, an accessory is available for surface mounting by drilling only two 22 mm diameter holes.

The FDM121 degree of protection is IP54 in front. IP54 is maintained after switchboard mounting by using the supplied gasket during installation.

Connection

The FDM121 is equipped with:

- A 24 V DC terminal block:
- $\hfill\square$ Plug-in type with 2 wire inputs per point for easy daisy-chaining
- ☐ Power supply range of 24 V -20 % (19.2 V) to 24 V +10 % (26.4 V)
- Two RJ45 jacks

The Micrologic connects to the internal communication terminal block on the Compact NSX via the pre-wired NSX cord. Connection to one of the RJ45 connectors on the FDM121 automatically establishes communication between the Micrologic and the FDM121 and supplies power to the Micrologic measurement functions. When the second connector is not used, it must be fitted with a line terminator.

Functions and characteristics

Switchboard display functions Micrologic 5E trip units



- Escape
- Down

- Context
- 5 6 Alarm LED



Product identification



Quick view



Metering: sub-menu



Metering: U average



Metering: meter



Services

Navigation

Five buttons are used for intuitive and fast navigation.

The "Context" button may be used to select the type of display (digital, bargraph,

The user can select the display language (Chinese, English, French, German, Italian, Portuguese, Spanish, etc.) Other languages can be downloaded.

Screens

Main menu

When powered up, the FDM121 screen automatically displays the ON/OFF status of the device.



Quick view



Metering



Alarms



Services.

When not in use, the screen is not backlit. Backlighting can be activated by pressing one of the buttons. It goes off after 3 minutes.

Fast access to essential information

■ "Quick view" provides access to five screens that display a summary of essential operating information (I, U, f, P, E, THD, circuit breaker On / Off)

Access to detailed information

- "Metering" can be used to display the measurement data (I, U-V, f, P, Q, S, E, THD, PF) with the corresponding min/max values
- Alarms displays active alarms and the alarm history
- Services provides access to the operation counters, energy and maximeter reset function, maintenance indicators, identification of modules connected to the internal bus and FDM121 internal settings (language, contrast, etc.)

Metering and monitoring

Powerpact 4 with integrated metering and monitoring

Selection and order form

Panelboards with the new range of Moulded Case Circuit Breakers (NSX) Installation Monitoring & Measuring functionality all integrated into the MCCB (4 Pole only), with Remote Display (FDM) and Modbus output Compact NSX enable the measured and metered data to be integrated in software management systems.

Note:- 4 pole breakers only on the incommer

Panel boa	rd Selection		
Order Code	Description		Selection
400A/630A Pa	<u> </u>		
MG6C6	18 single pole ways (4 x 4 po	ole)	
MG6C12	36 single pole ways (8 x 4 po		
MG6C18	54 single pole ways (12 x 4 p	pole + 2 x 3 pole)	
800A Panelbo	ard		
MG8C6	18 single pole ways (4 x 4 po	ole)	
MG8C12	36 single pole ways (8 x 4 po		
MG8C18	54 single pole ways (12 x 4 p	pole + 2 x 3 pole)	
1600A Panelb	pard		
MG16C14	42 single pole ways (9 x 4 po	ole + 2 x 3 pole)	
Incomer			
Order Code			
400A/630A Pa	nelboard 4 pole		
SEP4004M5	400A 4 pole MCCB compact NSX Integrate Micrologic 5 Including Metering Cable	ted Metering & Monitoring	
SEP6304M5	630A 4 pole MCCB compact NSX Integrate Micrologic 5 Including Metering Cable	ted Metering & Monitoring	
800A Panelbo	ard		
MGP8004B5	800A 4 Pole incommer		
1600A Panelb			
33566	1250A 4 pole Incommer		
33570	1600A 4 pole incommer		Ц
SEPINTP1	Power and interface kit		
	ways 4 pole (only) with Microld d U,I,E,P,f*,THD* Measuring ar		
Order Code	36kA rated circuit breakers		
		Out going way position	1
		1 2 3 4 5 6	
SEP0404M5	40 A protection module Micrologic 5		
SEP1004M5	100 A protection module Micrologic 5		
SEP1604M5	160 A protection module Micrologic 5		
SEP2504M5	250 A protection module Micrologic 5		
SEP4004M5	400 A protection module Micrologic 5***		
SEP6304M5	630 A protection module Micrologic 5***		
* FDM display ** Available via *** 50kA rated	required Modbus		· -

Metering and monitoring

Technical Section 9

Powerpact 4 with integrated metering and monitoring

Metering op	tions (Metering extention Box Required if Fitting		ule
Order Code	Side Extension boxes	Selection	
630A & 800A			
MGPCM6LX	6 Way board Left Hand Side 3 remote display positions		
MGPCM6RX		<u> </u>	
MGPCM12LX	, , ,		
MGPCM12RX			
MGPCM12LX		<u>⊔</u> П	
MGPCM18EX		<u>⊔</u> П	
1600A	to that sould high that a clast thomas display positions	<u>—</u>	
MG16CEM4X	Side Extension Cubicle		
Display			
TRV00121	FDM121 Metering Display module		
Cable accessorie	es		
TRV00870	5 RJ45 female/ female connector		
TRV00810	5 RJ45/RJ45 1M interconnector	 	
TRV00820	5 RJ45/RJ45 2M interconnector		
TRV00880		<u> </u>	
	nication accessories	<u> </u>	
TRV00210			
TRV00217		<u></u>	
		—	
Standard Ou	itgoing way MCCB (3pole) order codes		
Order Code	Description		
MGP0163X	PP4 MCCB 3P 16A		
MGP0253X	PP4 MCCB 3P 25A		
MGP0323X	PP4 MCCB 3P 32A		
MGP0403X	PP4 MCCB 3P 40A		
MGP0633X	PP4 MCCB 3P 63A		
MGP0803X	PP4 MCCB 3P 80A		
MGP1003X	PP4 MCCB 3P 100A		
MGP1253X	PP4 MCCB 3P 125A		
MGP1603X	PP4 MCCB 3P 160A		
MGP2003X	PP4 MCCB 3P 200A		
MGP2503X	PP4 MCCB 3P 250A		
MGP4003X	PP4 MCCB 3P 400A		
MGP6303X	PP4 MCCB 3P 630A		
Other option	ns		
Order Code	Description		
	On site Engineer Support 1 Day		
LV434205	Breaker Status information required (up to 630A)	1 required per Brea	ker
Everse	ordering a Danal Reard with Matering		
	ordering a Panel Board with Metering le Required Panel board from Section 1	MOGOC	\.4
	comer device	MG6C6 SEP6304M5	<u>x1</u> x1
	ower & Interface Kit	SEPINTP1	x1
	opropriate outgoing device from Section 3	SEP1004M5	x1
	ering accessories quire the display module for each outgoing way then select a side exte	nsion MGPCM6I	
box			
	equired Number of Display Modules (include Incommer) s required over Modbus protocol select the required number of Modbu	TRV00121 S TRV00210	x3 x3_
interface	s (include incomer)		
	odbus stacking connectors (pack of 10) include incommer	TRV00217	<u>x1</u>
	equired number of RJ45 interconnectors (Pack of 5) LP terminator (pack of 10)	TRV00810 TRV00880	<u>x1</u> x1
	nodules are required and data is to be made available over Modbus only items 4		
Dimensions			
Section 10			

2/27

Wall mounted switchgear

Enclosed MCCBs 63 to 630A	oage 3/2 oage 3/3 oage 3/4
Enclosed Interpactp	age 3/6
MGF Fusegear	page 3/7 page 3/8 page 3/9 page 3/9
Fuse combination units	jes 3/10

Wall mounted switchgear Enclosed MCCBs 63 to 630A





Application

- For use in commercial and industrial applications, providing protection isolation and control of motors and power circuits
- MCCBs can be supplied with adjustable Vigi earth leakage module for improving disconnection times and providing personnel and fire protection
- Suitable for switching inductive loads, AC23 contact rating and high mechanical endurance
- Security of isolation, positive contact indication in accordance with BS 7671 and padlockable rotary handle or toggle padlocking options

Offer

- ASTA certification of breaking capacity to BS EN 60947-2
- Supplied with line and load terminal shields
- Removable front cover provides all round cabling access
- Removable gland plates with optional extension boxes
- Trip indication and test button
- Shrouded disconnectable neutral with 3 pole device
- Steelwork finished in polyester epoxy powder, cream colour RAL9001

Technical data

Enclosure ingress protection	IP42	
Rated operational voltage	Ue 415V	
Rated current	at 40°C	
Rated ultimate short-circuit	Icu = 70kA	
breaking capacity	2 pole units 85kA@240V	
Rated service short-circuit	les: 1000/ less	
breaking capacity	Isu = 100% Icu	
Motor ratings	See Section 10	
Voltage releases for remote	220 to 415Vac	
tripping	220 to 415 vac	
Auxiliary change over contacts	ON OFF Tripped	
for remote indication	ON, OFF Tripped	
Connection accessories for	Cable alamas un ta 195/040mm² antional	
ease of wiring	Cable clamps up to 185/240mm² optional	
Rotary handle provides padlockin	g and ease of operation	
Earth leakage	30mA to 30A See page 3/4	

C-O operations in 000's		100A	160A	250A	400A	630A	
Mechanical endurance		50	40	20	15	15	
Electrical endurance	In/2	50	40	20	12	8	
	In	30	20	10	6	4	

Range				
МССВ				
Rating	Adjustment	Two Pole	3 pole + neutral	4 pole
63A	50 - 63	MGE0632X	MGE0633X	MGE0634X
100A	80 - 100	MGE1002X	MGE1003X	MGE1004X
125A	100 - 125	MGE1252X	MGE1253X	MGE1254X
160A	125 - 160	MGE1602X	MGE1603X	MGE1604X
200A	160 - 200		MGE2003X	MGE2004X
250A	200 - 250		MGE2503X	MGE2504X
400A	160 - 400		MGE4003X	MGE4004X
630A	250 - 630		MGE6303X	MGE6304X
МССВ	+ earth lea	kage		

MCCB -	MCCB + earth leakage			
Rating	Adjustment	Sensitivity	4 pole	
63A	50 - 63	30mA - 10A	MGE0634EX	
100A	80 - 100	30mA - 10A	MGE1004EX	
125A	100 - 125	30mA - 10A	MGE1254EX	
160A	125 - 160	30mA - 10A	MGE1604EX	
200A	160 - 200	30mA - 10A	MGE2004EX	
250A	200 - 250	30mA - 10A	MGE2504EX	
400A	160 - 400	300mA - 30A	MGE4004EX	
630A	250 - 630	300mA - 30A	MGE6304EX	

Safepact 2

Wall mounted switchgear Enclosed switch disconnectors 100 to 630A





Application

- For use in commercial and industrial applications, providing isolation and control of motors and power circuits
- Devices can be supplied with adjustable Vigi earth leakage module for personnel and fire protection
- Suitable for switching inductive loads, AC23 contact rating and high mechanical endurance
- Security of isolation, positive contact indication in accordance with BS 7671 and padlockable rotary handle

Offer

- Supplied with line and load terminal shields
- Removable front cover provides all round cabling access
- Removable gland plates and optional extension boxes
- Trip indication and test button
- Shrouded disconnectable neutral with 3 pole device
- Steelwork finished in polyester epoxy powder, cream colour RAL9001

Technical data

Enclosure ingress protection	IP42
Rated operational voltage	Ue 415V
Rated current	at 40°C
Voltage releases for remote tripping	220 to 415Vac
Auxiliary change over contacts for remote indication	ON, OFF, Tripped
Connection accessories for ease of wiring	Cable clamps up to 185/240mm² optional
Rotary handle provides padlocking	g and ease of operation
Earth leakage	30mA to 30A See page 3/4

C-O operations in 000's		100A	160A	250A	400A	630A
Mechanical endurance		50	40	20	15	15
Electrical endurance	ln/2	50	40	20	12	8
	In	30	20	10	6	4

Range		
Switch disconnector		
Rating	3 pole + neutral	4 pole
100A	MGE1003XS	MGE1004XS
160A	MGE1603XS	MGE1604XS
250A	MGE2503XS	MGE2504XS
400A	MGE4003XS	MGE4004XS
630A	MGE6303XS	MGE6304XS

Switch disconnector + earth leakage (RCCB)			
Rating	Sensitivity	4 pole	
100A	30mA - 10A	MGE1004XSE	
160A	30mA - 10A	MGE1604XSE	
250A	30mA - 10A	MGE2504XSE	
400A	300mA - 30A	MGE4004XSE	
630A	300mA - 30A	MGE6304XSE	

Safepact 2

Wall mounted switchgear Earth leakage Extension boxes



Application

- The vigi earth leakage module option disconnects the circuit breaker when an electrical earth fault is detected
- Used to overcome high earth fault loop impedance and associated excessive disconnection times eg long cable runs
- Enhanced personal and equipment protection

Technical data

Adjustable sensitivity and time delay settings	For discrimination with other RCDs		
Protection against nuisance tripping due to transient overvoltages etc.	To IEC255-4 and IEC801-2 - 5		
Class A	Immunity to DC components of up to 6mA		
Remote indication of tripping	Using optional changeover contact SDV		
Rating	Sensitivity settings (A)		
	Up to 160A	0.03*, 0.3, 1, 3 and 10	
	200 - 250	0.03*, 0.3, 1, 3, and 10	
	400 - 630	0.3, 1, 3, 10 and 30	
Time delay settings (ms)	0, 60, 150 and 310		

^{*} If the sensitivity is set to 30mA there is no time delay whatever the time delay setting. For ordering references see previous pages.

Extension boxes

■ Provide extra cabling space when using oversized cables. Colour RAL9001

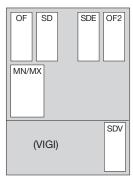
Size	To fit rating	Part number
100mm	63 - 250A	MGEX160C
200mm	63 - 250A	MGEX250C
120mm	400 - 630A	MGFX630C

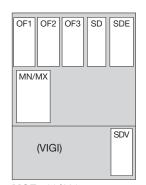
Safepact 2

Wall mounted switchgear Auxiliaries and accessories

Application

These diagrams show the position of auxiliaries when fitted inside the MCCB or switch disconnector.





MGE 100/160/250

MGE 400/630

Changeover contact

Auxiliary switch used for remote indication, electrical interlocking etc. Function is dependent upon position fitted within device.

- OF indicates contact position 'ON' and 'OFF'
- SD indicates device is in trip position
- SDE indicates device has tripped due to overcurrent or earth fault (100/160/250 requires SDE adaptor **29451**
- SDV indicates device has tripped due to earth fault

	Part number
OF/SD/SDE/SDV	29450
SDE adaptor for MGE 100/160/250	29451

Shunt trip (MX)

- Enables remote tripping on application of voltage from coil
- Coil permanently rated

Aux. supply voltage (V)	Part number
220/240	LV429387
380/415	LV429388

Undervoltage release (MN)

- Enables remote tripping on removal of voltage to coil
- Coil permanently rated
- Prevents reclosing of device before restoration of supply to undervoltage release

Aux. supply voltage (V)	Part number
220/240	LV429407
380/415	LV429408

Rotary handle

- Permits the device to be padlocked in OFF position by 1-3 padlocks, 5-8mm hasp
- Maintains indication of ON/OFF and TRIPPED positions
- Maintains access to 'push to trip' button
- Ronis/Profalux keylocks available on 400/630A

	Part number
For MGE 100/160/250	LV429337
For MGE 400/630	LV432597

Cable clamp

- For bare (uncrimped) cable connections
- See technical data for cable terminations in detail
- Other options available: refer to NS catalogue, or consult us

	Part number
For MGE 100/160 up to 95mm ² (set of 4)	LV429260
120 to 185mm² (set of 4)	LV429243
For MGE 250 25 to 95mm² (set of 4)	LV429260
120 to 185mm² (set of 4)	LV429228
For MGE 400/630 up to 2x240mm² (set of 4)	LV432482











Enclosed Interpact

Wall mounted switchgear Switch disconnectors IP55



Application

Heavy duty sheet steel enclosures for use in commercial and industrial applications, providing isolation and control of electrical loads. Suitable for switching highly inductive loads without derating. For use in environments where a superior degree of protection is required. Four pole isolation with positive contact indication. Padlockable handle. Alternative red/yellow handle for use in industrial applications. 480V 3 ph 4 wire 50/60Hz systems.

Technical data

Degree of protection	IP55 to BS EN 60529		
Sheet steel	Epoxy/polyester powder coated, beige colour		
Door interlocked rotary handle	Padlockable		
Black handle as standard	With Red/yellow handle option		
Removable bottom gland pla	ate		
Switch disconnector manufactured and tested to	BS EN 60947-3		
4 pole switching	With fully rated neutral		
Rated operational current at AC23A	Nominal rating up to 480V		
Rated operational voltage	690V 50/60Hz (500V for 63A)		
For further details of the switch disconnectors refer to Interpact catalogue.			

Terminations
63A Clamp connections accepting 1.5 - 16mm² rigid cable
100 - 630A Flat pads for crimped lugs
Termination details are identical to those of the Compact MCCBs

References		
	Black rotary handle	Red rotary handle with yellow surround
Rating	Part number	Part number
63A	MGES063	MGES063R
100A	MGES100	MGES100R
160A	MGES160	MGES160R
250A	MGES250	MGES250R
320A	MGES320	MGES320R
400A	MGES400	MGES400R
500A	MGES500	MGES500R
630A	MGES630	MGES630R

Accessories					
Rating		63A	100-160A	250A	320-630A
Auxiliary switch		29450	29450	29450	29450
Pair long terminal shields		28957	28958	29324	32565
Set of 4 crimp cable lugs for Cu cables c/w 3 phase barriers					
	95mm²		28952		
	120mm ²			29256	
	150mm ²			29257	
	185mm²			29258	
	240mm ²				32501
	300mm ²	·			32503

MGF Fusegear

Wall mounted switchgear Switch disconnector fuse Switch disconnector





Application

Heavy duty fuse products for use in commercial and industrial environments, providing isolation and traditional fuse protection for electrical loads.

Features

- Rated for 240/415V 50/60Hz
- Ratings 20A, 32A, 63A, 100A, SP&SwN, TP&N
- Utilisation category AC20A, AC21A, AC22A, AC23B at rated current
- Degree of protection IP41
- Handle position provides positive contact indication
- Door handle prevents door being opened when switch is ON or padlocked
- Handle padlockable in ON and OFF positions
- Fuse links supplied as standard

Construction

- Live terminals fully shrouded
- Door interlock has integral defeat mechanism allowing door to be opened without switching OFF. This feature is not operable when the handle is padlocked
- Removable gland plates with cable knockouts
- Lift off door provides greater access for installation and cabling
- Door opens within the width of the unit allowing units to be mounted adjacent
- Neutral has disconnectable link and capacity for 3 outgoing cables
- Keyhole slots in the enclosure base allow easy installation
- Earthing kit provided as standard
- Easy access to fuse links
- Steelwork finished in polyester epoxy powder, cream colour RAL9001

Technical data

Standard	BS EN 60947-3
Rated operational voltage	415V 50/60Hz

Rating	20A	32A	63A	100A
Rated current at 40°C, A	20	32	63	100
Rated impulse voltage	6kV	6kV	6kV	6kV
Rated short time withstand Icw, A	416	416	756	1300
Rated short circuit making capacity Icm	1.35kA	1.35kA	1.35kA	3.5kA
Rated short circuit breaking capacity Icn	50kA	50kA	50kA	50kA
Utilisation category at rated current		AC-20A/ 2	1A/ 22A/ 2	3B
Kilowatt rating	11kW	15kW	30kW	55kW
Cable size, maximum mm²	10mm²	10mm²	25mm²	50mm ²

References			
Rating (A)	Switch disconnector fuse	Switch disconnector	
	Part number	Part number	
Single pole and switched	neutral		
20	MGFA0201C	MGFL0201C	
32	MGFA0321C	MGFL0321C	
63	MGFA0631C	MGFL0631C	
100	MGFA1001C	MGFL1001C	
Three pole and neutral			
20	MGFA0203C	MGFL0203C	
32	MGFA0323C	MGFL0323C	
63	MGFA0633C	MGFL0633C	
100	MGFA1003C	MGFL1003C	

Fuse link data		
Rating (A)	BS88 reference	Bussman reference
20	A1, A2	NITD20
32	A1, A2	AA032
63	A2, A3	BA063
100	A2, A3, A4	CEO100

MGF Fusegear

Wall mounted switchgear Fuse switch disconnector Switch disconnector





Application

Heavy duty fuse products for use in commercial and industrial environments, providing isolation and traditional fuse protection for electrical loads.

Features

- Rated for 240/415V 50/60Hz
- Ratings 100A, 160A, 200A, 250A, 315A, 400A, 500A, 630A TP&N
- Utilisation category AC20A, AC21A, AC22A, AC23B at rated current, AC23A for ratings up to 160A
- Handle position provides positive contact indication
- Door handle prevents door being opened when switch is ON or padlocked
- Handle padlockable in ON and OFF positions
- Device may be fed to either top or bottom terminals
- Fuse links or copper links supplied as standard

Construction

- All terminals are fully shrouded
- Quick make and break silver plated contacts
- Door interlock has defeat mechanism allowing switch to be closed with door open
- Removable plain gland plates are fitted at top and bottom
- Cabling space may be increased by the addition of the cable boxes
- Lift off door provides greater access for installation and cabling
- Door opens within the width of the unit allowing units to be mounted adjacent
- Neutral is fitted with disconnectable link
- Earthing kit provided as standard
- Easy access to fuse links
- Removable cross rails allow cables to be laid in easily
- Direct front access to terminals without dismantling the mechanism
- Clear shrouds allow easy access for inspection and visual indication of contact position
- Steelwork finished in polyester epoxy powder, cream colour RAL9001

BS EN 60947-3

Technical data

Standard

Rated operat	ional volt	age 4	15V 50/6	0Hz				
Rating	100A	160A	200A	250A	315A	400A	500A	630A
Rated current at 40°C, A	100	160	200	250	315	400	500	630
Rated impulse voltage	8kV	8kV	8kV	8kV	8kV	8kV	8kV	8kV
Rated short time withstand lcw, A	3.4kA	3.4kA	5.23kA	5.23kA	12kA	12kA	12kA	12kA
Rated short circuit making capacity Icm	5kA	5kA	8kA	8kA	24kA	24kA	24kA	24kA
Rated short circuit breaking capacity Icn	50kA	50kA	50kA	50kA	50kA	50kA	50kA	50kA
Utilisation category at rated current	AC-23A	AC-23A	AC-23B	AC-23B	AC-23B	AC-23B	AC-23B	AC-23B
Kilowatt rating	55kW	90kW	110kW	130kW	175kW	220kW	250kW	300kW
Terminal stud	M8	M8	M10	M10	M12	M12	M12	M12
Terminal lug, maximum palm width	20mm	20mm	30mm	30mm	50mm	50mm	50mm	50mm
Maximum cable size	50mm ²	50mm ²	120mm²	120mm ²	400mm ²	400mm ²	400mm ²	400mm ²

References			
Rating (A)	Fuse switch disconnector	Switch disconnector	Cable box
	Part number	Part number	Part number
Three pole and neutral			
100	MGFS1003C	MGFD1003C	MGFX100C
160	MGFS1603C	MGFD1603C	MGFX160C
200	MGFS2003C		MGFX250C
250	MGFS2503C	MGFD2503C	MGFX250C
315	MGFS3153C		MGFX500C
400	MGFS4003C	MGFD4003C	MGFX500C
500	MGFS5003C	MGFD5003C	MGFX500C
630	MGFS6303C	MGFD6303C	MGFX630C

Fuse link data			
Rating (A)	BS88 reference	Bussman reference	Cu links (Set of 3)
100	B1	CD100	MGFQ100
160	B2	DD160	MGFQ160
200	B2	DD200	MGFQ250
250	B3	ED250	MGFQ250
315	C1	EFS315	MGFQ400
400	C1	EF400	MGFQ400
500	C2	FF500	MGFQ630
630	C2	FF630	MGFQ630

Technical Section 9

Wall mounted switchgear Busbar chambers and accessories

Application

The wall mounting busbar chambers provide an easy means of mounting and interconnecting fusegear products.

Range

Three ratings and three busbar lengths are available. Connection kits enable busbar chambers to be linked and all devices connected to the bars.

Technical data

Manufactured to	BS EN 60439-1
Rated voltage	415V 50/60Hz
Solid copper busbars rated at	200, 400 and 630A
Neutral bar	Fully rated
Busbar chamber lengths	750, 1200 and 1800mm
Chambers dimensions	Common depth (200mm)
	Common height (450mm)
End plates, top plates and bottom plates	Are fully removable for connections and for access
Steelwork finished	In polyester epoxy powder, cream colour RAL9001

Rating	Length (mm) 750 Part number	Length (mm) 1200 Part number	Length (mm) 1800 Part number
200	MGFB20007C	MGFB20012C	MGFB20018C
400	MGFB40007C	MGFB40012C	MGFB40018C
630	MGFB63007C	MGFB63012C	MGFB63018C

Busbar connection kits

Each kit comprises connections for three phases and neutral

Rating	Busbar interconnections to link busbar chambers*	Flexible busbar inter connections to link non Merlin Gerin busbar chambers	Cable connections to connect to busbars**
	Part number	Part number	Part number
200	MGFK200		MGFC200
400	MGFK400	MGFJ400	MGFC400
630	MGFK630	MGFJ630	MGFC630

^{*} The busbar connection kits allow 2 or more Merlin Gerin busbar chambers to be electrically and mechanically joined together providing facilities for a greater number of outgoing circuits.

Fuse switch connection kits

Each kit comprises connections for three phases and neutral

Rating	Top mounted Part number	Bottom mounted Part number
100, 160	MGFZ160	MGFZ160
200, 250	MGFZ250	MGFZ250
315 - 630	MGFZ630T	MGFZ630

Fuse switch connection kits comprise 4 copper links with connection hardware to connect a fuse switch to the busbars.

Note: the kit required for fitting devices of 315A or greater differs dependent on whether it is mounted above or below the busbar chamber.

^{**} The cable connection kits comprise 4 bolts, nuts and washers to connect a set of cables fitted with crimped lugs to the busbars.

Wall mounted switchgear Fuse combination unit



Application

Mounted fuse combination units come supplied with 100/80/63 or 40A fuse fitted and are fully wired to accept incoming cables at the bottom with outgoing at the top. The enclosure and fuse holder includes lugs for fitting lead seals and is supplied with a padlocking off device. Featured with a blown fuse indicator for easy maintenance and fault finding, and the fuse is easily changeable without removing the enclosure cover.

Features

- Supplied with fuse fitted
- Blown fuse indication
- Tunnel terminal on fuse holder 35 m/m
- Incoming terminals 50 m/m on switch disconnector
- Sealable enclosure
- Switch disconnector that can be padlocked
- Fully shrouded fuse holder
- Earth bolt supplied
- 25 m/m knockouts top and bottom

Technical data

Voltage	230V ± 10%, 50/60Hz
Maximum current	100A
Fuse holder	From 40 to 100A
Switch disconnector	100A 2 pole to BS EN 60947-3
Enclosure	Sheet steel
Colour	RAI 9001

References	
Rating (A)	Part number
100	MGWFCU100
80	MGWFCU80
63	MGWFCU63
40	MGWFCU40

Protection against earth leakage RCCB A, AC, si and SiE class 16-100A RCCB A, AC and si class 80-125A RCCB A class 25-63A recloser	page 4/2
RED, REDs and REDtest	
Protection against the effects of lightning strikes	
and overvoltages	pages 4/30 to 4/42
Surge arresters	page 4/30
Type 1 and 2 surge arresters	
Type 2 and 3 surge arresters	
PRC, PRI surge arresters	
Protection against overloads and short circuits	pages 4/44 to 4/57
DPN MCB	page 4/44
C60H MCB	See Section 1
C120H MCB	
Protection of motors	

"si" and "SiE" type, A & AC class RCCB 10mA, 30mA, 100mA, 300mA and 500mA instantaneous 100mAS, 300mAS, 500mAS

Function

Residual current circuit-breakers ensure:

- The control and isolation of electrical circuits
- The protection of persons against direct and indirect contacts
- The protection of installations against insulation faults

They conform to both the residual current device standard BS EN 61008 and to switch standards BS EN 60947-1 and BS EN 60947-3. Residual current circuit-breakers are used in the housing, commercial and industrial sectors.

AC class

Tripping is ensured for sinusoidal, alternating currents, whether they be quickly applied or slowly increase.

A class

Tripping is ensured for sinusoidal, alternating residual currents as well as for pulsed DC residual currents, whether they be quickly applied or slowly increase. Application: loads with electronics, rectifiers, instruments.

"si" type

Reinforced continuity of supply on disturbed networks with:

- A high risk of nuisance tripping:
- ☐ Successive lightning strokes
- ☐ IT earthing system
- ☐ Variable speed controllers, frequency converters
- ☐ Presence of electronic ballasts
- ☐ Presence of switchgear that incorporates interference filters i.e. lighting, microcomputing, etc
- Sources of blinding:
- ☐ Presence of harmonics or high frequency rejection
- ☐ Presence of DC components: diodes, thyristors, triacs
- ☐ Low temperature

"SiE" type

The RCCB self-types are particularly suitable for use in humid environments and/or environments polluted by aggressive agents, for example swimming pools, marinas, the food-processing industry, water treatment plants, industrial sites. They also incorporate RCCB self-type forms.

Instantaneous

It ensures instantaneous tripping (no time-delay).

Selective S

Total discrimination can be achieved using a non-selective residual current device placed downstream.

Description

The residual current trip unit is electromechanical. It functions without an auxiliary source.

Technical data

Voltage rating	230400 V AC, -15+10 %	
Frequency rating	AC and A classes: 50/60 Hz	
	"si" and "SiE" types: 50 Hz	
Current rating (Ith) at 40 °C	16100 A	
As in IEC 61008	Breaking and making capacity	
	Rated residual (I∆m): 2.5 kA	
	Rated (Im): 1.5 kA	
As in IEC 60947-3:	Isolation with positive break indication, opening is indicated by a green strip on the device operating handle. This indicator shows that all poles are open.	
	Rated impulse withstand	
	Voltage (Uimp): 6 kV	
	Insulation voltage (Ui): 440 V	
	Utilization category:	
	AC 23A rating ≤ 63 A	
	AC 22B ratings 80 and 100 A	

Technical Section 9

"si" and "SiE" type, A & AC class RCCB 10mA, 30mA, 100mA, 300mA and 500mA instantaneous 100mAS, 300mAS, 500mAS

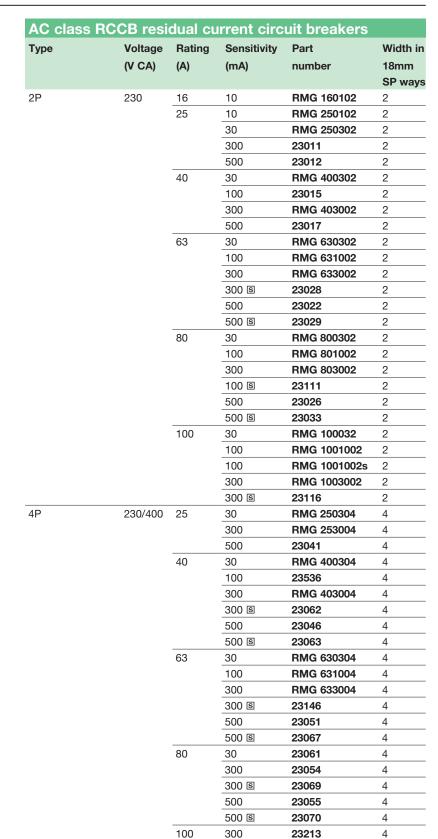
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ripped" position is pos	ssible using the padlocking device (not
uisance tripping due to n on the network, etc. evel 8/20 µs: neous	o transient overvoltages (lightning,
ns (O-C): 20 000	10 kA with 100 A fuse upstream
	ngs:
	al vertical selectivity can be achieved ed downstream
ult indication on front	panel by means of a mechanical
iliaries	
ng auxiliaries	
tment 2 (relative humid	dity 95 % at 55°C)
ure:	ary 55 75 at 55 57
°C	
	,
9: -40+60°C	
2P	3P
230	450
² up to 63amp. 50mm	² up to 80 and 100 amps ible 35mm² cable or rigid 50mm² cable
	ripped" position is position is position is position is position in position is position in the network, etc. evel 8/20 μs: neous withstand (IΔc = Inc): ns (O-C): 20 000 sensitivities for all ration in the sensitivities for all ration in the sensitivities for all ration in the sensitivities in the

AC class RCCB

10mA, 30mA, 100mA, 300mA and 500mA instantaneous 100mAS, 300mAS, 500mAS



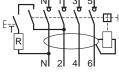




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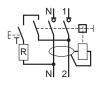
A class RCCB

10mA, 30mA, 100mA, 300mA and 500mA instantaneous 100mAS, 300mAS, 500mAS

Type Voltage (V CA) Rating (N) Sensitivity (mA) Part (ma) Width in number 2P 230 16 10 23415 2 25 10 23353 2 30 23249 2 300 23356 2 40 30 23358 2 300 23360 2 300 23365 2 300 23364 2 300 23364 2 300 23364 2 300 23371 2 80 300 23371 2 80 300 23272 2 100 300 23381 4 300 23381 4 40 30 23393 4 500 23381 4 40 30 23303 4 40 30 23399 4	A class BCC	B resid	ual curi	rent circu	it breakers	
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				300 S	23284	4
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			100	300 S	23294	4

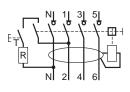
"si" and "SiE" type RCCB 25-100A 10 mA, 30 mA, 100 mA, 300 mA and 500 mA instantaneous 100 mAS, 300 mAS, 500 mAS





Туре	Voltage (V CA)	Rating (A)	Sensitivity (mA)	Part number	Width in 18mm SP ways
"si" type RC	CB resi	dual cu	rrent circui	t-breakers	S
2P	230	25	30	23523	2
		40	30	23524	2
		63	30	23525	2
			300 s	23363	2
		80	300 s	23372	2





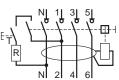
4P	230/400	25	30	23526	4
		40	30	23529	4
		63	30	23530	4
			300 s	23392	4
		80	30	23390	4
			300 s	23394	4





2P	230	25	30	23300	2	
		40	30	23307	2	
			300 s	23314	2	
		63	30	23352	2	
			300 s	23355	2	





230/400	25	30	23377	4
	40	30	23379	4
		300 s	23398	4
	63	30	23383	4
		300 s	23401	4

Accessories For 2 and 4 pole RCCB



Terminal shields

■ Two piece: completely covers terminals (cannot be fitted to 100A 2 pole unit)

Description	Part number
Two piece unit for use with 2P RCCB (except 100A unit)	26976
Two piece unit for use with 4P RCCB	26978



Sealable terminal screw shield

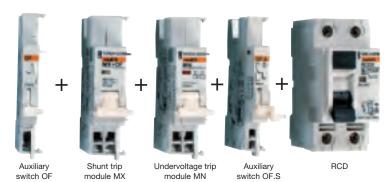
■ Enables total isolation of the terminal screws

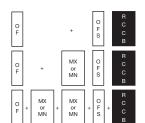
Description	Part number
For use with 2P and 4P RCCB (2 strips of 4)	26981

Padlocking facility	
Description	Part number
Padlocking bag of 2	26970
Padlock + 2 keys	MGPL
Spare key for MGPL	MGPLSK

Electrical auxiliaries for 2 and 4 pole RCCB 16-100A

Arrangement of auxiliaries





Note: both 2P and 4P RCCB type residual current devices can be fitted with the above combinations of electrical auxiliaries.

Note: OFS required for all combinations.



Shunt trip release (MX)

- Enables remote tripping
- Is equipped with a cut off switch in series with the coil allowing control circuit to remain energised
- Includes one auxiliary changeover switch (OF)
- Red flag trip indicator
- Mounted on the LHS of the OFS
- Cable capacity 2.5mm²

Width in 18mm SP ways	Coil volt	Consumption Pickup W or VA	Part number
1	130Vdc	10	26946
1	240Vac	50	26946
1	415Vac	120	26946
1	48 - 60Vdc	22	26947
1	48 - 130Vac	200	26947
1	24Vac/dc	120	_ 26948

Also requires OFS 26923

Under voltage release (MN)

- Enables the RCD to be tripped either when the auxiliary supply voltage drops or by the opening operation of a normally closed remote pushbutton
- Prevents the RCD from being switched 'ON' again if the undervoltage release supply is not present
- Red flag trip indicator
- Mounted on the LHS of the OFS
- Cable capacity 2.5mm²

Width in 18mm SP ways	Coil volt	Consumption Pickup W or VA	Part number
1	220/240Vac	4.1	26960
1	48Vac/dc	4.3	26961

Also requires OFS 26923



Electrical auxiliaries for 2 and 4 pole RCCB 16-100A



Auxiliary switch (OFS)

- A changeover switch which acts as an indicating or control device to monitor the ON or OFF positions of an RCD
- The OFS also acts as an adaptor mounted on the LHS of RCD, between the RCD and any other auxiliaries (additional OF, MX, MN, mounted on LHS of OFS). Indicates type of RCD
- Cable capacity 2.5mm²

_ case capacity		
Width in 18mm		Part number
SP ways		
0.5	OFS	26923
Contact ratings (A):		
■ 3A at 415Vac		
■ 1A at 125Vdc		
■ 6A at 24Vdc		
■ 6A at 240Vac		
■ 2A at 48Vdc		

Auxiliary switch (OF)

- Changes main contacts to ON/OFF
- Test button on front face
- Cable capacity 2.5mm²

= oasio oapaon, zioiiiii		
Width		Part
in 18mm		number
SP ways		
0.5	OFS	26924
Also requires OFS 26923		



RCCB 80...125 A AC and A class, "si" type 30 mA, 100 mA, 300 mA and 500 mA instantaneous, 300 mAs











Function

The residual current circuit-breakers are used to:

- Control electric circuits
- Protect people against direct and indirect contacts
- Protect installations against insulation faults

The residual current circuit-breakers are used in the tertiary sector and industry

Technical data

The residual current release is electromechanical and operates without auxiliary

Voltage rating:	2P: 230 V AC, +10 %, -15 %			
	4P: 230/400 V AC, +10 %, -15 %.			
Frequency rating:	50 Hz.			
Current rating (In):	80, 100 or 125 A.			
Making and breaking				
capacity, rated residual				
current (l∆m=lm) as per				
standard IEC 61008:	10 ln.			
Protected against nuisance t	ripping due to transient overvoltages (lightning stroke,			
device switching on the netv				
Level of immunity in	• •			
8/20 µs wave:	AC and A class:			
·	- 250 A for instantaneous			
	- 3 kA for s			
	"si" type: 3 kA			
Tripping time at:	IΔn: <300 ms			
11 3	5l∆n: <40 ms.			
Short-circuit current withstar	nd (l∆c=lnc): see the circuit breaker or fuse			
coordination table with RCC				
Number of operating				
cycles (O-C):	Mechanical: > 5 000			
-, -: (,-	Electrical: > 2 000.			
Releases with fixed				
sensitivities for all ratings:	Instantaneous release			
	Selective release: allows total vertical discrimination			
	with the 30 mA residual current devices placed			
	downstream.			
Test button used to check p	roper operation of the tripping mechanism.			
Indication of RCCB status	Closed (red indicator)			
by 3-position toggle and	Tripped on fault (green indicator)			
mechanical indicator on	Open (green indicator)			
the front face:	open (green maleater)			
Environment:	Tropicalisation: treatment 2 (relative humidity:			
Environment.	95% at 55°C)			
	Operating temperature: -25°C to +40°C			
	Storage temperature: -40°C to +60°C.			
Weight (g):	2P: 230			
Weight (g).	4P: 420.			
Connection:	By tunnel terminal for flexible or rigid cable:			
COMMODION.	- 1x1.5 to 50 mm ²			
	- 1X1.5 to 30 mm ² .			
Degree of protection:	IP40 on front face			
begree or protection.	ii 40 Oil iloiit lace			

OFsp auxiliary

Complies with standards:

■ Electrical indication: by OFsp auxiliary mounted to the left. It has a double changeover switch indicating the "open" or "closed" position of the RCCB

IP20 at terminals

VDE 0664

IEC 61008/EN 61008

- Weight (g): 40
- Connection: by tunnel terminal for 0.5 to 1.5 mm2 cable

Accessories

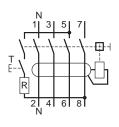
2P and 4P seable screw shield:

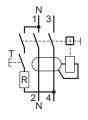
- Prevents all contact with device terminal screws, degree of protection IP40
- Optional sealing

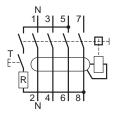
Technical Section 9

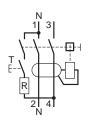
RCCB 80...125 A AC and A class, "si" type 30 mA, 100 mA, 300 mA and 500 mA instantaneous, 300 mAs

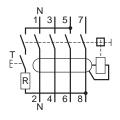
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Туре	Voltage (V CA)	Rating (A)	Sensitivity (mA)	Width in 18mm SP ways	Part number
RCCB resi	idual curre	ent circ	uit breake	ers, AC cla	ass
2P	230	125	30	2	16966
			300	2	16967

4P 230/400	230/400	100	30	4	16900
			100	4	16901
		125	30	4	16905
			100	4	16906
			300	4	16907
			500	4	16908

RCCB res	sidual cur	rent cir	cuit brea	akers, A c	lass
2P	230	100	30	2	16968
			300	2	16969
		125	30	2	16970
			300	2	16971

4P	230/400	80	30	4	16909
		100	30	4	16910
			300	4	16911
			500	4	16912
		125	30	4	16924
			300	4	16926
			300 S	4	16925
			500	4	16927

RCCB resid	ual cur	rent cir	cuit brea	akers, "si'	" type
2P	230	125	30	2	16972
			300	2	16973

4P	230/400	100	30	4	16915
			300	4	16916
		125	30	4	16920
			300	4	16921

RCCB 80...125 A AC and A class, "si" type 30 mA, 100 mA, 300 mA and 500 mA instantaneous, 300 mAs

OFsp auxiliary switch			
Voltage (V CA)	Contact (A)	Width in 18mm SP ways	Part number
230 V AC (AC	C15) 6	1/2	16940
230 V DC (D0	C13) 1		



Accessories		
Туре	Number	Part
	of poles	number
Screw shield (set of 10) upstream/downstream	2	16938
	4	16939



RCCB 25...125 A B type 30 mA, 300 mA and 500 mA instantaneous, 300 mAS

Description

B type ☆ ==

The RCCB B type residual current circuit-breakers provide specific protection of three-phase installations and people even in the presence of DC fault currents on the network generated by:

- Three-phase controllers and variable speed drives
- Three-phase battery chargers and inverters
- Three-phase backed-up power supplies

They are a requirement for three-phase supplied applications, when class I equipment installed downstream from the RCCB are likely to produce DC component fault currents (pure DC fault) $\stackrel{\sim}{\sim}$.

They include and also guarantee protection against fault currents:

- \blacksquare Sinusoidal AC residual currents \sim (AC type)
- Pulsed DC residual currents ഹ (A type)

They can be adapted, without exception, to all the application cases defined in standards IEC 60364 and EN 50178.

The B type RCCB combination with variable speed drives of the Telemecanique brand has been successfully tested and validated.

Instantaneous

It ensures instantaneous tripping (without time delay).

Selective S

It ensures total discrimination with a non-selective RCD placed downstream.

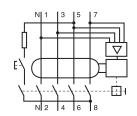
mpliance with standards IEC 61009 EN 61009 VDE 0664

Technical data

Compliance with standards	IEC 61008, EN 61008, VDE 0664
Voltage rating	230/400 V AC, +10%, -15%
Frequency rating	50 Hz
Current rating (In)	25, 40, 63, 80 or 125 A
Making and breaking	10 In with 500 A minimum
capacity, rated residual	
current (I∆m = Im) as per	
standard IEC 61008	
Protected against nuisance t	ripping due to transient overvoltages (lightning stroke,
device switching on the netw	vork, etc.)
Level of immunity in	250 A for instantaneous
8/20 µs wave	3 kA for S
Tripping time	I∆n: ≤ 300 ms
	5l∆n: ≤ 40 ms
Short-circuit current	See the circuit breaker or fuse coordination table
withstand ($I\Delta c = Inc$)	with B type RCCB
Number of operating	Mechanical: > 5 000
cycles (O-C)	Electrical: > 2 000
Releases with fixed	Instantaneous release
sensitivities for all ratings	Selective release S: allows total vertical
	discrimination with the 30 mA RCDs placed
	downstream
Test button	Checks proper operation of the tripping mechanism
	Working range: 185440 V AC
Indication of RCCB status	By 3-position toggle and mechanical indicator on the
	front face:
	closed (red indicator)
	tripped on fault (red indicator)
	open (green indicator)
	By OFsp auxiliary switch (optional)
Tropicalisation	Treatment 2 (relative humidity 95% at 55°C)
Operating temperature	-25°C to +40°C
Storage temperature	-40°C to +60°C
Weight (g)	500
Degree of protection	IP40 on front face
	IP20 at terminals
Connection by	Flexible or rigid cable: 1 x 1.5 to 50 mm ² or
tunnel terminal	2 x 1.5 to 16 mm ²

RCCB 25...125 A B type 30 mA, 300 mA and 500 mA instantaneous, 300 mAS





RCCB residu	al curre	ent circ	uit-breake	ers	
Туре	Voltage	Rating	Sensitivity	Width in	Part
	(V CA)	(A)	(mA)	18mm	number
				SP ways	
4P	230/400	25	30	4	16750
			300	4	16751
		40	30	4	16752
			300	4	16753
			300s	4	16754
			500	4	16755
		63	30	4	16756
			300	4	16757
			300s	4	16758
			500	4	16759
		80	30	4	16760
			300	4	16761
			300s	4	16762
		125	30	4	16763
			300	4	16764
			300s	4	16765
			500	4	16766

OFsp auxiliary

Electrical indication: by OFsp auxiliary mounted to the left. It has a double changeover switch indicating the "open" or "closed" position of the B type RCCB Weight (g) Connection by tunnel terminal Flexible or rigid cable: 0.5 to 1.5 mm²

RCCB re	esidual current circ	uit-break	ers	
Туре	Voltage (V CA)	Contact (A)	Width in 18mm	Part number
			SP ways	
OFsp	230 V AC (AC15)	6	1/2	16940
	230 V DC (DC13)	1		







Enclosures RCCB type residual current devices



G9 enclosure IP30

For a more comprehensive range of enclosures please refer to Section seven.

- Made from folded steel, epoxy powder coated
- Degree of protection: IP30
- It consists of:
- ☐ A back plate with DIN rail
- \square A cover screwed to the back plate having 25mm knockouts top and bottom

Capacity in	Part
18mm SP ways	number
3	99560
4	14599
5	14603



Mini opale IP30

Impact resistant, all insulated enclosure self extinguishing to 650°C.

- Degree of protection: IP30
- It consists of:
- ☐ An insulated back plate with integral DIN rail
- \square A cover clipped to the back plate

Capacity in	Part
18mm SP ways	number
4	13394
6	13396
8	13398



Kaedra weatherproof IP65

- Degree of protection: IP65
- Protection against mechanical damage IK09
- Self extinguishing insulating material
- Flame and abnormal heat resistance 650°C, IEC 60695-2-1
- Class 2: total insulation
- They are supplied complete with:
- Built in dividable blanking plate
- Screwed cover with hinged transparent window

Capacity in	Part
18mm SP ways	number
4	13976
6	13977
8	13978
12	13979
Lock & key	13948
Sealing kit	13947
Bag of membrane glands	14190

Earth leakage protection **Automatic recloser**

RED, REDs, REDtest Selection table

The RED, REDs and REDtest REsidual current Devices offer the following functions:

- Protection of people against direct and indirect contacts
- Protection of installations against insulation faults
- Disconnection of on-load electric circuits, already protected against overloads and short-circuits
- Automatic restart after insulation monitoring of the downstream circuit
- Automatic and periodical test of the device, without breaking downstream circuit (REDtest)

Only used on TT and TN-S earthing grounding systems.

Selection table



Earth leakage p	rotection compliance with standards IEC	61008, EN 61008		
	•	•		•
Current rating (In)	25, 40, 63 A	25, 40, 63 A	25, 40, 63, 100 A	25, 40 A
Sensibility (Idn)	30 mA	30, 300 mA		30 mA
Туре	A	Α		A
Recloser				

Autotest			
<u>-</u>	-	•	
Power supply			

■ with prolonged insulation monitoring

Power supply			
From the top	•	•	•
From the bottom	•	•	-

Indication			
Mechanical	By O-I (open-closed) 2-position lever	By O-I (open-closed) 2-position lever	By O-I (open-closed) 2-position lever
Luminous	1 LED	2 LEDs	2 LEDs
Remote	-	1 built-in auxiliary contact	1 built-in auxiliary contact

Earth leakage protection Automatic recloser

RED 25...63 A A type 30 mA

Fixed sensitivity releases for all ratings

Protection of people against direct and indirect contacts. Protection of installations against insulation faults. Disconnection of on-load electric circuits, already protected against overloads and short-circuits. Automatic restart after insulation monitoring of the downstream circuit.



Description

The RED, **RE**sidual current **D**evice recloser, is made up of a residual current device and a recloser.

A type 🔯

The RED **phase-to-neutral** residual current devices provide **A type** earth leakage protection: tripping due to sinusoidal AC residual currents as well as by continuous pulsed residual currents, whether they are applied quickly or increased slowly.

	are applied quickly or increased slowly.
RED 2563 A, A type	
Common technical data	
Earthing grounding systems	TT and TN-S only
Power supply	From top and bottom
Voltage rating (Ue)	230 V AC, +10 %, -15 %
Frequency rating	50 Hz
Current rating (In)	25, 40, 63 A
Impulse withstand voltage (Uimp)	4 kV
Insulation voltage (Ui)	500 V
8/20 µs wave immunity level	250 Â
Tropicalisation	Treatment 2 (relative humidity: 95 % at 55°C)
Operating temperature	-5°C to +40°C
Storage temperature	-20°C to +60°C
Weight (g)	350
Protection class	IP20 at terminals
Connection by tunnel terminal with guard	25 mm² flexible cable or 35 mm² rigid cable
Mounting	On DIN rail
Residual current device	
Compliance with standards	IEC 61008, EN 61008
Making and breaking capacity, rated residual current (I∆m=Im)	630 A
Breaking capacity in association with protection device	6000 A (gL 63 A)
Tripping time	I∆n : ≤ 300 ms
	5l∆n : ≤ 40 ms
Short-circuit current withstand (I∆c = Inc)	See coordination table of circuit-breaker or fuse with A type RED
Number of cycles (O-C)	Mechanical: 1,000

Test button min operating voltage	100 V
Recloser technical data	
Max duration of a restart cycle	90 s
Number of restart operations	15/hour
Maximum number of consecutive restart attempts (if no earth fault)	3
Min interval between 2 closings	180 s
Insulation fault presence monitoring	Yes
Restart in event of transient insulation fault	Yes
Stopping restart cycle if insulation fault present	Yes
Power consumed by the electronics	S = 0 VA

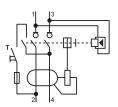
Instantaneous release

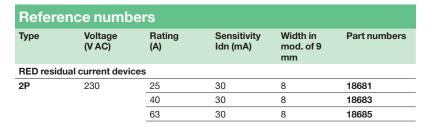
Indication	
RED status indication	Mechanical: by O-I (open-closed) 2-position lever
	Electrical: by 1 red indicator light on the front panel

4

Earth leakage protection Automatic recloser

RED 25...63 A A type 30 mA





Coordination table, max short-circuit current (kA rms)

Multi 9	9 circ	uit-br	eaker	, fuse	/ A typ	e RE	D coo	rdinat	ion
		Multi 9	circuit-b	reakers					Fuse
		C32	K60	DT40	DT40N	C60	C120	NG125	gL 63
RED A typ	эе								
Network	25 A	4.5	6	6	6	6	6	6	6
230 V L/N	40 A	4.5	6	6	6	6	6	6	6
L/IN	63 A	-	-	-	-	6	6	6	6

Operation

Recloser

The built-in automatic recloser automatically recloses the residual current device after checking insulation of the downstream circuit. If the circuit is faulty, then RCD reclosing is prohibited.

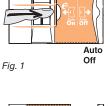
Residual current device

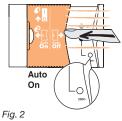
The RED operates in the residual current device mode without automatic restart when the sliding cover is open, i.e. to the right in the Auto Off position (Fig. 1).

The automatic restart mode is activated when the sliding cover is closed, i.e. to the left in the Auto On position (Fig. 2).

Test

■ This is only possible in manual mode, i.e. sliding cover open in the Auto Off position. You can then manually test the device by pressing the Test key. The downstream installation is then temporarily broken. You must then manually reclose the RED, by activating the O-I lever to power supply the downstream circuit.



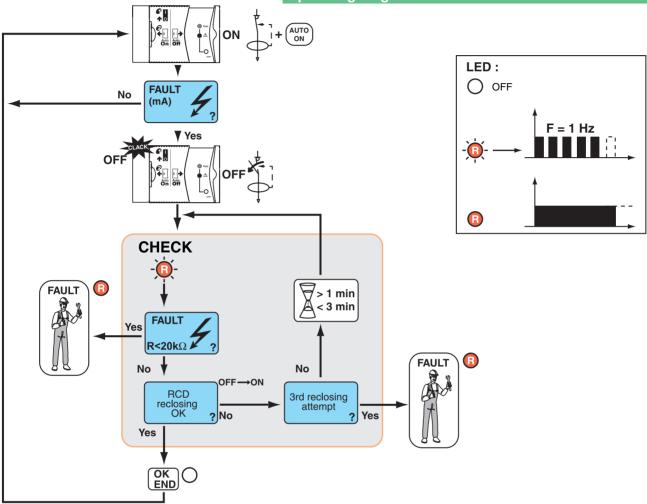


Earth leakage protection Automatic recloser

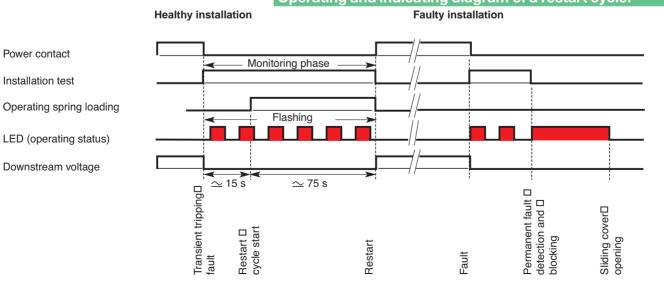
RED 25...63 A A type 30 mA

Operation Recloser

Operating diagram of the recloser:



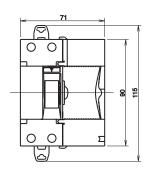
Operating and indicating diagram of a restart cycle:

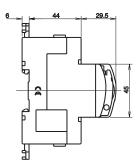


Technical Section 9

1

Dimensions





Earth leakage protection Automatic recloser

natic recloser A type 30 mA

Protection of people against direct and indirect contacts.

Protection of installations against insulation faults. Disconnection of on-load electric circuits, already protected against overloads and short-circuits. Automatic restart after insulation monitoring of the downstream circuit.



REDs 2P



REDs 4P

Description

The REDs, **RE**sidual current **D**evice recloser, is made up of a residual current device and a recloser.

A type



REDs 25...63 A

The REDs **phase-to-neutral** residual current devices provide **A type** earth leakage protection: tripping due to sinusoidal AC residual currents as well as by continuous pulsed residual currents, whether they are applied quickly or increased slowly.

REDs 25100 A, A type	2P	4P
Common technical data		
Earthing grounding systems	TT and TN-S only	
Power supply	From top and bottom	-
Voltage rating (Ue)+10 %, -15 %	230 V AC	400 V AC
Frequency rating	50 Hz	
Current rating (In)	25, 40, 63 A	25, 40, 63, 100 A
Impulse withstand voltage (Uimp)	4 kV	
Insulation voltage (Ui)	500 V	
8/20 µs wave immunity level	250 Â	
Tropicalisation	Treatment 2 (relative hun	nidity: 95 % at 55°C)
Operating temperature	-5°C to +40°C	
Storage temperature	-20°C to +60°C	
Weight (g)	360	25/40 A: 670 63 A, 30 mA: 720 63 A, 300 mA: 680 100 A: 700
Protection class	IP20 at terminals	
Connection by tunnel terminal with guard	25 mm ² flexible cable or	35 mm² rigid cable
Mounting	On DIN rail	
Residual current device technical dat	а	
Compliance with standards	IEC 61008, EN 61008	
Making and breaking capacity, rated residual current (l∆m=lm)	25, 40, 63 A: 630 A	25, 40, 63 A: 630 A 100 A: 1000 A
Breaking capacity in association with protection device	6,000 A (gL 63 A)	25, 40, 63 A: 10,000 A (gL 80 A) 100 A: 10,000 A (gL 100 A)
Tripping time	I∆n: ≤ 300 ms	
	5l∆n: ≤ 40 ms	
Short-circuit current withstand (I∆c = Inc)	See coordination table o with A type REDs	f circuit-breaker or fuse
Number of cycles (O-C)	1,000	4,000
Fixed sensitivity releases for all ratings	Instantaneous release	
Test button min operating voltage	100 V	170 V
Recloser technical data		
Max duration of a restart cycle	90 s	< 10 s
Maximum number of consecutive restart attempts (if no earth fault)	3	
Min interval between 2 closings	180 s	30 s
Insulation fault presence monitoring	Yes	
Restart in event of transient insulation fault	Yes	
Stopping restart cycle if insulation fault present	Yes, during 15 minutes	

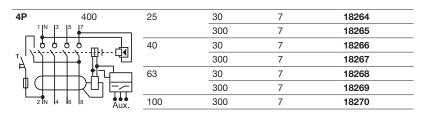
Earth leakage protection Automatic recloser

REDs 25...100 A A type 30 mA and 300 mA

Description

REDs 25100 A , A type	2P	4P		
Indication				
REDs status indication	Mechanical: by O-I (open-closed) 2-position lever			
	Electrical: by 2 indicator lights on the front panel: left: red LED right: green LED			
	Remote: by 1 built-in	auxiliary contact		
Auxiliary contact technical data				
Voltage rating (Ue)	5230 V AC/DC	230 V AC/30 V DC		
Insulation voltage (Ui)	350 V	500 V		
Current rating (ln)	Min: 0,6 mA	Min: 0,1 mA		
	Max: 100 mA, cos φ = 1	Max: 0,4 A AC/ 1,5 A DC		
Туре	Configurable: NO or NC or intermittent 1 Hz	NO and NC		
Connection by tunnel terminal	Flexible or rigid cable	: max 2.5 mm²		

Туре	Voltage (V AC)	Rating (A)	Sensitivity Idn (mA)	Width in mod. of 9 mm	Part numbers
REDs residual current devices					
2P	230	25	30	4	18687
1 1	1 3		300	4	18688
	40	30	4	18689	
1/1/-77			300	4	18690
	63	30	4	18691	
1 (H=H		300	4	18692



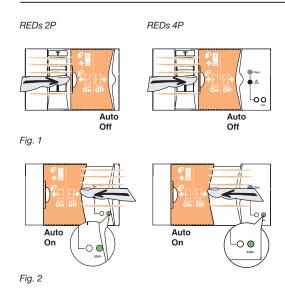
Coordination table, max short-circuit current (kA rms) 2P: Multi 9 circuit-breaker, fuse / A type REDs coordination Multi 9 circuit-breakers Fuse NG125 gL 63 DT40 **DT40N C60** C120 C32 K60 2P REDs A type Network 25 A 6 6 6 10 10 10 230 V 40 A 6 6 10 10 10 L/N 63 A 10 10 10

4P: Multi 9 circuit-breaker, fuse / A type REDs coordination									
Multi 9 circuit-breakers						Fuse			
		C32	K60	DT40	DT40N	C60	C120	NG125	gL 80
4P REDs	4P REDs A type								
Network	25 A	4,5	6	6	10	10	10	10	10
400 V L/N	40 A	4,5	6	6	10	10	10	10	10
L/IN	63 A	-	-		10	10	10	10	10
	100 A	-	-	-	-	-	-	-	-

Technical Section 9

Earth leakage protection Automatic recloser

REDs 25...100 A A type 30 mA and 300 mA



Operation

Recloser

The built-in automatic recloser automatically recloses the residual current device after checking insulation of the downstream circuit. If the circuit is faulty, then RCD reclosing is prohibited. After a 15-minute time delay, downstream circuit insulation is checked again.

There are then two possibilities:

- The installation is still faulty: in this case a new check will be carried out in 15 minutes. The sequence is locally reported by a 5-second intermittent red Led and remotely reported by the auxiliary contact.
- The fault was temporary and has disappeared: the recloser automatically recloses the RCD

Residual current device

The REDs operates in the residual current device mode without automatic restart when the sliding cover is open, i.e. to the right in the Auto Off position (Fig. 1).

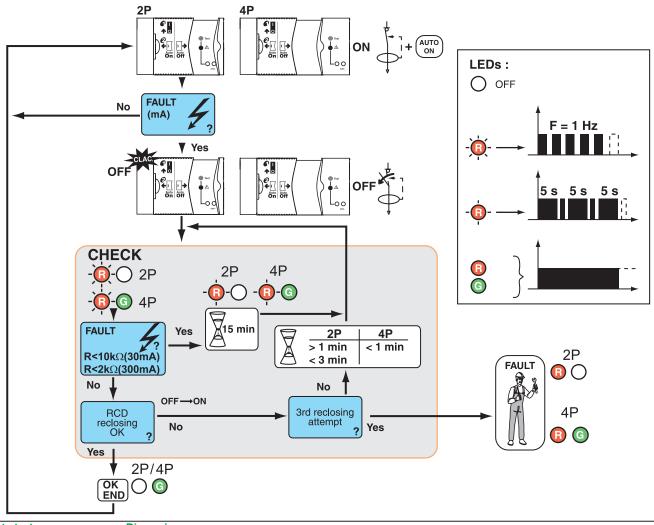
The automatic restart mode is activated when the sliding cover is closed, i.e. to the left in the Auto On position (Fig. 2).

Tes

■ This is only possible in manual mode, i.e. sliding cover open in the Auto Off position. You can then manually test the device by pressing the Test key. The downstream installation is then temporarily broken. You must then manually reclose the REDs by activating the O-I lever to power supply the downstream circuit.

Recloser

Operating diagram of the recloser:



Technical Section 9

Earth leakage protection Automatic recloser

REDs 25...100 A A type 30 mA and 300 mA

Operation

Recloser

Operating and indicating diagram of a restart cycle:



Remote indication

The auxiliary contact is activated in event of blocking on a residual current fault, during checking and time delay phases.

In order not to forget to activate the recloser, the auxiliary contact on the 4P REDs is activated if the residual current device remains in the closed position for 15 minutes and if the recloser is inhibited (sliding cover open, i.e. moved to the right).

The auxiliary contact on the 2P REDs can be configured for three options:

- Mode 1: 1 NO contact for an indicator light
- Mode 2: 1 NC contact for a telephone dialler
- Mode 3:1 intermittent contact, F = 1 Hz for a bell

Earth leakage protection Automatic recloser

REDtest 25...40 A A type 30 mA

Protection of people against direct and indirect contacts. Protection of installations against insulation faults. Disconnection of on-load electric circuits, already protected against overloads and short-circuits. Automatic restart after insulation monitoring of the downstream circuit. Periodic automatic testing of the device without downstream circuit power supply breaking.



18280

Description

The REDtest, **RE**sidual current **D**evice recloser, is made up of a residual current device, a recloser and a product automatic test function (Autotest).

A type \sim

The REDtest **phase-to-neutral** residual current devices provide **A type** earth leakage protection: tripping due to sinusoidal AC residual currents as well as by continuous pulsed residual currents, whether they are applied quickly or increased slowly.

REDtest 2540 A, A type	
Common technical data	
Earthing grounding systems	TT and TN-S only
Power supply	From top only
Voltage rating (Ue)	230 V AC, +10 %, -15 %
Frequency rating	50 Hz
Current rating (In)	25, 40 A
Impulse withstand voltage (Uimp)	4 kV
Insulation voltage (Ui)	500 V
8/20 µs wave immunity level	250 A
Tropicalisation	Treatment 2 (relative humidity: 95 % at 55°C)
Operating temperature	-5°C to +40°C
Storage temperature	-20°C to +60°C
Weight (g)	370
Protection class	IP20 at terminals
Connection by tunnel terminal with guard	25 mm² flexible cable or 35 mm² rigid cable
Mounting	On DIN rail

Residual current device	
Compliance with standards	IEC 61008, EN 61008
Making and breaking capacity, rated residual current (I∆m=Im)	630 A
Breaking capacity in association with protection device	6000 A (gL 63 A)
Tripping time	I∆n : ≤ 300 ms
	5l∆n : ≤ 40 ms
Short-circuit current withstand (I∆c = Inc)	See coordination table of circuit-breaker or fuse with A type REDtest
Number of cycles (O-C)	Mechanical: 1,000
Fixed sensitivity releases for all ratings	Instantaneous release
Test button min operating voltage	195 V

Autotest and recloser te	chnical data
Autotest	
Automatic test	Yes, without power supply breaking
Max duration of Autotest cycle	< 5 minutes
Recloser	
Max duration of a restart cycle	90 s
Number of restart operations	15/hour
Maximum number of consecutive restart attempts (if no earth fault)	3
Min interval between 2 closings	180 s
Insulation fault presence monitoring	Yes
Restart in event of transient insulation fault	Yes
Stopping restart cycle if insulation fault present	Yes
Power consumed by the electronics	S = 8 VA
Indication	
REDtest status indication	Mechanical: by O-I (open-closed) 2-position lever
	Electrical: by 2 indicator lights on the front panel: left: red/yellow LED right: green LED
	Remote: by 1 built-in auxiliary contact

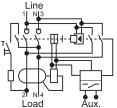
Earth leakage protection Automatic recloser

REDtest 25...40 A A type 30 mA

Description

Auxiliary contact technical data		
Voltage rating (Ue)	12230 V AC	
Insulation voltage (Ui)	600 V	
Current rating (In)	Min: 0.6 mA	
	Max: 100 mA, power factor = 1	
Туре	Configurable: intermittent 1 Hz or NO	
Connection by tunnel terminal	Flexible or rigid cable: max 2.5 mm ²	

Туре	Voltage (V AC)	Rating (A)	Sensitivity Idn (mA)	Width in mod. of 9 mm	Part numbers		
REDtest residual current devices							
2P	230	25	30	5	18280		
		40	30	5	18281		



Coordination table, max short circuit current (kA rms) Multi 9 circuit-breaker, fuse/A type REDtest coordination Multi 9 circuit-breakers Fuse C32 **DT40 DT40N C60** NG125 gL 63 K60 C120 **REDtest A type** Network 25 A 4.5 6 6 6 6 6 6 6 230 V 6 6 6 6 6 4.5 6 6

Operation

The REDtest carries out automatic testing of earth leakage protection every seven days.

The test consists in opening and reclosing the RCD, during which time continuity of supply of the downstream installation is guaranteed.

The built-in automatic recloser, automatically recloses the residual current device, after checking insulation of the downstream circuit. If the circuit is faulty, then RCD reclosing is prohibited.

Residual current device

The REDtest operates in the residual current device mode, without automatic restart, when the sliding cover is open, i.e. to the right in the Auto Off position (Fig. 1). The automatic restart mode and the Autotest are activated, when the sliding cover is closed, i.e. to the left in the Auto On position (Fig. 2).

Manual test and Autotest

There are two ways of testing earth leakage protection of the REDtest:

- Manual test: this is only possible in manual mode, i.e. sliding cover open in the Auto Off position. You can then manually test the device by pressing the Test key. The downstream installation is then temporarily broken. You must then manually reclose the REDtest, by activating the O-I lever to power supply the downstream circuit.
- Autotest: after checking installation insulation, the REDtest monitors its residual current device, without breaking the downstream power supply (bypass by bypass contact). If the test is satisfactory, the right LED moves to green, while the left LED remains OFF. If the system is faulty, the left LED moves to yellow and the faulty device must be replaced.

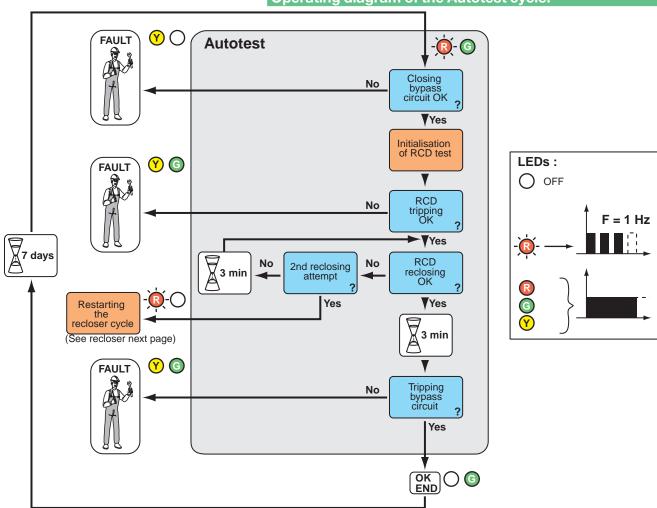
Earth leakage protection Automatic recloser

REDtest 25...40 A A type 30 mA

Operation

Autotest

Operating diagram of the Autotest cycle:



Operating and indicating diagram of Autotest cycle: Faulty residual current device Healthy residual current device (no device tripping during the test) Bypass contactor Power contact Test phase Residual current device test Operating spring loading Right LED (voltage presence) Left LED (operating status) Flashing Auxiliary contact Downstream voltage _ 2 15 s ~ 75 s Fault detection and blocking Sliding cover opening Cycle start Cycle start Restart cycle start Restart

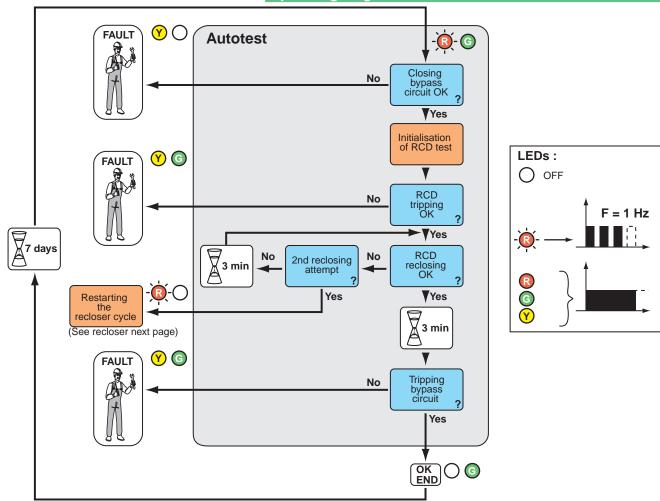
Earth leakage protection Automatic recloser

REDtest 25...40 A A type 30 mA

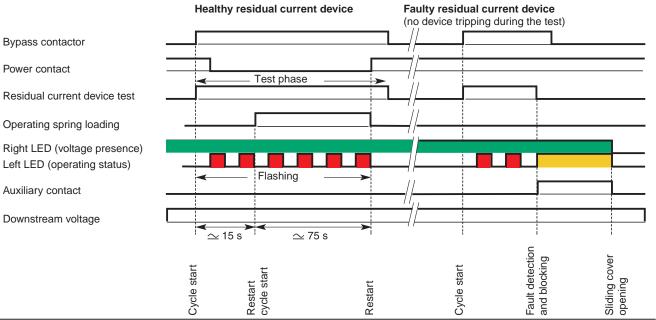
Operation

Recloser

Operating diagram of the recloser:



Operating and indicating diagram of Autotest cycle:



Technical Section 9

Earth leakage protection Automatic recloser

REDtest 25...40 A A type 30 mA

Operation

Remote indication

The auxiliary contact is activated in event of blocking on a residual current fault and/or in event of failure of the Autotest function. It can be configured according to 3 possibilities:

- Mode 1: 1 intermittent contact, F = 1 Hz for a bell...
- Mode 2: 1 NO contact for an indicator light...
- Mode 3: not used.

Protection against lightning strikes and overvoltages

Surge arresters

Exposed equipment such as antennas, satellite dishes and cameras must be protected from lightning strikes. Electronic equipment is also at risk, a direct strike to external equipment often results in damage to connected internal equipment but can also cause damage to unrelated equipment by flashovers in shared cable routes or cabinets. In addition to this the British Standards for the protection of a structure from a lightning strike and lightning surge protection devices are changing. Merlin Gerin, has developed a comprehensive range of surge protection equipment. For the protection of electrical installations and equipment from the effects of a direct or indirect lightning strike and from the effects of overvoltages caused by effects internal to the electrical system. The effectiveness of lightning protection is closely related to the installation and choice of the surge arresters.

To ensure the protection of equipment connected to:

- Low voltage networks
- Telecommunications networks
- Computer networks
- Certified coordination between the surge arrester and its disconnection circuit breaker
- Protection against the nuisance tripping of "si" and "SiE" earth leakage protection devices during a lightning strike
- Easy to implement and use
- Compatibility with all earthing systems (TT, TNS, TNC, IT)
- Technical and aesthetic consistency
- Compliance with standards
- Availability of products and services

PRF1/PRF 1 Master surge arresters

The Type 1 PRF1 surge arrester protects electrical installations against direct lightning strikes. It is recommended for electrical installations in service sector and industrial buildings, protected by a lightning conductor or by a meshed cage. It is used to conduct a direct lightning current and is propagated through the live conductors and the earth conductor. It must be installed with an upstream fuse type or circuit breaker protection (disconnection) device whose breaking capacity must be at least equal to the maximum prospective shortcircuit current at the installation point.





PRD Draw-out surge arresters

PRD removable surge arresters enable the rapid replacement of damaged cartridges

Removable surge arresters with local indication (PRD 65r, PRD 40r) have remote indication as well as the remote transfer of "cartridge to be replaced" information. The Uc voltage depends on:

- The earthing system
- The protection mode (MC/MD).

Each surge arrester in the range has a specific use:

- Incomer protection
- The PRD 65r is recommended for a very high risk level (highly exposed site)
- PRD 40r/PRD 40 are recommended for a high risk level
- The PRD 15 is recommended for a low risk
- Level secondary protection: the PRD 8 ensures secondary protection of loads to be protected and is placed in a cascading configuration with surge arresters at the incomer end

Protection against lightning strikes and overvoltages

Surge arresters



PF Fixed surge arresters

The PF all-contained, multiple pole surge arrester range is especially adapted to TT, TN-S and IT earthing systems. PF surges arresters with local indication (PF65r and PF30r) have remote indication.

Each surge arrestor in the range has a specific use:

- Incomer end protection
- The PF65r is recommended for a very high risk level (highly exposed site)
- PF30r/PF30 are recommended for a high risk level
- The PF15 is recommended for a low risk level
- Secondary protection: the PF8 ensures the secondary protection of loads to be protected and is placed in a cascading configuration with surge arrestors at the incomer end



PRC/PRI

- Protection of telecommunications and computer equipment
- Lightning can also propagate through telecommunications and computer networks
- It can damage all the equipment connected to these networks: telephones, modems, computers, servers, etc
- PRC surge arresters are designed to protect equipment connected to analogue telephone networks: lines, current or transmitter loops
- PRI surge arresters are designed to protect sensitive equipment, on digital telephone and automated networks, and on computer or data networks

Load protection

PRF1/PRF1 Master/PRD1 25r/PRD1 Master surge arresters Type 1 and 2 LV surge arresters

The Type 1 range of surge arresters meets the normative withstand capability of current wave type 10/350 µs (8/20 µs for Type 2 surge arresters). It is suitable for use with TT, TN-S, TN-C and 230 V IT earthing connection systems (neutral point connection). In addition, the PRF1 Master surge arrester covers the 400 V IT system. PRF1 12.5r and PRD1 surge arresters are fitted with a remote transfer contact to send «end-of-life indication» information. PRD1 surge arresters are fitted with easy-to-replace withdrawable cartridges

PRF1/PRF1 Master/PRD1 25r/PRD1 Master

The Type 1 surge arrester is recommended for electrical installations in the service sector and industrial buildings protected by a lightning conductor or by a meshed cage. It protects electrical installations against direct lightning strikes. It is used to conduct the direct lightning current, propagating from the earth conductor to the network conductors. It must be installed with an upstream disconnection device, such as a fuse or circuit-breaker, whose breaking capacity must be at least equal to the maximum prospective short-circuit current at the installation point. PRF1 12.5r and PRD1 25r surge arresters also provide Type 2 protection and protect the electrical installation by finely clipping the lightning wave overvoltages.



