Catalogue
2019/2020

:hager

Your reliable partner for intelligent solutions.

There's plenty to do. Let's get started.

The time for renovated electrical installations and intelligent solutions is now.

Dear friends and partners,

We all value experience. Routine helps us to be fast and reliable, which can save us time, money and hard work. Yet there are also moments when we need to leave the familiar behind and take advantage of golden opportunities just waiting to be discovered and seized.

This is one of those moments.

Renewable energy sources and innovative building technologies are creating opportunities to make more intelligent and energy-efficient homes.

The latest studies indicate that many properties will first have to be adapted to accommodate the solar power systems, energy storage units and intelligent building controls that characterise smart homes. As of 2014, 15.3 million UK homes could benefit from improvements to aid in energy-efficient living and working. Large-scale renovation and modernisation are needed if renewable energy is to help achieve an 80 percent cut in the UK's carbon emissions by 2050.

This work requires specialists. There's plenty to do. Let's get started.

We at Hager Group will support you with the very best products, solutions and services. And we are constantly evolving and improving: we have more than 800 team members working on better products and innovative technologies to make your work easier and our customers' lives more comfortable. At the same time, we are increasing our focus on services so that we can provide you and our customers with expert support.

When it comes to change, we practice what we preach. And we rely on expert partners like you to help us set the trends for the future. This future is starting right now, and I'm looking forward to shaping it with you.

Yours sincerely,

Daniel Hager
Hager Group CEO

Under one roof

Members of Hager Group

:hager

B. Berker

ELCOM.

DAITEM

diagral

EFEN

BOCCHIOTTI

One family

The world is changing, and we are changing with it. As a family company, we have grown steadily over the last sixty years to become a reliable partner to expert technicians and electrical wholesalers around the world. All while remaining true to ourselves and to our values. And so we continue today, with a number of well-known brands – each with their own distinctive strengths – working together under the Hager Group umbrella.

Hager Forum in Obernai, France, is a place where we can work with customers and partners to shape the future. That makes it a perfect symbol of the innovative power of Hager Group.

hagergroup

Your trust

As a partner and customer, you can choose from the entire range of products and services offered by every member of our brand family. Our new corporate image highlights our shared strengths even more clearly. From now on, each of our brands will be easily recognisable as a 'Member of Hager Group'. The new corporate image also involves some colour and design changes. Our core promise remains the same: we will always work with you to succeed together.

Our strengths

We have huge opportunities ahead. The upcoming modernisation of existing buildings, intelligent building technology, digital services, new energy sources and technologies – all of this opens up new, exciting potential for you and for us. At the same time, business requirements are becoming more and more complex. That's why it's so important for you to have Hager Group specialists supporting you with all of their expertise. Together, we are stronger. Together, we will overcome the complex challenges of our time with simple, impressive solutions – just as we have been doing for the last six decades.

E3

Global warming, a shortage of natural resources, social cohesion and the transition to renewable energy: there are many challenges facing businesses and society today. Hager Group is pursuing a variety of initiatives to promote sustainable development with its “E3” approach.

Environ

E for Environment

We work continuously to reduce our carbon footprint. Our priorities include optimising the transport of our products and cutting the amount of energy we use in production to further reduce our Carbon footprint.

Ethics

E for Ethics

We need skilled, motivated and healthy employees in order to offer our customers the best services and products. That's why we provide all our team members with a safe, healthy working environment, support their professional growth and offer them opportunities for further development. We also promote diversity and adherence to an Ethics Code throughout the company.

ment

Energy

E for Energy

Hager Group helps its customers to save energy intelligently. We also analyse and optimise our products' environmental performance throughout development and production. By providing a detailed environmental profile for most of our products, we can be fully transparent with our customers and ourselves.

Technology as a friend

Hager Design turns technical products into familiar friends.

Before we start designing a new product, we think about the people it is going to serve. Will it assist or entertain, observe or protect, save time or save energy? Ideally, whatever it does, users will feel it is a reliable 'friend'. We need to know how to connect with people on an emotional level, to ensure that in return they feel connected to our products.

Erwin van Handenhoven
Hager Group Design Director

Technology for people
Responsible design builds on an ethical foundation. At Hager, this foundation is all about respecting people and caring about their well-being. And it's not just about today – we want to inspire our customers for years to come. That's why we include them in every stage of the design process – from installer to planner, to end user.

An honest brand
Hager products are world-renowned for their quality, which is visibly and tangibly unveiled in their design. The unmistakeable, explicit and clear brand image tells customers straight away that these products are part of 'the family'. This is our signature, the Hager DNA, which embodies two central principles.

Friendly, serene, balanced: an honest, authentic design that blends naturally into everyday life, without gadgets or cheap effects.

Ingeniously simple: our products are important, but never over-the-top. If it's not necessary, we leave it out. The essence remains. Straightforward in both form and function: simple to install, simple to use. Simply Hager!

Looking ahead to the future
Hager systems are not stagnant – they are expanding, gaining more and more visibility in our customer's homes. This has implications for our present design language. We call it 'New Start'. The aim of New Start is to meet our customers where they are, and carry them with us into the future: with innovative ideas, new designs and expressive materials. The new Hager catalogue is full of 'New Starters' – along with lots of 'old friends'. Come and explore!

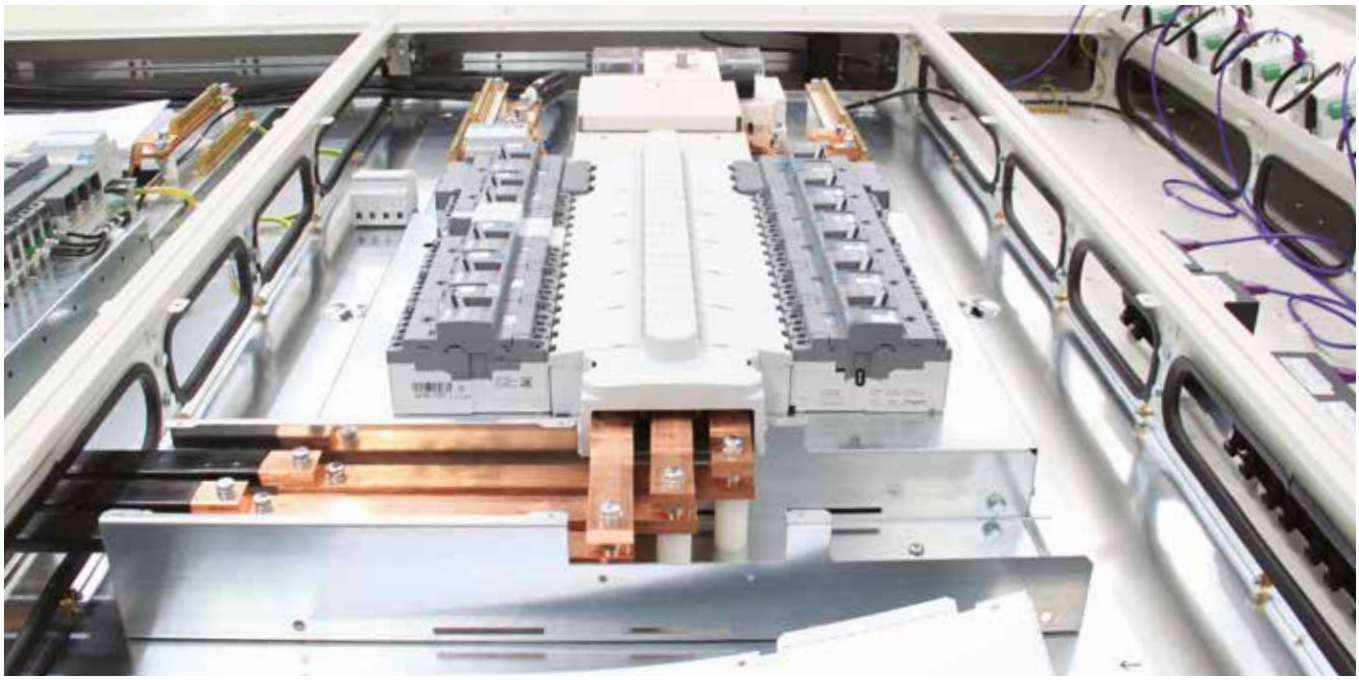
An engineered solution

From pre-assembled standard distribution units to bespoke composite TP&N boards, and plug in distribution boards we can provide the solution. We will even deliver to site to an agreed deadline and to specification. All the power of an experienced design engineering team and an ISO 9001:2008 manufacturing plant is just a telephone call away.

Here to help
Many electrical distribution solutions require something that cannot be purchased off the shelf.

Whether it is an unusual configuration or simply speed on site, our engineered solutions supplies the answer. You give us the specification and we will deliver what you need with the peace of mind of factory assured quality to ISO 9001:2008.

Metering
Our lighting and power meter board is a compact solution to meet the demands of energy metering. However for special applications we also offer our full-engineered solutions design and build service, providing additional features such as data logging and web connectivity for remote meter reading.



Pre-assembled standard distribution board

Factory assembly of standard distribution boards with standard incoming and outgoing devices. Providing the installer with all of the products factory assembled and ready for cabling.

Engineered Consumer Units

Factory assembly of non-standard consumer units, special configurations in standard enclosures or metal DIN rail enclosures. Providing an exact product that meets the requirements of your particular installation needs.

Pluggable and metered consumer units are also an option. With pluggable consumer units circuit breakers are wired to sockets fitted into the enclosure enabling final circuit cabling to be simply plugged in.

Bespoke composite system

Factory prepared distribution boards ready for assembly on site with apertures pre-cut to allow cable access between the various enclosures, combining Panelboards and TP&N boards into bespoke composite panels.

Standard metal distribution boards designed to accommodate customer specified OEM equipment.

To learn more about our engineered solutions offer, please contact us:

Technical Service Centre **01952 675600**
Call our Technical Services Centre for all your national sales enquiries. estimation@hager.co.uk

Technical Service Centre Faxline **01952 675557**

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5.1

Commercial Distribution

Powering a building to its potential, it's what we do. We have the perfect solutions to help an office, factory or industrial site save energy and keep their occupants safe. From Panelboards to our range of enhanced TP&N boards with metering capabilities, our commercial offering will create the perfect electrical ecosystem for a building.

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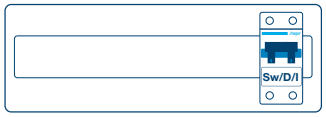
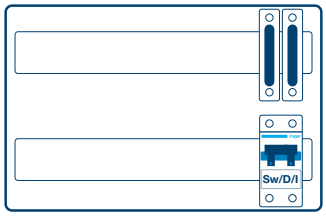
JK104

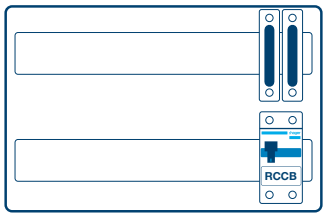


- 100A Switch Disconnector Incomer
- 63A 30mA Switch Disconnector Incomer

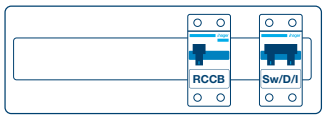


100A Switch Disconnector Incomer Dual Row

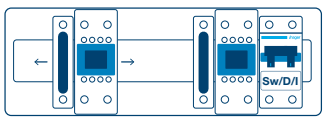
100A 30mA RCCB Incomer



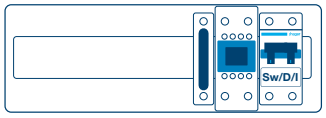
100A 30mA RCCB Incomer Dual Row



100A Switch Disconnector Incomer & 63A 30mA RCCB



100A Dual Metered with MID Meter - JKD114

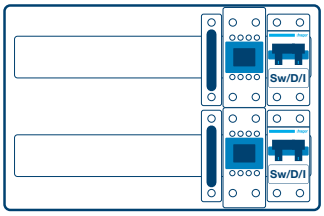


100A Metered with MID Meter - JKD117

SP&N Distribution Boards

Characteristics:
- SP&N distribution boards are available from 4-28 outgoing ways. The range comes with a choice of either 100A 2 pole switch disconnector, 63A 30mA 2 pole RCCB Type A or 100A 30mA 2 pole RCCB Type A, or a range of split load versions.
- Conforms to BS EN 61439-3. I_{nA} = 63A/100A, I_{nc} = 63A, I_{cc} = 10kA
- Cable Sizes: 100A: 50mm², 63A: 16mm²
- Ample wiring space, with provision to accept RCBO's.
- Full complement of earth and neutral terminal bars to accept up to 16mm² cable.
- Suitable for cable entry on all sides and back.
- For dimensions see page 1.49.

Description	Size	Cat ref.
100A Switch Disconnector Incomer		
4 Way 100A Switch Disconnector Incomer	3	**JK104**
6 Way 100A Switch Disconnector Incomer	3	**JK106**
10 Way 100A Switch Disconnector Incomer	4	**JK110**
14 Way 100A Switch Disconnector Incomer	5	**JK114**
20 Way 100A Switch Disconnector Incomer	7	**JK120**
28 Way 100A Switch Disconnector Incomer Dual Row	5 (2)	**JK128**
63A 30mA RCCB Incomer Type A		
4 Way 63A 30mA RCCB Incomer	3	**JK404H**
6 Way 63A 30mA RCCB Incomer	3	**JK406H**
10 Way 63A 30mA RCCB Incomer	4	**JK410H**
14 Way 63A 30mA RCCB Incomer	5	**JK414H**
20 Way 63A 30mA RCCB Incomer	7	**JK420H**
100A 30mA RCCB Incomer Type A		
4 Way 100A 30mA RCCB Incomer	3	**JK304H**
6 Way 100A 30mA RCCB Incomer	3	**JK306H**
10 Way 100A 30mA RCCB Incomer	4	**JK310H**
14 Way 100A 30mA RCCB Incomer	5	**JK314H**
20 Way 100A 30mA RCCB Incomer	7	**JK320H**
28 Way 100A 30mA RCCB Incomer Dual Row	5 (2)	**JK328H**
100A Switch Disconnector and 63A 30mA RCCB Type A		
6 Way Split Load Configurable 100A Switch 63A 30mA RCCB	4	**JK706C**
10 Way Split Load Configurable 100A Switch 63A 30mA RCCB	5	**JK710C**
14 Way Split Load Configurable 100A Switch 63A 30mA RCCB	7	**JK714C**
100A Switch Disconnector and 100A 30mA RCCB Type A		
28 Way Split Load 14+14 100A Switch 100A 30mA RCCB Dual Row	5 (2)	**JK527H**
100A Dual Metered with MID Meter		
14 Way Dual Metered 100A Configurable MID Pulsed, Modbus	7	**JKD114**
22 Way Dual Metered, Dual Row 100A MID Pulsed, Modbus	5 (2)	**JKD11111**
100A Metered with MID Meter		
17 Way Metered 100A MID Pulsed, Modbus	7	**JKD117**



100A Dual Metered with MID Meter - JKD11111

The relevant part of the BS EN 61439 series applies to the integration of mechanical and electrical components (switching devices, control devices, busbars, functional units, etc.), into an enclosure. Hager systems such as consumer unit, distribution board and panel board ranges are certified to the appropriate part of the BS EN 61439 series. When selecting other device / enclosure arrangements, please contact Hager technical support for guidance - 01952 675689.

DIN Rail Enclosures

JK008

Characteristics:
- One, two or three row 8-66 module enclosures, fitted with DIN rails to accept any combination of Hager devices. Ample wiring space, with provision to accept RCBO's.
- Conforms to BS EN 62208. I_{nA} = 63A/100A, I_{nc} = 63A, I_{cc} = 10kA
- Full complement of earth and neutral terminal bars to accept up to 16mm² cable.
- Suitable for cable entry on all sides and back.
- For dimensions see page 1.49.

Description	Size	Cat ref.
1 Row 8 Modules	3	**JK008**
1 Row 12 Modules	4	**JK012**
1 Row 16 Modules	5	**JK016**
1 Row 22 Modules	7	**JK022**
2 Row 24 Modules (2 x 12)	4 (2)	**JK024**
2 Row 32 Modules (2 x 16)	5 (2)	**JK032**
2 Row 44 Modules (2 x 22)	7 (2)	**JK044**
3 Row 66 Modules (3 x 22)	7 (3)	**JK066**

Invicta 3 SP&N Distribution Boards

JK114AG

Characteristics:
- Boards are available with 14 & 29 outgoing ways. The range comes with a 100A 2 pole switch disconnector to accept 50mm² cable. Ample wiring space, with provision to accept RCBO's.
- Conforms to BS EN 61439-3. I_{nA} = 63A/100A, I_{nc} = 63A, I_{cc} = 10kA
- Full complement of earth and neutral terminal bars to accept up to 16mm² cable.
- Suitable for cable entry on all sides and back.
- Enclosures are available with plain or glazed doors.
- For dimensions see page 1.49.

Description	Cat ref. Plain Door	Cat ref. Glazed Door
1 Row, 14 Way 100A Switch Disconnector Incomer	**JK114A**	**JK114AG**
2 Row, 29 Way 100A Switch Disconnector Incomer	**JK129A**	**JK129AG**

Type A SP&N Distribution Board SPD Kit

VM02SPD

- Consists of: 6mm² neutral, live & earth cables, 1x Double Pole SPD's.

Poles	I_n kA L-N	I_n kA N-PE	U_p kV	Width (mm)	Cat ref.
2	5	15	≤ 1.2	35	**VM02SPD**

JK106BG

[1] A **JK101SE** may be required to provide additional incoming cable space, see page 1.50.

[2] Full metal cover & door to comply with BS 7671 Amendment 3, where required for domestic dwelling applications.

Invicta 3 125A TP&N Distribution Boards (125A Incoming, 63A Outgoing)

Characteristics:
- Surface mounted steel enclosures, IP3XD rated available with plain, glazed & Amendment 3 door options.
- Conforms to BS EN 61439-3, I_{nA} = 125A, I_{nc} = 63A, I_{cc} = 25kA
- Supplied without incoming & outgoing devices. A Hager incomer kit must be used.
- Incoming cable sizes: 125A & 100A 50mm², 63A 16mm²
- Option with factory fitted SPD Type 2 & 4 Pole SD incomer.
- For dimensions see page 1.50.

Description	Cat ref. Glazed door & SPD type 2	Cat ref. Plain door	Cat ref. Glazed door	Cat ref. Residential Applications
4 Triple Pole Ways 125A TP&N Board	JK104BGSPD *	JK104B [1]	JK104BG [1]	JK104BA3 [1 2]
6 Triple Pole Ways 125A TP&N Board	JK106BGSPD *	JK106B [1]	JK106BG [1]	JK106BA3 [1 2]
8 Triple Pole Ways 125A TP&N Board	JK108BGSPD *	JK108B [1]	JK108BG [1]	JK108BA3 [1 2]
12 Triple Pole Ways 125A TP&N Board	JK112BGSPD *	JK112B	JK112BG	JK112BA3 [2]
16 Triple Pole Ways 125A TP&N Board	JK116BGSPD *	JK116B	JK116BG	JK116BA3 [2]
18 Triple Pole Ways 125A TP&N Board	JK118BGSPD *	JK118B	JK118BG	JK118BA3 [2]
24 Triple Pole Ways 125A TP&N Board	JK124BGSPD *	JK124B	JK124BG	JK124BA3 [2]

JKD1416PM

125A Dual Metered Boards - MID Meter

Characteristics:
- Boards are supplied with a dual channel meter that offers a pulsed & modbus output.
- Conforms to BS EN 61439-3, I_{nA} = 125A, I_{nc} = 63A, I_{cc} = 25kA.
- Provided with MID dual channel meter and 125A TP switch disconnector pre-fitted. Each individual pan is fully rated at 125A.
- For dimensions see page 1.53.

Description	Max cable capacity solid	Lower pan ways	Upper pan ways	Cat ref.
4+6 Way Power & Lighting Board	50mm²	4	6	JKD146MID *
6+6 Way Power & Lighting Board	50mm²	6	6	JKD166MID *
6+4 Way Power & Lighting Board	50mm²	6	4	JKD164MID *
6+8 Way Power & Lighting Board	50mm²	6	8	JKD168MID *
8+8 Way Power & Lighting Board	50mm²	8	8	JKD188MID *
8+6 Way Power & Lighting Board	50mm²	8	6	JKD186MID *
4+16 Way Power & Lighting Board	50mm²	4	16	JKD1416MID *
16+4 Way Power & Lighting Board	50mm²	16	4	JKD1164MID *
8+12 Way Power & Lighting Board	50mm²	8	12	JKD1812MID *
12+8 Way Power & Lighting Board	50mm²	12	8	JKD1128MID *
12+12 Way Power & Lighting Board	50mm²	12	12	JKD11212MID *

JK106BD

IP65 Distribution Boards (Steel version not suitable for outdoor use)

Characteristics:
- Suitable for three phase applications where a high IP rating is required.
- Conforms to BS EN 61439-3, I_{nA} = 125A, I_{nc} = 63A, I_{cc} = 25kA.
- Available with either a steel (mild steel, powder coated) or Glass Reinforced Plastic (GRP) enclosure.
- Supplied without incoming and outgoing devices. A Hager incomer kit must be used.
- Available up to 125A direct connection with outgoing distribution, rated for MCBs from 0.5A to 63A.

Description	Cat ref. Steel	Cat ref. GRP
4 Way IP65 Metal 125A TPN Board 800 x 600 x 300	JK104BD	JK104BF
6 Way IP65 Metal 125A TPN Board 800 x 600 x 300	JK106BD	JK106BF
8 Way IP65 Metal 125A TPN Board 800 x 600 x 300	JK108BD	JK108BF
12 Way IP65 Metal 125A TPN Board 1250 x 850 x 300	JK112BD	JK112BF
16 Way IP65 Metal 125A TPN Board 1250 x 850 x 300	JK116BD	JK116BF

MCBs & RCBOs for Invicta 3 Type B TP&N Distribution Boards - See pages 1.29-1.31 for more info

		0.5A	1A	2A	3A	4A	6A	10A
B Curve	Single Pole	-	-	-	-	-	NBN106A	NBN110A
	Triple Pole	-	-	-	-	-	NBN306A	NBN310A
C Curve	Single Pole	NCN100A	NCN101A	NCN102A	NCN103A	NCN104A	NCN106A	NCN110A
	Triple Pole	NCN300A	NCN301A	NCN302A	NCN303A	NCN304A	NCN306A	NCN310A
D Curve	Single Pole	NDN100A	NDN101A	NDN102A	NDN103A	NDN104A	NDN106A	NDN110A
	Triple Pole	NDN300A	NDN301A	NDN302A	NDN303A	NDN304A	NDN306A	NDN310A
RCBO (B Curve)	Single Pole	-	-	-	-	-	ADA106U *	ADA110U *
RCBO (C Curve)	Single Pole	-	-	-	-	-	ADA156U *	ADA160U *

Data is subject to errors and technical modifications. ★ New.

Incomer Kits for 125A Boards

Description	Max Cable Capacity Solid	Cat ref.
3 Pole 100A Switch Disconnector Incomer Kit (Fits within distribution board)	50mm²	**JK11003S**
4 Pole 100A Switch Disconnector Incomer Kit (Fits within distribution board)	50mm²	**JK11004S**
3 Pole 125A Switch Disconnector Incomer Kit (Fits within distribution board)	50mm²	**JK11253S**
4 Pole 125A Switch Disconnector Incomer Kit (Fits within distribution board)	50mm²	**JK11254S**
4 Pole 63A Contactor Incomer Kit includes Switch Disconnector (fits below distribution board, 300mm high)	50mm²	**JK10634C** [3]
4 Pole 100A Contactor Incomer Kit includes Switch Disconnector (fits below distribution board, 450mm high)	M8 Lug	**JK11004C** [3]
125A Direct Connection Kit (Fits within distribution board)	50mm²	**JK11254D**
4 Pole 63A 30mA RCCB Type A Incomer Kit (Fits within distribution board)	25mm²	**JK10634RH**
4 Pole 100A 30mA RCCB Type A Incomer Kit (Fits within distribution board)	50mm²	**JK11004RH**
4 Pole 100A 300mA RCCB Type A Incomer Kit (Fits within distribution board)	50mm²	**JK11004RL**
4 Pole 100A 300mA Time Delayed RCCB Type A Incomer Kit (Fits within distribution board)	50mm²	**JK11004RLD**
4 Pole 100A 100mA RCCB Type A Incomer Kit (Fits within distribution board)	50mm²	**JK11004RM**
4 Pole 100A 100mA Time Delayed RCCB Type A Incomer Kit (Fits within distribution board)	50mm²	**JK11004RMD**
125A 4 pole Changeover Incomer Kit (Fits within distribution board)	50mm²	**JK11254CO** [3]

JK11003S

[3] A 300 / 450mm space is required below the board for fitting.

Side by Side Incomer Kits for 125A Boards

Characteristics:
- Complete with 125A 3P SD incomer
- Cable sets to connect to distribution boards (left)
- Suitable for all 125A TP&N board sizes

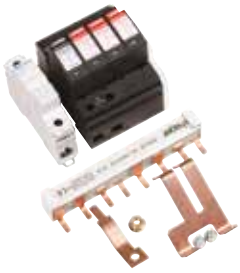
Description	Cat ref.	
Dual kWh Meter Pack 125A Incomer Pulsed & Modbus	M8 Lug	**JKD125MID** *
Triple kWh Meter Pack 125A Incomer Pulsed & Modbus	M8 Lug	**JKD125TMID** *

JKD125MID

Surge Protection Kits for 125A Boards

Characteristics:
- SPD kit for direct integration within 125A TPN boards
- Low U_p value assured through use of solid busbar connectors and solid copper Earth
- SPD suitable for TN / TT Earth arrangements including TNC-S (PME)
- CT2 type SPD to accommodate multiple Earthing systems.
- Coordination verified with upstream Hager Panelboard SPDs.

Description	Cat ref.
Type 1 & 2 Surge Protection Kit for 125A TP&N Boards	**JK101SPD** *
Type 2 Surge Protection Kit for 125A TP&N Boards	**JK102SPD** *
Type 1 & 2 Surge Protection Kit for 125A Dual Metered Boards	**JKD101SPD** *
Type 2 Surge Protection Kit for 125A Dual Metered Boards	**JKD102SPD** *



JK101SPD

Meter Packs & Kits for 125A Boards - MID

Characteristics:
- **JKD1125MID** – This enclosed meter pack fits below any Hager standard 125A TPN boards. Can be used in conjunction with SPD kits – MID meter has Modbus and pulse comms.
- **JK140MID** – This MID meter kits can be fitted within the TPN board, but is not suitable for 4 & 6 way boards. This kit can not be used, when an SPD is fitted – MID Meter has Modbus and pulse comms.

Description	Cat ref.
Meter Enclosure & MID Meter	**JKD1125MID** *
Multifunction Meter Pack 125A Pulsed & Modbus	**JK140MID** *

JK140MID

16A	20A	25A	32A	40A	45A	50A	63A
NBN116A	**NBN120A**	**NBN125A**	**NBN132A**	**NBN140A**	-	**NBN150A**	**NBN163A**
NBN316A	**NBN320A**	**NBN325A**	**NBN332A**	**NBN340A**	-	**NBN350A**	**NBN363A**
NCN116A	**NCN120A**	**NCN125A**	**NCN132A**	**NCN140A**	-	**NCN150A**	**NCN163A**
NCN316A	**NCN320A**	**NCN325A**	**NCN332A**	**NCN340A**	-	**NCN350A**	**NCN363A**
NDN116A	**NDN120A**	**NDN125A**	**NDN132A**	**NDN140A**	-	**NDN150A**	**NDN163A**
NDN316A	**NDN320A**	**NDN325A**	**NDN332A**	**NDN340A**	-	**NDN350A**	**NDN363A**
ADA116U *	**ADA120U** *	**ADA125U** *	**ADA132U** *	**ADA140U** *	**ADA145U** *	-	-
ADA166U *	**ADA170U** *	**ADA175U** *	**ADA182U** *	**ADA190U** *	-	-	-

JK208BG

[1] Full metal cover & door to comply with BS 7671 Amendment 3.

Invicta 3 250A TP&N Distribution Boards (250A Incoming, 63A Outgoing)

Characteristics:
- Surface mounted steel enclosures, IP3XD rated, available with plain, glazed & Amendment 3 door options.
- Conforms to BS EN 61439-3. I_{nA} = 250A, I_{nc} = 63A, I_{cc} = 25kA.
- Supplied without incoming and outgoing devices. A Hager incoming kit must be used.
- For dimensions see page 1.50.

Description	Cat ref. Plain door	Cat ref. Glazed door	Cat ref. Residential Applications
8 Triple Pole Ways 250A TP&N Board	**JK208B**	**JK208BG**	**JK208BA3** [1]
12 Triple Pole Ways 250A TP&N Board	**JK212B**	**JK212BG**	**JK212BA3** [1]
16 Triple Pole Ways 250A TP&N Board	**JK216B**	**JK216BG**	**JK216BA3** [1]
18 Triple Pole Ways 250A TP&N Board	**JK218B**	**JK218BG**	**JK218BA3** [1]
24 Triple Pole Ways 250A TP&N Board	**JK224B**	**JK224BG**	**JK224BA3** [1]

JKD2884PM

200A Tri Metered Boards (Power, Lighting & Mechanical Services)

Characteristics:
- Provides separate energy information for each group of outgoing devices.
- Boards are supplied with meters that offer a pulsed & modbus output.
- Provided with a 200A switch disconnector incomer pre-fitted with ample cable space.
- Conforms to BS EN 61439-3. I_{nA} = 200A, I_{nc} = 63A, I_{cc} = 25kA.
- For dimensions see page 1.53.

Description	Max cable cap. solid	Lower pan ways	Middle pan ways	Upper pan ways	Cat ref.
8+8+4 Way Power, Lighting & Service Board	M8 Lug	8	8	4	**JKD2884PM**

JK20210BG

Hybrid 250A TP&N Distribution Boards (250A Incoming, up to 125A outgoing)

Characteristics:
- A hybrid distribution board combining 2x TP ways of 27mm MCB devices to supply end loads up to 125A, with standard 18mm MCB/RCBOs for other smaller loads.
- Surface mounted steel enclosure, IP3XD rated, available with plain steel or glazed door options.
- Conforms to BS EN 61439-3, I_{nA} + 250A, I_{nc} = 63A /125A, I_{cc} = 25kA
- For dimensions see page 1.51.

Description	Cat ref. Plain Door	Cat ref. Glazed Door
Hybrid 250A Distribution Boards - Supplied with 250A 3P Switch Disconnector Incomer Pre-Fitted		
250A 2+10 Way Hybrid TPN Board	**JK20210BSD**	**JK20210BGSD**
250A 2+16 Way Hybrid TPN Board	**JK20216BSD**	**JK20216BGSD**
250A 2+20 Way Hybrid TPN Board	**JK20220BSD**	**JK20220BGSD**
Hybrid 250A TPN Distribution Boards Without Incomer Supplied		
250A 2+10 Way Hybrid TPN Board	**JK20210B**	**JK20210BG**
250A 2+16 Way Hybrid TPN Board	**JK20216B**	**JK20216BG**
250A 2+20 Way Hybrid TPN Board	**JK20220B**	**JK20220BG**

MCBs & RCBOs for Invicta 3 Type B TP&N Distribution Boards - See pages 1.29-1.31 for more info

		0.5A	1A	2A	3A	4A	6A	10A
MCB B Curve	Single Pole	-	-	-	-	-	**NBN106A**	**NBN110A**
	Triple Pole	-	-	-	-	-	**NBN306A**	**NBN310A**
MCB C Curve	Single Pole	**NCN100A**	**NCN101A**	**NCN102A**	**NCN103A**	**NCN104A**	**NCN106A**	**NCN110A**
	Triple Pole	**NCN300A**	**NCN301A**	**NCN302A**	**NCN303A**	**NCN304A**	**NCN306A**	**NCN310A**
MCB D Curve	Single Pole	**NDN100A**	**NDN101A**	**NDN102A**	**NDN103A**	**NDN104A**	**NDN106A**	**NDN110A**
	Triple Pole	**NDN300A**	**NDN301A**	**NDN302A**	**NDN303A**	**NDN304A**	**NDN306A**	**NDN310A**
RCBO B Curve	Single Pole	-	-	-	-	-	**ADA106U**	**ADA110U**
RCBO C Curve	Single Pole	-	-	-	-	-	**ADA156U**	**ADA160U**

MCBs Suitable for Hybrid Distribution Boards Only - See page 1.35 for more info

		80A	100A	125A
MCB C Curve	Single Pole	**HMC180T**	**HMC190T**	**HMC199T**
	Triple Pole	**HMC380T**	**HMC390T**	**HMC399T**
MCB D Curve	Single Pole	**HMD180T**	**HMD190T**	**HMD199T**
	Triple Pole	**HMD380T**	**HMD390T**	**HMD399T**

Data is subject to errors and technical modifications. ★ New.

Incomer Kits for 250A Boards

Description	Connection	Cat ref.
3 Pole 250A MCCB Incomer Kit (Fits within distribution board)	M8 Lug	**JK22503M**
4 Pole 250A MCCB Incomer Kit (Fits within distribution board)	M8 Lug	**JK22504M**
3 Pole 250A Switch Disconnector Incomer Kit (Fits within distribution board)	M8 Lug	**JK22503S**
4 Pole 250A Switch Disconnector Incomer Kit (Fits within distribution board)	M8 Lug	**JK22504MCS**
4 Pole 250A Direct Connection Kit (Fits within distribution board)	M8 Lug	**JK22504D**
4 Pole 160A Contactor Incomer Kit includes Switch Disconnector (fits below distribution board, 450mm high)	M8 Lug	**JK21604C**
3 Pole 125A MCCB Incomer Kit (Fits within distribution board)	M8 Lug	**JK21253M**
4 Pole 125A MCCB Incomer Kit (Fits within distribution board)	M8 Lug	**JK21254M**

Surge Protection Kits for 250A Boards

Characteristics:
- SPD kit for direct integration within 250A TPN boards
- Type 1 + 2 SPD - Low Up value assured through use of solid copper Earth link
- Fail safe design SPD facilitates direct connection to main busbars
- SPD suitable for TN / TT Earth arrangements including TNC-S (PME)
- CT2 type SPD to accommodate multiple Earthing systems

Description	Cat ref.
Type 1 & 2 Surge Protection Kit for 250A TP&N Boards	**JK201SPD ***
Type 2 Surge Protection Kit for 250A TP&N Boards	**JK202SPD ***

JK201SPD

Side by Side Incomer Kits for 250A TP&N Boards

Characteristics:
- Complete with 3P SD incomer
- Cable set to connect to distribution boards (left)
- Suitable for all 250A board sizes

Description	Connection	Cat ref.
Dual kWh Meter Module 250A Incomer Pulsed	M8 Lug	**JKD250MID ***
Triple kWh Meter Module 250A Incomer Pulsed & Modbus	M8 Lug	**JKD250TMID ***

JKD250PM (distribution boards are not included)

Single Meter Packs for 250A Boards

Characteristics:
- Meter kit for standard 250A distribution boards & hybrid 250A distribution boards.
- Each meter pack contains: meter, 3 pole CT Block, 3 x fuses & carriers on DIN rail, wiring loom, incoming shroud & instructions.

Description	Cat ref.
Multifunction Meter Kit 250A Pulsed & Modbus	**JK240MID ***
Multifunction Meter Pack 250A Pulsed & Modbus	**JKD2250MID ***

JK240PM

16A	20A	25A	32A	40A	45A	50A	63A
NBN116A	**NBN120A**	**NBN125A**	**NBN132A**	**NBN140A**	**-**	**NBN150A**	**NBN163A**
NBN316A	**NBN320A**	**NBN325A**	**NBN332A**	**NBN340A**	**-**	**NBN350A**	**NBN363A**
NCN116A	**NCN120A**	**NCN125A**	**NCN132A**	**NCN140A**	**-**	**NCN150A**	**NCN163A**
NCN316A	**NCN320A**	**NCN325A**	**NCN332A**	**NCN340A**	**-**	**NCN350A**	**NCN363A**
NDN116A	**NDN120A**	**NDN125A**	**NDN132A**	**NDN140A**	**-**	**NDN150A**	**NDN163A**
NDN316A	**NDN320A**	**NDN325A**	**NDN332A**	**NDN340A**	**-**	**NDN350A**	**NDN363A**
ADA116U	**ADA120U**	**ADA125U**	**ADA132U**	**ADA140U**	**ADA145U**	**-**	**-**
ADA166U	**ADA170U**	**ADA175U**	**ADA182U**	**ADA190U**	**-**	**-**	**-**

JK116EG

DIN Extension Boxes & Door Kits for 125A Primary Boards

Characteristics:
- Extension boxes have plain or glazed doors and a DIN rail for mounting modular devices.
- Conforms to BS EN 62208.
- Full width enclosure provided with sixteen modular ways per row.
- For dimensions see page 1.51.

Description	Cat ref. Plain door	Cat ref. Glazed door	Cat ref. Residential Applications
125A 16 Way 1 Row DIN Extension Box	**JK116E**	**JK116EG**	**JK116EA3**
125A 32 Way 2 Row DIN Extension Box	**JK132E**	**JK132EG**	**JK132EA3**
125A 16 Mod DIN Plain Spare Door Kit (Amendment 3)	**-**	**-**	**JK116EA3-DK**
125A 32 Mod DIN Plain Spare Door Kit (Amendment 3)	**-**	**-**	**JK132EA3-DK**

JK216E

DIN Extension Boxes & Door Kits for 250A Primary Boards

Description	Cat ref. Plain door	Cat ref. Glazed door
250A 16 Way 1 Row DIN Extension Box	**JK216E**	**JK216EG**
250A 32 Way 2 Row DIN Extension Box	**JK232E**	**JK232EG**
250A 16 Way 1 Row DIN Extension Box (Amendment 3)	**JK216EA3**	**-**
250A 32 Way 2 Row DIN Extension Box (Amendment 3)	**JK232EA3**	**-**
250A 16 Mod DIN Plain Spare Door Kit (Amendment 3)	**JK216EA3-DK**	**-**
250A 32 Mod DIN Plain Spare Door Kit (Amendment 3)	**JK232EA3-DK**	**-**

JK101SE

JK101DK

Cable Spreader Boxes & Door Kits for 125A & 250A Primary Boards

Characteristics:
- Cable spreader boxes are used for additional cabling space therefore do not require doors. Optional door kits are available.
- Conforms to BS EN 62208.
- For dimensions see page 1.51.

Description	Cat ref. 125A	Cat ref. 250A
Small Cable Spreader Box (supplied without a door)	**JK101SE**	**JK201SE**
Large Cable Spreader Box (supplied without a door)	**JK102LE**	**JK202LE**
Small Cable Spreader Box Door Kit	**JK101DK**	**JK101DK**
Large Cable Spreader Box Door Kit	**JK102DK**	**JK102DK**

JK08FK

(TP&N Board not included)

Invicta 3 125A Flush Kits

Characteristics:
- Suitable for flush mounting our 8 - 24 way Invicta 3 TP&N Boards - 125A.
- Distribution board not included.
- Flush mounted distribution board solution has been revalidated to meet BS EN 61439-3 - additional requirements for flush mounted solutions
- Provides low profile high aesthetic solution for open areas.

Description	Cat ref.
Flush Mounting Kit for Invicta 3 TP&N - 8 Way	**JK108FK ★**
Flush Mounting Kit for Invicta 3 TP&N - 12 Way	**JK112FK ★**
Flush Mounting Kit for Invicta 3 TP&N - 16 Way	**JK116FK ★**
Flush Mounting Kit for Invicta 3 TP&N - 18 Way	**JK118FK ★**
Flush Mounting Kit for Invicta 3 TP&N - 24 Way	**JK124FK ★**

Data is subject to errors and technical modifications. ★ **New.**

Side DIN Enclosures for Primary Boards

Characteristics:
- Side extension boxes allow for the installation of DIN rail mounted devices.
- Conforms to BS EN 62208.
- Can be horizontally or vertically attached to distribution boards.
- All Side DIN Enclosures supplied with two removable gland plates.
- For dimensions see page 1.50.

Description	Number of rows	Cat ref. Glazed door	Cat ref. Residential Applications
Side DIN Enclosures for 125A Primary Boards			
4 Way 32 Mod Side DIN Enclosure for **JK104B(G)**	2	**JK104BDFG**	**JK104BDFA3**
6 Way 32 Mod Side DIN Enclosure for **JK106B(G)**	2	**JK106BDFG**	**JK106BDFA3**
8 Way 48 Mod Side DIN Enclosure for **JK108B(G)**	3	**JK108BDFG**	**JK108BDFA3**
12 Way 64 Mod Side DIN Enclosure for **JK112B(G)**	4	**JK112BDFG**	**JK112BDFA3**
16 Way 80 Mod Side DIN Enclosure for **JK116B(G)**	5	**JK116BDFG**	**JK116BDFA3**
Side DIN Enclosures for 250A Primary Boards			
8 Way 80 Mod Side DIN Enclosure for **JK208B(G)**	5	**JK208BDFG**	**JK208BDFA3**
12 Way 80 Mod Side DIN Enclosure for **JK212B(G)**	5	**JK212BDFG**	**JK212BDFA3**
16 Way 96 Mod Side DIN Enclosure for **JK216B(G)**	6	**JK216BDFG**	**JK216BDFA3**
18 Way 112 Mod Side DIN Enclosure for **JK218B(G)**	7	**JK218BDFG**	**JK218BDFA3**
24 Way 128 Mod Side DIN Enclosure for **JK224B(G)**	8	**JK224BDFG**	**JK224BDFA3**

JK104BDFG

JK208BDFG

Side Extension Boxes for 125A Primary Boards

Characteristics:
- Side extension boxes allow cable ways to be fitted on site.
- Conforms to BS EN 62208.
- Available in either half or full distribution board width.
- All side extension boxes supplied with two removable gland plates.
- For dimensions see page 1.51.

Description	Cat ref. Plain door
Side Extension Boxes for 125A Primary Boards	
4 Way Side Extension Box for **JK104B(G)** Full Width	**JK104BSF**
6 Way Side Extension Box for **JK106B(G)** Full Width	**JK106BSF**
8 Way Side Extension Box for **JK108B(G)** Full Width	**JK108BSF**
12 Way Side Extension Box for **JK112B(G)** Full Width	**JK112BSF**
16 Way Side Extension Box for **JK1116B(G)** Full Width	**JK116BSF**
Side Extension Boxes for 250A Primary Boards	
8 Way Side Extension Box for **JK208B(G)** Full Width	**JK208BSF**
12 Way Side Extension Box for **JK212B(G)** Full Width	**JK212BSF**
16 Way Side Extension Box for **JK216B(G)** Full Width	**JK216BSF**
18 Way Side Extension Box for **JK218B(G)** Full Width	**JK218BSF**
24 Way Side Extension Box for **JK224B(G)** Full Width	**JK224BSF**
Half Width Side Extension Boxes for 125A Primary Boards	
4 Way Half Width Extension Box	**JK104BSH**
6 Way Half Width Extension Box	**JK106BSH**
8 Way Half Width Extension Box	**JK108BSH**
12 Way Half Width Extension Box	**JK112BSH**
16 Way Half Width Extension Box	**JK116BSH**
Small Half Width Filler Box	**JK101BSH**
Half Width Side Extension Boxes for 250A Primary Boards	
8 Way Half Width Extension Box	**JK208BSH**
12 Way Half Width Extension Box	**JK212BSH**
16 Way Half Width Extension Box	**JK216BSH**
18 Way Half Width Extension Box	**JK218BSH**
24 Way Half Width Extension Box	**JK224BSH**
Small Half Width Filler Box	**JK201BSH**

JK104BSF

JK104BSH

JK01B

JK222PK

Invicta 3 125A & 250A & IP65 Distribution Board Accessories

Description	125A Accessories Cat ref.	250A Accessories Cat ref.
Door Locking Kit	**JK222PK**	**JK222PK**
Spare Label Pack - All Sizes (one pack)	**JKLABELPACK**	**JKLABELPACK**
Single Phasing Kit	**JK1SPKIT**	**JK250BSP**
Single Pole Busbar Blank	**JK01B**	**JK01B**
Single Pole 27mm Blank	**JK02B**	**JK02B**
JK1/2 Horizontal or Vertical Mechanical Connection Kit	**JK100HK**	**JK100HK**
Brass Gland Plate - 2.0mm	**JK1PLATEB**	**JK2PLATEB**
100A Top Tap Off Kit	**JK100TAP**	**JK100TAP**
Additional Earth Bar Kit High Integrity - 2 x 15 Connections	**JK030BEB**	**JK030BEB**
Document Clip	**JK01DC**	**JK01DC**
Neutral Connecting Block 100A	**KRN190**	**KRN190**
JK1/2 Neutral Clear Shroud	**JK1/NEUTRALSHROUD**	**JK1/NEUTRALSHROUD**
JK1/2 Busbar Stack Top Shroud	**JK1/2TOPSHROUD**	**JK1/2TOPSHROUD**
JK1/2 Main Incomer Shroud	**JK1/INCOMSHROUD**	**JK2/INCOMSHROUD**
Spare Gland Plate Including Drill Markings - 1.2mm	**JK1PLATEM**	**JK2PLATEM**

JK106BA3-DK

Invicta 3 125A & 250A Amendment 3 Compliant Door Kit

Description	125A Cat ref.	250A Cat ref.
4 Way TPN Plain Spare Door Kit Amendment 3	**JK104BA3-DK**	**-**
6 Way TPN Plain Spare Door Kit Amendment 3	**JK106BA3-DK**	**-**
8 Way TPN Plain Spare Door Kit Amendment 3	**JK108BA3-DK**	**JK208BA3-DK**
12 Way TPN Plain Spare Door Kit Amendment 3	**JK112BA3-DK**	**JK212BA3-DK**
16 Way TPN Plain Spare Door Kit Amendment 3	**JK116BA3-DK**	**JK216BA3-DK**
18 Way TPN Plain Spare Door Kit Amendment 3	**JK118BA3-DK**	**JK218BA3-DK**
24 Way TPN Plain Spare Door Kit Amendment 3	**JK124BA3-DK**	**JK224BA3-DK**

JK06TK

[1] 4" trunking not suitable for JKD Power & Lighting Boards.

Invicta 3 125A & 250A Trunking Kits & Spares

Characteristics:
- Each trunking kit contains a trunking channel, lid, lid joining brackets, connecting brackets and end caps.

Description	100mm 4" Cat ref.	150mm 6" Cat ref.
Trunking Kit for Invicta 3 TP&N	**JK04TK** [1]	**JK06TK**
Spare Trunking Channel	**JK04TC** [1]	**JK06TC**
Spare Lid	**JK04TL** [1]	**JK06TL**
Spare End Cap	**JK04TE** [1]	**JK06TE**
Spare Connecting Bracket	**JK04TJ** [1]	**JK06TJ**
Spare Trunking Lid Joining Bracket	**JK04TP** [1]	**JK06TP**

Data is subject to errors and technical modifications. ★ New.

Engineered
solutions.
From pre-assembled standard distribution units to bespoke composite TP&N boards and plug in distribution boards, we can provide the solution.
We will deliver to site to an agreed deadline and specification.
To find out more, call our Estimation Team on **01952 675600.**
:hager

JN204BG

JN204B

Invicta 3 Panelboards (250A Incoming 125A Outgoing)

Characteristics
- Comprises of IP3XD rated enclosure, pan assembly, twin neutral and earth bars.
- Conforms to BS EN 61439-2. I_{nA} = 250A, I_{nc} = 125A, I_{cc} = 25kA.
- Supplied without incoming kit, JN 250A incomer kit must be used.
- Form 3B type 2 using outgoing terminal shield (form 3A without terminal shield).
- Removable side gland plates are standard. Removable gland plates are provided top and bottom for ease of installation.
- For dimensions see page 1.58.

Cable Capacity Incomers & Outgoers
- Incomers: 3 and 4 pole incomers, cable capacity 150mm², max lug width 25mm, M8 bolt, direct connection kit.
- Outgoers: 1 & 3 pole MCCB 70mm² flexible, 95mm² solid.

Options
- Key lock, meter pack, DIN rail, extension box, spreader box.

Outgoing MCCBs
- Adjustable thermal options on triple pole devices.

Description	Cat ref. Plain door	Cat ref. Glazed door
4 Triple Pole Ways 250A Panelboard	**JN204B**	**JN204BG**
6 Triple Pole Ways 250A Panelboard	**JN206B**	**JN206BG**
8 Triple Pole Ways 250A Panelboard	**JN208B**	**JN208BG**
12 Triple Pole Ways 250A Panelboard	**JN212B**	**JN212BG**
16 Triple Pole Ways 250A Panelboard	**JN216B**	**JN216BG**

Incomer Kits

Description	Max cable capacity	Cat ref.
3 Pole 250A MCCB Incomer Kit (Adj. Thermal 0.63, 0.8, 1) 40kA (Magnetic 5, 7, 9, 11 x I_n)	M8 Lug	**JN223BM**
4 Pole 250A MCCB Incomer Kit (Adj. Thermal 0.63, 0.8, 1) 40kA (Magnetic 5, 7, 9, 11 x I_n)	M8 Lug	**JN224BM**
3 Pole 250A Non-Auto MCCB Incomer Kit	M8 Lug	**JN223BS**
4 Pole 250A Non-Auto MCCB Incomer Kit	M8 Lug	**JN224BS**
250A Direct Connection Kit	M8 Lug	**JN224BD**
Palm Kit for Larger Cable >50mm² to 2 x 120mm² with 10mm Bolt Fixing		**JN250SL ***

JN202SPD

JN201SPD (Device only)

250A JN Panelboard Surge Protection Device Kit

Characteristics
- SPD kit for direct integration within 250A Panelboards
- Fail safe design SPD facilitates direct connection to main busbars
- SPD suitable for TN / TT Earth arrangements including TNC-S (PME)
- CT2 type SPD to accommodate multiple Earthing systems
- Solid copper Earth link for enhanced U_p performance
- Supplied with mounting & connection set

Description	Cat ref. Plain door
SPD kit Type 1+2 for JN Panelboards	**JN201SPD ***
SPD kit Type 2 for JN Panelboards	**JN202SPD ***

DIN Rail Extension Boxes

JN201BE

Characteristics
- Supplied with DIN Rail & without gland plate (utilise removed gland plate from panelboard)
- DIN rail extensions boxes have plain or glazed doors and DIN rail chassis.
- JK2 side extension boxes can be used with this range see page 1.10.
- For dimensions see page 1.52.

Description	Cat ref. Plain Door	Cat ref. Glazed Door
1 Row 26 Mod (300mm Height)	**JN201BE**	**JN201BEG**
2 Row 52 Mod (450mm Height)	**JN203BE**	**JN203BEG**

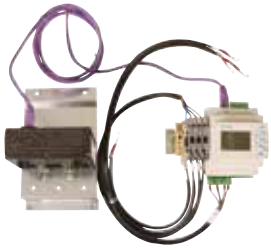
Cable Spreader Boxes & Door Kits

JN205BE

Characteristics
- Supplied without gland plates (utilise removed gland plate from panelboard)
- Cable spreader boxes are used for additional cabling space therefore do not require doors. Optional door kits are available.
- For dimensions see page 1.58.

Description	Cat ref.
Small (300mm Height) (Door not included)	**JN205BE**
Large (450mm Height) (Door not included)	**JN206BE**
Door Kit for Small Cable Spreader Box	**JN205DK**
Door Kit for Large Cable Spreader Box	**JN206DK**

Meter Pack 250A



JN201PM

Characteristics
- Comprises of a digital multi function meter, three control circuit fuse carriers, wiring harness and CTs.
- The meter pack fits directly into the main panelboard.
- For metering incoming supply to the panelboard.

Description	Cat ref.
Multifunction Meter Pack 250A Pulsed & Modbus	**JN201PM**
MID Multifunction Meter Pack 250A Pulsed & Modbus	**JN201MID**

Accessories

JN001BP

Description	Cat ref.
Touch Up Paint 30ml	**JF95A**
Allen Key Set	**JF296A**
Gland Plate for Invicta 3 (250A)	**JN2PLATE**
Key Lock with One Key	**JK222PK**
x125 Frame Blank (3x blanks required per triple pole way)	**JN001BP**
Multi Padlock Plate (for integral toggle lock, fits to toggle for up to 3 padlocks max ø8mm)	**HXA039H**
Neutral Barrier Kit	**JN201NS**

Outgoing Devices - See page 1.45 for more info

MCCBs - Single Pole

Rating.	18kA Fixed Thermal	25kA Fixed Thermal
16A	**HDA014E ***	**HHA014E ***
20A	**HDA018E ***	**HHA018E ***
25A	**HDA023E ***	**HHA023E ***
32A	**HDA030E ***	**HHA030E ***
40A	**HDA038Z**	**HHA038Z**
50A	**HDA048Z**	**HHA048Z**
63A	**HDA061Z**	**HHA061Z**
80A	**HDA078Z**	**HHA078Z**
100A	**HDA098Z**	**HHA098Z**
125A	**HDA123Z**	**HHA123Z**

MCCBs - Triple Pole Adjustable Thermal

Rating.	18kA Adjustable Thermal 0.63, 0.8, 1 x I_n	25kA Adjustable Thermal 0.63, 0.8, 1 x I_n
25A	**HDA025U**	**HHA025U**
40A	**HDA040U**	**HHA040U**
63A	**HDA063U**	**HHA063U**
80A	**HDA080U**	**HHA080U**
100A	**HDA100U**	**HHA100U**
125A	**HDA125U**	**HHA125U**

JF406B

Invicta 3 Panelboards (400A Incoming 125A Outgoing)

Characteristics
- Comprises of IP3XD enclosure, pan assembly, neutral bar and earth bar.
- Conforms to BS EN 61439-2. I_{nA} = 400A, I_{nc} = 125A, I_{cc} = 50kA.
- Supplied without incoming kit, one of the incomer kits listed below must be used.
- Form 3B type 2 using outgoing terminal shield (form 3A without terminal shield).
- Removable gland plates are provided top and bottom for ease of installation.
- For dimensions see page 1.59.

Cable Capacity Incomers & Outgoers
- Incomers: 3 and 4 pole incomers, cable capacity: M12 bolt, direct connection kit: M10 hexagonal bolt.
- Outgoers: 1 & 3 pole MCCB: 70mm² flexible/ 95mm² solid.

Options
- Key lock, meter pack, DIN rail, extension box, spreader box.

Outgoing MCCBs
- Adjustable thermal options on triple pole.

Description	Cat ref. Plain Door	Cat ref. Glazed door
6 Triple Pole Ways 400A Panelboard	**JF406B**	**JF406BG**
8 Triple Pole Ways 400A Panelboard	**JF408B**	**JF408BG**
12 Triple Pole Ways 400A Panelboard	**JF412B**	**JF412BG**
16 Triple Pole Ways 400A Panelboard	**JF416B**	**JF416BG**
18 Triple Pole Ways 400A Panelboard	**JF418B**	**JF418BG**

Incomer Kits for 400A Panelboards

Description	Max cable capacity solid	Cat ref.
3 Pole 400A MCCB Incomer Kit 50kA Electronic LSI MCCB, Ir adjustable 0.4 – 1.0 x I_n	M12 Lug	**JF443BM**
4 Pole 400A MCCB Incomer Kit 50kA Electronic LSI MCCB, Ir adjustable 0.4 – 1.0 x I_n	M12 Lug	**JF444BM**
3 Pole 400A Switch Disconnector Incomer Kit	M12 Lug	**JF443BS**
4 Pole 400A Switch Disconnector Incomer Kit	M12 Lug	**JF444BS**
400A Direct Connection Kit	M10 Lug	**JF444BD**

JF801SPD

400A JF Panelboard Surge Protection Device Kit

Characteristics
- SPD kit for direct integration within 400A Panelboards
- Type 1 + 2 SPD with Integrated fuses facilitates direct connect to main busbars
- SPD suitable for TN / TT Earth arrangements including TNC-S (PME)
- CT2 type SPD to accommodate multiple Earthing systems
- Solid copper Earth link for assured lower U_p performance

Description	Cat ref.
SPD kit Type 1 + 2 for JF Panelboards	**JF801SPD ***

JF801E

DIN Rail Extension Boxes for 400A Panelboards

Characteristics
- DIN rail extension boxes have plain or glazed doors and DIN rail chassis.
- Cable spreader boxes are used for additional cabling space therefore do not require doors. If doors are desired optional door kits are available.
- Supplied with DIN Rail and without gland plate (utilise removed gland plate from panelboard).
- For dimensions see page 1.59.

Description	Cat ref. Plain Door	Cat ref. Glazed Door
1 Row 34 Mod (300mm Height)	**JF801E**	**JF801EG**
2 Row 68 Mod (450mm Height)	**JF803E**	**JF803EG**

Data is subject to errors and technical modifications. ★ New.

Cable Spreader Boxes & Door Kits for 400A Panelboards

JF805E

Characteristics
- Supplied without gland plates (utilise removed gland plate from panelboard).
- Cable spreader boxes are used for additional cabling space therefore do not require doors. Optional door kits are available.
- For dimensions see page 1.59.

Description	Cat ref.
Small (300mm Height) (Door not included)	**JF805E**
Large (450mm Height) (Door not included)	**JF806E**
Small Cable Spreader Box Door Kit	**JF805DK**
Large Cable Spreader Box Door Kit	**JF806DK**

Meter Pack 400A

Characteristics
- These meter packs fit directly into the main panelboard. Suitable for single incoming cable.