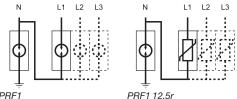
PRF1 12.5r



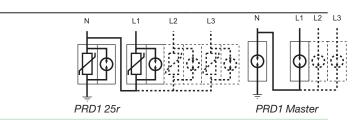
PRD1 25r



PRD1 Master



	7 7 11 7	7 7 11 7 7 2.07		
Type of surge arrester	Product solution			
Fixed surge arrester	1P+N	3P+N		
Combi PRF1	16626	16629		
PRF1	16625	16628		
	16621 + 16623			
		3 x 16621 + 16624		
PRF1 12.5r T1, T2	16632	16634		
PRF1 Master				



Cartridge surge arrester	1P+N	3P+N	
PRD1 25r	16330	16332	
T1 + T2			
PRD1 Master	16361	16363	

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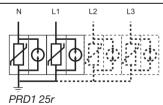


PRF1, PRF1 Master 2P, 3P

PRF1 12.5r 3

PRF1 Master 4P

			Neutral point connection	Recommended fixing accessory
2P	3P	4P		
			TT, TN-S	
2 x 16621	3 x 16621	4 x 16621	TN-C	
2 x 16622	16627	4 x 16622	TN-C	
			TT, TN-S	16641
			TT, TN-S	16643
			TT, TN-S	
	16633		TT, TN-S, IT 230 V	
2 x 16630			TT, TN-S, IT (1) distributed neutral	16643
	3 x 16630		TN-C, IT (1) non- distributed neutral	16644
		4 x 16630	TT, TN-S, IT (1) distributed neutral	16645





PRD1 Master

2P	3P	4P		
			TT, TN-S	
2 x 16329	16331		TT, TN-S , TN-C, IT 230 V	
			TT, TN-S	
2 x 16360		4 x 16360	TT, TN-S , TN-C, IT 230 V	
	16362		TN-C, IT 230 V	
	<u> </u>			

(1) Version without indicator light.

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PRF1/PRF1 Master/PRD1 25r/PRD1 Master surge arresters Type 1 and 2 LV surge arresters

Name of the surge arrester	No. of poles	Width	I imp (kA Impulse		I max (kA) (8/20) Maximal discharge current	In - kA Rated discharge current	Up - kV Degree of protection	Un - V Nominal line voltage	Uc - V Maximum steady state voltage	Part no.
Fixed surge arrester		18 mm ways	Surge arrester	Surge arrester + disconnector						
Combi PRF1 Ty	ype 1									
Combi PRF1 1P+N 260 V	1P+N	5	-	25/50 N/PE	-	35/50 N/PE	1.3	230	260	16626
Combi PRF1 3P+N 260/440 V	3P+N	10	-	25/50 N/PE	-	35/50 N/PE	1.3	230 / 400	260	16629
PRF1 Ty	ype 1									
PRF1 1P 260 V	1P	1	35	25	-	35	1.3	230	260	16621
PRF1 1P 440 V	1P	1	35	25	-	35	1.5	230	350	16622
PRF1 N/PE 50 1P 260 V	Neutral	1	50	50	-	50	1.5	230	260	16623
PRF1 N/PE 100 1P 260 V	Neutral	2	100	100	-	100	1.5	230	260	16624
PRF1 1P+N 440 V	1P+N	2	35/50 N/PE	25/50 N/PE	-	35/50 N/PE	1.5	230	350	16625
PRF1 3P 440 V	3P	3	35	25	-	35	1.5	230 / 400	350	16627
PRF1 3P+N 440 V	3P+N	5	35/100 N/PE	25/100 N/PE	-	35/100 N/PE	1.5	230 / 400	350	16628
PRF1 12.5r Ty	ype 1 + [2								
PRF1 12.5r 1P+N 350 V	1P+N	2	12,5/50 N/PE	12,5/50 N/PE		25	1.5	230	350	16632
PRF1 12.5r 3P 350 V	3P	4	12,5		50	25	1.5	230 / 400	350	16633
PRF1 12.5r 3P+N 350 V	3P+N	4	12,5/50 N/PE		50	25	1.5	230 / 400	350	16634
PRF1 Master Ty	ype 1									
PRF1 Master 1P 440 V	1P	2	50	35	-	50	1.5	230	440	16630
Withdrawable sur	ge arres	ter								
PRD1 25r T	ype 1 +	2								
PRD1 25r 1P	1P	2	25		40	25	1.5	230	350	16329
PRD1 25r 1P+N	2P	3	25/100 N/PE		40	25	1.5	230/400	350	16330
PRD1 25r 3P	3P	6	25		40	25	1.5	230	350	16331
PRD1 25r 3P+N	4P	8	25/100 N/PE		40	25	1.5	230/400	350	16332
PRD1 Master T	ype 1									
PRD1 Master 1P	1P	2	25		-	25	1.5	230	350	16360
PRD1 Master 1P+N	2P	4	25/100 N/PE		-	25	1.5	230/400	350	16361
PRD1 Master 3P	3P	6	25		-	25	1.5	230	350	16362
PRD1 Master 3P+N	4P	8	25/100 N/PE		-	25	1.5	230/400	350	16363
Spare cartridge										
C1 Master-350	1P		-	-	-	25	1.5	-	350	16314
C1 25-350	1P		-	-	-	25	1.5	-	350	16315
C2 40-350	1P		-	-	-	20	1.4	-	350	16316
C1 Neutral-350	1P		-	-	-	-	-	-	350	16317

Name of the surge arrester	Spare cartridge						
	Phase		Neutral				
	Type 1	Type 2					
PRD1 25r							
PRD1 25r 1P	16315	16316	-				
PRD1 25r 1P+N	16315	16316	16317				
PRD1 25r 3P	3 x 16315	3 x 16316	-				
PRD1 25r 3P+N	3 x 16315	3 x 16316	16317				
PRD1 Master							
PRD1 Master 1P	16314	-	-				
PRD1 Master 1P+N	16314	-	16317				
PRD1 Master 3P	3 x 16314	-	-				
PRD1 Master 3P+N	3 x 16314	-	16317				
Dimonsions							

Technical Section 9

PRF1/PRF1 Master/PRD1 25r/PRD1 Master surge arresters Type 1 and 2 LV surge arresters

		Combi PRF1	PRF1	PRF1 12.5r	PRF1 Master	PRD1 25r	PRD1 Master
		Combi PRF1	PRF1	PRF1 12.5r	PRF1 Master	PRD1 25r	PRD1 Master
Operating frequency		50/60 Hz	50/60 Hz	50 Hz	50/60 Hz	50 Hz	50 Hz
Degree of protection	Front panel	IP40	IP40	IP40	IP40	IP40	IP40
	Terminals	IP20	IP20	IP20	IP20	IP20	IP20
	Impacts	IK05	IK05	IK05	IK05	IK05	IK05
Response time		≤1 μs	≤1 μs	≤25 ns	≤1 μs	≤ 25 ns	≤ 100 ns
End-of-life indication		Green: correct operation	16621. Green: correct operation	Green: correct operation	-	White: correct operation	White: correct operation
		Off: at end of life	16621. Off: at end of life	Red: at end of life	-	Red: at end of life	Red: at end of life
	Remote notification	-	-	1 A/250 V AC	-	1 A/250 V AC. 0.2 A/125 V DC	1 A/250 V AC. 0.2 A/125 V DC
By tunnel terminal	Rigid cable	1025 mm ²	25 mm ²	1035 mm ²	1050 mm ²	2.535 mm ²	1035 mm ²
	Flexible cable	1025 mm ²	16 mm ²	1025 mm ²	1035 mm ²	2.525 mm ²	1025 mm ²
Operating temperature		-40°C to +85°C	-40°C to +85°C	-25°C to +60°C	-40°C to +85°C	-25°C to +60°C	-25°C to +60°C
Standards	Type 1	IEC 61643-1 T1. EN 61643-11	IEC 61643-1 T1. EN 61643-11	IEC 61643-1 T1. EN 61643-11	IEC 61643-1 T1. EN 61643-11	IEC 61643-1 T1. EN 61643-11	IEC 61643-1 T1. E 61643-11
	Type 2	-	-	IEC 61643-1 T2. EN 61643-11	-	IEC 61643-1 T2. EN 61643-11	-
Certification		KEMAKEUR, CE	KEMAKEUR, CE	NF, KEMAKEUR, OVE, GOST, CE	KEMAKEUR, CE	KEMAKEUR, CE	CE

Туре	limp:	Isc: prospective	lsc: prospective short-circuit current at the installation point							
	impulse current	6	k A	10 k/	A 15	kA	25 kA	36 I	k A 50	kA
Combi PRF1	25 kA	Integrated	-			'	'			
PRF1	25 kA	D125 curve D	-							
PRF1 12.5r	12.5 kA	C120N 80 A curve C		C	C120H 80 A curve C or NG125N 80 A curve C	NG125N 80 A curve C	Contact	Contact us		
PRF1 Master	35 kA	Compact NSX160E	Compact NSX160B 160 A TM			Compac NSX160F		Compact NSX160N 160 A		
PRD1 25r	25 kA	NG125N 80 A curve C			-					
PRD1 Master	25 kA	NG125N 80 A curve	e C				NG125H curve C		NG125L 80 A curve C	



16641

Accessories		
Туре	Number of poles	Part number
2P Wiring comb busbars	2	16641
3P Wiring comb busbars	3	16642
4P Wiring comb busbars	4	16643
6P Wiring comb busbars	6	16644
8P Wiring comb busbars	8	16645
200 mm flexible cable (PRF1	Master)	16646

PRD-DC surge arresters Withdrawable surge arresters Type 2 for direct current

Function



PRD 40r-600DC



PRD 40r-1000DC

The PRD-DC direct current surge arrester is designed to protect photovoltaic panels and the "DC" input to the inverter from overvoltages due to a lightning strike.

It should be installed in a switchboard inside the building. If the switchboard is located outside, it must be weatherproof.

Withdrawable PRD-DC surge arresters allow damaged cartridges to be replaced quickly. They offer remote reporting of the "cartridge must be changed" message.

Standards

- IEC 61643-1 T2
- EN 61643-11 Type 2.

Certifications

 ϵ

Catalogue nur	mbers											
Internal diagram	Imax (kA) Maximum discharge current	In (kA) Nominal discharge current	Up (k) Prote	/ DC) ction le	evel	Un (V CC) Nominal mains voltage	Maxin	DC) num st voltage		U _{oc stc} (V DC) Voltage in open circuit	Width in module of 9 mm	Part number
			CM	L-/≟	DM L+/L-		CM	L-/ <u></u>	DM L+/L-			
PRD 40r-600D	C		LT/ =	L-/ =	LT/L-		LT/ =	L-/ =	LT/L-			
* * 14 * * 12 0 11	40	15	1.6	1.6	2.8	600	600	600	840	600	6	16434
PRD 40r-1000	DC											
14	40	15	3.9	3.9	3.9	1000	600	600	1230	1000	6	16436

CM: Common Mode

Replacement cartridges







Туре	Replacement cartridges for	Part number
C 40-460	PRD 40r-1000DC	16684
C 40-340	PRD 40r-600DC	16685
C neutral-340	PRD 40r-600DC	16691

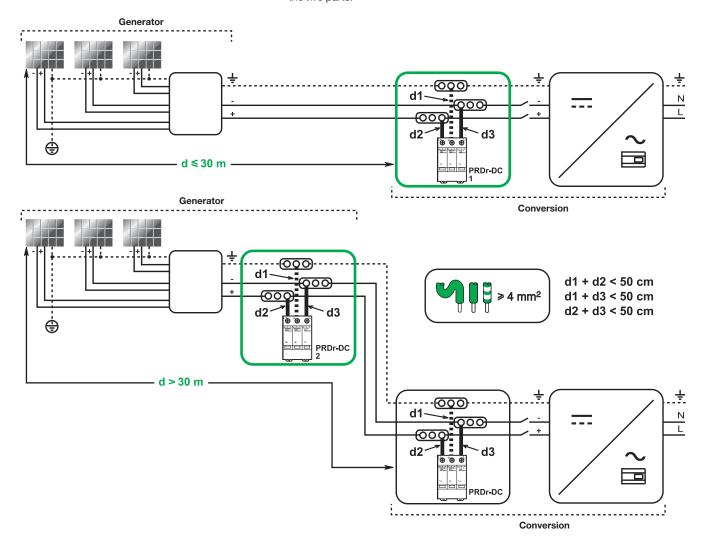
Replacement cartridges

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Operating frequency	Direct current		
Response time	< 25 ns		
Type of connection	Tunnel terminals, 2.	5 to 35 mm ²	
Signalisation de fin de vie	By the cartridges	White	Operational
		Red	At end of life
	By the NO/NC remo	ote indication	contact 250 V AC / 0.25 A
Operating temperature	-25°C to +60°C		
Storage temperature	-40°C to +85°C		
Protection class	IP at the terminals: I	IP20	
	IP on the front pane	l: IP20	
	IK03		
Weight (g)	PRD 40r-600DC: 40 PRD 40r-1000DC: 4		

Connection

Depending on the distance between the "generator" part and the "conversion" part, it may be necessary to install two surge arresters or more, to ensure protection of each of the two parts.



PRD surge arresters Type 2 or 3 LV withdrawable surge arresters

PRD withdrawable surge arresters allow quick replacement of damaged cartridges.



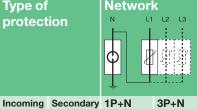
1P+N

Rated discharge
current (Imax) /
Nominal
discharge current
(In)



PRD65

PRD40





		16555			
		16556			
16557					
			16442		
				16558	
				16443	
	16559				
					16659
		16561			

3P

4P

40 k	KA/	15	KA
Jiah	rick	los	رما امر

65 kA / 20 kA Very high risk level (strongly exposed site)

High risk level

16562

16567				
		16444		
		16667		
			16445	
			16568	
			16563	
	16564			
	16569			
				16597
				16664
				16669

20 kA / 5 kA

Medium risk level

PRD20

			10091
			16664
			16669
	16571		
16672			
16572			



3P+N

8 KA / 2.5 KA
Secondary protection:
placed near the loads to be
protected when they are at
distance of more than 30 m

arrester

from the incoming surge

PRD8

				10070		
	16674					
	16574					
					16599	
					16673	
		16576				
16677						
16577						
			16448			
				16449		
				16578		
	16679					
	16579					
					16678	
					16680	

16446

16447 16573



Cartridge

Spare	cartridges	
Туре	Spare cartridges for	Part Number
C 65-460	PRD65r IT	16682
C 65-340	PRD65r	16681
C 40-460	PRD40r IT	16684
C 40-340	PRD40, PRD40r	16685
C 20-460	PRD20r IT	16686
C 20-340	PRD20, PRD20r	16687
C 8-460	PRD8r IT	16688
C 8-340	PRD8, PRD8r	16689
C neutral	All products	16691

Surge arrester/circuit breaker association					
Type of surge arrester	Associated circuit breaker				
PRD65	Curve C 50 A				
PRD40	Curve C 40 A				
PRD20	Curve C 25 A				
PRD8	Curve C 20 A				

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	Earthing system	Transfer	arrester in n	Width in mod. of 9 mm	Up - (kV) Voltage) protection level		Un - (V) Rated voltage	Uc - (V) Maximum continuous operating voltage		
					CM*		DM*	network	CM*		DM*
					L/÷	N/≟	L/N		L/÷	N/≟	L/N
			PRD65		L/÷	IN/÷	L/N		L/÷	IN/ =	L/N
lπ		•	PRD65r 1P IT	2	≤2	I.	I_	230	460	1_	1_
т.	TAI	-	PRD65r 1P			_	_	230	340		
	& TN-S	•	PRD65r 1P+N	4	≤ 1.5	- ≤1.5	- ≤1.5	-	340	260	340
	k IIV-5			4	-		₹ 1.5		-		340
TN		-	PRD65r 2P		≤1.5	≤ 1.5	-		340	340	-
IT			PRD65r 3P IT	6	≤2	-	-	230/400	460	-	-
TN-0			PRD65r 3P		≤1.5	-	-		340	-	-
	&TN-S		PRD65r 3P+N	8	-	≤ 1.5	≤ 1.5		-	260	340
TN-S	S	•	PRD65r 4P		≤ 1.5	≤ 1.5	-		340	340	-
			PRD40								
TT &	λ TN		PRD40r 1P	2	≤ 1.4	-	-	230	340	-	-
TT &	λ TN		PRD40 1P		≤ 1.4	-	-		340	-	-
	&TN-S		PRD40r 1P+N	4	-	≤ 1.4	≤1.4		-	260	340
TT &	&TN-S		PRD40 1P+N		-	≤1.4	≤1.4		-	260	340
TN			PRD40r 2P		≤ 1.4	≤ 1.4	-		340	340	-
TN			PRD40 2P		≤ 1.4	≤1.4	-		340	340	-
TN-0			PRD40r 3P	6	≤1.4	-	-	230/400	340	-	-
TN-0	С		PRD40 3P		≤1.4	-	-		340	-	-
IT		-	PRD40r 3P IT		≤2	-	-		460	-	-
	&TN-S		PRD40r 3P+N	8	-	≤1.4	≤1.4		-	260	340
	&TN-S		PRD40 3P+N		-	≤1.4	≤ 1.4		-	260	340
IT			PRD40r 4P IT		≤2	≤2	-		460	460	-
TN		•	PRD40r 4P		≤1.4	≤1.4	-		340	340	-
TNS	3		PRD40 4P		≤1.4	≤ 1.4	-		340	340	-
			PRD20								
TT &	λTN		PRD20 1P	2	≤ 1.1	-	-	230	340	-	-
TT &	&TN-S		PRD20r 1P+N	4	-	≤1.4	≤ 1.1		-	260	340
TT &	&TN-S		PRD20 1P+N		-	≤1.4	≤ 1.1			260	340
TN			PRD20 2P		≤1.1	≤ 1.1	-		340	340	-
TN-0	С		PRD20 3P	6	≤ 1.1	-	-	230/400	340	-	-
IT			PRD20r 3P IT		≤1.6	-	-		460	-	-
	&TN-S		PRD20r3P+N	8	-	≤ 1.4	≤ 1.1		-	260	340
TT &	&TN-S		PRD20 3P+N		-	≤ 1.4	≤ 1.1		-	260	340
IT			PRD20r 4P IT		≤1.6	≤1.6	-		460	460	-
TN-S	S		PRD20 4P		≤1.1	≤1.1	-		340	340	-
			PRD8 (1)		Type 2 / Typ	e 3					
TT &			PRD8 1P	2	≤1/≤1	-	-	230	340	-	-
	&TN-S		PRD8r 1P+N	4	-	≤1.4/≤1	≤1/≤1.1		-	260	340
	&TN-S		PRD8 1P+N		-	≤1.4/≤1	≤1/≤1.1		-	260	340
TN			PRD8 2P		≤1/≤1	≤1/≤1	-		340	340	-
TN-0	С		PRD8 3P	6	≤1/≤1	-	-	230/400	340	-	-
IT			PRD8r 3P IT		≤1.4/≤1.6	-	-		460	-	-
	&TN-S		PRD8r 3P+N	8	-	≤1.4/≤1	≤1/≤1.1		-	260	340
	&TN-S		PRD8 3P+N		-	≤1.4/≤1	≤1/≤1.1		-	260	340
IT			PRD8r 4P IT		≤1.4/≤1.6	≤1.4/≤1.6	-		460	460	
TN-S	S		PRD8 4P		≤1/≤1	≤1/≤1	-		340	340	-

^{*}CM: common mode (phase to earth and neutral to earth).
*DM: differential mode (phase to neutral).
(1) Uoc: combinated waveform voltage: 10 kV.

Technical data		
Operating frequency		50/60 Hz
Operating voltage		230/400 V AC
Permanent operating current (Ic)		< 1 mA
Response time		< 25 ns
End of life indication:	White	In operation
by mechanical indicator	Red	At end of life
End of life remote indication		By contact NO, NC 250 V / 0.25 A
Type of connection terminals		Tunnel terminals, 2.5 to 35 mm ²
Operating temperature		-25°C to +60°C
Standards		IEC 61643-1 T2 and EN 61643-11 Type 2

PF surge arresters Type 2 or 3 LV surge arresters

The PF multi-pole single-piece surge arrester range is adapted for earthing systems: TT, TN-S, TN-C. Type 2 surge arresters are tested with a 8/20 μs current

Type 3 surge arresters are tested with a 12/50 µs and 8/20 µs combined wave.

Each surge arrester in the range has a specific application:

- Incoming protection (type 2):
- ☐ The PF65(r) is recommended for a very high risk level (strongly exposed site)
- ☐ The PF40(r) is recommended for a high risk level
- ☐ The PF20 is recommended for a medium risk level
- Secondary protection (type 2 or 3):
- ☐ The PF8 ensures secondary protection of loads to be protected and is placed in cascade with the incoming surge arresters. This surge arrester is required when the loads to be protected are at a distance of more than 30 m from the incoming surge arrester.

The PF surge arresters with "r" indication have remote transfer of the information: "surge arrester to be replaced".

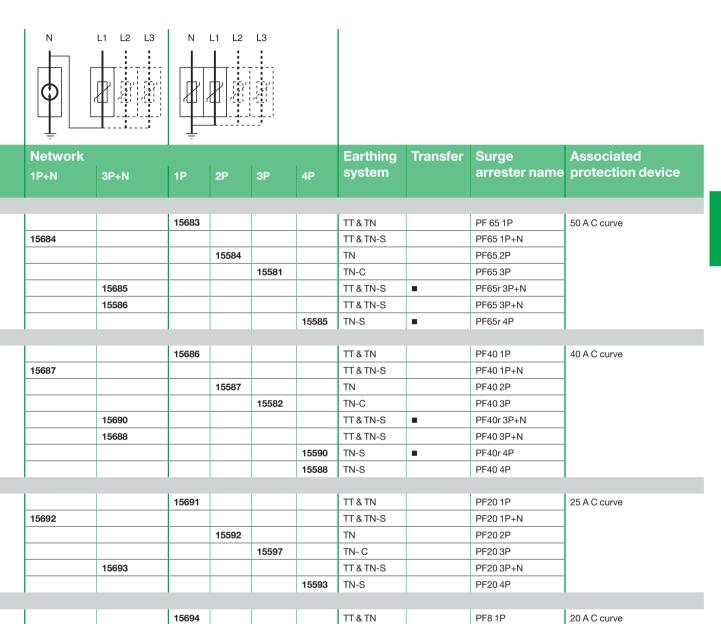




1P+N.



3P+N.



TT & TN-S

TT & TN-S

TN

15596

TN-C

TN-S

15595

15598

PF8 1P+N

PF8 2P

PF8 3P

PF8 3P+N PF8 4P

Technical	Dimensions
Section 9	Section 10

15696

15695

PRC, PRI surge arresters

Protection against overvoltages related to lightning strikes.

Function

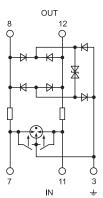
Analogue telephone line protection: the PRC surge arrester wired in series to the private installation input protects the telephones, the PABX, the modems (including ADSL), etc.

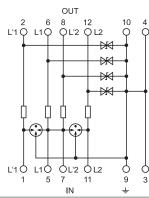
Protection for 2 low-current lines without common potential or 4 lines with common reference potential: the PRI protects the measuring instrument and PLC «sensor» inputs and the DC power supply inputs up to 53 V and AC power supply inputs up to 37 V.

The input current must not exceed 300 mA.









Line L1	Cables 7-8	Line L1	Cables 5-6
Line L2	Cables 11-12	Line L2	Cables 11-12
_	_	Line L'1	Cables 1-2
_	_	Line L'2	Cables 7-8
÷	Cable 3	÷	Cables 3-4-9-10
IN	Ligne side	IN	Ligne side
OUT	Protected side	OUT	Protected side

	PRC	PRI	
Mains voltage (Un)	< 130 V AC	48 V DC	
Function			
Analogue telephone system	•	-	
Telephone transmitter	•	_	
Digital telephone system	-		
Automation network	_	•	
VLV load power supply (1248 V)	_	•	
xDSL compatibility	•	_	

Technical data

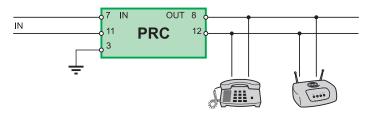
		PRC	PRI	
Part number		16337	16339	
Number of protected	lines	2	2	
Width in 9 mm module	es	2	2	
Test category	IEC/VDE	C1, C2, C3, D1, B2	C1, C2, C3, D1, B2	
Maximum continuous	voltage (Uc)	180 V DC, 130 V AC	53 V DC, 37 V AC	
Limitation voltage (Up)	300 V	70 V	
Rated discharge curre	ent (8/20) (In)	10 kA	10 kA	
Maximum discharge o (Imax)	current (8/20)	18 kA	10 kA	
Response time		< 500 ns	≤1 ns	
Nominal impulse curr	ent	100 A	70 A	
Rated current (I _N)		450 mA (up to 45°C)	300 mA (up to 45°C)	
Series resistor		2.2 Ω	4.7 Ω	
End-of-life informatio	n by	Loss of dialling tone	Loss of transmission	
Weight (g)		25	65	
Operating temperatur	e	-40°C to +85°C	-40°C to +85°C	
Température de stockage		-25°C to +60°C	-25°C to +60°C	
Protection class	at terminals	IP20	IP20	
	on the front panel	IP40	IP40	
	IK	05	05	

Technical Section 9

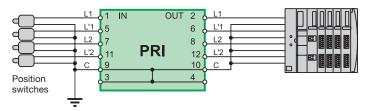
Connection

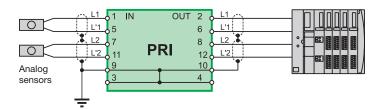


PRC

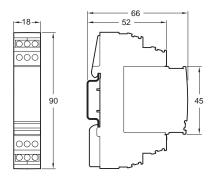


PRI





Dimensions



Circuit protection

DPN N

Curves: B and C

EN 60 898 6000

Functions

The circuit-breaker DPN N control and protect against:

- Circuit overcurrents in tertiary and industrial fi nal distribution with TT or TNS earthing systems, C curve
- Overcurrents for very long cables, B curve

Description

Technical data common to DPN N circuit-breakers

- Voltage rating: 230 V AC
- Breaking capacity:
- □ EN 60898:
 - Rated breaking capacity (Icn): 6 kA
- Rated residual breaking and making capacity (phase/earth): 6 kA
 Ratings: 1 to 40 A at 30 °C
- Fast closing
- Positive contact indication
- Durability (O-C cycle):
- ☐ Mechanical: 20000
- ☐ Electrical:
 - < 20 A: 20000
 - 25 A: 15000
 - 32 A: 10000
 - 40 A: 6000
- Environment:
- ☐ Tropicalisation: treatment 2 (relative humidity: 95 % at 55 °C)
- Weight: 120 g
- Connection: tunnel terminals for 10 mm² fl exible or 16 mm² rigid cables (in compliance with EN 50027)
- Approvals: KEMA KEURB

B curve

■ Tripping curve: the magnetic trip units operate between 3 and 5 In

■ Tripping curve: the magnetic trip units operate between 5 and 10 In

The same auxiliary functions as the C60 circuit-breaker can be added to the DPN.

- Indication:
- ☐ OF: DPN N ON-OFF position
- $\hfill \square$ SD: tripped position due to fault
- Remote tripping:
- ☐ MX + OF: shunt tripping
- ☐ MN: undervoltage tripping



B curve DPN N			
Туре	Rating (A)	Part numbers	Width in 18mm mods
1P + N	4	19249	1
N 1	6	19250	1
l *	10	19252	1
F-7	13	19253	1
) \	16	19254	1
15	20	19255	1
1 <i>7</i>	25	19256	1
N 2	32	19257	1
	40	19258	1



	40	19258	1	
C curve DPN N				
1P + N	1	19260	1	
N 4	2	19261	1	
N 1 I .I.	3	19262	1	
,1 , *	4	19263	1	
7-7	6	19264	1	
1 5	10	19266	1	
>	13	19267	1	
N 2	16	19268	1	
	20	19269	1	
	25	19270	1	
	32	19271	1	
	40	19272	1	

Technical Section 9

Circuit protection

DPN N Vigi 30 mA instantaneous, AC \sim class EN 60898/EN 61009 $\frac{6000}{3}$



Functions

The DPN N Vigi self-contained residual current device carries out complete protection of final circuits (overcurrents and insulation faults):

- Protection of persons against indirect contact (30 or 300 mA)
- Protection of installations against fire hazards (300 mA)
- Additional protection of persons against direct contact (30 mA)

The 30 mA version is selective with the ID or Vigi 300 mA S selective residual current devices installed upstream.

It is immune to nuisance tripping due to transient overvoltages (lightning, switchgear switching on the network, etc.) Λ

Description

Technical data

- Voltage rating: 230 V AC
- Breaking capacity:
- □ EN 60898 / EN 61009:
- Rated breaking capacity (Icn): 6 kA
- Rated residual breaking and making capacity (phase/earth): 6 kA
- Ratings: 4 to 40 A at 30 °C
- Fast closing
- Positive contact indication
- Earth fault visualised on front face
- Durability (O-C cycles):
- □ Mechanical: 20000
- □ Electrical:
- <20 A 20000
- 25 A 15000
- 32 A 10000
- 40 A 6000
- Environment:
- ☐ Tropicalisation: treatment 2 (relative humidity: 95 % at 55 °C)
- Weight: 190 g
- Connection: tunnel terminals for 10 mm² flexible or 16 mm² rigid cables (in compliance with EN 50027)
- Approvals: KEMA KEUR

C curve

■ Tripping curve: the magnetic trip units operate between 5 and 10 ln

Auxiliaries

The same auxiliary functions as the C60 circuit breaker can be added to the DPN N Vigi.

- Indication:
- □ **OF**: DPN N Vigi ON-OFF position
- □ SD: tripped position due to fault
- Remote tripping:
- □ MX + OF: shunt tripping
- □ MN: undervoltage tripping

1 protected pole + switched neutral

Туре	Width in 18mm SP ways	Sens. (mA)	Rat. (A)	Part number
N + 1P	2	30	6	19661
N 1P			10	19663
□ Î.¥Î			16	19665
-//			20	19666
E-1			25	19667
			32	19668
			40	19669
N 2				

C120H circuit breakers B, C and D curves Ratings 10 - 125A, breaking capacity 15kA









Applications

C120 MCBs provide high levels of current capacity, while maintaining a breaking capacity of 15kA. Available with a wide range of add on earth leakage and control accessories with B, C, and D type characteristics and 1 - 4 poles.

- Protection of cables against overloads and short circuits in final distribution
- Manual control and isolation
- Earth leakage protection when combined with a Vigi to BS EN 61009
- Remote tripping, indication, by adding auxiliaries common to the entire C60/C120 range

B curve

- Applications: Protection and control of circuits against overloads and short circuits in applications with general load characteristics
- Tripping characteristics: BS EN 60898 Type B. Magnetic setting between 3 and 5 In

C curve

- Applications: Protection and control of circuits against overloads and short circuits in applications with moderate inrush currents
- Tripping characteristics: BS EN 60898 Type C. Magnetic setting between 5 and 10 In

D curve

- Applications: Protection and control of circuits against overloads and short circuits in applications with high inrush currents
- Tripping characteristics: BS EN 60898 Type D. Magnetic setting between 10 and 14 In

Technical data

Current rating:	10 - 125A
Maximum voltage rating Ue:	440Vac
Insulation voltage Ui:	500V
Impulse withstand	6kV
voltage Uimp:	
Complies with:	BS EN 60898 and BS EN 60947-2
Service breaking capacity:	lcs = 50% lcu
Positive contact indication	
Fast closing ensures simultaneo	ous closing of poles
Electrical durability:	≤63A: 10,000 cycles (O-C)
	80 - 125A: 5,000 cycles (O-C)
Limitation class:	3
Mechanical durability:	20,000 cycles (O-C)
Connection:	Flexible cables: 1.5 - 35mm ²
	Rigid cables: 1 - 50mm ²
	Tightening torque: 3.5Nm
Terminals ensure:	Degree of protection IP2X
	Clamping of wide cross section cables
	Automatic guiding of cable into the correct position
Markers:	4 marker clips next to the upstream terminal
	Label holder on handle (2, 3 and 4 pole)
Degree of pollution:	3

C120H circuit breakers B, C and D curves Ratings 10 - 125A, breaking capacity 15kA

Breaking capa	acity: BS EN	60898	
Туре	Voltage (V)	Breaking capacity Icn (A)	
1, 2, 3, and 4P	230 - 400	15000	

Breaking capaci	ty: BS EN 60	947-2
Туре	Voltage (V)	Breaking capacity Icn (A)
1P	130	30000
	230 - 240	15000
	400 - 415	4500 (1)
2, 3 and 4P	230 - 240	30000
	400 - 415	15000
	440	10000

(1) Breaking capacity for 1 pole with IT isolated neutral system (case of double fault).

Weight:		
Pole	Grams	
1	205	
2	410	
3	615	
4	820	

C120H circuit breakers B, C and D curves Ratings 10 - 125A, breaking capacity 15kA

Ratings (A)	1P	Width in 18mm SP ways	2P	Width in 18mm SP ways	3P	Width in 18mm SP ways	4P	Width in 18mm SP ways
C120H	Type B	curve mir	niature o	circuit bre	aker			
10	18394	1.5	18405	3	18416	4.5	18427	6
16	18395	1.5	18406	3	18417	4.5	18428	6
20	18396	1.5	18407	3	18418	4.5	18429	6
25	18397	1.5	18408	3	18419	4.5	18430	6
32	18398	1.5	18409	3	18420	4.5	18431	6
40	18399	1.5	18410	3	18421	4.5	18432	6
50	18400	1.5	18411	3	18422	4.5	18433	6
63	18401	1.5	18412	3	18423	4.5	18434	6
80	18402	1.5	18413	3	18424	4.5	18435	6
100	18403	1.5	18414	3	18425	4.5	18436	6
125	18404	1.5	18415	3	18426	4.5	18437	6

Note: These products are not suitable for use with Isobar 4 connection system.

C120H	H Type C	curve n	niniature c	ircuit	breaker				
10	18438	1.5	18449	3	18460	4.5	18471	6	
16	18439	1.5	18450	3	18461	4.5	18472	6	
20	18440	1.5	18451	3	18462	4.5	18473	6	
25	18441	1.5	18452	3	18463	4.5	18474	6	
32	18442	1.5	18453	3	18464	4.5	18475	6	
40	18443	1.5	18454	3	18465	4.5	18476	6	
50	18444	1.5	18455	3	18466	4.5	18477	6	
63	18445	1.5	18456	3	18467	4.5	18478	6	
80	18446	1.5	18457	3	18468	4.5	18479	6	
100	18447	1.5	18458	3	18469	4.5	18480	6	
125	18448	1.5	18459	3	18470	4.5	18481	6	

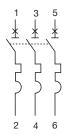
Note: These products are not suitable for use with Isobar 4 connection system.

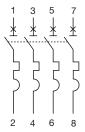
C120H	Type D	curve r	niniature c	ircui	t breaker				
10	18482	1.5	18493	3	18504	4.5	18515	6	
16	18483	1.5	18494	3	18505	4.5	18516	6	
20	18484	1.5	18495	3	18506	4.5	18517	6	
25	18485	1.5	18496	3	18507	4.5	18518	6	
32	18486	1.5	18497	3	18508	4.5	18519	6	
40	18487	1.5	18498	3	18509	4.5	18520	6	
50	18488	1.5	18499	3	18510	4.5	18521	6	
63	18489	1.5	18500	3	18511	4.5	18522	6	
80	18490	1.5	18501	3	18512	4.5	18523	6	
100	18491	1.5	18502	3	18513	4.5	18524	6	
125	18492	1.5	18503	3	18514	4.5	18525	6	

Note: These products are not suitable for use with Isobar 4 connection system.









Vigi C120 modules Add on residual current devices for use with C120 MCBs Standard and si type

Common function

- The protection of electrical installations against earth faults
- The protection of persons against indirect contact: medium sensitivities (300, 500, 1000mA)
- Supplementary protection of persons against accidental direct contact: high sensitivity (30mA)

The C120 residual current device complies with BS EN 61009. It is equipped with a locating device that ensures the correct rating and number of poles. The technical data of C120 circuit breakers when combined with Vigi modules

The technical data of C120 circuit breakers when combined with Vigi modules remain unchanged and the circuit breakers remain compatible with indication or control auxiliaries.

Trip sensitivity

- AC class Tripped by sinusoidal AC currents whether they are quickly applied or rise slowly
- A class A ⚠ class: ensures tripping with a DC component current. Tripped by sinusoidal AC currents as well as by pulsed DC currents whether they are quickly applied or rise slowly

Trip type

Instantaneous

Provides a trip upon reaching threshold (no intentional time delay).

Selective 5

Provides discrimination with down stream device by introducing an intentional time delay. Down stream device must be instantaneous with a sensitivity of 1/2 the upstream device.

si

Provides continuity of supply on circuits with a disturbed supply network. Used where there is a high risk of nuisance tripping due to:

- Lightning strikes
- IT earthing systems
- Switched electronic ballasts

Desensitised by:

- Harmonics or high frequencies
- DC components

Combination of earth leakage modules with circuit breakers



C120 circuit breaker



Vigi C120 module



C120 residual current device

Vigi C120 modules Add on residual current devices for use with C120 MCBs Standard and si type

Technical data

Common

The Vigi C120 module incorporates the residual current relay and toroid in a case. Its earth leakage module is electro-mechanical. It functions without an auxiliary power supply source and thus has a very wide operating range

Protected against nuisance tripping due to transient overvoltages (lightning strike, switchgear switching on the network, etc.)

Breaking and making capacity upon short circuit is equal to the breaking capacity

Instantaneous or Selective S trip units

Reinforced electromagnetic compatibility

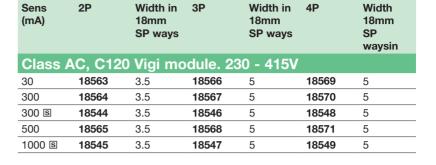
Standard type

AC class:	Standard, 50 - 60Hz	
8/20ms impulse withstand:	Instantaneous: 250A peak	
	Selective: 3kA peak	
Impulse withstand:	Instantaneous: 3kA peak	
	Selective: 5kA peak	
Remote tripping:	Possible using an MX or MN release on circuit breaker	
Connection:	Identical to C120 circuit breakers:	
	Flexible cables: 1.5 - 35mm ²	
	Rigid cables: 1 - 50mm²	
	Tightening torque: 3.5Nm	
Fault indication by means of	f a red strip on the resetting handle	
Resetting the Vigi	Either using the circuit breaker handle	
module, at user's	Independently of the circuit breaker	
convenience:		
Test button	On front face for local operation check	
Width of C120 residual curre	ent device + Vigi module: (in number of 18mm SP ways)	

	2P	3P	4P
	6.5 (3+3.5)		11 (6+5)
Weight (g):	325	500	580

Vigi C120 modules Add on residual current devices for use with C120 MCBs AC, A, si class, BS EN 61009



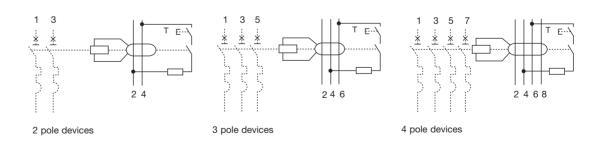




(mA)	2P	18mm SP ways	3P	18mm SP ways	4P	18mm SP waysin
Class A	A, C120	Vigi mod	lule. 230) - 415 V		
30	18572	3.5	18575	5	18578	5
300	18573	3.5	18576	5	18579	5
300 ន	18581	3.5	18584	5	18587	5
500	18574	3.5	18577	5	18580	5
1000 🗉	18582	3.5	18585	5	18588	5



Sens (mA)	2P	Width in 18mm SP ways	3P	Width in 18mm SP ways	4P	Width 18mm SP waysin
Class s	si, C120	Vigi mod	lule. 230	- 415V		
30	18591	3.5	18594	5	18597	5
300	18592	3.5	18595	5	18598	5
300 S	18556	3.5	18558	5	18560	5
500	18593	3.5	18596	5	18599	5
1000 🗉	18557	3.5	18559	5	18561	5



Electrical auxiliaries For DPN, C60 and C120

Applications

■ The TM unit provides remote control of C60 and C120 circuit breakers via an electrical signal. For security or energy management, TM can be used to control lighting motors or heating

For the remote control and status indication of DPN, C60 or C120 MCBs.

- They are mounted to the left of the circuit breaker within a maximum width of 54mm
- Fixed using clips (no tools) onto the left side of the circuit breaker
- Compatible with Vigi modules (fitted to the right side)
- A maximum of 3 indication auxiliaries on the same circuit breaker
- A maximum of 2 changeover auxiliaries (OF+SD/OF) on the same circuit breaker
- A maximum of 2 tripping auxiliaries (MX + OF or MN) on the same circuit breaker
 A maximum of 1 tripping auxiliary (MN) a ar MN or MSU) on the same circuit
- A maximum of 1 tripping auxiliary (MN s or MNx or MSU) on the same circuit breaker



TM remote controls For C60 and C120

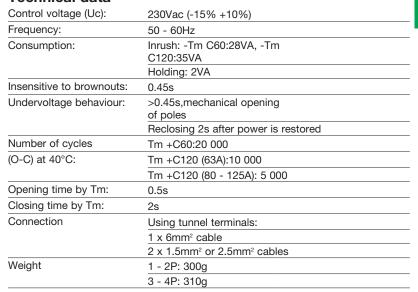
Tm modules allow

- Remote control of C60/C120 circuit breakers (with or without a Vigi module) via a latched order
- Circuit breaker resetting after tripping, while respecting safety rules and regulations in force
- A disconnection selector switch placed on the front panel is used to:
- ☐ Disconnect the remote control
- ☐ Lock the remote controlled circuit breaker in the "open" position (7mm Ø padlock not supplied)
- A mechanical indicator shows the "open" or "closed"status of the Tm remote control

■ Reclosing after a fault:

- ☐ Must be carried out in manual mode, locally after search and clearance of the fault
- □ To enable manual and local resetting, an SD auxiliary switch (part number 26927), cabled in series in the control line of the Tm to module, prevent automatic remote reclosing
- ☐ Remote reclosing is possible provided regulations are complied with:resetting takes place by opening the control circuit for more than 1.5s

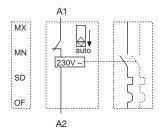
Technical data



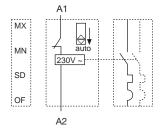
Possible combinations	Voltage (V)	Part number	Width in 18mm SP ways
C60 1 - 2P	230	18310	3.5
C120 1 - 2P	230	18312	3.5

C60 3 - 4P	230	18311	3.5









Electrical auxiliaries For DPN, C60 and C120



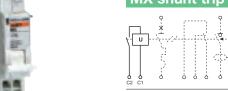




MX + OF shunt trip	release			
	Control voltag	ge	Width in 18mm SP ways	Part number
	(V AC)	(V DC)		
φ φ	100-415	100-130	1	26946
*	48	48	1	26947
	12/24	12/24	1	26948
5 약선	Disconnects th	ne MCB when a volta	ge is applied. Indicati	ion of tripping and fitted

with changeover contact for indication and self breaks control circuit allowing it

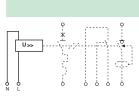




MSU

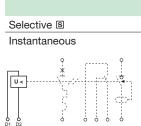
}	48	1	26477
2/24	12/24	1	26478





	Width in 18mm SP ways	Part number
C)		
	1	26979
	1	26479
	C)	SP ways





MN undervoltage r	elease			
	Control vo	oltage	Width in 18mm SP ways	Part number
	(V AC)	(V DC)		
Selective S	220-240		1	26963
Instantaneous	220-240		1	26960
φ φ	48	48	1	26961
*	115 (400H:	z)	1	26959
U<	Disconnec	ts the MCB whe	en a voltage is removed.	

MNx release for B



Ph + N	
U V X	00000

Г	with opening		
	230	1	26969
	230 (C60)	1	26977

* For use with C60 only.

Disconnects the MCB when the normally closed push button contact is opened. Does not trip in the event of power supply failure.

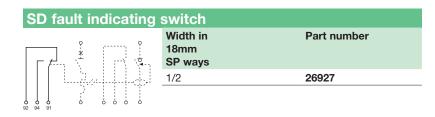
Ph Ph	
W ×	·····

400	1	26971
400 (C60)	1	26991

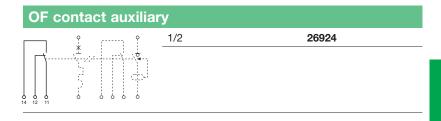
Technical Section 9

Electrical auxiliaries For DPN, C60 and C120

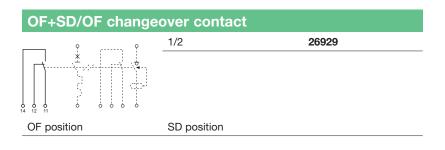












Protection against Accessories overloads and short For C60 and C120 circuits



Padlocking facility		
Breaker	Quantity	Part number
C60	Pack of 5	MGLA
C120	Pack of 2	27145



Screw shield		
Breaker	Quantity	Part number
C60	Sealable and dividable 2 x strips of 4	26981
C60 Vigi	Sealable 1P shields 20 off	26982
C120	Sealable and dividable 2 strips of 4	18527



Terminal sh	ield	
Breaker	Pole	Part number
C60 pair	1	26975
·	2	26976
	3	26975
	4	26976 + 26978
C120	1	18526
	2	2 x 18526
	3	3 x 18526
	4	4 x 18526



Insulated sub distribution terminal For 3 x cables up to 16mm ² each		
Breaker	Quantity	Part number
C60>25A	Pack of 4	19091

For 3 x cables up to 16mm² each.



Aluminium cable terminal		
Breaker	Quantity	Part number
C60/C120	Pack of 1	27060

For cables 16 - 50mm².

Accessories For C60 and C120



* Rear connection terminal For cables up to 50mm²		
Breaker	Quantity	Part number
C60	Pack of 2	18528

^{*} Not for use in Isobar 4 distribution boards



Inter-pole barrier		
Breaker	Pole	Part number
C60	Pack of 10	27001



Spacer		
Breaker	Width	Part number
C60>25A	9mm	27062



Replacement cover for vigibloc		
Breaker	Pole	Part number
C60	2	26483
Pack of 5	3	26484
replacements	4	26485

Label holder		
Breaker	Quantity	Part number
C120	Pack of 10 replacements	27150

Protection of motors

P25M circuit breakers



Functions

These ensure the protection of single-phase or three-phase motors with local manual control.

This protection includes:

- Isolation
- Manual control or remote control
- Protection against short circuits (magnetic)
- Protection against overloads (thermal)

Technical data

Compliance with IEC 947-2 and IEC 947-4- 1 standards (association with contactors)
CEBEC, DEMKO, NEMKO, SEMKO, FI. Approvals: Voltage rating (Ue): 690 V CA Insulation voltage (Ui): 690 V Impulse voltage (Uimp): 6 kV Ratings (In): Adjustable from 0.16 to 25 A Thermal tripping: Sensitive to phase failure Ratings (In): adjustable from 0.16 to 25 A Temperature compensation: - 20°C to + 40°C in an enclosure 12 times the In rating (± 20 %) Magnetic trip unit: Breaking capacity as per IEC 947-2 (kA)

P25M circuit breaker:

	Voltage (V)									
	230	240	400	415	440		500		690	
3	lcu kA	lcs %	lcu kA	lcs %	lcu kA	lcs %	lcu kA	lcs %	lcu kA	lcs %
to 1.6				unlimite	ed					
2.5									3	75
4									3	75
6.3					50	100	50	100	3	75
10					15	100	10	100	3	75
14			15	50	8	50	6	75	3	75
18			15	50	8	50	6	75	3	75
23	50	100	15	40	6	50	4	75	3	75
25	50	100	15	40	6	50	4	75	3	75

AC3 electrical durability: 100 000 O-C cycles

Padlocking device on front face

Treatment 2 (relative humidity: 95 % to 55 °C) Tropicalisation: Utilisation temperature: -20...+60 °C **Environment:** Storage: -40...+80 °C P25M 260 Weight (g) Limiter block 130 Connection: Using terminal clamps: 2 x 1 mm² min. Rigid copper cables 2 x 6 mm² max. Flexible copper cables

Limiter block

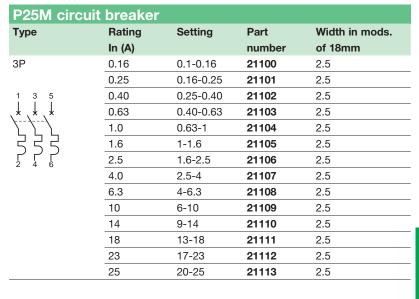
Allows the breaking capacity to be increased up to 100 kA at 415 V. Individual mounting (upstream/downstream) or on a terminal block, part number 21144

Connection: Tunnel terminals for 25 mm² flexible cables

Protection of motors

P25M circuit breakers







Limiter block					
Rating	Part	Width in mods.			
In (A)	number	of 18mm			
63	21115	2.5			

Protection of motors

P25M electrical auxiliaries

Functions

Electrical auxiliaries allow remote tripping or fault or position indication of P25M circuit breakers.

Remote tripping

This can be achieved using an MX or an MN release fixed to the right of the circuit breaker.

MX shunt release

When energized, this device controls tripping and opening of the circuit breaker with which it is associated.

MN udervoltage release

When its supply voltage decreases, this device controls tripping and opening of the circuit breaker with which it is associated.

Remote indication of the P25M circuit breaker position

This is achieved with the help of position or fault tripping contacts, mounted to the left of the device: **P25M circuit breaker "open" or "closed" position contact** It can be obtained using "position contact" blocks:

- O to indicate the "contact closed" position during rest cycles
 F to indicate the "contact open" position during rest cycles

Two versions are available:

- O + F
- C + F

These contacts are fixed to the right of the P25M (two blocks maximum).

Position and fault tripping contact

It can be achieved using "position contact + fault indication contact" blocks:

- SD.O to indicate a contact open fault
- SD.F to indicate a contact closed fault

Four versions are available:

- F + SD.F
- O + SD.O
- F + SD.O
- O + SD.F

These contacts are fixed to the left of the P25M, one "position-fault indication contact" block and one "position contact" block maximum.

Technical data

Rated current (le) of auxiliary contacts under the rated voltage (Ue)

Voltage ra Ue	ating	Current reposition of		Fault cont	act
		AC 15	DC 13	AC 14	DC 13
(V AC)	(V DC)	(A AC)	(A DC)	(A AC)	(A DC)
415	220	2.2	0.5	-	-
240	110	3.3	1.3	-	-
130	60	4.5	3	0.5	0.15
48	48	6	5	1	0.3
24	24	-	6	1.5	1

Technical data common to auxiliaries

Connection:	Terminal clamps for:	
	2 x 1 mm ² min. rigid cables	
	2 x 2.5 mm² max. flexible cables	
	2 x 1.5 mm ² flexible cable with end	

Combination of auxiliaries



Position contact



Position + fault

contact

P25M circuit breaker





MX shunt release

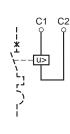
MN undervoltage release

Dimensions Section 10

Protection of motors

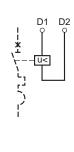
P25M electrical auxiliaries





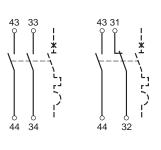
Contact voltage (V AC)	Frequency (Hz)	Part number	Width in modules of 18mm
MX shunt re	lease		
220240	50	21127	1
380415	50	21128	1





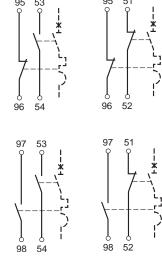
MN under	voltage relea	ase		
220240	50	21129	1	
380415	50	21130	1	





Position contact			
O + C	21117	1/2	
C + C	21116	1/2	





Position and	fault signa	al contact		
	C + SD.C	21118	1/2	
	O + SD.C	21119	1/2	
	C + SD.O	21120	1/2	
	O + SD.O	21121	1/2	

Protection of motors

P25M accessories

Functions

The accessories simplify circuit breaker integration and extend their use.

Comb busbars

- 63 A three-phase
- for fast supply of several P25M
- 54 mm module comb busbars for 2 or 4 P25M feeders
- For more feeders, comb busbars may be combined within the limit of the 63 A maximum current
- Possible mounting of an auxiliary contact between each P25M

Protective cable end

■ Recommended to insulate comb busbar outlets on standby

Terminal block

■ Downstream powering of comb busbars with 25 mm² diameter cables, and housing of the limiter block

Insulated connector

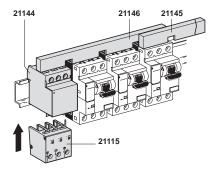
■ Upstream powering of comb busbars or powering of P25M with 25 mm² diameter cables

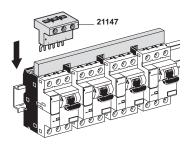
Clip-on terminal markers

- For identification on the front face:
- ☐ Of the circuit breaker (4 markers max.)
- \Box Of the auxiliaries (3 markers max.) See page 4/84.

Insulation enclosure

- For individual installation of a P25M with a block («position contact», «position contact + fault tripping contact») and a release (MX or MN) in an IP 55 sealed double insulation «e» enclosure (sealable cover)
- This enclosure is equipped with neutral and earth strips. Its front face can be fitted with an ON/OFF indicator light (punch-out)
- Punch-outs for 4 x 16 mm diameter cable glands





21133

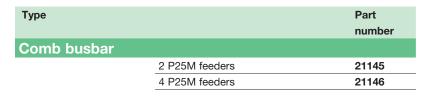
Protection of motors

P25M accessories









Protective cable end 21148

Downstream terminal block 21144

Insulated connector

21147

Enclosure

W = 93, H = 147, D = 100 (mm)



Neon indicator lamp							
Туре	Voltage	Colour	Part				
	(V)		number				
	230240	Green	21140				
		Red	21142				
	400415	Green	21141				
		Red	21143				

Control and command products

	control and indication
	I switches 20 to 125A page 5/
	BP pushbuttons page 5/
	V indicator lights page 5/
	TR transformerspage 5/
	SO/RO bells and buzzers page 5/
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00//1/	STI fuse holderspages 5/
	CM linear selector switches page 5/1
	CM rotary selector switches
	XB device holder page 5/1
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Remot	e controlpages 5/16 to 5/3
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	CT+ contactor high performance page 5/1
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	RLI/ERL changeover relays page 5/2
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	16A TL and TLI impulse relays page 5/3
	32A TL impulse relay page 5/3
	TLc, TLM and TLs impulse relays page 5/3
	Auxiliaries for impulse relayspage 5/3
	AT impulse relays page 5/3
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	Intuitive switches
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I switches 20 to 125 A Auxiliary and accessories

Function

I switches The I switches combine the following functions:

- Control (opening and closing of on-load circuits),
- Disconnection

Auxiliary

Changeover auxiliary switch

Indicates whether the switch is "open" or "closed".

Accessories

Sealable terminal shield (upstream/downstream)

Makes access to the device terminals impossible.

Screw cover

Prevents contact with the device terminal screws.

Rotary handle

Enables front or side control of the switches.

Padlocking device

Locks the switch in "open" or "closed" position.

Technical data

l	-:4 -	has

I switches	
Compliance with standards:	I 20, 32, 40 and 63 A: EN 60669-1, IEC 669-1
	I 40, 63, 100 and 125 A, IEC 947-3:
	Degree of pollution 3
	Isolating voltage 500 V AC
	Impulse voltage 6 kV
	Degree of protection IP 4 on the front pane
	Frequency 5060 Hz
Isolation with positive contact	et indication
USE approved for I 20, 32 ar	nd 63 A
DC application:	48 V (110 V with 2 series-connected poles)
Mechanical endurance:	I 20 and 32 A: 200,000 operating cycles
	I 40, 63, 100 and 125 A: 50,000 operating cycles
Electrical endurance:	AC22, p.f. = 0.6
	I = 20 and 32 A: 30,000 operating cycles
	I = 40 and 63 A: 20,000 operating cycles
	I = 100 A: 10,000 operating cycles
	I = 125 A: 2,500 operating cycles
Short-circuit withstand:	20 x ln: 1 s
Tropicalisation:	Treatment 2 (relative humidity 95% at 55 °C)
Connection by	10 mm² flexible/rigid cables for I 20 and 32 A
tunnel terminals for:	50 mm² rigid cables or comb busbars, 35 mm²
supple	cables for I 40, 63, 100 and 125 A
Switch with indicator light:	Supplied with 230 V neon red indicator light
Switch with indicator light.	Interchangeable indicator light:
	12, 24, 48 V AC/DC incandescent bulb
	(P = 1.2 W
Auxiliary	(F = 1.2 VV
O.C. auxiliary switch	
Contact breaking capacity:	3 A at 400 V AC
Contact breaking capacity.	6 A at 230 V AC
Fixing by aligning anto aymn	netrical rail on the left side of the switch
Connection by tunnel termin	
Accessories	als for cables up to 10 mm
	For I 40, 62, 100 and 105 A
Screw covers	For I 40, 63, 100 and 125 A Sealable and divisible
Determinent	
Rotary handle	IP549
Composition:	A switch operating subassembly
	A front or side fixed handle (on the right only) or an
	extended withdrawable handle
Padlocking device	For 8 mm diameter padlock (not supplied) (provide
	two devices on the outer poles for 3P and 4P
	devices for I 40, 63, 100 and 125 A)
1P, 2P, 3P and 4P combs	For I 40, 63, 100 and 125 A
	Acceptable current strength at 140 °C
	100 A with a central power supply point
	125 A with two power supply points

Local control

I switches 20 to 125 A Auxiliary and accessories











1 0	3 	5 	7 0
2	4	6	8





Туре	Rating (A)	Voltage (V AC)	Part number	Width in 18mm SP ways
I switc	hes			
1P	20	250	15005	1
	32	250	15009	1
	40	250	15024	1
	63	250	15013	1
	100	250	15090	1
	125	250	15057	1

2P	20	415	15006	1	
	32	415	15010	1	
	40	415	15020	2	
	63	415	15014	2	
	100	415	15091	2	
	125	415	15058	2	

3P	20	415	15007	2	
	32	415	15011	2	
	40	415	15023	3	
	63	415	15015	3	
	100	415	15092	3	
	125	415	15059	3	

4P	20	415	15008	2	
	32	415	15012	2	
	40	415	15019	4	
	63	415	15016	4	
	100	415	15093	4	
	125	415	15060	4	

Switc	h with 230	OV indicator li	ght		
1P	20	250	15063	1	
	32	250	15100	1	
2P	20	250	15064	1	
	32	250	15101	1	

Auxiliary			
O.C. auxiliary switch	15096	1	

Technical Section 9

Local control

I switches 20 to 125 A Auxiliary and accessories





Туре		Part
		number
Indicator li	ght	
Neon supplied	with red diffuser bag of 10 230 V AC	15111
Incandescent b	ulbs supplied with red diffuser	
	Bag of 10 12 V AC/DC	15112
	Bag of 10 24 V AC/DC	15113
	Bag of 10 48 V AC/DC	15114

Common a	Common accessories			
Rotary handle for 4 modules of 9 mm min. switch				
	Switch operating subassembly	27046		
	Withdrawable handle	27047		
	Fixed handle	27048		

Padlocking device bag of 2 pcs	26970	
--------------------------------	-------	--

Accessories for I 20 and 32 A

Modular sealable terminal shield for 2 modules of 9 mm 15094







Sealable terminal shield	1P	26975
	2P	26976
	3P	26975
		+ 26976
	4P	26978
	-	

Technical Section 9

Local control

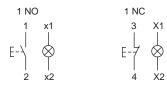
Control switchgear BP buttons for impulse control

Technical data			
Voltage rating:	250 V AC		
Current rating:	20 A		
Electrical durability:	30 000 switching operations AC22 ($\cos \varphi = 0.8$)		
Complies with standard:	IEC 60669-1 and IEC 60947-5-1		
Indicator light with	Consumption:	0.3 W	
LED technology:	Service life:	100,000 hours with constant	
		luminous efficiency	
	Indicator light requires no maintenance		
	(non-interchangeable LEDs)		
Operating temperature:	-20°C +50°C		
Storage temperature:	-40°C +80°C		
Tropicalisation:	Treatment 2 (relative humidity: 95 % at 55°C)		
Connection by rigid	Tunnel terminals up to 2 x 2.5 mm ² ,		
flexible cable with or	+/- recess screw, Pozidriv N° 1		
without cable end:	Staggered terminals simplifying cable connection		

The BP pushbutton range offers the following control contact types:

1 NC	1 NO	1 NO + 1 NC	1 NO / 1 NC	1 NO / 1 NO
3	1	1 3	1 3	1 3
E-7 4	E-\ 2	E-\7 2 4	E-\ E7 2 4	E-\ E-\ 2 4

BP with indicator light



Width in 18mm SP ways		Colour BP		Circuit	Part number	
Single	BP					
1		Grey		1NC	18030	
		Red		1NC	18031	
		Grey		1NO	18032	
		Grey		1NO+1NC	18033	
Double BP						
1		Green/re	ed	1NO / 1NC	18034	
		Grey/grey		1NO / 1NO	18035	
	_			.		
Width in	Power	Colour	Colour	Circuit	Part	
18mm SP ways	light		BP		number	
Single BP + indicator light						
1	110230 V AC	Green	Grey	1NO	18036	
		Red	Grey	1NC	18037	
	1248 V AC/DC	Green	Grey	1NO	18038	
		Red	Grey	1NC	18039	







Local control and indication

Indication switchgear V indicator light

Technical data	
Complies with standard	IEC 60947-5-1 (excepted part number 18327
	complies with standard IEC 73 and IEC 1000-4)
Operating frequency:	5060 Hz
Indicator light with	Consumption by indicator light:
LED technology:	0.3 W (0.5 W for part number 18327)
	Service life:
	100,000 hours with constant luminous efficiency
	Indicator light requires no maintenance (non-
	interchangeable LEDs)
Blinker frequency:	2 Hz
Degree of protection:	IP4/IPxxD for the part outside the enclosure
	IP2/IPxxB at the terminals
Divisible partition for the teet	th of any comb busbar to fit into
Degree of pollution:	3 (2 for part number 18325)
Operating temperature:	-20 °C +50 °C
Storage temperature:	-40 °C +100 °C
Tropicalisation:	Treatment 2 (relative humidity 95 % at 55 °C)
Connection by rigid or	Tunnel terminals up to 2 x 2.5 mm ² ,
flexible cable with or	+/- recess screw, Pozidriv N°1
without cable end:	Staggered terminals simplifying cable connection

The V indicator light range consists of:

Single in light	dicator	Double light	indicator	Blinker		-phase tor lig	e voltage ht
X1- X2+	X1 	X3 	0.5 s		X1	X2 	X3

Width in	Colour	Part	Part
	Colour		
18mm		number	number
SP ways		110-230V AC	12-48V AC/DC
Single indicator ligh	nt		
1	Red	18320	18330
	Green	18321	18331
	White	18322	18332
	Blue	18323	18333
	Yellow	18324	18334
Double indicator lig	jht		
1	Green/red	18325	
1	White/white	18328	
1	Green/red		18335
Blinker			
1	Red	18326	
Width in	Colour	Part	
18mm		number	
SP ways		230-400V AC 3 p	hase
Three-phase voltag	e indicator li	ght	
1	Red/red/red	18327	



Tecl	hnic	al
Sect	tion	9

Local control and indication

TR transformers





Function

Bell transformers and safety transformers allow for a very low voltage (ELV 8 V, 12 V or 24 V) to be obtained from a low voltage network (LV 230 V).

Description

All Multi 9 transformers are:

- \blacksquare Safe: primary and secondary circuits are perfectly insulated by each other.
- Resistant to short-circuit currents thanks to the built-in device.
- Class II with terminal shield (optional)

Technical data

Primary voltage: 230 V CA ±10 %.

Secondary voltage on load: 8-12-24 V CA ±15 % for bell transformers 12-24 V CA ±5 % for safety transformers

Transformer	Rated	Off load voltage (V)
Part number	secondary voltage (V)	
15214	8	12
15213	8	12
	12	16
15216	_8	13
	12	18
15212	8	13
	12	18
15215	12	16
	24	32
15218	12	14
	24	28
15219	12	14
	24	28
15220	_12	14
	24	28
15222	12	14
	24	28

Note: Transformers have an off load operating voltage that is higher than the rated voltage. For loads that are sensitive to overloads (electro-magnetic circuits), the transformer must be made to operate at In. After operation of the protection device upon an overload, cut-off the power supply and let the transformer cool down before restart.

Frequency:	50/60 Hz
Compliance with standards:	NF EN 60742, EN and IEC 61558-2-6
Approval NF USE	
Connection:	Tunnel terminals for cables up to 4 mm ²

1 0— 230 V — 7	10-230 V-07	10-230 V-07
40-8V-8	4 60-8 V-0 8 12 V	4 0 60-12 V-0 8 -24 V
15214	15212-15213-15216	15215
1 0— 230 V — 0	7 10—230 V—07	10-230 V-7
8 10 0-12 V-0 24 V	12 6 8 10 12	6 8 0 10 12
15218-15219	15220-15222	15220-15222

Power	Secondary	Width in	Part
(VA)	voltage	18mm	number
	(V AC)	SP ways	
Bell tran	nsformer		
4	8	2	15214
4	8-12	2	15213
8	8-12	2	15216
16	8-12	2	15212
25	12-24	3	15215
Safety t	ransformer		
16	12-24	5	15218
25	12-24	5	15219
40	12-24	5	15220
63	12-24	5	15222
Termina	l shield		
		2	15228
		3	15229
		5	15230

Local control and indication

SO bells and RO buzzers

Function

SO and RO

Audible indication in housing and the tertiary sector.

Description

SO and RO

- Sound level (at a distance of 60 cm):
- ☐ RO buzzer: 70 dBA
- ☐ SO bell: 80 dBA
- ☐ Frequency :50...60 Hz
- consumption:
- ☐ 3.6 VA: 8...12 A
- □ 5 VA: 220...240 V
- Connection: tunnel terminals for cables up to 4 mm²

Voltage (VA C)	Part number	Width in 18mm
		SP ways
SO bell		
230	15320	1
812	15321	1



RO buzzer			
230	15322	1	
812	15323	1	

Control and circuit protection

STI isolatable fuse carriers

Function

ST

The isolatable fuse-carriers provide overload and short-circuit protection and are used in the tertiary and industrial sectors.

Fuse-links

aM, gG (gl, gL) types for STI.

Indicator light

230 V neon indicator adaptable on STI.

Description

STI

- Isolation of all poles is guaranteed for the 2P, 3P, and 3P + N versions during factory assembly
- Positive contact indication
- To be equiped with aM or gG (gL gl) type fuse-links, with or without fuse blowing indicator

Rating	Size	аМ	gG
(A)	(mm)	fuse	fuse
0.5 to 20	8.5 x 31.5		
1 to 20	10.3 x 38		
25 to 32	10.3 x 38		

- Fuse-carrier: Captive, additional housing is provided for a spare fuse
- Optional indication by indicator lights (see accessories)
- Connection by tunnel terminals for rigid cables up to 10 mm² and flexible cables up to 6 mm²
- Complies with standard IEC 947.3

Fuse-links

- aM, gG (gL gl) types
- Fuse-link without striker pin
- Breaking capacity as in the standards

Dimensions (ø x L) (mm)	Rating (A)	Operating voltage (V AC)	Breaki (kA) aM	ng capacity gG
8.5 x 31.5	All	380	20	20
10 x 38	<10	500	80	80
	25	660	80	80

- Complies with standards NF C 60 200 and NF C 63 210
- Véritas and Lloyds approved

Indicator light (option)

Technical data

230V AC neon (400V AC maximum)

Allows indication of fuse blowing (lift after blowing)

Specific characteristics

STI 1P + N and 3P + N

- Disconnection of the phase and neutral in the normal dimensions of the phase (2 modules of 9 mm)
- Phase opening causes compulsory opening of the neutral
- The phase opens before the neutral on isolation and closes after the neutral on circuit closing

Control and circuit protection

STI isolatable fuse carriers







Function

- The STI isolatable fuse-carriers provide overload and short-circuit protection
- They are used for industrial applications requiring a high breaking capacity
- They perform the isolation function and must not be used as switches
- They can be equipped with an indicator light indicating blowing of the fuse cartridge
- Isolation of all poles is guaranteed for the 2P, 3P, and 3P+N versions during factory assembly

The general purpose fuse **(gG fuse)** provides overload and short-circuit protection. The fuse for motor application **(aM fuse)** only provides short-circuit protection. It is used for protection of loads with a high peak current (motors, transformer primaries, etc.)

Technical data

- Compliance with standards:
- ☐ STI: IEC EN 60947-3
- □ Cartridges :
- NF C 60-200, NF C 63-210 and IEC 60269-1/2
- Véritas and Lloyd's approved.
- Operating frequency: 50/60 Hz.
- Insulation voltage: 690 V.
- Isolation with positive contact indication by tilting the fuse-carrier:
- □ Captive fuse-carrier
- □ Additional housing is provided for a spare fuse.
- To be equiped with aM or gG (gL gl) type fuse cartridge without striker, with or without fuse blowing indicator:

Fuse cartridge type		Ith (A)	Pmax (W)
8.5 x 31	аМ	10	3
	gG	20	3
10.3 x 38	аМ	25	3.5
	αG	32	3.5

Pmax: maximum dissipated power per fuse cartridge.

- Cartridge blowing signalling (option): by indicator light ON after blowing
- Operating temperature: -20°C to +60°C
- Storage temperature: -40°C to +80°C

Specific technical data STI 1P+N and 3P+N

- Disconnection of the phase and neutral in the normal dimensions of the phase (2 mod. of 9 mm)
- Phase opening causes compulsory opening of the neutral
- The phase opens before the neutral on isolation and closes after the neutral on circuit closing

Part numbers

Fuse c	artrid	ges					STI fuse holder					
Fuse cartridge type	Rating (A)	Voltage rating Ue (V AC)	Short-o current (kA)		Fuse car catalogu	tridge e number	Network type	Network type				Terminal types
			аМ	gG	аМ	gG	1P	1P+N (1)	2P	3P	3P+N (1)	
							$\frac{1}{m}$	N 1 Y-1	1 3 11-11		N 1 3 5 1 1 1 1 1-11-11	
3							14	1 1-17	1 42-41	1 1 1 1 1	1 - 4 - 4 - 4	
							2	2	2 4	2 4 6	2 4 6	
8.5 x 31.5	2	400	20	20	15733	15767	15635	15645	15650	15655	15657	Tunnel
	4	400	20	20	15734	15768	2 modules of	2 modules of	4 modules of	6 modules of	6 modules of	terminals: up to 10 mm ²
	6	400	20	20	15735	15769	9 mm	9 mm	9 mm	9 mm	9 mm	up to romin
	10	400	20	-	15737	-						
10.3 x 38	2	500	120	120	15742	15775	15636	15646	15651	15656	15658	Tunnel
	4	500	120	120	15743	15776	2 modules of	2 modules of	4 modules of	6 modules of	6 modules of	terminals: up to 10 mm ²
	6	500	120	120	15744	15777	9 mm	9 mm	9 mm	9 mm	9 mm	up to 10 mm
	10	500	120	120	15746	15779]					
	25	400	120	-	15750	-						

(1) The neutral pole comes equipped with a locked tube.

Technical Dimensions Section 9 Section 10

Control and circuit protection

SBI fuse holder with indicator light









Function

- SBI fuse holders provide overload and short-circuit protection
- They are used for industrial applications requiring a high breaking capacity
- They perform the isolation function and must not be used as switches
- They are equipped with an indicator light indicating blowing of the fuse cartridge: to be equipped with aM or gG (gL-gl) type fuse cartridge without striker

The general purpose fuse **(gG fuse)** provides overload and short-circuit protection. The fuse for motor application **(aM fuse)** only provides short-circuit protection. It is used for protection of loads with a high peak current (motors, transformer primaries, etc.).

Technical data

- Compliance with standards: IEC EN 60947-3
- Operating frequency: 50/60 Hz
- Insulation voltage: 690 V
- Cartridge blowing signalling: by indicator light ON (neon)
- Maximum permissible characteristics of the fuse cartridges:

Fuse cartridge type		Ith (A)	Pmax (W)
14 x 51	аМ	50	3
	gG	50	5
22 x 58	аМ	125	9.5
	gG	100	9.5

Pmax: maximum dissipated power per fuse cartridge.

- Operating category: AC20B isolation by switching the drawer, must not be operated under load
- Operating temperature: -20°C to +60°C
 Storage temperature: -40°C to +80°C

Part numbers

Fuse c	artrido	jes					SBI fuse	e holder					
Fuse cartridge type	Rating (A)	Voltage rating Ue (V AC)	Short- circuit currer (kA)	t	Fuse ca reference		Network typ	oe ⁽¹⁾					Terminal types
			аМ	gG	aM	gG	N	1P	1P+N	2P	3P	3P+N	
							T T		N 1 1 1 1 2			$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	
14 x 51	10	690	-	80	-	15787	MGN15708	MGN15707	MGN15709	MGN15710	MGN15711	MGN15712	Tunnel
	16	690	-	80	-	15788							terminals: up to 25 mm ²
	25	690	120	-	15762	-	3 modules	3 modules	6 modules	6 modules	9 modules	12 modules	ap to Zo min
	32	500	120	120	15763	15791	of 9 mm	of 9 mm	of 9 mm	of 9 mm	of 9 mm	of 9 mm	
	40	500	120	120	15764	15792							
	50	400	120	-	15765	-							
22 x 58	32	690	-	80	-	15794	MGN15714	MGN15713	MGN15715	MGN15716	MGN15717	MGN15718	Tunnel
	40	690	80	80	15751	15795							terminals: up to 35 mm ²
	50	690	80	80	15752	15796	4 modules	4 modules	8 modules	8 modules	12 modules	16 modules	ap 10 00 111111
	63	690	80	80	15753	15797	of 9 mm	of 9 mm	of 9 mm	of 9 mm	of 9 mm	of 9 mm	
	80	690	80	80	15754	15798							
	100	500	120	-	15755	-							

(1) The neutral pole comes equipped with a locked tube.

Local control selector switches

Control switchgear CM linear selector switches

The CM selector switch range offers the following control types:

2 position selector switches



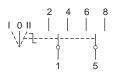




3 position selector switches

1 changeover switch 2 changeover switch switches





Technical data

Voltage rating:	250 V AC
Current rating:	20 A
Electrical durability:	30,000 cycles AC22
Complies with standard:	IEC 60669-1 and IEC 60947-5-1
Operating temperature:	-20°C +50°C
Storage temperature:	-40°C +80°C
Tropicalisation:	Treatment 2 (relative humidity 95 % at 55°C)
Connection by rigid or	Tunnel terminals up to 2 x 2.5 mm ² , +/- recess screw,
flexible cable with or	Pozidriv n°1
without cable end:	
	Staggered terminals simplifying cable connection

Width in	Contact	Part number
modules of		
18 mm		
2 positions	CM	
1	1 changeover switch	18070
2	2 changeover switches	18071
1	1 NO + 1 NC	18072



3 posit	tions CM		
1	1 changeover switch	18073	
2	2 changeover switches	18074	

Local control selector switches

Control switchgear Rotary selector switches CMB, CMC, CMD and CME



CMB

This 2-pole selector switch with reset manually controls a circuit with two operating directions with an OFF position.

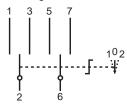
For example: Electrically controlled shutters

Position 1 = up

Position 0 = OFF

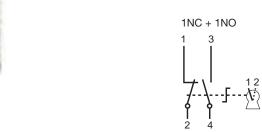
Position 2 = down.

2 changeover switches



CMC

This 2-position changeover switch (ON-OFF) with key-lock, allows locking in either position.





CMD

This 4-direction selector switch controls a circuit with operating priorities.

For example: fan control

Position 0 = OFF

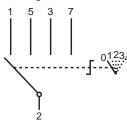
Position 1 = "ON" override, low speed

Position 2 = "ON" override, high speed

Position 3 = remote control

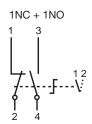
Position 4 = automatic operation.

1 changeover switch



CME

This 2-position changeover switch is used specially to control electronic circuits with a low voltage and current level.