Description	Cat ref.
Multifunction Meter Pack 400A Pulsed & Modbus	**JF403PM**

Accessories

Description	Cat ref.
Locking Kit for Incoming Device (All Ratings)	**HXD039H**
Allen Key Set	**JF296A**
Gland Plate for Invicta 3 400A Range	**JFPLATE**
Key Lock with One Key	**JK222PK**
x125 Frame 1 Pole Blank (3x blanks required per triple pole)	**JN001BP**
Outgoer Locking Kit (fits to toggle for up to 3 padlocks max ø 8mm²)	**HXA039H**
Terminal Cover x160 1 Pole Long	**HYA029H**
Terminal Cover x160 3 Pole Long	**HYA021H**

JN001BP

HXD039H

Outgoing Devices - See page 1.45 for more info

MCCBs - Single Pole

Rating.	18kA Fixed Thermal	25kA Fixed Thermal
16A	**HDA014E ***	**HHA014E ***
20A	**HDA018E ***	**HHA018E ***
25A	**HDA023E ***	**HHA023E ***
32A	**HDA030E ***	**HHA030E ***
40A	**HDA038Z**	**HHA038Z**
50A	**HDA048Z**	**HHA048Z**
63A	**HDA061Z**	**HHA061Z**
80A	**HDA078Z**	**HHA078Z**
100A	**HDA098Z**	**HHA098Z**
125A	**HDA123Z**	**HHA123Z**

MCCBs - Triple Pole Adjustable Thermal

Rating.	18kA Adjustable Thermal 0.63, 0.8, 1 x I_n	25kA Adjustable Thermal 0.63, 0.8, 1 x I_n
25A	**HDA025U**	**HHA025U**
40A	**HDA040U**	**HHA040U**
63A	**HDA063U**	**HHA063U**
80A	**HDA080U**	**HHA080U**
100A	**HDA100U**	**HHA100U**
125A	**HDA125U**	**HHA125U**

JF608B

Invicta 3 Panelboards (630A/800A Incoming 125A Outgoing)

Characteristics
- Comprises of IP3XD enclosure, pan assembly, neutral bar and earth bar.
- Conforms to BS EN 61439-2. I_{nA} = 630/800A, I_{nc} = 125A, I_{cc} = 50kA.
- Supplied without incoming kit, one of the incomer kits listed below must be used.
- Form 3B type 2 using outgoing terminal shield (form 3A without terminal shield).
- Removable gland plates are provided top and bottom for ease of installation.
- Switch Disconnector: 630A/800A, MCCB: 400A/630A, Direct connection: 800A.
- Incoming cable lugged via M12 hexagonal bolt.
- For dimensions see page 1.59.

Cable Capacity Incomers & Outgoers
- Incomers: 400A: 2 x 240mm², 630A: 2 x 240mm² / 2 x 300mm².
- Outgoers: Single pole up to 125A - 70mm² flexible, 95mm² solid, Triple pole up to 250A - 150mm² flexible.

Outgoing MCCBs
- Adjustable thermal options on triple pole.

Description	Cat ref. Plain Door	Cat ref. Glazed door
8 Triple Pole Ways 630A Panelboard	**JF608B**	**JF608BG**
12 Triple Pole Ways 630A/800A Panelboard	**JF812B**	**JF812BG**
18 Triple Pole Ways 630A/800A Panelboard	**JF818B**	**JF818BG**

[1] Max allowed incomer of 630A on this panelboard.

Invicta 3 Panelboards (630A/800A Incoming 125A/250A Outgoing)

Characteristics
- These boards will accept a range of MCCB frame sizes: 125A frame: 16-125A single pole/triple pole, 250A frame: 80-250A triple pole only
- I_{nA} = 630/800A, I_{nc} = 250A, I_{cc} = 50kA.

Description	Cat ref. Plain Door	Cat ref. Glazed door
6 Triple Pole Ways Panelboard (2 x 250A ❶ + 4 x 125A ❷)	**JF60204B** [1]	**JF60204BG** [1]
8 Triple Pole Ways Panelboard (2 x 250A ❶ + 6 x 125A ❷)	**JF80206B**	**JF80206BG**
8 Triple Pole Ways Panelboard (4 x 250A ❶ + 4 x 125A ❷)	**JF80404B**	**JF80404BG**
12 Triple Pole Ways Panelboard (2 x 250A ❶ + 10 x 125A ❷)	**JF80210B**	**JF80210BG**
12 Triple Pole Ways Panelboard (4 x 250A ❶ + 8 x 125A ❷)	**JF80408B**	**JF80408BG**
18 Triple Pole Ways Panelboard (4 x 250A ❶ + 14 x 125A ❷)	**JF80414B**	**JF80414BG**
18 Triple Pole Ways Panelboard (6 x 250A ❶ + 12 x 125A ❷)	**JF80612B**	**JF80612BG**

* Select the required 630A/800A rated panelboard (e.g. **JF80206BG**) and add the suffix **800LBS** e.g. **JF80206BG800LBS**

Incomer Kits for 630A/800A Panelboards

Characteristics
- A 300mm cable spreader box (**JF805E**) is required for all incomer kits.

Description	Max cable capacity	Cat ref.
4 Pole 400A Load Break Switch 25kA	M10 Lug	**JF844BSW**
4 Pole 630A Load Break Switch 25kA	M12 Lug	**JF864BSW**
4 Pole 800A Load Break Switch	M12 Lug	***800LBS**
800A Direct Connection Kit 4 Pole	M12 Lug	**JF884BD**
3 Pole 400A MCCB Incomer Kit 50kA Electronic LSI MCCB, I_r adjustable 0.4 – 1.0 x I_n	M12 Lug	**JF843BM**
4 Pole 400A MCCB Incomer Kit Electronic LSI MCCB, I_r adjustable 0.4 – 1.0 x I_n	M12 Lug	**JF844BM**
3 Pole 630A MCCB Incomer Kit 50kA Electronic LSI MCCB, I_r adjustable 0.4 – 1.0 x I_n	M12 Lug	**JF863BM**
4 Pole 630A MCCB Incomer Kit 50kA Electronic LSI MCCB, I_r adjustable 0.4 – 1.0 x I_n	M12 Lug	**JF864BM**

JF801SPD

630/800A JF Panelboard Surge Protection Device Kit

Characteristics
- SPD kit for direct integration within JF Panelboards
- Type 1 + 2 SPD with Integrated fuses facilitate direct connect to main busbars
- SPD suitable for TN / TT Earth arrangements including TNC-S (PME)
- CT2 type SPD to accommodate multiple Earthing systems

Description	Cat ref.
SPD kit Type 1 + 2 for JF Panelboards	**JF801SPD ***

Data is subject to errors and technical modifications. ★ New.

DIN Rail Extension Boxes for 630A/800A Panelboards

JF801E

Characteristics
- DIN rail extension boxes have plain or glazed doors and DIN rail chassis.
- Cable spreader boxes are used for additional cabling space therefore do not require doors. Optional door kits are available.
- Supplied with DIN rail and without gland plate (utilise removed gland plate from panelboard).
- For dimensions see page 1.59.

Description	Cat ref. Plain Door	Cat ref. Glazed door
1 Row 34 Mod (300mm Height)	**JF801E**	**JF801EG**
2 Row 68 Mod (450mm Height)	**JF803E**	**JF803EG**

Cable Spreader Boxes & Door Kits for 630A/800A Panelboards

Characteristics
- Supplied without gland plates (utilise removed gland plate from panelboard).
- Cable spreader boxes are used for additional cabling space therefore do not require doors. Optional door kits are available.
- For dimensions see page 1.59.

Description	Cat ref.
Small (300mm Height) (Door not included)	**JF805E**
Large (450mm Height) (Door not included)	**JF806E**
Small Cable Spreader Box Door Kit	**JF805DK**
Large Cable Spreader Box Door Kit	**JF806DK**

Meter Pack for 630A/800A Panelboards

Characteristics
- These meter packs fit directly into the main panelboard. Spreader box required to mount CT's.
- For Meter Enclosures see page 1.24.

Description	Cat ref.
Multifunction Meter Pack 800A Pulsed & Modbus	**JF803PM**

Outgoing Devices Thermal Magnetic - See page 1.45 - 1.47 for more info

❶ MCCBs x250 40kA - Triple Pole

Rating.	Adjustable Thermal & Magnetic
100A	**HNB100H**
125A	**HNB125H**
160A	**HNB160H**
200A	**HNB200H**
250A	**HNB250H**

❶ & ❷ - Please see left hand page for corresponding numbers.

❷ MCCBs - 125A 18kA Single Pole

Rating.	18kA Fixed Thermal	25kA Fixed Thermal
16A	**HDA014E ***	**HHA014E ***
20A	**HDA018E ***	**HHA018E ***
25A	**HDA023E ***	**HHA023E ***
32A	**HDA030E ***	**HHA030E ***
40A	**HDA038Z**	**HHA038Z**
50A	**HDA048Z**	**HHA048Z**
63A	**HDA061Z**	**HHA061Z**
80A	**HDA078Z**	**HHA078Z**
100A	**HDA098Z**	**HHA098Z**
125A	**HDA123Z**	**HHA123Z**

❷ MCCBs - 125A 25kA Triple Pole Adjustable Thermal

Rating.	18kA Adjustable Thermal 0.63, 0.8, 1 x I_n	25kA Adjustable Thermal 0.63, 0.8, 1 x I_n
25A	**HDA025U**	**HHA025U**
40A	**HDA040U**	**HHA040U**
63A	**HDA063U**	**HHA063U**
80A	**HDA080U**	**HHA080U**
100A	**HDA100U**	**HHA100U**
125A	**HDA125U**	**HHA125U**

JHF812B

Invicta 3 Panelboards (800A Incoming, 125A Outgoing)

Characteristics
- Comprises of IP3XD enclosure, pan assembly, neutral bar and earth bar
- Conforms to BS EN 61439-2. I_{nA} = 800A, I_{nc} = 125A, I_{cc} = 50kA.
- Supplied without incoming kit, one of the incomer kits listed below must be used.
- Form 3B type 2 using outgoing terminal shield (form 3A without terminal shield).
- Removable gland plates are provided top and bottom for ease of installation.
- MCCB: 800A 3 or 4 pole.
- Incoming cable lugs 44mm pad with 2 x M12 hexagonal bolt.
- For dimensions see page 1.60.

Cable Capacity Incomers & Outgoers
Incomers: 800A MCCB: 2 x 300mm²,
Outgoers: Single pole up to 125A - 70mm² flexible, 95mm² solid, Triple pole up to 250A - 150mm² flexible.

Outgoing MCCBs
- Adjustable thermal options on triple pole.

Description	Cat ref. Plain Door	Cat ref. Glazed door
12 Triple Pole Ways 800A Panelboard	**JHF812B**	**JHF812BG**
18 Triple Pole Ways 800A Panelboard	**JHF818B**	**JHF818BG**

JHF80408B

Invicta 3 Panelboards (800A Incoming 125A / 250A Outgoing)

- These boards will accept two MCCB frame sizes: 125A frame: 16 - 125A, 250A frame: 100 - 250A.
- I_{nA} = 800A, I_{nc} = 250A, I_{cc} = 50kA.

Description	Cat ref. Plain Door	Cat ref. Glazed door
8 Triple Pole Ways 800A Panelboard (2 x 250A ❶ + 6 x 125A ❷)	**JHF80206B**	**JHF80206BG**
8 Triple Pole Ways 800A Panelboard (4 x 250A ❶ +4 x 125A ❷)	**JHF80404B**	**JHF80404BG**
12 Triple Pole Ways 800A Panelboard (2 x 250A ❶ + 10 x 125A ❷)	**JHF80210B**	**JHF80210BG**
12 Triple Pole Ways 800A Panelboard (4 x 250A ❶ + 8 x 125A ❷)	**JHF80408B**	**JHF80408BG**
18 Triple Pole Ways 800A Panelboard (4 x 250A ❶ + 14 x 125A ❷)	**JHF80414B**	**JHF80414BG**
18 Triple Pole Ways 800A Panelboard (6 x 250A ❶ + 12 x 125A ❷)	**JHF80612B**	**JHF80612BG**

MCCB Incomer Kits for 800A Panelboards

Description	Palm lug max (width)	Cat ref.
800A 3 Pole MCCB Incomer Auto 50kA	60mm	**JHF883BM**
800A 4 Pole MCCB Incomer Auto 50kA	60mm	**JHF884BM**

JN001BP

Accessories

Description	Cat ref.
Locking Kit for MCCB Incoming Device (All Ratings)	**HXD039H**
Allen Key Set	**JF296A**
End Plate for Invicta 3 800A Range	**JFPLATE**
Key Lock with One Key	**JK222PK**
x125 Frame 1 Pole Blank (3x blanks required per triple pole)	**JN001BP**
x250 Frame 3 Pole Blank (1x blank required per triple pole)	**JF003BP**
Outgoer Locking Kit (fits to toggle for up to 3 padlocks max ø 8mm²)	**HXA039H**

Surge Protection SPD Options

Note:
- JF801SPD can not be fitted in JH* Panelboards
- Please contact our engineered solutions team for factory fitted SPD options - 01952 677 899

Data is subject to errors and technical modifications. ★ New.

DIN Rail Extension Boxes for 800A Panelboards

- DIN rail extension boxes have plain or glazed doors and DIN rail chassis.
- Cable spreader boxes are used for additional cabling space therefore do not require doors. Optional door kits are available.
- Supplied with DIN rail and without gland plate (utilise removed gland plate from panelboard).
- For dimensions see page 1.59.

Description	Cat ref. Plain Door	Cat ref. Glazed door
1 Row 34 Mod (300mm Height)	**JF801E**	**JF801EG**
2 Row 68 Mod (450mm Height)	**JF803E**	**JF803EG**

Cable Spreader Boxes for 800A Panelboards

- Supplied without gland plates (utilise removed gland plate from panelboard).
- Cable spreader boxes are used for additional cabling space therefore do not require doors. Optional door kits are available.
- For dimensions see page 1.59.

Description	Cat ref.
Small (300mm Height) (Door not included)	**JF805E**
Large (450mm Height) (Door not included)	**JF806E**
Small Cable Spreader Box Door Kit	**JF805DK**
Large Cable Spreader Box Door Kit	**JF806DK**

Meter Pack for 800A Panelboards

- These meter packs fit directly into the main panelboard. Spreader box required to mount CT's.
- For Meter Enclosures see page 1.24.

Description	Cat ref.
Multifunction Meter Pack 800A Pulsed & Modbus	**JF803PM**

Outgoing Devices Thermal Magnetic - See page 1.45 - 1.47 for more info.

❶ MCCBs x250 40kA - Triple Pole

Rating.	Adjustable Thermal & Magnetic
100A	**HNB100H**
125A	**HNB125H**
160A	**HNB160H**
200A	**HNB200H**
250A	**HNB250H**

❷ MCCBs - 125A 18kA Single Pole

Rating.	18kA Fixed Thermal	25kA Fixed Thermal
16A	**HDA014E ***	**HHA014E ***
20A	**HDA018E ***	**HHA018E ***
25A	**HDA023E ***	**HHA023E ***
32A	**HDA030E ***	**HHA030E ***
40A	**HDA038Z**	**HHA038Z**
50A	**HDA048Z**	**HHA048Z**
63A	**HDA061Z**	**HHA061Z**
80A	**HDA078Z**	**HHA078Z**
100A	**HDA098Z**	**HHA098Z**
125A	**HDA123Z**	**HHA123Z**

❷ MCCBs - 125A 25kA Triple Pole Adjustable Thermal

Rating.	18kA Adjustable Thermal 0.63, 0.8, 1 x I_n	25kA Adjustable Thermal 0.63, 0.8, 1 x I_n
25A	**HDA025U**	**HHA025U**
40A	**HDA040U**	**HHA040U**
63A	**HDA063U**	**HHA063U**
80A	**HDA080U**	**HHA080U**
100A	**HDA100U**	**HHA100U**
125A	**HDA125U**	**HHA125U**

JF12504SM

JF450CF

JF4508TM

Meter Enclosures for JF Panelboards

- Blanking plates not included (utilise removed blanking plate from panelboard).
- When selecting outgoing metering, the panelboard metering system is easily configured by selecting a side, top or combination that matches the panelboard (e.g. for the **JF406B/G** board, you can select a **JF12504SM** side mounted meter enclosure that can house 4 **ECM01** panel mounted meters). When using both side and top/bottom meter enclosures, corner filler enclosures are available.
- For help choosing your metering solution see the Method Chart on page 1.60.
- Please contact us for any non-standard requirements or assembly.
- For dimensions see page 1.62.

Suitable for board type / Description	Spaces for Meters	Cat ref.
Side Meter Enclosures		
6/8 Way JF Board	4 x Din 96 Cut-Outs	**JF12504SM**
12 Way JF Board	6 x Din 96 Cut-Outs	**JF14006SM**
16 Way JF Board	8 x Din 96 Cut-Outs	**JF15508SM**
18 Way JF Board	9 x Din 96 Cut-Outs	**JF17009SM**
Blanking Plate DIN 96	-	**JF96BP**
Top/Bottom Meter Enclosures		
300mm Enclosure	4 x DIN 96 Cut-Outs	**JF3004TM**
450mm Enclosure	8 x DIN 96 Cut-Outs	**JF4508TM**
Blanking Plate DIN 96	-	**JF96BP**
Corner Filler Enclosures		
300mm Corner Filler Side Enclosure	-	**JF300CF**
450mm Corner Filler Side Enclosure	-	**JF450CF**

JN11004SM

JN3003TM

Side/Top/Bottom Meter Enclosures for JN Panelboards

Characteristics
- Blanking plates not included.
- For meters see page 1.24.
- For dimensions see page 1.62.

Suitable for board type / Description	Apertures for Meters	Cat ref.
Side Meter Enclosures		
4 Way JN Board	2 x DIN 96 Cut-Outs	**JN9502SM**
6/8 Way JN Board	4 x DIN 96 Cut-Outs	**JN11004SM**
12 Way JN Board	6 x DIN 96 Cut-Outs	**JN12506SM**
16 Way JN Board	8 x DIN 96 Cut-Outs	**JN15508SM**
Top/Bottom Meter Enclosures		
300mm Enclosure	3 x DIN 96 Cut-Outs	**JN3003TM**
450mm Enclosure	6 x DIN 96 Cut-Outs	**JN4506TM**
Blanking Plate	-	**JF96BP**
Corner Filler Enclosures		
300mm Corner Filler Side Enclosure JN	-	**JN300CF**
450mm Corner Filler Side Enclosure JN	-	**JN450CF**

Data is subject to errors and technical modifications. ★ **New.**

Single Phase Direct Connect kWh Meters - MID Approved

Description:
- MID approved meter range (except EC…180T)
- A range of both direct connect and CT supplied din rail mounted meters

Characteristics:
- CT supplied meters compatible with 1 A / 5A CT's (not suitable for use with cables / ct's from page 1.23)
- Choice of communication options – pulse output kWh, Modbus or Mbus

ECN140D

Description	Width (1 Mod =17.5mm)	Cat ref.
40A kWh Meters		
1Ph kWh Meter Direct 40A Pulsed Output 1M	1 Mod	**ECN140D ***
1Ph kWh Meter Direct 40A 1M Pulsed Output MID	1 Mod	**ECP140D ***
1Ph kWh Meter Direct 40A 1M MBUS MID	1 Mod	**ECM140D ***
1Ph kWh Meter Direct 40A 1M MODBUS MID	1 Mod	**ECR140D ***
3 x 80A kWh Meters - Not MID Approved		
1Ph kWh Meter Direct 3x80A 4M Pulsed Output	4 Mod	**ECP180T ***
1Ph kWh Meter Direct 3x80A 4M MBUS	4 Mod	**ECM180T ***
1Ph kWh Meter Direct 3x80A 4M MODBUS	4 Mod	**ECR180T ***
80A kWh Meters		
1Ph kWh Meter Direct 80A 2M Pulsed Output MID	2 Mod	**ECP180D ***
1Ph kWh Meter Direct 80A 2M MBUS MID	2 Mod	**ECM180D ***
1Ph kWh Meter Direct 80A 2M MODBUS MID	2 Mod	**ECR180D ***

ECA180T

Three Phase Direct Connect kWh Meters - MID Approved

ECM310D

Description	Width (1 Mod =17.5mm)	Cat ref.
80A kWh Meters		
3Ph kWh Meter Direct 80A 4M MID	4 Mod	**ECP380D ***
3Ph kWh Meter Direct 80A 4M MBUS MID	4 Mod	**ECM380D ***
3Ph kWh Meter Direct 80A 4M MODBUS MID	4 Mod	**ECR380D ***
125A kWh Meters		
3Ph kWh Meter Direct 125A 6M S0 MID	6 Mod	**ECP310D ***
3Ph kWh Meter Direct 125A 6M MBUS MID	6 Mod	**ECM310D ***
3Ph kWh Meter Direct 125A 6M MODBUS MID	6 Mod	**ECR310D ***

Three Phase CT Fed kWh Meters

ECM300C

Description	Width (1 Mod =17.5mm)	Cat ref.
1-5A kWh Meters		
3Ph kWh Meter via CT 1-5A 4M Pulsed Output MID	4 Mod	**ECP300C ***
3Ph kWh Meter via CT 1-5A 4M MBUS MID	4 Mod	**ECM300C ***
3Ph kWh Meter via CT 1-5A 4M MODBUS MID	4 Mod	**ECR300C ***

HGR96EWC

Panel Mounted DIN 96 x 96 Meters

- Panel mounted meters suitable for use with Hager MCCB Panelboard enclosures
- DIN 96 x 96 mounting
- Cables not supplied with meters
- CT, CT cable & voltage reference cables to be selected from 1.23 - 1.24

Description	Cat ref.
Panel Mounted Multifunction Meter Pulse/Modbus	**ECM01**
Hager by Rayleigh MID Panel Mounted Meter Pulse/Modbus	**HGR96EWC ***
Hager by Rayleigh MID Panel Mounted Meter Mbus	**HGR96EWMB ***

HGR41EWC

DIN Rail Mounted Meters

- Cables & CT supplied separately
- CT, CT Cable & voltage reference cables to be selected from this page.

Description	Cat ref.
DIN Rail Mounted Plug-in Meter CT Fed	**JKM01**
DIN Rail Mounted Plug-in Meter CT Fed - Dual Channel Input	**JKM02**
Hager by Rayleigh DIN Rail Mounted Plug-in Meter CT Fed	**HGR41EWC**

PGMF300

PGMFT300

Meter Cables

Description	Cat ref. Meter to Meter Supply Cable	Cat ref. Voltage Supply Cable
Meter Supply Cable - PVC		
1m - Voltage Supply Cable with Fuse Carrier (For JF Meter Enclosures)	**-**	**JF130VMF**
1m - Voltage Supply Cable with Fuse Carrier (For JN Meter Enclosures)	**-**	**JN130VMF**
0.15m - Hi Flex Supply Cable	**PGMFT150**	**-**
0.30m - Hi Flex Supply Cable	**PGMFT300**	**PGMF300**
0.50m - Hi Flex Supply Cable	**PGMFT500**	**PGMF500**
1.00m - Hi Flex Supply Cable	**PGMFT1000**	**PGMF1000**
1.30m - Hi Flex Supply Cable	**PGMFT1300**	**PGMF1300**
2.00m - Hi Flex Supply Cable	**PGMFT2000**	**PGMF2000**
3.00m - Hi Flex Supply Cable	**PGMFT3000**	**PGMF3000**

PGRJ1000

RJ45 Connection Cable

Description	Cat ref.
0.30m - RJ45 Connector Cable 67 7003	**PGRJ300**
0.50m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ500**
1.00m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ1000**
1.50m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ1500**
2.00m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ2000**
3.00m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ23000**

Data is subject to errors and technical modifications. ★ **New.**

3 Phase CT Splitter Box

- This 3 Phase current transformer splitter box allows the separate monitoring of each phase of a three phase current transformer on individual energy meters.

JFS03

Description	Cat ref.
3 Phase CT Splitter Box	**JFS03**

Plug-in CTs

- No leads supplied with these CTs (RJ45 connection cable)
- For technical data see page 1.67.
- Suitable for use with ECM01, JKM01, JKM02 & Hager by Rayleigh meters.

EC1260CT

Description	Cat ref. 125A	Cat ref. 250A	Cat ref. 400A
60A 3 Phase CT	**EC1260CT**	**EC2560CT**	**-**
100A 3 Phase CT	**EC12100CT**	**EC25100CT**	**-**
125A 3 Phase CT	**EC12125CT**	**EC25125CT**	**-**
160A 3 Phase CT	**EC12160CT**	**EC25160CT**	**-**
200A 3 Phase CT	**-**	**EC25200CT**	**-**
250A 3 Phase CT	**-**	**EC25250CT**	**EC40250CT**
400A 3 Phase CT	**-**	**-**	**EC40400CT**
630A 3 Phase CT	**-**	**-**	**EC40630CT**
800A 3 Phase CT	**-**	**-**	**EC80800CT**

Converter

JFA03

Description	Cat ref.
Standard CT to plug in adapter	**JFA03**

Accessories

- Supply voltage connector plugs are for making up your own power cable looms.

JFT03

PG9522FEMALE

Description	Cat ref.
Supply Voltage Connector Plugs Voltage IN (Male) Connector	**PG9523MALE**
Supply Voltage Connector Plugs Voltage OUT (Female) connector	**PG9522FEMALE**
CT Output and RJ45 Lead Tester	**JFT03**

JF12504SM

JFG416U

Cable Capacity
20A = 16mm²
32A = 16mm²
63A = 25mm²
100A = 95mm²
125A = 95mm²
160A = 95mm²
200A = 240mm²
250A = 240mm²
315A = 240mm²
400A = 240mm²
630A = 2 x 300mm²
800A = 2 x 300mm²

Fuse Combination Switches 20 - 800A

Characteristics
- Provides individual protection and control of circuits.
- Enclosures up to 100A have been designed to provide adequate cabling space without the need for additional cable spreader boxes.
- Operation of the device is through a door mounted rotary handle which is mechanically interlocked to prevent access to live conductors when the switch is in the on position. The handle is padlockable in the off position.
- All versions will accept standard BS 88 fuse links and can be converted to switch disconnector by fitting copper links.

Utilisation category
- AC22B - 630 - 800A
- AC23A - 20 - 630A

Product features
- Conforms to: BS EN 60947-3
- Rated IP31.

Note: Maximum rated fuse links are fitted in all fuse combination switches.
Note: Copper links for conversion to isolating switches
- For dimensions see page 1.69.
- For technical information see page 1.71.

Description	Cat ref.	Cat ref. Cable extension boxes if required
Fuse Combination Switches Single Pole & Switched Neutral		
20A Fuse Combination Switch SP&SN	**JFB202U**	-
32A Fuse Combination Switch SP&SN	**JFB203U**	-
63A Fuse Combination Switch SP&SN	**JFD206U**	-
100A Fuse Combination Switch SP&SN	**JFE210U**	**JZA701**
Fuse Combination Switches Triple Pole & Neutral		
20A Fuse Combination Switch TP&N	**JFB302U**	-
32A Fuse Combination Switch TP&N	**JFB303U**	-
63A Fuse Combination Switch TP&N	**JFD306U**	-
100A Fuse Combination Switch TP&N	**JFE310U**	**JZA701**
125A Fuse Combination Switch TP&N	**JFG312U**	**JZA701**
160A Fuse Combination Switch TP&N	**JFG316U**	**JZA701**
200A Fuse Combination Switch TP&N	**JFG320U**	**JZA701**
250A Fuse Combination Switch TP&N	**JFG325U**	**JZA701**
315A Fuse Combination Switch TP&N	**JFH331U**	**JZA702**
400A Fuse Combination Switch TP&N	**JFH340U**	**JZA702**
630A Fuse Combination Switch TP&N	**JFI363U**	**JZA703**
800A Fuse Combination Switch TP&N	**JFI380U**	**JZA703**
Fuse Combination Switches Triple Pole & Switched Neutral		
20A Fuse Combination Switch TP&SN	**JFB402U**	-
32A Fuse Combination Switch TP&SN	**JFB403U**	-
63A Fuse Combination Switch TP&SN	**JFD406U**	-
100A Fuse Combination Switch TP&SN	**JFE410U**	**JZA701**
125A Fuse Combination Switch TP&SN	**JFG412U**	**JZA701**
160A Fuse Combination Switch TP&SN	**JFG416U**	**JZA701**
200A Fuse Combination Switch TP&SN	**JFG420U**	**JZA701**
250A Fuse Combination Switch TP&SN	**JFG425U**	**JZA701**
315A Fuse Combination Switch TP&SN	**JFH431U**	**JZA702**
400A Fuse Combination Switch TP&SN	**JFH440U**	**JZA702**
630A Fuse Combination Switch TP&SN	**JFI463U**	**JZA703**
800A Fuse Combination Switch TP&SN	**JFI480U**	**JZA703**
Copper Links		
63A	**JC60L**	-
100A	**JC10L**	-
125 / 200A	**JC20L**	-
315 / 400A	**JC40L**	-
630A	**JC63L**	-

Data is subject to errors and technical modifications. ★ New.

Switch Fuses

IU44-11

Characteristics
- Amendment 3 compliant switch fuses have a full metal construction to comply with BS 7671, when used in residential applications
- For dimensions see page 1.72.

Description	Cat ref.	Cat ref. Amd 3 door
4 Module Metal Unit 1 x 100A Isolator, AC22A. Connection Capacity: 50mm² Rigid Conductor, 35mm² Flexible Conductor, 1 x 63A Fuse	**IU44-16**	**IU44-16D**
4 Module Metal Unit 1 x 100A Isolator, AC22A. Connection Capacity: 50mm² Rigid Conductor, 35mm² Flexible Conductor, 1 x 80A Fuse	**IU44-18**	**IU44-18D**
4 Module Metal Unit 1 x 100A Isolator, AC22A. Connection Capacity: 50mm² Rigid Conductor, 35mm² Flexible Conductor, 1 x 100A Fuse	**IU44-11**	**IU44-11D**

Switch Disconnectors 20-800A

JAB402B

Characteristics
- Designed to provide individual isolation of circuits up to 800A.
- Provides adequate cabling space without the need for additional cable spreader boxes.
- Operation of the device is through a door mounted rotary handle which is mechanically interlocked to prevent access to live conductors when the switch is in the on position. The handle is padlockable in the off position.

Utilisation category
- AC-21, AC-22 (page 1.73)

Product features
- Conforms to: BS EN 60947-3
- IP rating: IP31.
- For technical information see page 1.69 - 1.73.

Rating	Cat ref.	Cat ref. Cable extension boxes if required
Switch Disconnectors TP&N		
160A	**JAC316**	**JZA700**
200A	**JAE320**	**JZA701**
250A	**JAE325**	**JZA701**
315A	**JAG331**	**JZA701**
400A	**JAG340**	**JZA701**
630A	**JAH363**	**JZA702**
800A	**JAH380**	**JZA702**
Switch Disconnectors TP&SN		
20A	**JAB402B**	**-**
32A	**JAB403B**	**-**
63A	**JAB406B**	**-**
100A	**JAB410B**	**-**
125A	**JAC412B**	**-**
160A	**JAC416**	**JZA700**
200A	**JAE420**	**JZA701**
250A	**JAE425**	**JZA701**
315A	**JAG431**	**JZA701**
400A	**JAG440**	**JZA701**
630A	**JAH463**	**JZA702**
800A	**JAH480**	**JZA702**

Cable Capacity
20A = 16mm²
32A = 16mm²
63A = 25mm²
100A = 95mm²
125A = 95mm²
160A = 95mm²
200A = 240mm²
250A = 240mm²
315A = 240mm²
400A = 240mm²
630A = 2 x 300mm²
800A = 2 x 300mm²

JG01S

Cable Capacity
20 - 40A = 16mm²
63 - 100A = 35mm²

IP65 Switch Disconnectors

- A range of enclosed switch disconnectors to IP65 for individual isolation.
- The devices are padlockable in three positions and offer plenty of cabling space. Clip on auxiliary contacts can be fitted retrospectively.

Product features
- Conforms to: BS EN 60947-3.
- IP65 to BS EN 60529.

Range: TPN 10, 16, 25, 40, 63 & 80A.

Utilisation category
- AC- 21.
- AC- 22.
- For technical information see page 1.72.

I_n AC 21	I_n AC 22	Cat ref.
20A	10A	**JG00S**
25A	16A	**JG01S**
40A	25A	**JG02S**
63A	40A	**JG03S**
80A	63A	**JG04S**
100A	80A	**JG05S**

Auxiliary Changeover Contacts

Description	Cat ref.
1 Normally Open / 1 Normally Closed Auxiliary Contacts 16-80A	**JG10A**
2 Normally Open / 2 Normally Closed Auxiliary Contacts 16-80A	**JG20A**

JG440DC

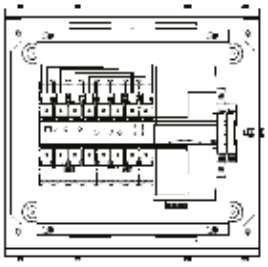
Cable Capacity
20 - 40A = 16mm²
63 - 100A = 35mm²

IP65 Switch Disconnectors - DC

- Used in applications such as photovoltaic installations where they isolate the incoming side of the inverter.
- They are supplied in grey with a black handle so that it is easy to distinguish them from the yellow/red a.c. switches used on the outgoing side of the inverter.

Product Features
- Conforms to: BS EN 60947-3 IP65 to BS EN 60529.
- An interlock ensures that the cover cannot be removed in both the ON and PADLOCKED OFF positions.

Rating	Utilisation Category	Cat ref.
12A at 500V DC-21B, 10A at 600V DC-21B 8A at 800V DC-21B, 6A at 440V DC-22B	DC-21B	**JG416DC**
16A at 500V DC-21B, 12A at 600V DC-21B 10A at 800V DC-21B, 6A at 440V DC-22B	DC-21B DC-22B	**JG425DC**
20A at 500V DC-21B, 16A at 600V DC-21B 12A at 800V DC-21B, 16A at 440V DC-22B	DC-21B DC-22B	**JG440DC**



Interior diagram JK***ATS

Enclosed ATS

Characteristics
- A range of enclosed Automatic Transfer Switches in IP30 rated enclosure. Available in ratings 40A – 125A.
- Conforming to BS EN 60947-3 & IEC 60947-6-1
- Overvoltage Category II
- Pollution degree 3
- Electromagnetic compatibility – Environment category – A
- Rated voltage of assembly: U_n = 415V a.c. 50Hz
- Rated operational voltage of assembly: U_e = 415V a.c. 50Hz
- Rated insulation voltage of assembly: U_i = 690V a.c. 50Hz (Power Circuits) / 300V (Control Circuits)
- Rated impulse voltage of assembly: U_{imp} = 6kV (Power Circuits) / 2.5kV (Control Circuits)
- Rated current of assembly: I_{na} / I_{nc} = 125A max
- Rated peak withstand current: I_{pk} = 105kA conditional (table 7, n = 2.1)
- Rated short-time withstand current: Icw = 7kA / 0.3 secs
  : Icw = 4kA / 1.0 sec
- For dimensions see page 1.61.

Description	Cat ref.
40A Enclosed ATS unit	**JK140ATS ***
63A Enclosed ATS unit	**JK163ATS ***
80A Enclosed ATS unit	**JK180ATS ***
100A Enclosed ATS unit	**JK1100ATS ***
125A Enclosed ATS unit	**JK1125ATS ***

Enclosed MCCBs

- The devices are mounted in IP31 enclosures, with removable cable entry plates located on the top and bottom.
- Single & triple pole devices are equipped with fully rated neutral links.

Non-Auto MCCB
- Triple pole: 125A - 250A - 400A - 630A.
- Four pole: 125A - 250A - 400A - 630A.

Specification
- Conforms to BS EN 61439-2.

Cable Capacity
- 63 - 125A: Flexible cable: min 6mm², max 70mm², Rigid cable: min 6mm², max 95mm².
- RCD add-on adjustable from 0.03A, 0.1A, 0.3A, 1A, 3A, 6A.
- Time delay - Instantaneous, 60ms, 150ms, 300ms, 500ms, 1s.
- For technical details and dimensions see page 1.75.

JG38BR

JG41BM

JG45BM

Description	I_{cu}	Cat ref.
Enclosed MCCBs Single Pole & Neutral		
63A Single Pole Enclosed MCCB	18kA	**JG25BM**
100A Single Pole Enclosed MCCB	18kA	**JG28BM**
125A Single Pole Enclosed MCCB	18kA	**JG31BM**
Enclosed MCCBs Triple Pole and Neutral (63-125A)		
63A 3-Pole Enclosed MCCB (40A-50A 63A)	18kA	**JG26BM**
100A 3-Pole Enclosed MCCB (63A-80A-100A)	18kA	**JG29BM**
125A 3-Pole Enclosed MCCB (80A-100-125A)	18kA	**JG32BM**
125A 3-Pole Enclosed Non-Auto MCCB	Non-Auto	**JG34BS**
Enclosed MCCBs Triple Pole and Neutral (160-250A)		
160A 3-Pole Enclosed MCCB (Adjustable)	25kA	**JG36BM**
250A 3-Pole Enclosed MCCB (Adjustable)	25kA	**JG40BM**
250A 3-Pole Enclosed Non-Auto MCCB	Non-Auto	**JG42BS**
Enclosed MCCBs Triple Pole and Neutral (400-630A)		
400A 3-Pole Enclosed MCCB (Adjustable)	50kA	**JG44BM**
400A 3-Pole Enclosed Non-Auto MCCB	Non-Auto	**JG46BS**
630A 3-Pole Enclosed MCCB (Adjustable)	50kA	**JG48BM**
630A 3-Pole Enclosed Non-Auto MCCB	Non-Auto	**JG50BS**
Enclosed MCCBs Four Pole (63-125A)		
63A 4-Pole Enclosed MCCB (Adjustable)	18kA	**JG27BM**
63A 4-Pole Enclosed MCCB (Adjustable) + RCD Add-on	18kA	**JG27BR**
100A 4-Pole Enclosed MCCB (Adjustable)	18kA	**JG30BM**
100A 4-Pole Enclosed MCCB (Adjustable) + RCD Add-on	18kA	**JG30BR**
125A 4-Pole Enclosed MCCB (Adjustable)	18kA	**JG33BM**
125A 4-Pole Enclosed Non-Auto MCCB	Non-Auto	**JG35BS**
Enclosed MCCBs Four Pole (160-250A)		
160A 4-Pole Enclosed MCCB (Adjustable)	25kA	**JG37BM**
160A 4-Pole Enclosed MCCB RCD Add-on	25kA	**JG37BR**
200A 4-Pole Enclosed MCCB RCD Add-on	25kA	**JG38BR**
250A 4-Pole Enclosed MCCB (Adjustable)	25kA	**JG41BM**
250A 4-Pole Enclosed Non-Auto MCCB	Non-Auto	**JG43BS**
Enclosed MCCBs Four Pole (400-630A)		
400A 4-Pole Enclosed MCCB (Adjustable)	50kA	**JG45BM**
375A 4-Pole Enclosed MCCB RCD Add-on	50kA	**JG45BR**
400A 4-Pole Enclosed Non-Auto MCCB	Non-Auto	**JG47BS**
630A 4-Pole Enclosed MCCB (Adjustable)	50kA	**JG49BM**
630A 4-Pole Enclosed Non-Auto MCCB	Non-Auto	**JG51BS**

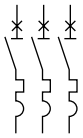
NCN116A

MCBs 10kA

Characteristics
- Provides protection against short circuits, protection against overload current, control, isolation, trip free mechanism.

Isolation
- The state of isolation is clearly indicated by the "OFF" mechanical position on the toggle with the green colour.
- Connection capacity: 25mm² flexible conductor, 35mm² rigid conductor.
- Conforms to: BS EN 60898-2 (10kA), BS EN 60947-2 (15kA).

Rating	Width (1 Mod = 17.5mm)	Cat ref. "B" Curve	Cat ref. "C" Curve	Cat ref. "D" Curve
Single Pole MCBs				
0.5A	1 Mod	-	**NCN100A**	**NDN100A**
1A	1 Mod	-	**NCN101A**	**NDN101A**
2A	1 Mod	-	**NCN102A**	**NDN102A**
3A	1 Mod	-	**NCN103A**	**NDN103A**
4A	1 Mod	-	**NCN104A**	**NDN104A**
6A	1 Mod	**NBN106A**	**NCN106A**	**NDN106A**
10A	1 Mod	**NBN110A**	**NCN110A**	**NDN110A**
16A	1 Mod	**NBN116A**	**NCN116A**	**NDN116A**
20A	1 Mod	**NBN120A**	**NCN120A**	**NDN120A**
25A	1 Mod	**NBN125A**	**NCN125A**	**NDN125A**
32A	1 Mod	**NBN132A**	**NCN132A**	**NDN132A**
40A	1 Mod	**NBN140A**	**NCN140A**	**NDN140A**
50A	1 Mod	**NBN150A**	**NCN150A**	**NDN150A**
63A	1 Mod	**NBN163A**	**NCN163A**	**NDN163A**



Triple Pole MCBs				
0.5A	3 Mod	-	**NCN300A**	**NDN300A**
1A	3 Mod	-	**NCN301A**	**NDN301A**
2A	3 Mod	-	**NCN302A**	**NDN302A**
3A	3 Mod	-	**NCN303A**	**NDN303A**
4A	3 Mod	-	**NCN304A**	**NDN304A**
6A	3 Mod	**NBN306A**	**NCN306A**	**NDN306A**
10A	3 Mod	**NBN310A**	**NCN310A**	**NDN310A**
16A	3 Mod	**NBN316A**	**NCN316A**	**NDN316A**
20A	3 Mod	**NBN320A**	**NCN320A**	**NDN320A**
25A	3 Mod	**NBN325A**	**NCN325A**	**NDN325A**
32A	3 Mod	**NBN332A**	**NCN332A**	**NDN332A**
40A	3 Mod	**NBN340A**	**NCN340A**	**NDN340A**
50A	3 Mod	**NBN350A**	**NCN350A**	**NDN350A**
63A	3 Mod	**NBN363A**	**NCN363A**	**NDN363A**

Data is subject to errors and technical modifications. ★ **New.**

MCBs 10kA (Continued)

Rating	Width (1 = 17.5mm)	Cat ref. "B" Curve	Cat ref. "C" Curve	Cat ref. "D" Curve
Double Pole MCBs				
0.5A	2 Mod	-	**NCN200A**	**NDN200A**
1A	2 Mod	-	**NCN201A**	**NDN201A**
2A	2 Mod	-	**NCN202A**	**NDN202A**
3A	2 Mod	-	**NCN203A**	-
4A	2 Mod	-	**NCN204A**	**NDN204A**
6A	2 Mod	**NBN206A**	**NCN206A**	**NDN206A**
10A	2 Mod	**NBN210A**	**NCN210A**	**NDN210A**
16A	2 Mod	**NBN216A**	**NCN216A**	**NDN216A**
20A	2 Mod	**NBN220A**	**NCN220A**	**NDN220A**
25A	2 Mod	**NBN225A**	**NCN225A**	**NDN225A**
32A	2 Mod	**NBN232A**	**NCN232A**	**NDN232A**
40A	2 Mod	**NBN240A**	**NCN240A**	**NDN240A**
50A	2 Mod	**NBN250A**	**NCN250A**	**NDN250A**
63A	2 Mod	**NBN263A**	**NCN263A**	**NDN263A**
Four Pole MCBs				
0.5A	4 Mod	-	**NCN400A**	**NDN400A**
1A	4 Mod	-	**NCN401A**	**NDN401A**
2A	4 Mod	-	**NCN402A**	**NDN402A**
3A	4 Mod	-	**NCN403A**	**NDN403A**
4A	4 Mod	-	**NCN404A**	**NDN404A**
6A	4 Mod	**NBN406A**	**NCN406A**	**NDN406A**
10A	4 Mod	**NBN410A**	**NCN410A**	**NDN410A**
16A	4 Mod	**NBN416A**	**NCN416A**	**NDN416A**
20A	4 Mod	**NBN420A**	**NCN420A**	**NDN420A**
25A	4 Mod	**NBN425A**	**NCN425A**	**NDN425A**
32A	4 Mod	**NBN432A**	**NCN432A**	**NDN432A**
40A	4 Mod	**NBN440A**	**NCN440A**	**NDN440A**
50A	4 Mod	**NBN450A**	**NCN450A**	**NDN450A**
63A	4 Mod	**NBN463A**	**NCN463A**	**NDN463A**

NCN316A

NCN416A

Accessories

Description	Cat ref.
Padlockable Locking Kit for MCB, RCCB & RCBO	**MZN175**
Padlock with 2 keys 3/4"	**JK25A**

MZN175
(device & padlock
not included)

ACB125

ADB106

AEC132

RCBOs - Single Pole - 10kA B & C Curve Type A

Characteristics
- Compact protection devices which combine the overcurrent functions of an MCB with the earth fault functions of an RCCB in a single unit.
- These devices are single pole & solid neutral.
- Locking kit = Cat ref.: **MZN175.**

Technical Data
- Conforms to IEC 61009-1, IEC 61009-2-2, EN 61009-1.

Sensitivities (fixed)
- 10mA, 30mA & 100mA.
- Flying neutral lead: 700mm.
- Terminal Capacities, 25mm² rigid, 16mm² flexible.

Operating Voltage
- 230V a.c.

Current rating	Width (1 Mod = 17.5mm)	B Curve Cat ref.	C Curve Cat ref.
Sensitivity 30mA (10kA) B / C Curve, Type A			
6A RCBO Single Pole 30mA 10kA	1 Mod	**ADA106U**	**ADA156U**
10A RCBO Single Pole 30mA 10kA	1 Mod	**ADA110U**	**ADA160U**
16A RCBO Single Pole 30mA 10kA	1 Mod	**ADA116U**	**ADA166U**
20A RCBO Single Pole 30mA 10kA	1 Mod	**ADA120U**	**ADA170U**
25A RCBO Single Pole 30mA 10kA	1 Mod	**ADA125U**	**ADA175U**
32A RCBO Single Pole 30mA 10kA	1 Mod	**ADA132U**	**ADA182U**
40A RCBO Single Pole 30mA 10kA	1 Mod	**ADA140U**	**ADA190U**
45A RCBO Single Pole 30mA 10kA	1 Mod	**ADA145U**	**ADA195U**
Sensitivity 10mA (10kA) B / C Curve, Type A			
6A RCBO Single Pole 10mA 10kA	1 Mod	**ACA106U**	**ACA156U**
16A RCBO Single Pole 10mA 10kA	1 Mod	**ACA116U**	**ACA166U**
25A RCBO Single Pole 10mA 10kA	1 Mod	**ACA125U**	**ACA175U**
32A RCBO Single Pole 10mA 10kA	1 Mod	**ACA132U**	**ACC182U**
Sensitivity 100mA (10kA) C Curve, Type A			
10A RCBO Single Pole 100mA 10kA	1 Mod	-	**AEC110**
16A RCBO Single Pole 100mA 10kA	1 Mod	-	**AEC116**
20A RCBO Single Pole 100mA 10kA	1 Mod	-	**AEC120**
25A RCBO Single Pole 100mA 10kA	1 Mod	-	**AEC125**
32A RCBO Single Pole 100mA 10kA	1 Mod	-	**AEC132**

Data is subject to errors and technical modifications. ★ **New.**

Arc Fault Detection Devices

Characteristics:
- Protection device which combines an MCB with Arc Fault Detection.
- Conforms to BS EN 62606
- Current rating 6A - 40A 10kA
- Available in B & C curve
- Terminal Capacities, 25mm² rigid, 16mm² flexible.

ARC506U

ARC540U

Description	Cat ref.
B Curve Arc Fault Detection Devices (10kA)	
6A 2P Arc Fault Detection Device + MCB B Curve 10kA	**ARC506U ***
10A 2P Arc Fault Detection Device + MCB B Curve 10kA	**ARC510U ***
13A 2P Arc Fault Detection Device + MCB B Curve 10kA	**ARC513U ***
16A 2P Arc Fault Detection Device + MCB B Curve 10kA	**ARC516U ***
20A 2P Arc Fault Detection Device + MCB B Curve 10kA	**ARC520U ***
25A 2P Arc Fault Detection Device + MCB B Curve 10kA	**ARC525U ***
32A 2P Arc Fault Detection Device + MCB B Curve 10kA	**ARC532U ***
40A 2P Arc Fault Detection Device + MCB B Curve 10kA	**ARC540U ***
C Curve Arc Fault Detection Devices (10kA)	
6A 2P Arc Fault Detection Device + MCB C Curve 10kA	**ARC556U ***
10A 2P Arc Fault Detection Device + MCB C Curve 10kA	**ARC560U ***
13A 2P Arc Fault Detection Device + MCB C Curve 10kA	**ARC563U ***
16A 2P Arc Fault Detection Device + MCB C Curve 10kA	**ARC566U ***
20A 2P Arc Fault Detection Device + MCB C Curve 10kA	**ARC570U ***
25A 2P Arc Fault Detection Device + MCB C Curve 10kA	**ARC575U ***
32A 2P Arc Fault Detection Device + MCB C Curve 10kA	**ARC582U ***
40A 2P Arc Fault Detection Device + MCB C Curve 10kA	**ARC590U ***

ADC816F

RCBOs - Single Pole & Switched Neutral - 4.5kA C Curve

Characteristics
- Compact protection devices which provide MCB overcurrent protection and RCCB earth fault protection in a single unit.
- The device switches both the line and neutral conductors. All ratings have 30mA earth fault protection. The units feature indicators which show whether a trip is due to an overcurrent or earth fault.

Technical Data
- Breaking capacity: 4.5kA.
- Conforms to EN 61009-1.
- Operating Voltage: 230V a.c. -15% +10% 50Hz.
- Mechanical life: 20,000 operations.
- Connection Capacity: Rigid conductor 25mm², Flexible conductor 16mm²
- **Note:** Not for use in fixed busbar consumer units or distribution boards.

Current rating	Width (1 Mod = 17.5mm)	C Curve Cat ref.
6A RCBO SPSN 4.5kA	2 Mod	**ADC806F**
10A RCBO SPSN 4.5kA	2 Mod	**ADC810F**
16A RCBO SPSN 4.5kA	2 Mod	**ADC816F**
20A RCBO SPSN 4.5kA	2 Mod	**ADC820F**
25A RCBO SPSN 4.5kA	2 Mod	**ADC825F**
32A RCBO SPSN 4.5kA	2 Mod	**ADC832F**

ADA990U

RCBOs - Single Pole & Switched Neutral - 6kA B & C Curve

Characteristics
- Compact protection devices which provide MCB overcurrent protection and RCCB earth fault protection in a single unit.
- The device switches both the line and neutral conductors. All ratings have 30mA earth fault protection. The units feature indicators which show whether tripping is due to an overcurrent or earth fault.

Technical Data
- Breaking capacity: 6kA.
- Conforms to EN 61009-1.
- Operating Voltage: 230V a.c. +10%/-15% 50Hz.
- Mechanical life: 20,000 operations.
- Connection Capacity: Rigid conductor 25mm², Flexible conductor 16mm²
- Neutral connection flying lead - 700mm.

Current rating	Width (1 Mod = 17.5mm)	B Curve Cat ref.	C Curve Cat ref.
6A RCBO SPSN 6kA	2 Mod	**ADA906U**	**ADA956U**
10A RCBO SPSN 6kA	2 Mod	**ADA910U**	**ADA960U**
16A RCBO SPSN 6kA	2 Mod	**ADA916U**	**ADA966U**
20A RCBO SPSN 6kA	2 Mod	**ADA920U**	**ADA970U**
25A RCBO SPSN 6kA	2 Mod	**ADA925U**	**ADA975U**
32A RCBO SPSN 6kA	2 Mod	**ADA932U**	**ADA982U**
40A RCBO SPSN 6kA	2 Mod	**ADA940U**	**ADA990U**

BD163T

Triple Pole RCD Add-On Blocks for MCB Devices

Characteristics
- Compatible with **NBN, NCN & NDN** range of MCB devices.
- Can be used in combination with any Hager 3 pole 10kA MCB up to 63A. Requires the use of the adjacent outgoing way.
- Type A RCD provides added protection against 'pulsating d.c. current'
- 3 Phase earth leakage protection up to 63A.
- One module add-on block + MCB combinations suit all Hager distribution boards.
- BS EN 61009-1 Appendix G.
- For technical details see page 1.86.

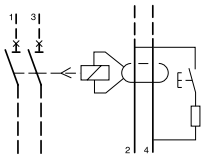
Sensitivity $I_{\Delta n}$	I_n A	Width (35mm)	Cat ref.
30mA	63A	4 Mod	**BD163T**
100mA	63A	4 Mod	**BE163T**
300mA	63A	4 Mod	**BF163T**

RCCB Add-On Blocks for MCB Devices

BD264

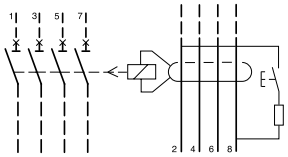
Characteristics
- Provide earth fault protection when associated with the 10kA (types **NBN**, **NCN**, **NDN**) range of MCBs.
- Designed to be fitted to the right hand side of 2 and 4 pole MCBs and the completed unit provides protection against overload, short circuit & earth faults.
- Protection against nuisance tripping.
- All devices have a test facility.
- Note: Not for use in fixed busbar distribution boards.

Technical Data
- Nominal voltage 230 - 400V.
- Selective (time delay) versions are available in 100mA & 300mA.
- Connection Capacity: 16mm² Flexible, 25mm² Rigid.
- Conforms to BS EN 61009 Appendix G



BD464

Sensitivity $I_{\Delta n}$	I_n A	Width (1 Mod = 17.5mm)	Cat ref.
Double Pole RCCB Add-On Blocks			
30mA	63A	2 Mod	**BD264**
100mA	63A	2 Mod	**BE264**
300mA	63A	2 Mod	**BF264**
Time Delayed S 100mA	63A	2 Mod	**BN264**
Time Delayed S 300mA	63A	2 Mod	**BP264**



Four Pole RCCB Add-On Blocks			
30mA	63A	3 Mod	**BD464**
100mA	63A	3 Mod	**BE464**
300mA	63A	3 Mod	**BF464**
Time Delayed S 100mA	63A	3 Mod	**BN464**
Time Delayed S 300mA	63A	3 Mod	**BP464**

One Module Add-On Blocks for MCB Devices

BD163T

Characteristics
- Compatible with **NBN, NCN & NDN** range of MCB devices.
- Can be used in combination with any Hager 3 pole 10kA MCB up to 63A. Requires the use of the adjacent outgoing way.
- Type A RCD provides added protection against 'pulsating d.c. current'
- 3 Phase earth leakage protection up to 63A.
- One module add-on block + MCB combinations suit all Hager distribution boards.
- BS EN 61009-1 Appendix G.
- For technical details see page 1.86.

Sensitivity $I_{\Delta n}$	I_n A	Width (1 Mod = 17.5mm)	Cat ref.
30mA	63A	4 Mod	**BD163T**
100mA	63A	4 Mod	**BE163T**
300mA	63A	4 Mod	**BF163T**

HMF199T

HMF299T

HMF399T

HMF499T

MCBs 80 - 125A

- Suitable for isolation (according to BS EN 60947-2). The isolation of the circuit breakers is indicated by a green indicator on the toggle.

Standards
- 10 kA: BS EN 60898-1, 10 kA BS EN 60947-2
- 15 kA: BS EN 60898-1, 15 kA BS EN 60947-2
- I_n 80 to 125A

Connection Capacity
- 35mm² flexible (50mm² possible with some cable pin lugs).
- 70mm² rigid.

Nominal Voltage
- 230/415 V a.c.
- Calibration setting: 30 °C
- (BS EN 60898-1)
- Insulation voltage: 500 V

Lockable Toggle
- MCB can be locked in “Off” position by the integrated locking facility on the toggle.
- This lock allows the insertion of a 2.5-3.5mm plastic cable tie where you can fit a warning card if necessary, allowing a safer working environment.
- Compatible with RCD Add-On Blocks.

Rating	Width (1 = 17.5mm)	Cat ref. 10kA C Curve	Cat ref. 15kA C Curve	Cat ref. 15kA D Curve
Single Pole MCBs				
80A	1 ½ Mod	**HMF180T**	**HMC180T**	**HMD180T**
100A	1 ½ Mod	**HMF190T**	**HMC190T**	**HMD190T**
125A	1 ½ Mod	**HMF199T**	**HMC199T**	**HMD199T**
Double Pole MCBs				
80A	3 Mod	**HMF280T**	**HMC280T**	**HMD280T**
100A	3 Mod	**HMF290T**	**HMC290T**	**HMD290T**
125A	3 Mod	**HMF299T**	**HMC299T**	**HMD299T**
Triple Pole MCBs				
80A	4 ½ Mod	**HMF380T**	**HMC380T**	**HMD380T**
100A	4 ½ Mod	**HMF390T**	**HMC390T**	**HMD390T**
125A	4 ½ Mod	**HMF399T**	**HMC399T**	**HMD399T**
Four Pole MCBs				
80A	6 Mod	**HMF480T**	**HMC480T**	**HMD480T**
100A	6 Mod	**HMF490T**	**HMC490T**	**HMD490T**
125A	6 Mod	**HMF499T**	**HMC499T**	**HMD499T**

MZN130

Terminal Covers Screw Cap

Description	Cat ref.
To cover connection terminals and screws of circuit breaker. The screw covers can be sealed.	**MZN130**

MZN131

Phase Barrier

Description	Cat ref.
1 Set of 3 Phase Separators	**MZN131**

Data is subject to errors and technical modifications. ★ **New.**

RCCB Add-On Blocks Type a.c. for HMF, HMC, HMD MCBs (Not suitable for Hybrid DBs)

Fixed
- High sensitivity 30 mA instantaneous, low sensitivity 300 mA instantaneous

Adjustable
- Sensitivity $I_{\Delta n}$ 0.3-0.5 - 1A
- Delay S Δt 0 - 60 -150 ms

Adjustable Blocks
- The setting is done by actuating dial on the front face. The setting dials are protected by a transparent sealable cover.