Local control selector switches

Control switchgear Rotary selector switches CMB, CMC, CMD and CME

Common technical of	Common technical data				
Rotary handle					
Maximum operating voltage:	440V, 50/60 Hz				
Nominal thermal current:	10 A				
Operating temperature:	-20°C to +55°C				
Storage temperature:	-25°C to +80°C				
Mechanical durability	2 000 000 operations				
(AC21A-3x440 V):					
Electrical durability:	1 000 000 operations				
Connection:	Jumper terminals with captive screws,				
	for cables up to 1.5 mm ²				
Complies with standards:	IEC 60947-3 (EN 60947-3)				
	VDE 0660 part. 107				
	UL				

CME specific technical data Voltage range 1 V-440 V AC/DC:			
Breaking capacity			
AC	DC		
Resistive load with small loads	Resistive load T \leq 1 ms		
1 V/5 A	1 V/3 A		
12 V/1.2 A	12 V/0.7 A		
24 V/0.7 A	24 V/0.4 A		
48 V/0.45 A	48 V/0.25 A		
110 V/0.25 A	110 V/0.13 A		
240 V/0.15 A	240 V/0.08 A		
300 V/0.13 A	300 V/0.07 A		
440 V/0.1 A	440 V/0.05 A		

Part numbers					
Туре	Rating (A)	Voltage (V AC)	Width in modules of 18mm	Part number	
CMB	10	415	2	15120	
CMC	10	415	2	15123	
CMD	10	415	2	15121	
CME	See above t	ne CME	2	15122	
	specific tech	nical data			

Local control

XB device holder



ApplicationThe device holders can be mounted on 35mm rail to facilitate mounting of pushbuttons, indicators or other devices.

Technical data

Button holder

For buttons, switches and indicators with metal or plastic flange Ø 22 of the Telemecanique XB4 / XB5 type

Depth under rail:	60mm (same as products in the multi 9 range)		
Drilling diameter:	Ø 22.3		
Self-extinguishing insulating material			
Colour:	Light grev RAL 7035		

Universal holder

For buttons, indicators, light emitting diodes (LED), potentiometers Easy drilling To be adapted depending on use Depth under rail 60 mm (same as products in the multi 9 range) Self extinguishing insulating material Light grey RAL 7035 Colour:

Туре	Width in 18mm ways	Part number
22mm button holder	3	15151
Universal holder	3	15152

Contactors

Contactors can be used to control:

- Heating, ventilation, roller blinds, sanitary hot water, mechanical ventilation systems, etc
- Load-shedding of non-priority circuits

 Manually-operated contactors let you override the

 (ON/OFF) control of the load.

CT contactors can accommodate the following auxiliaries on their sides:

- Indication
- Interference filtering
- Dual control (impulse and/or latched)
- Time delay

CT+ contactors benefit from high performance characteristics for demanding applications.

Contactor overview

Function

Contactors are designed to control 1P, 2P, 3P and 4P circuits up to 100 A. Each model is available in two versions:

- Standard contactors:
- ☐ Normally open for heating, ventilation, roller blinds and mechanical ventilation systems
- ☐ Normally closed for load-shedding of non-priority circuits
- Manually-operated contactors letting you override the (ON/OFF) control of the load

	NO
A	NC
*	NO + NC

Choice of 50 Hz contactors

		High performance contacto	ors
		Standard CT+	Manually-operated CT+
Rating	Α	20	20
Control voltage	VAC	230	230
Number of poles	<u>1P</u>	-	-
	2P	•	-
	3P	-	-
	4P	-	-
			•
Maximum number of switching ope	rations a day	5,000	5,000
Lifetime (total number of switching		5,000,000	5,000,000
Load type	·	All types without derating	All types without derating
Installation		All positions	All positions
	Electromagnetic disturbances	Audible perception threshold CT+ 0 t	
		CT+ 1	
	Temperature rise	Ambient temperature CT+ 1 t	
Auxiliaries			
Auxiliary contacts	ACTo+f	No	No
Interference filter	ACTp	No	No
Mixed control: impulse/latched	ACTc	No	No
Time delay	ATEt	No	No

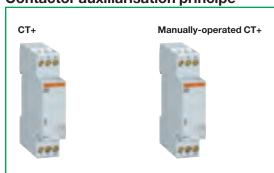
Technical	Dimensions
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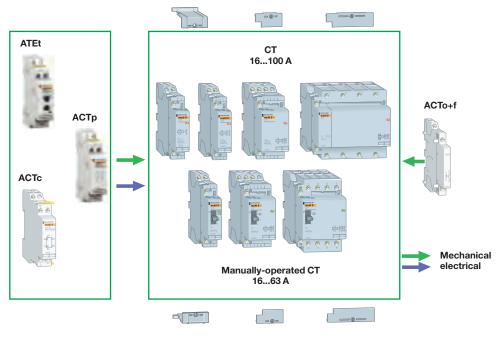
Contactors that can be equipped with auxiliaries															
	ard con										Manually-operated contactors				
16				25			40	63		100	16	25		40	63
12	24	220/ 240	230/ 240	24	220/ 240	230/ 240	220/ 240	24	220/ 240	220/ 240	230/ 240	220/ 240	230/ 240	220/ 240	220/ 240
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Technical	Dimensions
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Contactors

Contactor auxiliarisation principe





Accessories



Yellow clips

Ensure the mechanical and/or electrical link between contactors and their auxiliaries.

Sealable screw shields

Used to avoid all contact with device terminals (upstream and downstream).

CT + high performance contactors

CT+ high performance contactors allow remote control of single-phase circuits.

They are intended for demanding applications.







CT+ high performance contactors combine the advantages of static switching and electromechanical technology: compact dimensions, minimum temperature rise. CT+ contactors provide a solution when high performance is required, particularly in terms of number of switching operations, lifetime, versatility with loads, minimum noise, absence of electromagnetic disturbances, installation in all positions and limited temperature rise.

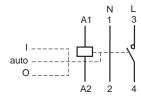
Туре	Contact	Rating (A)	Control voltage (V AC)	Width in mod. of 9 mm	Part number
CT+					
1P+N standard	1NO	20	230	2+1(1)	15030
A1 1 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					

230

2+1(1)

15031

1P+N with manual operation



1NO

20

(1) comes with a 9 mm spacer (cat. no. **27062**): to be used in case of mounting of the CT+ next to a circuit-breaker, contactor, impulse relay, etc. to guarantee optimum use.

Operation

CT+ high performance contactors have a NO contact and are controlled by latched type electrical orders. An orange indicator light comes ON on the front face when the output contact is closed.

The manually-operated CT+ contactors are equipped on their front face with an operating mode selection pushbutton. A green indicator light indicates the current mode:

- Automatic operating mode (green light ON)
- Temporary «ON» override (green light flashing)
- Permanent shutdown mode (light OFF)

In ON override or permanent shutdown mode, the CT+ systematically returns to automatic operating mode further to a supply outage.

△ It is compulsory to use the same phase for power and control connection.

Technical data

Voltage rating	Control circuit: 230 V AC (±10 %); 50 Hz Power circuit: 230 V AC (±10 %); 50 Hz
Inrush power	11 VA
Holding power	1.1 VA
Maximum switching frequency	6 switching operations/minute
Characterisation on load types	No derating
Electrical durability	5,000,000 cycles
Compliance with standard	EN 669-2-1
Approval	NF USE
Operating temperature	-5°C to +55°C with use of a spacer
Connection by tunnel terminals for flexible and rigid cables	Up to 2 x 1.5 mm² with end 2 x 2.5 mm² without end 1 x 4 mm² without end

CT contactors auxiliaries

The breadth of the CT contactor range satisfies most application cases (multi-pole, pole composition, etc.). CT contactors can be combined with auxiliary control, protection and indication functions.



Permanent ON override

Operation

CT contactors equipped with one or more normally open (NO) or normally closed (NC) contacts are controlled by latched type electrical orders. On the front face a red indicator light indicates voltage presence at the coil terminals (A1-A2). Manually-operated contactors have a 4-position selector switch on their front face:

- Automatic operating mode
- Temporary «ON» override
- Permanent «ON» override: used to lock the contactor in the ON position during installation maintenance
- Shutdown

Technical data

Power circuit

CT ratings	16 to 100 A (category AC7a)
Manually-operated CT ratings	16 to 63 A (category AC7a)
Characterisation on load types	Consult Practical Advice p. 92306
Voltage rating	250 V AC (1P and 2P), 400 V AC (3P and 4P)
Frequency	50 Hz or 60 Hz
Control circuit	
Voltage	12 V AC (±10 %), 24 V AC (±10 %), 230240 V AC (-10 % +6 %)
Coil frequency	50 Hz or 60 Hz

Inrush and holding power

Туре	Rating (A)	Consumpt inrush (VA)	ion holding (VA)	Max. power (W)
1P, 2P	16/25	15	3.8	1.1
3P, 4P	16/25	34	4.6	1.6
2P	40/63	34	4.6	1.6
3P, 4P	40/63	53	6.5	2.1
2P	100	53	6.5	2.1
4P	100	106	13	4.2

- Operating temperature: -5°C to +60°C
- Tropicalisation: treatment 2 (relative humidity: 95 % at 55°C)
- Compliance with standards: EN 60947-4-1, EN 61095, IEC 1095
- Approvals: NF, IMQ, VDE, GOST, CCC, CEBEC
- ELSV compliance (Extra Low Safety Voltage): for 25 A 2P versions with 24 V AC control

Connection by tunnel terminals

Cable type	Control circui	it Power circuit		
		16 and 25 A	40-63 A	100 A
Flexible	2 x 2.5 mm ²	2 x 2.5 mm ²	2 x 10 mm ²	6 to 35 mm ²
Rigid	2 x 1.5 mm ²	6 mm ²	25 mm ²	6 to 35 mm ²

■ Marking: contactors can be equipped with clip-on markers

Accessories

Screw shields

- Designed to cover terminals to avoid contact with device screws
- Allow sealing

Spacer - 27062

- Required to reduce temperature rise of modular devices installed side by side
- Recommended to separate electronic devices (thermostat, programmable clock, etc.) from electromechanical devices (relays, contactors)

Derating of contactors mounted in modular enclosure if inside temperature is $> 40^{\circ}\text{C}$

Contactor rating	40°C	50°C	60°C (1)
16 A	16 A	14 A	13 A
25 A	25 A	22 A	20 A
40 A	40 A	36 A	32 A
63 A	63 A	57 A	50 A
100 A	100 A	87 A	80 A

(1) Spacer compulsory between each product.



2 CT + spacer + 2 CT

CT + spacer + IHP

Technical Dimensions Section 9 Section 10

CT contactors - 50 Hz auxiliaries









50 Hz con	tactors					
Туре	itactors	Contact	Rating (A)	Voltage (V AC)	Width in mod. of 9 mm	Part number
1P		1NO	16	12	2	16110
1		1NO	16	24	2	16111
/q		1NO	16	230 240	2	16113
		1NO	25	230240	2	15958
ż 1NO						
2P		2NO	16	12	2	16114
D4 D0	1 3	2NO	16	24	2	16115
R1 R3	الّ أ.	2NO	16	230240	2	15957
		1NO+1NC	16	12	2	16125
 R2 R4		1NO+1NC	16	24	2	16126
2NC	2NO	1NO+1NC	16	230240	2	15956
2,10	2110	2NO	25	24	2	16020
1 R1 I I		2NO	25	230240	2	15959
\\-		2NC	25	230240	2	15960
) [2NO	40	220240	4	15966
2 R2 1NO + 1NC		2NO	63	24	4	16024
1110 + 1110		2NO	63	220240	4	15971
		2NO	100	220240	6	15977
3P		3NO	16	220240	4	16120
R1 R3 R5	1 3 5	3NO	25	220240	4	15961
\\	777-	3NO	40	220240	6	15967
(((3NO	63	220240	6	15972
R2 R4 R6 3NC	2 4 6 3NO					
4P		2NO+2NC	16	24	4	16129
R1 R3 R5 R7	7	4NO	16	220240	4	16124
	7.	2NO+2NC	16	220240	4	16130
((,	4NO	25	24	4	16022
R2 R4 R6 R8	3	4NO	25	220240	4	15962
4NC		4NC	25	24	4	16023
		4NC	25	220240	4	15963
1 3 5 7 1		2NO+2NC	25	&220240	4	15964
ffff		4NO	40	220240	6	15968
		4NC	40	220240	6	15969

\d	را 3	,å	R1
2	4	6	R2

2NO + 2NC

3NO + 1NC

4NO

Auxiliary: ACTo+f, ACTp, ACTc, ATEt.

4NO

4NO

4NC

4NC

4NO

2NO+2NC

3NO+1NC

63

63

63

63

63

63

100

24

24

220...240 6

220...240 6

220...240 6

220...240 6

220...240 12

6

6

16025

15973

16026

15974

15975

15976 15978

CT contactors - 50 Hz auxiliaries

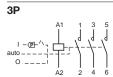




Туре	Contact	Rating	Voltage	Width in	Part
		(A)	(V AC)	mod. of	number
				9 mm	
2P	2NO	16	230240	2	16116
A1 1 3	1NO+1NC	16	230240	2	16127
1-@-^-	2NO	25	230240	2	15981
auto+	2NO	40	220240	4	15984
A2 2 4	2NO	63	220240	4	15987
2NO					
auto					

3NO

25



3NO

2NC

4P					
I -便-^^¬ auto	A1 ————————————————————————————————————	1 2	3 4	5	7
4NO					

4NO	25	220240	4	15983
4NO	40	220240	6	15986
4NO	63	220240	6	15988

220...240 4

15982

	A1	R1	R3	R5	R7
I -@-^-	<u></u> ,	/-	} -	/ -	-7-
O	-†				
4NC	A2	R2	R4	R6	R8

Auxiliary: ACTo+f, ACTp, ACTc, ATEt.

CT contactors auxiliaries ACTo+f, ACTp, ACTc, ATEt

Various auxiliaries can be fixed to the sides of CT contactors to provide:

- Indication
- Interference filtering
- Impulse/latched control
- Time delay

CT+ contactors cannot accommodate these auxiliaries.





ACTo+f

This auxiliary allows indication or control of the «open» or «closed» position of the contactor power contacts.

Туре	Width in mod. of 9 mm	Part number
ACTo+f		
A2 0 0 0 indication Oad Oad	1	15914

- Voltage: 24...240 V AC/DC 50/60 Hz
- Contact: 1 NO + 1 NC:
- \square Minimum 10 mA at 24 V DC/AC $\cos \varphi = 1$
- $\hfill\square$ Maximum 2 A at 240 V DC/AC cos ϕ = 1

Technical data

Combination with CT	Right side	
Connection	Tunnel terminals Flexible cable: 2 x 2.5 mm² Rigid cable: 2 x 1.5 mm²	

ACTp

This auxiliary is an interference suppressor which limits overvoltages on the control circuit.

Туре	Width in mod. of 9 mm	Control voltage (V AC)	Part number
АСТр			
L	2	24	15919
BPE-\ BPE-\		110240	15920
A1 A			
A2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			

The ACTp has 2 separate and identical circuits, allowing it to be combined with 2 different CT contactors:

- One by clips, on the CT mounted to its right
- The other by wires

Technical data

Power supply	Voltage: 24 V, 230 V Frequency: 50/60 Hz	
Combination with CT	Left side By clips ⁽¹⁾	
Consumption	Off-load: 3 VA	
Connection	Tunnel terminals Flexible cable: $2 \times 2.5 \text{ mm}^2$ Rigid cable: $2 \times 1.5 \text{ mm}^2$	

(1) electrical and mechanical link.

echnical	Dimensions		
Section 9	Section 10		

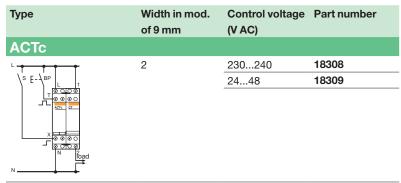
CT contactors auxiliaries ACTo+f, ACTp, ACTc, ATEt

ACTc

This auxiliary, combined with contactors, enables them to be controlled by 2 order types:

- Impulse order for local control (input T)
- Latched order for centralised control (input X).

The last order received takes priority.



- Minimum impulse duration: 250 ms
- Mains power outages:
- □ < 1 s: keeps its initial status
- $\square \geqslant 5$ s: reset
- $\hfill\Box$ Put back into operation by manual operation on X or T

Technical data

Power supply	Voltage: 2448 V, 230 V
	Frequency: 50/60 Hz
Combination with CT	Left side
	By clips ⁽¹⁾
Consumption	Off-load: 3 VA Inrush ⁽²⁾ : 2 A Holding ⁽²⁾ : 0.5 A
Connection	Tunnel terminals Flexible cable: 2 x 2.5 mm ² Rigid cable: 2 x 1.5 mm ²

- (1) Electrical and mechanical link.
- (2) Maximum consumption of all contactors controlled.

ATEt

This auxiliary is used to time delay contactor control. According to cabling, there are 4 possible time delay types.

Туре	Width in mod. of 9 mm	Control voltage (V AC)	Part number
ATEt			
	2	24240	15419

Technical data

Power supply	Voltage: 24 V, 240 V Frequency: 50/60 Hz
Combination with CT	Left side By clips ⁽¹⁾
Consumption	Off-load: 5 VA Inrush ⁽²⁾ : 3 A Holding ⁽²⁾ : 0.2 A
Connection	Tunnel terminals Flexible cable: 2 x 2.5 mm ² Rigid cable: 2 x 1.5 mm ²

- (1) Electrical and mechanical link.
- (2) Maximum consumption of all contactors controlled.



Technical Section 9 Dimensions Section 10

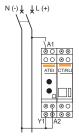
CT contactors auxiliaries ACTo+f, ACTp, ACTc, ATEt

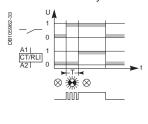
Operation

- There are 4 types of time delay:
- ☐ The A type time delay is used to delay energisation of a load
- □ The B type time delay is used, on closing of the control contact (pushbutton), to energise a load for a given time
- ☐ The C type time delay is used to extend energisation of a load
- ☐ The H type time delay is used, as long as the control contact remains closed, to energise a load for a given time.
- Time delay range: 1 s to 10 h.
- Repetition accuracy: ±0,5 %.

A type:

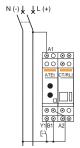
Delays energisation of the contactor or relay.

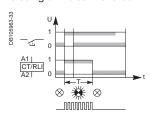




B Type:

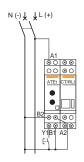
Energises the contactor or relay on closing of a pushbutton. The time delay starts on closing of the control order.

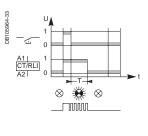




C Type:

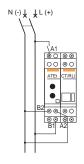
Energises the contactor or relay on closing of a pushbutton. The time delay starts on release of the control order.

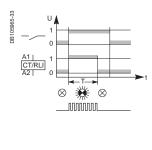




H Type:

Controls the contactor or relay for a given time on energisation.





RBN and **RTBT** interface relays

Function

The RBN and RTBT relays are used to interface automated system inputs and outputs with low voltage equipment.

RBN

This relay is used for the control of low power electronic circuits on receipt of a LV electrical order: these electronic circuits can be programmable logic controller (PLC) inputs, measurement or monitoring circuits, etc.

RTBT

This relay is used for the control of LV circuits from an Extra Low Voltage control: these ELV controls can be issued by a PLC (24V DC static outputs), a fire detection unit, a regulation system, etc.

Description

Common technical data

- Frequency: 50...60 Hz.
- Green pilot light on the control circuit
- Enhanced isolation between ELV/LV circuits: 4 kV
- Electrical durability: 100,000 switching operations
- Connection: tunnel terminals for 0.5 to 6 mm² cables

Specific technical data

RBN

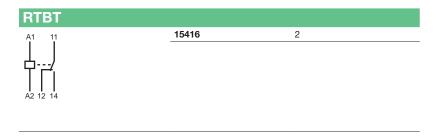
- Power circuit:
- □ rating (ln):
- min. 5 mA, 5 V AC/DC
- max. 2 A, 250 V AC.
- Control circuit:
- □ voltage: 230 V AC ±10 %
- □ consumption:
- inrush: 5 VA
- holding: 2.5 VA.
- Complies with standards:
- □ IEC 255 100
- □ IEC 529.

RTBT

- Power circuit:
- □ rating (In):
- min. 10 mA, 10 V DC
- max. 5 A, 250 V AC.
- Control circuit:
- □ voltage:
- 12...24 V AC -15...% +10 %
- 12...24 V DC ±20 %
- □ consumption:
- inrush: 0.22 W
- holding: 0.11 W.

Part numbers

RBN		
Туре	Part number	Witdh in mod. of 9 mm
A1 11 	15393	2







RLI changeover relay and ERL extension

Functions

These devices are used to relay ON and OFF information to the auxiliary circuits and to control low power loads.

Description

Common technical data

- Power circuit:
- □ Rating (In): 10 A, $\cos \varphi = 1$
- □ Voltage (Ue): 230 V AC
- □ Voltage (Ui): 250 V AC
- Control circuit:
- $\hfill\Box$ Voltage (±10 %): 12, 24, 48 or 230 V AC
- □ Frequency: 50 ... 60 Hz
- ☐ Inrush and holding power:
- RLI: 4 VA
- RLI + ERL: 8 VA.
- Electrical durability: 100,000 AC21 operating cycles ($\cos \varphi = 1$)
- Connection: tunnel terminals for 0.5 to 6 mm² cables
- Compliance with standards IEC 255 and NF C 45-250
- Direct control on the front face:
- □ Power: by pushbutton
- ☐ Coil: by selector switch (disconnection)
- Position indicator: built into the pushbutton
- Identification: clip-on markers on the front face

Specific technical data

RL

■ The RLI relay contains: 1 changeover switch (O-C), 1 normally open switch (NO).

FRI

- The ERL extension (3 ERL maximum for 1 RLI) contains: 1 changeover switch (O-C), 1 normally open switch (NO)
- It is mounted without tools or additional wiring by means of a yellow clip.
- \blacksquare This clip is used for mechanical assembly and electrical connection between coils.

Part numbers

ype	Rating (A)	Coil voltage Ue (V AC)	Part number	Width in mod. of 9 mm
	10	230240	15535	2
		48	15536	2
1 5		24	15537	2
i i i		12	15538	2



10	230240	15539	2
	48	15540	2
1 5	24	15541	2
T I Î	12	15542	2



Impulse relays

Impulse relays are used for control by pushbuttons of lighting circuits:

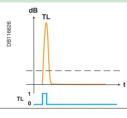
- Incandescent lamps, low voltage halogen lamps, etc. (resistive loads)
- Fluorescent tubes, discharge lamps, etc. (inductive loads)

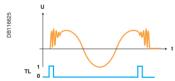
The range of Merlin Gerin impulse relays consists of:

- TL+: high performance impulse relay
- TL: impulse relays with auxiliaries
- TLI: changeover impulse relays with auxiliaries
- TLc, TLm, TLs: impulse relays with built-in auxiliary functions

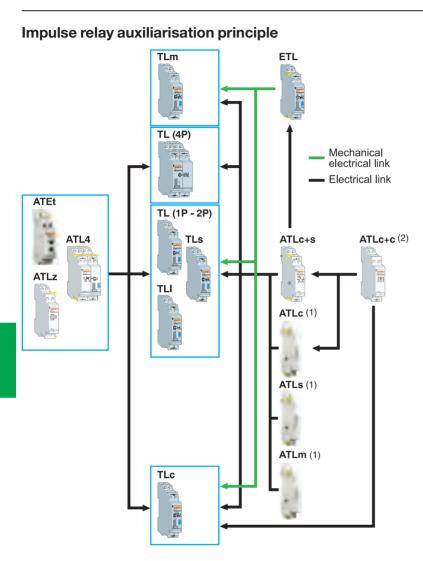
Choice of impuls		Impulse relays
		TL+ high performance
Rating		
	Α	16
Control voltage		
	V AC	230
	V DC	
		TL+
Number of poles		
	1P	-
	1P+N	•
	2P	-
	3P	-
	4P	-
Additional data		
	Noise	dB
		Audible perception threshold
	Disturbance	TL+ 1
Control type		
	Local on device	3-position illuminated PB Illuminated PB
	Remote	Illuminated PB
Electrical durability		
•	AC21	5000000
	AC22	5000000

										Impuls	e re	lays v	vith b	uilt-in auxilia	ry funct	ion	
Standard TL							3			TLc centralised control		TLm control on latched order			TLs remote indication		
16					32		16			16			16		16		
230-240	130	48	24	12	230-24	.40	230-240	48	24	230-240	48	24	230-24	40	230-240	48	24
110	48	24	12	6			110	24	12				110		110	24	12
TL		TL+E	ETL		TL	TL+ETL	TL	TLI+	ETL	TLc	TLc	+ETL	TLm	TLm+ETL	TLs	TLs	+ETL
•		[-		1	-	-	•	-		-	-		-	-	-	-	
		-			-	-	-	-		-	-		-	-	-	-	
•		-				-		-		-			-		-		
•		-			-	•	-	•		-			-		-		
•					-	•	-	•		-			-	•	-		





O-I toggle	O-I toggle	O-I toggle	O-l toggle	O-l toggle	O-I toggle
Illuminated PB	Illuminated PB	Illuminated PB	BP	Changeover	Illuminated PB
200000	50000	200000	200000	200000	200000
100000	20000	100000	100000	100000	100000



Impulse relays TL+ high performance Rating 16 Α Control voltage V AC 230 V DC **Auxiliary** Extension ETL Centralised control + indication ATLc+s (3) Multi-level centralised control ATLc+c (2) (3) Centralised control ATLc (1) (3) Signalisation ATLs(1) Latched control ATLm (1) No auxiliarisation Control for illuminated PB ATLz Step by step control ATL4 Time delay control **ATEt**

(1) The ATLc, ATLs and ATLm 9 mm auxiliaries are used by themselves to the right of an impulse relay. (2) The ATLc+c must be mounted to the right of an ATLc+s

Note: (3) The centralised control functions (TLc, ATLc, ATLc+s, ATLc+c) only operate on AC voltage networks. (4) ATEt: control voltage; V AC: 24...240, V DC: 24...110.

(1) The ATLc, ATLs and ATLm 9 mm auxiliaries are used by themselves to the right of an

(2) Connection by traditional cabling.

										<u>Impuls</u>	se rel	ays v	vith built-in auxiliar	y functio	n	
	Standard	TL					Changed	over T		TLc cent			TLm control on latched order	TLs remot		ation
	16				'	32	16		'	16			16	16		
												التكار				
	230-240	130			12		230-240	-		230-240	48	24	230-240	230-240	48	24
	110	48	24	12	6	<u> </u> '	110	24	12	<u> </u>		'	110	110	24	12
		•						-			•					
					47											
					-					[-	-	-	-			
		•		-	-				-		-		-	-	-	
					47			447								4
	•	•		-	-				-	[-	-	-	-			
)																
ſ		•		-	-				-		-			-		-
)					47			447			4					4
ſ				-		•	•		-	[-	-	-	-	•		-
1					47			447								
I	•	-	-	-	-		•	-	-	-	•	-	-	•		-
)					47			47			4					
I	•		-	-	-	•	•	-	-		-	-	-	-		-
1					47			47	447		4					
I	•			□ ⁽⁴⁾	-		•	-	□ ⁽⁴⁾	•	-		-	-		□ ⁽⁴⁾

Accessories





Link example.

Yellow clips
Ensure the mechanical link (indicated in dotted lines on diagrams), the electrical link between impulse relays and extension and/or auxiliaries.

The TL+ high performance impulse relay

The TL+ high performance impulse relay allows remote control of single-phase circuits. It is intended for demanding applications

The TL+ allows high performance, in particular in terms of the number of switching operations, equivalent performance with all lamp types, minimum noise, absence of electromagnetic disturbances.

It combines the advantages of static switching and electromechanical technology: compact size, minimum temperature rise.

Operation

The TL+ high performance impulse relay has a normally open contact and is controlled by impulse type electrical orders.

- One or more control points are possible.
- On the front face, an orange indicator light comes on when the output contact is closed

The TL+ impulse relay has a pushbutton on its front face allowing selection of the operating mode. A green indicator light indicates the current mode:

- ON/OFF control by room-mounted pushbutton (green light ON)
- "ON" override (green light flashing)
- "OFF" override (light OFF).

After a mains power outage, the TL+ returns to position 0, whatever its initial state.



Spacer

Technical data

ieciiiicai uata	
Voltage rating	230 V AC (±10 %), 50 Hz
Inrush power	11 VA
Holding power	1.1 VA
Impulse duration	50 ms (recommended value for automation system: 200 ms)
Control by illuminated pushbutton	Max. consumption 5 mA
Maximum switching frequency	6 switching operations/minute
Noise level on energisation	< 30 dBA
Characterisation on load types	No derating
Electrical durability	5,000,000 cycles
Compliance with standard	EN 669-2-2
Approval	NF
Operating temperature	-5 °C to +55 °C
Connection by tunnel terminals for flexible and rigid cables	S Up to 2 x 1.5 mm ² with end 2 x 2.5 mm ² without end 1 x 4 mm ² without end

Туре			Width in mod.	Coil voltage Uc	Part number
			of 9 mm	(V CA)	
TL+	- 16	Α			
1P+N	1		2+1(1)	230	15032
Δ1	N 1	L			



(1) Comes with a 9 mm spacer (cat. no. 27062): to be used in case of mounting of the TL+ next to a circuit-breaker, contactor, impulse relay, etc. to guarantee optimum use.

riangle The same phase must be used for power and control connection.

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 (except for single-piece TL)
- Indication: mechanical on front face by toggle position

Technical data	
Rating	16 A, $\cos \varphi = 0.6$
Voltage rating	1P and 2P: 250 V, 50/60 Hz 3P, 4P: 415 V, 50/60 Hz
Inrush power	1P and 2P: 19 VA 3P, 4P: 38 VA
Remote control	By pushbutton (illuminated up to 3 mA)
Control voltage (Uc)	Tolerance at 50 Hz: Uc +6 % -15 % Tolerance at 60 Hz: Uc ±6 % Tolerance in DC: +6 % -10 %
Impulse duration	50 ms (recommended value for automation system: 200 ms)
Maximum switching frequency	5 switching operations/minute
Noise level on energisation	≤ 60 dBA (at 1 m)
Electrical durability	200,000 cycles (AC21) 100,000 cycles (AC22)
Operating temperature	-20 °C to +50 °C
Tropicalisation	Treatment 2 (relative humidity 95 % at +55 °C)
Connection	Screw "±", Posidriv
Connection terminals	Power circuit: tunnel terminals for cables up to 10 mm ² Control circuit: tunnel terminals for 0.5 to 6 mm ² cables
Compliance with standard	EN 669-1, EN 669-2-2
Approvals	NF, CEBEC, IMQ, VDE, GOST



15510



15158



15520 + 15530

Туре	Width in mod. of 9 mm	Coil voltage (V AC)	· Uc (V DC)	Part number
16 A TL impul	se relays			
1P	2	230240	110	15510
I 1I		130	48	15511
A1)		48	24	15512
₽-/		24	12	15513
A2 /		12	6	15514
2P	2	230240	110	15520
		130	48	15521
1 3		48	24	15522
A11		24	12	15523
A2T / ₁ / ₁		12	6	15524
2 4				
4P	4	230240	110	15155
		24	12	15158
A1 3 5 7 A2 2 4 6 8				

16 A TL imp	ulse relays	+ ETL		
3P	2+2	230240	110	15510 + 15530
		130	48	15511 + 15531
5 	9	48	24	15512 + 15532
A ¹ ,	<i> </i>	24	12	15513 + 15533
	· / ·	12	6	15514 + 15534
F 4	B 10			
4P	2+2	230240	110	15520 + 15530
		130	48	15521 + 15531
, 1 3	5 9	48	24	15522 + 15532
A ¹		24	12	15523 + 15533
AT 1 1 T	Γ ′ 1 ′1	12	6	15524 + 15534

A2 4	6 8 10	12	6	15524 + 15534
16 A TL	l impulse relays			
1P - 2P	2	230240	110	15500
		48	24	15502
A1 - 1	3	24	12	15503
A2	/ 4			
3P - 4P	2+2	230240	110	15500 + 15530
		48	24	15502 + 15532
A1 - 1	3 5 9	24	12	15503 + 15533
A2	/+// 4 6 8 10			

ETL exten	sions for 16	A TL and 16	A TLI	
	2	230240	110	15530
		130	48	15531
5 9		48	24	15532
占//		24	12	15533
/ 1/1		12	6	15534
6 8 10				

Accessories	
Set of 10 clips	15415

Auxiliary: ATEt, ATLz, ATL4, ATLc+s, ATLc+c, ATLc, ATLs, ATLm.



Technical Section 9

15515 + 15505

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 (except for single-piece TL)
- Indication: mechanical on front face by toggle position

Technical data

32 A, $\cos \varphi = 0.6$
TL: 1P 250 V, 50/60 Hz
TL: 2P, 3P, 4P (TL+ETL): 415 V, 50/60 Hz
1P: 19 VA, 2P: 38 VA, 3P: 57 VA, 4P: 76 VA
Tolerance at 50 Hz: Uc +6 % -15 %
Tolerance at 60 Hz: Uc ±6 %
Tolerance in DC: +6 % -10 %
50 ms (recommended value for automation
system: 200 ms)
5 switching operations/minute
≤ 60 dBA (at 1 m)
50,000 cycles (AC21), 20,000 cycles (AC22)
-20 °C to +50 °C
Treatment 2 (relative humidity 95 % at +55 °C)
Screw "±", Posidriv
Power circuit: tunnel terminals for cables up to
10 mm ²
Control circuit: tunnel terminals for 0.5 to 6 mm ² cables

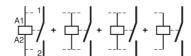
Туре	Width in mod.	Coil voltage U	С	Part number
	of 9 mm	(V AC)	(V DC)	
TL 32 A impuls	se relays			
1P	2	230240	110	15515



A1 +				
3P	2 + 4	230240	110	15515 + 2 x 15505
A1 +	+ -			
4P	2 + 6	230240	110	15515 + 3 x 15505

230...240

110



2 + 2

32 A ETL 6	extensions				
	2	230240	110	15505	_





TLc, TLm, TLs impulse relays with built-in auxiliary function

15518

TLc impulse relay with centralised control

- Mechanically latched opening and closing of circuits remotely controlled by impulse
- Centralised control of a group of TLc impulse relays while at the same time maintaining local impulse control

Туре	Width in mod. of 9 mm	Coil voltage Uc (V AC)	Part number
TLc 16 A			
L	2	230240	15518
off H		48	15526
A1 ¥ 1 A1	¥ 1	24	15525
on A2 A2 On off 2 On			

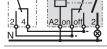
Technical data

Rating	16 A, cos j = 0.6
Power circuit	1P: 250 V AC, 50/60 Hz, 2P, 3P, 4P: 415 V AC, 50/60 Hz
Inrush power	19 VA, 38 VA with ETL
Other data	Same as 16 ATL

TLm impulse relay with latched control

- Operates on latched orders coming from a changeover switch (selector switch, time switches, thermostat)
- The manual control is inoperative

Туре	Width in mod. of 9 mm	Coil voltage (V AC)	Uc (V DC)	Part number
TLm 16 A				
2 4 A2 on off 2	2	230240	110	15516



Technical data

Rating	16 A, cos φ = 0.6
Power circuit	1P: 250 V AC, 50/60 Hz, 3P: 415 V AC, 50/60 Hz
Inrush power	19 VA, 38 VA with ETL
Other data	Same as 16 A TL

- Mechanically latched opening and closing of circuits remotely controlled by impulses
- Remote indication of the mechanical status of the impulse relay

Туре	Width in mod. of 9 mm	Coil voltag (V AC)	e Uc (V DC)	Part number
TLs 16 A				
L	2	230240	110	15517
4		48	24	15528
[A] - 11 - 1		24	12	15527
N				



ieciiiicai uata	
Rating	16 A, $\cos \varphi = 0.6$
Power circuit	1P: 250 V AC, 50/60 Hz, 3P: 415 V AC, 50/60 Hz
Inrush power	19 VA, 38 VA with ETL
Auxiliary circuit	24 V CC, V AC / 10 mA à 240 V CC, V AC / 6 A
Other data	Same as 16 A TL





15517

Impulse relay auxiliaries ATEt, ATLz, ATLc+s, ATLc, ATLs, ATLm, ATLc+c, ATL4

Add-on auxiliaries provide additional functions. They allow:

- Time delay control
- Control by illuminated pushbuttons
- Centralised control + indication
- Multi-level centralised control
- Step by step control



15419



15413



15409

ATEt time delay

Causes the automatic return of the impulse relay to the reset position after a time delay adjustable from 1 s to 10 h:

- The time delay cycle begins when the device closes
- A new impulse opens the impulse relay and interrupts the cycle

Туре	Width in mod. of 9 mm	Coil voltage (V AC)	Jc (V DC)	Part number
ATEt				
B1 B2 A2 Y1 2 4	2	24240	24110	15419

ATLz control by illuminated pushbuttons

Used to control impulse relays by illuminated pushbuttons, without operating risks:

■ Provide an ATLz when the current drawn up by the illuminated pushbuttons is higher than 3 mA (this current is sufficient to keep the coils energised). Above this value, fit one extra ATLz per 3 mA

For example: for 7 mA, fit 2 ATLz.

Туре	Width in mod. of 9 mm	Coil voltage Uc (V AC)	Part number
ATLz			
<u>L</u>	2	130240	15413



ATLc+s centralised control + indication

Used for centralised control, thanks to a "pilot line", of a group of impulse relays controlling separate networks, while at the same time maintaining local individual control of each impulse relay, and for remote indication of the mechanical status of each relay:

■ Auxiliary contact: 24 V CC, V AC / 10 mA à 240 V CC, VAC / 6 A

Туре	Width in mod. of 9 mm	Coil voltage Uc (V AC)	Part number
ATLc+s			
L	2	24240	15409
A1 1			

Impulse relay auxiliaries ATEt, ATLz, ATLc+s, ATLc, ATLs, ATLm, ATLc+c, ATL4

Total Cale

15404

ATLc centralised control

Used for centralised control, thanks to a "pilot line", of a group of impulse relays controlling separate networks, while at the same time maintaining local individual control of each impulse relay.

Туре	Width in mod. of 9 mm	Coil voltage Uc (V AC)	Part number
ATLc			
L1 (N) A1 A2 On off N (L1)	1	24240	15404



15405

ATLs indication

Allows remote indication of the associated impulse relay.

Туре	Width in mod. of 9 mm	Voltage rating Current rating	Part number
ATLs			
L1 (N)	1	24 V240 CA/CC	15405
N (L1)		10 mA 6 A CA/CC	

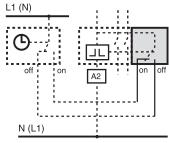
THE PART OF

15414

ATLm latched control

Combined with an impulse relay, it operates on latched orders.

Туре	Width in mod. of 9 mm	Voltage rating Uc (V AC) (V DC)	Part number
ATLm			
	1	12240 6110	15414



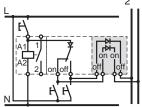
Impulse relay auxiliaries ATEt, ATLz, ATLc+s, ATLc, ATLs, ATLm, ATLc+c, ATL4

ATLc+c multi-level centralised control

Used to control the centralised controls of a number of impulse relay groups, while at the same time maintaining local individual control and centralised control by level:

- Each group, made up of TLc or (TL or TLl or TLs) + ATLc+s, must only contain a single ATLc+c
- Mounting: without mechanical link with impulse relays and auxiliaries

Туре	Width in mod. of 9 mm	Coil voltage Uc (V AC)	Part number
ATLc+c			
L	2 	24240	15410



ATL4 step by step control

Allows the step by step sequence over 2 circuits:

- The cycle is as follows:
- ☐ 1st impulse TL 1 closed, TL 2 open
- $\hfill\Box$ 2nd impulse TL 1 open, TL 2 closed
- $\hfill\Box$ 3rd impulse TL 1 and 2 closed
- $\hfill\Box$ 4th impulse TL 1 and 2 open
- $\hfill\Box$ 5th impulse TL 1 closed, TL 2 open, etc
- Mounting: assembled between 2 impulse relays: according to the auxiliarisation table

Туре	Width in mod. of 9 mm	Coil voltage Uc (V AC)	(V DC)	Part number
ATL4				
L TL1 F TL2 A1 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7	4	230240	110	15412



15412



Accessories

Yellow clips

Ensure the mechanical link (indicated in dotted lines on the diagrams) and/or the electrical link between impulse relays.

Туре	Part number
Set of 10 clips (spare)	15415

Time management

RTA, RTB, RTC, RTH, RTL and RTMF time delay relays

Technical data	
Time delay range:	0.1 s to 100 h
Control circuit:	Control and supply voltage:
	- 24 V DC ±10 %
	- 2440 V AC ±10 %
	- RTMF: 12240 V AC/DC ±10 %
Frequency:	5060 Hz
Operating temperature:	-5+55 °C
Power circuit:	Changeover switch (without cadmium)
	- minimum rating: 10 mA/5 V DC
	- maximum rating: 8 A/250V DC
	and 8 A/250 V AC
Mechanical durability:	> 5.106 operations
Electrical durability:	> 105 operations (utilisation category AC1)
Accuracy:	±10 % full scale
Minimum control	100 ms
impulse duration:	
Maximum resetting	100 ms
time by voltage break:	
Repetition accuracy:	±0.5 % with constant parameters
Visualisation of contact status	by green indicator light (flashing during the time
delay)	
Unaffected by brownouts <20	ms
Case protection:	IP40
Connection by	2 x 2.5 mm ² single-strand cable without end
tunnel terminals:	2 x 1.5 mm² multi-strand cable with end

Specific technical data

RTA

Delays energisation of a load

The single time delay cycle starts on energisation of the supply of the RTA relay The load is energised at the end of time delay T

RTB

Applies a time delay to energisation of a load on closing of an auxiliary contact (pushbutton)

The single time delay cycle starts on closing of an auxiliary contact (pushbutton)
At the end of time delay T, the load is de-energised

RTC

Delays energisation of a load on closing of an auxiliary contact (pushbutton) The single time delay cycle only starts when an auxiliary contact is released (pushbutton)

At the end of time delay T, the load is de-energised

RTH

Applies a time delay to energisation of a load

The single time delay cycle starts on energisation of the supply of the RTH relay The load is de-energised at the end of time delay T

RTL

Applies a time delay to energisation and de-energisation of a load for different periods of time, repeatedly (flashing indicator)

The time delay cycle starts on energisation

The load is energised for an adjustable time T1, then de-energised for an adjustable time T2. This cycle is repeated until the RTL relay supply is de-energised

RTMF

Lets you select one of the 4 time delay types: A, B, C or H

As applicable, the RTMF generates the time delay cycles of the RTA, RTB, RTC or RTH relays

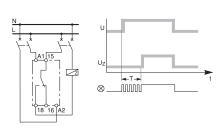
Time management

RTA, RTB, RTC, RTH, RTL and RTMF time delay relays

RTB

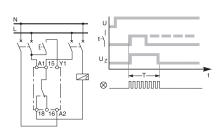
RTC





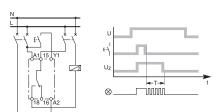
Туре	Part number	Width in mod of 18 mm
RTA	16065	1





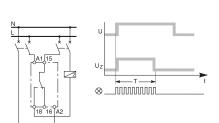
16066





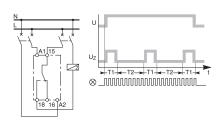
16067





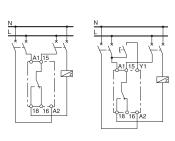
RTH **16068** 1





RTL **16069** 1





RTMF **16070** 1

MIN, MINs, MINp and MINt timers, PRE switch-off warning Selection table

Functions

MIN, MINs

These timers allow closing and then opening of a contact in a determined time.

MINp, MINt

This timer allows closing and then opening of a contact in a determined time, and it also provides warning that the lighting is about to be switched off by flickering of the lamplight. (switch-off warning). The MINt timer is the same as MINp with an "impulse relay" additional function (see "MINt" technical data).

PRE

This is used in association with MIN or MINs timers and only on incandescent lighting circuits (not used on fluorescent, fluocompact lamps and very low voltage halogen lamps). It provides warning that the lighting is about to be switched off by reducing the brightness by 50% during the 20 to 60 s warning time.

	MIN	MINs	MINp	MINt	PRE	
Part numbers	15363	CCT15232	CCT15233	CCT15234	15376	
Technical data						
Voltage (+10 %, -15 %)	230 V AC	230 V AC	230 V AC	230 V AC	230 V AC	
Frequency	50 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	
Adjustable time delay	1 to 7 min.	0.5 to 20 min.	0.5 to 20 min.	0.5 to 20 min.	20 to 60 s	
Long time delay			1 h	1 h		
Consumption	1 VA	< 6 VA	< 6 VA	< 6 VA		
Switching capacity (cos $\varphi = 1$)	6 A	6 A	6 A	6 A		
Operating temperature	-10 to +50°C	-25 to +50°C	-25 to +55°C	-25 to +55°C	-10 to +50°C	
Width (9 mm modules)	2	2	2	2	2	
1 screw connection per pole for						
cables up to 6 mm ²						
Selection of the type of connection (3 or 4 wires)	Selector switch	Automatic	Automatic	Automatic		
Mechanical compatibility with electrical						
distribution comb busbar						
Switch-off warning function						
Impulse relay function						
impaise relay fariotion						

MIN

Technical data



Functions

These timers allow closing and then opening of a contact in a determined time.

Technical data

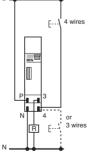
Two operating modes	Automatic mode:		
triggered by switch on	Operation in timing mode		
front face:	time delay adjustable from 1 to 7 min		
	Setting in steps of 15 s using knob		
	Pressing a push-button renews the		
	time delay		
	Manual override mode:		
	Constant lighting		
Voltage:	230 V AC ± 0 %		
Frequency:	50 Hz.		
Consumption during	1 VA maximum		
operation:			
Consumption of connected	50 mA maximum		
luminous push-buttons:			
Degree of protection:	IP 20B		
Operating temperature:	-10°C to +50°C		
Contact rating:	$6 \text{ A, } \cos \varphi = 1$		
Load table:			

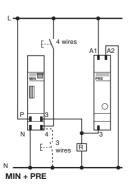
Type of lighting		Maximum power			
230 V incandescent and halo	ogen lamps	2300 W			
Non-corrected/ serial-correc	ted/ dual mounted	2300 VA			
fluorescent tubes with conve	entional ballast				
Fluocompact lamps with cor	ventional ballast	2000 VA			
Parallel-corrected fluorescent tubes		1300 VA (70 ∝F)			
with conventional ballast					
Fluorescent tubes with electronic ballast		300 VA			
Fluocompact lamps with electronic ballast		9 x 7W, 6 x 11W, 5 x			
		5W, 5 x 20W			
Control circuit:	Connected luminous push-buttons; timer inoperativia self-protection if consumption above 50 mA maximum				
Switch-off warning:	External via use of PRE product				
Connection					

Connect

Connection terminals:	1 screw connection per pole for cables up to 6mm ²
Connection type:	3 or 4 wires with selector switch on the side of the
	product

Part numbers	
Туре	Part number
MIN	15363

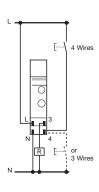




MINp, MINt Technical data







Functions

This timer allows closing and then opening of a contact in a determined time, and it also provides warning that the lighting is about to be switched off by flickering of the lamplight. (switch-off warning). The MINt timer is the same as MINp with an "impulse relay" additional function (see "MINt").

Technical data

Time delay adjustable from 0.5 to 20 min

Three operating modes triggered by switch on front face:

Timer mode with warning function built into the device.
The lamp blinks 40 and 30 s before the end of the time delay
Timer mode mode without "switch-off warning" function

Timer mode mode without "switch-off warning" function
Permanent mode : constant lighting

Timer mode operation:

Pressing a push-button for longer than 2 s: lighting will last for 1 h

Pressing again a push-button for less than 2 s relaunch the time delay of 1 h and pressing again a push-button for more than 2 s switches off the light

For MINp, pressing a push-button for less than 2 s launch the pre-set time delay, pressing again a push-button for less than 2 s relaunch the pre-set time delay For MINt, pressing a push-button for less than 2 s launch the pre-set time delay, pressing again a push-button for less than 2 s, switches off the light (impulse relay mode)

24 x 5W, 22 x 23W

Voltage: 230 V AC +10 %, - 15%

Frequency: 50/60 Hz

Consumption during operation: < 6 VA

Consumption of connected 50 mA maximum luminous push-buttons:
Insulation class: Class II

Degree of protection: IP 20B
Operating temperature: $-25^{\circ}\text{C to } +50^{\circ}\text{C}$ Contact rating: $6 \text{ A}, \cos \varphi = 1$

Load table: Type of lighting Maximum power 230 V incandescent and halogen lamps 3600 W Non-corrected/ serial-corrected/ dual mounted 3600 VA(1) fluorescent tubes with conventional ballast Fluocompact lamps with conventional ballast 500 VA (1) Parallel-corrected fluorescent tubes 1200 VA (120 mF) (1) with conventional ballast Fluorescent tubes with electronic ballast 1000 VA Fluocompact lamps with electronic ballast 34 x 7W, 27 x 11W,

(1) The "switch-off warning" function is not available for these types of loads.

Connection

Connection terminals: 1 screw connection per pole for cables up to 6mm²
Connection type: 3 or 4 wires with selector switch on the side of the product

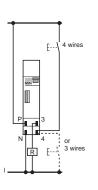
Mechanical compatibility with electrical distribution comb busbars

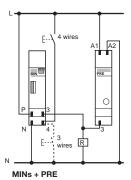
Part numbers	
Туре	Part number
MINp	CCT15233
MINt	CCT15234

MINs and PRE switch-off warning Technical data

MINs







Functions

These timers allow closing and then opening of a contact in a determined time.

Technical data

Two operating modes Timer mode: time delay adjustable triggered by switch on front face: from 0.5 to 20 min

permanent mode: constant lighting Pressing on a push-button renews the time delay 230 V AC +10 %, - 15% Voltage: Frequency 50/60 Hz Consumption during < 6 VA operation: Consumption of connected 50 mA maximum luminous pushbuttons: Class II Insulation class: Degree of protection: IP 20B -25°C to +50°C Operating temperature: Contact rating: 6 A, $\cos \varphi = 1$ Switch-off warning: External via use of PRE product

Load table:

Type of lighting Maximum power

2300 W
2300 VA
1500 VA
400 VA (42 μF)
300 VA
9 x 7W, 7 x 11W, 7 x 5W,
_

Connection	
Connection terminals:	Screw connection per pole for cables up to 6 mm ²
Connection type:	3 or 4 wires with automatic selection of the control push-button connection

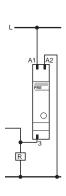
7 x 20W, 7 x 23W

Mechanical compatibility with electrical distribution comb busbars

Part numbers	
Туре	Part number
MINs	CCT15232

PRE switch-off warning





Functions

This is used in association with MIN or MINs timers and only on incandescent lighting circuits (not used on fluorescent, fluocompact lamps and very low voltage halogen lamps). It provides warning that the lighting is about to be switched off by reducing the brightness by 50% during the 20 to 60 s warning time.

Technical data

Only to be used with the MIN et MINs timers 50% reduction in brightness during warning time from 20 to 60 s Time adjustable Voltage: 230 V AC ± 10 % Frequency: 50/60 Hz Operating temperature: -10°C to +50°C

Maximum power:	2300 W for incandescent lamps only.				
Not compatible with fluorescent lamps, fluocompact lamps and very low voltage					
halogen lamps					
Connection					
Connection terminals:	Screw connection per pole for cables up to 6 mm ²				
Connection type:	3 or 4 wires				

Part numbers	
Туре	Part number
PRE	15376
Specific terminal shield for MIN	15359

Technical Section 9

Dimensions Section 10

The time switches control opening and closing of one or more separate circuits according to a programming pre-set by the user:

- By memorisation of On and Off switching operations for the IHP switches
- By positioning of jumpers or captive segments on a programming dial for the mechanical IH switches

An IHP or IH time switch is chosen according to the following criteria:

Designation	Number	Cycle period	Minimum	Number	Saving	Width	Override	Output contact	Time
	of	(d: day)	time between	of switching	on mains	(mods.	controls	changeover	changeover
	channels		2 switching	operations	cut off	of 9mm)	On/Off	switch	(summer/
			operations					(cos φ = 1)	winter)
IHP 1c	1	24 h and/or 7 d	1 min	56	6 years	5	On/Off	16 A	Auto
IHP + c	1	24 h and/or 7 d	1 s	84	6 years	5	On/Off	16 A	Auto
IHP 2c	2	24 h and/or 7 d	1 min	56	6 years	5	On/Off	16 A	Auto
IHP + 2c	2	24 h and/or 7 d	1 s	84	6 years	5	On/Off	16 A	Auto
18 mm int	uitive swi	tches							
IHP c 18 mm	1	24 h and/or 7 d	1 min	28	3 years	2	On/Off	16 A	Auto
IHP + c 8 mm	1	24 h and/or 7 d	1 min	42	3 vears	2	On/Off	16 A	Auto

Annual sw	itches								
IHP c annual (1)	1	7 d + dated d	1 min	6	4 years	10	On/Off	16 A	Auto
IHP 2c annual (1)	2	7 d + dated d	1 min	6	4 years	10	On/Off	16 A	Auto

Multifunctional switch									
ITM 4C-6E (2)	4	60 min., 24 h,	1 s	(3)	5 years	10	On/Off (4)	10 A	Auto
		7 d, 7 d + dated	d						

Mechanica	l switc	ches							
IH 60 mn c SRM	1	60 min.	1 min 15 s	24 On - 24 Off No	one	6	On	16 A	Manual
IH 24h c SRM	1	24 h	30 min	24 On - 24 Off No	one	6	On	16 A	Manual
IH 24h c ARM	1	24 h	30 min	24 On - 24 Off 50	0 h	6	On	16 A	Manual
IH 24h 2c ARM	2	24 h	30 min	24 On - 24 Off 50	0 h	6	On	16 A	Manual
IH 7d c ARM	1	7 days	4 h	2 On - 2 Off 50	0 h	6	On	16 A	Manual
IH 24 h + 7d	1+1	24 h + 7 d	45 min	16 On - 16 Off 15	50 h	6	On	16 A	Manual
+ c ARM			+ 12 h	+ 7 On - 7Off					

18 mm me	chan	ical switches						
IHH 7d c ARM	1	7 days	2 h	42 On - 42 Off 100 h	2	On/Off	16 A	Manual
IH 24h c ARM	1	24 h	5 min	48 On - 48 Off 100 h	2	On/Off	16 A	Manual
IH 24h c SRM	1	24 h	5 min	48 On - 48 Off None	2	On/Off	16 A	Manual

Accessories

Programming kit (5)

Memory key (5)

Memory cartridge (6)

- (1) Programming of dated days allows specific switching operations on certain days.
- (2) 4 output channels and 6 condition inputs.
- (3) 45 time brackets in weekly time programming, 5 time brackets in annual time programming, 20 different pulses in pulse programming.
- (4) On/Off via an override input or a condition input.
- (5) For IHP + c and IHP+ 2c.
- (6) For ITM 4c-6E.
- (7) Pulse programming allows switching operations of a duration less than one minute (adjustable from to 59s); a pulse control always has priority.
- (8) French, english, italian, spanish, german, portuguese languages.

Technical Section 9 Dimensions Section 10

Characteristics

Back-lit display	Absonce	Screwless	Mechanical	Input for	Instruction	Memory key	Part numbers (8)
	Absence						Fart numbers ™
random function	for	connection	compatability with	external	manual	integrated	
and pulse	holidays		electrical distribution	control	holder in	in front face	
programming (7)	function		comb busbar		front face		
							CCT15720
				1 input			CCT15721
							CCT15722
				2 inputs			CCT15723
							15854
_	_	•					15837
							40055
	_						16355
							16356
Pulse function	-						15270
							45000
							15338
							16364
							15365
							15337
-							15367
							15366
							15331
							15336
							15335
							15055
							CCT15860
							CCT15861
							15280
	,						

Intuitive switches Technical data



IHP 1C

5.4D

IHP 2C



IHP + 1C



IHP + 2C



Programming kit for PC



Memory key

Application

These time switches automatically switch on and off loads according to the program entered by the user.

- They operate on weekly cycle: the same program is repeated week after week
- They offer automatic summer/winter time change, and allow to adjust it according to where you are located
- The program can be overriden temporary or permanently by pressing 2 keys on the product
- The IHP 1C and 2C, as the IHP+ also offer holidays program, by configuring the starting and ending dates of the absence

Electrical data

Voltage:	230 V AC ± 10 %
Frequency:	50/60 Hz
Consumption:	4 VA for IHP 1c/+ 1c, 7 VA for IHP 2c/+2c
Saving of program and time	Lifetime: 6 years for IHP 1c/2c, IHP+ 1c/2c
by lithium battery:	Back-up time, cumulated mains cut off: 6 years for
	IHP 1c/2c and IHP+ 1c/2c
Time accuracy:	± 1 s per day at 20°C
Contact rating:	16 A under 250 V AC (cos φ = 1)
	10 A under 250 V AC (cos $\varphi = 0.6$)

Mechanical data

Overall dimensions:	5 modules of 9 mm				
Degree of protection:	IP20B				
Operating temperature:	- 10°C to + 50°C				
Location for instruction manual on the front face for IHP 1c/2c, IHP + 1C/2c					
The IHP 1c/2c, IHP + 1c/2c are compatible with electrical distribution comb					
busbars (mechanical compatibility)					

Specific data for 1 and 2 channel IHP+

Manual functions:	Temporary cancellation of programming for holidays, public holidays, etc. by configuration of the 2 dates - start and end of absence
	simulation of presence thanks to random operation during On periods
Pulse functions:	Programming of pulses adjustable from to 59 s
	(pulse takes priority over switching)
Back-lighting of the screen	
Memory key located on front	face
Supplementary inputs for ext (input for IHP+ 1c and 2 input	ernal control with a switch or a push-button ts for IHP+ 2c)
	Characteristics of the input:
	Voltage: 230VAC, +10%, -15%
	Frequency: 50/60 Hz
	Input current: max. 1.2 mA
	Consumption: max. 0.3 mW
	Cable length: max. 100 m
Accessory:	Programming kit for PC consists of a programming

device, a memory key, a CDROM and a 2m USB cable

Memory key for saving and duplicating programs

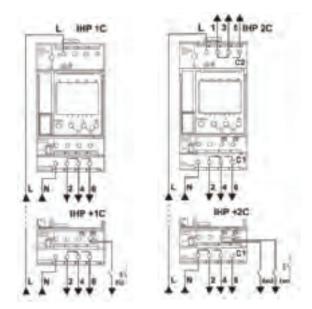
Technical Section 9 Dimensions Section 10

Intuitive switches Technical data

Connection

- 1 screw connection per pole for cables up to 6 mm² for IHP 1c/2c
- 2 screw-less connection per pole for cables up to 2.5 mm² for IHP 1c/2c and IHP+ 1c/2c

Part numbers				
Designation	Part number			
IHP 1c	CCT15720			
IHP + 1c	CCT15721			
IHP 2c	CCT15722			
IHP + 2c	CCT15723			
Programming kit for PC	CCT15860			
Memory key	CCT15861			



18mm intuitive switches Technical data



Function

- These time switches automatically switch on and off loads according to the program entered by the user
- They operate on weekly cycle: the same program is repeated week after week
- They offer automatic summer/winter time change, and allow to adjust it according to where you are located
- The program can be overriden temporary or permanently by pressing 2 keys on the product

Electrical data

Voltage:	230 V AC ± 10 %
Frequency:	50/60 Hz
Consumption:	2.5 VA for IHP 1c 8 mm, 3 VA for IHP + 1c 18 mm
Saving of program and	Lifetime: 10 years
time by lithium battery:	Back-up time, cumulated mains cut off: 3 years
Time accuracy:	± 1 s per day at 20°C
Contact rating:	16 A under 250 V AC (cos φ = 1)
	4 A under 250 V AC (cos φ = 0.6)

Mechanical data

Overall dimensions:	2 modules of 9 mm		
Degree of protection:	IP20B		
Operating temperature:	- 10°C to + 50°C		
Mechanical compatibility with electrical distribution comb busbars			
(only for IHP + 1c 8 mm)			

Connection

■ 1 screw connection per pole for cables up to 6 mm²

Part numbers	
Designation	Part number
IHP 1c 18mm	15854
IHP + 1c 18mm	15857



Annual switches Technical data



IHP 1c annual



IHP 2c annual

Function

- These time switches automatically switch on and off loads according to the program entered by the user
- They operate on annual cycle: the same program is repeated year after year
- They offer automatic summer/winter time change and allow to adjust it according to where you are located
- The program can be overriden temporary or permanently by pressing keys on the product

Electrical data

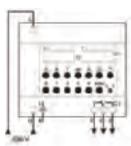
Voltage:	230 V AC ± 10 %
Frequency:	50/60 Hz
Consumption:	3.5 VA
Saving of program and	Lifetime: 10 years
time by lithium battery:	Back-up time, cumulated mains cut off: 4 years
Time accuracy:	± 1 s per day at 20°C
Contact rating:	16 A under 250 V AC (cos φ = 1)
	10 A under 250 V AC (cos φ = 0.6)

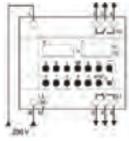
Mechanical data

Overall dimensions:	10 modules of 9 mm	
Degree of protection:	Front face - IP40	
	Terminals - IP20B	
Operating temperature:	- 10°C to + 50°C	
	·	

Connection

■ 1 screw connection per pole for cables up to 6 mm²





IHP 1c annual

IHP 2c annual

Part numbers	
Designation	Part number
IHP 1c annual	16355
IHP 2c annual	16356

Accessories	
Lithium battery	16357

Multifunctional switches Technical data



Function

- Weekly or annual time programming to be distributed over 1, 2, 3 or 4 channels. 6 inputs to condition these functions
- A removable memory cartridge to duplicate on another ITM or to save the program created by the contractor

Electrical data

Voltage:	230 V AC ± 10 %
Frequency:	50 Hz
Consumption:	4.5 VA
Saving of program and	Lifetime: 10 years
time by lithium battery:	Back-up time: 5 years
Time accuracy:	± 1 s per day at 20°C
Contact rating:	10 A under 250 V AC (cos φ = 1)
	$6 \text{ A under } 250 \text{ V AC (cos } \phi = 0.6)$

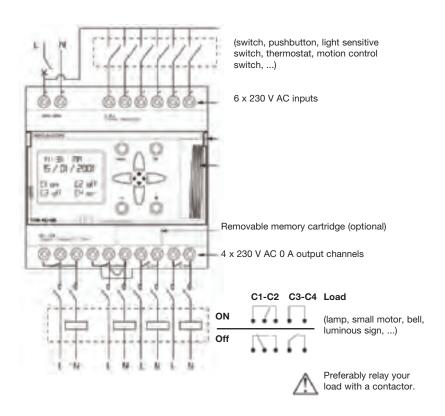
Mechanical data

Overall dimensions:	10 modules of 9 mm
Degree of protection:	Front face - IP40
	Terminals - IP20B
Operating temperature:	- 5°C to + 50°C

Connection

Memory cartridge

■ 1 screw connection per pole for cables up to 6 mm²



Part numbers	
Designation	Part number
ITM 4C-6E	15270
Accessorv	

15280

Technical	Dimensions
Section 9	Section 10

18mm mechanical switches Technical data



IHH 7d 1c ARM



IH 24h 1c ARM

Function

- These time switches automatically switch on and off loads according to the program entered by the user
- They operate daily or weekly cycle: the same program is repeated hour after hour, day after day (IH 24 h), week after week (IH 7d)
- The program can be overriden on or off

Electrical data

Voltage:	230 V AC ± 10 %
Frequency:	50/60 Hz
Consumption:	2.5 VA
Saving program and	Lifetime: 10 years
time:	Back-up time, cumulated mains cut off: 100 hours
	(except for IH 24 h C SRM).
Time accuracy:	± 1 s per day at 20°C
Contact rating:	16 A under 250 V AC (cos φ = 1)
	4 A under 250 V AC (cos φ = 0.6)

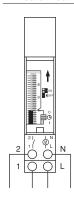
Mechanical data

Programming by captive segments

Overall dimensions:	2 modules of 9 mm
Degree of protection:	Front face: IP40
	Terminals: IP20B
Operating temperature:	- 10°C to + 50°C

Connection

■ 1 screw connection per pole for cables up to 6 mm²



Part numbers	
Designation	Part number
IHH 7d 1c ARM	15331
IH 24h 1c SRM	15335
IH 24h 1c ARM	15336

Mechanical switches Technical data



IH 60 min. 1c SRM

IH 24 h 1c SRM



IH 24 h + 7d 1 + 1c ARM

Function

- These time switches automatically switch on and off loads according to the program entered by the user
- They operate on hourly, daily or weekly cycle: the same program is repeated hour after hour (IH 60 min), day after day (IH 24 h), week after week (IH 7d)
- The program can be overridden on.

Electrical data

Voltage:	230 V AC ± 10 %
Frequency:	50/60 Hz
	(50 Hz for IH 60 min. 1c SRM, IH 24h + 7d + 1c
	SRM)
Consumption:	2.5 VA (VA for IH 60 min. 1c SRM)
Time accuracy:	± 1 s per day at 20°C
Contact rating:	16 A under 250 VAC (cos φ = 1)
	4 A under 250 VAC (cos φ = 0.6)

Mechanical data

Programming:	By jumpers (supplied):	
IH type	Number of jumpers supplied	
IH 24h 2c ARM	4 red + 4 green + 2 white	
IH 24h + 7d + 1c ARM	6 yellow (24 h)	
	12 blue + 2 red (7 white)	
IH 7d 1c ARM	7 blue + 7 red	

By captive segments for the other catalogue numbers		
Overall dimensions:	6 modules of 9 mm	
Degree of protection:	Front face: IP40	
	Terminals: IP20B	
Operating temperature:	- 10°C to + 50°C	
Accessories for Part No.	IH 24b 2c ARM IH 24b + 7d + c ARM IH 7d c ARM	

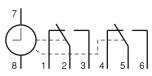
the additional jumpers are used to program a larger number of sequences

Connection

■ 1 screw connection per pole for cables up to 6 mm²



IH 60 min 1c SRM, IH 24h 1c SRM/ARM, IH 7d 1c ARM





IH 24d +7d 1 + 1c ARM

Part numbers	
Designation	Part number
IH 60 min 1c SRM	15338
IH 24h 1c SRM	16364
IH 24h 1c ARM	15365
IH 24h 2c ARM	15337
IH 7d 1c ARM	15367
IH 24h + 7d 1 + 1c ARM	15366
Accessories	
Additional jumpers	15341
(1 bag containing: 5 red, 5 green, 5 white, 5 yellow)	

IH 24h 2c ARM

Technical Section 9 Dimensions Section 10

IC100, IC200, IC2000, IC2000P+, IC Astro Selection table

	IC100	IC200	IC2000	IC2000P+	IC Astro
Part numbers	15482	15284	CCT15368	15483	15223
Control by brightness detection					
Coupling with weekly programming					
Control by calculation of sunrise/sunset times					
Technical data					
Voltage (+ 10 %, - 15 %)	230 V AC	230 V AC	230 V AC	230 V AC	230 V AC
Frequency	50/60 Hz	0/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Adjustable brightness threshold	2 to 100 lx	2 to 200 lx	2 to 2000 lx	2 to 50 lx 60 to 300 lx 350 to 2100 lx	
Consumption	6 VA	3 VA	6 VA	3 VA	4 VA
Switching capacity (cos φ = 1)	16 A	10 A	16 A	16 A	16 A
Monitoring indicator light, not time delayed it when brightness is less than the threshold	Red	•	Red		
Contact switching indicator light	Green		Green		
LCD liquid crystal display				Back-lit	Back-lit
Program saving by lithium battery					
Operating reserve				5-6 years	6 years
Operating temperature	-20 to +50 °C	- 10 to +50 °C	-25 to +55 °C	-20 to +50 °C	-20 to +50 °C
Simplified leaflet incorporated in the "leaflet nolder" slot under the swivel cover					
Width (9 mm modules)	2	5	5	5	5
1 screw connection per pole for cables up to 6 mm²	•	•		•	•
2 screw-less connection per pole for cables up to 2.5 mm ²					
Mechanical compatibility with electrical distribution comb busbars	•				
Cabling test function with a push-button on front face			•		
Languages				gb, fr, es, it, de, pt, se, dk/no, fi, nl	gb, fr, es, it, de, pt
Delivered with wall-mounted cell Part No. 15268					
Delivered with wall-mounted cell, Part No. CCT 15268			•		
Delivered with switchboard cell Part No. 15281		•			



Wall mounted cell Part No. CCT15268



Wall mounted cell Part No. 15268

Cell selection table for spare parts	
Spare cell	Part number
Switchboard cell, IP65	15281
Wall-mounted cell, IP54 (compatible with all products)	CCT15268



Switchboard cell Part No. 15281

Technical	
Section 9	

IC100, IC200 Technical data







Wall mounted cell

Function

The light sensitive switch controls closing of a contact when brightness decreases and drops below the selected threshold. It controls opening of a contact when brightness increases and rises above the selected threshold.

Technical data

10 100	
Adjustable brightness	2 to 100 lux
threshold:	
Time delay:	On closing: 20 s
	On contact breaking: 80 s
Contact opening:	< 3 mm
Insulation class:	Class II
Degree of protection:	IP20B
Compatible with electrical dis	tribution comb busbars
Delivered with wall mounted of	
Contact rating:	16 A under 250 V AC (cos φ = 1)
	10 A under 250 V AC (cos φ = 0.6)

Maximum power

IC100 load table: Type of lighting

230 V incandescent and halogen lamps	2300 W
Non-corrected/ serial-corrected/ dual mounted	2300 VA
fluorescent tubes with conventional ballast	
Fluocompact lamps with conventional ballast	1500 VA
Non-corrected/ serial-corrected mercury	1000 VA
and sodium vapour lamps	
Parallel-corrected mercury/ sodium vapour lamps	400 VA
and parallel-corrected fluorescent tubes	
with conventional ballast	
Fluorescent tubes/ dual mounted with electronic ballast	300 VA
Fluocompact lamps with electronic ballast	9 x 7W, 7 x 11W, 7 x 5W,
	7 x 20W, 7 x 23W

	. x 2011,	
IC200		
Adjustable brightness	2 to 200 lux	
threshold:		
Time delay on contact	> 40 s	
closing and breaking:		
Delivered with switchboard	front face cell	
Contact rating:	16 A under 250 V AC (cos φ = 1)	
	10 A under 250 V AC (cos φ = 0.6)	

IC200	load	table:	

IC200 load table:	
Type of lighting	Maximum power
230 V incandescent, halogen lamps and fluocompact	2300 W
lamp with conventional ballast	
Non-corrected/ serial-corrected fluorescent tubes	46 x 36W, 23 x 58W,
with conventional ballast	14 x 100W
Parallel-corrected fluorescent tubes	10 x 36W, 6 x 58W,
with conventional ballast	2 x 100W
Dual-mounted fluorescent tubes	11 x (2 x 58W),
with conventional ballast	6 x (2 x 100W)
Fluorescent tubes with electronic ballast	9 x 36W, 7 x 58W
Dual-mounted fluorescent tubes with electronic ballast	5 x (2 x 36W), 4 x (2 x 58W)
Fluocompact lamps with electronic ballast	6 x 7W, 8 x11W,
	6 x 15W, 6 x 20W
Parallel-corrected mercury and sodium vapour lamps	250 W



Wall mounted cell - Part No. 15268

- Cell connection: by double insulation 2-conductor cable, not to be laid next to mains cables or water ducts, maximum length: 25 m for IC100
- Degree of protection: IP54, IK05
- Operating temperature: -40°C to +70°C

Switchboard cell (delivered with product and its fixing device)

- Delivered with 1 m cable
- Degree of protection: IP65
- Operating temperature: -40°C to +70°C



IC200

Dimensions Section 10

IC2000 Technical data



IC2000



Wall mounted cell

Function

The light sensitive switch controls closing of a contact when brightness decreases and drops below the selected threshold. It controls opening of a contact when brightness increases and rises above the selected threshold.

Technical data

Adjustable brightness	2 to 2000 lux
threshold:	
Time delay on contact	60 s
closing and breaking	
Contact opening:	< 3 mm
Insulation class:	Class II
Degree of protection:	IP20B
Delivered with wall mounted of	cell and its fixing device
Contact rating:	16 A under 250 V AC (cos φ = 1)
	10 A under 250 V AC (cos φ = 0.6)

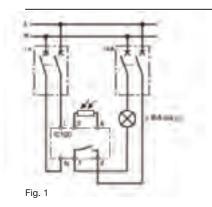
Load table:

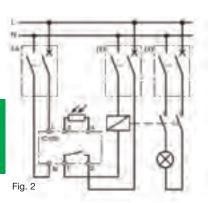
Load table:	
Type of lighting	Maximum power
230 V incandescent and halogen lamps	2300 W
Non-corrected/ serial-corrected/ dual mounted	2300 VA
fluorescent tubes with conventional ballast	
Fluocompact lamps with conventional ballast	1500 VA
Non-corrected/ serial-corrected mercury	1000 VA
and sodium vapour lamps	
Parallel-corrected mercury/ sodium vapour lamps	400 VA
and parallel-corrected fluorescent tubes	
with conventional ballast	
Fluorescent / dual-mounted fluorescent tubes	300 VA
with electronic ballast	
Fluocompact lamps with electronic ballast	9 x 7W, 7 x 11W,
	7 x 15W, 7 x 20W,
	7 x 23W

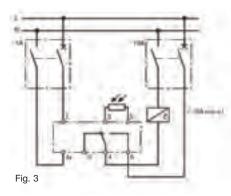
Wall mounted cell - Part No. CCT15268 (delivered with product and its fixing device)

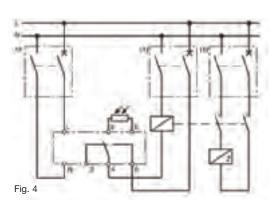
- Cell connection: by double insulation 2-conductor cable, not to be laid next to mains cables or water ducts, maximum length: 100 m
- Horizontally orientable (90°)
- Degree of protection: IP54, IK05
- Operating temperature: -40°C to +70°C

IC100, IC200, IC2000 Connection and part numbers









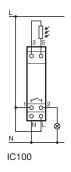
(1) Determination of ratings according to the power of the load(s).

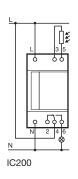
Connection IC100, IC200, IC2000

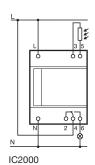
Connection terminals:

1 screw connection per pole for cables up to 6 mm² for IC100 and IC200

2 screw less connection per pole for cables up to 2.5 mm² for IC2000







Technical data

IC100

To guarantee safety of people, it is essential to comply with positioning of the power supply (L and N terminal). Reversal of these two terminals is

iorbiaderi.	
Determination of ratings	Power ≤ 16 A, Cos φ = 1 (Fig. 1)
according to the power	Power > 16 A, Cos φ = 1 (Fig. 2): you must relay with
of the load(s)	a contactor

IC200, IC2000

Power \leq 10 A, Cos φ = 1 (fig. 3). **Determination of ratings** according to the power Power > 10 A, Cos φ = 1 (fig. 4): you must relay with a of the load(s) contactor.

To facilitate threshold setting, mount the resistor (47 kW) supplied in place of the cell (terminals 3-5). Act on the threshold setting potentiometer until the red LED lights up

Part numbers	
Туре	Part number
IC100	15482
IC200	15284
IC2000	CCT15368

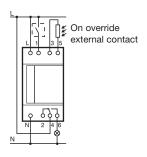
IC2000P+ **Technical data**



IC2000P+



Wall mounted cell



Function

The IC2000P+ controls lighting according to brightness and time. If brightness drops below the set threshold (light sensitive function: IC) and if the time program allows relay closing (time switch function), then the lighting circuit is activated.