Disassembly
- The bistable latch (two positions) facilitate the assembly or disassembly by the bottom of the add-on block.
- These RCD add-on blocks exist in version AC.
- The earth fault is indicated when the handle is in the lower position (yellow colour). Test button for earth fault check.

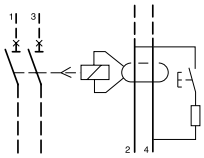
Connection Capacity
- 35mm² flexible connection
- 70mm² rigid connection.

Nominal voltage
- 2 pole 230V, three & four pole: 230 / 400V
- Test button: 230 / 400V.
- Conforms with BS EN 61009-1 appendix G.
- Conforms with BS EN 60947-2.

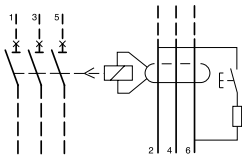
BDC280E

BDC380E

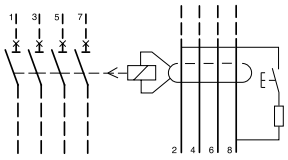
BDC480E



Sensitivity Fixed / Adjustable $I_{\Delta n}$	I_n/A	Width (1 = 17.5mm)	Cat ref.
Double Pole RCD Add-On Blocks			
Fixed 30mA	125A	6 Mod	**BDC280E**
Adjustable 0.3-0.5-1A Time Delayed S 0-60-150ms	125A	6 Mod	**BTC280E**



Triple Pole RCD Add-On Blocks			
Fixed 30mA	125A	6 Mod	**BDC380E**
Adjustable 0.3-0.5-1A Time Delayed S 0-60-150ms	125A	6 Mod	**BTC380E**



Four Pole RCD Add-On Blocks			
Fixed 30mA	125A	6 Mod	**BDC480E**
Fixed 300mA	125A	6 Mod	**BFC480E**
Adjustable 0.3-0.5-1A Time Delayed S 0-60-150ms	125A	6 Mod	**BTC480E**

Single Pole & Switched Neutral MCB - 6kA C Curve

Description
- For protection and control of circuits against overloads and short circuits.

Technical Data
- Conforms to BS EN 60898
- Voltage rating - 230V a.c.

Connection Capacity
- Rigid 16mm²
- Flexible 10mm²
- Locking kit = Cat ref.: **MZN175**

MLN710A

Rating	Width (1 = 17.5mm)	Cat ref.
6A SPSN MCB 6kA	1 Mod	**MLN706A**
10A SPSN MCB 6kA	1 Mod	**MLN710A**
16A SPSN MCB 6kA	1 Mod	**MLN716A**
20A SPSN MCB 6kA	1 Mod	**MLN720A**
32A SPSN MCB 6kA	1 Mod	**MLN732A**
40A SPSN MCB 6kA	1 Mod	**MLN740A**

Single Module Blank

Description	Cat ref.
Shrouds busbar and blanks spare ways	**JK01B**

JK01B

CDC225U

CFC425U

2 & 4 Pole RCCBs

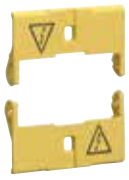
Characteristics
- To open a circuit automatically in the event an earth fault between line and earth, and/or neutral and earth.

Technical Data
- Conforms to BS EN 61008, IEC1008
- Terminal capacities: 16-63A Rigid 25mm², Flexible 16mm² / 80 & 100A Rigid 50mm², Flexible 35mm²

Features
- Positive contact indication is provided by the rectangular flag indicator
- Red = Closed
- Green = Open
- Indication of trip is provided by the oval flag indicator
- Yellow = Tripped
- All RCCBs have trip free mechanisms and can be padlocked either on or off with the use of a **MZN175**.

Operating Voltage
- 2P 127- 230V a.c.
- 4P 230 - 400V a.c.

Sensitivity type A	2 Pole Type A Cat ref.	4 Pole Type A Cat ref.	4 Pole Type AC Cat ref.
RCCBs Sensitivity 30mA			
RCCB 25A 30mA	**CDA225U**	**CDA425U**	**CDC425U**
RCCB 40A 30mA	**CDA240U**	**CDA440U**	**CDC440U**
RCCB 63A 30mA	**CDA263U**	**CDA463U**	**CDC463U**
RCCB 80A 30mA	**CD283U**	**CD480G**	**CD480U**
RCCB 100A 30mA	**CD285U**	**CD484G**	**CD484U**
RCCB 125A 30mA	**-**	-	**CDC490**
RCCBs Sensitivity 100mA			
RCCB 25A 100mA	**CEA225U**	-	**CEC425U**
RCCB 40A 100mA	**CEA240U**	**CE440J**	**CEC440U**
RCCB 63A 100mA	**CEA263U**	**CE463J**	**CEC463U**
RCCB 80A 100mA	**CE281J**	**CE481J**	**CE480U**
RCCB 100A 100mA	**CE285J**	**CE485J**	**CE484U**
RCCBs Sensitivity 300mA			
RCCB 25A 300mA	**CFA225U**	**CF425J**	**CFC425U**
RCCB 40A 300mA	**CFA240U**	**CF440J**	**CFC440U**
RCCB 63A 300mA	**CFA263U**	**CF463J**	**CFC463U**
RCCB 80A 300mA	**-**	**CF480J**	**CF480U**
RCCB 100A 300mA	**CF285U**	**CF484G**	**CF484U**
RCCBs Time Delayed			
RCCB 100A 100mA	**CN284J**	**CN487U**	**CN484U**
RCCB 100A 300mA	**CP284J**	**CP484G**	**CP484U**



CZN006

Terminal Covers

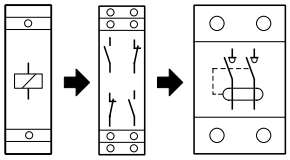
Current Rating	2 Pole Cat ref.	4 Pole Cat ref.
16 - 63A	**CZN005**	**CZN006**
80 - 100A	**CZ007**	**CZ008**

RCCB Auxiliaries

Auxiliary Interface
- Indicates the position of the associated RCCB on, off or tripped. Also acts as RCCB interface with standard MCB auxiliaries **MZ203**-**MZ206**.

Shunt Trip
- Allows remote tripping of the associated device, operation of the coil is indicated by a flag on the front of the device.

Under Voltage Release
- Allows RCCB to be closed, only when voltage is above 85% of U_n. RCCB will automatically trip when voltage falls to between 70-35% of U_n (230V). Operation of the release is indicated by a flag on the front of the device.



MZ203 to **MZ206** **CZ001** RCCB

Description	Width (1 Mod = 17.5mm)	Cat ref.
Auxiliary Interface		
2 Normally Open / 2 Normally Closed 6A a.c.1 230V	1 Mod	**CZ001**

CZ001

MZ203

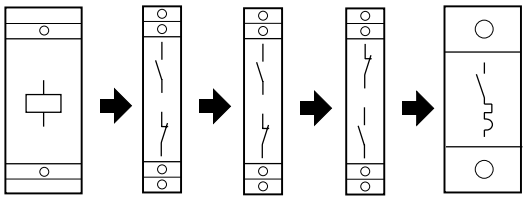
Auxiliaries for MCBs & RCCBs

Characteristics
- All auxiliaries are common to both single and multi-pole 10kA circuit breakers and RCCBs.

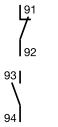
Connection capacity
- 4mm² flexible, 6mm² rigid

Shunt Trip: Allows remote tripping of devices. Operation of the coil is indicated by a flag on the front of the device.

Under Voltage Release: Allows MCB to be closed only when voltage is above 85% of U_n. MCB will automatically trip when voltage falls to between 70-35% of U_n. Operation of the coil is indicated by a flag on the front of the device.



MZ203 to **MZ206** + **MZ201** **MZ201** + **MZ201** **MZ201** + **MZ202** **MZ201** + MCB

	Description	Width (1 Mod = 17.5mm)	Cat ref.
	Auxiliary Contacts 5A - 230V a.c.		
	1NO +1NC Allows remote indication of main contact status	½ Mod	**MZ201**
	**Auxiliary Contacts & Alarm Induction**		
	Allows indication of MCB status when turned off or tripped	½ Mod	**MZ202**
	Shunt Trip		
	230V - 415V a.c. 110V - 130V d.c.	1 Mod	**MZ203**
	24 - 48V a.c. 12 - 48V d.c.	1 Mod	**MZ204**
	Under Voltage Release		
	230V a.c.	1 Mod	**MZ206**
	48V d.c.	1 Mod	**MZ205**

MZ201

MZ202

MZ204

MM501N

Motor Starters

- To ensure localised control and protection of single and three phase motors.

Technical Data
- Adjustable thermal relay
- AC 3 utilisation category

Connection capacity
- 2 conductors: Max size flexible 1 to 4mm², rigid 1.5 to 6mm²

Options
- Conforms to IEC 947-1, IEC 947-2 (appropriate parts of)

	Standard power ratings of 3 phase motors 50/60Hz (a.c. 3 category)			
Current setting	230V (kW)	400V (kW)	Width (1 Mod = 17.5mm)	Cat ref.
0.1 - 0.16A	-	-	-	**MM501N**
0.16 - 0.25A	-	0.06	2 ½ Mod	**MM502N**
0.25 - 0.4A	0.06	0.09	2 ½ Mod	**MM503N**
0.4 - 0.6A	0.09	0.12	2 ½ Mod	**MM504N**
0.6 - 1.0A	0.09	0.12	2 ½ Mod	**MM505N**
1.0 - 1.6A	0.25	0.55	2 ½ Mod	**MM506N**
1.6 - 2.5A	0.55	0.8	2 ½ Mod	**MM507N**
2.5 - 4A	0.8	1.5	2 ½ Mod	**MM508N**
4 - 6A	1.5	2.5	2 ½ Mod	**MM509N**
6 - 10A	2.5	4	2 ½ Mod	**MM510N**
10 - 16A	4	7.5	2 ½ Mod	**MM511N**
16 - 20A	5.5	9	2 ½ Mod	**MM512N**
20 - 25A	7.5	12.5	2 ½ Mod	**MM513N**

MZ520N

Auxiliary & Alarm Contacts for Motor Starters

- Auxiliary Contacts - Act as an indicating device to monitor the ON or OFF position.
- Alarm Contact - Mounted inside the motor starter

Characteristics	Width (1 Mod = 17.5mm)	Cat ref.
Auxiliary Contacts 1 Normally Closed + 1 Normally Open 2A AC 1 - 400V a.c.	½ Mod	**MZ520N**
Alarm Contact 1 Normally Closed 1A AC 1 - 400V a.c. / 2A AC 1 - 230V a.c.	½ Mod	**MZ527N**

MZ528N

Under Voltage Release for Motor Starters

- To prevent automatic restarting of the controlled device

Characteristics	Cat ref.
230V a.c. 50Hz	**MZ528N**
400V a.c. 50Hz	**MZ529N**

MZ521N

Surface Mounting Enclosure for Motor Starters

Description	Dimensions (H x W x D mm)	Cat ref.
IP55 Surface Mounting Enclosure for Motor Starter	78 x 150 x 95	**MZ521N**

MZ530N

Emergency Stop Button

Description	Cat ref.
IP65 External Emergency Stop Button	**MZ530N**

HRC Fuse Carriers (supplied without cartridge fuse)

Characteristics
- Protection and control of circuits against overloads and short-circuits.
- Suitable for fuses which comply with BS HD 60269-1 and with the standardised performance requirements for industrial fuse links specified in BS HD 60269-2 (formerly BS 88-2).

Technical Data
- Rating voltage: 415 V a.c., 250 V d.c.
- Rated breaking capacities: 80 kA at 415 V a.c., 40 kA at 250 V d.c.
- The LS201 HRC fuse carrier is suitable for the following type of BS 88-2 cartridge fuses:
  - 2A – 8A: with nickel-plated or silver plated caps.
  - 10A – 32A: with silver plated caps only.

LS201

Characteristics	Width (1 = 17.5mm)	Cat ref.
HRC Fuse Carriers		
32A max. (Supplied without fuse)	1 Mod	**LS201**
HRC Spare Cartridge Fuses		
2A (29 x 12.7mm)	-	**L17100**
4A (29 x 12.7mm)	-	**L17200**
6A (29 x 12.7mm)	-	**L17300**
8A (29 x 12.7mm)	-	**L17400**

SPSN Fuse Carriers (supplied without cartridge fuse)

Characteristics
- Protection and control of circuits against overloads and short-circuits.

Technical Data
- Characteristics type (fuse) gF
- Short-circuit rating: 4kA (10-20A), 6kA (25 & 32A).
- Voltage rating - 250V a.c.
- Connection Capacity: Rigid 16mm², Flexible 10mm²

L12401

LF140

LF138

Rating	Width (1 = 17.5mm)	Cat ref. SPSN Fuse Carrier	Cat ref. Fuse Type gF
10A	1 Mod	**L12401**	**LF138**
16A	1 Mod	**L12501**	**LF139**
20A	1 Mod	**L12601**	**LF140**
25A	1 Mod	**L12701**	**LF141**
32A	1 Mod	**L12801**	**LF142**

HRC Fuse Carriers (supplied with cartridge fuse)

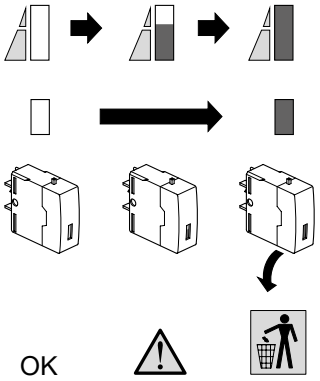
Characteristics
- Protection and control of circuits against overloads and short-circuits.

Technical Data
- Suitable for fuses which fully comply with BS 88-3 (Formerly BS1361).
- Short-circuit rating: 16.5kA
- Connection Capacity: Top: 16 mm² flexible cable & busbar.

LB113

L14700

Current rating	Colour	Width (1 = 17.5mm)	Cat ref. HRC Fuse Carrier	Cat ref. HRC Spare Fuse
HRC Fuse Carriers				
5A 230V	White	1 Mod	**LB113**	**L15300**
15A 230V	Blue	1 Mod	**LB115**	**L15500**
20A 230V	Yellow	1 Mod	**LB116**	**L15600**
30A 230V	Red	1 Mod	**LB118**	**L15800**
Spare Fuse Holder up to 20A	-	-	**L14700**	**-**



Surge Protection

Characteristics
- SPD's protect electrical and electronic equipment against transients, originating from lightning, switching of transformers, lighting and motors. These transient voltages can cause premature ageing of equipment, downtime, or complete destruction of electronic components and materials. SPDs are strongly recommended on installations that are exposed to transient voltages, to protect sensitive and expensive electrical equipment such as TV, video, Hi-Fi, PC, alarm etc.
- The range of SPDs is separated into three types of protection:
  1. Main protection - class 1
  SPDs with higher discharge current (I_{max} 10/350), to evacuate as much of the transient over-voltages associated with lightening strikes
  2. Main protection - class 2
  With a discharge current (I_{max} 8/20), to evacuate as much of the transient over-voltage to earth as possible protection level (Up ≤ 1200V).
  3. Main protection - class 3
  To cut-down the transient surge as low as possible to protect very sensitive equipment.

Technical Data
- Conforms to IEC61643-1.
- R Versions: reserve status indicator, signalling.
- D Versions: end of life indicator, auxiliary contact for remote indication.
- Connection Capacity (terminal blocks L, N & E): Rigid conductor: 10mm², Flexible conductor: 6mm².
- 230V a.c. 1A.
- 12V...10mA.

Installation and Connection
- The main protection SPDs are installed directly after the main incoming switch or RCCB
- SPDs are suitable for any supply system e.g TNCS, TNS, TT.
- Connected in parallel to the equipment to be protected.
- Protection is assured in both common and differential modes.

SPDs with Low Let Through Voltage Levels Type 3
- To protect very sensitive electronic equipment. This fine protection complements the main protection and can protect one or many electronic devices.
- Optimal coordination is obtained when cascaded with a main protection device.
- A green LED on the front face indicates the status of the **SP202N**, connected in series with the equipment that needs to be protected (with a maximum line current of 25A). Protection is assured in both common and differential modes.

Replacement Cartridges
- Allow simple replacement without the need to cut-off the power supply.
- Cartridges are available for all discharge currents (40kA and 15kA) with and without condition indication.
- A keying system exists to prevent a line cartridge being interchanged by mistake with a neutral one and visa versa. Neutral cartridges have a discharge current of 65kA.
- For technical details see page 1.89

JK101SPD

JKD101SPD

JK201SPD

Surge Protection Kits

Characteristics
- Developed to ensure effective protection of end equipment from fast transient overvoltages, where supplied from Hager Commercial distribution boards.
- Solid copper Earth links on all SPD kits and other design principles ensure optimum protection of end equipment through validated low U_p effective SPD performance.
- For more information on these Surge Protection Kits see distribution board pages.

Surge Protection Kits for 125A TP&N Boards	Cat ref.
Type 1 & 2 Surge Protection Kit for 125A Boards	JK101SPD *
Type 2 Surge Protection Kit for 125A Boards	JK102SPD *
Type 1 & 2 Surge Protection Kit for 125A Power & Lighting Boards	JKD101SPD *
Type 2 Surge Protection Kit for 125A Power & Lighting Boards	JKD102SPD *

Surge Protection Kits for 250A TP&N Boards	
Type 1 & 2 Surge Protection Kit for 250A Boards	JK201SPD *
Type 2 Surge Protection Kit for 250A Boards	JK202SPD *

Surge Protection Kits for JN Panelboards	
SPD kit Type 1+2 for JN Panelboards	JN201SPD *
SPD kit Type 2 for JN Panelboards	JN202SPD *

Surge Protection Kit for JF Panelboards	
SPD kit Type 1 + 2 for JF Panelboards	JF801SPD *

Class 1 + 2 (Class 1 + 2 + 3 if less than 5m) (with lifetime indicator)

TN / TT	Poles	I_{imp} L-N	I_{imp} N-PE	U_p kV	Single or Three Phase	Width (mm)	Cat ref.	Cat ref. with remote contact
TN / TT	2	12.5	25	≤1.5	Single	35	**SPA201**	-
TN / TT	4	12.5	50	≤1.5	Three	70	**SPA401**	-
TN	4	25	100	≤1.5	Three	140	**SPN801**	**SPN801R**
TT	4	25	100	≤1.5	Three	140	**SPN802**	**SPN802R**

SPN801R

Class 2 (with lifetime indicator)

Poles	I_n kA L-N	I_n kA N-PE	U_p kV	Single or Three Phase	Width (mm)	Cat ref.	Cat ref. with remote contact
2	5	15	≤ 1.2	Single	35	**SPN215D**	**SPN215R**
2	15	40	≤ 1.2	Single	35	**SPN240D**	**SPN240R**
4	5	15	≤ 1.5	Three	70	**SPN415D**	**SPN415R**
4	15	40	≤ 1.5	Three	70	**SPN440D**	**SPN440R**

SPN415D

Class 3 (Fine Protection) (with lifetime indicator)

Poles	I_n kA L-N	I_n kA N-PE	U_p kV	Width (mm)	Cat ref.
2	3	3	≤ 1.5	17.5	**SPN203N**

PV Applications (DC side) (with lifetime indicator)

Poles	I_n kA L-N	I_n kA N-PE	U_p kV	Single or Three Phase	Width (mm)	Cat ref.
3	12.5	25	≤ 4	-	52.5	**SPV325**

Replacement Cartridges

Description	Cat ref.
Phase replacement for **SPN215D**, **SPN415D**, **SPN115D**	**SPN015D**
Phase replacement for **SPN215R**, **SPN415R**, **SPN115R**	**SPN015R**
Phase replacement for **SPN240D**, **SPN440D**	**SPN040D**
Phase replacement for **SPN240R**, **SPN44R**	**SPN040R**
Neutral replacement for **SPN215D**, **SPN415D**, **SPN215R**, **SPN415R**	**SPN040N**

SPN040D

Replacement Cartridges (SPN8* Range)

Description	Cat ref.
Phase replacement for **SPN801**, **SPN801R**, **SPN802**, **SPN802R**	**SPN080**
Neutral replacement for **SPN801**, **SPN801R**, **SPN802**, **SPN802R**	**SPN080N**

SPN080

HR500

HR510

HR520

HR440

HR441

Earth Fault Relays

Characteristics
- Provides monitoring of earth fault currents. When the fault current rises above the selected level, the output contacts of the product operate.
- Depending on the relay selected, it can have either fixed or adjustable sensitivity. A time delay is also available for selectivity purposes. The relays are linked with detection torroids, available in circular and rectangular variants.
- Positive safety: the relay trips in the event of a break in the relay/torroid link.
- Positive reset required after a fault is detected.
- Test button for simulation of a fault.
- Protected against nuisance tripping from transients.
- Conforms to BS EN 61008.

Technical Data
- Type A RCD protection.
- Output: 1 C/O contact, 250V a.c. 5/6A AC1.
- Visual display of fault by red LED.

Specific device features of HR525 & HR534.
- Display of fault current before it triggers the relay (5% to 75%).
- Extra output contact (250V 0.1A max.) to enable remote indication if fault currents over 50% of $I_{\Delta n}$.
- Remote test and reset (opto-coupled).

Connection capacity
- Relay - 1.5 to 6mm²
- Relay - torroid link: 2 wires, 25m max.
- Test and remote reset link: 3 wires, 20m max.
- For enclosure selection, please consult us.

Description	Characteristics	Width	Cat ref.
Earth Fault Relay with Separate Detection Torroids			
Earth fault relay C/O contact 5A a.c.1	Instant trip, fixed sensitivity $I_{\Delta n}$ = 30mA	1 Mod	**HR500**
Earth fault relay C/O contact 5A a.c.1	Instant trip, fixed sensitivity $I_{\Delta n}$ = 300mA	1 Mod	**HR502**
Earth fault relay C/O contact 6A a.c.1	Adjustable sensitivity $I_{\Delta n}$ = 30mA, 100mA, 300mA 500mA, 1A, 3A, 10A Instant trip or time delay 0.1 - 0.3 - 0.4 - 0.5 - 1 - 3 secs	3 Mod	**HR510**
Earth fault relay C/O contact 6A a.c.1	Adjustable sensitivity $I_{\Delta n}$ = 30mA, 100mA, 300mA 500mA, 1A, 3A, 10A LED optical scale Instant trip or time delay 0.1 - 0.3 - 0.4 - 0.5 - 1 - 3 secs	3 Mod	**HR520**
Earth fault relay C/O contact 6A a.c.1	Adjustable sensitivity $I_{\Delta n}$ = 30mA, 100mA, 300mA 500mA, 1A, 3A, 10A LED optical scale Instant trip or time delay 0.1 - 0.2 - 0.25 - 0.3 - 0.4 - 0.5 secs	3 Mod	**HR522**
Earth fault relay C/O contact 6A a.c.1	Adjustable sensitivity $I_{\Delta n}$ = 500mA, 1A, 3A, 5A, 10A, 20A & 30A LED optical scale Instant trip or time delay 0.1 - 0.2 - 0.25 - 0.3 - 0.4 - 0.5 secs	3 Mod	**HR523**
Earth fault relay C/O contact 6A a.c.1 Trip / reclose input feature	Adjustable sensitivity $I_{\Delta n}$ = 30mA, 100mA, 300mA, 500mA, 1A, 3A, 5A, 10A & 30A LCD Display Instant trip or time delay 0.02 - 0.1 - 0.3 - 0.4 - 0.5 - 1 - 3 - 5 - 10 secs	3 Mod	**HR525**
Earth fault relay C/O contact 6A a.c.1 Solid State relay output Trip / reclose input feature	Adjustable sensitivity $I_{\Delta n}$ = 30mA, 100mA, 300mA, 500mA, 1A, 3A, 5A, 10A & 30A LCD Display Instant trip or time delay 0.02 - 0.1 - 0.3 - 0.4 - 0.5 - 1 - 3 - 5 - 10 secs	3 Mod	**HR534**
Earth Fault Relay with Integral Torroids			
Earth fault relay with integral torroid adjustable sensitivity 25mm² max. cable size	Adjustable sensitivity $I_{\Delta n}$ - 30mA, 100mA, 300mA, 500mA, 1A & 3A Instant trip or time delay 0.1 - 0.3 - 0.5 - 0.75 - 1 secs	4 Mod	**HR440**
Earth fault relay with integral torroid adjustable sensitivity 35mm² max. cable size	Adjustable sensitivity $I_{\Delta n}$ - 30mA, 100mA, 300mA, 500mA, 1A & 3A Instant trip or time delay 0.1 - 0.3 - 0.5 - 0.75 - 1 secs	6 Mod	**HR441**

Circular Section Torroids

Characteristics	Cat ref.
ø 30mm	**HR700**
ø 35mm	**HR701**
ø 70mm	**HR702**
ø 105mm	**HR703**
ø 140mm	**HR704**
ø 210 mm	**HR705**

HR702

Rectangular Section Torroids

Dimensions	Cat ref.
70 x 175mm	**HR830**
115 x 305mm	**HR831**
150 x 350mm	**HR832**

HR830

Rectangular Split Torroids

Dimensions	Cat ref.
20 x 30mm	**HR820**
50 x 80mm	**HR821**
80 x 80mm	**HR822**
80 x 121mm	**HR823**
80 x 161mm	**HR824**

HR820

HDA125Z

Moulded Case Circuit Breakers x160 18kA

Characteristics
- Thermal magnetic trip unit, two versions: Z version: fixed thermal and fixed magnetic. U version: adjustable thermal and fixed magnetic.
- Access to mechanical test button on cover.
- Lockable cover protects MCCB settings.
- Integrated padlocking handle: Ø 4mm.
- Connection capacity: 95mm² rigid cables, 70mm² flexible cables.
- Cage terminals
- Conforms to BS EN 60947-2.
- Fixed thermal: 1x I_n
- Adjustable thermal: 0.63 - 0.8 - 1 x I_n
- For technical details see table on page 1.96.