Description

The IC2000P+ uses its time programming to define lighting On and Off periods:

- According to three pre-set time programs:
- ☐ "DAYPROG": On time programming from 7 am to 8 pm a validation of the IC function from 7 am to 8 pm
- $\hfill\Box$ "NIGHTPROG": On time programming from 5 am to 8 am and from 6 pm
- to pm a validation of the IC function on these two operating periods

 "EMPTYPROG": Off time programming throughout the day a no validation of the IC function. These programs can be modified if necessary
- According to a customised operating period, with possibility of copying to the other days. It is equipped with the following functions:
- ☐ Consideration of periods of absence (holidays)
 ☐ Temporary or permanent On or Off override
- ☐ Remote control of lighting override by NO external contact
- ☐ Consideration of change to "summer/winter" time, automatic or manual
- ☐ Permanent liquid crystal display: of time and minutes

Technical data

i ecililicai data	
Adjustable brightness	Range 1: 2 to 50 lx
threshold over 3 ranges:	Range 2: 60 to 300 lx
-	Range 3: 350 to 2100 lx
Time delay on contact	Separate setting between 20 s
closing and breaking:	and 40 s (80 s by default)
Contact:	Potential free.
Time base:	quartz.
Operating accuracy:	< ± 1 s / day at 20°C.
Number of separate	42
switching operations:	
Minimum switching:	1 min
Switching accuracy:	1 s
Insulation class:	Class II
Degree of protection:	IP20B
Contact rating:	16 A under 250 V AC (cos φ = 1)
	10 A under 250 V AC (cos φ = 0.6)

Load table:	
Type of lighting	Maximum power
230 V incandescent and halogen lamps	2300 W
Non corrected/serial corrected fluorescent tubes	26 x 36W, 20 x 58W,
with conventional ballast	10 x 100W
Parallel corrected fluorescent tubes	10 x 36W, 6 x 58W,
with conventional ballast	2 x 100W
Dual-mounted fluorescent tubes	10 x (2 x 58W),
with conventional ballast	5 x (2 x 100W)
Fluorescent tubes with electronic ballast	9 x 36W, 6 x 58W
Dual-mounted fluorescent tubes with electronic ballast	5 x (2 x 36W), 3 x (2 x 58W)
Fluocompact lamps with electronic ballast	9 x 7W, 7 x 11W,
	7 x 15W, 7 x 20W
Parallel-corrected mercury and sodium vapour lamps	250 W

Wall mounted cell (delivered with product and its fixing device

- Photoresistance, connection by 2-wire cable, 100 m max
- Do not install parallel to mains cables
- Degree of protection: IP54, IK05
- Operating temperature: -40°C to +70°C

External input

- Voltage: 230 V AC, + 10 %, 15 %
- Frequency: 50/60 Hz ■ Input current: max. 2.5 mA
- Consumption: max. 0.4 mW ■ Cable length: max. 100 m

Connection

■ Connection terminals: 1 screw connection per pole for cables up to 6 mm²

Part numbers	
Туре	Part number
IC2000P+	15483



IC Astro

IC Astro Technical data

Function

The IC Astro astronomic programmable light sensitive switch is used to start and stop an electric load (e.g. lighting) according to sunrise and sunset times, without a brightness detector. Sunrise and sunset times are calculated automatically by the IC Astro according to the geographic parameters configured by the user.

Description

The IC Astro is configured according to the place of installation.

- The place of installation of the IC Astro can be configured:
- $\hfill\Box$ Either by selecting a country and a town
- ☐ Or by its geographic coordinates (latitude, longitude)
- The IC Astro allows:
- $\hfill\Box$ Addition or deletion of a switch-off/switch-on switching operation (Off-On) between the sunset and sunrise times
- ☐ Different programmes each day
- ☐ Difference in sunset and/or sunrise times, adjustable separately by ± 120 min. according to local constraints (mountains, buildings, etc.)
- ☐ Consideration of periods of absence (holidays), remote control of lighting override by a NO contact
- ☐ Re-initialisation of programmes
- ☐ Automatic switching to "summer-winter" time
- ☐ Permanent display by liquid crystals: hours and minutes, day of the week, contact output status, and current programme
- ☐ Manual waiver of the lighting On/Off programme, permanently or temporarily (up to the next switching operation)

Technical data

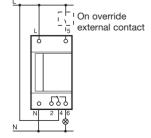
Memory:	14 switching operations (not including sunrise/sunset)
Minimum time between	1 min
2 switching operations:	
Switching accuracy:	1 s
Time accuracy:	± 1 s /day
Programming longitude:	- 80° (East) to + 80° (West) in steps of 1°
Programming latitude:	-90° (South) to +90° (North) in steps of 1°
Operating temperature:	-20°C to +50°C
Degree of protection:	IP20B
Consumption:	override input: < 0.5 mA
Contact rating:	16 A under 250 V AC (cos φ = 1)
	10 A under 250 V AC (cos φ = 0.6)

Type of lighting	Maximum power
Load table:	
230 V incandescent and halogen lamps	2300 W
Non-corrected/ serial-corrected fluorescent tubes	26 x 36W, 20 x 58W,
with conventional ballast	10 x 100W
Parallel corrected fluorescent tubes	10 x 36W, 6 x 58W,
with conventional ballast	2 x 100W
Dual-mounted fluorescent tubes	10 x (2 x 58W),
with conventional ballast	5 x (2 x 100W)
Fluorescent tubes with electronic ballast	9 x 36W, 6 x 58W
Dual-mounted fluorescent tubes	5 x (2 x 36W),
with electronic ballast	3 x (2 x 58W)
Fluocompact lamps with electronic ballast	9 x 7W, 7 x 11W,
	7 x 15W, 7 x 20W
Parallel-corrected mercury and sodium vapour lamps	250 W

Connection

■ Connection terminals: 1 screw connection per pole for cables up to 6 mm²

Part numbers		
Туре	Language	Part number
IC Astro	gb, fr, es, it, de, pt	15223



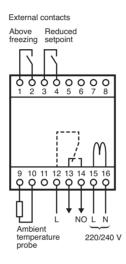
Technical Dimensions Section 9 Section 10

Regulation and programming

TH3 and TH6 thermostats probes

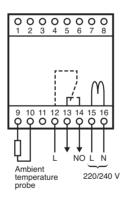


Туре	Supply voltage (V AC)	Width mod. of 18mm	Part number
TH3	220240	4	15841





Туре	Supply voltage (V AC)	Width mod. of 18mm	Part number
TH6	220240	4	15840



Probes	
Floor temperature probe with 2 m cable	15845
Ambient temperature probe	15846
Outside temperature probe	15847
Collar probe with 2m cable	15848

Regulation and programming

THP1 and THP2 programmable thermostats

Function

Monitors and regulates ambient temperature in 1 or 2 zones according to 3 operating modes:

- Comfort: 5 °C to 30 °C while the premises are occupied
- Reduced: 5 °C to 26 °C while the premises are unoccupied
- Above freezing: the temperature in the premises is maintained at approximately

Ambient temperature probe

Installed inside buildings, this probe is used to measure temperature.

Operation

THP

- Choice of operating mode:
- ☐ By local pushbutton: automatic, reduced, comfort, above freezing
- ☐ By external remote contact overriding the local pushbutton
- ☐ The comfort operating mode overrides the above freezing mode
- Programming:
- ☐ Minimum programming time between 2 switching operations: 1 minute ☐ Memory:
- THP1: up to 42 switching operations
- THP2: up to 168 switching operations
- ☐ Programmes over 24 hours and 7 days with:
- - possible anticipation of switching
 - deletion of a switching operation in order to modify or cancel a sequence
- ☐ Changeover to "summer-winter" time in a single operation

Technical data

THP

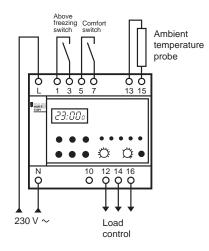
Electrical data:	Consumption:	1 VA
	Output contact current:	5 A under 250 V
		$\cos \varphi = 1$, 1 A under 250
		$\cos \varphi = 0.6$
Display:	By liquid crystal display:	Of hour, minutes, day of
		the week and of contact
		status
	Indicator lights:	5 light-emitting diodes for
		1 zone and 10 for 2
		zones displaying:
		- the automatic, comfort
		and reduced operating
		modes (yellow),
		- the above freezing
		operating mode (green)
		- the make position of the
		output contact(s) (red)
General data:	A 6 year power reserve	
	A quartz time base,	
		ng and activation: ± 0.2 °C
	Degree of protection: IP 2	0.1
	4 mm² tunnel terminals	
Coming with:	A non-adjustable ambient temperature probe for the	
	THP1	
	Two non-adjustable ambient temperature probes for	
	the THP2 ambient temper	ature probe
There are three types	Non-adjustable probes	
of probe:	± 3 °C adjustable probes	
	Tempo probes	
The probe-THP link is ma	ade of 1.5 mm ² copper cables	less than 50 m long

Regulation and programming

THP1 and THP2 programmable thermostats

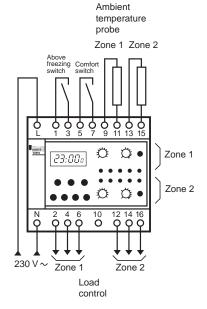


Туре	Technical data	Supply voltage (V AC)	Width mod. of 18 mm	Part number
THP1	1 zone	230	5	15833



Туре	Technical data	Supply voltage (V AC)	Width mod. of 18 mm	Part number
THP2	2 zone	230	5	15834





Ambient temperature probes	
Non-adjustable probe	15835
± 3 °C adjustable probe	15836
Tempo probe	15893
Accessory	
Spare battery	16358

Energy management

RCP phase control, RCI current control, RCU voltage control and RCC compressor control relays

Function

The phase control relay monitors phase order and asymmetry as well as voltage presence on all 3 phases of a three-phase circuit (motor supply, etc.). It reports phase loss or reversal.

The current control relay monitors the current flowing in a circuit and reports when the preset threshold is reached.

The voltage control relay monitors the potential difference of a circuit and reports when the preset threshold is reached.

RCC

The compressor control relay monitors the compressor power supply and prevents its immediate restart on detection of a voltage break or drop.

Common Technical data

Parameter setting:	On the front face
	By direct scale
	Using a screwdriver
Display accuracy:	±10 % full scale
Utilisation frequency:	5060 Hz
Utilisation temperature:	-5+55 °C
Consumption:	3 VA
Indication:	Green LED for power ON
	Red LED for fault
Output by 8 A changeover switch under 250 V AC (cos φ = 1)	
Connection:	Tunnel terminals for rigid cables from 1.5 to 6mm ²

Specific technical data

Optional fault memorisation with reset

Operating voltage: Threshold setting:

threshold reached:

Time delay on

\mathbf{p}	г
nu	г

RCP		
Operating voltage:	400 V AC, ±15 %	
Phase asymmetry	525 %	
threshold setting:		
Hysteresis:	Fixed, 5% of asymmetry threshold	
Phase rotation direction moni	toring	
3 phase presence monitoring		
Time delay on tripping: 0.3 s		
RCI		
Measurement:	Range: 0.1510 A	
	Automatic recognition of ac and dc current	
	2 measurement ranges selected by wiring:	
	- 0.151.5 A	
	- 110 A	
Overcurrent and undercurrent	monitoring (selection by selector switch)	
Threshold	Adjustable from 10100 %	
Hysteresis	Adjustable from 550 %	
Failsafe contact		
Time delay on	0.110 s	
threshold reached:		
Power supply:	230 V AC	
Optional fault memorisation v	vith reset	
Compatible with TI current tra	ansformers with an X/5 ratio	
RCU		
Measurement:	Range: 10500 V	
	Automatic recognition of ac and dc voltage	
	2 measurement ranges selected by wiring:	
	- 1050 V	
	- 50500 V	
	e monitoring (selection by selector switch)	
Threshold	Adjustable from 10100 %	
Hysteresis	Adjustable from 550 %	
Failsafe contact		
Time delay on threshold reac	hed: 0.110s	
Supply voltage: 230 V AC		

230 V AC

±5...±15 % voltage drop

3 or 6 minutes (selection by wiring)

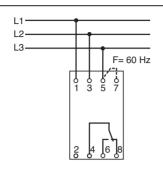
Technical Section 9

Dimensions Section 10

Energy management

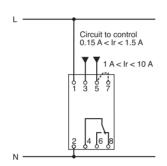
RCP phase control, RCI current control, RCU voltage control and RCC compressor control relays



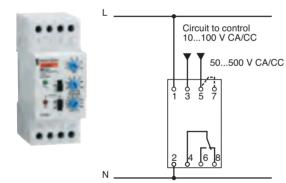


Туре	Part number	Width mod. of 18 mm
RCP	21180	2

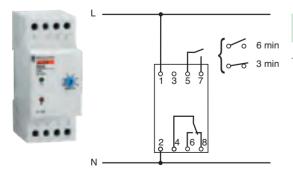




Туре	Part number	Width mod. of 18 mm
RCI	21181	2



Туре	Part number	Width mod. of 18 mm
RCU	21182	2



Туре	Part number	Width mod. of 18 mm
RCC	21183	2

Argus surface mounted movement detectors



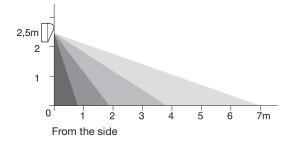
ARGUS 70	
Description	Part number
Polar white	MTN545719

Electronic outdoor movement detector. 70° surface monitoring for smaller areas such as gateways, entrances or staircases.

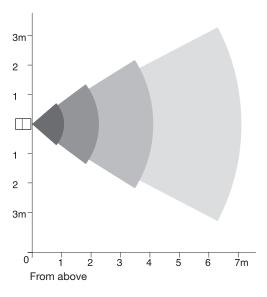
Technical data Mains voltage: AC 230 V ±10 %, 50 Hz Connected load: up to 500 VA Max. switching current: 2 A, AC 230 V, $\cos \varphi = 0.6$ Halogen lamps: AC 230 V, up to 300 W Capacitive load: max. 21 µF Power consumption: < 1 W Number of levels: 4 Number of zones: 26 with 104 switching segments Area of detection: 70° surface monitoring, approx. 7x8 m Light sensor: infinitely adjustable from 3-1000 lux Range: approx. 7 m Time: 1 sec. to approx. 8 min. in 6 steps Ambient temperature: -25 °C to +55 °C Neutral conductor: requiredType of protection: IP 4

Area of detection

The actual values depend on a number of factors - heat source (size and temperature), direction of movement, speed, temperature difference - and can therefore be higher or lower than the values given.



Accessories: Capacitor, Part number MTN542895.

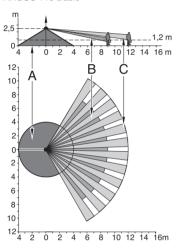


Argus surface mounted movement detectors



Area of detection

ARGUS 110 Basic



A =Inner safety zone with an area of detection of 360° within a radius of approx. 4 m.

- B = Middle safety zone with a detection angle of 110° and an area of detection of approx. 9 m x 18 m.
- C = Outer safety zone with a detection angle of 110° and an area of detection of approx. 12 m x 24 m.

ARGUS 110 basic	
Description	Part number
Polar white	MTN565119

Electronic outdoor movement detector. 11 0° surface monitoring for smaller house fronts and sections of the house.

- 360° short-range zone with a radius of approx. 4 m
- Very easy installation thanks to large wiring compartment and plug-in connection system
- Looping through is possible
- Integrated LED function display for alignment at installation site
- Potentiometers for adjustment are protected under the easily accessible cover
- Can be installed on walls and ceilings without additional accessories.
- Can be mounted on inner/outer corners and stationary pipes with installation bracket, Part number MTN5652
- The area of detection can be adjusted to local conditions with the aid of the spherical head which can be adjusted horizontally, vertically and axially
- The design is independent of the position of the sensor head
- Possible to blank out individual lens areas

Under the cover plate there are potentiometers for setting the brightness and time.

lechnical data	
Mains voltage: AC 230 V, ± 10 %, 50 Hz	
Incandescent lamps: AC 230 V, max. 2000 W	
Halogen lamps: AC 230 V, max. 1200 W	
Fluorescent lamps: AC 230 V, 1200 W uncompensated	
Capacitive load: max. 35 µF	

Max. switching current: 16 A, AC 230 V, cosφ = 1

Angle of detection: 11 0°

Range: max. 12 m Number of levels: 7

Number of zones: 92 with 368 switching segments

Light sensor: infinitely adjustable from 3-1000 lux

Time: 1 sec. to approx. 8 min. in 6 levels

Neutral conductor: required

Possible to set the sensor headWall mounting: 9° up, 24° down, 12° left/right, ±12° axial

Ceiling mounting: 4° up, 29° down, 25° left/right, ± 8.5° axial

EC guidelines: Low voltage guideline 73/23/EEC and EMC guideline 89/336/EEC

Type of protection: IP 5

Accessories: Mounting bracket, Part number MTN565291.

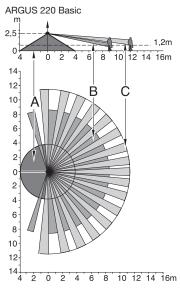
Capacitor, Part number MTN542895.

Contents: With cover plate and segments to limit area of detection, screws & plugs.

Argus surface mounted movement detectors



Area of detection



- A =Inner safety zone with an area of detection of 360° within a radius of approx. 4 m.
- B = Middle safety zone with a detection angle of 220° and an area of detection of approx. 9 m x 18 m.
- C = Outer safety zone with a detection angle of 220° and an area of detection of approx. $12 \text{ m} \times 24 \text{ m}$.

The specified ranges refer to average conditions and a mounting height of 2.50 m and should therefore be taken as guide values. The range can vary greatly depending on the weather.

ARGUS 220 basic Description Part number Polar white MTN565219

Electronic outdoor movement detector. 220° surface monitoring for large house fronts and sections of the house.

The movement detector for outdoor areas

- 360° short-range zone with a radius of approx. 4 m
- Very easy installation thanks to large wiring compartment and plug-in connection system
- Looping through is possible
- Integrated LED function display for alignment at installation site
- Potentiometers for adjustment are protected under the easily accessible cover plate
- Can be installed on walls and ceilings without additional accessories
- Can be mounted on inner/outer corners and stationary pipes with installation bracket, Part number MTN5652
- The area of detection can be adjusted to local conditions with the aid of the spherical head which can be adjusted horizontally, vertically and axially
- The design is independent of the position of the sensor head
- Possible to blank out individual lens areas
- Under the cover plate there are potentiometers for setting the brightness and time

Technical data

Mains voltage: AC 230 V, ± 10 %, 50 Hz Incandescent lamps: AC 230 V, max. 2000 W Halogen lamps: AC 230 V, max. 1200 W

Fluorescent lamps: AC 230 V, 1200 W uncompensated Capacitive load: max. 35 µF

Max. switching current: 16 A, AC 230 V, $\cos \varphi = 1$

iviax. Switching current: 16 A, AC 230 V, $\cos \varphi = 1$

Angle of detection: 220° Range: max. 12 m

Number of levels: 7

Number of zones: 112 with 448 switching segments

Light sensor: infinitely adjustable from 3-1000 lux

Time: 1 sec. to approx. 8 min. in 6 levels

Neutral conductor: required

Possible to set the sensor headWall mounting: 9° up, 24° down, 12° left/right, \pm 12° axial

Ceiling mounting: 4° up, 29° down, 25° left/right, ± 8.5° axial

EC guidelines: Low voltage guideline 73/23/EEC and EMC guideline 89/336/EEC

Type of protection: IP 5

Accessories: Mounting bracket, art. no. MTN565291.

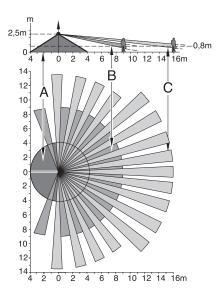
Capacitor, art. no. MTN542895.

Contents: With cover plate and segments to limit the area of detection, screws and plugs.

Argus surface mounted movement detectors



Area of detection



- A = Inner safety area with an area of detection of 360° within a radius of approx. 4 m.
- B = Middle safety zone with a detection angle of 220° and an area of detection of approx. 9 m x 18 m.
- C = Outer safety zone with a detection angle of 220° and an area of detection of approx. 16 m x 28 m.

The specified ranges refer to average conditions and a mounting height of 2.50 m and should therefore be taken as guide values. The range can vary greatly depending on the weather.



ARGUS 220 advanced Description Part number Polar white MTN565419

Electronic outdoor movement detector. 220° surface monitoring for large house fronts and sections of the house.

The movement detector for outdoor areas

- 360° short-range zone with a radius of approx. 4 m
- Sensitivity: infinitely adjustable
- Very easy installation thanks to large wiring compartment and plug-in connection system
- Looping through is possible
- Integrated LED function display for alignment at installation site
- Potentiometers for adjustment are protected under the easily accessible cover plate
- Can be installed on walls and ceilings without additional accessories
- Can be mounted on inner/outer corners and stationary pipes with installation bracket, Part number MTN5652
- The area of detection can be adjusted to local conditions with the aid of the spherical head which can be adjusted horizontally, vertically and axially
- The design is independent of the position of the sensor head
- Possible to blank out individual lens areas
- Potentiometers for setting functions are located underneath the cover plate

Technical data

Mains voltage: AC 230 V, \pm 10 %, 50 Hz

Incandescent lamps: AC 230 V, max. 2000 W

Halogen lamps: AC 230 V, max. 2000 W

Fluorescent lamps: AC 230 V, 1200 W uncompensated

Capacitive load: max. 35 μF

Max. switching current: 16 A, AC 230 V, $\cos \varphi = 1$

Angle of detection: 220°

Range: max. 16 m

Number of levels: 7

Number of zones: 112 with 448 switching segments

Light sensor: infinitely adjustable from 3-1000 lux

Time: 1 sec. to approx. 8 min. in 6 levels

Sensitivity: infinitely adjustable

Neutral conductor: required

Possible to set the sensor headWall mounting: 9° up, 24° down, 12° left/right, \pm 12° axial

Ceiling mounting: 4° up, 29° down, 25° left/right, ± 8.5° axial

EC guidelines: Low voltage guideline 73/23/EEC and EMC guideline 89/336/EEC

Type of protection: IP 5

Accessories: Mounting bracket, Part number MTN565291.

Capacitor, Part number MTN542895.

Contents: With cover plate and segments to limit the area of detection, screws and plugs.

Mounting bracket	
Description	Part number
Polar white	MTN565291

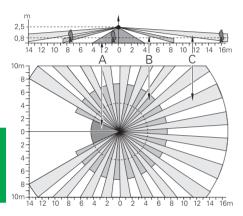
Installation bracket for attaching the ARGUS 110/220 Basic, Timer or Connect to outer or inner corners. Can also be secured to fixed pipes (VDE 0100) with conventional conduit clips.

Contents: With screws and plugs. Without conduit clip.

Argus surface mounted movement detectors



Area of detection



The specified ranges refer to average conditions and a mounting height of 2.50 m and should therefore be taken as guide values. The range can vary greatly depending on the weather.

A =Inner safety zone with an area of detection of 360° within a radius of approx. 4 m.

- B = Middle safety zone with a detection angle of 300° and a radius of approx. 7 m.
- C = Outer safety zone with a detection angle of 300° and an area of detection of approx. 16 m x 20 m.

ARGUS 300	
Description	Part number
Polar white	MTN564319

Electronic outdoor movement detector.

300° surface monitoring for mounting on house corners in order to secure the area of two house walls. 360° short-range zone with a radius of approx. 4 m.

The plug-in system and the enlarged wiring compartment facilitate simple and

The plug-in system and the enlarged wiring compartment facilitate simple and convenient installation.

The range of the area of detection can be adjusted in sectors with three selectively adjustable 100° sectors. This makes it possible to compensate for a site that slopes upwards or downwards.

Function bar for configuring brightness, time and sensitivity (range). The integrated function display allows the ARGUS to be aligned quickly and easily at the installation site. The universal housing allows these detectors to be mounted on house corners without requiring additional accessories. The area of detection can be optimally adapted to prevailing on-site conditions with the aid of the spherical head which can be adjusted horizontally, vertically and axially. To prevent obstacles such as downpipes from blanking the area of detection, ARGUS 300 can be installed with an extension.

Technical data

Mains voltage: AC 230 V, ± 10 %, 50 Hz
Incandescent lamps: max. 3000 W
Halogen lamps: AC 230 V, max. 2500 W
Capacitive load: max. 140 µF

Max. switching current: 16 A, AC 230 V, cosφ = 0,6

Power consumption: <1 W Angle of detection: 300°

Range: max. 16 m Number of levels: 7

Number of zones: 123 with 492 switching segments

Light sensor: infinitely externally adjustable approx. 3-1000 lux

Time: externally adjustable in 6 levels of approx. 1 sec. to approx. 8 min.

Neutral conductor: required

Possible to adjust the sensor head: Horizontal rotation to the left and right by 30°. Swivelling of the sensor head to the right or left by 45°.

EC guidelines: Low voltage guideline 73/23/EEC and EMC guideline 89/336/EEC

Type of protection: IP 5

Accessories: Capacitor, Part number MTN542895.

Contents: With 2 blanking inserts to limit the area of detection, unlocking clamp, screws and plugs.



Extension	
Description	Part number
Polar white	MTN554399

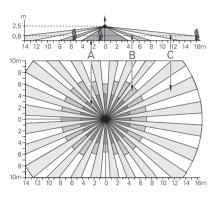
The extension between wall bracket and sensor head can be installed for the ARGUS 300 in order to increase the distance between the movement detector and the wall. Obstacles such as downpipes, which blank the area of detection if mounted on corners, can be prevented.

Length: 11.5 cm

Argus surface mounted movement detectors



Area of detection



The specified ranges refer to average conditions and a mounting height of 2.50 m and should therefore be taken as guide values. The range can vary greatly depending on the weather.

- A = Inner safety area with an area of detection of 360° within a radius of approx. 4 m.
- B = Middle safety zone with an angle of detection of 360° and a radius of approx. 7 m.
- C = Outer safety zone with a detection angle of 360° and an area of detection of approx. 30 m depth (16 m to the front and 14 m to the back) and 20 m width.



Electronic movement detector for outdoor ceiling mounting. 360° surface monitoring over a length of 30 m and a width of 20 m. Function bar to set brightness and time. With integrated function display.

Mains voltage: AC 230 V, ± 10 %, 50 Hz
Incandescent lamps: max. 3000 W

Halogen lamps: AC 230 V, max. 2500 W

Capacitive load: max. 140 μ F Max. switching current: 16 A, AC 230 V, $\cos \varphi = 0.6$

Power consumption: < 1 W

Angle of detection: 360°
Range: max. 16 m
Number of levels: 7

Number of zones: 124 with 496 switching segments

Light sensor: infinitely adjustable from 3-1000 lux

Time: adjustable in 6 levels of approx. 1 sec. to approx. 8 min.

Neutral conductor: required

EC guidelines: Low voltage guideline 73/23/EEC and EMC guideline 89/336/EEC

Type of protection: IP 5

Accessories: Capacitor, Part number MTN542895.

Accessories	
Description	Part number
Capacitor AC 230 V, 0.33 µF	MTN542895

AC 230 V, 0.33 μF

For use in push-button circuits to prevent flickering of the neon lamp and/or instantaneous switching of the installation relay when several push-buttons with neon lamps are in use.

For interference suppression of inductive loads, e.g. relays, contactors, fluorescent lamps, transformers, if the induction voltage of these devices leads to the retriggering of the ARGUS.



Presence detectors

Argus presence system



Presence system

Part number MTN550499

Indoor presence detection. The system detects the slightest movement in the room, switches the light on and leaves it on until no further movement is detected or natural lighting is sufficient.

The power unit has two relay outputs:

Relay 1:

For brightness-dependent movement detection, e.g. lighting. The overshoot time is infinitely adjustable at the sensor within a range of between 10 seconds and 30 minutes. The device constantly monitors the brightness in the room. Then, when there is sufficient natural light, the artificial light is switched off even if there is still someone in the room. The relay switches phase L.

Relav 2:

Floating contact (electrically isolated). For movement detection independent of brightness e.g. ventilation or heating control. The overshoot time is infinitely adjustable at the sensor within a range of between 5 minutes and 2 hours. The system consists of the sensor head and a power unit with a permanently attached interconnecting cable (length 2.5 m) plugged into the sensor head. Every sensor head has two sockets to enable through-wiring. A maximum of 8 sensor heads (Part number 550419) can be connected in this way to one power unit (master-slave principle). Installing several sensor heads makes it possible to seamlessly monitor long corridors and large rooms for example.

The sensor head that registered the last movement determines the overshoot time. Can also be controlled via an extension input. Sensor heads are installed in 68 mm ceiling openings. Areas of use include: offices, schools, public buildings, homes. Optimum installation height of 2.50 m.

Technical data

Mains voltage: AC 230 V \pm 10%, 50 Hz

Connecting cable: 2.5 m

Max. switching current per relay: 10 A, AC 230 V, $\cos \varphi = 0.6$

Incandescent lamps: max. 2300 W Halogen lamps: max. 2000 W

Motor load: max. 1000 W
Capacitive load: max. 140 μF

Power consumption: 2 W for 8 sensors

Angle of detection: 360°

Range: a radius of max. 4m from the installation site (mounting height of 2.50m)

Number of levels: 5

Number of zones: 71 with 284 switching segments

Light sensor: infinitely adjustable between approx. 10 and 1000 lux. The light sensor is not active in the test position.

EC guidelines: Low voltage guideline 73/23/EEC and EMC guideline 89/336/EEC



Presence system sensor Description Part number Polar white MTN550419

Sensor head with prefabricated interconnecting cable for extending the ARGUS Presence system. Each sensor head has two plugs allowing through-wiring to other sensors.

Technical data

Interconnecting cable: 8 m long

Angle of detection: 360°

Range: a radius of max. 4m from the installation site (mounting height of 2.50m)

Number of levels: 5

Number of zones: 71 with 284 switching segments

Light sensor: infinitely adjustable between approx. 10 and 1000 lux. The light sensor is not active in the test position.

EC guidelines: Low voltage guideline 73/23/EEC and EMC guideline 89/336/EEC

Technical Section 9 Dimensions Section 10

Presence detectors

Argus presence system



Presence	
Description	Part number
Polar white	MTN550590

- Indoor presence detection
- ARGUS switches on the light and leaves it switched on until presence is no longer detected or the ambient brightness is sufficient. Can be used in offices, schools, public buildings or homes, for example. The detector is installed in or on the ceiling
- For installation on the ceiling in a 60 mm installation box. Optimum height 2.50 m
- The surface-mounted housing, Part number MTN550619, allows the presence detector to be mounted on non-suspended ceilings

The device has 2 relay outputs:

Relay 1:

For brightness-dependent movement detection, e.g. lighting. The overshoot time is infinitely adjustable within a range of between 10 seconds and 30 minutes. ARGUS Presence constantly monitors the brightness in the room. Then, when there is sufficient natural light, the artificial light is switched off even if there is still someone in the room.

Relay 2:

For movement detection independent of brightness e.g. ventilation or heating control. The overshoot time is infinitely adjustable between 5 minutes and 2 hours.

Technical data

Mains voltage: AC 230 V ± 10 %, 50 Hz

Relay 1 (sole use): Nominal capacity: max. 1000 W/VA,

5 A, $\cos \varphi = 1$

5 A, $\cos \varphi = 0.6$

Incandescent lamps: 1000 W

230 V halogen: 1000 W

LV halogen: 500 W with conventional transformer

Capacitive load: 5 A, 140 μF

Fluorescent lamps: 5 A, 140 µF;

1000 W, uncompensated;

1000 W, 140 µF parallel compensation;

2x500 W, twin-lamp circuit;

Electronic ballast: 5 A, Cmax \leq 140 μ F

Minimum load: 10 mA, ≥ DC 24 V

Relay 2 (sole use):Nominal capacity: max. 1000 W, $\cos \varphi = 1$

Relays 1+2 (combined use):Nominal capacity: max. 1000 VA, $\cos\phi$ = 0.6 and max. 750 W, halogen 230 V

Fuse: T5H

Power consumption: < 1 W

Angle of detection: 360°

Range: a radius of max. 7m from the installation site (mounting height of 2.50m)

Number of levels: 6

Number of zones: 136 with 544 switching segments

Light sensor: infinitely adjustable between approx. 10 and 1000 lux. The light sensor is not active in the test position.

EC guidelines: Low voltage guideline 73/23/EEC and EMC guideline 89/336/EEC

Accessories: Surface-mounted housing for Argus Presence, Part number MTN550619.

Presence detectors

Argus presence system





Description	Part number
Polar white	MTN550591

- Indoor presence detection
- ARGUS switches on the light and leaves it switched on until presence is no longer detected or the ambient brightness is sufficient. Can be used in offices, schools, public buildings or homes, for example. The detector is installed in or on the ceiling
- For installation on the ceiling in a 60 mm installation box. Optimum height 2.50 m
- The surface-mounted housing, Part number MTN550619, allows the presence detector to be mounted on non-suspended ceilings

When connecting the nominal voltage or short-term interruption of the power supply (e.g. with a push-button connected as a make contact), the device switches channel 1 on for one minute plus the set time, regardless of the level of light.

Other features and attributes as for ARGUS Presence, Part number MTN550590. For channel 1, the functions "Permanent ON", "Permanent OFF" and "Automatic" can be controlled with the IR remote control.

Accessories: Surface-mounted housing for Argus Presence, Part number MTN550619.

Transmitter: IR remote control Distance, Part number MTN570222.

Surface-mounted housing for ARGUS Presence Description Part number Polar white MTN550619

The surface-mounted housing for ARGUS Presence devices also allows them to be surface mounted.



Metering and measurement

AMP/VLT analogue ammeters and voltmeters





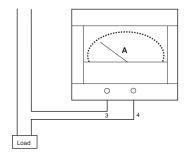
ApplicationThe meters facilitate the real-time monitoring of current and voltage.

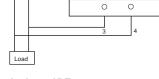
Technical data

Ferromagnetic device	
Connection:	Tunnel terminals for 1.5 - 6mm² rigid cable
Pseudo-linear scale over 90°	
Overall dimensions:	H = 79, W = 72, D = 66mm
Weight (g):	170
Complied with standards:	IEC 51 - IEC 414
Degree of protection:	Terminal block IP40
	Terminals IP20
Installation temperature:	-25°C to +55°C
Storage temperature:	-40°C to +80°C
Reference temperature:	23°C
Effect of temperature	± 0.03%/°C
on accuracy	
Overload AMP ONLY	Maximum for 5 seconds: 10 In
	Permanence: 1.2 In
Consumption:	1.1VA
Accuracy class:	1.5

Туре	Scale (A or V)	Connection with CT	Width in 18mm ways	Part number
Amp with direct connection				
	0 - 30	Direct	4	16029

AMP with con	nection via	СТ		
Basic device		xxx/5	4	16030
Dials	0 - 5	(See TI rang	ge on page 5/64)	16031
	0 - 50			16032
	0 - 75			16033
	0 - 100			16034
	0 - 150			16035
	0 - 200			16036
	0 - 250			16037
	0 - 300			16038
	0 - 400			16039
	0 - 500			16040
	0 - 600			16041
	0 - 800			16042
	0 - 1000			16043
	0 - 1500			16044
	0 - 2000			16045
VLT	Scale			
	0 - 300		4	16060
	0 - 500		4	16061





Analogue AMP

Analogue VLT

Metering and measurement

AMP/VLT/FRE digital meters



Application

The meters facilitate the real time monitoring of current, voltage and frequency.

Technical data

Supply voltage:	230Vac
Operating frequency:	50 - 60Hz
Display by red LED:	3 digits
Accuracy at full scale:	0.5% ± 1 digital
Consumption:	0.3VA
Connection:	Tunnel terminals for 2.5mm ² cables
EMC electromagnetic	IEC EN 50081-1 and IEC EN 50082-2
compatibility:	
Safety:	IEC EN 61010-1

Specific technical data

AMP 104

AIIII IVA		
Minimum value measured:	4% of rating	
Measurement input	1VA	
consumption:		

AMP Multirange

/ um manango			
Ratings:	In direct reading: 5A		
	By CT (not supplied) configurable on the front face		
	of the ammeter: 10, 15, 20, 25, 40, 50, 60, 100, 150,		
	200, 250, 400, 500, 600, 800, 1000, 1500, 2000,		
	2500, 4000, 5000A		
Minimum value measured:	4% of rating		
Measurement input	0.55VA		
consumption:			

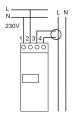
VLT

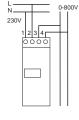
Direct measurement:	0 - 600Vac
Input impedance:	2 ΜΩ
Minimum value measured:	4% of rating

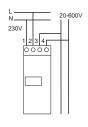
FRE

Minimum value measured:	20Hz	
Maximum value measured:	100Hz	
Full scale display:	99.9Hz	

Туре	Scale	Connection with CT	Width in 18mm ways	Part number
Amp with d	irect connecti	on		
	0 - 10A	Direct	2	15202
AMP with m	nultirating			
	0 - 5000A	As per rating	2	15209
VLT				
	0 - 600V	As per rating	2	15201
FRE				
	20 - 100Hz	As per rating	2	15208







Digital AMP + TI

Digital VLT

Digital FRE

Metering and measurement

Kilowatt hour meters





EN40.

EN40p.



ME1zr.



ME3zr.



ME4zrt.

Function

Digital kilowatt-hour meters designed for sub-metering of active energy (rms) consumed by a single-phase or three-phase electric circuit with or without distributed neutral.

EN40

40 A single-phase kilowatt-hour meter.

EN40p

40 A single-phase kilowatt-hour meter with remote transfer of metering impulses (static output).

MF₁

Single-phase kilowatt-hour meter.

MF17

Single-phase kilowatt-hour meter with partial meter.

ME1zz

Single-phase kilowatt-hour meter with partial meter and remote transfer of metering impulses (relay output).

ME3

Three-phase kilowatt-hour meter without neutral.

MF3zr

Three-phase kilowatt-hour meter without neutral, with partial meter and remote transfer of metering impulses (relay output).

ME4

Three-phase + neutral kilowatt-hour meter.

ME4z

Three-phase + neutral kilowatt-hour meter with partial meter and remote transfer of metering impulses (relay output).

ME4zr

Three-phase kilowatt-hour meter with or without neutral associated with external CTs (not supplied), with partial meter and remote transfer of metering impulses (relay output).

Part numbers					
Туре	Rating (A)	Voltage (V AC)	Tolérance (V AC)	Width in mod. of 9 mm	Part no.
Single-phase	e circuit (1L + N)				
EN40	40	230	±20	2	15238
EN40p	40	230	±20	2	15239
ME1	63	230	±20	4	17065
ME1z	63	230	±20	4	17066
ME1zr	63	230	±20	4	17067
Three-phase	circuit (3L)				
ME3	63	3 x 400-3 x 230	±20	8	17075
ME3zr	63	3 x 400-3 x 230	±20	8	17076
ME4zrt	406000	3 x 400-3 x 230	±20	8	17072
Three-phase	+ neutral circuit (3L	- + N)			
ME4	63	3 x 230/400	±20	8	17070
ME4zr	63	3 x 230/400	±20	8	17071
ME4zrt	406000	3 x 230/400	±20	8	17072

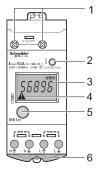
Main technical data

	ME	EN40 / EN40p
Accuracy class	1	1
Frequency	48/62 Hz	48/62 Hz
Consumption	2.5 VA	< 10 VA
Operating temperature	-25°C to +55°C	-25°C to +55°C -25°C to +65°C (32 A)
Connection by tunnel terminals	Top terminals: 6 mm ²	Top terminals: 4 mm ²
	Bottom terminals: 16 mm ²	Bottom terminals: 10 mm ²
Compliance with standard	IEC 61557-12 : - PMD/DD/K55/1 - PMD/SD/K55/1 (ME4zrt)	IEC 62053-21 / IEC 61557-12 : - PMD/DD/K55/1
	IEC 62053-21 (accuracy)	Pending MID approval:
Sealable screw shield	Except ME4zrt	Yes

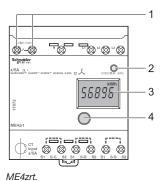
Kilowatt hour meters

Sdockdor Elder 2 3 0 0 4 5

EN40p.



MEzr.



Circuit-breaker Circuit-breaker

Oontactor

Kilowatt-hour meter

Contactor

Load

Load

Example: meter on a load switching

Description

EN40, EN40p

- 1 Allow the comb busbar to pass.
- 2 Remote transfer pulse output (EN40p).
- 3 Green power-on indicator light.
- 4 Yellow metering indicator light (flashing).
- 5 Display unit.
- 6 Seal.

ME1, ME1z, ME1zr

- 1 Pulse output for remote transfer (ME1zr).
- 2 Flashing meter indicator.
- 3 Total or partial meter display (ME1z, ME1zr).
- 4 Wiring error indicator.
- 5 Push-button: total or partial meter display, reset partial meter (ME1z, ME1zr).
- 6 Sealing connection.

ME3, ME3zr, ME4, ME4zr, ME4zrt

- 1 Pulse output for remote transfer (ME3zr, ME4zr, ME4zrt).
- 2 Flashing meter indicator.
- 3 Total or partial meter display (ME3zr, ME4zr, ME4zrt) and CT rating display (ME4zrt).
- 4 Push-button: total or partial meter display (ME3zr, ME4zr, ME4zrt), reset partial meter, display or selection of CT rating (ME4zrt).

Installation

- \blacksquare The front panel of the product is IP40 and its housing is IP20
- Its installation must be appropriate to the operating conditions
- The protection must not be less than IP65 for outdoor use

Use with a contactor

For a non-continuous supply (load switching), we recommend that you place the breaking device downstream from the measurement instrument to limit disturbances on the module inputs.

These disturbances, particularly on inductive loads, may result in early ageing of the device.

You must also place the measurement instrument at a distance from the breaking device to limit the risk of disturbance.

Kilowatt hour meters

Specific technical data

EN40, EN40p, ME1, ME1z and ME1zr specific technical data							
	EN40	EN40p		ME1	ME1z	ME1zr	
Direct measurement	Up to 40 A			Up to 63 A	١	•	
Metering and activity indicator light (yellow)	3,200 flash	nes per kWh		1,000 flashes per kWh			
Wiring error indicator	Yes			•			
Total meter (max. capacity) on one phase	999 999.9	999 999.9 kWh			999.99 MWh		
Total meter display	In kWh wit	In kWh with 7 significant digits			In kWh or MWh with 5 significant digits. No decimal point in kWh; 2 digits after the decimal point in MWh		
Partial meter (max. capacity) on one phase with RESET	-			-	99.99 MWh		
Partial meter display	-	-			In kWh or MWh with 4 significant digits. No decima point in kWh; 2 digits after the decimal point in MWh		
Remote transfer	-		By static output: - ELV insulation voltage: 4 kV, 50 Hz - 20 mA/35 V DC max 100 impulses of 120 ms per kWh	-	-	By NO impulse contact: - ELV insulation voltage: 4 kV, 50 Hz - 18 mA/24 V DC, 100 mA/230 V AC - 1 impulse of 200 ms (contact closing) per kWh	

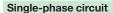
ME3 and ME3z						
	ME3	ME3zr				
Direct measurement	Up to 63 A					
Metering and activity indicator light (yellow)	100 flashes per kWh					
Total meter (max. capacity) on one phase	999.99 MWh					
Total meter display	In kWh or MWh with 5	In kWh or MWh with 5 significant digits. No decimal point in kWh; 2 digits after the decimal point in MWh				
Partial meter (max. capacity) on one phase with RESET	-	99.99 MWh				
Partial meter display	-	In kWh or MWh with 4 significant digits. 1 digit after the decimal point in kWh				
Remote transfer	-	By NO impulse contact: - ELV insulation voltage: 4 kV, 50 Hz - 18 mA/24 V DC, 100 mA/230 V AC - 1 impulse of 200 ms (contact closing) every 10 kWh				

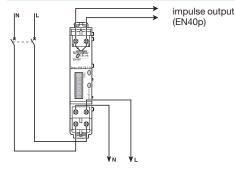
ME4, ME4zr and ME4zrt			
	ME4	ME4zr	ME4zrt
Direct measurement	Up to 63 A		-
Measurement by CT	-		Ratio of 40/5 to 6,000/5 (configurable)
CT ratings choice	-		see page 92068E.indd/2
Consumption of each measurement input	-		0.05 to 5 A
Metering and activity indicator light (yellow)	100 flashes per kWh		10,000/x flashes per kWh (1) (x = CT rating)
Total meter (max. capacity) on all 3 phases	999.99 MWh		Where CT ≤ 150 A : 999.99 MWh Where CT > 150 A : 9,999.9 MWh
Total meter display	In kWh or MWh with 5	significant digits. No decimal point in kWh; 2 dig	its after the decimal point in MWh
Partial meter (max. capacity) on all 3 phases with RESET	-	99.99 MWh	Where CT ≤ 150 A : 99.99 MWh Where CT > 150 A : 999.99 MWh
Partial meter display	-	In kWh or MWh with 4 significant digits. 1 digit	after the decimal point in kWh
Remote transfer	-	By NO impulse contact: - ELV insulation voltage: 4 kV, 50 Hz - 18 mA/24 V DC, 100 mA/230 V AC - 1 impulse of 200 ms (contact closing) every 10 kWh	By NO impulse contact: - ELV insulation voltage: 4 kV, 50 Hz - 18 mA/24 V DC, 100 mA/230 V AC - 10/x impulse of 200 ms (contact closing) per kWh = x/10 kWh per impulse (2) (x = CT rating)

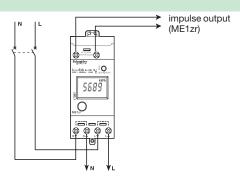
(1) example: 500/5 CT = 10,000/500 flashes per kWh = 20 flashes per kWh (2) example: 500/5 CT = 500/10 kWh per impulse = 50 kWh per impulse

Kilowatt hour meters

Connection



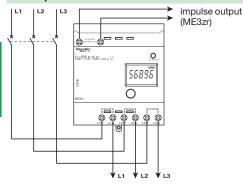


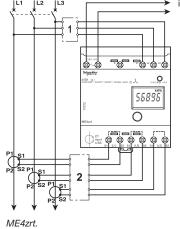


EN40 / EN40p.

ME1 / ME1zr.

Three-phase circuit

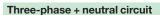


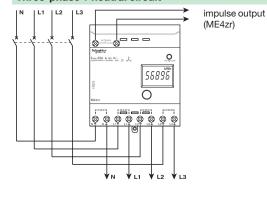


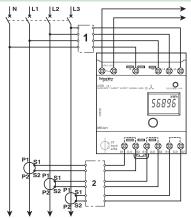
impulse output

- 1 Protection (to be adapted to suit the short-circuit current at the connection point).
- 2 Shorting switch unit.

ME3 / ME3zr.







ME4zrt.

impulse output

- 1 Protection (to be adapted to suit the short-circuit current at the connection point).
- 2 Shorting switch unit.

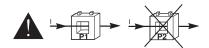
ME4 / ME4zr.

Caution

■ Do not earth the CT secondary (S2).

■ You must comply with the routing direction of power cables in the current transformer primary. Cables enter in "P1" and leave in "P2" to the loads.





Technical Section 9 Dimensions Section 10

Power Meter Series PM9 Functions and characteristics



The PowerLogic Power Meter Series PM9 offers the basic measurement capabilities required to monitor an electrical installation in a 4-module case (18 mm modules).

They can be used to monitor 2-, 3- and 4-wire low-voltage systems and connect to external current transformers. With the large backlit display, you can monitor all three phases at the same time.

Three versions are available for one supply voltage (220 to 240 V AC):

- PM9 for basic measurements
- PM9P for basic measurements with pulse output
- PM9C for basic measurements with Modbus RS485 output.

Applications

Panel instrumentation.
Sub-billing / cost allocation.
Remote monitoring of an electrical installation.

Characteristics

Only 72 mm wide (four 18 mm modules)

Compact design for optimised installation.

Large backlit display

Simultaneous monitoring of all three phases.

Demand power

Monitoring of subscribed-power overruns.

Compliance with standards

Complies with IEC 61557-12 standard for Power Meter.

IEC 62053-21 class 1 accuracy for active energy for sub-billing and cost-allocation applications.

Part numbers			
Туре	Voltage	Width in 9 mm modules	Part number
Power Meter PM9	220 to 240 V AC	8	15199
Power Meter PM9P	220 to 240 V AC	8	15197
Power Meter PM9C	220 to 240 V AC	8	15198

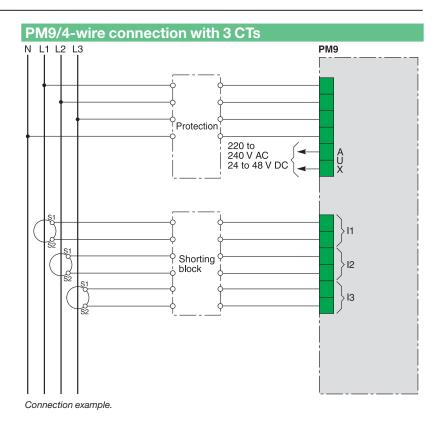
Power Meter Series PM9 Functions and characteristics

Selection guide		PM9	PM9P	PM9C
General				
Use on LV systems only	1P + N, 3P, 3P + N	•		
Current and voltage accuracy	/	0.5 %	0.5 %	0.5 %
Energy and power accuracy		1 %	1 %	1 %
Direct voltage connection		450 V	450 V	450 V
Instantaneous rms values				
Current	3 phases and neutral		•	•
Voltage	Phase-to-neutral and phase-to- phase	•	•	•
Frequency				
Active and reactive power	Total and per phase		•	•
Apparent power	Total	•	•	
Power factor	Total			
Energy values				
Active energy				
Partial active energy				
Reactive energy			•	•
Demand values				
Active, reactive, apparent power	Present and max. values	•	•	•
Other measurements				
Hour counter				
Display and I/O				
Backlit LCD display				
Pulse output		-	1	-
Communication				
RS485 port		-	-	
Modbus protocol		-	-	•

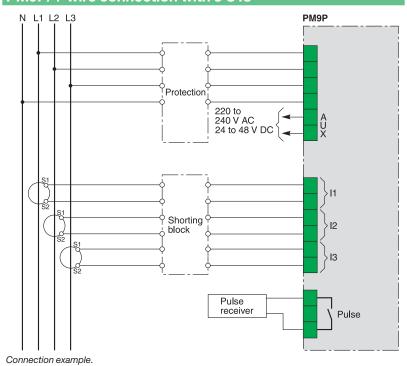
Power Meter Series PM9 Functions and characteristics

Electrical ch	naracteristics			
Type of measurer	nent	On single-phase (1P + N) or three-phase (3P,		
		3P + N) AC systems		
Measurement accuracy	Current and voltage	0.5 % of reading		
	Power	1 % of reading from pf 0.8 leading to 0.5 lagging		
	Frequency	0.2 Hz		
	Power factor	2 % from 0.8 leading to 0.5 lagging		
	Active energy	Class 1 as defined by IEC 62053-21 and IEC 61557-12		
	Reactive energy	Class 2 as defined by IEC 62053-23 and IEC 61557-12		
Input-voltage characteristics	Measured voltage	50 to 450 V AC (direct) and up to 1000 V AC (with external VT)		
	Permissible overload	1.15 Un		
	Frequency measurement range	45 to 65 Hz		
Input-current	CT ratings	Adjustable from 5 to 10000 A		
characteristics	Secondary	5 A		
	Metering over-range	15 mA to 6 A		
	Permissible overload	6 A continuous 20 A 10 s 50 A 1 s		
	Load	0.55 VA		
	Input current	Not isolated		
Control Power	AC	220 to 240 V AC (±10 %), < 5 VA		
Pulse output (PM9P)		Static output, 350 V AC/DC max., 130 mA max. at 25 °C, derating 1 mA/°C above 25 °C, 5 kV insulation		
Mechanical	characteristic	·		
Weight	onaraotoriotic	0.3 kg		
IP degree of prote	ection	IP52 (front display)		
Dimensions		72 x 90 x 66 (mm)		
Connection		Tunnel terminals, 1 x 4 mm ²		
	tal conditions			
Operating temper		-5 °C to +55 °C		
Pollution degree	rature	2		
Installation categories	ory	III for distribution systems up to 260/450 V		
Electromagnetic compatibility	Electrostatic discharge	Level III (IEC 61000-4-2)		
Companishing	Immunity to radiated fields	Level III (IEC 61000-4-3)		
	Immunity to fast transients	Level IV (IEC 61000-4-4)		
	Immunity to impulse waves	Level IV (IEC 61000-4-5)		
	Conducted and radiated emissions	Class B (CISPR11)		
Safety				
		CE		
Communica	ation			
RS485 port (PM9C) remote reading and reset		2-wire, 9600 or 19200 bauds, Modbus RTU, ELSV circuit, 6 kV impulse withstand (double insulation)		
Standards of	ompliance —			
IEC 61557-12	ompliance	PMD/SD/K55/1 PMD/SS/K55/1		
		T MD/ JO/ NOO/ T		

Power Meter Series PM9 Installation and connection

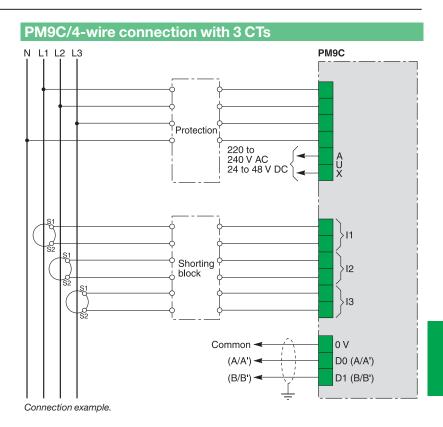


PM9P/4-wire connection with 3 CTs



Note: other types of connection are possible. See product documentation.

Power Meter Series PM9 Installation and connection



Note: other types of connection are possible. See product documentation.

5

Metering and measurement

CT current transformers



16453.



16462.



16542.



16453 + 16550.



Sealable cover.

Function

The Ip/5A ratio current transformers deliver at the secondary a current of 0 to 5 A that is proportional to the current measured at the primary. They are available in two major families:

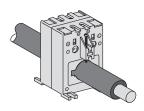
- Cable current transformers
- Bar current transformers.

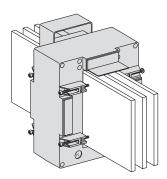
This allows them to be used in combination with measurement instruments: ammeters, kilowatt-hour meters, measurement units, control relays, etc.

Common technical data

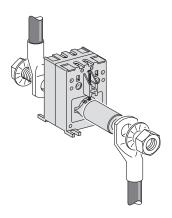
- Secondary current: 5 A
- Max. voltage rating Ue: 720 V
- Frequency: 50/60 Hz
- Safety factor (sf):
- □ 40 to 4,000 A:sf ≤ 5
- □ 5,000 to 6,000 A: $sf \le 10$.
- Degree of protection: IP20
- \blacksquare Operating temperature: tropicalised range, -25 °C to +60 °C, relative humidity > 95 %
- Compliance with standards: IEC 60044-1 and VDE 0414
- Secondary connection (as per model):
- □ By terminals for lug
- □ By tunnel terminals
- □ By screws

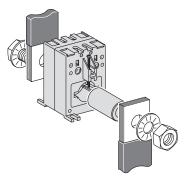
Connection





CT with let-through primary.





CT with primary connection by screw and nut. Use of cylinder 16550 or 16551.

The three references 16482, 16483 and 16534 have a double connection output at the secondary: twice S1 and twice S2. The terminals are in parallel, as there is only one secondary winding.

The unused secondary outputs must not be connected.

CT current transformers

						Part nu	ımbers					
Rating	Power (VA) Insulated cable:				:	Dimension	Weight (g)	Part numbers				
lp/5 A	A Accuracy class:		1			maximum	l maximum	opening for		Tropicalised CT	Cylinder (2)	Sealable cover
•				diameter (1)	cross-section (1)	bars		·	*			
	0.5	1	3	(mm)	(mm²)							
40 A	-	-	1	21	120	-	200	16500	16550 ⁽³⁾	built-in		
50 A	-	1.25	1.5	21	120	-	200	16451	16550	built-in		
75 A	-	1.5	2.5	21	120	-	200	16452	16550	built-in		
100 A	2	2.5	3.5	21	120	-	200	16453	16550	built-in		
125 A	2.5	3.5	4	21	120	-	200	16454	16550	built-in		
150 A	3	4	5	21	120	-	200	16455	16550	built-in		
	1.5	5.5	6.5	22	150	30 x 10	270	16459	16551 ⁽⁴⁾	16552		
200 A	4	5.5	6	21	120	-	200	16456	16550	built-in		
	4	7	8.5	22	150	30 x 10	270	16460	16551	16552		
	-	2	5	-	-	65 x 32	600	16476	-	built-in		
250 A	6	9	11	22	150	30 x 10	270	16461	16551	16552		
	2.5	5	8	35	240	40 x 10	430	16468	-	16553		
	1	4	6	-	-	65 x 32	600	16477	-	built-in		
300 A	7.5	11	13.5	22	150	30 x 10	270	16462	16551	16552		
	4	8	12	35	240	40 x 10	430	16469	-	16553		
	1.5	6	7	-	-	65 x 32	600	16478	-	built-in		
400 A	10.5	15	18	22	150	30 x 10	270	16463	16551	16552		
	8	12	15	35	240	40 x 10	430	16470	-	16553		
	4	8	10	-	-	65 x 32	600	16479	-	built-in		
500 A	12	18	22	22	150	30 x 10	270	16464	16551	16552		
	10	12	15	35	240	40 x 10	430	16471	-	16553		
	2	4	6	-	-	64 x 11	500	16473	-	built-in		
						51 x 31						
	8	10	12	-	-	65 x 32	600	16480	-	built-in		
600 A	14.5	21.5	26	22	150	30 x 10	270	16465	16551	16552		
	4	6	8	-	-	64 x 11 51 x 31	500	16474	-	built-in		
	8	12	15	_		65 x 32	600	16481	_	built-in		
800 A	12	15	20	-	-	65 x 32	600	16482		built-in		
1000 A	15	20	25	-	-	65 x 32	600	16483	-	built-in		
1250 A	15	20	25	_	_	65 x 32	600	16534	_	built-in		
1230 A	12	15	20	_		84 x 34	700	16537	_	built-in		
	8	12	_	_	- -	127 x 38	1500	16540		built-in		
1500 A	20	25	30	_		65 x 32	600	16535	_	built-in		
100071	15	20	25	_	_	84 x 34	700	16538	_	built-in		
	10	15	_		_	127 x 38	1000	16541	_	built-in		
2000 A	15	20	-	-	_	127 x 38	1000	16542	-	built-in		
2500 A	20	25	-	_	_	127 x 38	1000	16543	_	built-in		
200071	30	50	60	_	_	127 x 52	1300	16545	_	built-in		
3000 A	25	30	-	-	-	127 x 32	1000	16544	_	built-in		
555071	40	60	60	_	_	127 x 52	1300	16546	_	built-in		
4000 A	50	60	60	_	_	127 x 52	1300	16547	_	built-in		
5000 A	60	120	-	-	-	165 x 55	5000	16548	_	built-in		
6000 A	70	120	<u> </u>	-	_	165 x 55	5000	16549	_	built-in		
500071	1,0	1 120			l	1 100 × 00	10000	1 100 10		Dant III		

- (1) Cable(s) that can be routed through the CT (2) For CT with primary connection by screw and nut. (3) Cylinder with inner dia. 8.5 mm, L = 32 mm (4) Cylinder with inner dia. 12.5 mm, L = 62 mm

Fastening mod	le		
CT Part number	Adapter for DIN rail	Mounting plate	Insulated locking screw
1645116456			-
1645916471			•
16473 and 16474	-		
1647616483	-	-	
16500		•	-
1653416549	-		

CH/CI counters



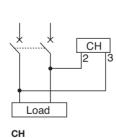


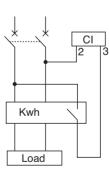
ApplicationThe CH counters measure the total operating time of any load. The CI counters count 230Vac pulses from devices such as utility meters or people counters.

Specific technical data					
CH					
Electromechanical display					
Maximum display:	99999.99 hours				
Display accuracy:	0.01%				
Without reset					
Storage temperature:	-25°C to +85°C				
Connection:	Tunnel terminals for 2.5mm ² cable				
Consumption:	0.15VA				
Operating temperature:	-10°C to +70°C				
Mounting on symmetrical rail					

CI	
Supply and metering voltage:	230Vac, 50/60 Hz
Consumption:	0.15VA
Maximum display:	9 999 999 impulses
Without reset	
Metering data	Minimum impulse time: 50ms
	Minimum time between 2 impulses: 50ms
Storage temperature:	-25°C to +85°C
Operating temperature:	-10°C to +70°C
Connection:	Tunnel terminals for 2.5mm ² cable

Туре	Control voltage	Width in 18mm ways	Part number
CH	230Vac	2	15440
CI	230Vac	2	15443



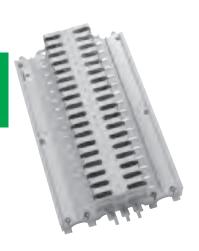


CI

Connection systems, enclosures and industrial sockets

sobar 4 MCB pan assembliespages 6/2 to	6/3
Multiclip busbar and Polyblocpages 6/4 to	6/6
Comb busbar page	6/7
Terminals and installation accessories pages 6/8 to	6/9
Powerpact 4 pan assemblies page 6	3/10
Enclosures pages 6/11 to 6 Mini Opale IP30 page 6 G9 IP30 page 6 A-Series IP30 page 6 B-Series IP31 page 6 Pragma page 6	6/11 6/11 6/11
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PK Plugs and sockets	6/31 6/36 6/37 6/38 6/39







Isobar 4 MCB pan assemblies PS type single phase PS type three phase

PS type single phase and neutral

Application (No neutral switching facility)

All pan assemblies incorporate the unique Isobar MCB way connection feature, which offers the user the highest levels of safety through electrical isolation of unused ways. The PS range of pan assemblies is designed to suit single pole applications, where switching and protection of the neutral is unnecessary. Each pan assembly is comprised of a flat steel base incorporating DIN rail, incoming and outgoing busbar assembly with neutral and earth terminal bars. They can be easily incorporated into custom built enclosure systems.

Technical data

BS EN 60439 - 1 and 3
125A
230/240V also suitable for 110Vac operation
50Hz
As A type distribution boards, see page 1/4
Note: All Merlin Gerin 2 pole RCDs are available for
use as incomers to PS pan assemblies
SP C60H MCBs, SP C60H RCBO, C60H MCB & vigi
combination

SP ways	Part number
6	MGAN6PS
9	MGAN9PS
12	MGAN12PS
15	MGAN15PS

PS KN pan assemblies

Application (No neutral switching facility)

The PS range of three phase pan assemblies is designed to suit applications where switching and protection of the neutral is deemed unnecessary. Each pan assembly is fully insulated incorporating DIN rail, incoming and outgoing busbar assembly. They can be easily and quickly incorporated into custom built enclosure systems. PS pan assemblies are designed for use with SP and TP C60H MCB, and are also suitable for two pole two phase equipment.

Technical data

Standards:	BS EN 60439 - 1 and 3
Busbar rating:	250A
Operating Voltage:	400/415V
Frequency:	50Hz
Incomers:	MGI1253, PS pan assemblies can utilise Multi 9, 3
	or 4 pole devices as incomers - additional shroud
	must be used - ref. 80011
Outgoers:	SP C60H MCB, SP C60H RCBO
-	TP C60H MCB
	SP C60H MCB and Vigi combination
	TP C60H MCB and Vigi combination

TP ways		Part number
4		MGBN4PS
6		MGBN6PS
8		MGBN8PS
12		MGBN12PS
16		MGBN16PS
18		MGBN18PS
24		MGBN24PS
TP ways	Front cover	Part number black sliders
Type TN		
4		MGBN4TN
6		MGBN6TN
		MGBN8TN
8		
8 12		MGBN12TN
12		MGBN12TN MGBN16TN



Isobar 4 MCB pan assemblies Type E Type PEV

Application

This range of pan assemblies is designed for use with Merlin Gerin's high quality Prisma range of enclosures or installations within a general purpose environment. Each pan assembly includes all components necessary for final distribution and protection of circuits, i.e. steel fixing plate, DIN rail busbar assembly, incoming connections, neutral and earth bars, optional distributed neutral busbar for switched neutral applications on type E/PEV.

Technical data

Standards:	BS EN 60439 - 1 and 3	
Busbar rating:	250A	
Operating Voltage:	400/415V	
Frequency:	50Hz	
Incomers:	Switch disconnectors:	3 pole 125A MGI1253N
		4 pole 125A MGI1254
	Terminal block:	125A MGTB1254
		250A MGNPB250TB
	RCDs:	16261, 23213, 23227
For MCCBs and switch disco		
Outgoers:	1, 2, 3 or 4P C60H MCBs,	C60H RCBO, C60 MCB
	and Vigi combinations	
	Note: All 4 pole RMG RCD	s can be used as
	incomers. Other incoming	devices may be used by
	separately mounting them	into the Prisma cubicle

To install in prisma G use sp or kit MGBNSPA

TP ways	Front cover*	Prisma mods.	Part number phase coloured sliders	Part number black sliders
Type E				
4	-	-	MGBN4E	MGBN4PEV
6	07795P	8	MGBN6E	MGBN6PEV
8	07796P	9	MGBN8E	MGBN8PEV
12	07797P	11	MGBN12E	MGBN12PEV
16	07798P	13	MGBN16E	MGBN16PEV
18	-	-	MGBN18E	MGBN18PEV
24	07799P	18	MGBN24E	MGBN24PEV

^{*} Cut-out only for 125 amp DIN style incomer

Multiclip busbar and Polybloc



Multiclip busbar application

A fast, reliable and maintenance free method of connecting outgoing circuits. Each connection is made in a spring front accessed connection rated at 40A. Contact pressure of the spring is automatically adjusted to suit the cross sections of the conductor.

Technical data

Voltage rating:	440V
Current rating:	200A at 40°C
Incoming connection:	Direct by cable lugs, connectors or flexible bars
Outgoing connection:	Provides reliable, maintenance free electrical
	connecting independent of heat variations
	Rapid connection and reconnection after modification
	Automatic spring connections
	12 connection points for each phase and 18/or neutral
	Cable capacity 10mm² max (supplied with 24
	connections)
	52A max. current rating per connection
Fixing:	On Multifix rails (fixing brackets included)
	By screws on all standard supports

Multifix DIN rail (Merlin Gerin patent). Multifix (length 470mm)

Rail only, drilled on each end	03004
With two fixed height mounting brackets	03001
With two adjustable height mounting brackets	03002

Туре	Part number
2P Phase and Neutral	04012
3P	04013
4P 3 Phase and Neutral	04014

Symmetrical DIN rail L = 2000

th = 2.3; h = 15	06603
------------------	-------

Asymmetrical rail L = 2000

th = 1.5; h = 15 06602

Polybloc 250A application

A distribution block patented by Merlin Gerin for 'wire to wire' connections, it consists of: Outgoing $6 \times 10 \text{mm}^2$ and $3 \times 16 \text{mm}^2$ cables per phase.

Туре		Part number
Polybloc	3P	04033
Polybloc	4P	04034

Short circuit withstand current

This table indicates the short circuit withstand current (in kA rms) for various combinations of upstream and downstream devices on a 380/415V installation.

Downstream	Short of	ircuit wi	thstand cu	ırrent (in	rent (in kA rms), depending on upstream device							
device	C120	NG125	NS100									
		N	Н	N	Н	L	N	н	L	N	н	L
C60H (10kA)	-	25	36	25	30	30	25	30	30	25	30	30
C120 (15kA)	-	25	25	25	40	40	-	-	-	-	-	-
Other devices	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)

(1) Check that the peak short circuit current, limited by the downstream device, is lower than 12kA. Check that the thermal stress delivered by the downstream device does not exceed the permissible thermal stress of the 6mm cable (4.76 x 105 A²s).

Technical	Dimensions
Section 9	Section 10

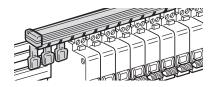
Connection accessories for DPN, STI, C60, C120, NG125 and RCCB





14881, 14882, 14883, 14884

14890



14888



Function

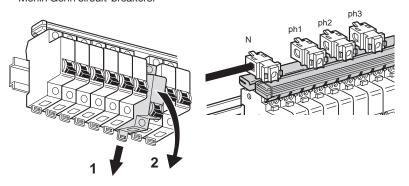
Accessories simplify the implementation of multi 9 system products.

- Delivered with 2 side plates IP2.
- Outgoers can be marked.
- Cutting marks on busbars and insulating material.
- Self-extinguishing insulating material colour RAL 7016.
- Unused teeth can be isolated using tooth cover ends.

Technical data

1P + N and 3P + N comb busbars for DPN and STI

- Supply by using semi-rigid cable directly in the device's tunnel:
- □ cross-section of 16 mm² for DPN
- □ cross-section of 10 mm² for STI.
- Using 25 mm² semi-rigid cable when using the connector cat. no. **14885**.
- Permissible current at 40°C:
- □ 80 A with 1 central feed point
- □ 100 A with 2 feed points.
- Rated insulation voltage: 250 V.
- Short-circuit current withstand: compatible with the breaking capacity of modular Merlin Gerin circuit-breakers.



DPN circuit-breakers can be disassembled (1-2) when 1P+N comb busbars are used

3P+N comb busbars

1P, 2P, 3P and 4P comb busbars for C60H, STI(1) and RCCB

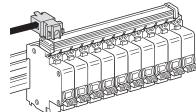
- Supply by using semi-rigid cable directly in the device's tunnel:
- ☐ Cross-section of 25 mm² for C60 and RCCB all ratings
- ☐ Cross-section of 10 mm² for STI.
- Using 25 mm² semi-rigid cable when using the connector part number 14885.
- Permissible current at 40°C:
- □ 80 A with 1 central feed point
- □ 100 A wtih 2 feed points.
- Rated insulation voltage: 500 V (as in IEC 60664).
- Short-circuit current withstand: compatible with the breaking capacity of modular Merlin Gerin circuit-breakers.

1P, 2P, 3P and 4P comb busbars for C120 and NG125

- Supply directly on the circuit-breaker terminal: max. 50 mm² rigid.
- Permissible current at 40°C: 125 A.
- Max. current per outgoer: 63 A.

Insulated connectors

- Compatible with all Merlin Gerin comb busbars.
- Clip-on to the busbars insulating material, which makes them very stable.
- Can be marked with clip-on markers allowing for circuits to be identified



Insulated connectors

(1) except for STI 3P + N.

Connection accessories for DPN, STI, C60, C120, NG125 and RCCB

Part numbers

Comb busbars for DPN and STI (1P + N)					
Туре	Number of busbars	Number of mod.	Part number		
1P + N					
	1	26	14880		
	2	48	14890		
3P + N					
	2	48	14899		

Comb busbars for	or C60H, STI and F	RCCB	
1P			
	1	24	14881
	1	108	14801
	2	48	14891
2P			
	1	24	14882
	1	108	14802
	2	48	14892
3P			
	1	24	14883
	1	108	14803
	2	48	14893
4P			
	1	24	14884
	1	108	14804
	2	48	14894

Comb busbars for C120 NG125 < 63 A			
1P			
	(L=430 mm, 16 poles)	14811	
2P			
	(L=430 mm, 16 poles)	14812	
3P			
	(L=405 mm, 15 poles)	14813	
4P			
	(L=430 mm, 16 poles)	14814	

Comb busbar ac	cessories for DPN, STI,	C60 and RCCB
Set of 40 side plates	for 1P+N, 1P, 2P comb busbars	14886
	for 3P+N, 3P, 4P comb busbars	14887
Set of 40 tooth cover ends	for 1P+N, 3P+N comb busbars	14898
	for 1P, 2P, 3P, 4P comb busbars	14888
Set of 4 insulated connectors	for 25 mm ² cable	14885
Connector for C60 and RCCB supply	for 35 mm ² cable	26998

Comb busbar accessories for C120 and NG125

Set of 20 tooth cover for 1P, 2P, 3P, 4P comb busbars 14818 ends

Connectors and assembled terminals



Distribloc 125 and 160A

4 pole distribution block comprising:

- A fully insulated, one piece distribution complying with the degree of protection IPXXB (protection against direct contacts)
- A modular cover designed for a 45mm cut-out blends perfectly into a row comprising modular devices

Part numbers	
Description	Part number
125A Distribloc distribution block	04045
160A Distribloc distribution block + connection	04046

Technical data

ectrical	

le (40°C)
125A for the 125A Distribloc
160A for the 160A Distribloc with its prefabricated
connection for INS160 or NSA160
The reinforced breaking capacity due to cascading in
circuit breaker combinations is maintained. The worst
case situations have been tested
Complies with the low voltage device standard
IEC 60947.7.1 and/or IEC 60439.1
Uimp = 8kV

Supply

Tunnel terminals	On 125A Distribloc 125 for 6 to 35 ⁻ flexible cables
	(10 to 35 [□] rigid cables)

The 160A Distribloc is supplied with a prefabricated flexible connection. It is designed for an INS100/160 or NSA160 switch disconnector, installed on the left or right

Distribution (125A and 160A Distribloc)

`	,
Spring terminals	2 outgoers from 1 to 10 [□] , flexible or rigid
	3 outgoers from 1 to 6°, flexible or rigid
	7 outgoers from 1 to 4 ⁻ , flexible or rigid
Tunnel terminals	1 outgoer from 4 to 16 ⁻ , flexible (4 to 25 ⁻ rigid)

Supply

An identification label

Adhesive labels for phase identification

A prefabricated flexible connection for the INS160 (160A Distribloc only)

Installation

Clipped onto a modular rail

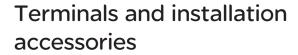
Width occupied is 12 modules (9mm each)

Screwed to plain or slotted backplate. Distances between centres = 100 x 75mm

125A connection

Set of four flexible connections, 35^{\square} , L = 210mm. To supply a 125A Distribloc from an NG125 or an INS125.

Part numbers	
Description	Part number
4 NG-INS125 connections for Distribloc	04047







For fixing to symmetrical DIN rails. 1P and 2P blocks can be fitted together to form 3P and 4P blocks.

Technical data

Current rating 80A

Туре	Part number
1P (2 x 25mm² + 4 x 16mm²)	14936
1P (2 x 35mm² + 4 x 25mm²)	14938
2P (2 x 25mm² + 4 x 16mm²)	14937
2P (2 x 35mm² + 4 x 25mm²)	14939

Connection strips 80 - 125A (40°C)

Cross section for stranded cables.

Each strip has one M4 threaded hole for screw attachment to any support.

	Part number
80A connection strip	
4 holes (2 x 10mm² + 2 x 16mm²) length 32mm	14962
6 holes (3 x 10mm² + 2 x 16mm² + 1 x 35mm²) length 50mm	14963
10 holes (5 x 10mm² + 4 x 16mm² + 1 x 35mm²) length 74mm	14964
125A connection strip	
14 holes (7 x 10mm² + 6 x 16 mm² + 1 x 35mm²) length 98mm	14965

Terminal block supports

Terminal block support made of self extinguishing insulating material: 960°C/5s. Beige in colour.

Each support can be individually identified using clip-on markers (optional):

- Blue for neutral
- Yellow/green for earth

Fixing:

- Clipped on to:
- ☐ 12 x 2 flat bar
- $\hfill\square$ Multifix or symmetrical rail
- Screwed on to any support (plain or slotted plate) using 2 ears

Cross section for stranded cables	Part number
80A terminal block	
4 holes (2 x 10mm² + 2 x 16mm²) length 68mm	14975
6 holes (3 x 10mm² + 2 x 16mm² + 1 x 35mm²) length 68mm	14976
10 holes (5 x 10mm² + 4 x 16mm² + 1 x 35mm²) length 115mm	14977

125A terminal block		
14 holes (7 x 10mm² + 6 x 16mm² + 1 x 35 mm²) length 115mm	14979	

Terminals and installation accessories











Terminal bar for earth/neutral connections

- For panel mounting
- Including support
- Current rating 200A

Туре	Part number
For panel mounting	
1 x 20 holes, length 183mm (19 x 16 ² + 1 x 120 ²)	99217
1 x 25 holes, length 222mm (24 x 16 ² + 1 x 120 ²)	99219
1 x 38 holes, length 332mm (37 x 16 ² + 1 x 120 ²)	99221
1 x 49 holes, length 419mm (48 x 16 ² + 1 x 120 ²)	99223
1 x 73 holes, length 624mm (72 x 16+1 x 120 ²)	99225

End stop

For symmetrical DIN rail.

Туре	Part number
End stop (pack of 10)	14915

Universal terminal support

This unit can be installed on:

- Symmetrical DIN rail
- Slotted mounting plate
- Asymmetrical DIN rail width: 3 modules of 9mm

Туре	Part number
Universal terminal support (pack of 5)	4224

Flush mounting clamp

Allows the installation of all DIN standard devices on an enclosure door. The depth is adjustable by turning the bracket round. DIN rail not included.

Туре	Part number
Flush mounting clamp (pack of 4)	20267

Transparent hinged weatherproof covers for enclosure doors - IP55

Allows the installation of DIN standard devices up to 10 SP ways (twenty 9mm modules) on an enclosure door.

Degree of protection IP55.

- External dimensions (mm): w 235 x h 126 x d 33
- Dimensions of the hole on the door (mm): w 186 x h 96

Supplied with a blanking plate (to cover up to ten 9mm modules) and fixing and drilling template.

Туре	Part number
Transparent hinged cover (10 x 18mm ways)	14210
DIN rail support (and fixing)	14211
Transparent hinged cover (4 x 18mm ways)	99246A
Transparent hinged cover complete with DIN support bracket (4 x 18mm ways)	99246B











Powerpact 4 pan assemblies accessories 630A or 800A busbar rating outgoing 630A or 800A busbar rating incoming

Outgoing pan assembly 630A or 800A busbar ratings

Application

Pan assemblies provide easy to connect high density connection independent of device mix for mounting of moulded case circuit breakers into a low voltage power distribution switchboard. Can be fed from the side or bottom fed using incoming pan assembly. For technical data see Section 2.

SP ways	Part number	
	630A busbar	800A busbar
18	MG6PAC6	MG8PAC6
36	MG6PAC12	MG8PAC12
54	MG6PAC18	MG8PAC18
72	MG6PAC24	MG8PAC24
90	MG6PAC30	MG8PAC30

See Section 2 for outgoing and incoming devices

Incoming pan assembly 630A or 800A busbar ratings

Application

Incoming section including mounting tray metal shroud and copper busbar 'T' section to allow cassetted breakers to feed pan from bottom.

Current	Part number	
rating (A)	3P	4P
630	MG6PACN	MG6PACN
800	MG8PACN3	MG8PACN4

18 way neutral bar kit

Mounts on either side of incoming device when using incoming pan assembly. Includes disconnectable neutral link.

Туре	Part number
630A	MG6PANKIT
800A	MG8PANKIT

Front cover (up to 18TP ways only)									
Number of outgoing ways		Part number	Part number						
SP	TP	630A interior	800A interior						
18	6	MG6PAFC6	MG6PAFC6						
36	12	MG6PAFC12	MG6PAFC12						
54	18	MG6PAFC18	MG6PAFC18						

Note: If RCD, metering, remote metering or 400/630A outgoing devices are fitted then a shrouding kit must be used.

Shrouding kit (with MG6 FC front covers only)

Provides additional support for device and shrouding for front cover .One shrouding kit must be used per side when fitting either outgoing 400/630AMP MCCBs or outgoing ammeter and/or earth leakage protection. In addition to the shrouding kit an addition a 25mm three stage filler piece is required when 4 pole 400A or 630AMP circuit breakers are fitted on the outgoing pan assembly MGPTSF25.

Number of outgoing ways	Shrouding kit	Part number
SP	TP	
18	6	МGРСН6
36	12	MGPCH12
54	18	MGPCH18

Enclosures

Mini Opale IP30 G9 IP30

A-Series IP30



Mini Opale enclosures (IP30)

Mini Opale enclosures are all insulated and made of an impact resistant material which is self extinguishing to 650°C. Degree of protection: IP30

They consist of:

- An insulated back plate incorporating a DIN rail
- A cover clipped to the back plate
- Two 4 hole terminal bars built in, 13396 and 13398 only. (1 X 16mm² + 3 X 10mm²)

Installation

■ Wall mounting, 2 or 4 screws supplied.

SP ways	Size (mm) H - W - D	Part number 18mm
2	130 x 44 x 57	13392
4	130 x 80 x 57	13394
6	160 x 119 x 65	13396
8	160 x 155 x 65	13398

Suitable for most DIN standard devices



These enclosures are made from pressed sheet steel, epoxy powder coated. Colour: moonstone beige. Degree of protection: IP30.

They consist of:

- A back plate with DIN rail
- A cover, screwed to the back plate, having 25mm knockouts top and bottom

Installation

■ Wall mounting

SP ways	Size (mm) H - W - D	Part number 18mm
3	200 x 101 x 63	99560
4	250 x 122.5 x 63	14599
5	250 x 122.5 x 63	14603

Suitable for most DIN standard devices

A-series enclosures (IP30)

These enclosures are made from folded steel sheet, epoxy powder coated. Colour: RAL 9001. Degree of protection: IP30.

They consist of:

- An enclosure having a back plate with DIN rail 25mm knockouts in top, bottom, sides and rear of enclosure built-in earth terminal bar
- A cover having a drop down door with plastic latch. To lock enclosure use easily fitted key lock MGBL

Installation

■ Wall mounting

SP ways	Number of holes	Size (mm) H - W - D	Part number 18mm
8	9	264 x 260 x 127	MGN16DE
11	12	264 x 315 x 127	MGN22DE
14	18	264 x 370 x 127	MGN28DE
17	24	264 x 450 x 127	MGN34DE
28	36	494 x 370 x 127	MGN56DF*

Suitable for most DIN standard devices

^{*} Two tier

Accessories	
Key lock	MGBL







ApplicationThese enclosures are designed to accommodate DIN rail mounted products, primarily for control and metering. They may be mounted individually or attached to the side of an MGB board of equivalent height using the side joining kit MGBNSJK. For mounting above and below a standard B board use ref MGBNTJKN.

Technical data

Ingress protection:	IP31 to BS EN 60529
Earth bar capacity:	25mm ²
Mounting:	Surface
Colour:	RAL 9001 epoxy powder coated



Supplied with DIN rail, door and slotted front cover									
Part number Capacity Number Dimensions in mm									
	in 18mm SP ways	of rows	Height	Width	Depth				
MGBN4SXS	34	2	484	470	138				
MGBN8SXS	34	2	538	470	138				
MGBN12SXS	51	3	700	470	138				
MGBN16SXS	68	4	808	470	138				
MGBN24SXS	85	5	970	470	138				



Supplied with DIN rail, door and plain front cover								
Part number	Capacity	Number	Dimensions in mm					
	in 18mm SP ways	of rows	Height	Width	Depth			
MGBN4SXP	34	2	484	470	138			
MGBN8SXP	34	2	538	470	138			
MGBN12SXP	51	3	700	470	138			
MGBN16SXP	68	4	808	470	138			
MGBN24SXP	85	5	970	470	138			

Suitable for most DIN standard devices

Installation

- Wall mounting
- Flush mounting kit available

Enclosures

Pragma Surface mounted enclosures







13 module enclosures



Customisable transparent door



Modular terminal blocks with screwless quick connections for small cables - earth and neutral terminal blocks

Function

A range of ready-to-install enclosures devised for electricians: ergonomics and flexibility of installation. The Pragma offer is particularly robust, especially the 24-module enclosures thanks to their metal structure and their reinforced front face.

Application

This distribution enclosure is intended for top of the range residential and tertiary sectors. The 24-module enclosures can accommodate the NG125 incoming circuit breaker or switch, equipped if necessary with an earth leakage protection module.

Technical data

13 module enclosures technoplastic (1), metal grey and titanium white						
24 module enclosures: metal and technoplastic (1), metal grey and titanium white						
Transparent doors:	For 13 module enclosures: technoplastic (1), crystal					
	For 24 module enclosures: metal and glass, titanium					
	white and crystal					
Opaque doors:	For 13 module enclosures: technoplastic (1), titanium					
	white					
	For 24 module enclosures: metal, titanium white					
Withstand fire and abnormal h	neat at 650 °C as per IEC 60695-2-11/EN 60695-2-11					
Total insulation class II:	Conform to IEC 60439-3/EN 60439-3 § 7.4.3.2.2.					
Advantage:	Thanks to its design, the entire Pragma range has					
	"total insulation": no components on the enclosure,					
	interface or door need be earthed.					
Degree of protection	Without door: IP30					
as per IEC 60529:	With door: IP40					
Degree of protection against	Without door: IK08					
mechanical impacts as per	With door: IK09					
IEC 62262:						
Operating temperature:	-25 °C to +60 °C.					
(1) Technoplectic meterial appointly developed by Marlin Corin						

(1) Technoplastic material specially developed by Merlin Gerin.

Components delivered with each enclosure and interface

Componente denvered with	i cacii ciiciccai c ana interiace
Marking strips + label-guard	
Blanking plate strip	
Earth and neutral terminal blocks:	See part number table
Identification label	
Front face and back connection	
1 plain plate per row	



Neutral terminal blocks easy to split to adapt to earth leakage protection

Enclosures

Pragma Surface mounted enclosures

Enclosures												Part number
Number of modules per row	Number of rows	Capacity in modules of 18mm	Rated current In			inal bloo onnectio	***			al block onnecti		Without door
				Total	50 °	25⁰	6 º	Total	50 °	25 °	6 º	
13 modules	1	13	63 A	11	-	3	2 x 4	13	-	1	3 x 4	PRA20113
	2	26	63 A	19	-	3	4 x 4	17	-	1	4 x 4	PRA20213
	3	39	90 A	23	-	3	5 x 4	22	-	2	5 x 4	PRA20313
	4	52	90 A	27	-	3	6 x 4	26	-	2	6 x 4	PRA20413
24 modules	1	24	125 A	23	1	2	5 x 4	22	1	1	5 x 4	PRA20124
	2	48	125 A	29	1	4	6 x 4	27	1	2	6 x 4	PRA20224
	3	72	160 A	29	1	4	6 x 4	27	1	2	6 x 4	PRA20324
	4	96	160 A	35	1	6	7 x 4	32	1	3	7 x 4	PRA20424



Externall wall mounting lugs

Accessories	
Mounting in interfaces	Part Number
Externall wall mounting lugs	PRA90009
Door lock - key 405	PRA90039
13 module blank	PRA91020

Door for enclosure	es		
Mounting in interfaces		Customisable transparent Part Number	Opaque Part Number
13 modules	1 row	PRA15113	PRA16113
	2 rows	PRA15213	PRA16213
	3 rows	PRA15313	PRA16313
	4 rows	PRA15413	PRA16413
24 modules	1 row	PRA15124	PRA16124
	2 rows	PRA15224	PRA16224
	3 rows	PRA15324	PRA16324
	4 rows	PRA15424	PRA16424
	5 rows	PRA15524	PRA16524
	6 rows	PRA15624	PRA16624

Introduction

Kaedra Offer overview



The most comprehensive enclosure range

- Enclosure for modular switchgear
- Enclosures for modular switchgear with interface
- Enclosures for power outlets
- Universal enclosures

For the production of electrical switchboards incorporating protection, control and distribution

- Modular protection devices
- Power outlets
- Pushbuttons and indicator lights, etc
- Non-modular switchgear (transformer, motor control, etc.)

For tertiary, small contracting and industrial sectors

For environments requiring optimum protection of persons and electrical switchgear.

Safety

Kaedra switchboards guarantee a high degree of protection and increased dependability thanks to:

- Their degree of protection (IP65)
- Their high impact strength (IK09) and resistance to chemical and atmospheric agents, UVs, etc
- Class 2 insulating material
- Optional locking of the door and sealing of the front face and front plates
- Conformity with IEC 670 standard for empty enclosures and with IEC 439-3 standard for equipped boards

Ergonomics

Kaedra switchboards offer remarkable cabling space.

Both the cable inlet and internal distribution is simplified.

The transparent doors enable permanent, immediate checking of operating conditions. The interface zones offer quick access to power outlets and control devices. The functional openings allow rapid installation of all devices directly or using matching plates. The frame and all its possibilities guarantee assembly time savings.

Attractive design

Their modern, rounded shape, result of in-depth design and ergonomic studies, make the Kaedra switchboards ideal for use even in places visible to the general public. Their innovating colours ensure enhanced integration, while at the same time guaranteeing the basic requirements of visibility and inspection of switchgear.

Enclosures for modular switchgear

Available in 7 versions from 3 to 72 modules. They allow installation of modular switchgear up to 125 A, as well as non-modular switchgear on slotted mounting plate.

Enclosures for modular switchgear with interface

Available in 3 versions of 12, 24 and 36 modules. The interface zone offers the possibility, thanks to the functional plates, of installing on the switchboard front face, control or protection devices, indicator lights and PK series power outlets of the domestic or industrial type.

Interface enclosures

Available in 2 versions with 2 or 3 openings. They can be used by themselves, horizontally or vertically, or associated with other enclosures as cable trunking or interface zone (control devices, indicator lights, power outlets, etc.). Universal enclosures, Available in 5 sizes. They are designed for production of control and monitoring switchboards with non-modular type devices.

Enclosures for power outlets

 90×100 mm openings. Available in versions with 1 to 8 openings. They are characterised for the new functional feature with openings allowing installation of all PK power socket outlets or the incorporation of control and indicator light functions.

103 x 225 mm opening, Available in versions with 1 to 4 openings. They can accommodate the new PK Unika interlockable power outlets.

Universal

Available in 5 sizes.

They allow mounting of flush-mountable power socket outlets up to 125 A.



Range of weatherproof mini enclosures 1 row Part number Number of modules Width Height

Range of weatherproof enclosures mm 5 modules 8 modules 12 modules 12 + 1 modules 18 modules per row 18 + 1 modules per row (12 modules if interface)

Enclosures offering:

- A zone for industrial or domestic power outlets, buttons or indicator lights
 A row for modular switchgear protecting power outlets

	Mini encl	osures		Enclosures					See page	e 6/28
Number of modules	4	4	4	5	8	12+1	12+1	18+1	0	0
	13175	13176	13177	13178	13179	13180	13181	13182	13993	13994

Technical data

Self-extinguishing insulating	material
Operating temperature:	-25°C to +60°C
Colour:	Light grey RAL 7035 and transparent green wicket
gate	
IP65	As per IEC 60529
IK09	As per EN 50102
Class 2:	Total insulation
Flame and abnormal	650°C as per IEC 60695-2-1
heat resistance:	
Complies with standard	IEC 60439-3
Resistance to chemicals and	d atmospherics agents

Enclosures part numbers

Data						s m					Accesso	ries delive	ered	with	an e	nclosu	re part	numbe	er (2)	Part		
Total		Pre-cu	itout (to	p and	bottom)``		Dimer	Dimensions (mm)		Wiring	Terminal Termina		minal block		Terminal block		Plates	Part nui	mber		No.
mod.	open	M	16	20	25	32	50				strap	block	numl	nber of holes								
		PG		11	16	21	29/36	W	Н	D		support	4	8	16	13135	13136	13138	13143			
Mini e	nclosu	res for	power	outlets	(65 x 85	mm o	oenings)															
4	1				1			98	248	98.5										13175		
4	2				1			98	310	98.5						1				13176		
4	3				1			98	392	98.5						1				13177		

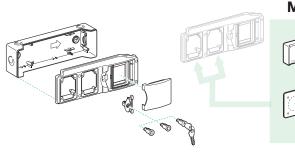
Enclosures for power outlets (90 x 100 mm openings)

		•					0 ,											
5	2			1	1	1		138	460	160			1			2	1	13178
8	4			2	2	3		236	460	160	2	1		1		4	1	13179
12+1	3		6	6	2	3		340	335	160	2	1		1		3	1	13180
12+1	6		6	6	2	3		340	460	160	2	1		1		6	2	13181
18+1	8			10	4	2	1	448	460	160	2	1			1	8	2	13182

Enclosures for interlocked power outlets (103 x 225 mm openings)

	ou. 00 i	0	oonoa	pomo.	outioto	(100 % 2	-20 111111	орони	90)									
5	1			1	1	1		138	460	160			1					13185
8	2			2	2	3		236	460	160	2	1		1			1	13186
12+1	3		6	6	2	3		340	460	160	2	1		1			1	13187
18+1	4			10	4	2	1	448	460	160	2	1		1			1	13188

- (1) Concentric pre-cutouts of the PG and ISO/metric type (EN 50262).
- (2) Accessories also delivered:
- Mini enclosures: class II plugs
- Enclosures: class II plugs, blanking plates (5 modules of 18 mm per row) and a marking kit



Mini enclosures with 65 x 85 mm openings

Direct mounting



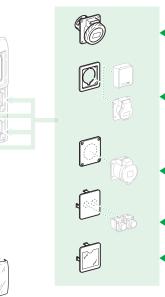
Domestic and LV power outlets (65 x 85 mm).

With plate Part no. 13135



Power outlets (50 x 50 mm).

Enclosures with 90 x 100 mm openings



Direct mounting



16/32 A slanting power outlets (90 x 100 mm).

With plate Part no. 13136



Domestic and LV power outlets (65 x 85 mm).

With plate Part no. 13137



LV and ELV power outlets (65 x 65 mm and 75 x 75 mm).

With plate Part no. 13138



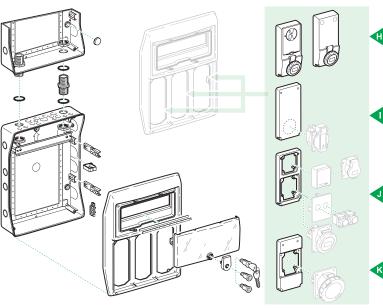
Buttons, indicator lights and switches 16 and 22 mm diameter.

With plate Part no. 13141



Identification label.

Enclosures with 103 x 225 mm openings



Direct mounting



Power outlet interlocked or with safety transformer.

With plate Part no. 13143



Blanking and adaptation plate to be drilled for 65 x 65 mm or 75 x 75 mm power outlet.

With plate Part no. 13142



Plate with 2 openings:

- 65 x 85 mm
 - 90 x 100 mm.

With plate Part no. 13144



63 A LV power outlet (100 x 107 mm).

Technical Section 9

Dimensions Section 10

Enclosures for modular switchgear with interface





Enclosure offering:

- An interface zone always available for user and that can accomodate buttons, indicator lights, power outlets or modular switchgear
- A zone, behind the door, to install the modular switchgear

Number of modules	12 1	24 3	36 4
	13990	13991	13992

Mechanical data

Self-extinguishing insulating material

excellent cable duct

Door opening in either direction

Inside depth available for installation of non-modular switchgear between the slotted mounting plate and the plain front plate: 100 mm

In enclosures with 3 or 4 openings, the kit for INS40/63/80 A must be mounted in the central openings

Technical data

Self-extinguishing insulating material

Operating temperature:	-25°C to +60°C
Colour:	Light grey RAL 7035 and transparent green door
IP65	As per IEC 60529
IK09	As per EN 50102
Class 2:	Total insulation
Flame and abnormal	650°C as per IEC 60695-2-1
heat resistance:	
Complies with standard	IEC 60439-3
Resistance to chemicals a	nd atmospherics agents

Enclosures for modular Kaedra switchgear with interface

Enclosures part numbers

Data	Data									Accessories delivered with an enclosure part number (2)											
Row	Total mod.		Pre-c M PG	20	25 16	32 21	50 29/36		nsions	(mm)	marking kit	wiring strap	Terminal block support	1 1		er o	fhol	les	Plates for buttons, indicator lights 13138	power	Part number
	10	_	- · ·	10	10	21	20/00			_	_	_		-	-	-10		02	10100	10100	40000
1	12	1		10	4	2	1	448	280	160	1	1	1	1		1_			1		13990
2	24	3		10	4	2	1	448	460	160	2	2	1	1			1		3	1	13991
3	36	4		10	4	2	1	448	610	160	3	3	1	1				1	4	1	13992

- (1) Concentric pre-cutouts of the PG and ISO/metric type (EN 50262)
- (2) Accessories also delivered: class II plugs and blanking plates (5 modules of 18 mm per row)

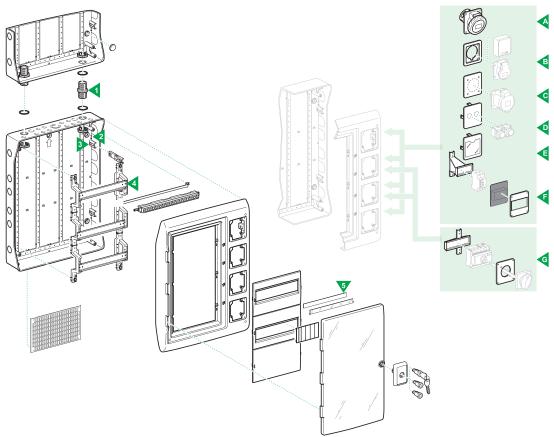
Part numbers of the main accessories

Name	Description	Part number
Association kit	2 sleeves + 4 nuts	13934
Wall mounting lugs		13935
Slotted mounting plate		13941
Plain front plate	12 modules	13944
Interface plate for	65 x 85 power outlets	13136
	65 x 65 or 75 x 75 power outlets	13137
	Pushbutton controls	13138
	Identification	13141
Interface kit	INS40/63/80 A	13139
	Modular switchgear up to 4 modules	
	(e.g. residual current circuit breaker)	13140
Wiring strap		13946
Sealing kit		13947
Keylock		13948
Insert	Triangle	13949
	Square	13950

Other accessories available for these enclosures:

Row separator, jack-up block, junction for trunking, blanking plate, terminal block support, insulated terminal blocks, IP2 covers, cable support sleeves, cable gland, self-adhesive symbols, self-adhesive sheets.

Kaedra Enclosures for modular switchgear with interface



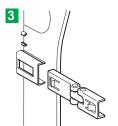


Add-on possibility Enclosures can be horizontally or vertically associated keeping the IP65 and allowing cable insertion.

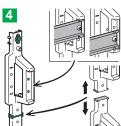


Dovetails Arranged on the back and on the chassis, they can accommodate:

- 4-hole terminal blocks
- Wiring straps

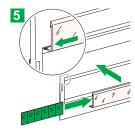


Back/front face hinges Clipped onto the right or left, they simplify cabling and working on the interface zone.



Chassis

- DIN symmetrical rails positionable in 2 depths and 2 heights to privilege cabling room
- Chassis that can be severed to install a mounting plate on the back



Marking

Clip-on label covers ensure neat, quick and upgradeable marking.

Everything for the interface

Direct mounting

16/32 A slanting

power outlets

(90 x 100 mm).

Α

With plate Part no 13136



LV power oultets (65 x 85 mm).



With plate

Part no 13137



LV and ELV power outlets (65 x 65 mm and 75 x 75 mm).



Part no. 13138

With plate

Buttons, indicator lights and switches 16 and 22 mm diameter.





Identification label



Part no 13140

With kit

Modular switchgear up to 4 modules (e.g. residual current circuit breaker).

With kit Part no 13139



INS40/63/80 A.

Technical Section 9

Dimensions Section 10

Enclosures and mini Kaedra enclosures for modular switchgear

3 to 12 module mini enclosures, economic and compact.

Add-on 12 to 72 module enclosures.



Kaedra enclosures and mini enclosures for modular switchgear.

Mini analası				
Mini enclosur	es			
Nbr of modules	4	6	8	12
1 row				
	13441	13442	13443	13444
Enclosures				
Nbr of rows	1	2	3	4
12 modules				
	13981	13983	13985	
18 modules per row		G		
	13982	13984	13986	13987

Enclosure part numbers

Data					Accessories with an enclosure catalogue					Part										
							number (2)					No.								
Row		Pré-cutout (top and bottom) (1) Dimension					S	Marking	Wiring	Terminal										
	Total		16	20		25	32	50	(mm) 			kit	strap block support		number of holes					
	mod.	PG			11	16	21	29/36	W	Н	D			Support	4	8	16	22	32	
Mini e	nclosu	res																		
1	4		1	1		1			123	200	112	1		1	2					13441
	6		1	1		1			159	200	112	1		1	2					13442
-	8		2	2		1			195	200	112	1		1	4					13443
	12		2	2		2	1		267	200	112	1		1		2				13444
Enclos	sures												•	•	•	•				
1	12		6		6	2	3		340	280	160	1	1	1	1	1				13981
	18				10	4	2	1	448	280	160	1	1	1	1		1			13982
2	24		6		6	2	3		340	460	160	2	2	1	1			1		13983
	36				10	4	2	1	448	460	160	2	2	1	1				1	13984
3	36		6		6	2	3		340	610	160	3	3	1	1				1	13985
	54				10	4	2	1	448	610	160	3	3	2	1			2		13986
4	72				10	4	2	1	448	842	160	4	4	2	1				2	13987

(1) Concentric pre-cutouts of the PG and ISO/metric type (EN 50262).

(2) Accessories also delivered:
■ mini enclosures: class II plugs
■ enclosures: class II plugs and blanking plates (5 modules of 18 mm per row).

Part numbers of the main accessories

Name	Description	Mini-enclosures Enclosures	Part No.
Association kit	2 sleeves + 4 nuts		13934
Wall mounting lugs			13935
Slotted mounting plate			13941
Pain plate	12 modules	•	13944
•	18 modules	•	13945
Wiring strap de filerie			13946
Sealing kit			13947
Keylock			13948
Insert	Triangle		13949
	Square		13950

Other accessories available for these enclosures (1):

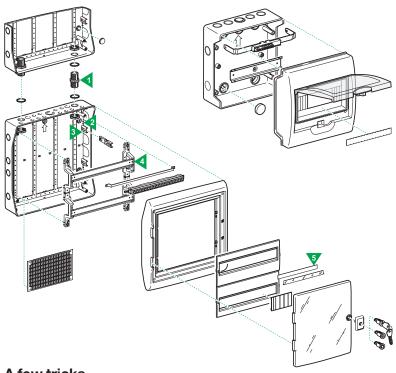
Row separator, jack-up block, junction for trunking, blanking plate, terminal block support, insulated terminal blocks, IP2 covers, cable support sleeves, cable gland, self-adhesive symbols, self-adhesive sheets.

Technical Section 9

Dimensions Section 10

Enclosures and mini enclosures for modular switchgear

Kaedra

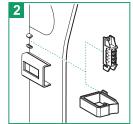


A few tricks



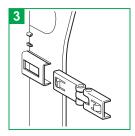
Add-on possibility Enclosures can be horizontally or vertically associated keeping the IP65 and allowing

cable insertion.



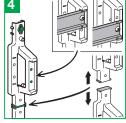
Dovetails Arranged on the back and on the chassis, they can accommodate:

- 4-hole terminal blocks
- wiring straps.



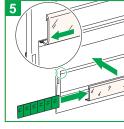
Back/front face hinges

Clipped onto the right or left, they simplify cabling and working on the interface zone.



Chassis

- DIN symmetrical rails positionable in 2 depths and 2 heights to privilege marking. cabling room
- Chassis that can be severed to install a mounting plate on the back



Marking

Clip-on label covers ensure neat, quick and upgradeable

Mechanical data

Enclosure

- Reversible front face for opening of door to the left or right
- Inside depth available for installation of non-modular switchgear between the slotted mounting plate and the plain front plate: 100 mm
- Reversible front plate according to distance between axes of rails (125, 150, 175 mm)

Mini enclosure

- Clip-on terminal block support
- Back with dovetail to accommodate 4-hole terminal block and wiring strap.

Technical data

- Self-extinguishing insulating material
- Operating temperature: -25 °C to +60 °C
- Colour: light grey RAL 7035 and transparent green door
- IP65 as per IEC 60529
- IK09 as per EN 50102
- Class 2: total insulation
- Flame and abnormal heat resistance: 650 °C as per IEC 60695-2-1
- Complies with standard IEC 60439-3
- Resistance to chemicals and atmospherics agents: see PAGE 93140.

Universal enclosures

Kaedra



The opaque door universal enclosure provides a zone to install non-modular switchgear. The universal enclosure for power outlets provides a row for modular switchgear and a universal zone.

Opaque door universal enclosures 340 x 460 340 x 610 448 x 460 448 x 610 448 x 842 Image: 40 molecular of the color of th

Universa	l enclosures	s for power o	utlets	
138 x 460 5 modules	236 x 460 8 modules	340 x 335 12+1 modules	340 x 460 12+1 modules	448 x 460 18+1 modules
13189	13190	13191	13192	13193

Mechanical data

Opaque door universal enclosure

Delivered with a slotted mounting plate mounted at the back

Available depth for installation of non-modular switchgear on mounting plate: 130 mm

Reversible front face to change door opening direction

Technical data

Self-extinguishing insulating material

Operating temperature:	-25°C to +60°C							
Colour:	Light grey RAL 7035							
IP65	As per IEC 60529							
IK09	As per EN 50102							
Class 2:	Total insulation							
Flame and abnormal heat	650°C as per IEC 60695-2-1							
resistance:								
Complies with standard	IEC 60439-3							
Resistance to chemicals and	Resistance to chemicals and atmospherics agents							

Note: universal enclosures for power outlets can accommodate

power outlets up to 125A.

Universal enclosures

Kaedra

Enclosures part numbers										
Dime	nsions	(mm)	No of Pre-cutout (top and bottom)(1)							
w	н	D	modules	M PG	16	20 11	25 16	32 21	50 29/36	number
Opaque door universal enclosures										
340	460	160			6	6	2	3		13195
340	610	160			6	6	2	3		13196
448	460	160				10	4	2	1	13197
448	610	160				10	4	2	1	13198
448	842	160				10	4	2	1	13199
Universal enclosures for power outlets										
138	460	160	5			1	1	1		13189
236	460	160	8			2	2	3		13190
340	335	160	12+1		6	6	2	3		13191
340	460	160	12+1		6	6	2	3		13192
448	460	160	18+1			10	4	2	1	13193

- 1) Concentric pre-cutouts of the PG and ISO/metric type (EN 50262).

 (2) Accessories also delivered:

 Opaque door universal enclosures: class II plugs, mounting plate

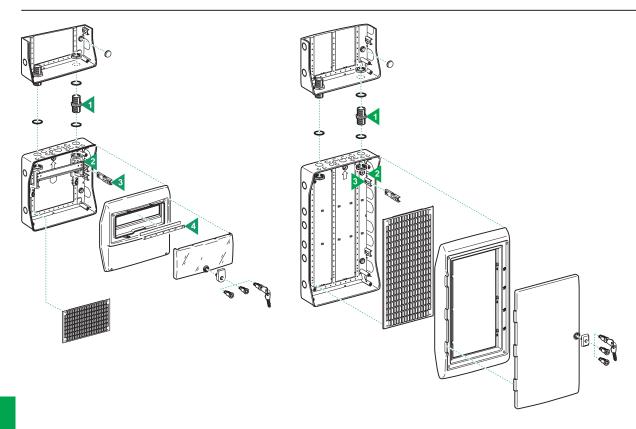
 Universal enclosures for power outlets: class II plugs, blanking plates (5 modules of 18 mm) and marking kit

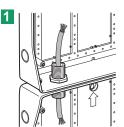
Part numbers of the main accessories						
Name	Part number					
Association kit	13934					
Wall mounting lug	13935					
Jack-up block	13938					
Junction for trunking	13939					
Wiring strap	13946					
Slotted mounting plate 150 x 250	13941					

6

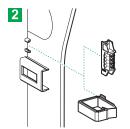
Universal weatherproof enclosures

Kaedra



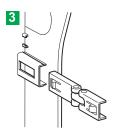


Add-on possibility Enclosures can be horizontally or vertically associated keeping the IP65 and allowing cable insertion.

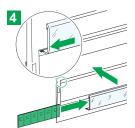


DovetailsArranged on the back and on the chassis, they can accommodate:

- 4-hole terminal blocks
- wiring straps



Back/front face hinges Clipped onto the right or left, they simplify cabling and working.



Marking Clip-on label covers ensure neat, quick and upgradeable marking.

Interface enclosures

Kaedra



Enclosures that can be installed alone, but also as an extension of another enclosure.

Number of 50 x 100 mm openings

3	4
13993	13994

Mechanical data

This enclosure can also act as a cable duct

In enclosures with 3 or 4 openings, the kit for INS40/63/80 A must be mounted in the central openings

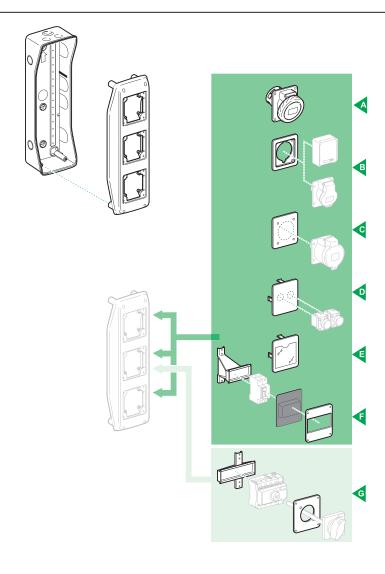
Technical data

Self-extinguishing insulating material Operating temperature: -25°C to +60°C Colour: Light grey RAL 7035 As per IEC 60529 IP65 IK09 As per EN 50102 Class 2: Total insulation Flame and abnormal heat 650°C as per IEC 60695-2-1 resistance: Complies with standard IEC 60439-3 Resistance to chemicals and atmospherics agents

Part numbers of the	e main accessories	
Name	Description	Part number
Association kit	2 sleeves + 4 nuts	13934
Wall mounting lugs		13935
Slotted mounting plate		13941
Plain front plate	12 modules	13944
Interface plate for	65 x 85 power outlets	13136
	65 x 65 or 75 x 75 power outlets	13137
	Pushbutton controls	13138
	Identification	13141
Interface kit	INS40/63/80 A	13139
	Modular switchgear up to 4 modules (e.g. residual current circuit breaker)	13140
Wiring strap		13946
Sealing kit		13947

Other accessories available for these enclosures:

Jack-up block, insulated terminal blocks, cable support sleeves, cable gland.



Everything for the interface

Direct mounting



16/32 A slanting power outlets (90 x 100 mm).

With plate Part no 13136



LV power oultets (65 x 85 mm).

With plate Part no 13137



LV and ELV power outlets (65 x 65 mm and 75 x 75 mm).

With plate Part no. 13138



Buttons, indicator lights and switches 16 and 22 mm diameter.

With plate Part no 13141



Identification label.

With kit Part no 13140



Modular switchgear up to 4 modules (e.g. residual current circuit breaker).

With kit Part no 13139



INS40/63/80 A.

Description

For enclosure installation

- Association kit: used for horizontal or vertical association of two enclosures with one another while preserving IP65
- Wall mounting lugs: used to fix the enclosure to the wall without using holes in the back of the enclosure
- Row separator: used to create IP2 insulated zones. For example: separate strong and weak current zones
- Jack-up block: used to detach the enclosure from the wall in order to route cables behind the enclosure (2 lengths of 1 metre to be cut)
- Plain front plate: used to hide a zone without modular switchgear
- Blanking plate: clipped onto the front plates to conceal slots with no devices
- Junction for trunking: allows tidy incoming of cables in a trunking

For switchgear installation

- Functional plates for 90 x 100 mm slot:
- ☐ Adaptation (screwed on) for 65 x 85 mm power outlets
- ☐ Blanking or adaptation (screwed on) for 65 x 65 mm or 75 x 75 mm power outlets (slot to be punched out)
- ☐ Blanking or adaptation (clipped on) for buttons, indicator lights and switches of diameters 16 and 22 mm (1 central slot or 2 side by side to punch out).
- ☐ Blanking for identification (clipped on)
- Functional plates for 103 x 225 mm slot:
- \square Adaptation (screwed on) with 2 openings: 65 x 85 mm and 90 x 100 mm.
- □ Blanking or adaptation (screwed on) offering 1 slot for 65 x 65 mm or 75 x 75 mm power outlets (to be punched out) and a universal zone
- ☐ Adaptation (screwed in) for 63 A 100 x 107 mm LV power outlet
- Interface kit for 90 x 100 mm slot for:
- ☐ INS40 to 80 A (chassis + plate)
- ☐ Modular switchgear up to 4 modules
- e.g. residual current circuit breaker (chassis + plate + membrane)
- Slotted plate (150 x 250 mm): screwed onto the back of the enclosure, used to fix non-modular devices

For electrical connection

- Terminal block support: flat iron (12 x 2 mm), 2 versions: screwed onto the pins or onto the chassis
- Set of insulated terminal blocks with IP42 covers:
- \square 4 holes: clipped onto the terminal block supports, fixed onto walls by dovetails,
- □ 8 holes: clipped onto the terminal block supports, clipped onto DIN symmetrical rail, screwed onto the back
- $\hfill \square$ 32 holes: clipped onto the terminal block supports
- Wiring strap: used to guide cables along walls for simplified cabling (set of 5)
- Cable support sleeves: used for incoming flexible cables
- Cable glands: used for cable and tube incoming, guaranteeing tightness and mechanical withstand

For identification

- Self-adhesive symbol: allows identification of feeders by symbols:
- ☐ Currents: loads (power outlet, lighting, convector, etc.), places (bedroom, bathroom, etc.)
- Special: loads (surge arrester, gate, swimming pool, etc.), places (technical room, computer room, etc.)
- Self-adhesive sheets for SISmarker printing: allows printing of customised labels using the SISmarker software

For enclosure protection

- Sealing kit: used to seal the front face on the back (2 screws) and the front plates on the front face (4 kits)
- Keylock: Eurolocks combination no. 850. Installed in the door
- Insert (male square or triangle, female key supplied): installed in the door

For enclosure maintenance

- Front plate
- Chassis 1 row: can be combined to obtain a multi row chassis

Terminal	block o	composition	
Number of holes Total	Cross s	ection in mm²	Width in mm
	10	16	
4	2	2	85
8	4	4	85
32	16	16	202

Name	Description		Use min end		Enclosure ire	es						Part no.
											0	
For enclosure impleme	entation 2 sleeves + 4 nuts -	. 4 ininte				_		_	_	_	_	12024
Association kit Wall mounting lugs (set		F 4 JOINTS										13934
Row separator	12 modules wide					_	_	_	_	_	_	13936
- Total Copulator	18 modules wide											13937
Jack-up block												13938
Junction for trunking	enclosure 340 mm				_	_			_			13939
Blanking plate (set of 10	enclosure 448 mm	wide										13929 13940
For switchgear implem			_	-	_	_		_	_	_		13940
Plate for 85 x 65 slot for		ets										13135
Plate for 90 x 100 slot												13136
for	65 x 65 and 75 x 75 p											13137
	ø 16 & 22mm pushl blanking and identif											13138 13141
Kit for 90 x 100 slot for l		ication					-					13139
	residual current circ	uit-breakers										13140
Plate for 103 x 225 slot												13142
for	blanking (blank to b (for 65x65 or 75x75n											13143
	63A LV power outle											13144
Front plate	plain	12 modules										13944
		18 modules										13945
Slotted plate		150 x 250 mm	-				_					13941
For electrical connection Terminal blocks kit	5 x 4 holes (2 blue,	3 hlack)										13445
Tomma brooks kill	2 black covers	o Diaony		_	_	_	-	_	_	_	_	1.0.10
	2 green covers											
Terminal blocks kit	1 x 8 holes (blue) 1 green cover											13446
	1 support for 8 back	k mounting										
Terminal blocks kit	1 x 8 holes (blue)											13448
	1 green cover											
Terminal blocks kit	1 support for 12 bar 1 x 32 holes (blue)	ck mounting										13450
reminal blocks kit	1 green cover							-	-	-	-	13450
	1 support for 18 ba	ck mounting										
Terminal block support	for mini enclosure	4 modules										13361
		6 modules										13362
		8 modules 12 modules										13363 13364
Terminal block support	for mounting	12 modules		_								13599
on chassis		18 modules										13595
Cable support sleeves v	aried diameter bag	2011										14190
Cable gland		PG11 PG13,5										83992 83993
		PG16	_									83994
		PG21										83995
		PG29										83996
Mining atrop (act of E)		PG36	_									83997 13946
Wiring strap (set of 5) For marking				-				_				13946
Self-adhesive symbols	standard											13735
	special											13736
Self-adhesive sheets for												13260
For enclosure protection Sealing kit	UII											13947
Keylock							_					13948
Insert	triangle											13949
Fancier 1.1	square						-					13950
For enclosure mainten Front plate	ance	12 modules		-								10200
1 Tont plate		18 modules				_						10200
Chassis 1 row		12 modules										10210
		18 modules	1	1						I		10220

Technical Section 9 Dimensions Section 10

PK Plugs and sockets Low voltage



A complete range of high performance industrial plugs and sockets

The PK range of industrial plugs and sockets is basically designed to suit all needs and all kinds of environments: tertiary sector, industry, building sites, workshops, agricultural sector, as well as indoor and outdoor of any kind of building. These sockets are in conformity with the international IEC60309-1 and IEC60309-2 standards.

This wide range of plugs and sockets, which are solid, well-sealed and also resistant to chemical and atmospheric agents, is the result of Schneider Electric's experience and know-how.

- Very high performance products
- Easy installation
- A complete range

PK PratiKa: a world wide patented innovation

This range presents two series, the PK PratiKa FAST and PK PratiKa SCREW with innovating solutions in the connection, in the closing and in the cable clamp, for both series. The FAST patented solution, enables the connection without stripping the conductor and without the use of screws.

These solutions are:

- Fast to connect
- Safe in the use
- Functional and ergonomic
- Easy and intuitive

PK: a complete range of products

PK represents a range of highly functional 16, 32, 63 and 125A low voltage industrial sockets in all the different versions, in conformity with standards.

- Wander plugs and sockets
- Wall mounting plugs and sockets
- Panel mouting plugs and sockets available in different numbers of pole (2P+E 3P+E and 3P+N+E)

PK Plugs and sockets Low voltage PK PratiKa



PK PratiKa with FAST connection

The FAST connecting system is the most innovating solution of this series which guarantees the connection without stripping the conductor, in total absence of screw. This logo is the guarantee of the new patented connecting system of the FAST series. The logo highlights the FAST connection which is dedicated to flexible cables. It is to note the new closing system of the body-handgrip and the cable clamp both available on the wander version.







PK PratiKa a growing range

NEW versions have been added to enrich the PratiKa_range:

- the Wall Mounted sockets and plugs with the FAST and SCREW solution
- the Multiple Way adapters with the LED warning device on each phase
- the System adapters available with new domestic Standards



PratiKa FAST®, the patented solution

The FAST patented solution, enables the connection without stripping the conductor and without the use of any screws. It guarantees a constant and everlasting contact pressure avoiding overheating and the need of re-cabling during maintenance. This solution is dedicated to flexible cables both for the 16A



PratiKa SCREW

The SCREW version simplifies the most common cabling solution, having introduced the orientation of the screws which are completely open to speed the cabling.

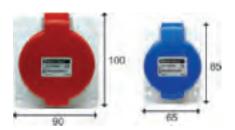


Wander plugs and sockets

The locking and cable clamp devices grant an easy and safe installation. The lock is guaranteed by a stainless-steel insert (spring) which gives particular solidity and durability to the union of the two parts. The external cable clamp, with its integrated cable-gland can be easily tightened just with the hands, no tool is needed. Its conception prevents the accidental loosening due to vibrations or mechanical stresses.

Technical Section 9 Dimensions Section 10

PK Plugs and sockets Low voltage PK PratiKa



Panel sockets

Both straight and angled versions are flanged as to fit directly in all openings of the enclosures of the series Kaedra:

- 65x85mm for the 16A 2P+E and 3P+E
- 90x100mm for the 16A 3P+N+E and for all versions 32A



Wall sockets and plugs IP44

Both solutions FAST and Screw are now available for surface applications with the new series of Plugs and sockets PratiKa Wall IP44. This range extension confirms the performing characteristics of PK PratiKa offering speed mounting on any surface and safe operations for the installer.

In spite of its small dimensions cabling operations are easy and functional thanks to the possibility to separate the contact holder from the back plate. Robustness due to rigid cover, stainless steel screws and high level of thermoplastic material permit the use in tertiary, industry and any sector.



Multiple way adapters

This new product is the first on the market to integrate externally a visible LED, World's unique solution, that highlights when the product is powered. This is very useful for the user who can easily see in distance if the power is ON. This solution is available both for the mono-phase version and three-phase versions; in this case the three LEDs indicate if all phases are connected.

An external hook enables the hanging of the product as to give an additional visibility and avoid treading on of heavy machinery. Its solid body closed by stainless steel screws assures the maximum mechanical resistance.



System adapters

New Standards have been added to the range in order to enlarge solutions when the conversion from industrial to domestic outlet is needed.

English, French and Swiss standard are now available beside the existing German and Italian versions.

PK Plugs and sockets Low voltage PK PratiKa





The world wide innovation

The FAST connection is the great innovation introduced in this range of products and gives great technical and functional advantages to the products as it:

- Allows the electrical connections without stripping each conductor (standard flexible cables)
- Guarantees the electrical conductivity and mechanical resistance even if the conductor should be wrongly stripped



World wide patent

The new range of the PK PratiKa FAST plugs and sockets gives an assembling and cabling real reduction of time of 80% (if compared to the traditional products). Nowadays it is absolutely the fastest on the market. Also the screw version gives a notabily time reduction.





SCREW







Wall plugs and sockets

Wall installations both for plugs and sockets can now be realised with PratiKa Wall IP44 available with the FAST and the Screw solution, 16A and 32A.

Easy and safe installation:

- Installing operations are simplified thanks to the possibility of having the contact body completely separated from the back plate
- Once fixed the wall back plate and adjusted to a perfect vertical position, by means of the slots, the insertion of the cable is realised through a threaded nut M25. Cable glands are available as alternative accessory
- Conductor cabling operations take the advantage of wide open space internally due to the separate cover. In the FAST model time saving for installer is more and more evident not needing any tool to fix conductors and manipulating directly the contact body
- Closing operations become extremely rapid thanks to the rapid threaded screw. The four fixing points of the cover grant an extreme robustness and solidity to the installed product. The cover can be easily removed for checking connections in complete safety during maintenance

Its compact structure, stainless steel screws and resistance to most aggressive chemical agents make this range suitable for most of the wall application in any



Dimensions Section 10

PK Plugs and sockets Low voltage PK series





Panel plugs 63A and 125A

The PK range has been enlarged with this new panel version of 63A and 125A plugs, designed in the IP67 version. The nickel-plated contacts, the stainless steel screws, and the high performing plastic materials, ensure the maximum protection even in very humid and corrosive environments. These products have a pilot contact which can be used as an auxiliary contact to realise an electrical interlock. (with delayed "close" when inserted, "leading-open" when pulled). (See page 19)



Wander, Wall plugs & sockets and panel sockets 63A and 125A

As for the new plugs above mentioned, this range is designed in the IP67 and it's available in all executions, voltage and polarities. In addition to the nickel-plated contacts and to the auxiliary pilot contact the main feature of the entire range is the mechanical resistance IK10. A high performing thermoplastic material ensures the use in any aggressive environment in presence of oils and chemical agents.



90° Wander plugs

This version allows to reduce the bulk of connection between itself and a panel sockets and limits the mechanical stresses upon the cables, due to the absence of curves.



Phase inverters

Designed to solve quickly and safely the problems concerning electrical connections of all rotary equipment. In fact it is possible to invert the positions of two plugs pins and, hence, the rotary direction of the motor by using a ordinary screwdriver and without unscrewing the plug to change the cable connection.



Wander plugs Low voltage

FAST connection, without screws



Functions

Designed to supply fixed or movable equipment by a flexible cable.

Characteristics

- Degree of protection, according to IEC 60529:
- ☐ PK PratiKa: 16 and 32A, IP44 and IP 67;
- Degree of protection against external mechanical impacts, according to EN 50102: IK08
- Resistance to fire and abnormal heat, according to IEC 60695-2-1: 850°C (glow wire test)
- Materials:
- ☐ Housing made of self-extinguishing engineering polymer
- ☐ Pins made of nickel-plated brass
- ☐ Springs and pins made of stainless steel
- Cable entry:

In	IP 44 / IP 67 fair-lead and cable clamp	
16 A	8 - 15 mm	
32 A	11.5 - 21 mm	

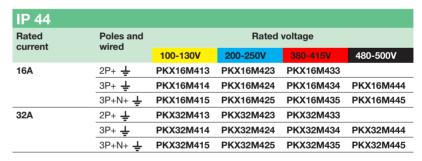
■ Connection terminals:

- ☐ Fast connection without screws and without stripping the conductor
- ☐ Maximum cross section of conductors:

In	Stranded wire cables / flexible cables		
	(IEC6	0309	-1/A1 and 60309-2/A1)
16 A	1	to	2.5 mm ²
32 A	2.5	to	6 mm ²

PK PratiKa

Code of wander plugs



IP 67					
Rated	Poles and		Rated	voltage	
current	wires	100-130V	200-250V	380-415V	480-500V
16A	2P+ 🛓	PKX16M713	PKX16M723	PKX16M733	
	3P+ ≟	PKX16M714	PKX16M724	PKX16M734	PKX16M744
	3P+N+ ↓	PKX16M715	PKX16M725	PKX16M735	PKX16M745
32A	2P+ 🚣	PKX32M713	PKX32M723	PKX32M733	
	3P+ ≟	PKX32M714	PKX32M724	PKX32M734	PKX32M744
	3P+N+ ∔	PKX32M715	PKX32M725	PKX32M735	PKX32M745







Wander sockets Low voltage

FAST connection, without screws



Designed to supply fixed or movable equipment by a flexible cable.

Characteristics

- Degree of protection, according to IEC 60529:
- ☐ PK PratiKa: 16 and 32A IP44 and IP 67;
- Degree of protection against external mechanical impacts, according to EN 50102: IK08
- Resistance to fire and abnormal heat, according to IEC 60695-2-1: 850°C (glow wire test)
- Materials:
- ☐ Housing made of self-extinguishing engineering polymer
- ☐ Sleevs made of brass
- \square Springs and pins made of stainless steel
- Cable entry:

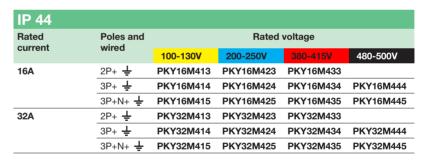
In	IP 44 / IP 67 fair-lead and cable clamp	
16 A	8 - 15 mm	
32 A	11.5 - 21 mm	

- Connection terminals:
- ☐ Fast connection without screws and without stripping the conductor
- ☐ Maximum cross section of conductors:

In			wire cables / flexible cable 0-1/A1 and 60309-2/A1)	es
16 A	1	to	2.5 mm ²	
32 A	2.5	to	6 mm ²	

PK PratiKa

Code of wander socket



IP 67					
Rated	Poles and		Rated	voltage	
current	wires	100-130V	200-250V	380-415V	480-500V
16A	2P+ 🛓	PKY16M713	PKY16M723	PKY16M733	
	3P+ ≟	PKY16M714	PKY16M724	PKY16M734	PKY16M744
	3P+N+ +	PKY16M715	PKY16M725	PKY16M735	PKY16M745
32A	2P+ 上	PKY32M713	PKY32M723	PKY32M733	
	3P+ ≟	PKY32M714	PKY32M724	PKY32M734	PKY32M744
	3P+N+ ↓	PKY32M715	PKY32M725	PKY32M735	PKY32M745









Panel mounted angled sockets Low voltage

FAST connection, without screws



Functions

They can be mounted on a plate, panel or machine to supply appliance with wander plugs.

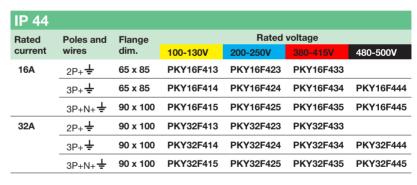
Characteristics

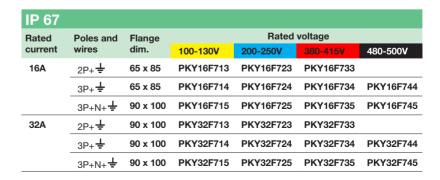
- Degree of protection, according to IEC 60529:
- ☐ 16 and 32A IP44 and IP 67;
- Degree of protection against external mechanical impacts, according to EN 50102: IK08
- Resistance to fire and abnormal heat, according to IEC 60695-2-1: 850°C (glow wire test)
- Materials:
- ☐ Housing made of self-extinguishing engineering polymer
- ☐ Sleeves made of brass
- ☐ Pins and springs made of stainless steel
- Connection terminals:
- ☐ Fast connection without screws and without stripping the conductor
- Maximum cross section of conductors:

In			vire cables / flexible cables -1/A1 and 60309-2/A1)
16A	1	to	2.5 mm ²
32A	2.5	to	6 mm ²

PK PratiKa

Code of panel mounted angled sockets







PKY16F423



PKY32F734

Technical	Dimensions
Section 9	Section 10



Panel mounted straight sockets Low voltage

FAST connection, without screws



Functions

They can be mounted on a plate, panel or machine to supply appliance with wander plugs.

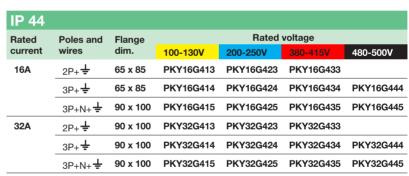
Characteristics

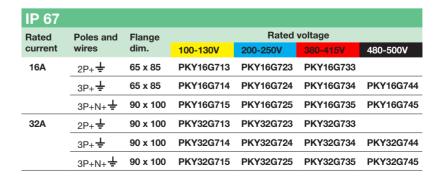
- Degree of protection, according to IEC 60529:
- ☐ 16 and 32A IP44 and IP 67;
- Degree of protection against external mechanical impacts, according to EN 50102: IK08
- Resistance to fire and abnormal heat, according to IEC 60695-2-1: 850°C (glow wire test)
- Materials:
- ☐ Housing made of self-extinguishing engineering polymer
- ☐ Sleeves made of brass
- ☐ Pins and springs made of stainless steel
- ☐ Connection terminals:
- ☐ Fast connection without screws and without stripping the conductor
- Maximum cross section of conductors:

In		Stranded wire cables / flexible cables (IEC60309-1/A1 and 60309-2/A1)				
16A	1	to	2.5 mm ²			
32A	2.5	to	6 mm ²			

PK PratiKa

Code of panel-mounted straight sockets







PKY16G423



PKY32G734

Technical	Dimensions
Section 9	Section 10



Wall mounted sockets Low voltage

FAST connection, without screws

Functions

They can be wall-mounted to supply appliances with wander plugs. They are very compact in dimensions.

Characteristics

- Degree of protection, according to IEC 60529: IP44
- Degree of protection against external mechanical impacts, according to EN 50102: IK08
- Resistance to fire and abnormal heat, according to IEC 60695-2-1: 750°C (glow wire test)
- Materials:
- $\hfill\square$ Housing made of self-extinguishing engineering polymer
- ☐ Sleeves made of brass
- $\hfill \square$ Screws, pins and springs made of stainless steel
- Cable entry:

In	Cable diameter	IP44 cable entry
16A	max 21.0 mm	M25 threaded nut
32A	max 21.0 mm	M25 threaded nut

■ Connection terminals:

☐ Fast connection without screws and without stripping the conductor ☐ Maximum cross section of conductors:

In		Stranded wire cables / flexible cables (IEC60309-1/A1 and 60309-2/A1)					
16 A	1	to	2.5 mm ²				
32 A	2.5	to	6 mm ²				

PK PratiKa

Code of wall mounted sockets PK PratiKa FAST® version

IP 44						
Rated	Poles and	Flange		Rated	voltage	
current	wires	dim.	100-130V	200-250V	380-415V	480-500V
16A	2P+ ⋢	65 x 85	PKY16W413	PKY16W423	PKY16W433	
	3P+ ≟	65 x 85	PKY16W414	PKY16W424	PKY16W434	PKY16W444
	3P+N+ ‡	90 x 100	PKY16W415	PKY16W425	PKY16W435	PKY16W445
32A	2P+ ≟	90 x 100	PKY32W413	PKY32W423	PKY32W433	
	3P+ ≟	90 x 100	PKY32W414	PKY32W424	PKY32W434	PKY32W444
	3P+N+ ‡	90 x 100	PKY32W415	PKY32W425	PKY32W435	PKY32W445





PKY32W435



Wall mounted plugs Low voltage

FAST connection, without screws

Functions

They can be installed on an appliance to enable supply by wander socket.

Characteristics

- Degree of protection, according to IEC 60529: IP44
- Degree of protection against external mechanical impacts, according to EN 50102: IK08
- Resistance to fire and abnormal heat, according to IEC 60695-2-1: 750°C (glow wire test)
- Materials:
- \square Housing made of self-extinguishing engineering polymer
- ☐ Pins made of nickel-plated brass
- ☐ Stainless steel screws
- Cable entry:

In	Cable diameter	IP44 cable entry
16A 32A	21.5 mm 21.5 mm	M25 threaded nut M25 threaded nut

■ Connection terminals:

- ☐ FAST connection: fast connection without screws and without stripping the conductor
- ☐ SCREW connection: captive screws, completely loosened

PK PratiKa

In	Stranded wire cables / flexible cables						
	(IEC60309-1/A1 and 60309-2/A1)						
16 A	1	to	2.5 mm ²				
32 A	2.5	to	6 mm ²				

Code of wall mounted Plugs PK PratiKa FAST® version

IP 44						
Rated	Poles and	Flange		Rated	voltage	
current	wires	dim.	100-130V	200-250V	380-415V	480-500 V
16A	2P+ ≟	65 x 85	PKX16W413	PKX16W423	PKX16W433	
	3P+ ≟	65 x 85	PKX16W414	PKX16W424	PKX16W434	PKX16W444
	3P+N+ ≟	90 x 100	PKX16W415	PKX16W425	PKX16W435	PKX16W445
32A	2P+ -	90 x 100	PKX32W413	PKX32W423	PKX32W433	
	3P+ ≟	90 x 100	PKX32W414	PKX32W424	PKX32W434	PKX32W444
	3P+N+ ≟	90 x 100	PKX32W415	PKX32W425	PKX32W435	PKX32W445
In		S	olid cables /	stranded win	re cables / fle	exible cables
16A			1 to 4	mm²		
32A			2.5 to 10	mm²		

Code of wall mounted Plugs PK PratiKa SCREW version

Rated	Poles and	Flange				
current	wires	dim.	100-130V	200-250V	380-415V	480-500V
16A	2P+ ≟	65 x 85	PKE16W413	PKE16W423	PKE16W433	
	3P+ ≟	65 x 85	PKE16W414	PKE16W424	PKE16W434	PKE16W444
	3P+N+ ≟	90 x 100	PKE16W415	PKE16W425	PKE16W435	PKE16W445
32A	2P+ ≟	90 x 100	PKE32W413	PKE32W423	PKE32W433	
	3P+ ≟	90 x 100	PKE32W414	PKE32W424	PKE32W434	PKE32W444
	3P+N+ ‡	90 x 100	PKE32W415	PKE32W425	PKE32W435	PKE32W445







PKE16W435

Technical Dimensions Section 9 Section 10



Wall mounted plugs Low voltage

FAST connection, without screws

Functions

They can be installed on an appliance to enable supply by wander socket.

Characteristics

- Degree of protection, according to IEC 60529
- 16 and 32A IP44 and IP 67; 63 and 125A IP67
- Pilot contact available in the 63A and 125A
- Degree of protection against external mechanical impacts, according to EN 50102: IK08
- Resistance to fire and abnormal heat, according to IEC 60695-2-1: 850°C (glow wire test)
- Materials:
- \square Housing made of self-extinguishing engineering polymer
- ☐ Pins made of nickel-plated brass
- ☐ Stainless steel screws
- ☐ Cable entry:

In	IP44 fair-lead	IP67 cable gland
16A	8 – 15 mm	PG16 (PG21 5P)
32A	11.5 – 21 mm	PG 21
63A		PG 36
125A		PG 48

■ Connection terminals:

- ☐ Captive screws, completely loosened
- ☐ Maximum cross section of conductors:

In	Solid and stranded wire flexible cables					
16A 32A	1	to	4 mm ²			
	2.5	to	10 mm ²			
63A	6	to	25 mm ²			
125A	16	to	70 mm ²			

Code of wall-mounted plugs

IP 44									
Rated	Poles and		Rated voltage						
current	wires	100-130V	200-250V	380-415V	480-500 V				
16A	2P+ ≟	83501	83504	83507					
	3P+ ±	83502	83505	83508	83511				
	3P+N+ -	83503	83506	83509	83512				
32A	2P+ ≟	83513	83516	83519					
	3P+ ±	83514	83517	83520	83523				
	3P+N+ ≟	83515	83518	83521	83524				

IP 67								
Rated Poles and			Rated voltage					
current	wires	100-130V	200-250V	380-415V	480-500 V			
16A	2P+ ≟	83501	83504	83507				
	3P+ ≟	83502	83505	83508	83511			
	3P+N+±	83503	83506	83509	83512			
32A	2P+ -	83513	83516	83519				
	3P+ ≟	83514	83517	83520	83523			
	3P+N+ ±	83515	83518	83521	83524			
63A	2P+ ≟		81578					
	3P+ ≟	81576	81579	81582	81585			
	3P+N+ -	81577	81580	81583	81586			
125A	2P+ ≟		81590					
	3P+ ≟	81588	81591	81594	81597			
	3P+N+ ≟	81589	81592	81595	81598			





83504



83571

Technical	Dimensions
Section 9	Section 10

Introductionpages	7/2 to 7/3
KDP 20A trunking	7/4 to 7/5
KBA 25A trunkingpages	7/6 to 7/7
KN 40 to 160A trunking pages	7/8 to 7/9
KS 100 to 400A trunking pages 7	/10 to 7/11

Prefabricated busbar trunking

We offer a number of advantages thanks to prefabricated design and qualities of Canalis.

1 Maximise safety

Interlocking systems prevent mounting errors and reduce inspection times. Work is carried out safely without exposure to live connections.

Live parts in Canalis tap-off units are not accessible. Tap-off units can be added and removed with the trunking energised. Interlocking devices eliminate connection errors.

The PE conductor is connected before the phase and neutral conductors to enhance protection.

2 Control deadlines

Prefabricated design ensures smooth work flow. Installation times can be precisely planned in advance and, if plans must be changed, a fast and effective solution is always available with the adaptable and upgradeable Canalis system. The result is improved productivity.

3 Make modifications easy

With Canalis, electrical equipment can be moved or a machine added easily and quickly. That is the type of service that customers appreciate.

With cables, the same modification could take over a day. That can become a real problem if another job has already been scheduled. What is more, customers today expect this type of service at no extra cost.

4 Create a new image for electrical contracting

The worksite remains clean, with no cable ends or waste scattered about. Stand out from the crowd and gain customer recognition by installing modern upgradeable systems.

5 Provide greater continuity of service

In the industrial sector, customers want continuity of service.

Canalis avoids costly production shutdowns.

Tap-off units can be connected or disconnected with the trunking live.

This makes it possible to add or remove loads without cutting power to the rest of the installation.

6 Offer quick modifications...

...at no cost to you!

Accept last-minute changes with a smile.

Your customers will be even more satisfied and that means more business for you. The need to change the electrical distribution network will no longer be an obstacle to development projects.

7 Offer total freedom for upgrades

Your customers will have access to electrical power throughout their installations. Easy upgrading of the electrical installation become a routine part of future investment projects.

8 Offer flexibility in machine layout...

...without taking any risks on your quote.

In the early stages of a project, firm information on machine layout is not always available. The customer nevertheless needs a good idea on the costs and deadlines that you can meet.

With Canalis, you have the solution in hand because:

- The product can handle any and all modifications
- worksite uncertainties are reduced to a minimum and deadlines remain under control
- The customer is reassured, they now have the time to analyse and finalise the layout. Canalis offers a degree of flexibility unmatched by any conventional solution.

9 Offer a reusable system

Canalis is 100% reusable, producing major savings when changing layouts or increasing power ratings.

10 Simplify maintenance

Due to successive modifications, many customers lose a clear understanding of their electrical installation over the course of time.

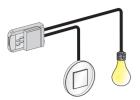
With Canalis, the entire distribution network remains clear, consistent and easy to understand, whatever the changes.

11 Offer an attractive solution

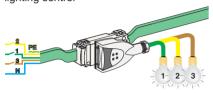
Provide your customer with a discreet product that blends in with the on-site architecture. This represents a clear advantage over cable trays running under ceilings and along walls.

This added touch will show your customer that your know-how goes beyond technical aspects.

Busbar trunking



A special tap-off unit for lighting control



Three levels of illuminance

Canalis KDP trunking 20A For lighting and power socket distribution

For lighting and power-socket distribution

- Flexible 20 A trunking
- Used when the luminaires are attached to the building structure (false ceilings, beams, etc.)
- Available in 192-metre reels, single phase or three-phase
- Fixing systems for all types of building structures
- 10 and 16 A tap-off units, with fixed polarity or phase selection.



Run components

- Rating: 20A
- 2 or 4 wire live conductors

Polarity	Distance between tap-offs (mm)	Reel	Part number			
Single phase	1200	192m	KDP 20ED2192120			
L+N+PE	1350	183m	KDP 20ED2183135			
	1500	192m	KDP 20ED2192150			
	3000	192m	KDP 20ED2192300			
3 phase	1200	192m	KDP 20ED4192120			
3L+N+PE	1350	183m	KDP 20ED4183135			
	1500	192m	KDP 20ED4192150			
	3000	192m	KDP 20ED4192300			



Feed units

■ The feed units and end covers receive the cables supplying one end of Canalis KDP trunking

Mounting	Cable connection		Part number
	Terminals (mm²)	Cable gland Ø max (mm)	
Left or right	4	PG 16, Ø 15	KDP 20ABG4



■ The fixing system is used to attach Canalis KDP to the sides of cable trays, metal structures or concrete slabs

motal disasta of a control of a							
Fixing on	Thickness (mm)	Order in multiples of of 100	Part number				
Pre-slotted sheet metal cable trays	-	100	KDP ZF10				
Mesh trays	Ø 4 - Ø 6	100	KDP ZF14				
Metal structure	1-8	100	KDP ZF10				
	8-13	100	KDP ZF11				
	13-17	50	KDP ZF12				
	17-22	50	KDP ZF13				
Wood or	Fixing with cable tie	100	KDP ZF20				
concrete	Concrete fixing plug for Ø 8mm hole	100	KDP ZF21				



Busbar trunking

Canalis KDP trunking 20A For lighting and power socket distribution



Tap-off units				
Type of busbar trunking	Polarity	Colour of lock	Order in multiples of	Part number
Tap-off unit,	L1+N	Green	10	KBC 10DCS101
direct connection	L2+N	Yellow	10	KBC 10DCS201
10A with fixed	L3+N	Brown	10	KBC 10DCS301
polarity				
10A tap-off ur	nit with p	hase se	lection	
Without prewiring	All polaritie	es	10	KBC 10DCB20
Pre-wired	All polaritie	es	10	KBC 10DCC211
S05Z1Z1-F 3 x 1.5n	nm²			
10A single ph	ase tap-	off units	for lighting	control, with
phase selection	on			
10A with fixed	polarity	/		
Single circuit	All polaritie	es	10	KBC 10DSA20
Double circuit switching	All polaritie	es	10	KBC 10DDA20
Two way switching	All polaritie	 es	10	KBC 10DVV20
Timer or impulse switch	All polaritie	es	10	KBC 10DMT20



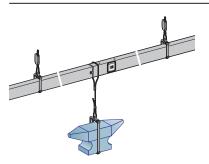
Connection le	eads		
Usage	Length (m)	Order in multiples of	Part number
Connect the luminaires	1	10	KBZ 31EMC010
Connect to	1	10	KBZ 31EFC010
tap-off units	3	10	KBZ 31EFC030
	5	10	KBZ 31EFC050
Connect between	2	10	KBZ 31EFM020
luminaires	3	10	KBZ 31EFM030
	5	10	KBZ 31EFM050
Usage	Function	Order in multiples of	Part number
Splitter block	T shape	20	KBZ 32DBA12
	1 male input		
	2 female outputs		
	T shape	10	KBZ 32DBA15
	1 male input		
	2 female outputs		
Connector to be	Female	50	KBZ 32APFR2
wired	Male	10	KBZ 32APMR2
Lock	Resists pulling forces	10	KBZ 32ZVP01

Busbar trunking

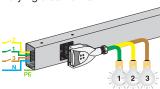
Canalis KBA trunking 25A For lighting and power socket distribution

For supply and fixing of luminaires

- Rigid 25 A trunking
 Available in 3-metre lengths, single phase or three-phase
- 10 and 16 A tap-off units, with fixed polarity or phase selection



Very rigid carrier rail



3 illuminance levels in three-phase systems



Run components

- Rating: 20A
- 2 or 4 wire live conductors

Type of component	Length (m)	Number of tap-offs	Order in multiples of	Part number
Standard straight length L+N+PE	3	2	6	KBA 25ED2302
Standard straight length	3	2	6	KBA 25ED4302
L+N+PE	2	2	6	KBA 25ED4202

Feed units (supplied with end cover)					
Designation	Rating (A)	Mounting	Cable connection		Part number
			Terminals (mm²)	Cable gland Ø max (mm)	
End feed unit	25	Left	4	PG 16, Ø 15	KBA 25ABG4





■ The fixing system	n ensures that Canalis I	KBA is w	ell secured	
Designation	Mounting	Max. load (Kg)	Order in multiples of	Part number
Busbar trunk	ing fixings			
Universal fixing bracket (1)	Suspended on threaded rod or lateral (except wall)	60	10	KBA 40ZFU
Spring fixing bracket (1)	Adjustable suspension for threaded rod, M6	50	10	KBA 40ZFPU
Cable suspension system	Universal fixing bracket and steel cable, 3m long	60	10	KBA 40ZFSU
Pigtail hook	Suspended by small chain	60	10	KBB 40ZFC
Luminaire fix	ings			
Universal fixing bracket (1)	For direct suspension under trunking	60	10	KBA 40ZFU

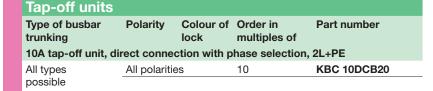
(1) Optional white-lacquered metal enclosure: add W to Part numberr Example: KBA 40ZFUW.

Technical **Dimensions** Section 10 Section 9

Busbar trunking

Canalis KBA trunking 25A For lighting and power socket distribution





10A tap-off unit, direct connection with phase selection, 2L+PE, pre-wired S05Z1Z1-F 3 x 1.5mm²

All types	All polarities	10	KBC 10DCC211
nossible			

Tap-off unit, direct connection pre-wired S05Z1Z1-F 3 x 1.5mm², 0.8m long

10A with fixed polarity, 2L+PE

Single circuit	L1 + N	Green	10	KBC 10DCS101
switching and	L2 + N	Yellow	10	KBC 10DCS201
balancing on 3 phases or 3 circuit switching	L3 + N	Brown	10	KBC 10DCS301



KBL luminaires

- The IP20 luminaires are designed for lighting in premises of low to medium height (industrial) or high premises (intensive)
- The IP55 luminaires are designed for premises of low to medium height with severe environments

Type (1) of tube	Type of ballast	Power (W)	Part number (2)			
	ustrial luminaires (delive e-wired with S05Z1Z1-F 3 x 1.5mm		off unit with phase			
T8	Compensated ferro-magnetic	2 x 58	KBL 258C			
	Electronic	2 x 58	KBL 258HF			
T5	Electronic	2 x 35	KBL 235T5			
	IP20 intensive luminaires (delivered with 10A tap-off unit with phase selection, pre-wired with S05Z1Z1-F 3 x 1.5mm²)					
T5	Flootronio	2 v 80	KBI 290TE			

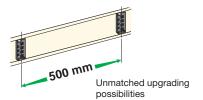
IP55 polycarbonate dust and damp proof luminaires (delivered with 10A tap-off unit with phase selection, pre-wired with S05Z1Z1-F 3 x 1.5mm²)

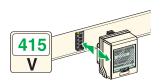
T8	Compensated ferro-magnetic	2 x 58	KBL 258CE
	Electronic	2 x 58	KBL 258HFE
T5	Electronic	2 x 35	KBL 235T5E

- (1) Tubuler are not supplied
- (2) Sale by inseparable quantity of 30, beyond 30, sale by unit is possible

Busbar trunking

Canalis KN trunking 40 to 160A For low power distribution







- For low power distribution
 For loads rated 16 to 63A
 For supply of Canalis KBA or KDP lighting systems
- Available in 3-metre lengths
- Tap-off units with circuit breaker or fuse protection
- Tap-off units with power sockets

Run components					
■ 4 live conductors					
Polarity	Rating (A)	Length (mm)	Number of tap-off outlets	Part number	
Standard le	ngths				
3L + N + PE	40	3000	3	KNA 40ED4303	
or	63	3000	3	KNA 63ED4303	
3L + PEN	100	3000	3	KNA 100ED4303	
	160	3000	3	KNA 160ED4303	
Additional le	engths				
3L + N + PE	63	2000	4	KNA 63ED4204	
or	100	2000	4	KNA 100ED4204	
3L + PEN	160	2000	4	KNA 160ED4204	
Designation	Rating	Direction (edgewise)		Part number	
Flexible elbow,	40 to 63	Left or right		KNA 63DL4	
for internal or	100	Left or right		KNA 100DL4	
external angle 80° to 180°*	160	Left or right		KNA 160DL4	
00 10 100					

^{*} Minimum curve radius: 70 mm



Feed unit	s (sup	plied wi	th end co	ver)		
Designation	Rating (A)	Mounting	Connection	Max si (mm²) Flexible		Part number
End feed unit	40 and 63	Left or right	Terminals	16	25	KNA 63AB4
Feed unit	100	Left or right	Lugs (M8 screws)	35	50	KNA 100AB4
	160	Left or right	Lugs (M8 screws)	95	95	KNA 160AB4

Busbar trunking

Canalis KN trunking 40 to 160A For low power distribution

Tan off units and tan off unit with isolate



Tap-off un	its and tap-off u	nit with isolat	or
■ They are use	ed to supply loads from	16 to 63 A	
Designation Rating	Distribution	Protection	Part number
16A Single phase tap-off unit	Single phase L+N+PE with phase selection	C60N circuit breaker (supplied)	KNB 16CM2
32A Four pole tap-off unit	3 phase 3L+N+PE ⁽¹⁾ or 3L+Np+PE	Circuit breaker (5 x 18mm modules)	KNB 32CM55
32A Tap-off unit with power sockets ⁽²⁾	3 phase 3L+N+PE	Circuit breaker (8 x 18mm modules)	KNB 32CP15F
63A Tap-off unit with isolator	3 phase 3L+N+PE ⁽¹⁾	Circuit breaker (8 x 18mm modules)	KNB 63SM48
16A Single phase tap-off unit	Single phase L+N+PE with phase selection	NF fuses 8.5 x 31.5 (not supplied)	KNB 16CF2
25A Four pole tap-of unit	3 phase 3L+N+PE (1)	NF fuses 10 x 38 (not supplied)	KNB 25CF5
50A Tap-off unit with isolator	3 phase 3L+N+PE ⁽¹⁾	NF fuses 14 x 51 (not supplied)	KNB 50SF4

- (1) Also suitable for tap-off unit 3L + PE (N not distributed)
- (2) Power socket polarity according to the case



Fixing system

■ Used to secure Canalis KN whatever the type of building structure

- 0000 to 000010	Our land i	ar whatever the type	or ballaring stre	actaro
Designation	Rating (A)	Mounting	Order in multiples of	Part number
Spring fixing bracket (1)	40 to 160	Suspended on threaded rod	10	KNB 160ZFPU
Fixing bracket (2)	40 to 160	Suspended on threaded rod	10	KNB 160ZF1

- (1) Maximun load: 100 kg
- (2) Maximun load: 80 kg
- Maximum recommended distance between fixings: 3 meters

Busbar trunking

Canalis KS trunking 100 to 400A For medium power distribution





Excellent contact

For medium power distribution

- For loads rated 25 to 160 A
- Available in 3-metre lengths
- Tap-off units with circuit breaker or fuse protection
- Tap-off units with power sockets



Run compo	nents			
■ 4 live conducto	ors			
Polarity	Rating (A)	Length (mm)	Number of tap-off outlets	Part number
Standard le	ngths			
3L + N + PE	100	3000	6	KSA 100ED4306
or	160	3000	6	KSA 160ED4306
3L + PEN	250	3000	6	KSA 250ED4306
	400	3000	6	KSA 400ED4306
Additional le	engths			
3L + N + PE	250	2000	8	KSA 250ED4208
or 3L + PEN				
Designation	Rating	Direction (edgewise)		Part number
Edgewise	100 to 250	Left or right		KSA 250DLC40
elbow				



Feed unit	s (sup	plied wi	th end cov	ver)	
Designation	Rating (A)	Mounting	Connection	Max size (mm²) Flexible Rigid	Part number
End feed unit	100	Left or right	Terminals	5 x 16	KSA 100AB4
Feed unit	100 to 250	Left or right	Lugs (M10 screws)	240	KSA 250AB4
	400	Left or right	Lugs (M10 screws)	2 x 240	KSA 400AB4

Technical Section 9 Dimensions Section 10

Busbar trunking

Canalis KS trunking 100 to 400A For medium power distribution



Tap-off un	its and tap-off u	nit with isolatoı	r
■ They are use	ed to supply loads from	16 to 63 A	
Designation Rating	Distribution	Protection	Part number
32A Tap-off units	3 phase 3L+N+PE ⁽²⁾	Circuit breaker (5 x 18mm modules)	KSB 32CM55
32A Tap-off unit with power sockets (2)	3 phase 3L+N+PE	Circuit breaker (8 x 18mm modules)	KSB 32CP15F
63A Tap-off unit with isolator	3 phase 3L+N+PE ⁽²⁾	Circuit breaker (8 x 18mm modules)	KSB 63SM48
100A Tap-off unit with isolator	3 phase 3L+N+PE ⁽²⁾	Circuit breaker (12 x 18mm modules)	KSB 100SM412
160A Tap-off unit with isolator	3 phase 3L+N+PE ⁽²⁾	Compact NS circuit breaker (without vigi module)	KSB 160DC4
32A Tap-off units	3 phase 3L+N+PE ⁽²⁾	NF fuses 10 x 38 (not supplied)	KSB 32CF5
50A Tap-off units with isolator	3 phase 3L+N+PE (2)	NF fuses 14 x 51 (not supplied)	KSB 50SF4
100A Tap-off units with isolator	3 phase 3L+N+PE ⁽²⁾	NF fuses 22 x 58 (not supplied)	KSB 100SF4
160A Tap-off units with isolator	3 phase 3L+N+PE (2)	Blade type fuses (not supplied)	KSB 160SF4

- (1) Also suitable for tap-off unit 3L + PE (N not distributed)
- (2) Power socket polarity according to the case

Fixing system

■ Used to secure Canalis KN whatever the type of building structure

Designation	Rating (A)	Mounting	Order in multiples of	Part number
Fixing bracket (1)		Wall or suspended on threaded rod	10	KSB 400ZF1

(1) Maximun load: 100 kg Maximum recommended distance between fixings : 3 meters

Cable management systems

wita noor boxesp	
Floor outlet boxes	page 8/2
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Mita Cablelinepa	ages 8/6 to 8/40
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Ladder support work	

Flooring systems

Mita floor outlet boxes



- 292mm x 201mm cut out offering choice of 3 or 4 compartment
- High quality moulded grey trim
- Self closing lid & 'parking facility'
- Lid and cable guides can be removed by hand & turned through 180° degrees
- Pre-galvanised lower box with 20/25mm knockouts for cable entry
- Dual quick fix securing clamps (panel plus carpet thickness of 18-49mm)
- This unit is available pre-wired.