Description	Breaking Capacity	Cat ref. 1 pole	Cat ref. 3 pole
Moulded Case Circuit Breakers, 18kA, Fixed Thermal			
MCCBs x160 - 16A	I_{cu} / I_{cs}: 18 kA	**HDA014E ***	**HDA016Z**
MCCBs x160 - 20A	I_{cu} / I_{cs}: 18 kA	**HDA018E ***	**HDA020Z**
MCCBs x160 - 25A	I_{cu} / I_{cs}: 18 kA	**HDA023E ***	**HDA025Z**
MCCBs x160 - 32A	I_{cu} / I_{cs}: 18 kA	**HDA030E ***	**HDA032Z**
MCCBs x160 - 40A	I_{cu} / I_{cs}: 18 kA	**HDA038Z ***	**HDA040Z**
MCCBs x160 - 50A	I_{cu} / I_{cs}: 18 kA	**HDA048Z ***	**HDA050Z**
MCCBs x160 - 63A	I_{cu} / I_{cs}: 18 kA	**HDA061Z ***	**HDA063Z**
MCCBs x160 - 80A	I_{cu} / I_{cs}: 18 kA	**HDA078Z ***	**HDA080Z**
MCCBs x160 - 100A	I_{cu} / I_{cs}: 18 kA	**HDA098Z ***	**HDA100Z**
MCCBs x160 - 125A	I_{cu} / I_{cs}: 18 kA	**HDA123Z ***	**HDA125Z**
MCCBs x160 - 160A	I_{cu} / I_{cs}: 18 kA	**-**	**HDA160Z**
Moulded Case Circuit Breakers, 18kA, Adjustable Thermal			
MCCBs x160 - 25A	I_{cu} / I_{cs}: 18 kA	**-**	**HDA025U**
MCCBs x160 - 40A	I_{cu} / I_{cs}: 18 kA	**-**	**HDA040U**
MCCBs x160 - 63A	I_{cu} / I_{cs}: 18 kA	**-**	**HDA063U**
MCCBs x160 - 80A	I_{cu} / I_{cs}: 18 kA	**-**	**HDA080U**
MCCBs x160 - 100A	I_{cu} / I_{cs}: 18 kA	**-**	**HDA100U**
MCCBs x160 - 125A	I_{cu} / I_{cs}: 18 kA	**-**	**HDA125U**
MCCBs x160 - 160A	I_{cu} / I_{cs}: 18 kA	**-**	**HDA160U**
Moulded Case Circuit Breakers 25kA Fixed Thermal			
MCCBs x160 - 16A	I_{cs}: 20 kA, I_{cu}: 25 kA	**HHA014E ***	**HHA016Z**
MCCBs x160 - 20A	I_{cs}: 20 kA, I_{cu}: 25 kA	**HHA018E ***	**HHA020Z**
MCCBs x160 - 25A	I_{cs}: 20 kA, I_{cu}: 25 kA	**HHA023E ***	**HHA025Z**
MCCBs x160 - 32A	I_{cs}: 20 kA, I_{cu}: 25 kA	**HHA030E ***	**HHA032Z**
MCCBs x160 - 40A	I_{cs}: 20 kA, I_{cu}: 25 kA	**HHA038Z ***	**HHA040Z**
MCCBs x160 - 50A	I_{cs}: 20 kA, I_{cu}: 25 kA	**HHA048Z ***	**HHA050Z**
MCCBs x160 - 63A	I_{cs}: 20 kA, I_{cu}: 25 kA	**HHA061Z ***	**HHA063Z**
MCCBs x160 - 80A	I_{cs}: 20 kA, I_{cu}: 25 kA	**HHA078Z ***	**HHA080Z**
MCCBs x160 - 100A	I_{cs}: 20 kA, I_{cu}: 25 kA	**HHA098Z ***	**HHA100Z**
MCCBs x160 - 125A	I_{cs}: 20 kA, I_{cu}: 25 kA	**HHA123Z ***	**HHA125Z**
MCCBs x160 - 160A	I_{cs}: 20 kA, I_{cu}: 25 kA	**-**	**HHA160Z**
Moulded Case Circuit Breakers 25kA Adjustable Thermal			
MCCBs x160 - 25A	I_{cs}: 20 kA, I_{cu}: 25 kA	**-**	**HHA025U**
MCCBs x160 - 40A	I_{cs}: 20 kA, I_{cu}: 25 kA	**-**	**HHA040U**
MCCBs x160 - 63A	I_{cs}: 20 kA, I_{cu}: 25 kA	**-**	**HHA063U**
MCCBs x160 - 80A	I_{cs}: 20 kA, I_{cu}: 25 kA	**-**	**HHA080U**
MCCBs x160 - 100A	I_{cs}: 20 kA, I_{cu}: 25 kA	**-**	**HHA100U**
MCCBs x160 - 125A	I_{cs}: 20 kA, I_{cu}: 25 kA	**-**	**HHA125U**
MCCBs x160 - 160A	I_{cs}: 20 kA, I_{cu}: 25 kA	**-**	**HHA160U**

Accessories for x160 Devices

Indication contacts
- 1 changeover switch (ON/OFF): indicates the position of the MCCB “open” or “close”.
- 1 changeover alarm contact: indicates MCCB tripped.

Coil connection
- Connection capacity: 0.75 mm² flexible or rigid cables
- The cable capacity of the terminals is 0.5 to 1.25mm².

Shunt trip
- Remote tripping of MCCBs
- Operating voltage: 0.7 to 1.1 x U_n

Under voltage release
- Enables tripping of MCCBs or moulded case switches when voltage level drop between 35 and 70% of U_n. Pick up voltage 0.85 x U_n.
- Padlockable direct rotary handle is equipped with front cover and handle, fixing without additional screws.

HXA021H

HXA024H

Description	Cat ref.
Auxiliary Contacts	
1 Changeover contact (On/Off), 250V a.c. / 3A, 125V d.c. / 0.4A, 1 NO+ 1NC	**HXA021H**
1 Changeover alarm contact, 250 V a.c. / 3A, 125 V d.c. / 0.4A, NO + 1 NC	**HXA024H**
Low level contact (On/Off), 125V a.c. , NO + 1 NC	**HXA025H**
Low Level alarm contact, 125 V a.c. , NO + 1 NC	**HXA026H**
Shunt Trips	
24V DC	**HXA001H**
48V DC	**HXA002H**
100-120V a.c.	**HXA003H**
200-240V a.c.	**HXA004H**
380-450V a.c.	**HXA005H**
Undervoltage Releases	
24V DC	**HXA011H**
100-120V a.c.	**HXA013H**
200-240V a.c.	**HXA014H**
380-450V a.c.	**HXA015H**
Delayed Undervoltage Releases	
24V DC	**HXA051H**
100-120V a.c.	**HXA053H**
200-240V a.c.	**HXA054H**
380-450V a.c.	**HXA055H**
Accessories	
Locking Device to Mount on MCCB for Handle Locking for 3 Padlock Max ø 8mm	**HXA039H**
Set of Three Extended Spreader Connections	**HYA014H**
Pair of Terminal Covers for Extended Straight Connections 1 Pole	**HYA029H**
Pair of Terminal Covers for Extended Straight Connections 3 Pole	**HYA021H**
Pair of Terminal Covers for Extended Spreader Connections	**HYA023H**

HXA014H

HXA039H

HYA021H

HYA023H

Add-On Blocks for x160 Devices

Characteristics
- These devices are intended to be fixed on the right side of the devices.
- Type A RCD protection for protection against pulsating d.c.
- High Immunity reduces unexpected tripping (generated by micro-processing, electronic ballast etc.).
- Fixed version: 300 mA sensitivity and instantaneous tripping, adjustable version: adjustable sensitivity and time delay.
- Test button for electrical functioning check.
- LED fault indication and auxiliary output for remote indication - (25-50% $I_{\Delta n}$).
- Assembly and disassembly facilitated by the drawer assembly system.
- Connection capacity: 95 mm² rigid cables, 70 mm² flexible cables.
- Sensitivity $I_{\Delta n}$, adjustable: 0.03 - 0.1 - 0.3 - 1 - 3 - 6A
- Adjustable tripping: instantaneous or time delay: 0.06 - 0.15 - 0.3, 0.5 - 1s
- Conforms to BS EN 60947-2.

HBA125H

Description	Cat ref. 3P
Fixed Add-on Block - 125A	**HBA127H**
Adjustable Add-on Block - 125A	**HBA125H**
Adjustable Add-on Block - 160A	**HBA160H**

HDA125Z

Moulded Case Circuit Breakers x250 25kA

Characteristics
- Thermal magnetic trip unit, two versions: Z version: fixed thermal and fixed magnetic. H version: adjustable thermal magnetic.
- Access to mechanical test button on cover.
- Lockable cover protects MCCB settings.
- Integrated padlocking handle: Ø 4mm.
- Connection capacity: 150mm² rigid cables, palm lug max. width: 25mm
- Conforms to BS EN 60947-2
- AC 22/23A.
- For technical data see page 2.

x250 25kA
- Fixed thermal: 1x I_n
- Fixed magnetic: > 10 x I_n

x250 40kA
- Adjustable thermal: 0.63, 0.8, 1 x I_n
- Adjustable magnetic: 6 - 8 - 10 - 13 x I_n (100 - 200A). 5 - 7 - 9 - 11 x I_n (250A).

Description	Breaking capacity	Cat ref. 3P
Moulded Case Circuit Breakers 25kA - Fixed		
MCCBs x250 - 100A	I_{CS}: 20 kA, I_{CU}: 25 kA	**HHB100Z**
MCCBs x250 - 125A	I_{CS}: 20 kA, I_{CU}: 25 kA	**HHB125Z**
MCCBs x250 - 160A	I_{CS}: 20 kA, I_{CU}: 25 kA	**HHB160Z**
MCCBs x250 - 200A	I_{CS}: 20 kA, I_{CU}: 25 kA	**HHB200Z**
MCCBs x250 - 250A	I_{CS}: 20 kA, I_{CU}: 25 kA	**HHB250Z**
Moulded Case Circuit Breakers 40kA - Fixed		
MCCBs x250 - 100A	I_{CS}: 20 kA, I_{CU}: 40 kA	**HNB100Z**
MCCBs x250 - 125A	I_{CS}: 20 kA, I_{CU}: 40 kA	**HNB125Z**
MCCBs x250 - 160A	I_{CS}: 20 kA, I_{CU}: 40 kA	**HNB160Z**
MCCBs x250 - 200A	I_{CS}: 20 kA, I_{CU}: 40 kA	**HNB200Z**
MCCBs x250 - 250A	I_{CS}: 20 kA, I_{CU}: 40 kA	**HNB250Z**
Moulded Case Circuit Breakers 40kA - Adjustable		
MCCBs x250 - 100A	I_{CS}: 20 kA, I_{CU}: 40 kA	**HNB100H**
MCCBs x250 - 125A	I_{CS}: 20 kA, I_{CU}: 40 kA	**HNB125H**
MCCBs x250 - 160A	I_{CS}: 20 kA, I_{CU}: 40 kA	**HNB160H**
MCCBs x250 - 200A	I_{CS}: 20 kA, I_{CU}: 40 kA	**HNB200H**
MCCBs x250 - 250A	I_{CS}: 20 kA, I_{CU}: 40 kA	**HNB250H**

Data is subject to errors and technical modifications. ★ **New.**

Accessories for x250 Devices

Indication contacts
- 1 changeover switch (ON/OFF): indicates the position of the MCCB “open” or “close”.
- 1 changeover alarm contact: indicates MCCB tripped.

Coil connection
- Connection capacity: 0.75 mm² flexible or rigid cables
- The cable capacity of the terminals is 0.5 to 1.25mm².

Shunt trip
- Remote tripping of MCCBs
- Operating voltage: 0.7 to 1.1 x U_n

Under voltage release
- Enables tripping of MCCBs or moulded case switches when voltage level drop between 35 and 70% of U_n. Pick up voltage 0.85 x U_n
- Padlockable direct rotary handle is equipped with front cover and handle, fixing without additional screws.

Description	Cat ref.
Auxiliary Contacts	
1 Changeover contact (On/Off), 250V a.c. / 3A, 125V d.c. / 0.4A, 1 NO+ 1NC	**HXA021H**
1 Changeover alarm contact, 250 V a.c. / 3A, 125 V d.c. / 0.4A, NO + 1 NC	**HXA024H**
Low level contact (On/Off), 125V a.c. , NO + 1 NC	**HXA025H**
Low Level alarm contact, 125 V a.c. , NO + 1 NC	**HXA026H**
Shunt Trips	
24V DC	**HXA001H**
48V DC	**HXA002H**
100-120V a.c.	**HXA003H**
200-240V a.c.	**HXA004H**
380-450V a.c.	**HXA005H**
Undervoltage Releases	
24V DC	**HXA011H**
100-120V a.c.	**HXA013H**
200-240V a.c.	**HXA014H**
380-450V a.c.	**HXA015H**
Delayed Undervoltage Releases	
24V DC	**HXA051H**
100-120V a.c.	**HXA053H**
200-240V a.c.	**HXA054H**
380-450V a.c.	**HXA055H**
Accessories	
Locking Device to Mount on MCCB for Handle Locking for 3 Padlock Max ø 8mm	**HXA039H**
Set of Four Extended Straight Connections	**HXB010H**
Set of Four Extended Spreader Connections	**HYB011H**
Set of Three Interphase Barriers	**HYB019H**
Pair of Terminal Covers for Extended Straight Connections	**HYB021H**
Pair of Terminal Covers for Extended Spreader Connections	**HYB023H**

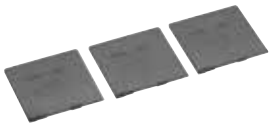
HXA021H

HXA024H

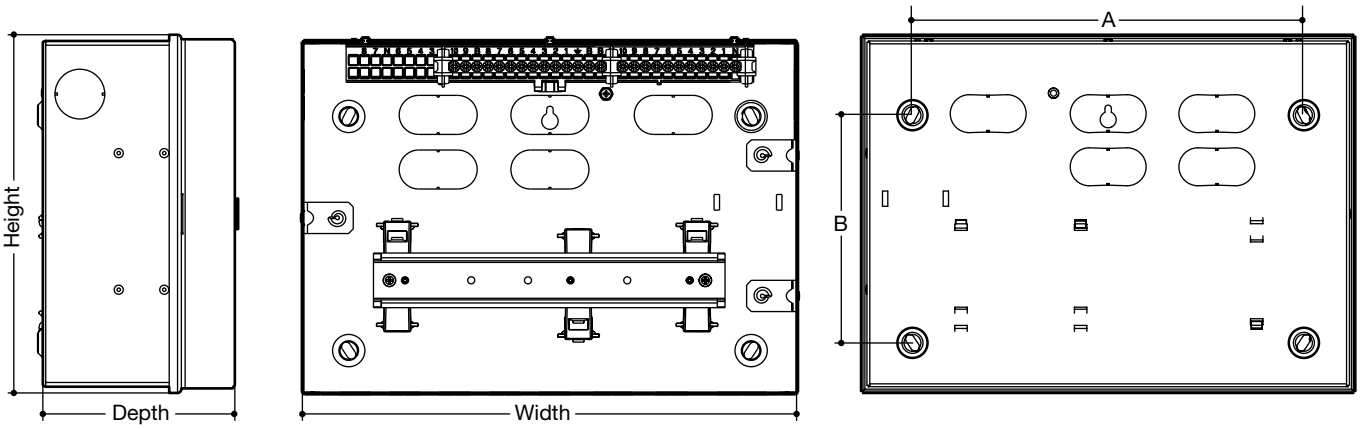
HXA014H

HXA039H

HYB010H


HYB019H

HYB021H

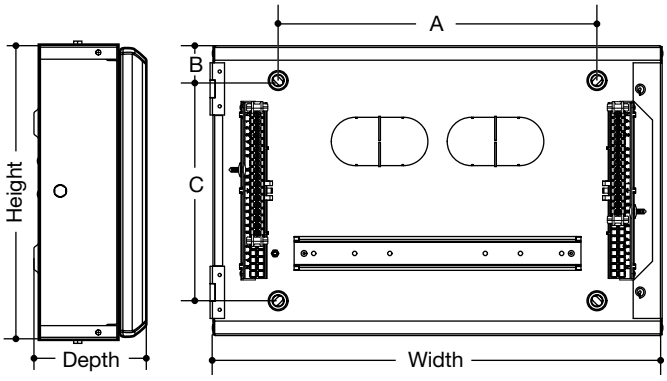


SP&N A Boards

	Dimensions			Fixing Centres		Knockout Size	Nº of Knockouts				
Enclosure Size	**Width**	**Height**	**Depth**	**A**	**B**		**Top**	**Bottom**	**Left**	**Right**	**Back**
3	254	236	125	186	150	ø 20	3	3	-	-	-
						ø 32	1	1	1	1	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	3
4	326	236	125	258	150	ø 20	6	6	-	-	-
						ø 32	1	1	1	1	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	5
5	398	236	125	330	150	ø 20	8	8	-	-	-
						ø 32	1	1	1	1	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	7
7	505	236	125	437	150	ø 20	11	11	-	-	-
						ø 32	1	1	1	1	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	9
4 (2)	326	472	125	258	388	ø 20	6	6	-	-	-
						ø 32	1	1	2	2	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	6
5 (2)	398	472	125	330	388	ø 20	8	8	-	-	-
						ø 32	1	1	2	2	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	8
7 (2)	505	472	125	437	388	ø 20	11	11	-	-	-
						ø 32	1	1	2	2	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	10

Invicta 3 SP&N A Boards

	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK114A/AG	300	465	107.7	350	35	228
JK129A/AG	450	465	107.7	330	35	378



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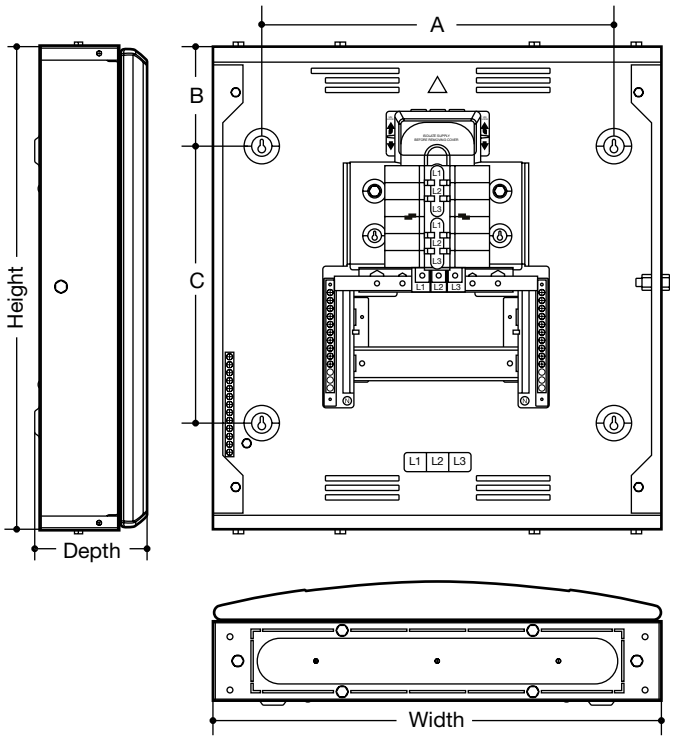


125A Primary Boards

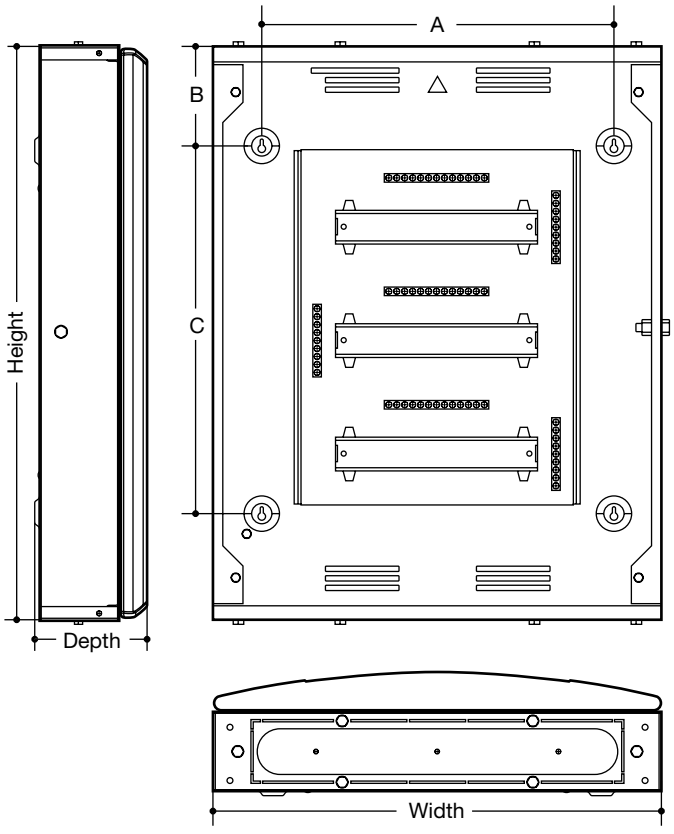
	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK104B/BG/A3	500	465	132.5	365	100	300
JK106B/BG/A3	550	465	132.5	365	100	350
JK108B/BG/A3	625	465	132.5	365	100	425
JK112B/BG/A3	850	465	132.5	365	100	650
JK116B/BG/A3	950	465	132.5	365	100	750
JK118B/BG/A3	1100	465	132.5	365	100	900
JK124B/BG/A3	1250	465	132.5	365	100	1050

250A Primary Boards

	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK208B/BG/A3	950	465	165.5	365	100	750
JK212B/BG/A3	1100	465	165.5	365	100	900
JK216B/BG/A3	1250	465	165.5	365	100	1050
JK218B/BG/A3	1400	465	165.5	365	100	1200
JK224B/BG/A3	1550	465	165.5	365	100	1350

Contactor Incomers

	Dimensions (mm)		
	Height	**Width**	**Depth**
JK10634C	300	465	165.5
JK11004C	450	465	234.5
JK21604C	450	465	234.5

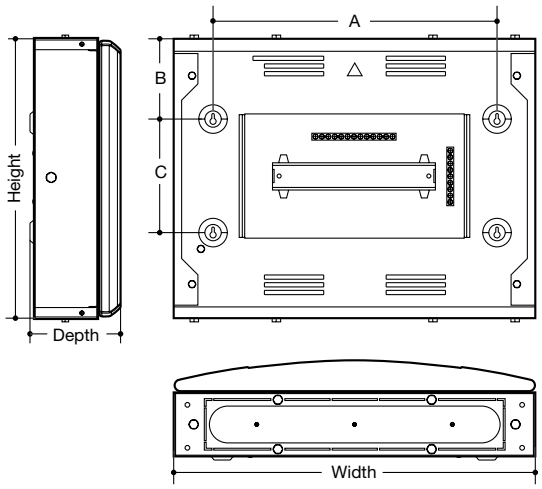


125A Side DIN Enclosures

	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK104BDFG	500	465	132.5	365	100	300
JK106BDFG	550	465	132.5	365	100	350
JK108BDFG	625	465	132.5	365	100	425
JK112BDFG	850	465	132.5	365	100	650
JK116BDFG	950	465	132.5	365	100	750

250A Side DIN Enclosures

	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK208BDFG	950	465	165.5	365	100	750
JK212BDFG	1100	465	165.5	365	100	900
JK216BDFG	1250	465	165.5	365	100	1050
JK218BDFG	1400	465	165.5	365	100	1200
JK224BDFG	1550	465	165.5	365	100	1350

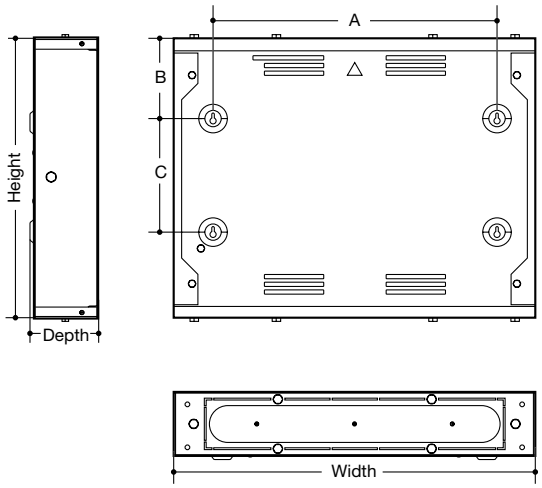


125A DIN Extension Boxes

	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK116E/EG	300	465	132.5	365	150	-
JK132E/EG	450	465	132.5	365	80	290

250A DIN Extension Boxes

	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK216E/EG	300	465	165.5	365	150	-
JK232E/EG	450	465	165.5	365	80	290

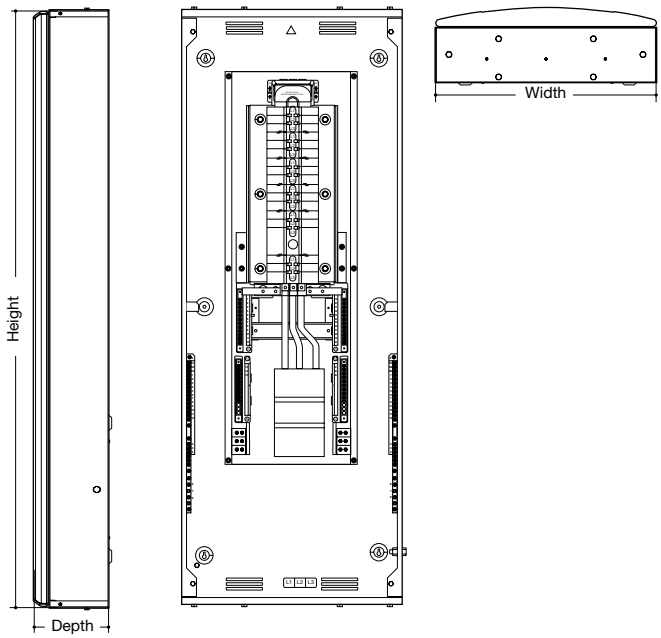


125A Cable Spreader Boxes

	Dimensions (mm)				Fixing Centres (mm)		
	Height	**Width**	**Depth**	**Depth with optional door**	**A**	**B**	**C**
JK101SE	300	465	91.5	132.5	365	150	-
JK102LE	450	465	91.5	132.5	365	80	290

250A Cable Spreader Boxes

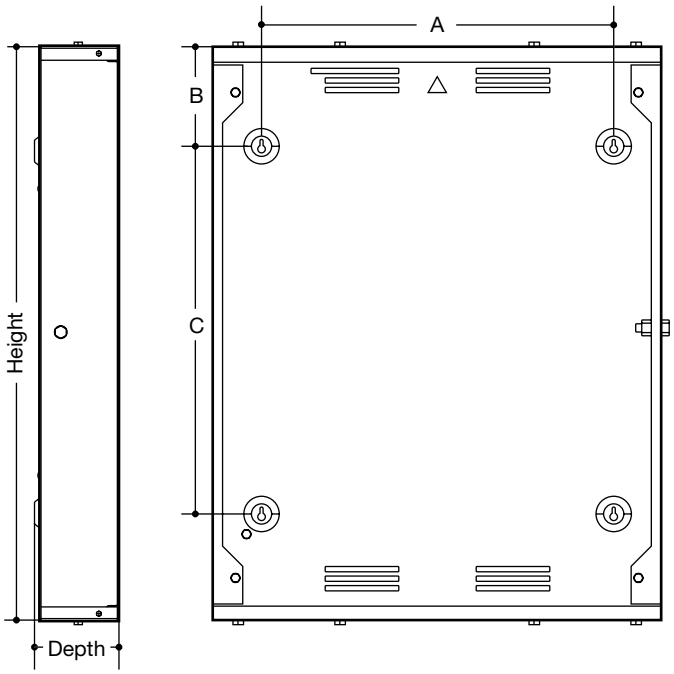
	Dimensions (mm)				Fixing Centres (mm)		
	Height	**Width**	**Depth**	**Depth with optional door**	**A**	**B**	**C**
JK201SE	300	465	124.5	165.5	365	150	-
JK202LE	450	465	124.5	165.5	365	80	290

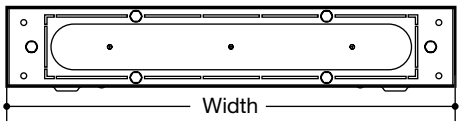


Hybrid 250A TPN Distribution Boards

	Dimensions (mm)		
	Height	**Width**	**Depth**
JK20210B/BG	1250	465	165.5
JK20216B/BG	1400	465	165.5
JK20220B/BG	1400	465	165.5
JK20210B/BGSD	1250	465	165.5
JK20216B/BGSD	1400	465	165.5
JK20220B/BGSD	1400	465	165.5

Data is subject to errors and technical modifications.