Also available 'Intercell' raised flooring system – integral floor panel and outlet box, please contact Schneider Electric.



Floor outlet box

Overall dimensions:

 $310 \times 220 \times (100 \text{ or } 75 \text{mm}) \text{ deep.}$

Floor panel cut out 292 x 201mm.

3 compartment base box c/w hinged lid & grey carpet trim.

Article number	Depth	Part number	Qty
	120mm	FBX 120	1
5251 021	100mm	FBX 100	1
5251 010	75mm	FBX 75	1
	65mm	FBX 65	1
		(3 comp only)	
	120mm	FBXD 120	1



Divider

To convert 3 compartment box to 4 compartment box.

Article number	Depth	Part number	Qty
5251 101	100mm	FBD 100	1
5251 110	75mm	FBD 75	1
For FBXD 120 box only	50mm	FBDD 50	1

Locking device

Where restricted access to a floor box is required a locking device can be supplied for initial installation or can be retro fitted.

for initial installation	or can be retro fitted.		
Pre-wired flo	or outlet box		
Article number	Description	Part number	Qty
5251 030	Standard 32A 3 metre unfused tap off wired to a twin socket	FBPW 10	1
	Standard 32A 3 metre unfused off wired to two twin sockets	FBPW 20	1
	Standard 13A 5 metre fused tap off wired to two twin sockets	FBPW 30	1
	Standard 13A 5 metre fused tap off wired to a twin socket	FBPW 40	1
Additional plates sh	own are available at e	vtra cost	

Additional plates shown are available at extra cost.



Technical Section 9 Dimensions Section 10

Flooring systems

Mita floor outlet boxes



Slab box			
Article number	Description	Part number	Qty
5150 869	3 compartment	FSBX 3	1
5150 870	4 compartment	FSBX 4	1



For screeded	lfloors				
Outlet Unit, hinged lid, grey carpet trim and base					
Conduit fed s	Conduit fed screeded unit				
Article number	Size/Description	Part number	Qty		
3 Compartment					
5150 791	(Conduit entry, screed depth 60-75mm)	UTB 0360	1		
5150 866	(Conduit entry, screed depth 75-90mm)	UTB 0375	1		
4 Compartment					
5150 867	(Conduit entry, screed depth 60-75mm)	UTB 0460	1		
5150 868	(Conduit entry, screed depth 75-90mm)	UTB 0475	1		

Mita floor box accessories



Please note, in certain installations eg, shallow box systems, it may not be possible to install a CAT6 solution. Please check suitability with us before placing your order.

4"4
4"4
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AD

3 com	partment 1.2mm plate, dimensi	ons 17	3 x 87n		me.				
			rioor outi	et box ty	pe				
Article number	Description	Part number	FBXD120 FBX120 FBX100	FBX75	FBX65	FSBX	υтв	UTO FT065 FT060	Qty
5250 305	Twin 13A SSO BS1363 (complete) (Dual Earth as standard)	Q301	✓	✓	✓	✓			1
-	Twin 13A SSO BS1363 Clean Earth (complete) (Dual Earth as standard)	Q301CE	✓	✓	✓	✓			1
5250 310	Twin 13A SO BS1363 (complete)	Q310	√	1	/	1	/	1	1
5250 315	Twin 13A SSO BS1363 (complete) (dual-earth as standard)	Q311					✓	✓	1
5250 320	3 x single 13A SO BS1363 (complete)	Q312	√	√	✓	√	√	1	1
5250 325	Twin 13A Non Standard C/E SSO BS5733 (complete)	Q313	1	1	1	1	A	A	1
5250 330	To accept moulded twin gang accessory #	Q314	✓	*		✓	Data only	Data only	1
5250 365	To accept 2 standard 86 x 86mm UK wall # plates (data only) (for CAT5e and CAT6)	Q321	✓	✓	✓	✓	Outer Comp Only	Outer Comp Only	1
					CAT5e or	nly			
5250 370	To accept 6 x LJ6C/RJ45 (for CAT5e and CAT6) #	Q322	✓	✓	✓	✓	/	1	1
-	To accept 4 x LJ6C/RJ45 (for CAT5e and CAT6) #	Q328	✓						1
-	To accept 4 x LJ6C/RJ45 (for CAT5e and CAT6) #	Q329	√						1
5250 375	2 x Euro 50 x 50mm frames (complete) #	Q323	/	√	✓	1	/	1	1
5250 390	Blank Plate	Q326	/	1	/	1	/	/	1
-	To accept 8 x LJ6C/RJ45 (for CAT5e and CAT6) #	Q325	✓	√	√	1	✓	/	1

Flooring systems

Mita floor box accessories



Article number	Description	Part number	FBXD120 FBX120 FBX100	let box type FBX75	UTB	UTO FT065 FT060	Qty
• 5250 515	Twin 13A SSO BS1363 (complete) (Dual Earth as standard)	Q411	1	/	✓		1
• 5250 525	Twin 13A N/S C/E SSO BS5733 (complete)	Q413	√	✓	A		1
5250 570	To accept 4 x LJ6C/RJ45 #	Q422	√	/	√		1
-	To accept 4 x LJ6C/RJ45 (for CAT5e and CAT6) #	Q428	1				1
5250 590	Blank Plate	Q426	✓	✓	√		1

st Height restriction 34mm (Allow for moulded plate thickness when calculating available headroom)

[▲] Height restriction 65mm or greater

[•] Due to space requirements for plug tops, it is not recommended that power plates are installed adjacent to each other in a four compartment box.

Cable trunking

Mita Cableline Prima 60



Cableline Prima 60 is a 3 compartment trunking system with a stylish profile. Prima 60 has been designed for use in power and high density CAT5e, CAT6, shielded and 10Gig structured cabling solutions.

With adjustable bends and a multi-configurable tee, Prima 60 has a sleek and contemporary style.

- Lengths of 3m
- Colour white (RAL colour options available)
- BS4678 Pt.4, BS7671 (IEE regs) BS6701 (2004), Cenelec (BSEN50173 / EN50173), ANSI/TIA/EIA568B, TIA569B, ISO/IEC11801
- Powertrack versions available please contact Schneider Electric for further details
- 3 compartments
- 150 x 60mm
- Adjustable bends allow movement of +/- 5°
- Multi-configurable tee allow for 50mm bend radius to be maintained
- Screw fit fittings
- Accommodates socket mounting boxes up to 50mm deep
- Pre-punched steel divider where screening is required
- Meets and exceeds requirements of European and International Data Standards
- Accepts all leading wiring accessories
- Lower lid acts as cable shelf during installation



Trunking assembly	
Part number	Qty
CA3W	2 x 3m

Spacing lid cover	
Part number	Qty
CCS3W	10

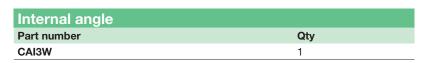


External angle	
Part number	Qty
CAX3W	1

Cable trunking

Mita Cableline Prima 60 fittings





Joint cover	
Part number	Qty
CAJ3W	1

End caps	
Part number	Qty
CAS3W	2

Flat angle	
Part number	Qty
CAF3W	1

Flat tee		
Part number	Qty	
CAT3W	1	
Note: Flat Too is supplied with 1xCATR1W and 1xCATR2W		

Prima to Delta converter	
Part number	Qty
CAC3W	1

Screening divider	
Part number	Qty
SS60	4x1.5m

For continued screening divider around external/internal angles		
Part number	Qty	
External SSX60	1	
Internal SSI60	1	

Earth tags	
Part number	Qty
SET1	10

Oval bell mouth bush	
Part number	Qty
ВМВ	10

Where cabling passes through knockouts, a bell mouth bush can be supplied which fits into the knockouts preventing any potential snagging of sensitive cabling.



Technical Dimensions Section 9 Section 10

Cable trunking

Mita Cableline Prima 60 common components





Rear cable entry box	
Part number	Qty
CBB3	1

Socket mounting boxes		
Size	Part number	Qty
1 gang 25mm deep	CLB 31W	10
1 gang vertical mounting box 25mm deep	CLB 314W	10
1 gang 35mm deep	CLB 41W	10
2 gang 25mm deep	CLB 32W	10
2 gang 35mm deep	CLB 42W	10
1 gang 50mm deep	CLB 51W	10
2 gang 50mm deep	CLB 52W	10

Screened socket mounting boxes		
Size	Part number	Qty
1 gang 25mm deep	CLBS 1W	10
1 gang vertical mounting box 25mm deep	CLBS 14W	10
1 gang 35mm deep	CLBS 3W	10
2 gang 25mm deep	CLBS 2W	10
2 gang 35mm deep	CLBS 4W	10
1 gang 50mm deep	CLBS 5W	10
2 gang 50mm deep	CLBS 6W	10

MCB/RCD housing complete with DIN mounting rail		
	Part number	Qty
Profile: Ultra 60 housing unit only	DCH 3W	1
Housing unit with cover	DCHC 3W	1
Extension collars		
Size	Part number	Qty
1 gang 10mm deep	CEC 110W	10
1 gang 19mm deep	CEC 119W	10
2 gang 10mm deep	CEC 210W	10
2 gang 19mm deep	CEC 219W	10

Socket mounting plate		
Туре	Part number	Qty
1 gang	CTMP 1W	15
2 gang	CTMP 2W	10

Mounting frames for 45 x 45mm accessories				
Туре	Part number	Qty		
1 gang	ATMF 451W	15		
2 gang	ATMF 452W	10		

Mini trunking adaptors self adhesive				
Size	Part number	Qty		
16 x 16mm	CLA 31W	5		
25 x 16mm	CLA 32W	5		
Please Note. Images for illustration purposes or	ılv. Fittings will varv ad	ccording to profile		

Please Note. Images for illustration purposes only. Fittings will vary according to profile selected.

Technical Dimensions Section 9 Section 10

Mita Cableline Ultra 60



With a dedicated data compartment and 62mm depth, Ultra 60 is designed to support and maintain the integrity of your data solution.

Ultra 60 offers 50mm bend radius for standard fittings, whilst incorporating an elegant and stylish look.

- Lengths of 3m
- Colour white (RAL colour options available)
- BS4678 Pt.4, BS7671 (IEE regs), BS6701 (2004), BSEN50173, (CENELEC)
 BSEN50174-2, ANSI/TIA/EIA 568B, ISO IEC 11801
- Powertrack versions available please contact Schneider Electric for further details
- 2 compartments
- Deeper profile: 190 x 62mm
- Standard fittings provided for 50mm minimum bend radius
- Dedicated compartment for data cabling holds up to 48 UTP or 42 STP CAT6 data cables
- Screw fix for fittings
- Accommodates socket mounting boxes up to 50mm deep
- Accepts all leading wiring accessories
- Increased depth allows for extra capacity for CAT5e, CAT6, CAT6 Augmented, CAT7 data and fibre optic cabling



Trunking assemblies	
Part number	Qty
CU2W	2 x 3m



Divider	
Part number	Qty
CUD2W size 60mm deep	3 x 1m
CUD1W size 30mm deep	3 x 1m

Spacing cover lid	
Part number	Qty
CCS3W	10

acks

Mita Cableline Ultra 60 fittings



External angle	
Part number	Qty
CUXB 2W	1

Cover and back section for screw fix



Internal angle	
Part number	Qty
CUIB 2W	1

Cover and back section for screw fix



Joint cover	
Part number	Qty
CUJ 2W	1



End caps	
Part number	Qty
CUS 2LW (LH)	2
CUS 2RW (RH)	2



Flat angle complete with integral data cable guides	
Part number	Qty
CUF 2RW (Riser)	1
CUF 2DW (Dropper)	1

Technical Section 9 Dimensions Section 10

Mita Cableline Ultra 60 fittings



Flat tee	
Part number	Qty
CUT 2RW (Riser)	1
CUT 2DW (Dropper)	1

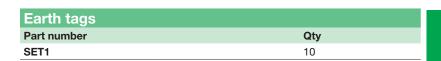


Screening divider with oval knockouts at 300mm		
intervals Part number	Type	Qtv
SS43	43 x 1mm	4 x 1.5m



For continued screening around external/internal angles	
Part number	Qty
External SSX43	1
Internal SSI43	1







Oval bell mouth bush	
Part number	Qty
BMB	10

Where cabling passes through knockouts, a bell mouth bush can be supplied which fits into the knockouts preventing any potential snagging of sensitive cabling.

Mita Cableline Ultra 60 common components





Rear cable entry box	
Part number	Qty
CBB3	1

Socket mounting boxes		
Size	Part number	Qty
1 gang 25mm deep	CLB 31W	10
1 gang vertical mounting box 25mm deep	CLB 314W	10
1 gang 35mm deep	CLB 41W	10
2 gang 25mm deep	CLB 32W	10
2 gang 35mm deep	CLB 42W	10
1 gang 50mm deep	CLB 51W	10
2 gang 50mm deep	CLB 52W	10

Screened socket mounting boxes		
Size	Part number	Qty
1 gang 25mm deep	CLBS 1W	10
1 gang vertical mounting box 25mm deep	CLBS 14W	10
1 gang 35mm deep	CLBS 3W	10
2 gang 25mm deep	CLBS 2W	10
2 gang 35mm deep	CLBS 4W	10
1 gang 50mm deep	CLBS 5W	10
2 gang 50mm deep	CLBS 6W	10

MCB/RCD housing complete with DIN mounting rail			
Part number	Qty		
DCH 3W	1		
DCHC 3W	1		
Part number	Qty		
CEC 110W	10		
CEC 119W	10		
CEC 210W	10		
CEC 219W	10		
	Part number DCH 3W DCHC 3W Part number CEC 110W CEC 119W CEC 210W		

Socket mounting plate		
Туре	Part number	Qty
1 gang	CTMP 1W	15
2 gang	CTMP 2W	10

Mounting frames for 45 x 45mm accessories		
Туре	Part number	Qty
1 gang	ATMF 451W	15
2 gang	ATMF 452W	10

Mini trunking adaptors self adhesive			
Size	Part number	Qty	
16 x 16mm	CLA 31W	5	
25 x 16mm	CLA 32W	5	
Please Note. Images for illustration purposes only. Fittings will vary according to profile selected.			

Mita Cableline Ambassador

Choose from 3 distinct profiles







DP3W 180 x 52mm

DS3W 180 x 52mm

DC3W 180 x 52mm

- Lengths of 3m
- BS4678 Pt.4, BS7671 (IEE regs), BS6701 (2004), BSEN50173, (CENELEC) BSEN50174-2, ANSI/TIA/EIA 568B, ISO IEC 11801
- Powertrack versions available please contact Schneider Electric for further details
- This unit is available pre-wired, please contact Schneider Electric for further details

Colours			
		Colour	
		PVC	Wood effect
Profile	Length	White	Light oak
DP3	2 x 3m	W	LO
DS3	2 x 3m	W	LO
DC3	2 x 3m	W	

RAL colour options available

Please suffix code with colour choice

Mita Cableline Ambassador and Cableline Plus for Ambassador

Spare lid pack				
Part number		Qty		
CLL 3	Centre	2 x 3m		
DPN 3	Chamfered Outer	2 x 3m		
DSN 3	Skirting Base	2 x 3m		
DCN 3	Contoured Outer	2 x 3m		

Spacing cover lid	
Part number	Qty
CCS3W	10

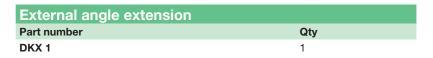
Finishes

The Wood Effect finish combines with moulded corner fittings and boxes in complimentary satin finish solid colour of beige. Patterned light oak fittings are also available.

Cableline Plus for Ambassador

Easy to use clip-on component which increases the capacity of Cableline Ambassador perimeter trunking to allow for high density cabling requirements. The actual components are illustrated in grey.

Trunking extension				
Colour	White - W	Please suffix code with		
	Light oak - LO	colour choice		
DK 1 adds 85m	m to the width of standard Cableline			
Part number		Qty		
DK 1		4 x 3m		







Mita Cableline Plus for Ambassador



Internal angle extension	
Part number	Qty
DKI 1	1



Joint cover extension	
Part number	Qty
DKJ 1	2

Flat stop end complete units for DP3		
Part number	Qty	
DPE 4	2	

Other fittings Flat angles and tees are fabricated to order.

Mita Cableline Ambassador fittings



External angle including continuity piece		
Part number	To suit	Qty
	Ambassador pro	file
DPX 3	DP3	1
DSX 3	DS3	1
DCX 3	DC3	1

Data cable guide		
DCGA	Top/Bot	2



Internal angle		
Part number	To suit	Qty
	Ambassador profile	
DPI 3	DP3	1
DSI 3	DS3	1
DCI 3	DC3	1



Joint cover		
Part number	To suit	Qty
	Ambassador profile	
DPJ 3	DP3	2
DSJ 3	DS3	2
DCJ 3	DC3	2

Mita Cableline Ambassador fittings







Flat angle unit		
Part number	To suit	Qty
	Ambassador prof	file
DPF 3	DP3	1
DSF 3C	DS3	1
DSF 3R	DS3	1
DCF 3	DC3	1

DSF3C has a chamfered inner lid and a skirting base outer lid. DSF3R has a skirting base inner lid and a chamfered outer lid.

Data cable guide	
DCGA	2

Flat tee unit			
Part number	To suit	Qty	
	Ambassador profile		
DPT	DP3	1	
DST 3C	DS3	1	
DCT 3	DC3	1	
Includes one crossov	er unit Ref. DLO3		

Complete with DIN mounting rail Colour - white Part number DCH 3W Profile: DP3, DS3, DC3 Housing unit only DCHC 3W Housing unit with cover

Screening divid	er		
Colour - N/A			
Part number	Size	Qty	
SS34	34mm x 1mm	4 x 1.5m	

Earth tags	
Part number	Qty
SET1	10

Cable retainers	
Colour - white	
Part number	Qty
Chamfered outer DPC3T	20
Centre DLC3M	10
Skirting Base DSC3T	20

Mita Cableline Ambassador common components





Socket mounting boxes		
Colour - white unless shown otherwise		
Size	Part number	Qty
1 gang 25mm deep	CLB 31W	10
1 gang vertical mounting box 25mm deep	CLB 314W	10
1 gang 35mm deep	CLB 41W	10
2 gang 25mm deep	CLB 32W	10
2 gang 35mm deep	CLB 42W	10

Screened socket mounting boxes		
Size	Part number	Qty
1 gang 25mm deep	CLBS 1W	10
1 gang vertical mounting box 25mm deep	CLBS 14W	10
1 gang 35mm deep	CLBS 3W	10
2 gang 25mm deep	CLBS 2W	10
2 gang 35mm deep	CLBS 4W	10



Part number	Qty
CEC 110W	10
CEC 119W	10
CEC 210W	10
CEC 219W	10
	CEC 110W CEC 119W CEC 210W



Mounting frames for 45 x 45mm accessories		
Туре	Part number	Qty
1 gang	ATMF 451W	15
2 gang	ATMF 452W	10

Socket mounting plate		
Туре	Part number	Qty
1 gang	CTMP 1W	15
2 gang	CTMP 2W	10

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Mita Cableline Ambassador common components



Part number	Qty
DLO 3R	5



Mini trunking adaptors self adhesive			
Colour - white			
Size	Part number	Qty	
16 x 16mm	CLA 31W	5	
25 x 16mm	CLA 32W	5	



Cable hanger	
Colour - white	
Part number	Qty
CLH 3R	10

Mita Cableline Classic

Choose from 3 distinct profiles







CL3W 145 x 40mm

CS3W 145 x 40mm

CP3W 145 x 40mm

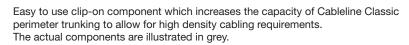
- Lengths of 3m
- Colour white (RAL colour options available)
- BS4678 Pt.4, BS7671 (IEE regs), BS6701 (2004), BSEN50173, (CENELEC) BSEN50174-2, ANSI/TIA/EIA 568B, ISO IEC 11801
- This unit is available pre-wired, please contact Schneider Electric for further details

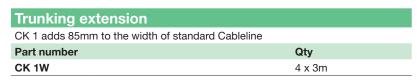
Trunking assemblies	
Part number	Qty
CL3W	2 x 3m
CS3W	2 x 3m
CP3W	2 x 3m

Spare lid pack		
Part number		Qty
CLL 3W	Centre	2 x 3m
CLN 3W	Radius outer	2 x 3m
CSN 3W	Chamfered outer	2 x 3m

Spacing cover lid	
Part number	Qty
CCS 3W	10

Mita Cableline Plus for Classic





External angle extension	
Part number	Qty
CKX 1W	1

Internal angle extension	
Part number	Qty
CKI 1W	1

Qty
2

Flat stop end complete units for DP3	
Part number	Qty
CLS 4W	2

Other fittings	
Flat angles and tees are fabricated to order.	







Mita Cableline Classic fittings





External angle		
Part number	To suit	Qty
	Classic profile	
CLX 3W	CL3	1
CSX 3W	CS3	1
CPX 3W	CP3	1

Internal angle		
Part number	To suit	Qty
	Classic profile	
CLI 3W	CL3	1
CSI 3W	CS3	1
CPI 3W	CP3	1

Joint cover		
Part number	To suit	Qty
	Classic profile	
CLJ 3W	CL3	2
CSJ 3W	CS3	2
CPJ 3W	CP3	2

Qty
2
2
2
2
1

Flat angle unit		
Part number	To suit	Qty
	Classic profile	
CLF 3W	CL3	1
CSF 3CW	CS3	1
CSF 3RW	CS3	1
CPF 3W	CP3	1

CSF 3CW has a chamfered inner lid and a radius outer lid. CSF 3RW has a radius inner lid and a chamfered outer lid.

Flat tee unit		
Part number	To suit	Qty
	Classic profile	
CLT 3W	CL3	1
CST 3W	CS3	1
CPT 3W	CP3	1

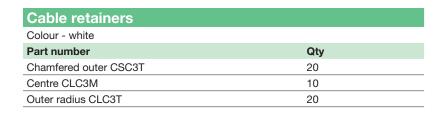
Includes one crossover unit Ref. CLO3R

Mita Classic fittings

MCB/RCD hou	sing	
Complete with DIN m	ounting rail	
Colour - white		
Part number	To suit	Qty
BCH 3W	Profile: CL3, CS3, CP3	1
	Housing unit only	
BCHC 3W	Housing unit	1
	with cover	

Screening divide	er		
Colour - N/A			
Part number	Size	Qty	
SS23	23mm x 1mm	4 x 1.5m	

Earth tags	
Part number	Qty
SET1	10





Mita Cableline Classic common components







Rear cable entry box	
Part number	Qty
CBB3W	1

Socket mounting boxes		
Size	Part number	Qty
1 gang 25mm deep	CLB 31W	10
1 gang vertical mounting box 25mm deep	CLB 314W	10
2 gang 25mm deep	CLB 32W	10

Screened socket mounting boxes		
Size	Part number	Qty
1 gang 25mm deep	CLBS 1W	10
1 gang vertical mounting box 25mm deep	CLBS 14W	10
2 gang 25mm deep	CLBS 2W	10







Part number	Qty
CEC 110W	10
CEC 119W	10
CEC 210W	10
CEC 219W	10
	CEC 110W CEC 119W CEC 210W

Mounting frames for 45 x 45mm accessories		
Туре	Part number	Qty
1 gang	ATMF 451W	15
2 gang	ATMF 452W	10

Socket mounting plate		
Туре	Part number	Qty
1 gang	CTMP 1W	15
2 gang	CTMP 2W	10

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Mita Cableline Classic common components



Crossover unit			
Size	Part number	Qty	
For Classic	CLO 3R	5	



Mini trunking adaptors self adhesive		
Size	Part number	Qty
16 x 16mm	CLA 31W	5
25 x 16mm	CLA 32W	5



Cable hanger	
Part number	Qty
CLH 3R	10

Please note. Images for illustration purposes only, fittings will vary according to profile selected.

Mita Cableline Envoy

Choose from 3 distinct profiles







EL3W 180 x 52mm

ES3W 180 x 52mm

ER3W 180 x 52mm

- Lengths of 3m
- Colour white (RAL colour options available)
- BS4678 Pt.4, BS7671 (IEE regs), BS6701 (2004), BSEN50173, (CENELEC) BSEN50174-2, ANSI/TIA/EIA 568B, ISO IEC 11801
- Powertrack versions available
- This unit is available pre-wired, please contact Schneider Electric for further details

Trunking assemblies	
Part number	Qty
EL3W	2 x 3m
ES3W	2 x 3m
ER3W	2 x 3m

Spare lid pack		
Part number		Qty
CLL 3W	Centre	2 x 3m
ELN 3W	Radius outer	2 x 3m
DSN 3W	Skirting base	2 x 3m
DPN 3W	Chamfered outer	2 x 3m

Spacing cover lid	
Part number	Qty
CCS 3W	10

Easy to use clip-on component which increases the capacity of Cableline Envoy perimeter trunking to allow for high density cabling requirements. The actual components are illustrated in grey.

Trunking extension	
CK 1 adds 85mm to the width of standard Cableline	
Part number	Qty
DK 1W	4 x 3m

External angle extension	
Part number	Qty
DKX 1W	1

Internal angle extension	
Part number	Qty
DKI 1W	1

Joint cover extension	
Part number	Qty
DKJ 1W	2

Flat stop end complete units for DP3	
Part number	Qty
ELS 4W	2

Other fittings Flat angles and tees are fabricated to order.

Mita Cableline Envoy fittings







External angle including continuity piece		
Part number	To suit	Qty
	Envoy profile	
ELX 3W	EL3	1
ESX 3W	ES3	1
ERX 3W	ER3	1

Data cable guide		
DCGA	Top/Bot	2

Internal angle		
Part number	To suit	Qty
	Envoy profile	
ELI 3W	EL3	1
ESI 3W	ES3	1
ERI 3W	ER3	1

Joint cover			
Part number	To suit	Qty	
	Envoy profile		
ELJ 3W	EL3	2	
ESJ 3W	ES3	2	
ERJ 3W	ER3	2	





End caps			
Part number	To suit	Qty	
	Envoy profile		
ELS 3W	EL3	2	
ESS 3LW	ES3 L.H	2	
ESS 3RW	ES3 R.H	2	
ERS 3LW	ER3 L.H	2	
ERS 3RW	ER3 R.H	2	

Flat angle unit			
Part number	To suit	Qty	
	Envoy profile		
ELF 3W	EL3	1	
ESF 3CW	ES3	1	
ESF 3RW	ES3	1	
ESF 3SW has a skirting	base inner lid and a r	adius outer lid.	
ESF 3RW has a radius of	outer lid and a skirting	base inner lid.	
ERF 3CW	ER3	1	
ERF 3RW	ER3	1	
·			

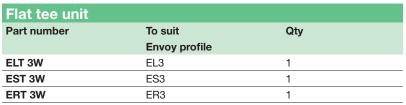
ERF 3CW has a chamfered inner lid and a radius outer lid. ERF 3RW has a radius inner lid and a chamfered outer lid.

Data cable guide		
DCGA	Top/Bot	2

Dimensions Section 10

Mita Cableline Envoy fittings





Includes one crossover unit Ref. DLO3

Data cable guide		
DCGA	Top/Bot	2

MCB/RCD hou	sing		
Complete with DIN m	ounting rail		
Part number	To suit	Qty	
DCH 3W	Profile: EL3, ER3, ES3	1	
	Housing unit only		
DCHC 3W	Housing unit	1	
	with cover		

Screening divider		
Part number	Size	Qty
SS34	34mm x 1mm	4 x 1.5m

Earth tags	
Part number	Qty
SET1	10

Qty
20
10
20





Mita Cableline Envoy common components



Rear cable entry box	
Part number	Qty
CBB3	1

Socket mounting boxes		
Size	Part number	Qty
1 gang 25mm deep	CLB 31W	10
1 gang vertical mounting box 25mm deep	CLB 314W	10
1 gang 35mm deep	CLB 41W	10
2 gang 25mm deep	CLB 32W	10
gang 35mm deep	CLB 42W	10

Screened socket mounting bo	oxes	
Size	Part number	Qty
1 gang 25mm deep	CLBS 1W	10
1 gang vertical mounting box 25mm deep	CLBS 14W	10
1 gang 35mm deep	CLBS 3W	10
2 gang 25mm deep	CLBS 2W	10
2 gang 35mm deep	CLBS 4W	10







Part number	Qty
CEC 110W	10
CEC 119W	10
CEC 210W	10
CEC 219W	10
	CEC 110W CEC 119W CEC 210W

Mounting frames f	Mounting frames for 45 x 45mm accessories		
Туре	Part number	Qty	
1 gang	ATMF 451W	15	
2 gang	ATMF 452W	10	

Socket mounting plate		
Туре	Part number	Qty
1 gang	CTMP 1W	15
2 gang	CTMP 2W	10

Mita Cableline Envoy common components



Crossover unit		
Size	Part number	Qty
For Envoy	DLO 3R	5



Mini trunking adaptors self adhesive		
Size	Part number	Qty
16 x 16mm	CLA 31W	5
25 x 16mm	CLA 32W	5



Cable hanger	
Part number	Qty
CLH 3R	10

Mita Cableline Solo

Available in dado or skirting profile, Solo is designed to give maximum capacity within a compact profile.





TP1W 150 x 52mm

TS1W 150 x 52mm

- Single, twin or three compartment
- A stylish and compact trunking
- Removable walls form one large compartment
- Dividing walls feature pre-punched cable entry points, for ease of installation
- Contained under one lid
- Fittings simply clip into place. Optional fixing bracket for screw fixing
- Lengths of 3m
- Colour white (RAL colour options available)
- BS4678 Pt.4, BS7671 (IEE regs), BS6701 (2004), BSEN50173, (CENELEC) BSEN50174-2, ANSI/TIA/EIA 568B, ISO IEC 11801
- This unit is available pre-wired, please contact Schneider Electric for further details

Trunking assemblies	
Part number	Qty
TP1W sold complete with divider (not fitted) 2 x 3m	2 x 3m
TS1W sold complete with divider (not fitted) 4 x 1.5m	2 x 3m

Spare lid pack	
Part number	Qty
CLL 3W	2 x 3m

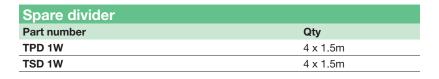
Spacing cover lid	
Part number	Qty
CCS 3W	10

Data cable guide, when fixed into an external corner, enables cables to maintain a minimum 50mm bend radii.



Profile TS1W with data cable guide TSDCG1W fitted.

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Data cable guide for TSIW only	
Part number	Qty
TS DCG 1W	1



Internal angle	
Part number	Qty
TPI 1W	2
TSI 1W	2



Joint cover extension	
Part number	Qty
TPJ 1W	2
TSJ 1W	2

Mita Cableline Solo fittings



End caps		
Part number	To suit	Qty
	Solo profile	
TPS 1W	TP1	2
TSS 1LW	TS1	2
TSS 3RW	TS1	2



Flat angle unit		
Part number		Qty
TPF 1W		1
TSF 1CW	Riser	1
TSF 1CR	Dropper	1

Data cable guide	
Part number	Qty
DCGA	2



Flat tee unit	
Part number	Qty
TPT 1W	1
TST 1W	1

Data cable guide	
Part number	Qty
DCGA	2

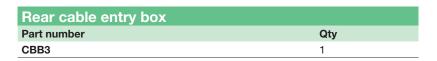


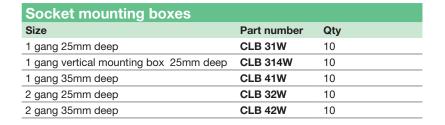
Fixing bracket	
Part number	Qty
TPFB 1W	2

Mita Cableline Solo common components











Screened socket mounting boxes		
Size	Part number	Qty
1 gang 25mm deep	CLBS 1W	10
1 gang vertical mounting box 25mm deep	CLBS 14W	10
1 gang 35mm deep	CLBS 3W	10
2 gang 25mm deep	CLBS 2W	10
2 gang 35mm deep	CLBS 4W	10



Mounting frames for 45 x 45mm accessories		
Туре	Part number	Qty
1 gang	ATMF 451W	15
2 gang	ATMF 452W	10

Socket mounting plate		
Туре	Part number	Qty
1 gang	CTMP 1W	15
2 gang	CTMP 2W	10

Dimensions Section 10

Mita Cableline Solo common components



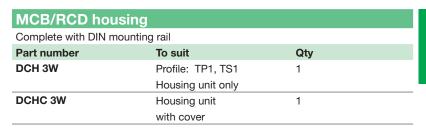
Crossover unit		
Size	Part number	Qty
For Solo	DLO 3R	5



Mini trunking adaptors self adhesive		
Size	Part number	Qty
16 x 16mm	CLA 31W	5
25 x 16mm	CLA 32W	5



Cable hanger	
Part number	Qty
CLH 3R	10



Screening divider			
Part number	Size	Qty	
SS23	23mm x 1mm	4 x 1.5m	



Earth tags	
Part number	Qty
SET1	10

Cable retainers for TS1 only	
Part number	Qty
TSCR1W	10

Mita Cableline Duo

A large capacity trunking system principally for structured cabling installations.



EP2W 210 x 52mm

- 210 x 52mm high impact thermoplastic profile
- 2 compartments offering increased cabling capacity
- Secure screw-on corner fittings
- Accepts all leading wiring accessories
- Lengths of 3m
- Colour white (RAL colour options available)
- BS4678 Pt.4, BS7671 (IEE regs), BS6701 (2004), BSEN50173, (CENELEC) BSEN50174-2, ANSI/TIA/EIA 568B, ISO IEC 11801
- Powertrack versions available
- This unit is available pre-wired, please contact Schneider Electric for further details

Trunking assemblies	
Part number	Qty
EP2W	2 x 3m

Spare lid pack	
Part number	Qty
CLL 3W	2 x 3m

Spacing cover lid	
Part number	Qty
CCS 3W	10

Divider - 50mm deep	
Part number	Qty
EPD 2W	16 x 1.5m

Data cable guide (EPDCGIW), when fixed into an external corner, enables cables to maintain a minimum 50mm bend radii.





Mita Cableline Duo fittings



External angle including continuity piece		
Part number	Qty	
EPX 2W	1	

External angle data cable guide	
Part number	Qty
EP DCG 1W	1

Internal angle	
Part number	Qty
EPI 2W	1

Joint cover		
Part number		Qty
EPJ 2W	EL3	2

End caps	
Part number	Qty
EPS 2W	2

Flat angle unit	
Part number	Qty
EPF 2W	1

Data cable gu	uide		
Part number		Qty	
DCGA	Top/Bot	2	

Flat tee unit		
Part number	Qty	
EPT 2W	1	
1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		

Includes one crossover unit Ref. DLO3R

Data cable guide		
Part number		Qty
DCGA	Top/Bot	2

Mita Cableline Duo fittings and common components



Earth tags	
Part number	Qty
SET1	10

Cable retainers	
Part number	Qty
EPC 2W	10

Cableline Duo common components

Rear cable entry box	
Part number	Qty
CBB3	1

Socket mounting boxes		
Colour - white unless shown otherwise		
Size	Part number	Qty
1 gang 25mm deep	CLB 31W	10
1 gang vertical mounting box 25mm deep	CLB 314W	10
1 gang 35mm deep	CLB 41W	10
2 gang 25mm deep	CLB 32W	10
2 gang 35mm deep	CLB 42W	10

Screened socket mounting boxes		
Part number	Qty	
CLBS 1W	10	
CLBS 14W	10	
CLBS 3W	10	
CLBS 2W	10	
CLBS 4W	10	
	Part number CLBS 1W CLBS 14W CLBS 3W CLBS 2W	



Mita Cableline Duo common components



Extension collars		
Size	Part number	Qty
1 gang 10mm deep	CEC 110W	10
1 gang 19mm deep	CEC 119W	10
2 gang 10mm deep	CEC 210W	10
2 gang 19mm deep	CEC 219W	10

Mounting frames for 45 x 45mm accessories		
Туре	Part number	Qty
1 gang	ATMF 451W	15
2 gang	ATMF 452W	10

Socket mounting plate		
Туре	Part number	Qty
1 gang	CTMP 1W	15
2 gang	CTMP 2W	10



Crossover unit		
Size	Part number	Qty
For Duo	DLO 3R	5



Mini trunking adaptors self adhesive			
Size	Part number	Qty	
16 x 16mm	CLA 31W	5	
25 x 16mm	CLA 32W	5	

Mita Cableline Duo common components



Cable hanger	
Part number	Qty
CLH 3R	10

MCB/RCD housing			
Complete with DIN mounting rail			
Part number	To suit	Qty	
DCH 3W	Profile: EP2	1	
	Housing unit only		
DCHC 3W	Housing unit	1	
	with cover		

Mita Cableline Powertrack



Cableline Powertrack combines all the benefits of Cableline Classic, Ambassador, Duo and Envoy systems with the advanced electrical power distribution capabilities of busbar technology.

The Powertrack busbar is factory fitted into one compartment, allowing data and telecommunication cables to be routed through the other compartments.

- Lengths of 3m
- BS4678 Pt.4

Ambassador Powertrack

■ Size: 180 x 52mm

Colours		
	Colour	
	PVC	Wood effect
Profile	White	Light oak
DP3	W	LO
DS3	W	LO
DC3	W	

RAL colour options available Please suffix code with colour choice

Fittings		
	Colour	
Profile	White	Light oak
DP3	W	LO
DS3	W	LO
DC3	W	

		Laminated	
Trunking assemblies			
Part number	For Profile	Qty	
DP 3PT	DP3	2 x 3m	
DS 3PT	DS3	2 x 3m	
DC 3PT	DC3	2 x 3m	

Rear cable entry section			
Part number	For Profile	Qty	
DPR 3	DP 3PT	1	
DSR 3	DS 3PT	1	
DCR 3	DC 3PT	1	

Fixed end caps			
Part number	For Profile	Qty	
DPE 3	DP3 PT	2	
DSE 3L	DS3 PT	2	
DSE 3R	DS3 PT	2	
DCE 3	DC3 PT	2	

Mita Cableline Powertrack

Classic Powertrack

■ Colour: white■ Size: 145 x 40mm

Trunking assemblies			
Part number	For Profile	Qty	
CL 3PTW	CL3W	2 x 3m	
CS 3PTW	CS3W	2 x 3m	
CP 3PTW	CP3W	2 x 3m	

Rear cable entry section			
Part number	For Profile	Qty	
BLN 3W	CL 3PTW	1	
BSN 3W	CS 3PTW	1	
BCN 3W	CP 3PTW	1	

Fixed end caps			
Part number	For Profile	Qty	
BLE 3W	CL3W PT	2	
BSE 3LW	CS3W PT	2	
BSE 3RW	CS3W PT	2	
BCE 3W	CP3 PTW	2	

Envoy Powertrack

■ Colour: white■ Size: 180 x 52mm

Trunking assemblies			
Part number	For Profile	Qty	
EL3 PTW	EL3W	2 x 3m	
ES3 PTW	ES3W	2 x 3m	
ER3 PTW	ER3W	2 x 3m	

Rear cable entry section complete with 2 joint covers			
Part number	For Profile	Qty	
ELR 3W	EL 3PTW	1	
ESR 3W	ES 3PTW	1	
ERR 3W	EP 3PTW	1	

For Profile	Qty
EL3 PT	2
ES3 PT LH	2
ES3 PT RH	2
ER3 PT LH	2
ER3 PT RH	2
	EL3 PT ES3 PT LH ES3 PT RH ER3 PT LH

Mita Cableline Powertrack and common components

Duo Powertrack

- Colour: white
- Size: 210 x 52mm

Trunking assemblies		
Part number	For Profile	Qty
EP 2PTW	EP2W	2 x 3m

Rear cable entry section complete with 2 joint covers		
Part number	For Profile	Qty
EPR2W	EP 2PTW	1

Fixed end caps		
Part number	For Profile	Qty
EPS2W	EP 2PTW	2

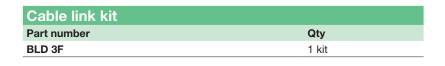
Cableline Powertrack common components

Mains connector	
Part number	Qty
BLC 3	5

Take off unit	
For ease of installation this unit is supplied	fitted with single core cable.
Part number	Qty
BLP 3	5

Straight coupler	
Part number	Qty
BLG 3	5

Cable link assembly	
Part number	Qty
BLD 3A	1













Mita Consort Delta 105

Consort Delta 105, with dimensions of 100×50 mm is a single compartment pvc trunking with a stylish profile. Delta 105 has been designed for use in power and high density CAT5e and CAT6 structured cabling solutions.

Delta 105 has a contemporary look and the trunking features adjustable bends and a multi-configurable tee.



DA105W

- Lengths of 3m
- Colour white (RAL colour options available)
- BS4678 Pt.4, BS7671 (IEE regs) BS6701 (2004), Cenelec (EN50174-2 / EN50173), ANSI/TIA/EIA568B, TIA569B, ISO/IEC11801
- Single compartment, readily dividable
- 100 x 50mm
- Adjustable bends allow movement +/- 5°
- Multi-configurable tee allow for 50mm bend radius to be maintained
- Clip on fitting:
- Accommodates socket mounting boxes up to 35mm deep
- Pre-punched steel divider where screening is required
- Meets and exceeds requirements of European and International Data Standards

Trunking assemblies	
Part number	Qty
DA105W	2 x 3m

Divider	
Part number	Qty
DAHD105W	16 x 1.5m



Mita Consort Delta 105 fittings







Internal angle	
Part number	Qty
DAI105W	1



Joint cover	
Part number	Qty
DAJ105W	2



End caps	
Part number	Qty
DAS105W	2



Flat angle		
Part number	Qty	
DAF105W	1	



Flat tee	
Part number	Qty
DAT105W	1

Note: Flat Tee is supplied with 1xDATB1 and DATBC

Screening divider	
Part number	Qty
SS105	4x1.5m

		_		
_			C 365	100
-	_	-	920	259.
			40	E Bro
			250	

For continued screening divexternal/internal angles	vider around
Part number	Qty
External SSX105	1
Internal SSI105	1

		98

Tee bridge/clip (DATB1 and DATBC) are also available

Technical Dimensions Section 9 Section 10

Mita Consort Delta 105 components









Socket mounting boxes			
Size	Part number	Qty	
1 gang 25mm	CTB 11W	10	
1 gang 35mm	*CTB 21W	10	

^{*}Not suitable for use with CT 104W DADO trunking.

Socket mounting boxes			
Size	Part number	Qty	
2 gang 25mm	CTB 12W	10	
2 gang 35mm	*CTB 22W	10	

^{*}Not suitable for use with CT 104W DADO trunking.

Socket mounting boxes			
Size	Part number	Qty	
1 gang - vertical 25mm	CTB 114W	10	

Socket mounting plate			
Size	Part number	Qty	
1 gang	CTMP 1W	15	
2 gang	CTMP 2W	10	

Mita Consort Delta 105 components



Mounting frames for 45 x 45mm accessories			
Size	Part number	Qty	
1 gang	ATMF 451W	15	
2 gang	ATMF 452W	10	



Mini trunking adaptors			
Size	Part number	Qty	
16 x 16mm	MFC 1W	10	
25 x 16mm	MFC 2W	10	

Mita Consort Dado trunking







CT 104W 100 x 40mm

CT 105W 100 x 50mm

CT 106W 100 x 60mm

- Lengths of 3m
- Colour white (RAL colour options available)
- BS4678 Pt.4, BS7671 (IEE regs), BS6701 (2004) BSEN50173, (CENELEC) BSEN50174-2, ANSI/TIA/EIA 568B, ISO IEC 11801
- This unit is available pre-wired
- Single compartment readily segregated with clip-in dividers
- Double locking lid for extra safety
- Fully segregated one and two gang socket boxes accepting wiring accessories from all leading manufacturers
- Complete range of moulded fittings for fast, cost effective installation and maintenance

Trunking assemblies			
Size	Part number	Qty	
100 x 40mm	CT 104W	2 x 3m	
100 x 60mm	CT 105W	2 x 3m	
100 x 60mm	CT 106W	2 x 3m	

Mita Consort Dado fittings



External angles			
Size	Part number	Qty	
100 x 40mm	CTO 104W	1	
100 x 50mm	CTO 105W	1	
100 x 60mm	CTO 106W	1	



Internal angles				
Size	Part number	Qty		
100 x 40mm	CTI 104W	1		
100 x 50mm	CTI 105W	1		
100 x 60mm	CTI 106W	1		



Joint covers and coupler			
Size	Part number	Qty	
100 x 40mm	CTJ 104W	2	
100 x 50mm	CTJ 105W	2	
100 x 60mm	CTJ 106W	2	
100 x 40mm	CTC 40W	10	



Flat angles			
Size	Part number	Qty	
100 x 40mm	CTF 104W	1	
100 x 50mm	CTF 105W	1	
100 x 60mm	CTF 106W	1	
130 x 60mm (F)	CTF 136W	1	

Note: Flat angle for CT136W is fabricated (F)

Mita Consort Dado fittings



Flat tees		
Size	Part number	Qty
100 x 40mm	CTT 104W	1
100 x 50mm	CTT 105W	1
100 x 60mm	CTT 106W	1



End caps and flat stop end				
Size	Part number	Qty		
100 x 40mm	CTS 104W	2		
100 x 50mm	CTS 105W	2		
100 x 60mm	CTS 106W	2		
100 x 40mm	CTE 104W	5		



Cable retainers	3		
Size	Part number	Qty	
100 x 40mm	CTR 104W	10	
100 x 50mm	CTR 105W	10	
100 x 60mm	CTR 106W	10	

Mita Consort Dado large radius fittings and components





Internal angle			
Size	Part number	Qty	
100 x 40mm	CTIX 104W	1	
100 x 50mm	CTIX 105W	1	
100 x 60mm	CTIX 106W	1	

Flat angle			
Size	Part number	Qty	
100 x 40mm	CTFX 104W	1	
100 x 50mm	CTFX 105W	1	
100 x 60mm	CTFX 106W	1	









Consort Dado accessories

Socket mounting boxes			
Size	Part number	Qty	
1 gang 25mm	CTB 11W	10	
1 gang 35mm	*CTB 21W	10	

^{*}Not suitable for use with CT 104W DADO trunking.

Socket mounting boxes			
Size	Part number	Qty	
2 gang 25mm	CTB 12W	10	
2 gang 35mm	*CTB 22W	10	

^{*}Not suitable for use with CT 104W DADO trunking.

Socket mounting boxes			
Size	Part number	Qty	
1 gang - vertical 25mm	CTB 114W	10	

Mita Consort Dado components









Socket mounting plate				
Part number	Qty			
CTMP 1W	15			
CTMP 2W	10			
	Part number CTMP 1W	Part number Qty CTMP 1W 15		

Mounting frames for 45 x 45mm accessories				
Size Part number Qty				
1 gang	ATMF 451W	15		
2 gang ATMF 452W 10				





Technical	Dimensions
Section 9	Section 10

Mini trunking adaptors			
Size	Part number	Qty	
16 x 16mm	MFC 1W	10	
25 x 16mm	MFC 2W	10	

Dividers		
Size	Part number	Qty
40mm deep	CTD 40W	16 x 1.5m
50mm deep	CTD 50W	16 x 1.5m
60mm deep	CTD 60W	16 x 1.5m

Mita wire cable tray

Mita wire cable tray features a unique design based on a double transverse wire, giving greater overall loading capacity, load carrying ability and a secure safety edge.

- 70mm standard depth offers greater carrying capacity and strength
- Safety Edge; avoids damage to cables or installer
- Quick Fit Couplers avoid the need for special tools
- Fast Fix Brackets and Clips reduce installation time
- Electro Zinc Steel Wired with 20 microns of zinc protection

Finish codes

EZ Electroplated HDG Hot Dip Galvanised SS Stainless Steel LZ Laminer zinc



aemsa wire cable tray - 3m lengths					
Alt code	Part number	Finish	Qty		
4511110	REZ35X100	EZ	24m		
4511115	REZ35X150	EZ	12m		
4511120	REZ35X200	EZ	12m		
4511130	REZ35X300	EZ	12m		
4511206	REZ60X60	EZ	24m		
4511210	REZ70X100	EZ	12m		
4511215	REZ70X150	EZ	12m		
4511220	REZ70X200	EZ	6m		
4511230	REZ70X300	EZ	6m		
4511240	REZ70X400	EZ	6m		
4511250	REZ70X500	EZ	6m		
4511260	REZ70X600	EZ	6m		
4511320	REZ105X200	EZ	6m		
4511330	REZ105X300	EZ	6m		
4511340	REZ105X400	EZ	6m		
4511350	REZ105X500	EZ	6m		
4511360	REZ105X600	EZ	6m		
4512110	REG35X100	HDG	24m		
4512115	REG35X150	HDG	12m		
4512120	REG35X200	HDG	12m		
4512130	REG35X300	HDG	12m		
4512206	REG60X60	HDG	24m		
4512210	REG70X100	HDG	12m		
4512215	REG70X150	HDG	12m		
4512220	REG70X200	HDG	6m		
4512230	REG70X300	HDG	6m		
4512240	REG70X400	HDG	6m		
4512250	REG70X500	HDG	6m		
4512260	REG70X600	HDG	6m		
4512320	REG105X200	HDG	6m		
4512330	REG105X300	HDG	6m		
4512340	REG105X400	HDG	6m		
4512350	REG105X500	HDG	6m		
4512360	REG105X600	HDG	6m		

aemsa wire cable tray is also available in stainless steel, please contact Schneider Electric for further details

Mita wire cable tray accessories

















Technical Dimensions Section 9 Section 10

Tray cover - 2m lengths				
Alt code	Part number	Finish	Qty	
4541106	TC60E	EZ	8m	
4541110	TC100E	EZ	4m	
4541115	TC150E	EZ	4m	
4541120	TC200E	EZ	4m	
4541130	TC300E	EZ	4m	
4541140	TC400E	EZ	4m	
4541150	TC500E	EZ	4m	
4541160	TC600E	EZ	4m	

Tray divider - 2m lengths				
Alt code	Part number	Finish	Qty	
4571510	DIV35E	EZ	20m	
4571520	DIV70E	EZ	20m	
4571530	DIV105E	EZ	20m	

ID label		
Alt code	Part number	Qty
4551485	IDLABEL	25

Fast coup	ler			
Alt code	Part number	Finish	Qty	
4530200	RC70105EZ	EZ	30	
4532200	RC70105LZ	LZ	30	

Quick fix clamp				
Alt code	Part number	Qty		
4561160	QFIXC	25		

Fixing clar	np			
Alt code	Part number	Finish	Qty	
4561120	FC1E	EZ	50	
4562120	FC1H	HDG	50	

Bolt croppers					
Alt code	Part number	Qty			
4580110	BOLTCROP1	1			

Joining clamps					
Alt code	Part number	Finish	Qty		
4561110	JC1E	EZ	50		
4562110	JC1H	HDG	50		

Mita wire cable tray accessories



Side joints					
Alt code	Part number	Finish	Qty		
4561200	SJ35E	EZ	25		
4561205	SJ70105E	EZ	25		



Extendable joints						
Alt code	Part number	Finish	Qty			
4561150	EJOINTE	EZ	10			



Insulating floor support bracket					
Alt code	Part number	Finish	Qty		
4571700	FSB	PVC	20		



Illustration shows accessory plate fixing

Wall bracket and accessory plate						
Alt code	Part number	Finish	Qty			
4571120	SHS1E	EZ	10			
4571130	SHS2E	EZ	5			



Flexible conduit take off plate					
Alt code	Part number	Finish	Qty		
4571315	FCTP202532E	EZ	10		



Earthing clamp						
Alt code	Part number	Finish	Qty			
4571310	EDE	EZ	10			

Mita wire cable tray horizontal brackets













Fast fix bracket				
Alt code	Part number	Finish	Qty	
4550110	SR100E	EZ	10	
4550111	SR150E	EZ	10	
4550112	SR200E	EZ	10	
4550113	SR300E	EZ	10	
4550114	SR400E	EZ	5	
4550115	SR500E	EZ	5	
4550116	SR600E	EZ	5	

Horizontal support bracket				
Alt code	Part number	Finish	Qty	
4550310	SO100E	EZ	10	
4550315	SO150E	EZ	10	
4550320	SO200E	EZ	10	
4550330	SO300E	EZ	10	

Horizontal support bracket				
Alt code	Part number	Finish	Qty	
4551110	S100E	EZ	10	
4551115	S150E	EZ	10	
4551120	S200E	EZ	10	
4551130	S300E	EZ	10	
4551140	S400E	EZ	5	
4551150	S500E	EZ	5	
4551160	S600E	EZ	5	
4552110	S100H	HDG	10	
4552115	S150H	HDG	10	
4552120	S200H	HDG	10	
4552130	S300H	HDG	10	
4552140	S400H	HDG	5	
4552150	S500H	HDG	5	
4552160	S600H	HDG	5	

Horizontal support set				
Alt code	Part number	Finish	Qty	
4551210	CS100E	EZ	2	
4551215	CS150E	EZ	2	
4551220	CS200E	EZ	2	
4551230	CS300E	EZ	2	
4551240	CS400E	EZ	2	
4551250	CS500E	EZ	2	
4551260	CS600E	EZ	2	

Adjustable support bracket				
Alt code	Part number	Finish	Qty	
4551510	CSO100E	EZ	2	
4551515	CSO150E	EZ	2	
4551520	CSO200E	EZ	2	
4551530	CSO300E	EZ	2	
4551540	CSO400E	EZ	2	
4551550	CSO500E	EZ	2	
4551560	CSO600E	EZ	2	

Technical Section 9

Dimensions Section 10

Mita wire cable tray pendant support



Swivel pendant support					
Alt code	Part number	Finish	Qty		
4551410	PS5E	EZ	1		
4571115	PSLPE	EZ	1		



Pendant support				
Alt code	Part number	Finish	Qty	
4551910	C100E	EZ	1	
4551915	C150E	EZ	1	
4551920	C200E	EZ	1	
4551930	C300E	EZ	1	
4551940	C400E	EZ	1	
4551950	C500E	EZ	1	
4551960	C600E	EZ	1	



Urail				
Alt code	Part number	Finish	Qty	
4551420	URAILE	EZ	4	

Mita wire cable tray suspension brackets







Vertical suspension support				
Alt code	Part number	Finish	Qty	
4551315	VS150E	EZ	10	
4551320	VS200E	EZ	10	
4551330	VS300E	EZ	10	
4551340	VS400E	EZ	5	
4551350	VS500E	EZ	5	
4551360	VS600E	EZ	5	
4552315	VS150H	HDG	10	
4552320	VS200H	HDG	10	
4552330	VS300H	HDG	10	
4552340	VS400H	HDG	5	
4552350	VS500H	HDG	5	
4552360	VS600H	HDG	5	



Heavy duty suspension support				
Alt code	Part number	Finish	Qty	
4551620	VSR200E	EZ	4	
4551630	VSR300E	EZ	4	
4551640	VSR400E	EZ	4	
4551650	VSR500E	EZ	4	
4551660	VSR600E	EZ	4	



Suspension support and channel fixing bracket				
Alt code	Part number	Finish	Qty	
4551430	CS40E	EZ	30	
4551440	C SUPPORT	EZ	10	
4551450	L SUPPORT	EZ	10	





Suspension brackets				
Alt code	Part number	Finish	Qty	
4571408	GTV8	EZ	10	
4571410	GTV10	EZ	10	
4571416	GHS6	EZ	20	
4575418	GHS8	EZ	20	
4571436	GVS6	EZ	20	
4571438	GVS8	EZ	20	

Mita wire cable tray accessories





Threaded rod					
Alt code	Part number	Finish	Qty		
4551467	M610E	EZ	10		
4551470	M805E	EZ	10		
4551480	M810E	EZ	10		
4551481	CVM6E	EZ	50		
4551482	CVM8E	EZ	50		

Screws				
Alt code	Part number	Finish	Qty	
4721912	M6X12E	EZ	150	
4571110	M6X20E	EZ	150	
4725912	M6X12S	SS	150	

Mita KHZSP ladder



Ordering informationKHZSP ladder is ordered in either 4m or 6m lengths.

Finish codes

PG Pre-galvanised HDG Hot Dip Galvanised

4m cable ladder pre-galvanised				
Alt code	Туре	Part number	Finish	Qty
718572	200	KHZSP 200P	PG	4m
718573	300	KHZSP 300P	PG	4m
718574	400	KHZSP 400P	PG	4m
718575	500	KHZSP 500P	PG	4m
718576	600	KHZSP 600P	PG	4m

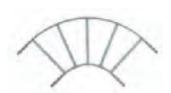
6m cab	6m cable ladder pre-galvanised				
Alt code	Туре	Part number	Finish	Qty	
781099	800	KHZPS 800P	PG	6m	
725356	1000	KHZPS 1000P	PG	6m	

Flat interior bend					
Alt code	Туре	Part number	Finish	Qty	
723061	15/200	KAI 15200P	PG	1	
723062	15/300	KAI 15300P	PG	1	
723063	15/400	KAI 15400P	PG	1	
723064	15/500	KAI 15500P	PG	1	
723065	15/600	KAI 15600P	PG	1	
721961	15/800	KAI 15800G	HDG	1	
716073	15/1000	KAI 151000G	HDG	1	

Flat exterior bend				
Alt code	Туре	Part number	Finish	Qty
716180	15/200	KAE 15200G	HDG	1
716182	15/300	KAE 15300G	HDG	1
716183	15/400	KAE 15400G	HDG	1
716184	15/500	KAE 15500G	HDG	1
716185	15/600	KAE 15600G	HDG	1

Riser				
Alt code	Туре	Part number	Finish	Qty
718177	18/200	KI 18200G	HDG	1
718179	18/300	KI 18300G	HDG	1
718180	18/400	KI 18400G	HDG	1
718181	18/500	KI 18500G	HDG	1
718182	18/600	KI 18600G	HDG	1
721964	18/800	KI 18800G	HDG	1
718183	18/1000	KI 181000G	HDG	1

T junction				
Alt code	Туре	Part number	Finish	Qty
716194	16/200	KT 16200G	HDG	1
716196	16/300	KT 16300G	HDG	1
716197	16/400	KT 16400G	HDG	1
716198	16/500	KT 16500G	HDG	1
716199	16/600	KT 16600G	HDG	1
721962	16/800	KT 16800G	HDG	1
716200	16/1000	KT 161000G	HDG	1

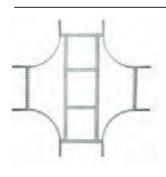




Technical Section 9

Dimensions Section 10

Mita KHZSP ladder and accessories



Alt code	Type		X junction				
All Code	Type	Part number	Finish	Qty			
716210	17/200	KX 17200G	HDG	1			
716212	17/300	KX 17300G	HDG	1			
716213	17/400	KX 17400G	HDG	1			
716214	17/500	KX 17500G	HDG	1			
716215	17/600	KX 17600G	HDG	1			
721963	17/800	KX 17800G	HDG	1			
716216	17/1000	KX 171000G	HDG	1			



Joint 21				
Alt code	Туре	Part number	Finish	Qty
791196	Joint 21	KJC21G	Р	1



Universa	al coupling			
Alt code	Туре	Part number	Finish	Qty
718409	Coupling 22	KVHC 22G	HDG	1



Access	Accessories				
Alt code	Туре	Part number	Finish	Qty	
709017	Fixed Take-off Hook 4	KTOH 4A	ALU	1	
709018	End Connection 10	KEC 10A	ALU	1	



Corner plates					
Alt code	Туре	Part number	Finish	Qty	
768733	Angle Plate 33/1	KAP 331P	PG	1	
707748	Angle Plate 33/2	KAP 332G	HDG	1	



Junction	n couplin	g			
Alt code	Туре	Part number	Finish	Qty	
725096	14	KJT 14G	HDG	1	

Profile protection 2m length				
Alt code	Туре	Part number	Finish	Qty
732151	28P	KPP 28P	Grey plastic	1 x 2m

Technical Section 9 Dimensions Section 10

Mita KHZSP ladder and accessories



Profile o	clamp			
Alt code	Туре	Part number	Finish	Qty
725363	41	KPC 41P	PG	1



Hold do	wn clan	np		
Alt code	Type	Part number	Finish	Qty
800210	42S	KPC 42SG	HDG	1

Mita KHZP ladder and accessories



Ordering information

KHZP ladder is ordered in 6m lengths.

Finish codes

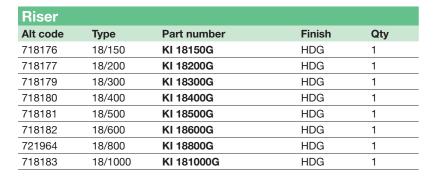
HDG Hot Dip Galvanised SS Stainless steel

6m cable ladder					
Alt code	Туре	Part number	Finish	Qty	
718562	150	KHZP 150G	HDG	6m	
718563	200	KHZP 200G	HDG	6m	
718564	300	KHZP 300G	HDG	6m	
718565	400	KHZP 400G	HDG	6m	
718566	500	KHZP 500G	HDG	6m	
718567	600	KHZP 600G	HDG	6m	
721960	800	KHZP 800G	HDG	6m	
718568	1000	KHZP 1000G	HDG	6m	

Accessories

Flat inte	rior bend			
Alt code	Type	Part number	Finish	Qty
716066	15/150	KAI 15150G	HDG	1
716067	15/200	KAI 15200G	HDG	1
716069	15/300	KAI 15300G	HDG	1
716070	15/400	KAI 15400G	HDG	1
716071	15/500	KAI 15500G	HDG	1
716072	15/600	KAI 15600G	HDG	1
721961	15/800	KAI 15800G	HDG	1
716073	15/1000	KAI 151000G	HDG	1

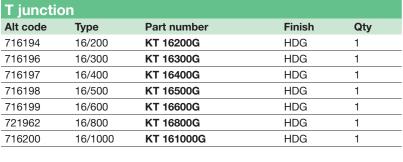
Flat exte	rior bend			
Alt code	Туре	Part number	Finish	Qty
716180	15/200	KAE 15200G	HDG	1
716182	15/300	KAE 15300G	HDG	1
716183	15/400	KAE 15400G	HDG	1
716184	15/500	KAE 15500G	HDG	1
716185	15/600	KAE 15600G	HDG	1





Mita KHZP ladder and accessories





	716214
	716215
phonone and a second	721963
	716216

X junction					
Alt code	Type	Part number	Finish	Qty	
716210	17/200	KX 17200G	HDG	1	
716212	17/300	KX 17300G	HDG	1	
716213	17/400	KX 17400G	HDG	1	
716214	17/500	KX 17500G	HDG	1	
716215	17/600	KX 17600G	HDG	1	
721963	17/800	KX 17800G	HDG	1	
716216	17/1000	KX 171000G	HDG	1	
•			· · · · · · · · · · · · · · · · · · ·		



Joints				
Alt code	Туре	Part number	Finish	Qty
705304	Joint 9	KJC 9G	HDG	1
791199	Joint 21	KJC21G	HDG	1



Universa	I coupling			
Alt code	Туре	Part number	Finish	Qty
718409	Coupling 22	KVHC 22G	HDG	1



Accesso	ries			
Alt code	Туре	Part number	Finish	Qty
709017	Fixed take-off hook 4	KTOH 4A	ALU	1
709018	End connection 10	KEC 10A	ALU	1



Corner	Corner plates				
Alt code	Туре	Part number	Finish	Qty	
768733	Angle plate 33/1	KAP 331P	PG	1	
707748	Angle plate 33/2	KAP 332G	HDG	1	

Mita KHZP ladder and accessories



Junction	n couplir	ng		
Alt code	Type	Part number	Finish	Qty
725096	14	KJT 14G	HDG	1



2m prof	ile prote	ction		
Alt code	Type	Part number	Finish	Qty
732151	28P	KPP 28P	Grey Plastic	1 x 2m



Profile o	lamp			
Alt code	Type	Part number	Finish	Qty
720824	41	KPC 41G	HDG	1



Hold do	wn clam	р		
Alt code	Туре	Part number	Finish	Qty
800210	42S	KPC 42SG	HDG	1

Mita KHZ ladder and accessories



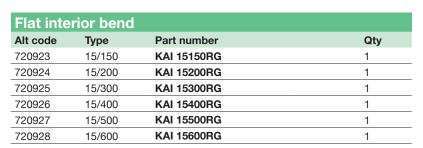
Ordering information KHZ ladder is ordered in 6m lengths.

Finish codes

Hot Dip Galvanised HDG

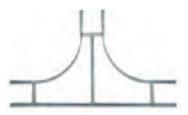
6m cab	le ladder	pre-galvanised		
Alt code	Туре	Part number	Finish	Qty
768001	150	KHZ 150G	HDG	6m
768002	200	KHZ 200G	HDG	6m
768004	300	KHZ 300G	HDG	6m
768005	400	KHZ 400G	HDG	6m
768006	500	KHZ 500G	HDG	6m
768007	600	KHZ 600G	HDG	6m

Accessories



Riser			
Alt code	Туре	Part number	Qty
720935	18/150	KHZI 18150G	1
720936	18/200	KHZI 18200G	1
720937	18/300	KHZI 18300G	1
720938	18/400	KHZI 18400G	1
720939	18/500	KHZI 18500G	1
720940	18/600	KHZI 18600G	1





T junction	on		
Alt code	Туре	Part number	Qty
720929	16/150	KHZT 16150G	1
720930	16/200	KHZT 16200G	1
720931	16/300	KHZT 16300G	1
720932	16/400	KHZT 16400G	1
720933	16/500	KHZT 16500G	1
720934	16/600	KHZT 16600G	1

Mita KHZ accessories















Interme	Intermediate connection bolts					
Alt code	Туре	Part number	Finish	Qty		
705392	29/200	KICB 29200G	HDG	1		
705394	29/300	KICB 29300G	HDG	1		
705395	29/400	KICB 29400G	HDG	1		
705396	29/500	KICB 29500G	HDG	1		
705397	29/600	KICB 29600G	HDG	1		

Joints				
Alt code	Туре	Part number	Finish	Qty
705304	Joint 9	KJC 9G	HDG	1
708740	Joint 21	KJC021G	HDG	1

Univers	al coupling			
Alt code	Туре	Part number	Finish	Qty
718409	Coupling 22	KVHC 22G	HDG	1

Cross member plug					
Alt code	Туре	Part number	Finish	Qty	
726668	Plug 27	KCMP 27	Silver LDPE	1	
617522	Rung Plug	KRPK 71571LDPE	Clear LDPE	1	

End plugs					
Alt code	Туре	Part number	Finish	Qty	
709019	External 28	KEP 28	LDPE	1	
731994	Internal 28i	KEP 281FF	LDPE	1	

Accessories					
Alt code	Туре	Part number	Finish	Qty	
709017	Fixed take-off hook 4	KTOH 4A	ALU	1	
709018	End connection 10	KEC 10A	ALU	1	

Corner plates						
Туре	Part number	Finish	Qty			
33/1	KAP 331P	PG	1			
33/2	KAP 332G	HDG	1			
	Type 33/1	Type Part number 33/1 KAP 331P	TypePart numberFinish33/1KAP 331PPG			

Technical Section 9 Dimensions Section 10







Profile protection length 2m						
Alt code	Туре	Part number	Finish	Qty		
732151	28P	KPP 28P	Grey Plastic	1 x 2m		



Profile clamps					
Alt code	Туре	Part number	Finish	Qty	
720824	41	KPC 41G	HDG	1	



Hold down clamp						
Alt code	Туре	Part number	Finish	Qty		
800210	42S	KPC 42SG	HDG	1		

Mita KHZPV ladder and accessories



Ordering information

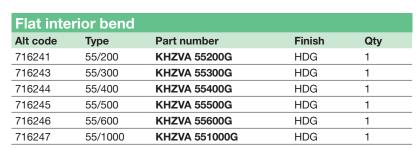
KHZPV Ladder is ordered and priced in 6m lengths

Finish codes

HDG Hot Dip Galvanised

6m cable ladder pre-galvanised					
Alt code	Туре	Part number	Finish	Qty	
717982	200	KHZPV 200G	HDG	6m	
717983	300	KHZPV 300G	HDG	6m	
717984	400	KHZPV 400G	HDG	6m	
717985	500	KHZPV 500G	HDG	6m	
717986	600	KHZPV 600G	HDG	6m	
716400	1000	KHZPV 1000G	HDG	6m	

Accessories



T junction					
Alt code	Туре	Part number	Finish	Qty	
716255	56/200	KHZVT 56200G	HDG	1	
716257	56/300	KHZVT 56300G	HDG	1	
716258	56/400	KHZVT 56400G	HDG	1	
716259	56/500	KHZVT 56500G	HDG	1	
716260	56/600	KHZVT 56600G	HDG	1	
721261	56/1000	KHZVT 561000G	HDG	1	





Riser coupling					
Alt code	Туре	Part number	Finish	Qty	
716389	49/200	KRC 49200G	HDG	1	
716390	49/300	KRC 49300G	HDG	1	
716391	49/400	KRC 49400G	HDG	1	
720517	49/500	KRC 49500G	HDG	1	
716392	49/600	KRC 49600G	HDG	1	
716393	49/1000	KRC 491000G	HDG	1	





Cut end	– joint				
Alt code	Туре	Part number	Finish	Qty	
707609	45	KJ 45G	HDG	1	

(includes fixing and joining screw set)





Coupling					
Alt code	Type	Part number	Finish	Qty	
720815	44	KCC 44G	HDG	1	
731837	51	KJC 51G	HDG	1	
718901	48/30 Coupling Plate	KCP 4830G	HDG	1	
718902	48/60 Coupling Plate	KCP 4860G	HDG	1	
718411	48/45 Coupling Plate	KCP 4845G	HDG	1	

(excludes joint screws)







Profile of	Profile clamp							
Alt code	Type	Part number	Finish	Qty				
707511	43	KPC 43G	HDG	1				

Mita KHZPV accessories



Take off	Take off hook							
Alt code	Туре	Part number	Finish	Qty				
714353	47	KTH 47G	HDG	1				



Lighting bracket						
Alt code	Type	Part number	Finish	Qty		
718643	Heavy duty 200mm	KLBHD 200	HDG	1		

Covers







Covers for trunking body - length 2m							
Alt code	Type	Part number	Finish	Qty			
732216	W5-150	KCW 5150P	PG	1			
732217	W5-200	KCW 5200P	PG	1			
732218	W5-300	KCW 5300P	PG	1			
732219	W5-400	KCW 5400P	PG	1			
732220	W5-500	KCW 5500P	PG	1			
732221	W5-600	KCW 5600P	PG	1			
732222	W5-1000	KCW 51000P	PG	1			

Covers for flat interior bend						
Alt code	Туре	Part number	Finish	Qty		
732322	150	KCA 15150	PG	1		
732323	200	KCA 15200	PG	1		
732324	300	KCA 15300	PG	1		
732325	400	KCA 15400	PG	1		
732326	500	KCA 15500	PG	1		
732327	600	KCA 15600	PG	1		
732328	1000	KCA 151000	PG	1		

Alt code Type Part number Finish Qty 732345 150mm KTC 16150 PG 1 732346 200mm KTC 16200 PG 1 732347 300mm KTC 16300 PG 1 732348 400mm KTC 16400 PG 1	Covers for T junction						
732346 200mm KTC 16200 PG 1 732347 300mm KTC 16300 PG 1							
732347 300mm KTC 16300 PG 1							
732348 400mm KTC 16400 PG 1							
732349 500mm KTC 16500 PG 1							
732350 600mm KTC 16600 PG 1							
732351 1000mm KTC 161000 PG 1							

Mita ladder accessories



Profile s	support _l	oiece		
Alt code	Туре	Part number	Finish	Qty
729217	37	KPSP 37P	PG	1

(Use with screw set W38)



Cover jo	oints			
Alt code	Туре	Part number	Finish	Qty
712639	150	KCJ 150P	PG	1
712640	200	KCJ 200P	PG	1
712642	300	KCJ 300P	PG	1
712643	400	KCJ 400P	PG	1
712644	500	KCJ 500P	PG	1
712645	600	KCJ 600P	PG	1
	/f 1000	0 500)		

(for 1000 use 2 x 500)



Tele-conduit 36* with knockout holes - length 2m							
Туре	Part number	Finish	Qty				
36/50	KTC 3650P	PG	1				
36/100	KTC 36100P	PG	1				
36/200	KTC 36200P	PG	1				
	Type 36/50 36/100	Type Part number 36/50 KTC 3650P 36/100 KTC 36100P	Type Part number Finish 36/50 KTC 3650P PG 36/100 KTC 36100P PG				



Dividing	strip 39	* - length 1.75m			
Alt code	Туре	Part number	Finish	Qty	
718835	39/24	KD 3924P	PG	1	
725785	39/55	KD 3955P	PG	1	



Joint W	Joint W39*						
Alt code	Туре	Part number	Finish	Qty			
716824	Joint W39	KJW 39	PG	1			



Junction	n box pla	ite		
Alt code	Туре	Part number	Finish	Qty
718618	35P	KJBP 35P	PG	1
711205	355	KJBP 355P	PG	1

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Mita ladder accessories and cable clamps







Clamp 12					
Alt code	Туре	Part number	Finish	Qty	
728653	12/70	KC 1270G	HDG	1	
728654	12/120	KC 12120G	HDG	1	



Cable clamps for KHZP and KHZPV ladders

Cable clamp type A1 for 1 cable					
Alt code	Type	Part number	Finish	Qty	
718507	A1-12	KCCA 112P	PG	1	
718508	A1-16	KCCA 116P	PG	1	
718509	A1-22	KCCA 122P	PG	1	
718510	A1-28	KCCA 128P	PG	1	
718511	A1-36	KCCA 136P	PG	1	
718512	A1-44	KCCA 144P	PG	1	
718513	A1-52	KCCA 152P	PG	1	
718514	A1-60	KCCA 160P	PG	1	

Cable clamp type A2 for 2 cables						
Alt code	Туре	Part number	Finish	Qty		
718516	A2-12	KCCA 212P	PG	1		
718517	A2-16	KCCA 216P	PG	1		
718518	A2-22	KCCA 222P	PG	1		
718519	A2-28	KCCA 228P	PG	1		
718520	A2-36	KCCA 236P	PG	1		
718521	A2-44	KCCA 244P	PG	1		

Mita ladder cable clamps





Cable clamp type R1 for 1 cable					
Alt code	Type	Part number	Finish	Qty	
769000	R1-12	KCCR 112P	PG	1	
769001	R1-16	KCCR 116P	PG	1	
769002	R1-22	KCCR 122P	PG	1	
769003	R1-28	KCCR 128P	PG	1	
769004	R1-36	KCCR 136P	PG	1	
769005	R1-44	KCCR 144P	PG	1	
769006	R1-52	KCCR 152P	PG	1	
769007	R1-60	KCCR 160P	PG	1	
769008	R1-70	KCCR 170P	PG	1	

Cable clamp type R2 for 2 cable					
Alt code	Туре	Part number	Finish	Qty	
769009	R2-12	KCCR 212P	PG	1	
769010	R2-16	KCCR 216P	PG	1	
769011	R2-22	KCCR 222P	PG	1	
769012	R2-28	KCCR 228P	PG	1	
769013	R2-36	KCCR 236P	PG	1	
769014	R2-44	KCCR 244P	PG	1	
769015	R2-52	KCCR 252P	PG	1	
769016	R2-60	KCCR 260P	PG	1	



Inserts for all clamps

Insert p	iece			
Alt code	Туре	Part number	Finish	Qty
709050	EM-12	KIEM 12	PVC	1
709051	EM-16	KIEM 16	PVC	1
709052	EM-22	KIEM 22	PVC	1
709053	EM-28	KIEM 28	PVC	1
709054	EM-36	KIEM 36	PVC	1
709055	EM-44	KIEM 44	PVC	1
709056	EM-52	KIEM 52	PVC	1
709057	EM-60	KIEM 60	PVC	1
709058	EM-70	KIEM 70	PVC	1



Cable roller					
Alt code	Туре	Part number	Finish	Qty	
718660	Type S	KCRSG	HDG	1	

Mita ladder support work



Cantilever arm 50					
Alt code	Туре	Part number	Finish	Qty	
723432	50/100	KCA50 100G	HDG	1	
723433	50/150	KCA50 150G	HDG	1	
723434	50/200	KCA50 200G	HDG	1	
723435	50/250	KCA50 250G	HDG	1	
723436	50/300	KCA50 300G	HDG	1	
723437	50/400	KCA50 400G	HDG	1	
723438	50/500	KCA50 500G	HDG	1	
723439	50/600	KCA50 600G	HDG	1	
727128	50/1000*	KCA50 1000G	HDG	1	

Cantilever arm 50F					
Alt code	Туре	Part number	Finish	Qty	
718624	50F/200	KCA50F 200G	HDG	1	
718625	50F/300	KCA50F 300G	HDG	1	
718626	50F/400	KCA50F 400G	HDG	1	
718627	50F/500	KCA50F 500G	HDG	1	
718628	50F/600	KCA50F 600G	HDG	1	
712465	50F/1000*	KCA50F 1000G	HDG	1	

Cantilever arm 50L					
Alt code	Туре	Part number	Finish	Qty	
725107	50L/200	KCA50L 200G	HDG	1	
725109	50L/300	KCA50L 300G	HDG	1	



Accessories for arms				
Alt code	Туре	Part number	Finish	Qty
768738	Back plate 40	KBP 40G	HDG	1
717001	Mounting rail	KMR 40G	HDG	1



Profile clamps					
Alt code	Туре	Part number	Finish	Qty	
705611	42	KPC 42G	HDG	1	
800210	42S	KPC 42SG	HDG	1	
707511	43	KPC 43G	HDG	1	

Mita ladder support work



Vertical piece 2						
Alt code	Туре	Part number	Finish	Qty		
717191	2/300	KVP 2300G	HDG	1		
717192	2/400	KVP 2400G	HDG	1		
717193	2/500	KVP 2500G	HDG	1		
717194	2/700	KVP 2700G	HDG	1		
717195	2/1000	KVP 21000G	HDG	1		

Vertical piece 2F					
Alt code	Туре	Part number	Finish	Qty	
717196	2F/280	KVP2F 280G	HDG	1	
717197	2F/370	KVP2F 370G	HDG	1	
717198	2F/505	KVP2F 505G	HDG	1	
717199	2F/730	KVP2F 730G	HDG	1	
717200	2F/1000	KVP2F 1000G	HDG	1	

Vertical piece 20					
Alt code	Туре	Part number	Finish	Qty	
715723	20/505	KVP20 505G	HDG	1	
715724	20/730	KVP20 730G	HDG	1	
715725	20/1000	KVP20 1000G	HDG	1	
715726	20/1500	KVP20 1500G	HDG	1	
715727	20/2000	KVP20 2000G	HDG	1	
715728	20/3000	KVP20 3000G	HDG	1	

Vertical piece 20F & 20S					
Alt code	Туре	Part number	Finish	Qty	
718249	20F/1000	KVP20F 1000G	HDG	1	
718250	20F/1500	KVP20F 1500G	HDG	1	
718251	20F/2000	KVP20F 2000G	HDG	1	
709799	20F/3000	KVP20F 3000G	HDG	1	
718721	20FS/3000	KVP20FS 3000G	HDG	1	

Ceiling	plate			
Alt code	Туре	Part number	Finish	Qty
718849	20F	KCP20FG	HDG	1

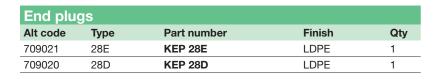


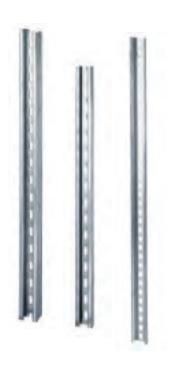


Pendant bar 1					
Alt code	Type	Part number	Finish	Qty	
717640	1/300	KPB 1300G	HDG	1	
717641	1/500	KPB 1500G	HDG	1	
717642	1/800	KPB 1800G	HDG	1	
718903	1/1500	KPB 11500G	HDG	1	

Mita ladder support work







3m pen	dant/fixir	ng rails		
Alt code	Туре	Part number	Finish	Qty
715879	24/34	KPF 2434G	HDG	1

2.97m pendant/fixing rails				
Alt code	Type	Part number	Finish	Qty
705092	24/40	KPF 2440G	HDG	1
705093	24/48	KPF 2448G	HDG	1
709795	24/20	KPF 2420G	HDG	1
709798	24/20F	KKPF 2420F	HDG	1

5.94m pendant/fixing rails				
Alt code	Туре	Part number	Finish	Qty
718808	24/20F	KPF 2420FL5940G	HDG	1
709031	24/20FS	KPF 2420FSL5940G	HDG	1

4m pen	4m pendant/fixing rails				
Alt code	Туре	Part number	Finish	Qty	
768063	24/26x53	KPR 2426X53G	HDG	1	



Pendant joints					
Туре	Part number	Finish	Qty		
2J	KP J2JG	HDG	1		
2FJ	KP J2JFG	HDG	1		
20J	KP J20JG	HDG	1		
	Type 2J 2FJ	Type Part number 2J KP J2JG 2FJ KP J2JFG	TypePart numberFinish2JKP J2JGHDG2FJKP J2JFGHDG		



Ceiling bracket 5					
Alt code	Туре	Part number	Finish	Qty	
718640	5	KCB 5G	HDG	1	

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Mita ladder support work



Pendant base plate					
Alt code	Туре	Part number	Finish	Qty	
718253	5	KPBP 520G	HDG	1	



Support bracket 3						
Alt code	Туре	Part number	Finish	Qty		
720761	3/150	KSB 3150G	HDG	1		
720762	3/200	KSB 3200G	HDG	1		
720763	3/300	KSB 3300G	HDG	1		
720764	3/400	KSB 3400G	HDG	1		
720765	3/500	KSB 3500G	HDG	1		
720766	3/600	KSB 3600G	HDG	1		

Each bracket requires 2 x clamp 42





Wall brackets 11/25 & 11/75					
Alt code	Туре	Part number	Finish	Qty	
713204	11/25	KWB 1125G	HDG	1	
713203	11/75	KWB 1175G	HDG	1	





Beam clamp					
Alt code	Туре	Part number	Finish	Qty	
715675	5BK-10	KBC5BK 10G	HDG	1	
718243	5BK-30	KBC5BK 30G	HDG	1	
713153	5TP	KBC5TPG	HDG	1	



Bracket 60/40					
Alt code	Type	Part number	Finish	Qty	
718904	60/40	KB 6040G	HDG	1	

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Wall bracket					
Alt code	Туре	Part number	Finish	Qty	
723450	20	KWB 20	HDG	1	



Angle b	racket 5	L		
Alt code	Туре	Part number	Finish	Qty
731791	5L	KAB 5LG	HDG	1



Angle bracket 5LS					
Alt code	Туре	Part number	Finish	Qty	
709801	5L	KAB 5LSG	HDG	1	



End bra	cket HT-	11		
Alt code	Туре	Part number	Finish	Qty
717618	HT-11	KEB HT11G	HDG	1



Round I	Round bar fixing for floors				
Alt code	Туре	Part number	Finish	Qty	
718312		KRBF	HDG	1	

Technical Section 9 Dimensions Section 10

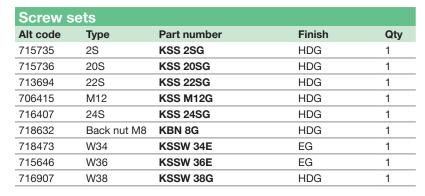
Cable management

Mita ladder support work



Clamp s	set M6			
Alt code	Туре	Part number	Finish	Qty
720786	M6-25	KCM 625SS	HDG	1







T-bolts				
Alt code	Туре	Part number	Finish	Qty
716794	26/F30	KTB 26F30G	HDG	1
716795	26/F40	KTB 26F40G	HDG	1
716796	26/F50	KTB 26F50G	HDG	1
714009	26	KTB 26G	HDG	1

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Breaking capacities Tripping characteristics

Miniature circuit breaker (magnetic trip setting)			BS EN 608 Breaking	898** capacity (A)				
Туре	Ratings (A)	Page	1 P 240V	2,3,4P 415V	1 P 220V/240V	2,3,4P 220V/240V	2,3,4P 380V/415V	2,3,4P 440V
С60НВ МСВ	1A - 63A	12/13	10,000	10,000	15,000	30,000	15,000	10,000
(type B: 3 - 5ln)								
C60HC MCB	1A - 63A	12/13	10,000	10,000	15,000	30,000	15,000	10,000
(type C: 5 - 10ln								
C60HD MCB	1A - 63A	12/13	10,000	10,000	15,000	30,000	15,000	10,000
(type D: 10 - 14ln)								
C120 HB MCB	10A - 125A	17	15,000	15,000	15,000	30,000	15,000	10,000
C120 HC MCB	10A - 125A	18	15,000	15,000	15,000	30,000	15,000	10,000
C120 HD MCB	10A - 125A	19	15,000	15,000	15,000	30,000	15,000	10,000
NG125 N	10A - 125A	35	-	-	25,000	50,000	25,000	20,000
NG125 H	10A - 80A	38	-	-	36,000	70,000	36,000	30,000

^{*} Breaking capacities quoted are lcu. lcs = 50% of lcu.

Note: For UL/CSA approved MCBs consult us. Maximum operating voltage 440V + 10%

Magnetic tripping characteristics (50/60Hz)

RS FN	ANSOS/RS	EN 60947-2

Туре	In min.	In max.	Typical applications
В	3	5	Moderately inductive, e.g. commercial and general industrial
С	5	10	Highly inductive, e.g. heavy industrial
D	10	14	More highly inductive, e.g transformers, motors and certain lighting systems

Note: BS EN 60898 calibration temperature 30°C BS EN 60947-2 calibration temperature 40°C

^{**} Breaking capacities quoted are Icn. Ics = 75% of Icn.

Temperature derating Multi 9

The maximum permissable current in a device depends on the ambient temperature in which it is placed.

Ambient temperature is the temperature inside the enclosure or switchboard in which the devices have been installed.

The reference temperature is in the coloured column for the various circuit-breakers. When several simultaneously operating circuit-breakers are mounted side by side in a small enclosure, the temperature rise inside the enclosure causes a reduction in the current rating. A reduction coefficient of the order of 0.8 must therefore be allocated to the rating (already derated if it depends on the ambient temperature).

Example

The table below shows how to determine the following for a C60 depending on the ambient temperature and the installation mode:

- The service current which must not be exceeded for a rating of 20 A (reference temperature 30 °C)
- The ratings which must be adopted (in bold) to allow a service current of 20 A

Service current which must not be exceeded (A)

Instal condi	llation itions	Single C60	Several C60a in the same enclor (calculed using the reduction coefficient indicated below)						
Temp	erature (°C)	30 °C	40 °C	30 °C	40 °C				
	nominal	real	real	real	real				
	rating (A)	rating (A)	rating (A)	rating (A)	rating (A)				
C60	20	20	19	$20 \times 0.8 = 16$	19 x 0.8 = 15.2				
	25	25	23.7	25 x 0.8 = 20	23.7 x 0.8 = 18.96				
	32	32	30.4	32 x 0 8 = 25 6	30 x 0 8 = 24				

Max current (A) according to ambient temperature

Déclic, DPN, DPN N

Temperature (°C)	20	25	30	35	40	45	50	55	60
Rating (A)									
1	1.04	1.02	1	0.98	0.96	0.93	0.91	0.89	0.86
2	2.08	2.04	2	1.96	1.91	1.87	1.82	1.77	1.72
3	3.16	3.08	3	2.92	2.83	2.75	2.66	2.57	2.47
6	6.26	6.13	6	5.87	5.73	5.60	5.45	5.31	5.16
10	10.5	10.3	10	9.73	9.45	9.17	8.87	8.57	8.25
16	16.7	16.4	16	15.6	16.2	14.8	14.4	14	13.5
20	20.9	20.4	20	19.5	19	18.7	18	17.5	17
25	26.1	25.5	25	24.4	23.8	23.3	22.7	22.1	21.4
32	33.6	32.8	32	31.2	30.3	29.4	28.5	27.6	26.7
40	42	41	40	39	37.9	36.8	35.7	34.6	33.4

C60H: curve B and C

Temperature (°C)	20	25	30	35	40	45	50	55	60
Rating (A)									
1	1.05	1.02	1	0.98	0.95	0.93	0.90	0.88	0.85
2	2.08	2.04	2	1.96	1.92	1.88	1.84	1.80	1.74
3	3.18	3.09	3	2.91	2.82	2.70	2.61	2.49	2.37
4	4.24	4.12	4	3.88	3.76	3.64	3.52	3.36	3.24
6	6.24	6.12	6	5.88	5.76	5.64	5.52	5.40	5.30
10	10.6	10.3	10	9.70	9.30	9.00	8.60	8.20	7.80
16	16.8	16.5	16	15.5	15.2	14.7	14.2	13.8	13.3
20	21.0	20.6	20	19.4	19.0	18.4	17.8	17.4	16.8
25	26.2	25.7	25	24.2	23.7	23.0	22.2	21.5	20.7
32	33.5	32.9	32	31.4	30.4	29.8	28.4	28.2	27.5
40	42.0	41.2	40	38.8	38.0	36.8	35.6	34.4	33.2
50	52.5	51.5	50	48.5	47.4	45.5	44.0	42.5	40.5
63	66.2	64.9	63	61.1	58.0	56.7	54.2	51.7	49.2

Temperature derating Multi 9

Max current (A) according to ambient temperature C60: curve D

Temperature (°C)	20	25	30	35	40	45	50	55	60
Rating (A)									
1	1.10	1.08	1.05	1.03	1	0.97	0.95	0.92	0.89
2	2.18	2.14	2.08	2.04	2	1.96	1.90	1.86	1.80
3	3.42	3.30	3.21	3.12	3	2.88	2.77	2.64	2.52
4	4.52	4.40	4.24	4.12	4	3.88	3.72	3.56	3.44
6	6.48	6.36	6.24	6.12	6	5.88	5.76	5.58	5.46
10	11.4	11.1	10.7	10.4	10	9.60	9.20	8.80	8.40
16	17.9	17.4	16.9	16.4	16	15.5	15.0	14.4	13.9
20	22.2	21.6	21.2	20.6	20	19.4	18.8	18.2	17.6
25	27.7	27.0	26.5	25.7	25	24.2	23.5	22.7	21.7
32	35.2	34.2	33.6	32.9	32	31.0	30.4	29.4	28.4
40	44.4	43.6	42.4	41.2	40	38.8	37.6	36.4	34.8
50	56.0	54.5	53.0	51.5	50	48.5	46.5	45.0	43.0
63	71.8	69.9	67.4	65.5	63	60.4	57.9	55.4	52.9

DPN Vigi, DPN N Vigi

Temperature (°C)	20	25	30	35	40	45	50	55	60
Rating (A)									
1	1.04	1.02	1	0.98	0.96	0.93	0.91	0.89	0.86
2	2.08	2.04	2	1.96	1.91	1.87	1.82	1.77	1.72
3	3.16	3.08	3	2.92	2.83	2.75	2.66	2.57	2.47
6	6.26	6.13	6	5.87	5.73	5.60	5.45	5.31	5.16
10	10.5	10.2	10	9.75	9.49	9.23	8.96	8.67	8.38
16	16.8	16.4	16	15.6	16.2	14.8	14.3	14.9	13.4
20	21	20.5	20	19.5	19	18.5	17.9	17.4	16.8
25	26.1	25.5	25	24.4	23.9	23.3	22.7	22.1	21.4
32	33.4	32.7	32	31.2	30.5	29.7	28.9	28	27.1
40	41.6	41.8	40	39.2	38.3	37.4	36.5	35.6	34.6

Temperature derating Multi 9

Max current (A) according to ambient temperature NG125

Temperature (°C)	20	25	30	35	40	45	50	55	60
Rating (A)									
10	11	10.75	10.5	10.25	10	9.75	9.5	9.25	9
16	17.6	17.2	16.8	16.4	16	15.6	15.2	14.8	14.4
20	22	21.5	21	20.5	20	19.5	19	18.5	18
25	27.5	26.87	26.25	25.62	25	24.37	23.75	23.12	22.5
32	35.2	34.4	33.6	32.8	32	31.2	30.4	29.6	28.8
40	44	43	42	41	40	39	38	37	36
50	55	53.75	52.5	51.25	50	48.75	47.5	46.25	45
63	69.3	67.72	66.15	64.57	63	61.42	59.85	58.27	56.7
80	88	86	84	82	80	78	76	74	72
100	110	107.5	105	102.5	100	97.5	95	92.5	90
125	137.5	134.3	131.2	128.1	125	121.8	118.7	121.8	112.5

C120 in accordance with BS EN 60898

Temperature (°C)	20	25	30	35	40	45	50	55	60
Rating (A)									
10	10.8	10.4	10	9.6	9.2	8.7	8.2	7.7	7.2
16	17.0	16.5	16	15.5	14.9	14.3	13.7	13.1	12.4
20	21.5	20.7	20	19.2	18.4	17.6	16.7	15.7	14.8
25	27.3	26.2	25	23.7	22.4	21.0	19.5	17.8	16.0
32	34.3	33.2	32	30.8	29.5	28.2	26.8	25.4	23.8
40	43.3	41.7	40	38.3	36.4	34.5	32.5	30.3	28.0
50	54.4	52.2	50	47.7	45.2	42.6	39.8	36.9	33.6
63	68.1	65.6	63	60.3	57.5	54.5	51.3	48.0	44.4
80	85.9	83.0	80	76.9	73.6	70.2	66.6	62.8	58.7
100	109.1	104.7	100	95.1	90.0	84.5	78.7	72.4	65.4
125	136.7	131.0	125	118.7	112.1	105.0	97.4	89.2	80.1

C120 in accordance with BS EN 60947-2

7120 III accordance with bo EN 00347-2									
Temperature (°C)	20	25	30	35	40	45	50	55	60
Rating (A)									
10	11.7	11.3	11	10.5	9.5	9.0	8.4	7.8	7.2
16	18.6	18.0	17	16.9	15.6	15.0	14.3	13.6	12.4
20	23.4	22.6	22	21.0	19.2	18.2	17.2	16.1	14.8
25	29.8	28.6	27	25.9	22.9	21.2	19.4	17.5	16.0
32	37.4	36.2	35	33.6	30.8	29.2	27.7	26.0	23.8
40	47.2	45.4	44	41.7	37.6	35.4	33.0	30.5	28.0
50	59.3	56.9	55	52.0	46.4	43.4	40.2	36.7	33.6
63	74.2	71.5	69	65.7	59.4	56.0	52.3	48.4	44.4
80	93.7	90.5	87	83.8	76.5	72.6	68.4	64.0	58.7
100	118.9	114.1	109	103.7	92.1	85.7	78.9	71.3	65.4
125	149.0	142.8	136	129.4	114.4	106.2	97.2	87.3	80.1

RCCB and I-NA switches

in accordance with BS EN 60947-3

Temperature (°C)	25	30	40	50	60
Rating (A)					
16	20	19	16	15	13
25	32	30	25	23	20
40	46	44	40	36	32
63	75	70	63	56	50
80	95	90	80	72	65
100	123	120	100	95	90
125	135	133	125	118	110

Note: the thermal protection device (overload) placed upstream from the residual current circuit breaker should take the values indicated in the table above into account.

For use with lighting loads

Table 1: fluorescent lighting

Depending on the power supply and the number and types of lighting units, the table gives the circuit breaker rating based on the following assumptions:

- Installation in an enclosure with an ambient temperature of 25°C (derating coefficient = 0.8)
- Power of ballast: 25% of tube power
- Power factor: 0.6 for non-compensated fluorescent lighting. 0.86 for compensated fluorescent lighting

Circuit breakers mounted in an enclosure with an ambient exterior temperature of 25°C: derating coefficient = 0.8.

Single phase system: 230V

Three phase + N system: 400V between phases

Types of	Powe				Nui	mber o	f lightii	ng unit	s per p	ohase	lighting	g unit		
Single phase	18	4	9	29	49	78	98	122	157	196	245	309	392	490
non-compensated	36	2	4	14	24	39	49	61	78	98	122	154	196	245
	58	1	3	9	15	24	30	38	48	60	76	95	121	152
Single phase	18	7	14	42	70	112	140	175	225	281	351	443	562	703
compensated	36	3	7	21	35	56	70	87	112	140	175	221	281	351
	58	2	4	13	21	34	43	54	69	87	109	137	174	218
Two phase 2x18 =	36	3	7	21	35	56	70	87	112	140	175	221	281	351
compensated 2x36 =	72	1	3	10	17	28	35	43	56	70	87	110	140	175
2x58 =	118	1	2	6	10	17	21	27	34	43	54	68	87	109
MCB rating		1	2	6	10	16	20	25	32	40	50	63	80	100

Calculation: non-compensated fluorescent lighting example (star connection)

Number =
$$\frac{\text{(rating x 0.8) (U x 0.6)}}{\text{(P x 1.25)}}$$

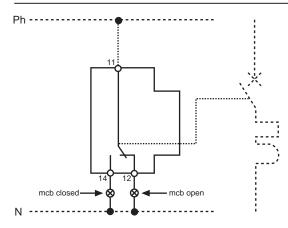
Table 2: high pressure discharge lamps

Table valid for 230V and 400V, with compensated or non-compensated ballast.

Mercury vapour + fluorescent substance	Rat. (A)
P(1) ≤ 700W	6
$P(1) \le 1000W$	10
P(1) ≤ 2000W	16
Mercury vapour + metal halides	
P(1) 375W	6
P(1) 1000W	10
P(1) 2000W	16
High pressure sodium vapour lamps	
P(1) 400W	6
P(1) 1000W	10

For C60/C120 MCBs

Auxiliary ON/OFF switch (OF), Alarm switch (SD), Shunt trip unit (MX), Under voltage release (MN)



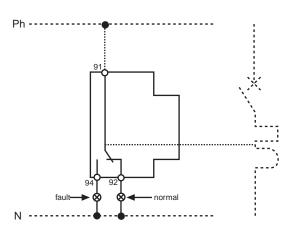
Auxiliary ON/OFF switch (OF) to indicate the 'open' or 'closed' position of a circuit breaker

Assembly

Clip on the left side of the circuit breaker.

Applications

Audible or visual indication of the open or closed state of the circuit. The indication can be given on the front of a cubicle or enclosure or grouped on a control desk. Can be used in conjunction with an alarm switch.



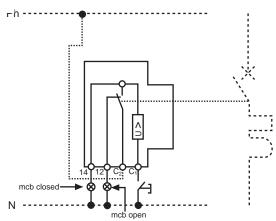
Alarm switch (SD) to indicate circuit breaker opening on a fault (tripped)

Assembly

Clip on the left side of the circuit breaker.

Applications

Audible or visual indication of a fault on an electrical circuit in air conditioned rooms, passenger and goods lifts, ventilation etc. May be used in conjunction with an auxiliary ON/OFF switch.



Shunt trip unit (MX) for remote tripping

Assembly

Clip on the left side of the circuit breaker.

Applications

Remote opening of electrical circuits.

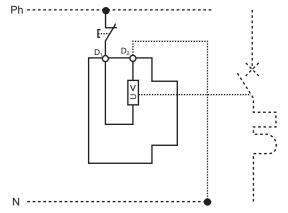
Under voltage release unit (MN) to ensure automatic tripping in case of under voltage and for remote tripping by EMERGENCY STOP push button

Assembly

Clip on the left side of the circuit breaker.

Applications

Automatic tripping of a circuit breaker whenever the voltage drops sufficiently below its nominal rated voltage. Remote tripping of a circuit breaker by 'emergency stop' or other N.C. push button.



Safety perimeters - utilisation limits

Vigi modules and RCCB-ID residual current circuit breakers

Implementation and operation

- The test button (T) checks that the circuit breaker is working properly: verification is recommended once a month
- The residual current circuit breaker is reset whilst closed
- The earth leakage module can be reset in 2 ways:
- □ By resetting the Vigi module first then the circuit breaker
- ☐ Or by resetting the Vigi module and circuit breaker at the same time (locking operating handles)

Note: never allow the protection conductor to pass through the residual current circuit- breaker or Vigi module.

Fluorescent lighting

- Do not exceed 400 m of cables for 30 mA sensitivity
- Do not exceed 12 x 65 watt tubes per phase and 24 tubes with the "si" type, for non-compensated lighting

Protection of circuits and the residual current circuit breaker

■ This is usually achieved using a circuit breaker or gG fuse with a rating adapted to the conductors' cross-section. The residual current circuit breaker is thus protected against overvoltages and shortcircuits

Application examples

- I∆n: 10 or 30 mA
- □ Protection against direct contact
- □ Protection against indirect contact in IT and TN earthing systems (breaking of protection conductor, etc.)
- $\ \square$ In highly-exposed situations (building sites, stalls, swimming pools, etc.).
- I∆n: 300 mA
- ☐ Sites with fire risks
- ☐ Protection against indirect contact in TT earthing system
- I∆n: selective 300 mA s
- protection against indirect contact,
- □ In TT earthing system
- ☐ Allows vertical discrimination with earth leakage protection devices ≤ 30 mA placed downstream

Very important!

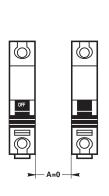
Use of the earth leakage function in harsh environments

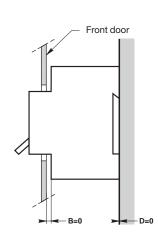
Safety of persons

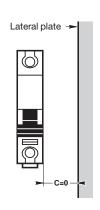
- An electrical installation can be subject to numerous elements:
- □ Water, humidity
- □ Dust
- □ Corrosive substances, etc
- These elements act in variable degrees depending on the installation site:
- ☐ Camp site (humidity, salt spray, etc.)
- ☐ Swimming pool (chlorine)
- □ Laboratories (corrosive vapours), etc
- In all of these cases:
- □ Refer to the installation standard
- Put the device in an IP 55 tight enclosure with a corrosion inhibitor or isolate the area where the earth leakage device is located using a tight door
- ☐ Air the site with clean air

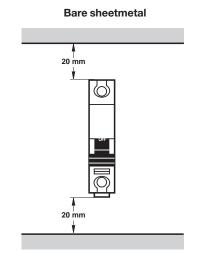
Safety perimeters - utilisation limits

Safety perimeters









Utilisation limits

Upstream	Utilisation limits	
	Vibrations	Impacts
	(IEC 60068-2-6)	(IEC 60068-2-27)

Downstream			
C60/C120	6 g	30 g/11 ms	
RCCB	3 a level S2	30 g/11 ms	

Safety perimeters - utilisation limits

High altitude temperature derating

Influence of altitude on the circuit breaker's characteristics

The IEC 60947.2 construction standard stipulates the dielectric characteristics to be respected. It follows that altitude has no effect on the characteristics of ID circuit breakers up to 2000 m.

Any higher, and it is nécessary to take the fall in dielectric withstand and the air's cooling powers into account. The ID circuit breakers, designed to work in these conditions, should be built or used in accordance with an agreement which should be drawn up between the constructor and the user.

The table below shows corrections that are to be made depending on altitude. The ID circuit breaker's breaking capacity remains the same.

Altitude (m)	2000	3000	4000
Dielectric withstand (V)	2500	2200	1950
Maximum operating voltage (V)	440	440	440
Thermal rating	In	0.96 In	0.93 ln

Derating in chemical atmospheres

Metal parts

- Chlorine Cl₂
- Nitrogen dioxide NO
- Sulphurous hydrogen H₂S
- Sulphurous anhydride SO,

Copper

- The copper sulphur Cu²S layer's thickness doubles in the presence of chlorine compared with a normal environment
- The same happens with nytrogen dioxide

Silver

The silver or silver-plated contacts go black and create an insulating layer of sulphur in the presence of anhydride or sulphurous hydrogen. This insulating sulphur causes excessive overheating of contacts and eventually leads to their destruction. The presence of chlorine, for example in humid areas, mixed with sulphurous hydrogen increases the thickness of the silver suplur by 7 and adding suphurous hydrogen and nitrogen dioxide increases the thickness of sulphurous silver by 20.

Practical advice

- Devices which are installed in oil refineries, steel works, paper mills, synthetic fibre (nylon) factories and in general in sulphur chemical factories, will be exposed to sulphurising which chemists refer to as oxidisation by analogy with the chemical reaction which causes oxidisation by oxygen.
- It must not be thought that the devices installed in "technical" areas are protected from this oxidisation process. Air intakes, which keep the area's pressure higher than the atmospheric pressure, are "too short"; often the air drawn in is clearly less poluted than the air near the ground, but it is polluted enough for the devices to go black five or six years after their installation.
- There is no cure for this oxidisation, just advice: a device's nominal rating is multiplied by 0.6 or a maximum of 0.8 if it is to be installed in a factory where sulphurous gas may be released, the aim being to prevent overheating which speeds up the oxidisation reaction.

Circuits supplied with DC current Choosing a circuit breaker

The choice of circuit breaker type, for protection of a DC installation, depends mainly on the following criteria:

- Nominal current which is used to choose current rating
- Nominal voltage which is used to determine the number of serial-connected poles contributing to breaking
- The maximum short circuit current at the installation point, used to define breaking capacity
- The type of network (see below)

Type of networks		Earthed networks		Unearthed networks	
Diagrams and various possible faults		The source has an earthed polarity	The source has an earthed mid-point		
		B A R	□ U/2 □ U/2 □ U/2 □ U/2 □ A B R R	a B A R R	
Analysis of each fault	fault A	Maximum Isc only the positive polarity is concerned	lsc close to maximum lsc only the positive polarity is concerned at half voltage U/2	No effect	
	fault B	Maximum Isc both polarities are concerned	Maximum Isc both polarities are concerned	Maximum lsc both polarities are concerned	
	fault C	No effect	Same as fault A but this time the negative polarity is concerned	No effect	
The most unfavoura	able case	Fault A	Faults A and C	Fault B	
Distribution of the breaking poles		All the poles effectively contributing to breaking are serial-connected on the positive polarity (1) (2)	On each polarity provide the number of poles required to break maximum lsc at voltage U/2	Distribute the number of poles required for breaking on each polarity	

⁽¹⁾ or negative if it is the positive polarity that is earthed

240 V DC

 $Ri = 0.5 \, m\Omega/cell$

300 A 500 Ah

Short circuit current at the terminals of an accumulator battery

When its terminals are short-circuited, an accumulator battery delivers a current given by Ohm's law:

$$Isc = \frac{Vb}{Ri}$$

 $Vb = maximum \ discharge \ voltage \ (battery \ charged \ at \ 100 \ \%).$

Ri = internal resistance equivalent to all the cells (value normally given by the manufacturer according to battery Ampere/hour capacity).

Example

What is the short circuit current at the terminals of a stationary battery with the following characteristics:

- Capacity: 500 Ah
- Maximum discharge voltage: 240 V (110 x 2.2 V cells)
- Discharge current: 300 A
- Backup time: 1/2 hour
- Internal resistance: $0.5 \text{ m}\Omega$ per cell

Answer

$$Ri = 110 \times 0.5 \cdot 10^{-3} = 55 \cdot 10^{-3}$$

$$Isc = \frac{240}{55.10^{-3}} = 4.4KA$$

As shown in the calculation above, shortcircuit currents are relatively small. Note: if internal resistance is not known, the following approximate formula can be used:

lsc = kC where C is the battery capacity expressed in Ampere/hour and k is a co-efficient close to 10 and in all cases always less than 20.

⁽²⁾ provide an additional pole on teh earthed polarity if the aim is isolation

Circuits supplied with DC current Choosing a circuit breaker

Choosin	g DC circuit-breakers					
Туре	Rated current (A)	Breaking capaci	ty (kA) (L/R < 0.01	5 s)	Overload Magnetic	
		(The number of p	ooles contributing	to breaking is given in brackets)	protection threshold	
		24/48V 60V	125V 125V	250V 500V 750V 1000V	thermal overrating coefficient	
Multi 9						
C32H-DC(1)	1-2-3-6-10-16-20-25-32-40	20 (1P)	10 (1P) 20 (2P)	10 (2P)	Special DC Special DC	
XC40	10-15-20-25-32-38	15 (1P)	20 (2P) 45 (3P)	50 (4P)	Ditto AC 1.43	
C60N	6-10-16-20-25-32-40-50-63	15 (1P)	20 (2P) 30 (3P)	40 (4P)	Ditto AC 1.38	
C60H	1-2-3-6-10-16-20-25-32-40-50-63	20 (1P)	25 (2P) 40 (3P)	50 (4P)	Ditto AC 1.38	
C120H	10-16-20-25-32-40-50-63-80-100-125	15 (1P)	15 (1P)	15 (2P)	Ditto AC 1.4	
Compac	et e e e e e e e e e e e e e e e e e e					
NS100N	16-25-40-63-80-100	50 (1P)	50 (1P)	50 (1P) 50 (1P)	Protection by thermal magnetic	
NS100H	16-25-40-63-80-100	85 (1P)	85 (1P)	85 (1P) 85 (1P)	trip unit identical to the trip unit used in AC current	
NS100L	16-25-40-63-80-100	100 (1P)	100 (1P)	100 (1P) 100 (1P)		
NS160N	80-100-125-160	50 (1P)	50 (1P)	50 (1P) 50 (1P)	_	
NS160H	80-100-125-160	85 (1P)	85 (1P)	85 (1P) 85 (1P)	-	
NS160L	80-100-125-160	100 (1P)	100 (1P)	100 (1P) 100 (1P)	-	
NS250N	160-200-250	50 (1P)	50 (1P)	50 (1P) 50 (1P)	-	
NS250H	160-200-250	85 (1P)	85 (1P)	85 (1P) 85 (1P)	_	
NS250L	160-200-250	100 (1P)	100 (1P)	100 (1P) 100 (1P)	_	
NS400H	MP1/MP2	85 (1P)	85 (1P)	85 (1P) 85 (1P)	Thermal Special	
NS630H	MP1/MP2/MP3	85 (1P)	85 (1P)	85 (1P) 85 (1P)	inoperative, MP1/MP2/MP	
C1251N-DC	P21/P41-1250	50 (1P)	50 (1P)	50 (1P) 50 (1P) 25 (3P)	provide an P21/P41	
					external relay DC current (2) (if necessary) trip units	
Masterp	act					
M10-DC	1000	100 (3P)	100 (3P)	100 (3P) 100 (3P) 100 (3P) 100 (3P) Dina ⁽³⁾ 1.5-50k	
M20-DC	2000	100 (3P)	100 (3P)	100 (3P) 100 (3P) 100 (3P) 100 (3P) Dina ⁽³⁾ 1.5-50k	
M40-DC	4000	100 (3P)	100 (3P)	100 (3P) 100 (3P) 100 (3P) 100 (3P) Dina ⁽³⁾ 1.5-50k	
M60-DC	6000	100 (4P)	100 (4P)	100 (4P)	Dina ⁽³⁾ 9-40kA	
M80-DC	8000	100 (4P)	100 (4P)	100 (4P)	Dina ⁽³⁾ 9-40kA	

⁽¹⁾ The C32H-DC special DC circuit-breaker is equipped with a permanent magnet, which requires strict respect of polarities

⁽²⁾ For memory:
MP1 Im adjustable from 800 to 1600 A
MP2 Im adjustable from 1200 to 2500 A
MP3 Im adjustable from 2000 to 4000 A

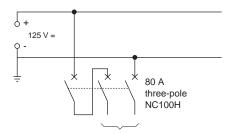
P21-1250 Im adjustable from 1600 to 3200 A

P41-1250 Im adjustable from 3200 to 6400 A
(3) There are 7 versions of the dina 1500/3000 A trip units - 3/6 kA - 6/12 kA - 12/20 kA - 9/18 kA - 12/24 k A - 20/40 kA. Note: the masterpact switches, HI type in the three-pole version with a rating from M08 to M63, can be used in DC up to 125 V DC (one pole on the positive polarity, one pole on the negative polarity and one pole not used).

Circuits supplied with DC current Choosing a circuit breaker

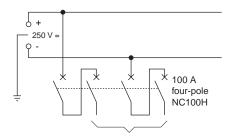
Examples

How to provide protection of a 80 A outgoer on a 125 V DC network whose negative polarity is earthed: lsc = 15 kA?



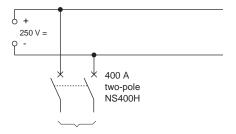
The chart opposite informs us that a NC100H (30 kA, 2P, 125 V) circuit-breaker must be used. The chart on the previous page informs us that both poles must be placed on the positive polarity. An additional pole can be placed on the negative polarity to guarantee isolation.

How to provide protection of a 100 A outgoer on a 250 V DC network whose mid-point is earthed: $lsc = 15 \, kA$?



Each pole will be subjected to a maximum of U/2 = 125 V. The chart opposite informs us that a NC100H (30 kA, 2P, 125 V) or NS100N (50 kA, 1P, 125 V) or NS160N (50 kA, 1P, 125 V) circuitbreaker must be used. The chart on page 9/11 informs us that both poles must contribute to breaking at the voltage 125 V.

How to provide protection of a 400 A outgoer on a 250 V DC unearthed network: Isc = 35 kA?

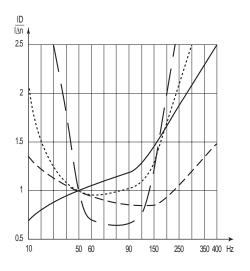


The chart opposite informs us that a NS400H (85 kA, 1P, 250 V) circuit breaker must be used. At least 2 poles must contribute to breaking The chart page 9/11 informs us that the number of poles required for breaking must be distributed over each polarity.

9

Miniature circuit breakers

Use in 400Hz Multi 9





The greater part of Multi 9 circuit breakers are used on 400 Hz networks. Short-circuit currents at 400 Hz generator terminals do not, in general, exceed the nominal current by more than 4 times. Therefore, breaking capacity problems are very rare.

Multi 9 circuit breakers

- The C120 and NG125 circuit breakers cannot be used on 400 Hz network. For the others :
- No thermal derating
- Increase of magnetic thresholds:
- ☐ Coefficient 1.5 for DPN, DPN N and DPNa
- □ Coefficient 1.48 for C60
- □ Coefficient 1.40 for NC100
- Residual current circuit breakers from the Multi 9 range can be used on 400 Hz networks. It should be noted that the mA threshold varies depending on the network's frequency (see curves below).

Note:

In 400 Hz, the test circuit for residual current devices may present the risk of not functioning when actioning the test button because of threshold variation. According to international studies (IEC 60479-2), the human body is less sensitive to a 400 Hz current that passes through the body; so well that, even though the residual current device has had its frequency desensitised, these devices still ensure the protection of persons. The method for choosing residual current devices in 400 Hz is thus the same as that for 50 Hz.

RCCB

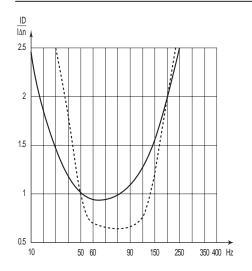
Operating residual current variation curves

Туре	Rating (A)	Curve n°				
		Sensitivity	(mA)			
		10	30	100	300	500
AC						
	25	2	1	-	1	1
	25-40	-	1	1	1	1
	63-80-100	-	2	1	1	1
Α						
	16-25-40-63	-	3	-	2	2
A si, SiE						
		-	4	-	4	-
Selective [S (AC, A)					
		-	-	-	2	2

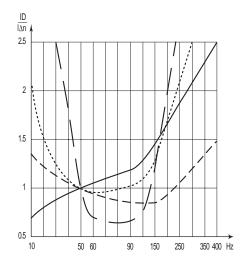
9

Miniature circuit breakers

Use in 400Hz Multi 9









DPN Vigi, DPN N Vigi

Operating residual current variation curves

Туре	Rating (A)	Curve number Sensitivity (mA)		
		10	30	300
AC				
	25	8	8	8
A si				
		-	4	4

Vigi C60 module

Operating residual current variation curves

Vigi C60 module 130/230 V - 50 Hz

Туре	Rating (A)	Curve number Sensitivity (mA)				Sensitivity (A)
		10	30	100	300	1
AC						
	25	2	1	1	-	-
	63	-	2	1	-	-

Vigi C60 module 230/400 V - 50 Hz

AC						
	25	2	1	1	-	-
	40-63	-	2	1	-	-
Α						
	25-63	3	3	2	2	-

All types

Sélectif s						
	-	4	2	2	2	

Vigi C60 module

A si						
	_	4	_	4	4	

For use in conjunction with motor starters and transformers

Motor starters

In general miniature circuit breakers can give only short circuit protection to motor loads due to the high starting currents which may be encountered; typically 3 - 12 times full load current (FLC).

Assumptions

The tables give recommended MCB ratings for motors up to 37kW based on the following assumptions:

■ Direct-on-line starting

- ☐ Starting current = 7 x FLC
- ☐ Run up time = 6seconds, motors <3kW
- \square 10 seconds, motors < 22kW
- ☐ Running currents = average values only (individual manufacturer's figures will vary). four pole motors, i.e. speed approx. 1500rpm

For higher inertia loads, i.e. hoists or fans, run up times may be considerably longer than those assumed above. The rating of the MCB must take account of the greater run up time and starting current. The required MCB rating can be determined by reference to time/current curves (consult us).

■ Star/delta starting

Since, during the changeover from star to delta, a high current surge in the order of DOL values may be met, the MCB rating selected should be the same as that recommended for DOL starting.

Tabl	e 1 - 3	phase 41	5Vac D.O.	L. starting	
			Recommer	ided MCB	
kW	hHp	Running I	C60HB	C60HC	C60HD
0.12	0.166	0.65	2	2	1
0.18	0.25	0.7	2	2	1
0.25	0.33	0.87	4	2	1
0.37	0.5	1.35	4	4	2
0.55	0.75	1.55	4	4	2
0.75	1.0	1.93	6	4	4
1.1	1.5	2.5	6	6	4
1.5	2	3.5	10	10	6
2.2	3	4.8	16	10	10
3.75	4	6.4	20	20	10
3.75	5	7.8	25	25	16
4	5.5	8.1	25	25	16
5.5	7.5	11	32	32	16
7.5	10	14.4	50	50	20
9.33	12.5	17.3	63	50	20
11	15	21	63	63	25
13	17.5	25	-	-	32
15	20	28	-	-	40
18.5	25	35	-	_	50
22	30	40	-	-	50
30	40	54	-	-	63
37	50	65.5	_	_	_

		Pilace E-i	UVAC D.U.L	starting	
kW	Нр	Running I	C60HB	C60HC	C60HD
0.12	0.166	0.95	4	2	1
0.18	0.25	1.5	4	4	2
0.25	0.33	1.7	6	4	2
0.37	0.5	3	10	6	4
0.55	0.75	4.5	16	10	6
0.75	1	5.5	16	16	10
1.1	1.5	8.5	25	25	16
1.5	2	10.5	32	32	20
	3	15.5	40	40	25
	4	20	63	63	32
3.75	5	24	-	63	40
5.5	7.5	34	-	-	50
6.3	8.5	36.5	-	-	63
7.5	10	45	-	-	63
11	15	66.5	-	-	-

For use in conjunction with motor starters and transformers

Transformers

High inrush currents are also produced when transformers are switched on, typically 10 - 15 times full load current.

Assumptions

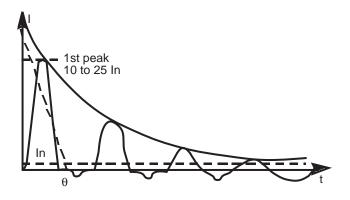
The tables give recommended MCB ratings for single phase transformers up to 12500VA and three phase transformers up to 30000VA based on the following formula.

Table	Table 3 - 3 phase transformers 415Vac supply							
VA	Primary In (A)	С60НВ	C60HC	C60HD				
500	0.7	4	2	1				
750	1.04	6	4	2				
1000	1.39	10	6	4				
2000	2.78	16	10	6				
5000	6.95	40	25	16				
10000	13.89	-	50	25				
15000	20.84	-	63	32				
20000	27.78	-	-	50				
25000	34.73	-	-	63				
30000	41.67	-	-	63				

Table	Table 4 - 1 phase transformers 240Vac supply						
VA	Primary In (A)	С60НВ	C60HC	C60HD			
50	0.21	2	-	-			
100	0.42	4	2	1			
250	1.04	6	4	2			
500	2.08	16	10	4			
1000	4.17	25	16	10			
2500	10.42	63	32	16			
5000	20.84	-	63	32			
10000	41.66	-	-	63			
12500	52.08	-	-	-			

Inrush currents

When LV/LV transformers are switched on, very high inrush currents are produced which must be taken into account when choosing overcurrent protection devices. The peak value of the first current wave often reaches 10 - 15 times the rated rms current of the transformer and may reach values of 20 - 25 times the rated current even for transformers rated less than 50kVA. This transient inrush current decays very quickly (in a few milliseconds).



Motor protection

P25M circuit breakers

Choice of motor supply cable size

When selecting the cable size the starting current of the motor and the permissible voltage drop must be taken into account. The cable must be capable of carrying a permanent service current at least equal to the sum of In + Is/3 where:

In = rated current

Is = starting current (4 - 8 In) depending on the motor.

Voltage drop

The permissible voltage drop from the start of the installation to the motor in question is 6% for public distribution systems. If the torque of the machine to be driven is low during starting it is only necessary to check the voltage drop for the rated current of the motor. If the starting torque is high (grinding mills, goods lifts, etc.) the voltage drop should be checked for the starting current.

P25M motor circuit breaker

This protects motors against overloads and short circuits. P25M type circuit breaker has on each pole a thermal release for protection against overloads and a magnetic release for protection against short circuits. For high short circuit currents use the limiter block, Ref. 21115. For ratings from 0.16A - 10A. 415V or from 0.16 - 18A, 240V; in this case the breaking capacity of the P25M circuit breaker is unlimited.

Applications

The P25M circuit breaker is particularly suitable for protecting **small machine tools** and similar machines, with **local control**.

Thermal release settings

The thermal releases are supplied set to the bottom value of the setting range. Simultaneous setting of the thermal releases can be carried out by opening the cover and adjusting the dial on the front face of the P25M. It is recommended that the thermal releases be set to the current that the motor absorbs in normal service and not to its rated current so as to provide effective close protection.

Ambient temperature compensation

Close protection against thermal overload is enhanced by thermal releases which are ambient temperature compensated over the range - 20° C - $+60^{\circ}$ C. During overload conditions, tripping is delayed at lower ambient temperatures, from - 20° C - $+20^{\circ}$ C, and is accelerated at higher ambient temperatures, from 20° C - $+60^{\circ}$ C.

Protection of the line supplying the motor

Every circuit and every motor must be protected against overloads and short circuits.

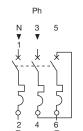
Phase failure protection

The P25M protects each phase separately and interrupts all three phases in the event of a loss of phase. Single phasing sensitivity is achieved by means of a differential trip which accelerates tripping should phase failure occur.

Auxiliaries:

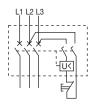
- Alarm switch.
- ON/OFF switch.
- Shunt trip release or undervoltage release (emergency stop).

Single phase connection



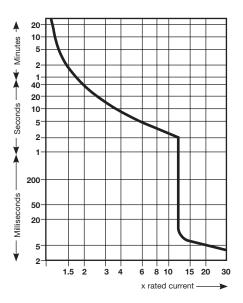
Two poles of the apparatus must be connected in series for the single phase supply

Emergency switch wiring

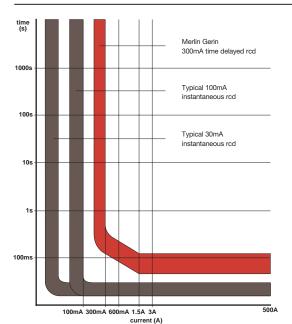


The early closing of the auxiliary contact is necessary to enable the closing of the circuit breaker equipped with an undervoltage release

Time/current characteristics



Rating In (A)	Settings	Part number	Standard power ratings kW: of 3-phase motors 50 - 60Hz AC-3 category					
			230	400	415	440	500	690
0.16	0.1 - 0.16	21100	-	-	-	-	-	-
0.25	0.16 - 0.25	21101	-	-	-	-	-	-
0.40	0.25 - 0.40	21102	-	-	-	-	-	-
0.63	0.40 - 0.63	21103	-	-	-	-	-	0.37
1.0	0.63 - 1	21104	-	-	-	0.37	0.37	0.55
1.6	1 - 1.6	21105	-	0.37	-	0.55	0.75	1.1
2.5	1.6 - 2.5	21106	0.37	0.75	1.1	1.1	1.1	1.5
4.0	2.5 - 4	21107	0.75	1.5	1.5	1.5	2.2	3
6.3	4 - 6.3	21108	1.1	2.2	2.2	3	3.7	4
10	6 - 10	21109	2.2	4	4	4	5.5	7.5
14	9 - 14	21110	3	5.5	5.5	7.5	9	11
18	13 - 18	21111	4	7.5	9	9	10	15
23	17 - 23	21112	5.5	9	11	11	11	18.5
25	20 - 25	21113	5.5	11	11	11	15	22



Types of RCD

Two families of RCD are offered in this catalogue

Those without overcurrent protection (RCDs) e.g. RMGs

Those with overcurrent protection (RCBOs) e.g. C60H rcbo's and DPN Miniature circuit breakers combined with a residual current device, this RCD/ MCB combination can be realised in the form of the C60H RCBO combined RCD/ MCB or by combining a vigi module with an MCB. All of these units can be used to protect individual circuits or as devices mounted within individual enclosures. Individual out going circuits within type A or type B MCB distribution boards can be protected by installing RCD/MCB combinations on that particular outgoing way. Groups of circuits can be protected within distribution boards by selection of either split load or dual incomer units with selected circuits protected by RCD incoming devices. Complete distribution systems can be given RCD protection by installing an RMG RCD in a separate enclosure ahead of the distribution board or by using a distribution board having an incoming RCD.

Unwanted tripping

The principal reasons for unwanted tripping of RCDs are lack of discrimination between RCD's (see following paragraph) and transient earth leakage currents, which have various causes such as lightning strikes, switching surges (caused by switching inductive loads) or switching capacitive loads (RF filter networks, mineral insulated cables etc) All Merlin Gerin RCDs and RCD/MCBs incorporate a filtering device which minimises their response to transients, virtually eliminating unwanted tripping.

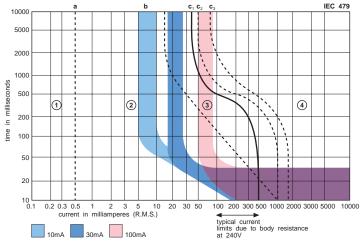
Discrimination of RCDs

Figure 3: characteristic of 231 16, 300mA time delayed RCD with 10, 30 and 100mA instantaneous devices superimposed to show discrimination. Wherever two or more RCDs are installed in series with one another, measures must be taken to ensure that they discriminate properly - in the event of an earth fault, only the device next upstream should operate. RCDs do not discriminate on rated residual operating current sensitivity alone. In other words, a 100mA device upstream of a 30mA device will not offer inherent discrimination. To provide the necessary discrimination, RCDs can be provided with an inbuilt time delay mechanism, usually 50ms. This inbuilt time delay is sufficient to allow the downstream device to open the circuit before the upstream device starts to operate. Such an RCD must be used as the incomer to a split load board incorporating two RCDs.

(fig. 3)

IEC publication 479 "effects of currents passing through the human body"

TIME/CURRENT ZONES OF EFFECTS OF A.C. CURRENT (15 - 100HZ) ON PERSONS WITH STANDARD RCD CHARACTERISTICS SUPERIMPOSED

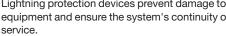


Zone Physiological Effects

- 1 Usually no reaction effects
- 2 Usually no harmful physiological effects
- 3 Usually no organic damage to be expected. Likelihood of muscular contraction and difficulty of breathing reversible disturbances of formation and conduction of impulses in the heart and transient cardiac arrest without ventricular fibrillation increases with current magnitude and time
- In addition to the effects of zone 3 probability of ventricular fibrillation increased up to 5% (Curve C2) up to 50% (Curve C3) and above 50% beyond Curve C3 Increasing with magnitude and time. pathyphysiological effects such as cardiac arrest, breathing arrest and heavy burns may occur.

How to implement a surge arrester system?

Lightning protection devices prevent damage to equipment and ensure the system's continuity of





PRF1 Master



Quick PRD



Withdrawable cartridge



Indicator lamp



Remote indication



Quick PRD withdrawable cartridge

Selecting a surge arrester

Surge arrester selection is performed in three stages:

- Estimate the value of the equipment to be protected
- Determine the type of building
- Assess the risk of lightning impact according to the site

Choice of technology

To maintain the system's continuity of service, a surge arrester must be installed downstream of a disconnection device.

A circuit breaker, thoroughly appropriate for this type of function, well coordinated with the surge arrester, is the ideal solution.

There are two technologies to provide this coordination:

- Surge arresters with integral disconnector (ready to wire) which incorporate their own disconnection circuit breaker: Combi PRF1, Quick PF, Quick PRD
- Modular surge arresters: the disconnector to be added on has been coordinated with the surge arrester to ensure complete safety in the surge arrester's end-of-life stage: PRF1, PF, PRD

The choice of ease of installation

The solution of a surge arrester and disconnector combined in a single product (Combi PRF1, Quick PF, Quick PRD) ensures optimum performance. In this case the regulatory constraints and obligations for installation between disconnector and surge arrester are allowed for in the product. Only the power supply and earth connections have to be performed.

Simplified maintenance

To facilitate maintenance:

- Rapid pinpointing of the operation to be performed: through indication of its state by indicator lamp
- Remote indication of surge arrester state by choosing a surge arrester provided with "remote reporting"
- A range of surge arresters with withdrawable cartridges to simplify maintenance

How to implement a surge arrester system

1

Estimate the value of the equipment to be protected

To estimate its value, consider:

- The cost of the equipment in financial terms
- The economic impact if the equipment goes down



- Domestic equipment:
- □ Audio-video, computers
- □ Household appliances
- □ Burglar alarm



- Sensitive equipment:
- □ Burglar alarm
- □ Fire alarm
- □ Access control
- □ Video surveillance



- Building equipment:
- ☐ Automated heating or air-conditioning
- □ Lift



- Professional equipment:
- □ Programmable machine
- □ Computer server
- □ Sound or light control system



- Heavy equipment:
- □ Medical infrastructure
- □ Production infrastructure
- ☐ Heavy computer processing

2

Determine the electrical architecture of buildings

Lightning protection can be calculated for an entire building or for part of a building that is electrically independent

Depending on the size of the building and the extent of its electrical system, one or more surge arresters must be used in the various switchboards in the installation.

- Detached house
- Apartment, small semi-detached house
- Communal part of a building
- Professional premises
- Tertiary and industrial buildings:
- ☐ Single switchboard, main switchboard
- □ Distribution board
- ☐ Sensitive equipment more than 30 m from the switchboard

9

3

Understand the risk of the impact of lightning on the site

Lightning is attracted by high points that conduct electricity. They can be:

- Natural: tall trees, mountain crest, wet areas, ferrous soil
- Artificial: chimney, aerial, pylon, lightning conductor

Indirect effects can be incurred within a fifty metre radius around the point of impact.

Location of the building



In an urban, peri-urban, grouped housing area





 In an area where there is a particular hazard (pylon, tree, mountainous region, mountain crest, wet area or pond)





■ In flat open country



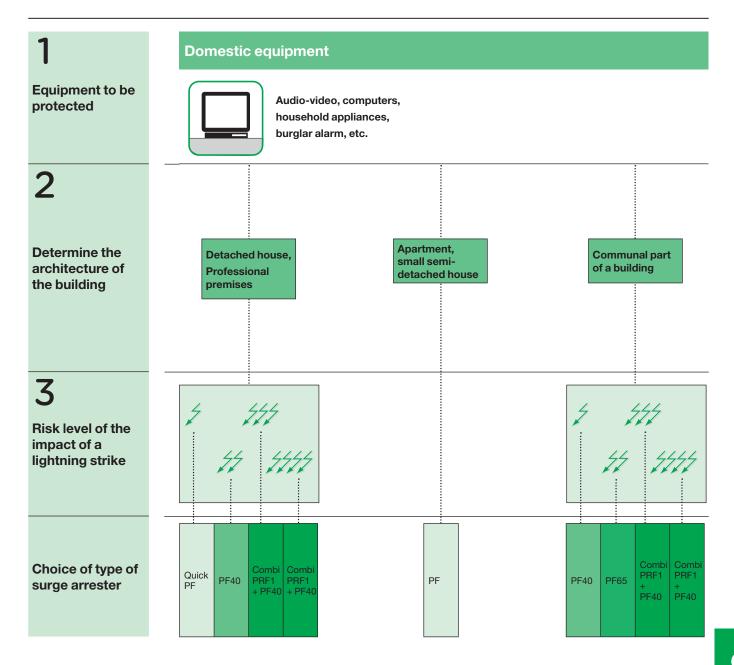


 In an exceptionally exposed area (lightning conductor on a building less than 50 metres away)



Dimensions Section 10

Selection guide Domestic equipment

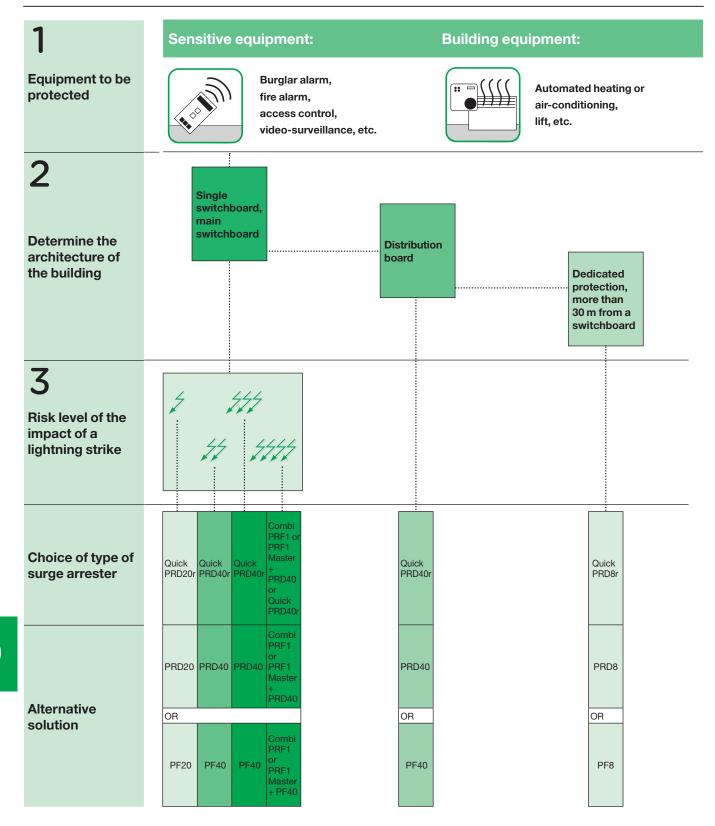


Lightning also propagates through telecommunications networks.

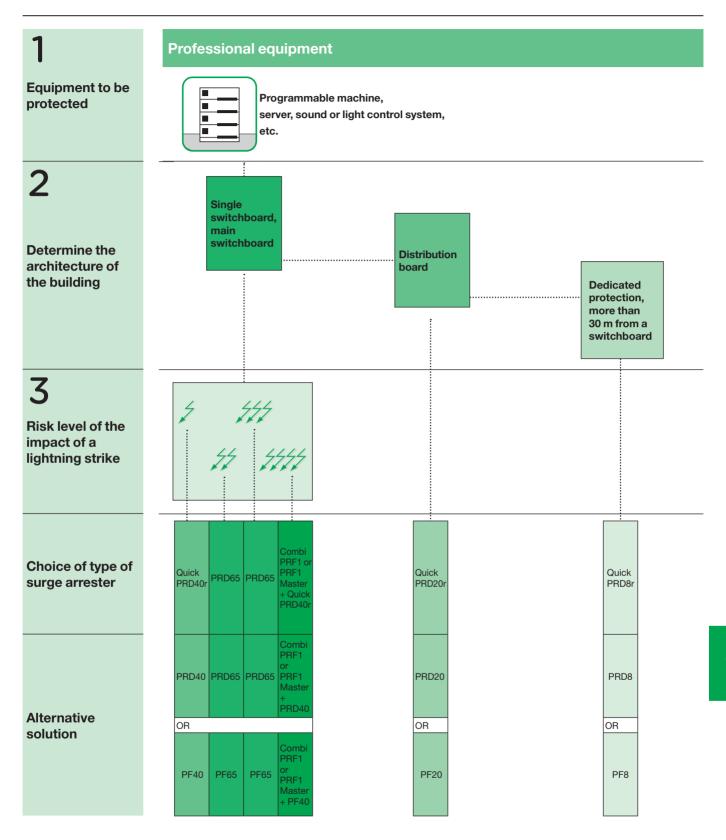
It can damage all the equipment connected to these networks.

Protection of telecommunication	s equipment
Choice of surge arresters	PRC
Analogue telephone networks < 200 V	

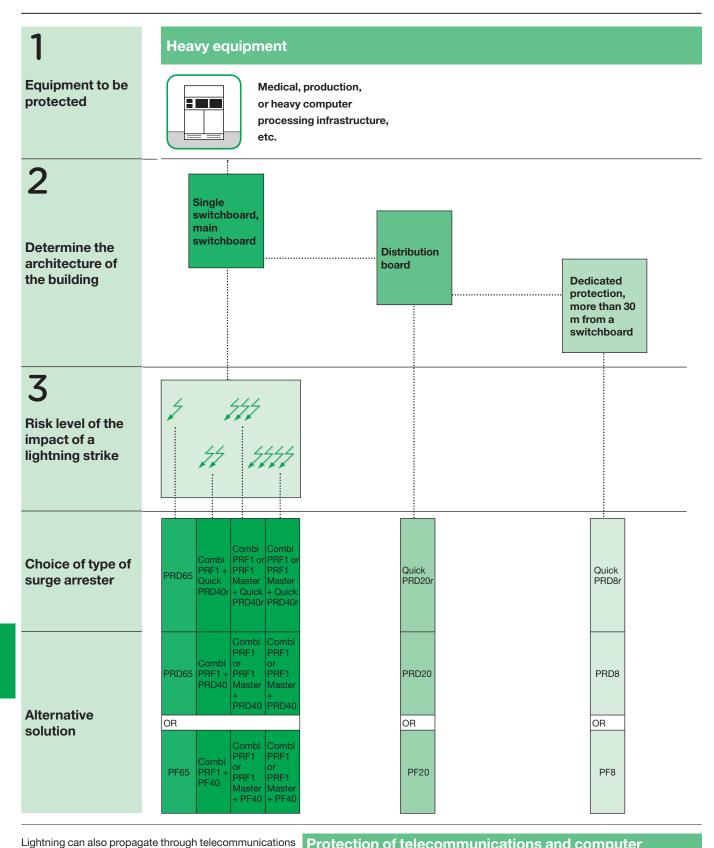
Selection guide Sensitive equipment Building equipment



Selection guide Professional equipment



Selection guide Heavy equipment



Lightning can also propagate through telecommunication and computer networks.

It can damage all the equipment connected to these networks: telephones, modems, computers, servers, etc.

equipment	iputer	
Choice of surge arresters	PRC	PRI
Analogue telephone networks < 200 V		
Digital networks, analogue lines < 48 V		

Digital networks, analogue lines < 6 V VLV load supply < 48 V

Dimensions Section 10

9

Lightning protection

Choice of disconnector

Choice of disconnector

The disconnector is necessary to ensure the safety of the installation

■ One of the surge arrester parameters is the maximum current (Imax 8/20 µs wave) that it can withstand without degradation. If this current is exceeded, the surge arrester will be destroyed; it will be permanently short circuited and it is essential to replace it.

The fault current must therefore be eliminated by an external disconnector installed upstream.

The disconnector provides the complete protection required by a surge arrester installation, i.e.:

- ☐ It must be able to withstand standard test waves:
- It must not trip at 20 impulses at In
- It can trip at Imax without being destroyed
- ☐ The surge arrester disconnects if it short-circuits.
- The ready-to-cable surge arresters with an integrated disconnection circuit breaker are:
- □ Combi PRF1
- □ Quick PF
- □ Quick PRD.

Types	Isc	/ disconnection circ Surge arresters	6 kA	10 kA	15 kA	25 kA	36 kA	50 kA	70 kA
турсз	35 kA (1)	PRF1 Master	NH 160 A g		IORA	20 KA	OO KA	JO KA	70 KA
Type 1			NS160N 160 A					NS160H 160 A	
	25 kA (1)	PRF1	D125	NH 125 A	gL/gG fuse				
	65 kA (2)	PF65, PRD65	C60N 50 A Curve C		C60H 50 A Curve C	Contact us			
	40 kA (2)	PF40, PRD40	C60N 40 A Curve C		C60H 40 A Curve C	Contact us			
Type 2	20 kA (2)	PF20, PRD20	C60N 25 A Curve C		C60H 25 A Curve C	Contact us			
	8 kA (2)		C60N 20 A Curve C		C60H 20 A Curve C				

Isc: prospective short-circuit current at the point of installation.

(2) Imax.

⁽¹⁾ limp.

End-of-life indication of the surge arrester

Various indication devices are provided to warn the user that the loads are no longer protected against atmospheric overvoltages.

Type 1 surge arresters (with gas filled spark gap)

PRF1 1P 260 V, Combi 1P+N and 3P+N and PRF1 Master

These surge arresters have a light indicating that the module is in good working order. This indicator light requires a minimum operating voltage of 120 V AC.

- The light does not come on:
- ☐ if the operating voltage is ≤ 120 V AC
- ☐ if there is no network voltage
- $\hfill\Box$ if the spark-over electronics are defective

Type 2 surge arresters (varistor, varistor + gas filled spark gap)

PF. PRD

At end of life, the surge arrester or the cartridge are destroyed.

- This can occur in two ways:
- ☐ Internal end-of-life disconnection: the accumulated electric shocks cause the varistors to age, resulting in an increase in leakage current

Above 1 mA, a thermal runaway occurs and the surge arrester disconnects.

□ External end-of-life disconnection: this occurs in the event of an excessive overvoltage (direct lightning strike on the line); above the discharge capacity of the surge arrester, the varistor(s) are dead short-circuited to earth (or possibly between phase and neutral). This short-circuit is eliminated when the mandatory associated disconnection circuit breaker opens

Quick PRD and Quick PF

Whatever the hazards of the power supply network, Quick PRD and Quick PF incorporate a perfectly coordinated disconnector.

- In the event of lightning strikes < Imax: like all surge arresters, they have internal anti-ageing protection
- In the event of a lightning strike > Imax: Quick PRD and Quick PF are selfprotected by their integrated disconnector
- In the event of neutral disconnection or phase-neutral reversal occurring on the power supply:

Quick PRD and Quick PF are self-protected by their integrated disconnector. To simplify maintenance work, Quick PRD is fitted with local indicators and draw-out cartridges that are mechanically combined with the disconnector.

Quick PRD has indicator lights on the cartridges and on the integrated disconnector, so that the work to be carried out can quickly be located. For safety reasons, the disconnector opens automatically when a cartridge is removed. It cannot be set until the cartridge is plugged in.

When changing the cartridge, a phase/neutral failsafe system ensures that it can be plugged in safely.

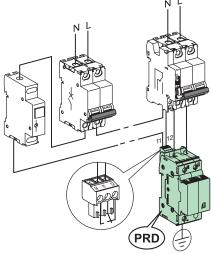
Operating state continuous display

Quick PRD has an integrated reporting contact to send information about the operating state of the surge arrester from a remote location.

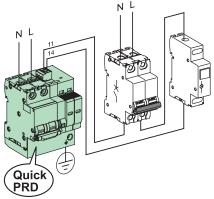
Monitoring the surge arresters installed throughout the installation makes it possible to be continuously aware of their operating state and to ensure that the protection devices are always in good working order.

- A reporting contact gives the alert:
- □ At end of life of a cartridge
- ☐ If a cartridge is missing, as soon as it has been removed
- If a fault occurs on the line (short-circuit, neutral disconnection, phase-neutral reversal)
- □ In the event of local manual operation (handle down)

Quick PF has an optional indication reporting auxiliary (SR) that sends information about the operating state of the surge arrester from a remote location.



Example of indication for PRD.



Example of indication for Quick PRD.

Installing surge arresters in a box or cabinet

Connections

These must be as short as possible. In fact, one of the essential characteristics for equipment protection is the maximum level of voltage that the equipment can withstand at its terminals. A surge arrester with a protection level suitable for the equipment to be protected should be chosen (fig. 35). The total length of the connections is L = L1 + L2 + L3. It represents an impedance of roughly 1 μ H/m for high frequency currents.

Application of the rule $\Delta U = L$ $\frac{di}{dt}$

with an $8/20~\mu s$ wave and a current of 8 kA leads to a voltage of 1,000 V peak per metre of cable.

$$\Delta U = 1.10^{\text{-}6} \, x \, \frac{8.10^3}{8.10^{\text{-}6}} = 1000 \, V$$

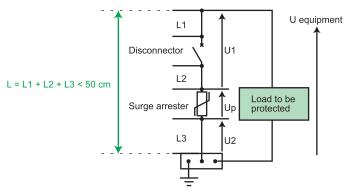


Fig. 35 - surge arrester connection: L < 50 cm

This gives U equipment = Up + U1 + U2.

If L1 + L2 + L3 = 50 cm, this will result in a voltage surge of 500 V for a current of 8 kA.

Wiring rules

Rule 1

The first rule to be respected is not to exceed a distance of 50 cm when connecting the surge arrester to its disconnection circuit-breaker. The surge arrester connections are shown in figure 36.

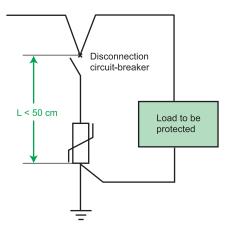


Fig. 36 - diagram of the connections

Installing surge arresters in a box or cabinet

Rule 2

The outgoing feeders of the protected conductors must be connected right at the terminals of the surge arrester and disconnection circuit-breaker (fig. 37).

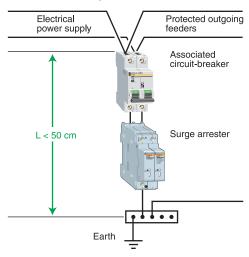


Fig. 37 - the connections are right at the surge arrester's terminals.

Rule 3

The phase, neutral and PE incoming wires must be tightly coupled to reduce the loop surfaces (fig. 38).

Rule 4

The surge arrester's incoming wires must be moved away from the outgoing wires to avoid mixing the polluted cables with the protected cables (fig. 38).

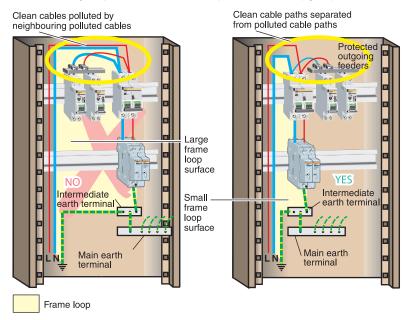


Fig. 38 - example of wiring precautions to be taken in a box (rules 2,3,4,5)

Rule 5

The cables must be flattened against the metallic frames of the box in order to minimise the frame loops and thus benefit from a disturbance screening effect. If the box is made of plastic and the loads particularly sensitive, it must be replaced by a metal box.

In all cases, you must check that the metallic frames of the boxes or cabinets are frame grounded by very short connections.

Finally, if screened cables are used, extra lengths which serve no purpose ("pigtails"), must be cut off as they reduce screening effectiveness.

Installing surge arresters in a box or cabinet

Layouts for installing surge arresters in a box

To respect the rule of the shortest possible wiring - L < 50 cm - the phases and neutral should be directly connected to the disconnection circuit-breaker and the earth link should be connected to the surge arrester's earth terminal (fig. 39).

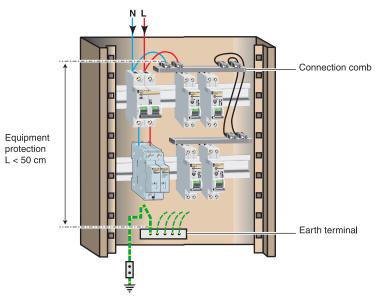


Fig. 39 - example of a surge arrester installation layout for household applications

It is advisable to use this type of wiring in small installations (e.g. domestic). Connection combs should be used as far as possible as they provide optimum wiring

The wiring layout shown in figure 40 is the most practical, especially for service sector and industrial applications which regularly require maintenance or wiring modifications.

For this purpose, the following is added:

- A phase/neutral wiring distribution terminal block as close as possible to the associated circuit breaker
- An intermediate earth terminal block as close as possible to the surge arrester The protection of sensitive equipment will be ensured from these terminal blocks. The length of the general supply cables and earth cable will therefore no longer make any difference.

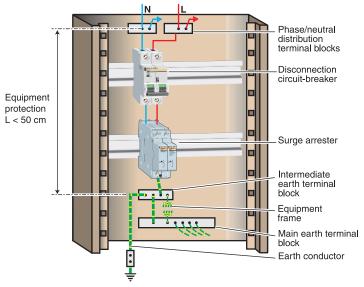


Fig. 40 - example of shortest wiring for the service sector and industry

Installing surge arresters in a box or cabinet

Power supply incoming feeder via the top

Example of layout for installing the surge arrester and its associated disconnector on different symmetrical rails (fig. 41)

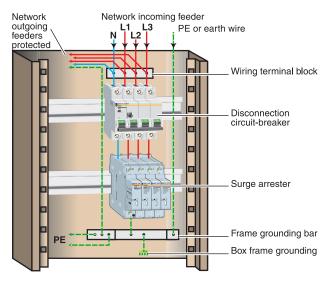


Fig. 41 - example of a surge arrester installation on different symmetrical rails.

Layout for installing the surge arrester and its asociated disconnector on the same symmetrical rail (figure 42).

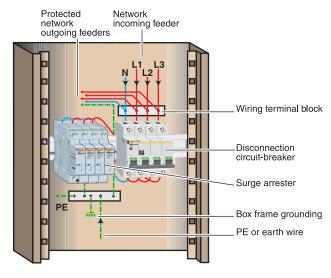


Fig. 42 - example of a surge arrester installation on the same symmetrical rail.

Installing surge arresters in a box or cabinet

Power supply incoming feeder via the bottom (fig. 43)

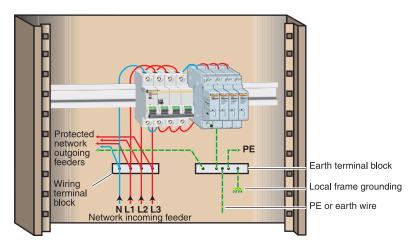


Fig. 43 - example of surge arrester installation with power supply incoming feeder via the bottom.

Cable sections

The standard requires a surge arrester connection cable section of 10 mm^2 when there is a lightning conductor and at least 4 mm^2 in other cases.