125A Side Extension Boxes

	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK104BSF	500	465	91.5	365	100	300
JK106BSF	550	465	91.5	365	100	350
JK108BSF	625	465	91.5	365	100	425
JK112BSF	850	465	91.5	365	100	650
JK116BSF	950	465	91.5	365	100	750

250A Side Extension Boxes

	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK208BSF	950	465	124.5	365	100	750
JK212BSF	1100	465	124.5	365	100	900
JK216BSF	1250	465	124.5	365	100	1050
JK218BSF	1400	465	124.5	365	100	1200
JK224BSF	1550	465	124.5	365	100	1350

125A Half Width Side Extension Boxes

	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK104BSH	500	232.5	91.5	170	100	300
JK106BSH	550	232.5	91.5	170	100	350
JK108BSH	625	232.5	91.5	170	100	425
JK112BSH	850	232.5	91.5	170	100	650
JK116BSH	950	232.5	91.5	170	100	750
JK101BSH	300	232.5	91.5	170	100	100

250A Half Width Side Extension Boxes

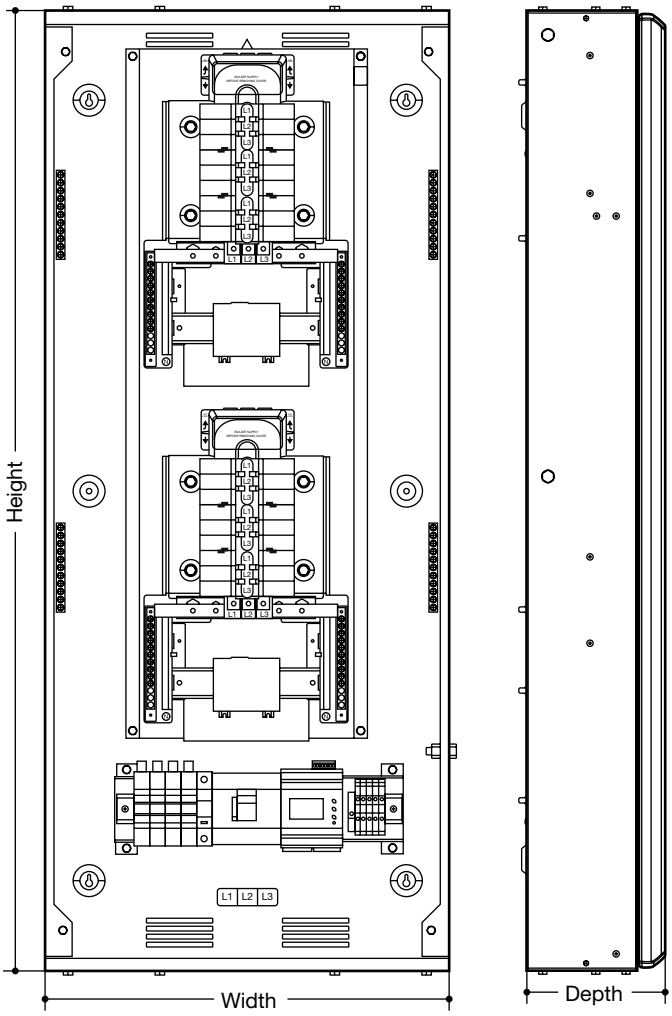
	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK208BSH	950	232.5	124.5	170	100	750
JK212BSH	1100	232.5	124.5	170	100	900
JK216BSH	1250	232.5	124.5	170	100	1050
JK218BSH	1400	232.5	124.5	170	100	1200
JK224BSH	1550	232.5	124.5	170	100	1350
JK201BSH	300	232.5	124.5	170	100	100

Dual Power & Lighting Boards

	Dimensions (mm)		
	Height	**Width**	**Depth**
JKD146PM	1100	465	165.5
JKD166PM	1100	465	165.5
JKD164PM	1100	465	165.5
JKD168PM	1250	465	165.5
JKD188PM	1250	465	165.5
JKD186PM	1250	465	165.5
JKD1416PM	1400	465	165.5
JKD1164PM	1400	465	165.5
JKD1812PM	1400	465	165.5
JKD1128PM	1400	465	165.5
JKD11212PM	1400	465	165.5

Triple Power, Lighting & Services Board

	Dimensions (mm)		
	Height	**Width**	**Depth**
JKD2884PM	1850	465	165.5



Meter Characteristics	
Supply	60 to 300V AC, 50/60Hz (±5%)
Serial Communication	
Interface Standard and Protocol	RS485 and MODBUS RTU
Input (CT)	
Pluggable RJ45	Input 1/ Input 2
Output	
Pulse Output:	Voltage Range : 24V DC max
Current Capacity :	100mA max
Pulse Duration :	Selectable Between 0.1 to 2.0sec
Pulse Weight :	Selectable between 0.01 to 9.99kWh
Accuracy of meter	
Measurement	Accuracy
Voltage VL-N	0.5% of full range
Voltage VL-L	0.5% of full range
Current A	0.5% of full range
Frequency For L-N Voltage > 20V For L-L Voltage > 35V"	0.1% of full range
Active power	1.0% of full range
Apparent Power	1.0% of full range
Reactive Power	1.0% of full range
Power Factor	±0.01% of full Range
Active Energy	1.0% of full range
Reactive Energy	1.0% of full range
Max/Min Active Power	1.0% of full range
Max/Min Reactive Power	1.0% of full range
Max Apparent Power	1.0% of full range
Power Consumption	Less than 8VA

Data is subject to errors and technical modifications.

Characteristics	JK1**	JK2**
Standards	Designed, manufactured and tested to BS EN 61439-3	Designed, manufactured and tested to BS EN 61439-3
Busbar Current Rating	125A	250A
Busbar Type	Fully shrouded copper	Fully shrouded copper
Busbar Rating	25kA Conditional	25kA Conditional
Incoming	100A Switch	250A MCS
	125A Switch	250A MCCB
	63A contactor AC3	160A contactor AC3
	100A contactor AC3	Direct connection
	Direct connection	
	RCCB incomers	
Outgoing Ways	4, 6, 8, 12, 16, 18, 24 Triple pole outgoing ways	8, 12, 16, 18, 24 Triple pole way outgoing ways
Outgoing Protection	Type B MCB (6A to 63A, 1P & 3P) Type C, D MCB, (0.5A to 63A, 1P & 3P) 1Mod and 2Mod RCBO	Type B MCB (6A to 63A, 1P & 3P) Type C, D MCB, (0.5A to 63A, 1P & 3P) 1Mod and 2Mod RCBO
Voltage Rating in AC	230 / 415V	230 / 415V
IP Protection	IP3X to BS EN 60529	IP3X to BS EN 60529
Enclosure Body Type	Steel	Steel
Enclosure Paint Type	Powder Coat Grey White BS4800 00A01	Powder Coat Grey White BS4800 00A01
Cable Entry	Obround protected cable entry points	Obround protected cable entry points
Terminal Connection Capacity		
Incoming Line Terminal	50mm²	120mm²
Incoming Earth Terminal	M8 stud	M8 stud
Incoming Neutral Terminal	50mm² cage or M6 stud	M8 Stud
Outgoing Earth Terminals	16mm²	16mm²
Outgoing Neutral Terminals	16mm²	16mm²
Enclosure Earth Stud	M8	M8
Installation		
Mounting	4 x key hole fixing holes plus central top key hole for one fixing hanging / levelling Surface Wall Mount	4 x key hole fixing holes plus central top key hole for one fixing hanging / levelling Surface Wall Mount
Gland Plate	Top and bottom removable	Top and bottom removable
Integrated Locking System	Coin lock as standard, key lock as accessory	Coin lock as standard, key lock as accessory

Torque Settings

			Cables >1.5mm² Tightening torque (N.m)		Cables ≤1.5mm² Tightening torque (N.m)		
	Pz No.	(mm)	Single Cable	Multi Cables	Single Cable	Multi Cable	Cable Stripping (mm)
Consumer unit terminals							
Earth and neutral terminal bars	2	6.5	2	2	1.5	1.5	10
Isolation							
SB switch disconnectors	2	6.5	3.6	3.6	3.6	3.6	15
Circuit protection							
MTN MCB	2	6.5	2.8	2.8	2.8	2.8	13
NBN/NCN/NDN MCB	2	6.5	2.8	2.8	2.8	2.8	13
RCBO	2	5.5	2.1	2.1	2.1	2.1	13
RCCB	2	5.5	2.8	2.8	2.8	2.8	13

Interface Characteristics	**Dual Power & Lighting Boards**	**Triple Power, Lighting & Services Board**
Rated & operational voltage (U_n / U_e)	415V a.c. 50Hz	415V a.c. 50Hz
Rated insulation voltage (U_i)	690V a.c. 50Hz	690V a.c. 50Hz
Rated impulse withstand voltage (U_{imp})	4kV	4kV
Rated current of the Assembly (I_{nA})	125A	200A
Rated current of pan assembly	Lower Pan (I_n) = 125A (RDF=1) Upper Pan (I_n) = 125A (RDF=1)	Lower Pan (I_n) = 125A (RDF=1) Middle Pan (I_n) = 125A (RDF=1) Upper Pan (I_n) = 125A (RDF=1)
Rated current of an Outgoing Circuit (I_{nc})	MCB 0.5A - 63A (marked rated current on device) RCBO 6A - 45A (marked rated current on device)	MCB 0.5A - 63A (marked rated current on device) RCBO 6A - 45A (marked rated current on device)
Rated conditional short-circuit current of the assembly (I_{cc})	10kA with equipment and arrangements specified in Hager's technical documentation/catalogue	10kA[1] with equipment and arrangements specified in Hager's technical documentation/catalogue
Protection against electric shock	Equipment shall be installed in an electrical system conforming to IEC 60364 / BS 7671	Equipment shall be installed in an electrical system conforming to IEC 60364 / BS 7671
Rated Diversity Factor (RDF) / Values of assumed loading	10 way to 24 way = 0.5 Note: RDF only applies to continuously and simultaneously loaded circuits.	10 way to 24 way = 0.5 Note: RDF only applies to continuously and simultaneously loaded circuits.
Rated frequency (f_n)	50 Hz	50 Hz
Pollution degree	2	2
Types of system earthing for which the assembly is designed	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671
Intended locations	Indoor use only	Indoor use only
Stationary Assembly		
Degree of protection	IP3XD with Door Closed IP2XC with Door Open	IP3XD with Door Closed IP2XC with Door Open
Intended use	Distribution boards intended to be operated by ordinary persons (DBO)	Distribution boards intended to be operated by ordinary persons (DBO)
Electromagnetic compatibility (EMC) classification	EMC Environment B	EMC Environment B
External design	Wall-mounted, surface type, enclosed assembly.	Wall-mounted, surface type, enclosed assembly.
Mechanical impact protection	IK05	IK05
The type of construction	Fixed parts	Fixed parts
DBO Type	Type B DBO	Type B DBO
Incoming Line Terminal	70mm^2 (switch disconnector)	70mm^2 (switch disconnector
Incoming Neutral Terminal	50mm^2 Cage	50mm^2 Cage
Enclosure Earth Stud	M8	M8
Standards	BS EN 61439-3	BS EN 61439-3

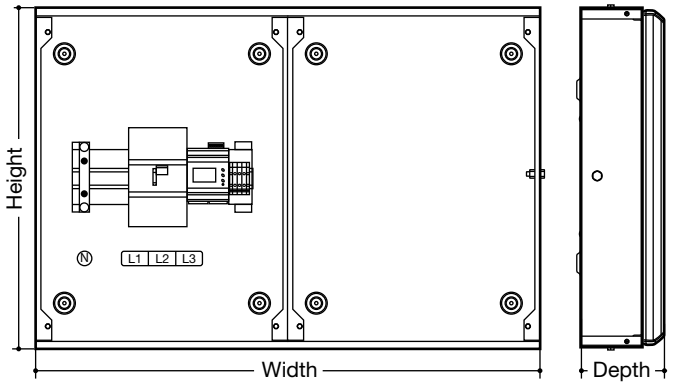
Data is subject to errors and technical modifications.

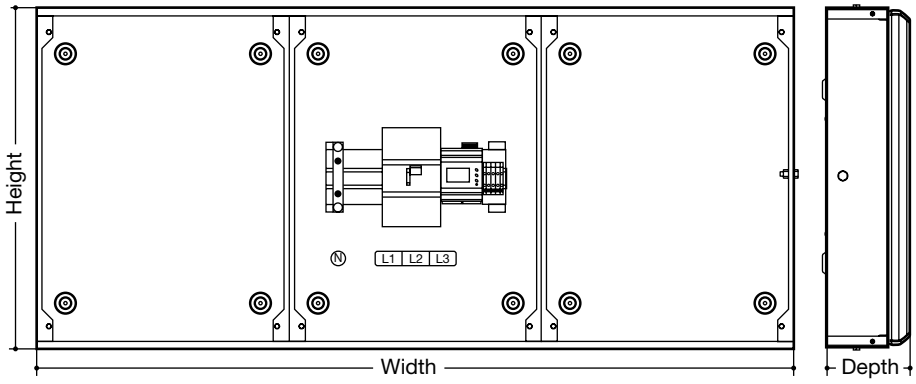
Interface Characteristics	JKD125PM	JKD125TPM	JKD250PM	JKD250TPM
Rated & operational voltage (U_n / U_e)	415V a.c. 50Hz	415V a.c. 50Hz	415V a.c. 50Hz	415V a.c. 50Hz
Rated insulation voltage (U_i)	690V a.c. 50Hz	690V a.c. 50Hz	690V a.c. 50Hz	690V a.c. 50Hz
Rated impulse withstand voltage (U_{imp})	4kV	4kV	4kV	4kV
Rated current of the Assembly (I_{nA})	125A Right Side Pan Assembly (I_n) 125A Left Side Pan Assembly (I_n) 125A	125A Right Side Pan Assembly (I_n) 125A Middle Pan Assembly (I_n) 125A Left Side Pan Assembly (I_n) 125A	250A Right Side Pan Assembly (I_n) 250A Left Side Pan Assembly (I_n) 250A	250A Right Side Pan Assembly (I_n) 200A Middle Pan Assembly (I_n) 200A Left Side Pan Assembly (I_n) 200A
Rated conditional short-circuit current of the assembly (I_{cc})	10kA with equipment and arrangements specified in Hager's technical documentation/catalogue	10kA with equipment and arrangements specified in Hager's technical documentation/catalogue	10kA with equipment and arrangements specified in Hager's technical documentation/catalogue	10kA with equipment and arrangements specified in Hager's technical documentation / catalogue
Protection against electric shock	Equipment shall be installed in an electrical system conforming to IEC 60364 / BS 7671	Equipment shall be installed in an electrical system conforming to IEC 60364 / BS 7671	Equipment shall be installed in an electrical system conforming to IEC 60364 / BS 7671	Equipment shall be installed in an electrical system conforming to IEC 60364 / BS 7671
Rated frequency (f_n)	50 Hz	50 Hz	50 Hz	50 Hz
Pollution degree	2	2	2	2
Types of system earthing for which the ASSEMBLY is designed	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671
Intended locations	Indoor use only	Indoor use only	Indoor use only	Indoor use only
Degree of protection	IP3XD with Door Closed IP2XC with Door Open	IP3XD with Door Closed IP2XC with Door Open	IP3XD with Door Closed IP2XC with Door Open	IP3XD with Door Closed / IP2XC with Door Open
Intended use	Distribution boards intended to be operated by ordinary persons (DBO)	Distribution boards intended to be operated by ordinary persons (DBO)	Distribution boards intended to be operated by ordinary persons (DBO)	Distribution boards intended to be operated by ordinary persons (DBO)
Electromagnetic compatibility (EMC) classification	EMC Environment B	EMC Environment B	EMC Environment B	EMC Environment B
External design	Wall-mounted, surface type, enclosed assembly.	Wall-mounted, surface type, enclosed assembly.	Wall-mounted, surface type, enclosed assembly.	Wall-mounted, surface type, enclosed assembly.
Mechanical impact protection	IK05	IK05	IK05	IK05
The type of construction	Fixed parts	Fixed parts	Fixed parts	Fixed parts
Incoming Line Terminal	M8	M8	M8	M8
Incoming Neutral Terminal	M8 Lug	M8 Lug	M8 Lug	M8 Lug
Enclosure Earth Stud	M8	M8	M8	M8

Meter Characteristics	
Supply	60 to 300V AC, 50/60Hz (±5%)
Serial Communication	
Interface Standard and Protocol	RS485 and MODBUS RTU
Input (CT)	
Pluggable RJ45	Input 1/ Input 2
Output	
Pulse Output:	Voltage Range : 24V DC max
Current Capacity :	100mA max
Pulse Duration :	Selectable Between 0.1 to 2.0sec
Pulse Weight :	Selectable between 0.01 to 9.99kWh
Accuracy of meter	
Measurement	Accuracy
Voltage VL-N	0.5% of full range
Voltage VL-L	0.5% of full range
Current A	0.5% of full range
Frequency For L-N Voltage >20V For L-L Voltage >35V"	0.1% of full range
Active power	1.0% of full range
Apparent Power	1.0% of full range
Reactive Power	1.0% of full range
Power Factor	±0.01% of full Range
Active Energy	1.0% of full range
Reactive Energy	1.0% of full range
Max/Min Active Power	1.0% of full range
Max/Min Reactive Power	1.0% of full range
Max Apparent Power	1.0% of full range
Power Consumption	Less than 8VA

Dual & Triple Meter Incomers

	Dimensions (mm)		
	Height	**Width**	**Depth**
JKD125PM	625	930	132.5
JKD125TPM	625	1395	132.5
JKD250PM	625	930	132.5
JKD250TPM	625	1395	132.5





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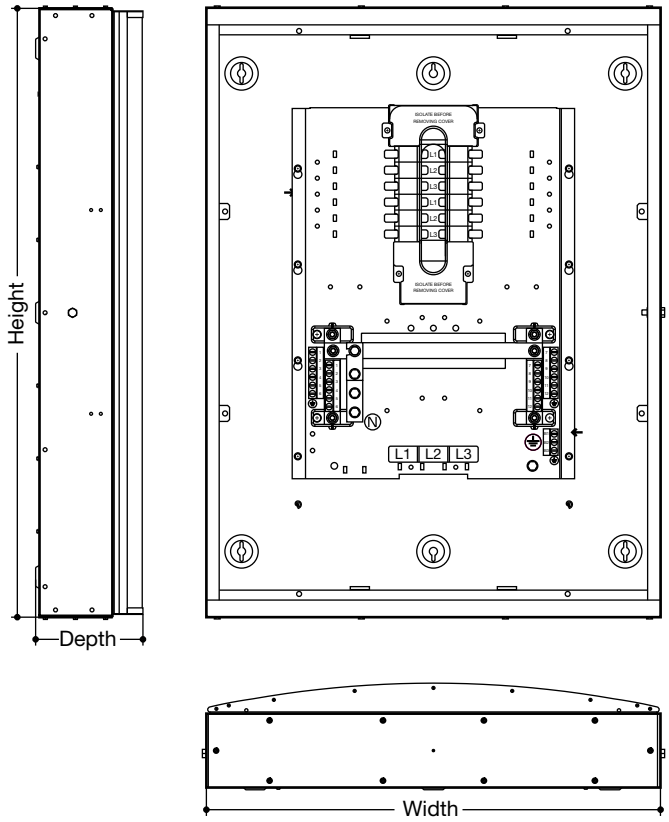


Primary Boards

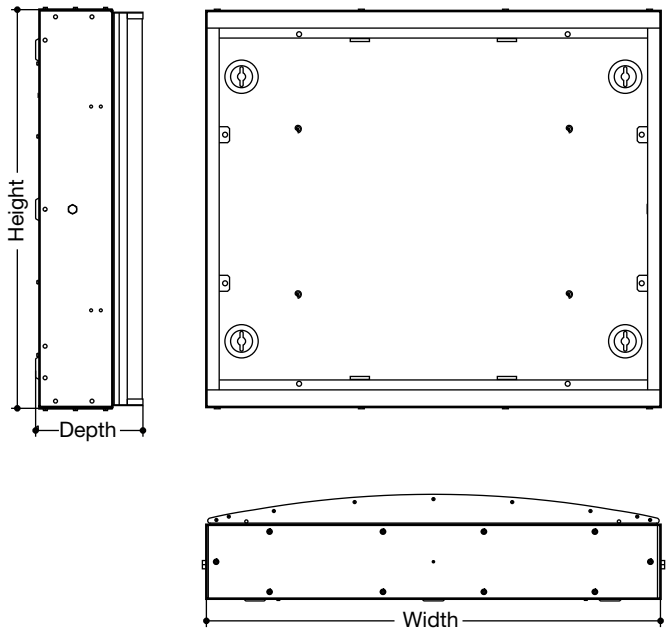
	Dimensions (mm)		
	Height	**Width**	**Depth**
JN204B/G	950	710	160
JN206B/G	1100	710	160
JN208B/G	1100	710	160
JN212B/G	1250	710	160
JN216B/G	1550	710	160

Terminals

Neutral	**Earth**	**Bond**
2 x 6 x 50mm	2 x 6 x 50mm	1 x 3 x 50mm
2 x 9 x 50mm	2 x 9 x 50mm	1 x 3 x 50mm
2 x 12 x 50mm	2 x 12 x 50mm	1 x 3 x 50mm
2 x 18 x 50mm	2 x 18 x 50mm	1 x 3 x 50mm
2 x 24 x 50mm	2 x 24 x 50mm	1 x 3 x 50mm

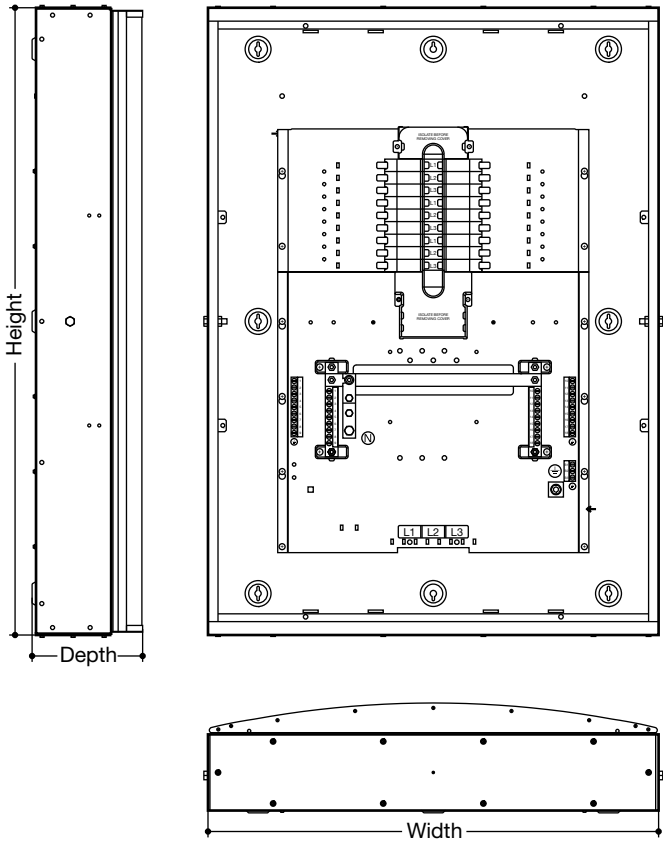
Cables outgoing ways:
25 - 50mm² CSA Flex
25 - 70mm² CSA Solid

MCCB Connections	M8
Earth	M8
Neutral	M8



Extension Boxes

	Dimensions (mm)		
	Height	**Width**	**Depth**
JN201BE/G	300	710	160
JN203BE/G	450	710	160
JN205BE	300	710	125
JN206BE	450	710	125



Primary Boards

	Dimensions (mm)		
	Height	**Width**	**Depth**
JF406B/G	1250	900	220
JF408B/G	1250	900	220
JF412B/G	1400	900	220
JF416B/G	1550	900	220
JF418B/G	1700	900	220
JF808B/G	1250	900	220
JF812B/G	1400	900	220
JF818B/G	1700	900	220
JF60204B/G	1250	900	220
JF80206B/G	1250	900	220
JF80404B/G	1250	900	220
JF80210B/G	1400	900	220
JF80408B/G	1400	900	220
JF80414B/G	1700	900	220
JF80612B/G	1700	900	220

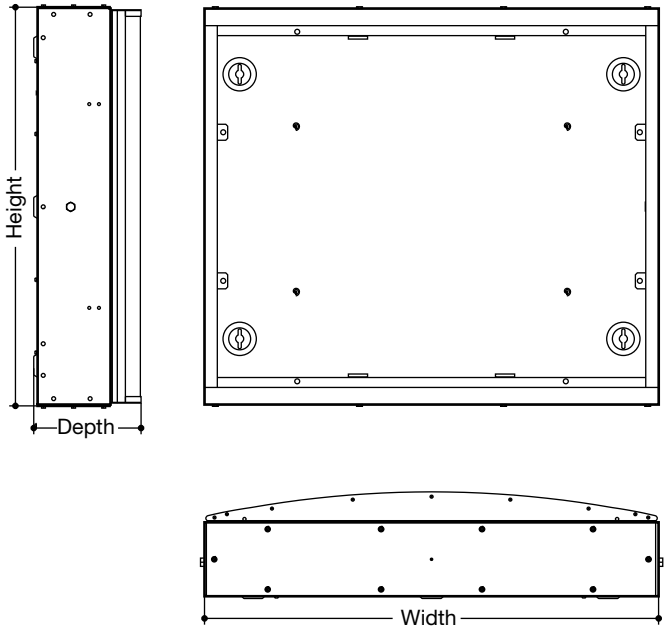
Terminals

Neutral		**Earth**	**Bond**
2 x 9 x 50mm		2 x 9 x 50mm	1 x 3 x 50
2 x 12 x 50mm		2 x 12 x 50mm	1 x 3 x 50
2 x 18 x 50mm		2 x 18 x 50mm	1 x 3 x 50
2 x 24 x 50mm		2 x 24 x 50mm	1 x 3 x 50
2 x 12 x 50mm		2 x 12 x 50mm	1 x 3 x 50
2 x 18 x 50mm		2 x 18 x 50mm	1 x 3 x 50
2 x 27 x 50mm		2 x 27 x 50mm	1 x 3 x 50
2 x 6 x 50mm	2 x M8 Bolt	2 x 9 x 50mm	1 x 3 x 50
2 x 9 x 50mm	2 x M8 Bolt	2 x 12 x 50mm	1 x 3 x 50
2 x 6 x 50mm	4 x M8 Bolt	2 x 12 x 50mm	1 x 3 x 50
2 x 15 x 50mm	2 x M8 Bolt	2 x 18 x 50mm	1 x 3 x 50
2 x 12 x 50mm	4 x M8 Bolt	2 x 18 x 50mm	1 x 3 x 50
2 x 21 x 50mm	4 x M8 Bolt	2 x 27 x 50mm	1 x 3 x 50
2 x 18 x 50mm	6 x M8 Bolt	2 x 27 x 50mm	1 x 3 x 50

Cables outgoing ways:
25 - 50mm^2 CSA Flex
25 - 70mm^2 CSA Solid

MCCB Connections:
400A M10
630A M12

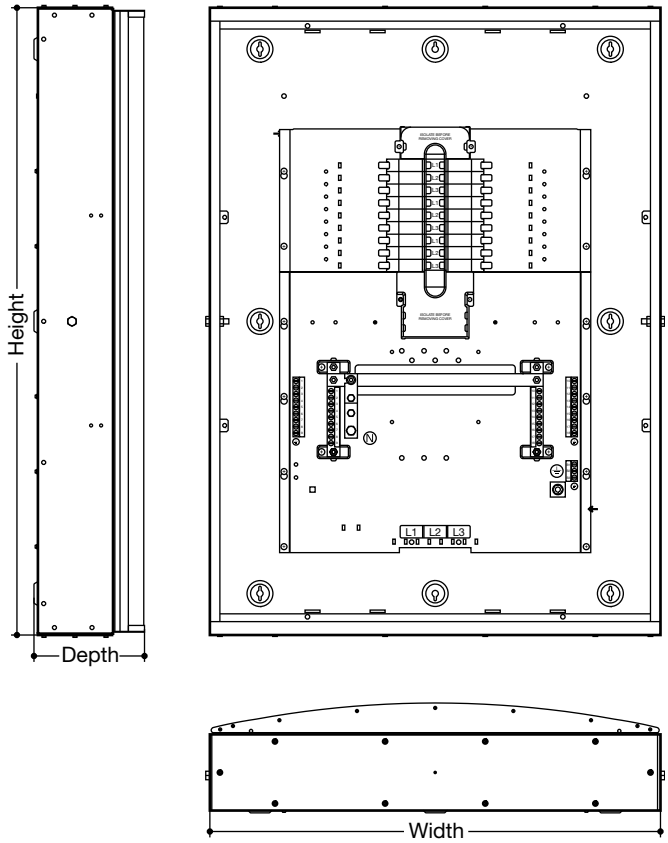
Earth:
400A M10
630A M10



Extension Boxes

	Dimensions (mm)		
	Height	**Width**	**Depth**
JF801E/G	300	900	220
JF803E/G	450	900	220
JF805E	300	900	158
JF806E	450	900	158

Data is subject to errors and technical modifications.



Primary Boards

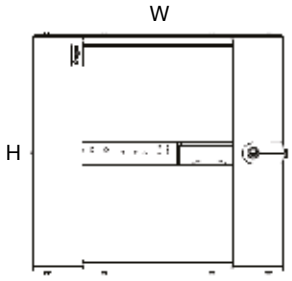
	Dimensions (mm)		
	Height	**Width**	**Depth**
JHF812B/G	2050	900	220
JHF818B/G	2200	900	220
JHF80206B/G	1900	900	220
JHF80404B/G	1900	900	220
JHF80210B/G	2050	900	220
JHF80408B/G	2050	900	220
JHF80414B/G	2200	900	220
JHF80612B/G	2200	900	220

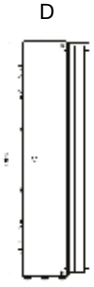
Invicta 3 Panelboard Metering Method Chart

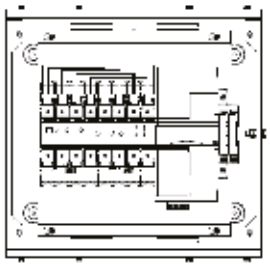
Use the process below to aid you in selecting the appropriate Invicta 3 Panelboard, side extension boxes, meters, meter supply cables and CT's.