Use of multi 9 contactors from 16 to 100 A

For automation needs in the housing, tertiary and industrial sectors, the range of modular CT contactors is used for:

- Power control of final circuits for housing and the tertiary sector:
- ☐ Lighting (luminous signs, shop windows, safety lighting, etc.)
- ☐ Heating, heat pumps, ovens
- ☐ Hot water for domestic use
- ☐ Small utility motors (pumps, fans, barriers, garage doors, etc.)
- □ Emergency stops and safety systems
- □ Air conditioning
- Energy distribution control:
- □ Load shedding and restoration
- □ Source changeover, etc

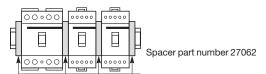
Characterisation on load types

Standard IEC 61095 applies to electromechanical contactors for domestic and similar purposes. It differs from standard IEC 60947.4 (designed for industrial applications) by specific requirements relating to safety of persons and equipment in premises and corridors accessible to the general public.

Applications	Industrial: IEC 60947.4	Domestic: IEC 61095		
Motor	AC3	AC7b		
Heating	AC1	AC7a		
Liahtina	AC5a and b	AC5a and b		

Use for temperatures between 50 and 60 °C

When contactors are mounted in enclosures with an internal temperature of between 50 and 60 °C, a spacer, catalogue number 27062, must be placed between each contactor.



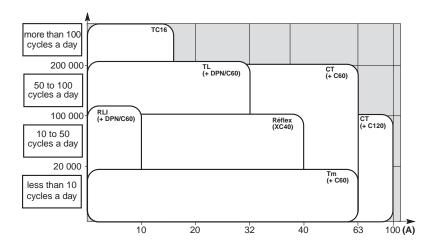
Positioning the remote control contactors

This table positions each device according to:

- The number of cycles (total or daily)
- The power to be controlled

It provides information on the protection circuit-breaker to be associated.

Life time (total number of cycles)



Lighting application

- The following tables concern all the contactors from the CT range, with or without manual control, for 230 V single-phase lighting circuits
- They indicate the contactor rating to be chosen according to the number and type of lamps to be controlled. As a guideline, maximum power is also given
- To obtain an equivalence on:
- □ Three-phase + neutral circuits: multiply the number of lamps and the power indicated in the table by 3
- □ Three-phase without neutral circuits: multiply the number of lamps and the power indicated in the table by 1.7

Incandescent lamp	with <u>or</u>	wit <u>hou</u>	ıt halog	en gas			
Type of lighting application				s for a give	en rating		
230 V single-phase circuit		tactors					
Power (W)	16 A	25 A	40 A	63 A	100 A		
40	38	57	115	172	250		
60	30	45	85	125	187		
75 100	25 19	38 28	70 50	100 73	150 110		
150	12	18	35	50	75		
200	10	14	26	37	55		
300	7	10	18	25	37		
500	4	6	10	15	22		
1000	2	3	6	8	12		
12 V halogen lamp (on ELV electromagnetic transformer)							
20	15	23	42	63	94		
50	10	15	27	42	63		
75	8	12	23	35	52		
100	6	9	18	27	40		
150	4	6	13	19	28		
26 mm 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 7	30 14	43 20	64 30		
115 140	5 5	7	14	20	30		
26 mm fluorescent t		-			00		
<u> 15 milli fluorescent t</u>	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		
26 mm fluorescent t							
2 x 18	30	46	80	123	180		
2 x 20	30	46	80	123	180		
2 x 36	17 17	25 25	43	67 67	100		
2 x 40 2 x 58	10	16	43 27	42	100 63		
2 x 65	10	16	27	42	63		
2 x 118	6	10	16	25	37		
2 x 140	6	10	16	25	37		
26 mm fluorescent t				orrectio			
4 x 18	15	23	46	69	100		
		m tube					
18	74	111	222	333	500		
36	38	58	117	176	260		
58	25	37	74	111	160		
Electronic ballast (2							
2 x 18	36	55	111	166	250		
2 x 36	20	30	60	90	135		
2 x 58	12	19	38	57	85		
i.							

Electronic compact Type of lighting application	<u> </u>				n rating		
230 V single-phase circuit	Maximum number of lamps for a given rating CT contactors						
Power (W)	16 A	25 A	40 A	63 A	100 A		
7	133	200	400	600	900		
11	80	120	240	360	540		
15	58	88	176	264	396		
20	44	66	132	200	300		
23	38	57	114	171	256		
Low pressure sodiur	n vapo	ur lam	p (witho	out corr	ection)		
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 sodiur	n vapo	ur lam	р				
(with parallel correct	tion)						
18	14	21	40	60			
35	3	5	10	15			
55	3	5	10	15			
90	2	4	8	11			
135	1	2	4	6			
180	1	2	5	7			
High pressure sodiu	m vapo	our lam	p (with	out cori	rection)		
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 sodiu	m vapo	our lam	р				
(with parallel correct	tion)						
70	6	9	18	25			
150	6	9	18	25			
250	2	3	6	9			
400	2	4	8	12			
1000	1	2	4	6			

Heating application

- The following table concerns all the contactors in the CT range, with or without manual control, for 230 V single-phase and 400 V three-phase heating circuits
- It indicates the contactor rating to be chosen according to the power to be controlled and the number of operations a day

230 V heating							
Type of heating application Number of		Maximum power (kW) for a given rating CT contactors					
	operations / day	25 A	40 A	63 A	100 A		
	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		
400 V hea	ting						
	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 CT range, with or without manual control, for 230 V single-phase and 400 V three-phase circuits
- It indicates the contactor rating to be chosen according to the power of the motor to be controlled

Asynchronous single phase motor with capacitor						
Small motor application type	Maximum for a give CT conta	/)				
Voltage	25 A	40 A	63 A			
230 V	1,4	2,5	4			
Asynchronous three phase motor						
400 V	4	7,5	15			
Universal motor						
230 V	0,9	1,4	2,2			

Remote control

TL impulse relays

Impulse relays are used to control circuits composed of resistive loads (incandescent lamps, low voltage halogen lamps, convectors) or inductive loads (fluorescent tubes, discharge lamps):

- The table opposite gives the power or maximum number of lamps which can be installed on a 230 V single-phase circuit
- For 230/400 V three-phase + neutral circuits, multiply these values by 3
- For 230 V three-phase circuits without neutral, multiply these values by 1.7

Lighting

Incandesc	ent la	mps					
Maximum num	nber of I	amps on	a 230 V			Max. po	wer
single-phase of	circuit					TL16A	TL32A
Tungsten fi lan	nents (2	30 V)					
Power	40W	60W	75W	100W	200W		
Maximum no.	40	25	22	16	8	1600W	
Maximum no.	95	43	34	26	13		2600W
Halogen lamps	s (230 V)					
Power		300W	500W	1000W	1500W		
Maximum no.		5	3	1	1	1500W	
Maximum no.		8	5	2	1		2200W
ELV halogen la	mps (12			•			
Power		20W	50W	75W	100W		
Maximum no.		70	28	19	14	1400W	
Maximum no.		110	44	29	22		2200W
Fluorescei	nt tub	es					
Single with sta	rter (no	t correct	ed) p.f. = 0),6			
Power			18W	36W	58W		
Maximum no.			70	35	21	1300W	
Maximum no.			186	93	55		3400W
Single with sta	rter (pa	rallel cor					
Power			18W	36W	58W		
Maximum no.			50	25	16	1100W	
Maximum no.			133	66	42		2400W
Double with st	arter (s	eries cor		-			
Power			2x18W	2x36W	2x58W		
Maximum no.			56	28		2000W	
Maximum no.			148	74	45		5300W
HF single tube	s and b	allast p.f.	•	00147	5014		
Power			18W	36W	58W	4000/4/	
Maximum no.	-	-	80	40	26	1300W	0.400\4/
Maximum no.		a alla at m	212	106	69		3400W
HF double tube	es and i	oanast p.	2x18W	2x36W	2x58W		
Maximum no.			40	2 x36w	13	1300W	
Maximum no.			106	53	34	130000	3400W
Compact with	alactro	nic hallac				ration)	340000
Power	electro	11W	15W	20W	23W	nauonj	
Maximum no.		50	45	35	30	800W	
Maximum no.		120	110	90	70	55011	1800W
Compact with	integra						100011
Power	og. a	11W	15W	20W	23W		
Maximum no.		80	60	50	45	1100W	
Maximum no.		180	150	120	100		2400W
Discharge	lamp						
Low pressure			of = 0.96				
Power	Souluili	55W	90W	135W	180W		
Maximum no.		24	15	10	7	1300W	
Maximum no.		63	40	26	18	100044	3400W
High pressure	sodium						C 10011
Power	Junuill	pour (250W	400W	1000W		
Maximum no.			5	3	1	1300W	
Maximum no.			13	8	3		3400W
Heating					-		- 10077
	230 V single-phase circuit						
• •	nase Cli	cuit				36001//	7200\\/
Heating (AC1)						3600W	7200W

Current transformers

CT current transformers

Choosing a current transformer

Choice of a CT depends on 2 criteria:

- The Ip/5 A ratio
- The installation type

The Ip/5 A ratio

We recommend that you choose the ratio immediately higher than the maximum measured current (In).

Example: In = 1103 A; ratio chosen = 1250/5.

For small ratings from 40/5 to 75/5 and for an application with digital devices, we recommend that you choose a higher rating, for example 100/5.

This is because small ratings are less accurate and the 40 A measurement, for example, will be more accurate with a 100/5 CT than with a 40/5 CT.

The installation type

Choice of a CT model depends on the installation type:

- Insulated cables
- Mounting on bars

Important precaution

Never open the secondary circuit of a current transformer when the primary circuit is energised.

Prior to working on the secondary circuit, the secondary terminals of the current transformer must be short-circuited.

Determining the accuracy class of a CT

The accuracy class depends on the apparent power (VA) of the transformer and on consumption of the complete measurement system.

The latter allows for consumption of all the devices and the connecting cables. For a given accuracy class, consumption of the measurement system must not exceed apparent power (VA) of the CT transformer.

Copper cable cross-section (mm²)	Power in VA per doubled meter at 20 °C
1	1
1.5	0.685
2.5	0.41
4	0.254
6	0.169
10	0.0975
16	0.062

For each temperature variation per 10 °C bracket, the power drawn up by the cables increases by 4 %.

Merlin Gerin device	Consumption of the current input in VA
Ammeter 72 x 72 / 96 x 96	1.1
Analog ammeter	1.1
Digital ammeter	0.3
PM700, PM800, CM3000, CM4000	0.15
ME4zrt	0.05
PM9	0.55

Example: consumption of a meas 20 °C	surement s	system at
PM9		0.55 VA
4 meters of 2.5mm ² doubled wires	+	16.4 VA
i.e. a measurement system consumption	=	2.19 VA

Based on the result, the CT accuracy class is determined (see previous page):

- Class 3 for a 75/5 ratio CT
- Class 1 for a 100/5 ratio CT
- Class 0.5 for a 125/5 ratio CT.

Current transformers

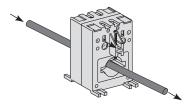
CT current transformers

Specific case of the motor starter

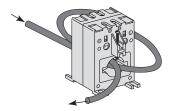
To measure motor starter current, you must choose a CT with primary current Ip = Id/2 (Id = motor starting current).

Practical advice

Use a current transformer to measure a nominal current of 50 A.



50/5 A CT: Imax = 50 A

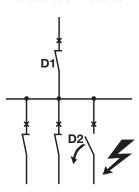


100/5 A CT, 2 cable openings: Imax = 50 A

To divide by 2 the nominal current of a transformer, you only need to pass the current to be measured twice through this transformer.

Discrimination

The table below indicates where total discrimination exists between devices.



Upstream	Compac	t	MGE1003X	MGE1253X	MGE1603X	MGE2003X	MGE2503X	MGE4003X	MGE6303X
Downstrea circuit brea		Rating (A)							
multi 9	C60H	10 - 16							
		20 - 25							
		32 - 40							
		50 - 63							

Note: For further information on this product range: consult us.

Guidance for motor loads

Specific "magnetic only" MCCBs are available for short circuit protection of motors. However, the standard MCCB may be used, as detailed below.

	Max motor size (kW)	Running current (A) @ 415V
16A	2.2	5.0
25A	3.7	7.5
40A	4	8.4
63A	9	17
80A	15	28
100A	22	40
125A	25	47
160A	33	60
200A	45	80
250A	69	128

Note:

- These tables offer guidance only, for DOL starting assuming:
- ☐ A starting current of 7 x FLC
- ☐ Run-up time =8 seconds for motors

< 3kW

10 seconds for motors

> 3kW

■ The running current is a typical value and may vary from manufacturer to manufacturer

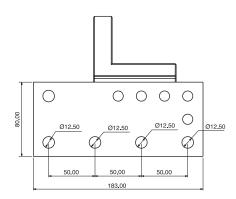
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	L →	capaci	ty for	Breaking capacity 415V
Device	ø→□	(mm) Ø	@ L	
MGP100	MCCB SP	6	25	25,000A @ 240V
MGP100X	MCCB TP	6	25	36,000A
MGP160X	MCCB TP	6	25	36,000A
MGP250X	MCCB	8	25	36,000A
MGP250NA	Switch disconnector	8	25	-
MGP400X	MCCB	10	32	50,000A
MGP400A	Switch disconnector	10	32	-
MGP630X	MCCB	10	32	50,000A
MGP630NA	Switch disconnector	10	32	-
NS800		12	44	50,000A
NS800NA	Switch disconnector	12	44	-
MGP INC	Direct connection	10	32	-
Outgoing	Earth connection	6	25mm tunnel	-
Outgoing	Neutral connection	6	25	-
Incoming	Earth connection	10	32	-
Incoming	Neutral connection	12	40	-
	MGP100 MGP100X MGP160X MGP250X MGP250NA MGP400X MGP400A MGP630X MGP630NA NS800 NS800NA MGP INC Outgoing Incoming	MGP100 MCCB SP MGP100X MCCB TP MGP160X MCCB TP MGP250X MCCB MGP250NA Switch disconnector MGP400X MCCB MGP400A Switch disconnector MGP630X MCCB MGP630NA Switch disconnector NS800 NS800NA Switch disconnector MGP INC Direct connection Outgoing Earth connection Incoming Earth connection	Device MGP100 MGP100X MGCB SP 6 MGP160X MCCB TP 6 MGP250X MCCB MGP250X MCCB MGP250NA MGCB MGP400X MCCB MGP400X MCCB MGP400X MCCB MGP400A MGP630X MCCB MGP630X MCCB MGP630NA MCCB MGP630NA MCCB MGP630NA MCCB MGP630NA MCCB MCCB MGP630NA MCCB MC	Device Ø L MGP100 MCCB SP 6 25 MGP100X MCCB TP 6 25 MGP160X MCCB TP 6 25 MGP250X MCCB 8 25 MGP250NA Switch disconnector 8 25 MGP400X MCCB 10 32 MGP400A Switch disconnector 10 32 MGP630X MCCB 10 32 MGP630NA Switch disconnector 10 32 NS800 12 44 NS800NA Switch disconnector 12 44 MGP INC Direct connection 10 32 Outgoing Earth connection 6 25mm tunnel Outgoing Rearth connection 6 25 Incoming Earth connection 10 32

Other connections available on request. If you require higher breaking capacity, consult us.

1600A Panelboard

Incoming connection details 4 - Ø12.5 holes on 50 mm pitch Pole pitch = 70mm Distance to gland plate = 708mm



Degrees of protection

Provided by enclosures

External influences

In many national and international standards, a large number of external influences to which an electrical installation can be subjected are indexed and coded: presence of water, presence of solid objects, risk of impact, vibrations, presence of corrosive substances, etc. These influences may be present with variable intensity depending on the conditions of installation: The presence of water may be in the form of a few drops or total immersion.

Protection index

European standard EN60529 gives a protection code (IP) which characterises the ability of equipment to withstand the following external influences:

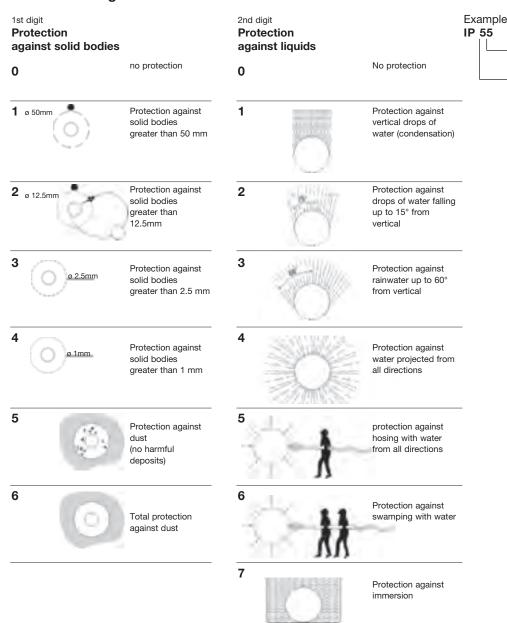
- Presence of solid bodies
- Presence of water

This code comprises two digits, depending on these external influences. The protection index is assigned to the equipment following a series of tests laid down in the respective standards.

Protection against dust (no harmful deposits)

Protection against hosing with water from all directions

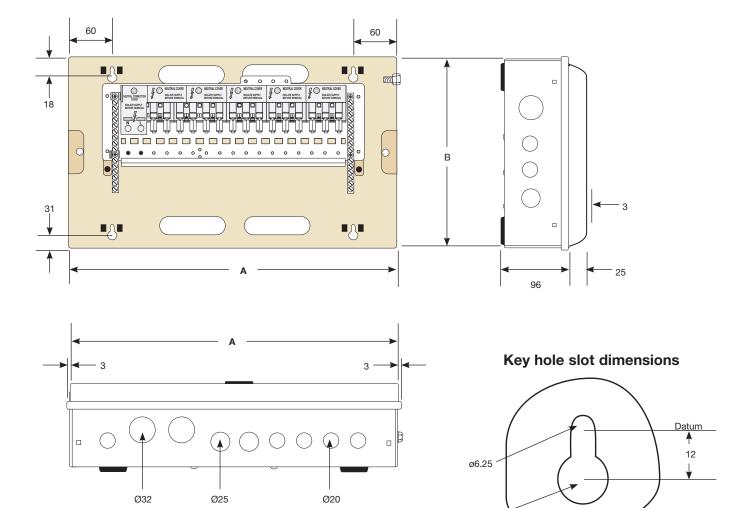
Test according to EN60529



Dimensions

Distribution boards A type

Part number	Α	В
MGAN6	260	264
MGAN9, MGAN42SL	315	264
MGAN12, MGAN46DS, MGAN416/96MS	370	264
MGAN15, MGAN66/76DS, MGAN48/66DS,		
MGAN520/716/912/1010/126MS,	450	264
MGAN23, MGAN1228MS (two row unit)	370	494



A series enclosure		
Part number	Α	В
MGAN16DE	260	264
MGAN22DE	315	264
MGAN28DE	370	264
MGAN34DE	450	264
MGAN56DE*	370	494

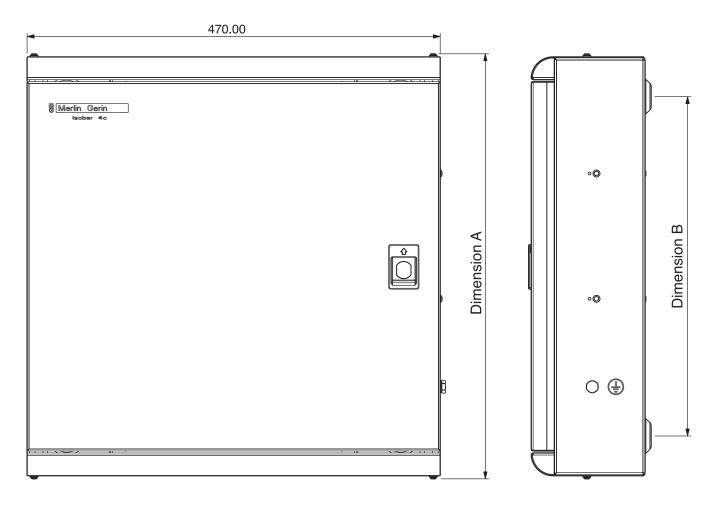
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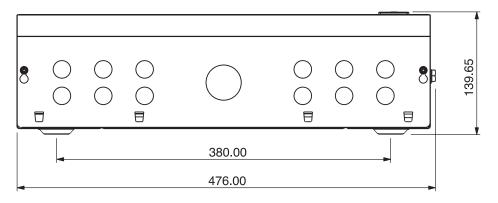
All other dimensions as A type distribution board

^{* 2} row enclosure

Distribution boards B type

Part number	Α	В
MGBN4,MGBN6	484	386
MGBN8	538	440
MGBN12	700	602
MGBN16, MGBN18	808	710
MGBN24	970	872
MGBN split metering	1290	1192

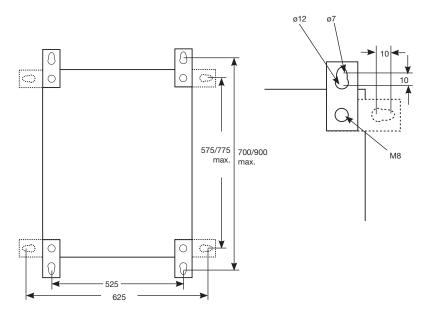




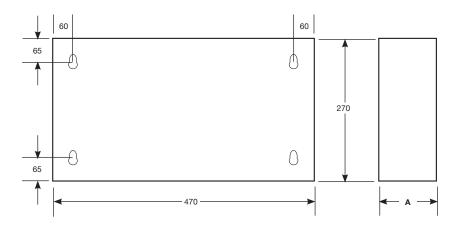
Heavy duty distribution board (100A) IP55 weatherproof

Part number	Number of	Dimensions (mm)				
		Height	Width	Depth		
MGBN6HDGK/G-R	6	650	600	290*		
MGBN8HDGK/G-R	8	650	600	290*		
MGBN12HDGK/G-R	12	850	600	290*		
MGBN16HDGK/G-R	16	850	600	290*		

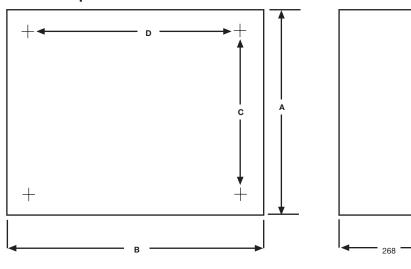
 $^{^{\}star}$ Denotes the maximum depth dimensions with key fitted.



B board extension box enclosures							
Part number	Α						
MGBNEXN	124						
MGBNEX034N	140						
MGBNKWH	124						
MGBNEXA15N	140						
MGBN100CCI	140						
MGBNDSI	124						



250A powerboard



Board ref.	Α	В	С	D
MG25C2 & MG25C2M	650	600	442	306
MG25C4 & MG25C4M	650	778	442	484
MG25EXC	650	600	442	306

C and D are the fixing dimensions about the centre line

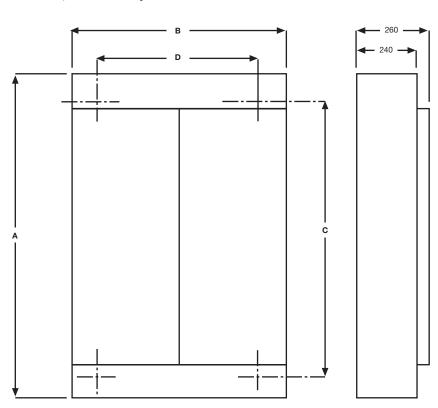
250, 400/630A panelboard

Board ref.	Α	В	С	D
MG2C5	679	850	541	670
MG2C7	784	850	646	670
MG2C9	889	850	751	670
MG2C13	1074	850	920	670
MG6C6	1178	850	1035	710
MG6C12	1493	850	1350	710
MG6C18	1808	850	1665	710

C and D are the fixing dimensions about the centre line

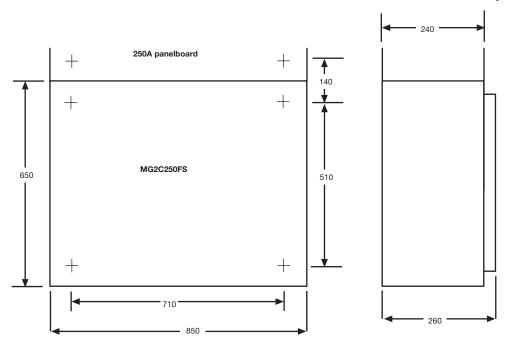
Material thickness

- 1.2mm cover
- 1.6mm enclosure

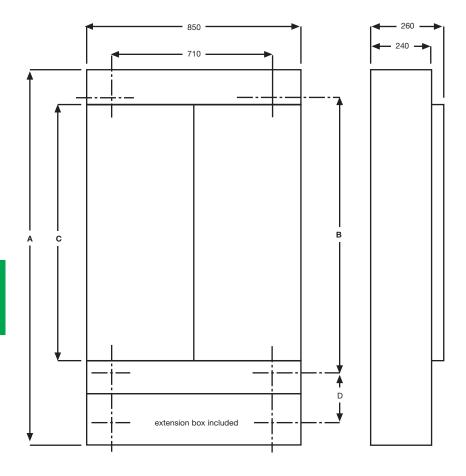


Powerpact 4 powerboards and panelboards 250A, 400/630A and 800A

Fuse switch incomer for 250A panelboard



800A panelboard

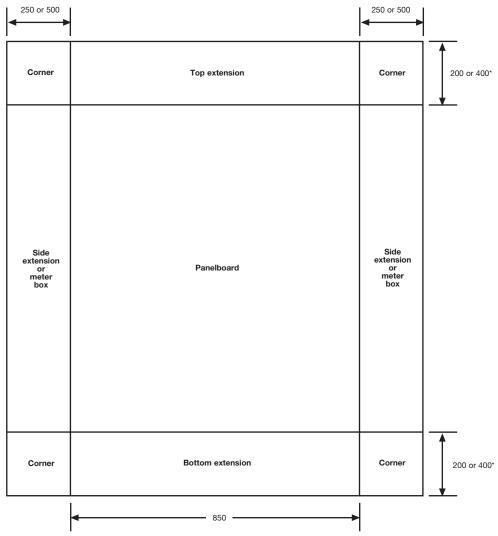


Board ref.	Α	В	С	D
MG8C6	1578	1035	991	172
MG8C12	1893	1350	1306	172
MG8C18	2208	1665	1621	172

Material thickness

- 1.2mm cover
- 1.6mm enclosure

10



Powerpact 4

Extension boxes

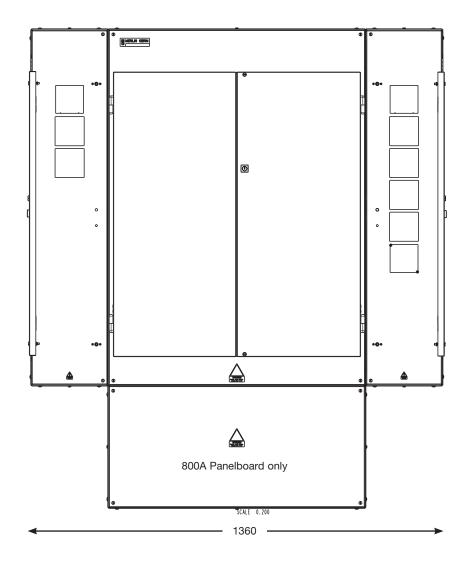
All extension boxes are the same depth as the main board - 240mm.

Corner units are available to suit all combinations of top/bottom and side extension boxes.

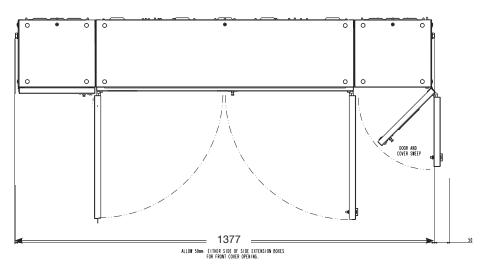
Ove	rall dimension t	able													
	oard Part number		MG25C2M	MG25C4	MG25C4M	MG2C5	MG2C7	MG2C9	MG2C13	MG6C6	MG6C12	MG6C18	MG8C6	MG8C12	MG8C18
Height	Standard	653	653	653	653	679	784	889	1074	1178	1493	1808	1583	1898	2213
	With 1 top or bottom ext box					883	988	1093	1278	1382	1697	2012	1787	2102	2417
	with top & bottom ext box					1087	1192	1297	1482	1586	1901	2216	1991	2306	2621
Width	Standard	600	600	778	778	850	850	850	850	850	850	850	850	850	850
	with 1-250mm side ext box									1105	1105	1105	1105	1105	1105
	with 1-500mm side ext box									1360	1360	1360	1360	1360	1360
	with 1-600mm side ext box	1200	1200	1378	1378										
	with 1-250 & 1-500mm side e	xt box							1615	1615	1615	1615	1615	1615	
	with 2-250mm side ext boxes									1360	1360	1360	1360	1360	1360
	with 2-500mm side ext boxes	:								1870	1870	1870	1870	1870	1870
Depth		263	263	263	263	263	263	263	263	263	263	263	263	263	263

^{* 400}mm extension box is fitted as standard at the incoming end of the 800A panelboard.

Powerpact 4 metering extensions 630, 800A panelboard with side extension metering boxes



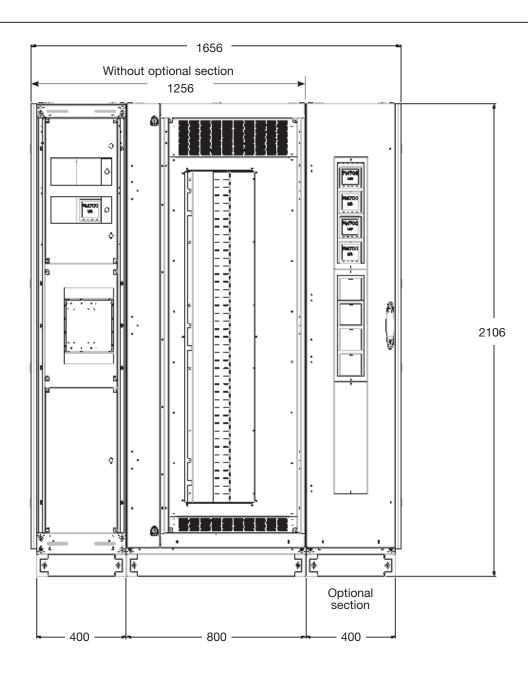
The side extensions with metering are dimensionally the same as standard 250mm side extensions

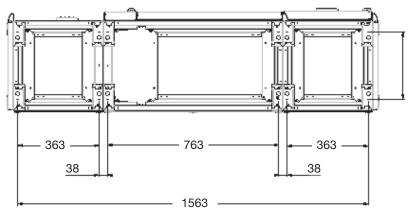


All apertures are 92mmsq. to accept standard DIN 96 meters.

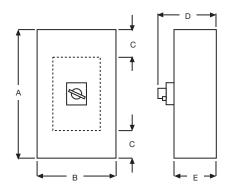
Panelboard 1600A







Safepact 2



Safepact 2 MCCB or switch disconnector general purpose enclosure IP40								
	Height	Width	Cable space	Overall depth	Enclosure depth			
Rating	Α	В	C	D	E			
Up to 100A	420	230	140	211	145			

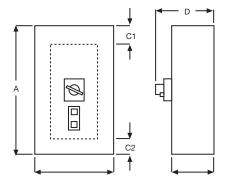
235

169

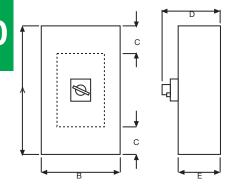
Note: C^* - we recommend fitting cable extension boxes on each end of the 160, 250 and 630A ratings, unless utilising trunking



Extension boxes for Safepact 2 MCCB enclosures						
Height (A)	Part number					
100	MGEX 160C					
200	MGEX 250C					
120	MGEX 630C					

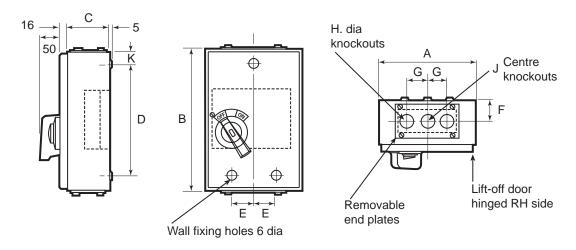


Safepact 2 MCCB or switch disconnector general purpose enclosure IP40 including earth leakage									
Rating		Height A	Width B	Cable space C1	C2	Overall depth D	Enclosure depth E		
Up to	100A	420	230	140	65	211	145		
00 10	160A	520	230	140	165				
	250A	620	230	140	265				
	400A	820	356	236	256	235	169		
	630A								



Enclosed Interpact								
	Height	Width	Cable space	Overall depth	Enclosure depth			
Rating	Α	В	С	D	E			
63A	350	350	130	300	250			
100A	350	350	125	300	250			
160A	350	350	125	300	250			
250A	450	350	165	300	250			
320A	650	350	235	300	250			
400A	650	350	235	300	250			
500A	650	350	235	300	250			
630A	650	350	235	300	250			

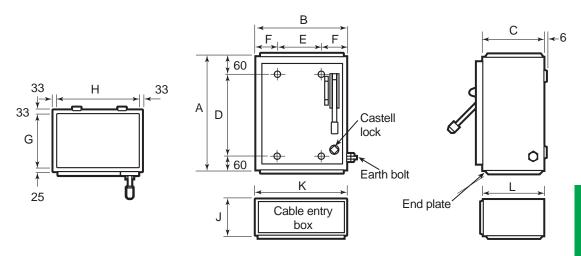
Switch disconnector fuse MGFA Switch disconnector MGFL



Rating	Α	В	С	D	E	F	G	Н	J	Weight Kg*
20A	210	240	105	160	50	51	44	20	25	4.10
32A	210	240	105	160	50	51	44	20	25	4.82
63A	235	350	105	270	55	51	50	32	32	5.34
100A	260	400	120	320	65	51	60	38	40	7.37

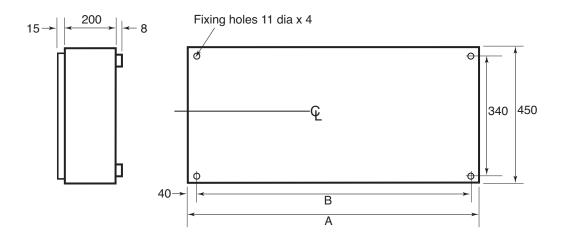
^{*} Weights do not include the fuse links

Fuse switch disconnector MGFS Switch disconnector MGFD



Rating	Α	В	С	D	E	F	G	Н	J	K	L	Weight Kg*
100A	380	292	200	260	130	81	142	226	100	292	220	15.6
160A	380	292	200	260	130	81	142	226	150	292	220	15.6
200/ 250A	380	340	200	260	180	80	142	274	180	340	220	19.5
400A	455	489	270	335	289	100	212	423	300	489	290	36.2
500A	455	489	270	335	289	100	212	423	300	489	290	36.2
630A	455	489	270	335	289	100	212	423	400	489	290	36.2

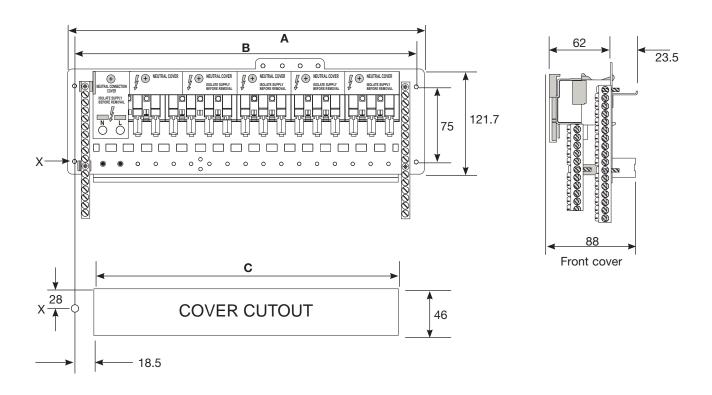
^{*} Weights do not include the fuse links



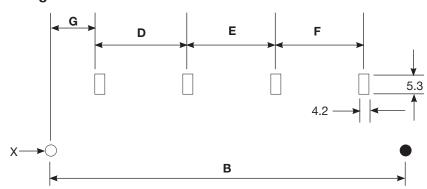
Туре	Α	В
MBFB07TN	750	670
MBFB12TN	1200	1120
MBFB18TN	1800	1720

Single phase Type P & PS

Reference	Α	В	С	D	E	F	G
MGAN6P/PS	196	182	145	70.12	70.12	-	18.5
MGAN9P/PS	250	236	199	70.12	36.01	70.12	27.5
MGAN12P/PS	304	290	253	70.12	108.01	70.12	18.5
MGAN15P/PS	358	344	307	97.12	108.01	97.12	18.5

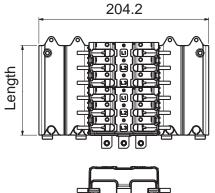


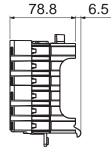
Fixing details

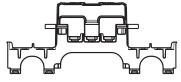


Reference	Length	
MGBN4PS	108.0	1 x 4 way
MGBN6PS	162.0	1 x 6 way
MGBN8PS	216.0	2 x 4 way
MGBN12PS	324.0	2 x 6 way
MGBN16PS	432.0	2 x 6 way + 1 x 4 way
MGBN18PS	486.0	3 x 6 way
MGBN24PS	648.0	4 x 6 way

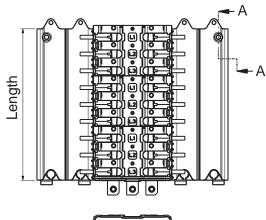
Reference	Α	В	С	D	E	F	G
MGN4PS	99.58						
MGBN6PS	153.52						
MGBN8PS	99.52	108.0	99.52				
MGBN12PS	153.52	162.0	153.52				
MGBN16PS	153.52	162.0	153.52	324.0	99.52		
MGBN18PS	153.52	162.0	153.52	324.0	153.52		
MGBN24PS	153.52	162.0	153.52	324.0	153.52	486.0	153.52

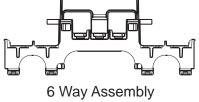






4 Way Assembly

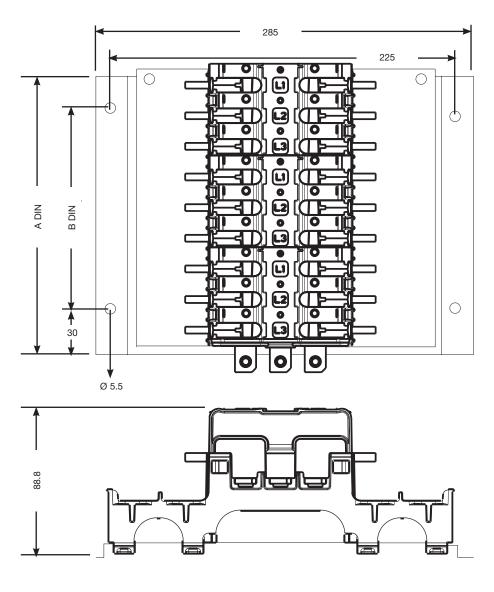




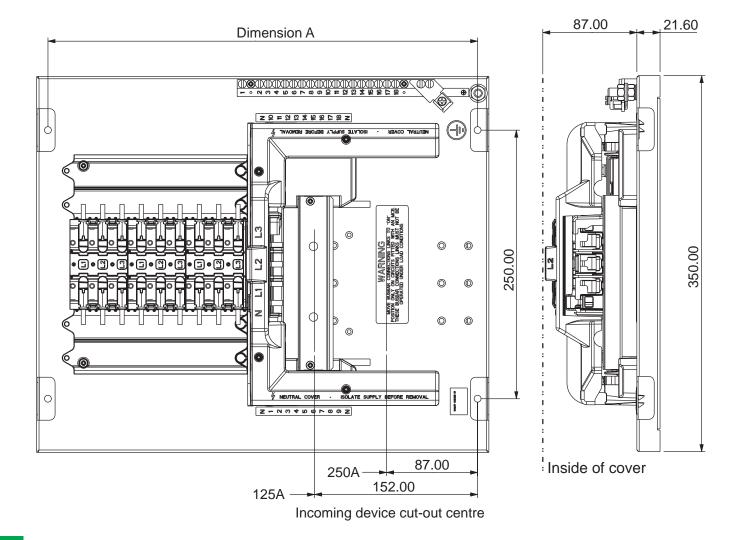
183.70 Fixing holes for M4 screws Ċ 0 ш ш \circ Ω 89.76 170.70 13.00

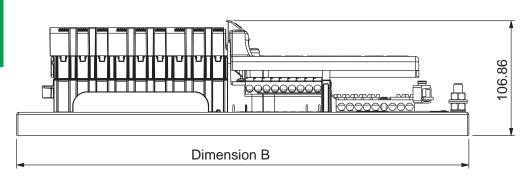
Three phase Type TN

Reference	Α	В	
MGBN4TN	112	54	
MGBN6TN	188	108	
MGBN8TN	220	162	
MGBN12TN	328	270	
MGBN16TN	465	378	
MGBN18TN	490	452	
MGBN24TN	652	584	



Part number	Α	В	
MGBN4EV	325	346	
MGBN6EV	400	421	
MGBN8EV	450	471	
MGBN12EV	550	571	
MGBN16EV	650	671	
MGBN18EV	725	746	
MGBN24EV	875	896	





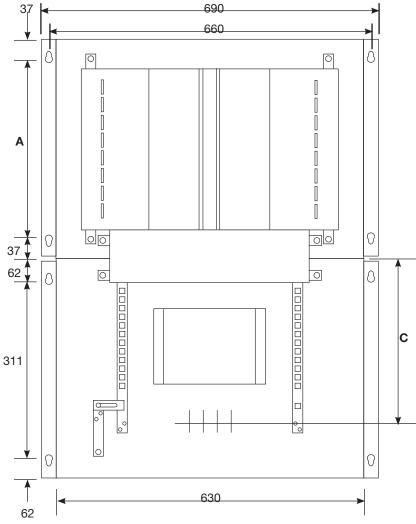
10

Powerpact 4 Pan assembly and incoming MCCB

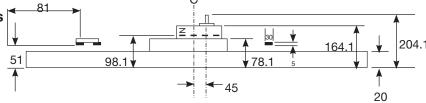
Reference	Α
6 way	346
12 way	661
18 way	976
24 way	1291
30 way	1606

Reference	С	
NS800	475	
NS630	330	
NS250 228		
Dimension C = centre		

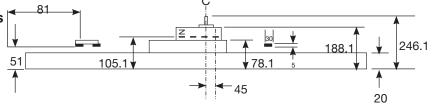
Dimension C = centre line of incoming breaker terminals (plan view).



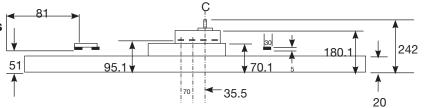
NS250 incoming MCCB connections



NS630 incoming MCCB connections

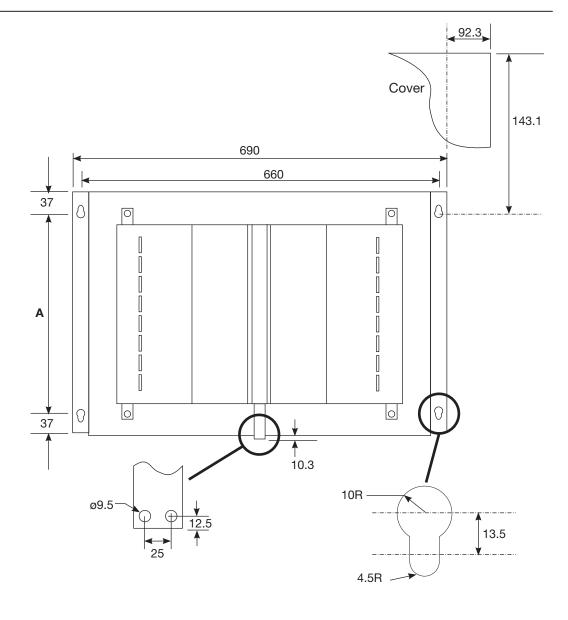


NS800 incoming MCCB connections

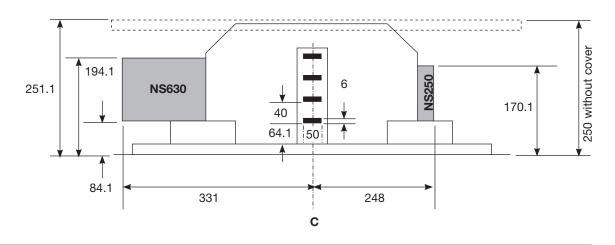


Outgoing pan assembly 630A only

Reference	Α
6 way	346
12 way	661
18 way	976
24 way	1291
30 way	1606

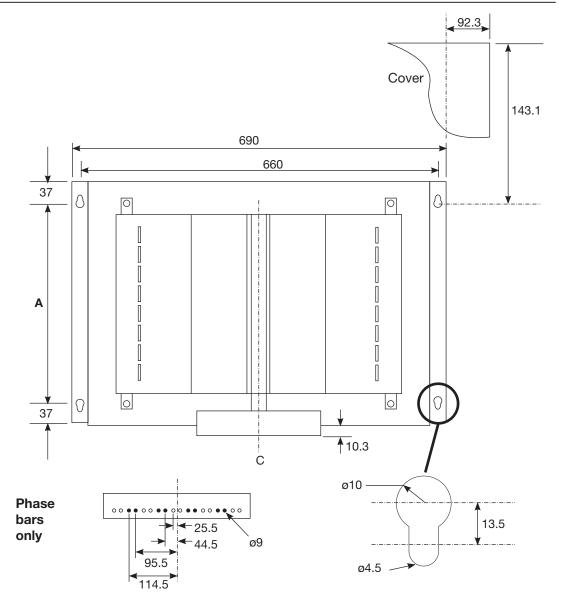


Incoming busbar connections direct to outgoing pan assembly

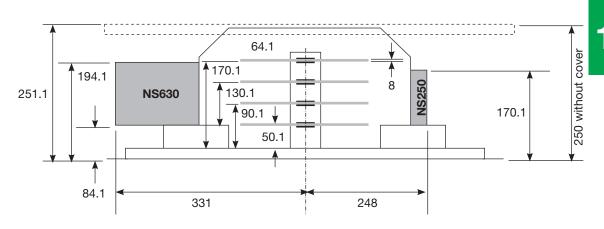


Technical Section 9

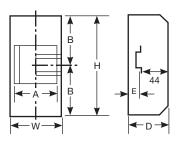
Reference	Α
6 way	346
12 way	661
18 way	976
24 way	1291
30 way	1606



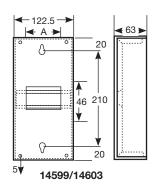
Incoming busbar connections direct to outgoing pan assembly

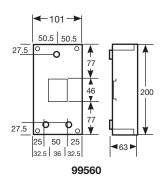


Mini Opale enclosures						
Part number	Н	W	D	Α	В	Е
13392	130	44	57	36	65	11
13394	130	80	57	72	65	11
13396	160	119	65	108	80	19
13398	160	155	65	151	80	19

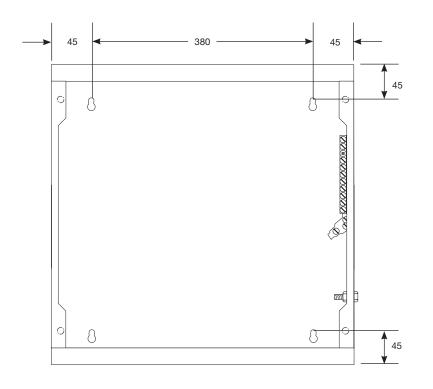


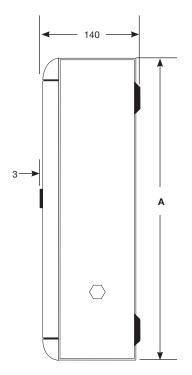
G9 enclosures				
Part number	Α			
14599	72			
14603	99			

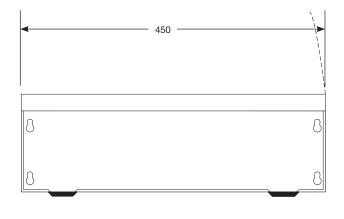


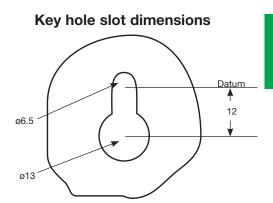


Part number	Α
MGBN4SXS/SXP	484
MGBN8SXS/SXP	538
MGBN12SXS/SXP	700
MGBN16SXS/SXP	808
MGBN24SXS/SXP	970









Enclosures Pragma surface mounted enclosures and interfaces

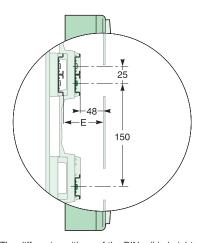
150 B H

Surface mounted enclosures

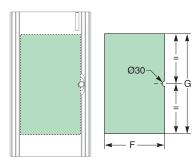
Enclosure Dimensions (mm)										
		Н	W	D	Α	В	E	F	G	J
13 modules	1R	300	336	123	160	200	73	253	149	
	2R	450		(115)		350			299	
	3R	600				500			449	
	4R	750				650			599	
24 modules	1R	300	550	148	340	150	84			121
	2R	450		(136)		300				271
	3R	600				450				421
	4R	750				600				571
	5R	900				750				721
	6R	1050				900				871

Panel for customisation of the transparent door

13 module enclosures

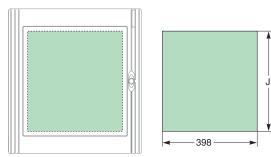


The different positions of the DIN rail in height and depth. $\,$



Panel thickness: 0.5 mm max.

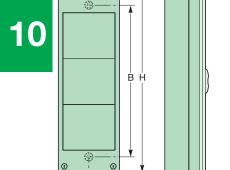
24 module enclosures



Panel thickness: 0.5 mm max.

Interfaces

Enclosure	Associated with enclosure	Dimensions (mm)			
		H	W	D	В
1R	13 modules	300	200	115	206
2R		450			356
3R		600			506
1R	24 modules	300	200	136	175
2R		450			325
3R		600			475



Technical Section 9

Pre-cutouts

The new European standard EN 50262 generalises metric dimensions for cable glands.

To simplify the transition, the entire Kaedra range is equipped with pre-cutouts both in ISO/metric standardisation and in PG standardisation. Each pre-cutout is marked:

■ Simple pre-cutout adapted to the metric cable gland:



- Double pre-cutout:
- ☐ External: pre-cutout adapted to the metric cable gland/ISO
- ☐ Internal: pre-cutout adapted to the PG cable gland



Cable glands	
Type of pre-cutout	For cables of diameter (mm)
M16	4 - 8
M20	6 - 12
M25	12 - 18
M32	18 - 25
M50	30 - 38
PG11	5 - 10
PG16	10 - 14
PG21	14 - 17
PG29	19 - 26
PG36	22 - 32

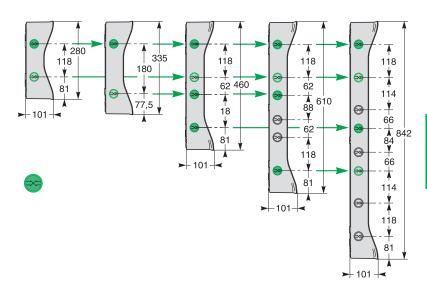
Associations

The enclosures can be associated:

- Horizontally, regardless of their height (see diagram below)
- Vertically, if their width is identical.

Use the association kit, Part number 13934 (2 sleeves + 4 nuts + 4 seals) in the M32 precutouts marked with a double arrow.

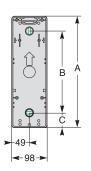
Insertion of cables between the enclosures is possible, while preserving the degree of protection IP65.

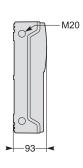


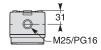
Kaedra

Weatherproof mini enclosures

Weatherproof mini enclosures for power outlets







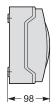
Α	В	С	Weight
			(g)
248	166	41	550
310	228	41	600
392	310	41	700

Weatherproof mini enclosures for modular switchgear

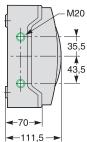
8

12

3 modules







 Number of modules
 A
 L
 Weight (g)

 3
 80
 300

 4
 123
 500

 6
 159
 650

195

267

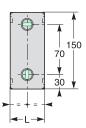
850

1050

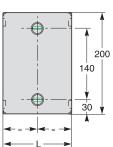
88

160

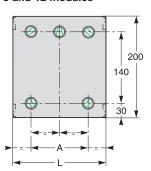
3 modules



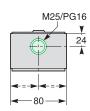
4 and 6 modules



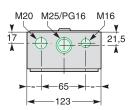
8 and 12 modules



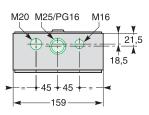
3 modules



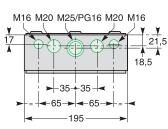
4 modules



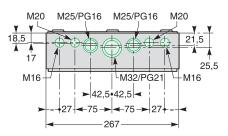
6 modules



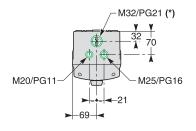
8 modules



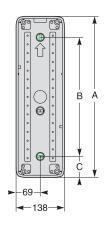
12 modules

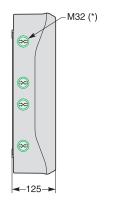


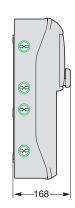
Α	В	С	Weight
			(g)
460	251	104.5	1450
460	251	104.5	1250
460	251	104.5	1400
460	251	104.5	1400
610	490	60	1650



Weatherproof enclosures 5 modules



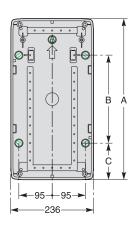


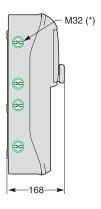


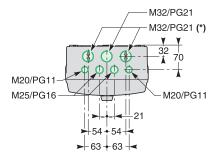
(*) pre-punchout also used for enclosure association

Α	В	С	Weight
			(g)
460	251	104.5	2050
460	251	104.5	1900
460	251	104.5	1900

8modules





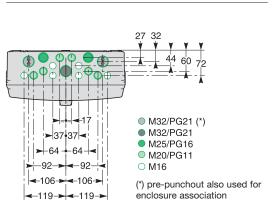


(*) pre-punchout also used for enclosure association

Kaedra

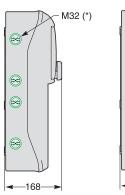
12-13 modules

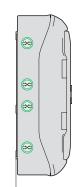
Α	В	С	Weight (g)
280	118	81	1900
335	170	82.5	2200
335	170	82.5	2150
460	251	104.5	3100
460	251	104.5	2850
460	251	104.5	3300
460	251	104.5	2650
460	251	104.5	2700
610	401	104.5	4100
460	251	104.5	4550



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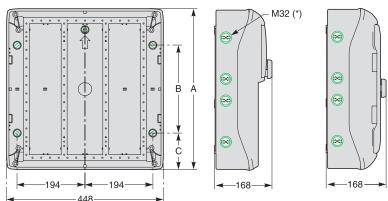
Weatherproof enclosures



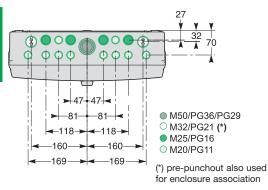


Α	В	С	Weight
			(g)
280	118	81	2400
280	118	81	1950
460	251	104.5	3850
460	251	104.5	3550
460	251	104.5	4150
460	251	104.5	3200
460	251	104.5	3150
460	251	104.5	3300
610	401	104.5	3150
610	401	104.5	5600
610	401	104.5	4050
842	633	104.5	6500
842	633	104.5	6600

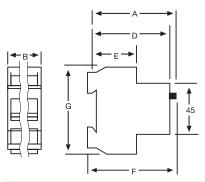
18-19 modules



10

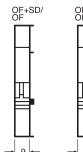


C60/RMG/MGV/DPN/DPN+Vigi

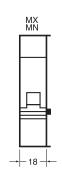


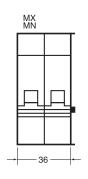
Part number	Description	Width in 18mm SP ways		B 1P	B 2P	B 3P	B 4P	D	E	F	G
C60+any code	Miniature circuit breakers	1,2,3,4	70	18	36	54	72	60	44	76	81
RMG+any code	Residual current devices	2,4	69		36		72	60	44	76	81
MGV+any code	Vigi rcd for C60H MCBs		70		36		72	60	44	75	81
DPN	1Ph+N MCB	1	70	18				60	44	75	81
DPN+Vigi	1Ph+N RCBO	2		36				60	44	75	81

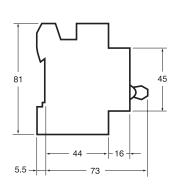
OF, SD, OF+SD/OF, MX, MN auxiliaries for C60H, C60H RCBOs

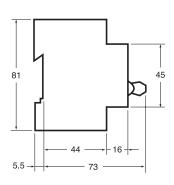




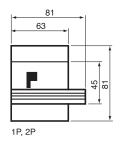


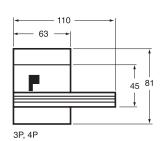


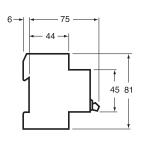




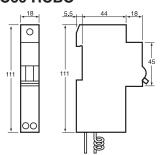
TM C60 auxiliaries





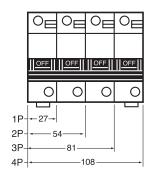


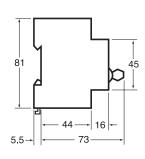
C60 RCBO

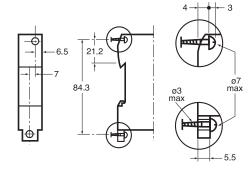


Circuit breakers C120 and Vigi

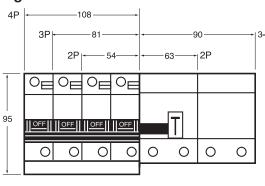
Miniature circuit breakers





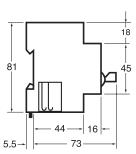


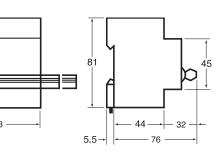
Vigi



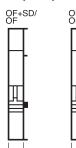


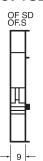
Tm C120 auxiliaries

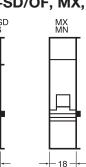


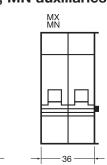


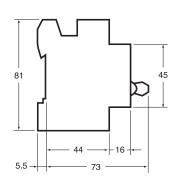
OF, SD, OF+SD/OF, MX, MN auxiliaries

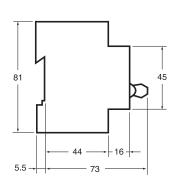




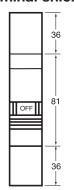




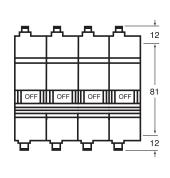




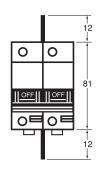
Terminal shield



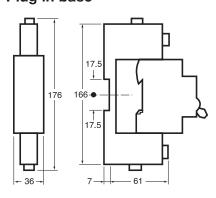




Inter-pole barriers



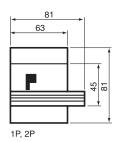
Plug in base

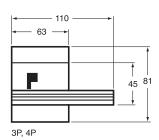


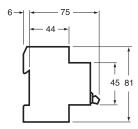
Technical Section 9

TMC60 auxiliaries and C60H RCBO

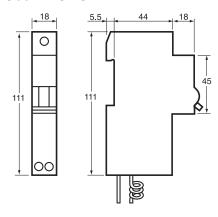
TM C60 auxiliaries





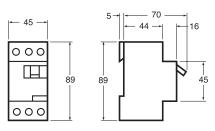


C60H RCBO

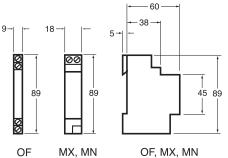


Circuit breakers P25M and Vigi

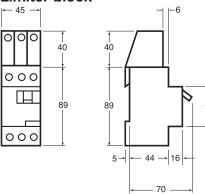
P25M circuit breaker



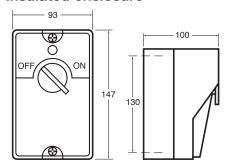
OF, MX, MN auxiliaries



Limiter block

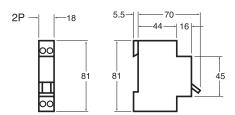


Insulated enclosure

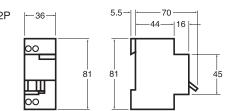


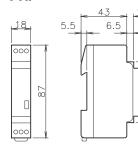
Vigi circuit breakers

DPN and DPN N circuit breakers

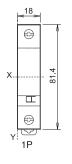


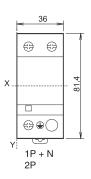
DPN vigi and DPN n vigi circuit breakers

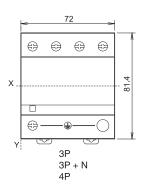


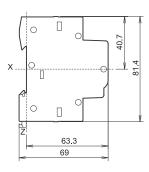


PF

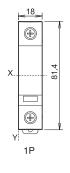


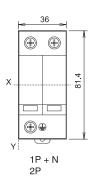


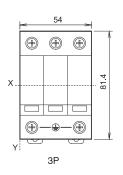


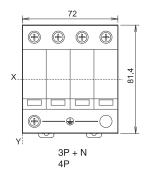


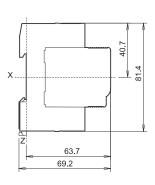
PRD



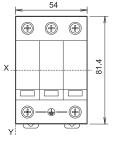


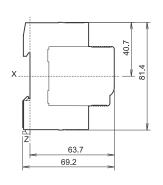






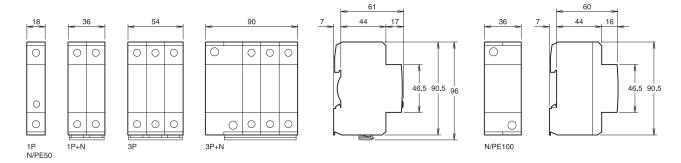
PRD-DC



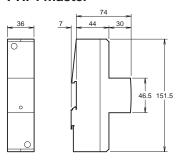


Modular switchgear Protect

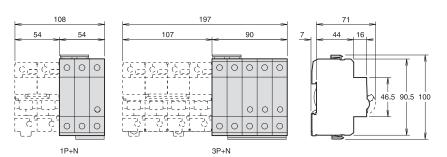
PRF1



PRF1 master



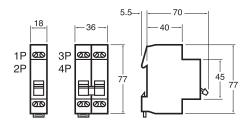
Combi PRF1

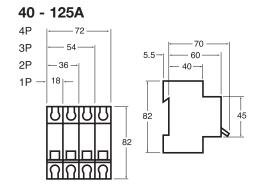


Local control

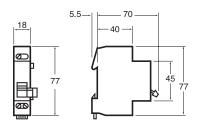
I switch disconnectors

20 and 32A

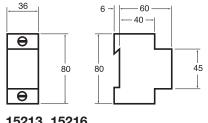




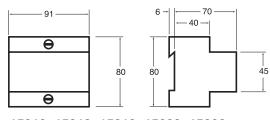
NO, NF auxiliaries



Bell and safety transformers

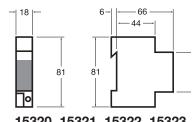


15213, 15216



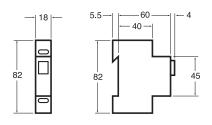
15212, 15218, 15219, 15220, 15222

SO bell and RO buzzer

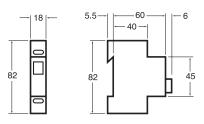


15320, 15321, 15322, 15323

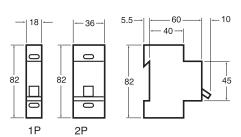
V indicator lights



BP pushbuttons

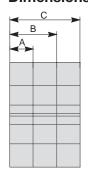


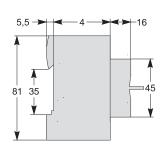
CM selector switches



				Connections	and agricem	ing torques	
Fuse cartridge type	Stripping length	Mono cable rigid	flexible	Multi-cables rigid	flexible or with end piece	Tightening torque	Posidriv
						Gc	⊕
8.5 x 31.5 10.3 x 38	_12 mm	0.7510 mm ²	0.336 mm ²	0.7510 mm ²	0.336 mm ²	2 N.m	Ø 5.5 mm

Dimensions





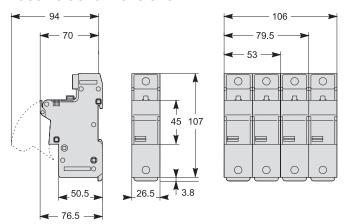
Туре	Reference	Dimensions (mm)	Width in mod of 9 mm
1P, 1P+N	Α	18	2
2P	В	36	4
3P.3P+N	С	54	6

SBI fuse holder with indicator light

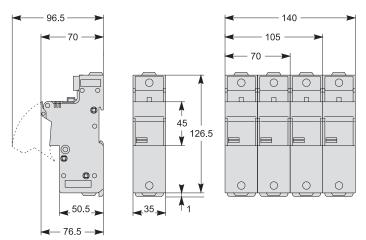
Connections and tightening torques

Fuse cartridge type	Stripping length	Mono cable rigid, multi-strand, with end piece	Multi-cables rigid	flexible or with end piece	Tightening torque	Posidriv
					G^{c}	∂
14 x 51	10 mm	2.525 mm ²	2.510 mm ²	2.510 mm ²	3.5 N.m	Ø 5 mm
22 x 58	12 mm	2.535 mm ²	2.525 mm ²	2.516 mm ²	3.5 N.m	Ø6mm

Fuse holder dimensions



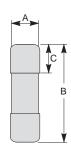
14 x 51 mm.



22 x 58 mm.

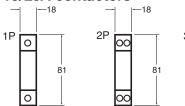
aM, gG fuse dimensions

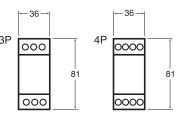
. •				
Fuse type	Α	В	С	
14 x 51	14.3	51	13.8	
22 x 58	22.2	58	16.2	

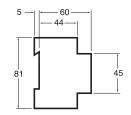


Dimensions (mm) Remote control

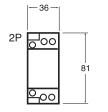
16/25A contactors

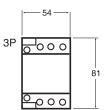


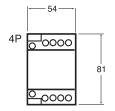


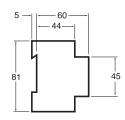


40/63A contactors

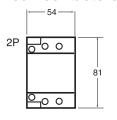


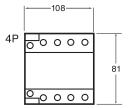


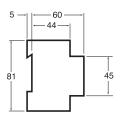




100A contactors

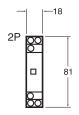


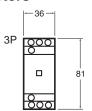


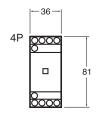


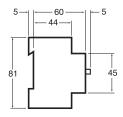
CT contactors with manual operating mechanism

16/25A contactors

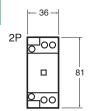


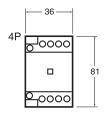


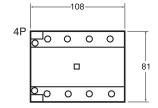


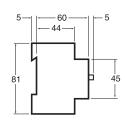


40/63A contactors



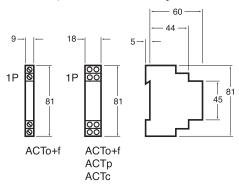






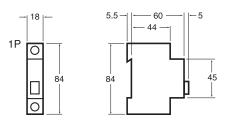
Add-on auxiliaries

ACTo+f, ACTt and ACTp

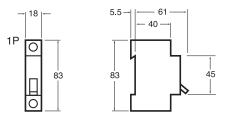


Relays and extensions

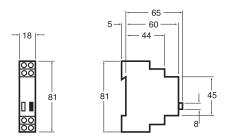
RLI changeover relay



RBN low level relay

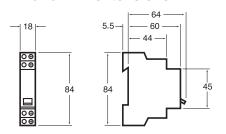


ERL extension

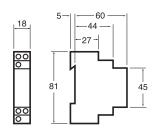


Impulse relays

TL and ETL extensions

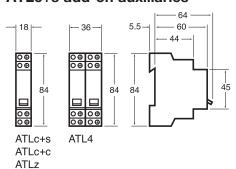


RT, etc. time delay relays



Impulse relays

ATLc+s add-on auxiliaries

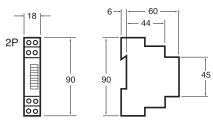


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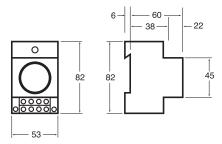
Time management

Time switches

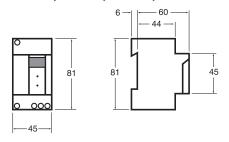
IH time switch 24 hours



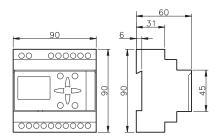
IH time switch 60 min, 24h, 24h+7d, 7d



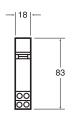
IHP programmable time switches 15720, 15721, 15722, 15723

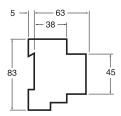


ITM multifunction time switch



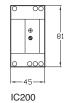
MIN timers 15231, 15232, 15363 and PRE timer 15233

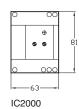


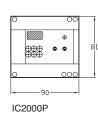


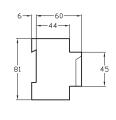
IC light sensitive switches

IC200, IC2000 and IC2000P

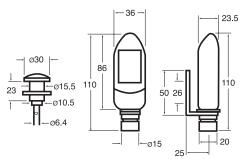






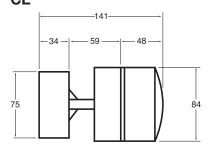


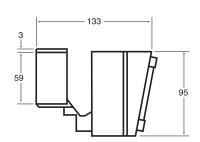
Front face and wall mounted cells



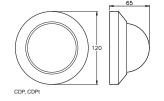
CDM and CE30 movement detection control switches

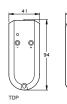
CE





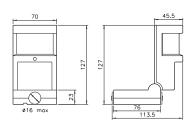
CDP, CDPt and TDP

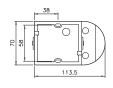


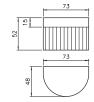




CDM



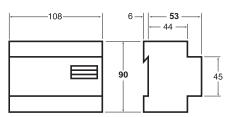




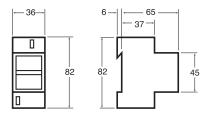
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Metering and measurement

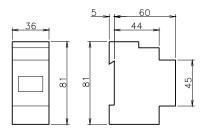
CE and **CE**r kilowatt hour meters



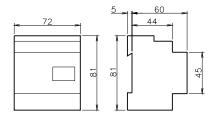
CI/CH counters



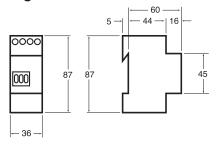
ME3, ME4 watt hour meters



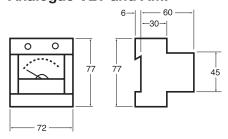
ME1 watt hour meters



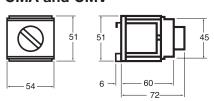
Digital VLT and AMP



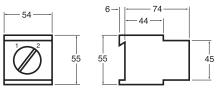
Analogue VLT and AMP



CMA and CMV

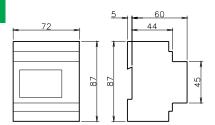


CME

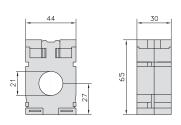


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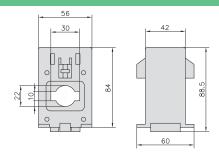
PM9 multimeter



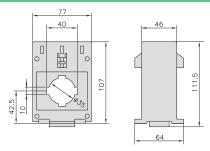




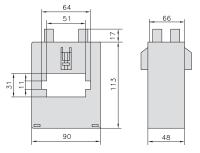
Part number 16500, 16451 to 16456



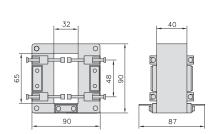
Part number 16459 to 16465



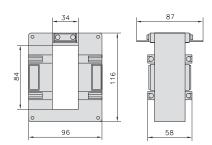
Part number 16468 to 16471



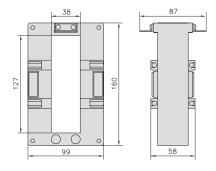
Part number 16473 and 16474



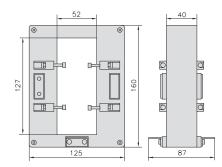
Part number 16534 to 16535, 16476 to 16483



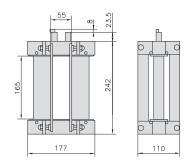
Part number 16537 and 16538



Part number 16540 to 16544



Part number 16545 to 16547



Part number 16548 and 16549



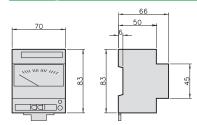
Part number 16550



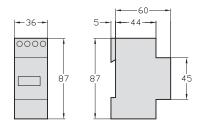
Part number 16551

Panel instruments

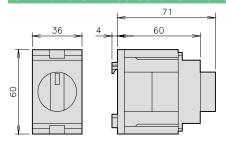
Analog ammeters and voltmeters



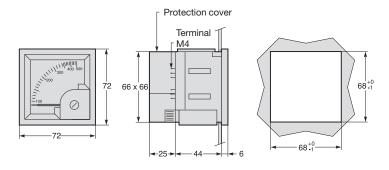
Digital ammeters, voltmeter and frequency meter



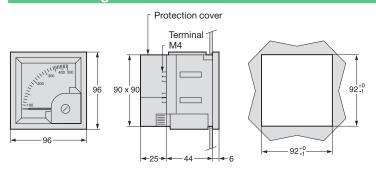
CMA and CMV selector switches



72 x 72 analog ammeters and voltmeter

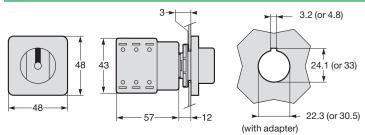


96 x 96 analog ammeters and voltmeter

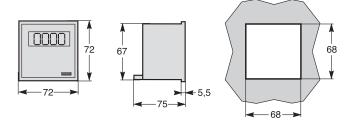


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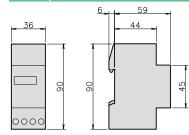
48 x 48 CMA and CMV selector switches



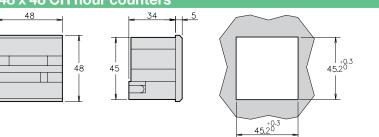
UM100 voltmeter, IM100 ammeter



CI impulse counter and CH hour counter

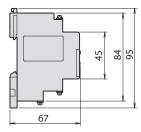


48 x 48 CH hour counters

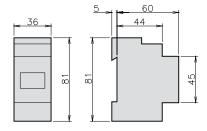


EN'clic, EN40 and EN40p kilowatt-hour meters

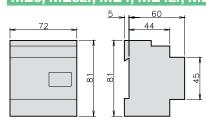




ME1, ME1z and ME1zr kilowatt-hour meters

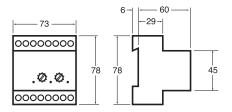


ME3, ME3zr, ME4, ME4zr, ME4zrt kilowatt-hour meters

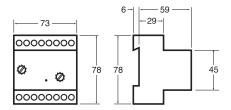


TH thermostats

TH3 thermostat

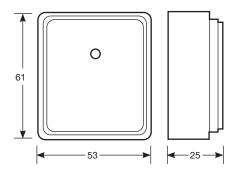


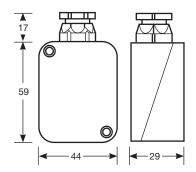
TH6 thermostat



Ambient temp probe (15846)

Outdoor temp probe (15847)





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Merlin Gerin is a world leader in the manufacture and supply of high, medium and low voltage products for the distribution, protection, control and management of electrical systems and is focused on the needs of both the commercial and industrial sectors. The newly launched VDI Network Solutions offer provides flexible, configurable ethernet systems for all communication needs.

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Square D is a total quality organisation and its business is to put electricity to work productively and effectively, protecting people, buildings and equipment. Its low voltage electrical distribution equipment, systems and services are used extensively in residential and commercial applications.

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Telemecanique is a UK market leader and world expert in automation and control. It provides complete solutions, with it's range of components, Modicon range of high technology programmable controllers (PLCs), multiple fieldbus and ethernet communication networks, HMI, motion control systems, variable speed drives and communications software. In addition, it offers power distribution through prefabricated busbar trunking.

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