Step	Selection method	Catalogue page	Order code	Qty
1	Select panelboard eg. 6 way with glazed door (**JN206BG**)	250A Page 1.13. 400A Page 1.15. 630A/800A Page 1.17. 800A Page 1.19.	**JN206BG**	1
2	Identify quantity of meters required eg. 4 metered ways modbus (**ECM01**)	Page 1.24.	**ECM01**	4
3	Select position for meter enclosure (Top or side) eg. Top - 450mm enclosure 6xDIN 96 Cut- Outs or Side - 6/8 Way JN Board 4xDIN 96 Cut-Outs	For JN Page 1.13. For JF Page 1.24.	**JN4506TM** **JN11004SM**	1 1
4	Number of blanking plates required eg. Top - 450mm enclosure 6xDIN 96 Cut- Outs or Side - 6/8 Way JN Board 4xDIN 96 Cut-Outs	Page 1.24.	**JF96BP**	2 0
5	Meter voltage supply including fuses. (1st meter only includes incoming) e.g. **JN130VMF**	Page 1.23.	**JN130VMF**	1
6	Supply cable for remaining meters (Link meter to meter) e.g. **PGMFT150**	Page 1.23.	**PGMFT150**	3
7	Identify which CT's are required eg. 60 Amp Qty 1 eg. 100 Amp Qty 2 eg. 125A Qty 1	Page 1.23.	**EC1260CT** **EC12100CT** **EC12125CT**	1 2 1

Characteristics	**250A**	**400A**	**630 / 800A**	**800A**
Series	JN2**	JF4**	JF6**/JF8**	JHF8**
Busbar current rating	250A	400A	800A	800A (for 800A MCCB only)
Busbar type	Type B Fully Shrouded Copper			
Busbar rated short-time with-stand current	25kA for 1 sec	35kA for 1 sec	35kA for 1 sec	35kA for 1 sec
Internal separation	Form 3A			
Incoming	Up to 250A MCCB, MCS	Up to 400A MCCB, MCS	Up to 630A MCCB, 800A LBS	800A MCCB
Outgoing	16 - 125A max.	16 - 125A max.	16 - 125A 100A - 250A	16 - 125A 100A - 250A
Voltage rating in a.c.	415V	415V	415V	415V
IP Protection	IP30			
Enclosure body type	Steel			
Enclosure paint type	Powder coat Grey White BS 4800 00A01			
Cable entry	Via Gland Plates			
Terminal Connection capacity				
Incoming earth terminal	M8	M10	M10	M10
Incoming neutral terminal	M8	M12	M12	M12
Outgoing earth terminals	Up to 50mm²	Up to 50mm²	Up to 50mm²	Up to 50mm²
Outgoing neutral terminals	Up to 50mm²	Up to 50mm²	16A - 125A: Up to 50mm² 100A - 250A: M8 Stud	16A - 125A: Up to 50mm² 100A - 250A: M8 Stud
Enclosure earth stud	M8	M10	M10	M10
Installation				
Mounting	Surface (Wall)			



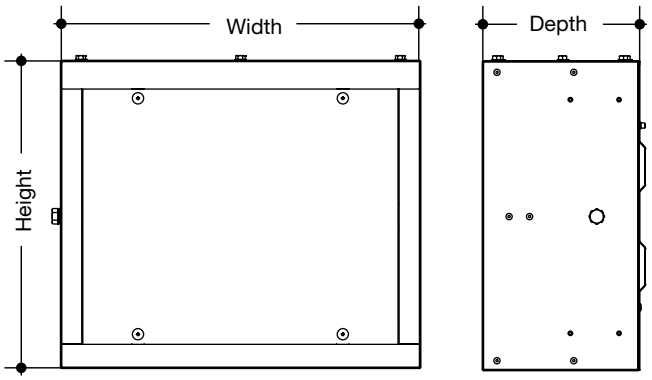


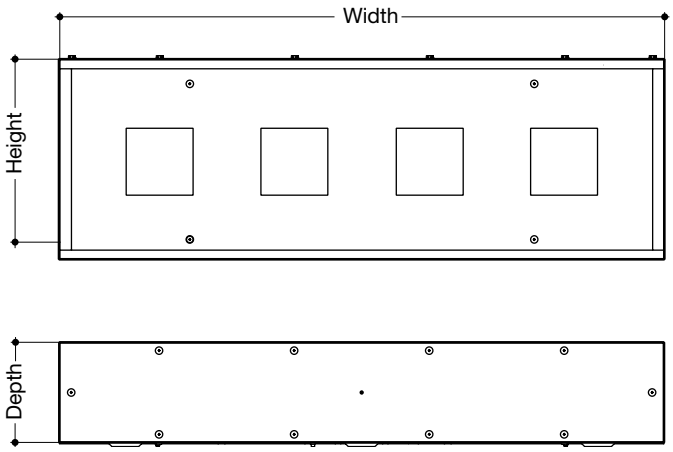


Enclosed ATS

	Dimensions (mm)			
	Width	**Height**	**Depth**	**Weight**
JK140ATS	450	465	132.5	10.5
JK163ATS	450	465	132.5	10.5
JK180ATS	450	465	132.5	10.5
JK100ATS	450	465	132.5	10.5
JK125ATS	450	465	132.5	10.5

Data is subject to errors and technical modifications.



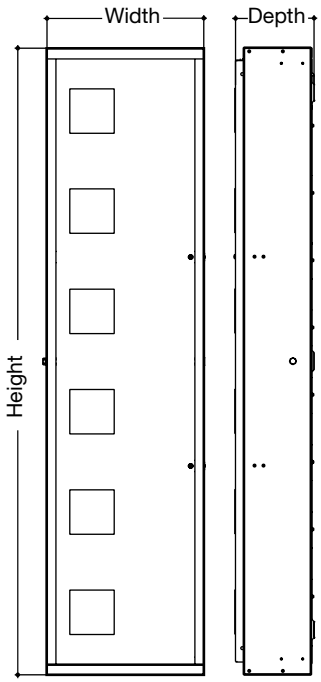


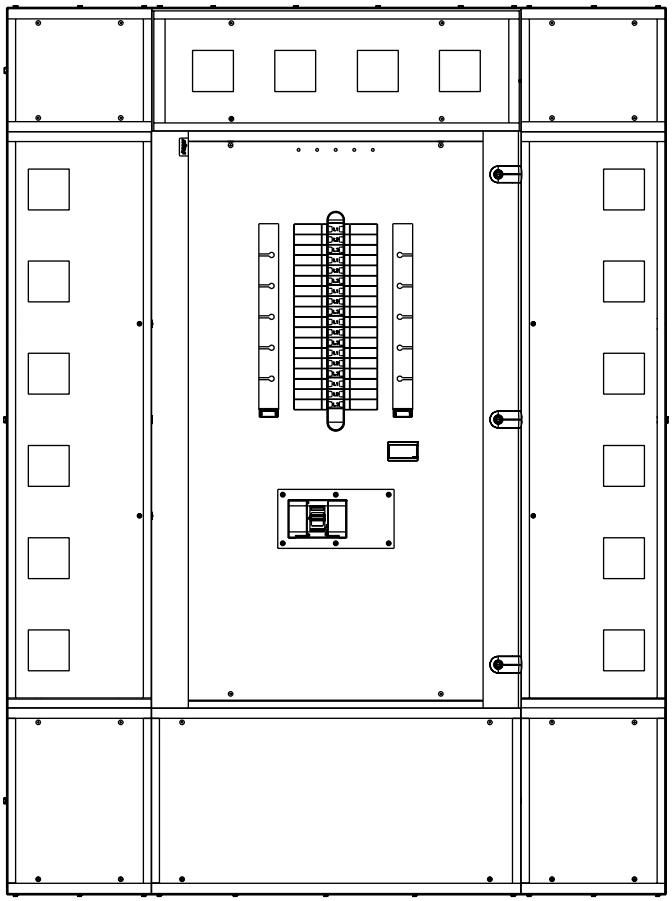
Corner Filler Enclosures

	Dimensions (mm)		
	Width	**Height**	**Depth**
JF300CF	350	300	160
JF450CF	350	450	160

Top/Bottom Enclosures

	Dimensions (mm)		
	Width	**Height**	**Depth**
JF3004TM	900	300	160
JF4508TM	900	450	160





Side Enclosures

	Dimensions (mm)		
	Width	**Height**	**Depth**
JF12504SM	350	1250	160
JF14006SM	350	1400	160
JF15508SM	350	1550	160
JF17009SM	350	1700	160

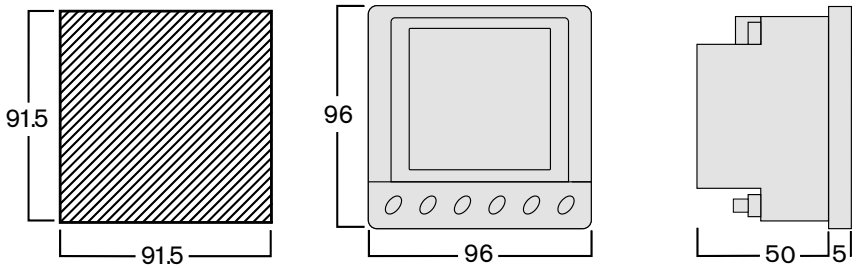
- 96 x 96mm Flush mounting
- Single phase or 3 phase (4 wire) network balanced or unbalanced load
- Built in energy pulsed output or with pulsed output and RS485 (modbus)
- Backlit LCD display with bargraph current indication on every page
- Automatic or manual scrolling display
- 330mV current transformer input
- Active energy class 1 (EN62053-21)
- Reactive energy class 2 (EN62053-23)
- Programmable VT ratio
- 3-phase: 140…460Vac measured voltage
- Single phase: 80…265Vac measured voltage
- THD up to 31st harmonic for voltage and current
- Self supplied auxiliary
- Programmable CT ratio 5 to 10,000A
- Frequency 45/65Hz
- Wide range of measured parameters (see table below)
- Selectable CT phase correction allows reversal of L1 and L3
- Weight 230g

Function Diagram

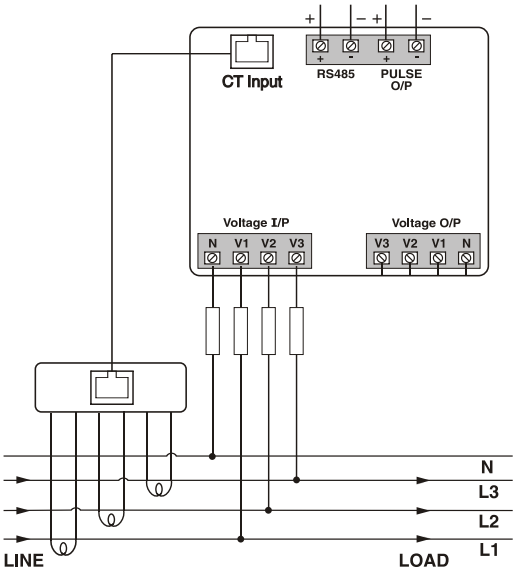
V	I	VAF	PF	P	E
Voltage *line to neutral and average*	Current *phase and average*	Voltage *current and power factor of phase 1 & frequency*	Power Factor *3-phase and average*	Active Power *3-phase and total*	Active Energy *3-phases*
Voltage *line to line and average*	Current *Maximum Demand*	Voltage *current and power factor of phase 2 & frequency*		Reactive Power *3-phase and total*	Apparent Energy *3-phases*
THD Voltage *line to neutral and average*	THD Current *phase and average*	Voltage *current and power factor of phase 3 & frequency*		Apparent Power *3-phase and total*	Reactive Energy *3-phases*
THD Voltage *line to line and average*		Average Voltage *current and power factor of 3-phases & frequency*		Active, Reactive, Apparent Power and Power Factor *first phase*	
				Active, Reactive, Apparent Power and Power Factor *second phase*	
				Active, Reactive, Apparent Power and Power Factor *third phase*	
				Total Active, Reactive, Apparent Power & Average Power Factor *three phases*	
				Max. Active Power Demand, Reactive Power Demand and Apparent Power Demand	
				Min. Active Power Demand and Reactive Power Demand	

Button Selection

Dimensions Diagram (mm)



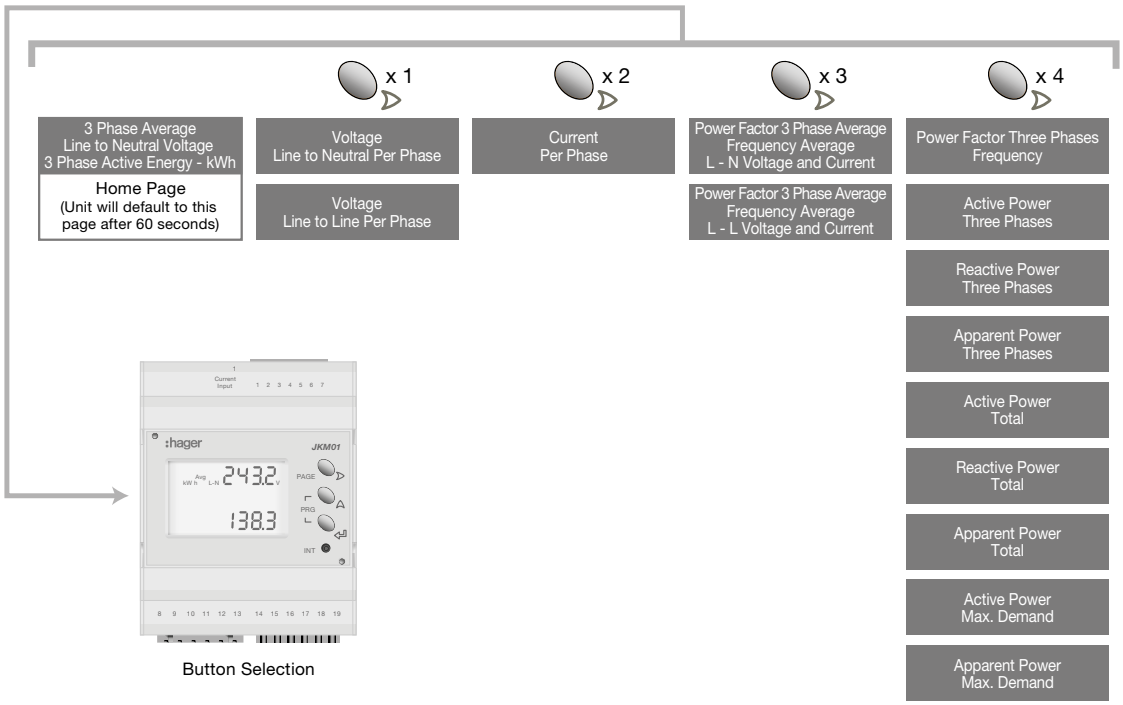
Please allow space at the rear of the meter for cable connections.



Data is subject to errors and technical modifications.

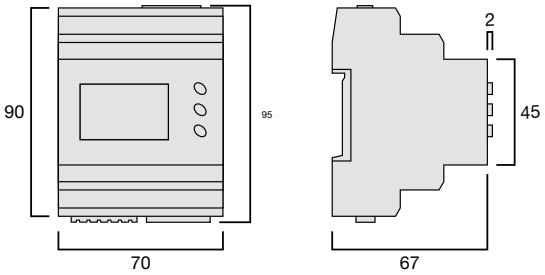
- 4 Module DIN rail mounting
- Single phase or 3 phase (4 wire) network balanced or unbalanced load
- Built-in energy pulse output and RS485 MODBUS communication
- Wide range of measured parameters (see table below)
- High quality backlit LCD display
- 330mV current transformer input
- Active energy class 1 (EN62053-21)
- Reactive energy class 2 (EN62053-23)
- THD up to 31st harmonic for voltage and current
- 3-phase: 140…460Vac measured voltage
- Single phase: 80…265Vac measured voltage
- Self supplied auxiliary
- Programmable CT ratio 5…10,000A
- Programmable VT ratio
- Frequency 45/65Hz
- Selectable CT phase correction allows reversal of L1 and L3
- Weight 190g

Function Diagram

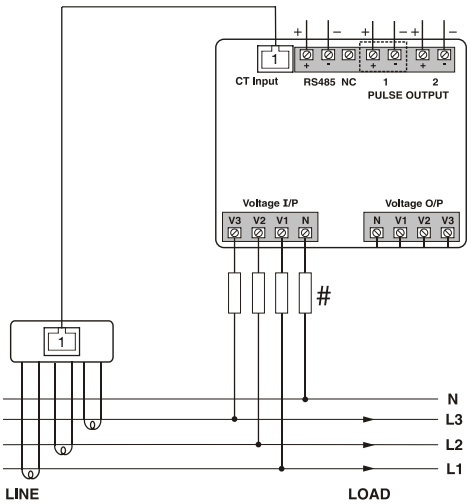


Button Selection

Dimension Diagrams (mm)



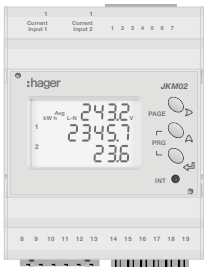
Please allow space above and below the meter for cable connections.



- Split Load, Dual CT input meter
- 4 Module DIN rail mounting
- Single phase or 3 phase (4 wire) network balanced or unbalanced load
- Built-in dual energy pulse output, one for each load and RS485 MODBUS communication
- Wide range of measured parameters (see table below)
- High quality backlit LCD display
- 330mV current transformer input
- Active energy class 1 (EN62053-21)
- Reactive energy class 2 (EN62053-23)
- THD up to 31st harmonic for voltage and current
- 3-phase: 140…460Vac measured voltage
- Single phase: 80…265Vac measured voltage
- Self supplied auxiliary
- Programmable CT ratio 5…10,000A per load
- Programmable VT ratio
- Frequency 45/65Hz
- Selectable CT phase correction allows reversal of L1 and L3
- Weight 200g

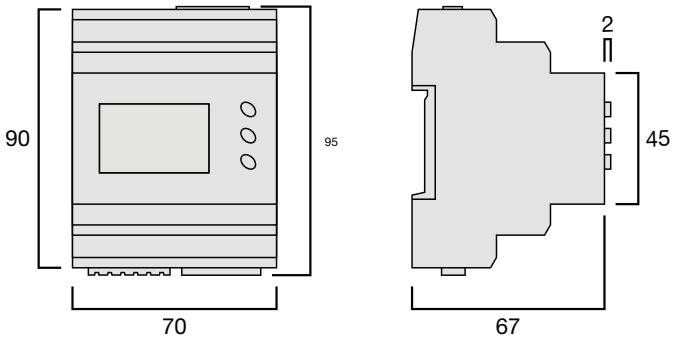
Function Diagram

x 1	x 2	x 3	x 4
3 Phase Average L-N Voltage Active Energy kWh - Load 1 Active Energy kWh - Load 2 **Home Page** (Unit will default to this page after 60 seconds)	Voltage Line to Neutral Per Phase	Current Per Phase - Load 1	Power Factor 3 Phase Average Frequency Load 1	3 Phase Average L-N Active Energy Load 1 and 2
	Voltage Line to Line Per Phase	Current Per Phase - Load 2	As above - Load 2	3 Phase Average L-N Reactive Energy Load 1 and 2
			Active Power Three Phases Load 1	
			As above - Load 2	
			Reactive Power Three Phases Load 1	
			As above - Load 2	
			Apparent Power Three Phases Load 1	
			As above - Load 2	
			Total Active Power Three Phases Load 1 and 2	
			Total Reactive Power Three Phases Load 1 and 2	
			Total Apparent Power Three Phases Load 1 and 2	
			Active Power Max. Demand Load 1 and 2	
			Active Power Max. Demand Load 1 and 2	

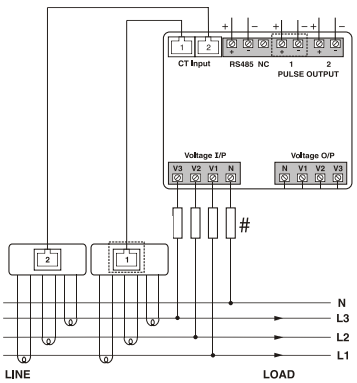


Button Selection

Dimension Diagrams (mm)



Please allow space above and below the meter for cable connections.



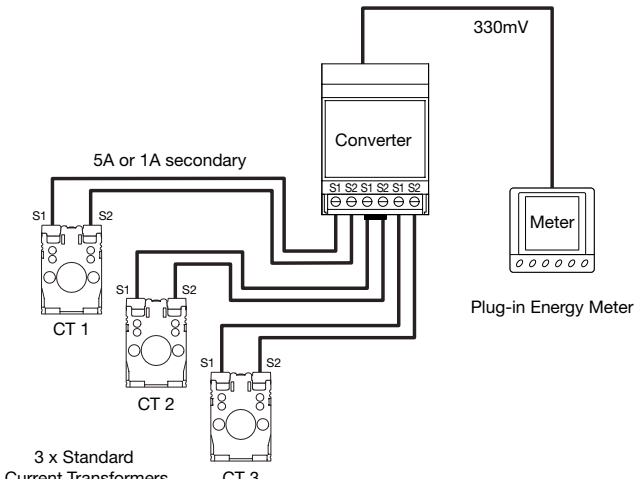
Data is subject to errors and technical modifications.

- Connect up to three standard or split core CT's (1A or 5A secondaries)
- Integrated protection circuitry

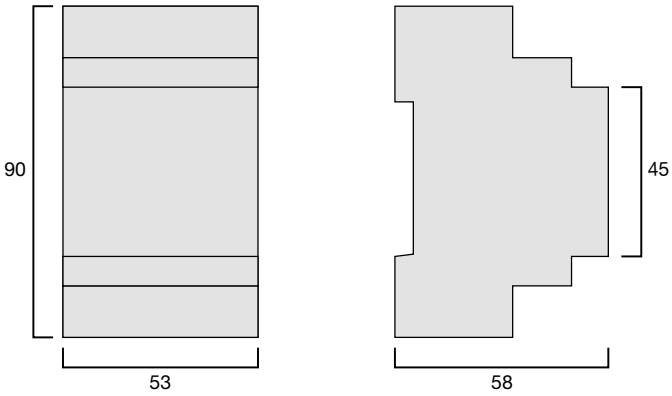
Standard CT to plug-in Adaptor
The **JFA03** converter allows for the connection of up to three standard current transformers, or standard split-core current transformers (with 1A or 5A secondary's), to the plug-in system.

The unit has integrated protection circuitry allowing for disconnection from meter under load conditions for maintenance.

Important Note
This converter does not provide electrical isolation.
Current transformer secondaries may not be earthed and should be wired as shown.



Dimension Diagrams (mm)



Technical Specification

Burden:	<2VA per channel (5A Version) <0.5VA per channel (1A Version)
Accuracy:	0.4%
Suggested Cable Size: (CT to Adaptor)	1.5mm² or 2.5mm² (2.5mm² Max.)
Mounting:	DIN rail 35mm
Termination:	CT to adaptor - Rising clamp screw terminals Adaptor to Meter - RJ45 Patch Cable
Operating Temperature:	–10°C…+45°C
Storage Temperature:	–25°C…+70°C

Commercial Distribution

Commercial Distribution

Description
Designed for use with Hager x160 MCCBs and the plug-in multifunction power meters.

Internal safety circuitry is provided which limits the output voltage to a safe level, allowing the transformer secondary to be left disconnected under load.

Installation
The CT uses plug-in technology allowing much faster installation, saving you time and money. Additionally, all our three phase current transformers have been designed with hole centres and apertures to fit most standard industrial circuit breakers.

	EC1260CT, EC12100CT, EC12125CT, EC12160CT	EC2560CT, EC25100CT, EC2512CT, EC25160CT, EC25200CT, EC25250CT	EC40250CT, EC40400CT, EC40630CT	EC80800CT
Accuracy Class	1	1	1	1
Aperture	3 @ 15.5 x 30mm	3 @ 21 x 25mm	3 @ 31 x 31mm	3 @ 54 x 50mm
Width	75mm	105mm	140mm	215mm
Primary Current	60 to 160A	60 to 250A	250 to 630A	800A
Hole Centres	25mm	35mm	45mm	70mm
Housing Material	Self extinguishing Nylon IEC185 classification VO according to UL-94			
Reference Standard	EN6004-8			
Weight	500g	550g	680g	1200g

EC1260CT, EC12100CT, EC12125CT, EC12160CT

Current Transformer Ratios

Primary Current	Output	
60	330	**060**
100	330	**100**
125	330	**125**
160	330	**160**

330mV Secondary

EC2560CT, EC25100CT, EC2512CT, EC25160CT, EC25200CT, EC25250CT

Current Transformer Ratios

Primary Current	Output	
60	330	**060**
100	330	**100**
125	330	**125**
160	330	**160**
200	330	**200**
250	330	**250**

330mV Secondary

EC40250CT, EC40400CT, EC40630CT

Current Transformer Ratios

Primary Current	Output	
250	330	**250**
400	330	**400**
630	330	**630**

330mV Secondary

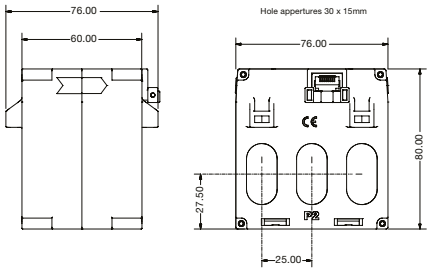
EC80800CT

Current Transformer Ratios

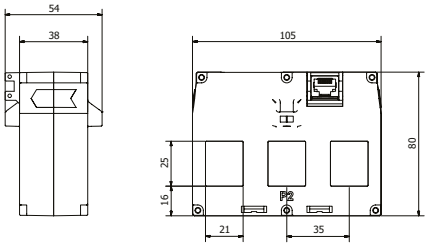
Primary Current	Output	
A	mV	Code
800	330	**800**

330mV Secondary

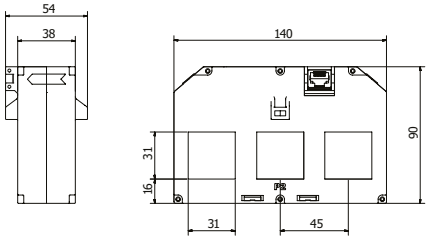
EC1260CT, EC12100CT, EC12125CT, EC12160CT



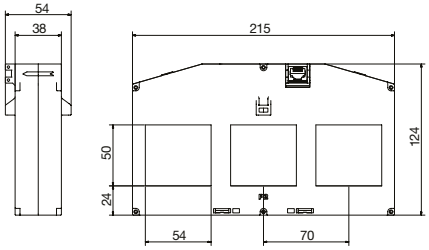
EC2560CT, EC25100CT, EC2512CT, EC25160CT, EC25200CT, EC25250CT



EC40250CT, EC40400CT, EC40630CT



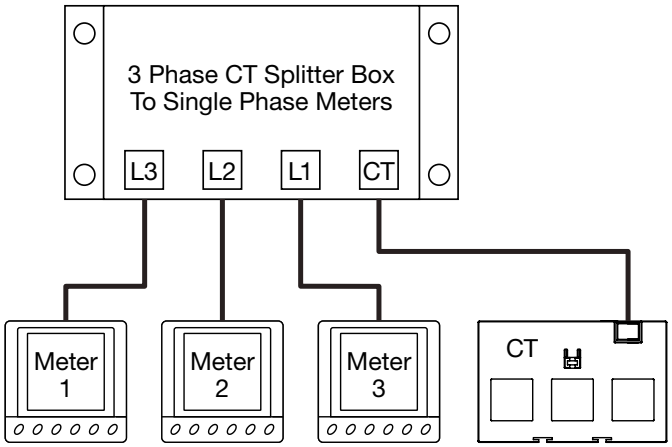
EC80800CT



Data is subject to errors and technical modifications.

CT Output and RJ45 Lead Tester
This device makes it possible to test the RJ45 patch lead used to connect the current transformer to the meter. It also enables a standard electricians multimeter to measure the individual secondary outputs of the current transformer. To test the RJ45 patch lead, simply disconnect the lead from the meter and current transformer. Plug one end into socket 1 and the other end into socket 2 on the test box. Press the test button - the Green LED will light to indicate the lead is OK or the Red LED will light to indicate a faulty lead. When the lead is proven to be OK you can then check the individual secondary outputs of the current transformer. To measure the secondary output plug one end of the RJ45 patch lead into the current transformer and the other end into socket 2 on the test box. You can now use a standard multimeter to test the secondaries using the test points on the front of the test box. The output measured for each phase should be between 0 and 330mV a.c.
Model Reference: **JFT03**

3 Phase CT Splitter Box
This 3 Phase CT Splitter Box allows the separate monitoring of each phase of a three phase current transformer on individual energy meters.
Model Reference: **JFS03**



Meter Voltage Supply Cable
Our high quality Meter Voltage Supply Cables are fitted with a plug at one end and insulated bootlace ferrules at the other and provide power to the plug-in meter from your mains supply.

Meter to Meter Supply Cable
Our high quality Meter to Meter Voltage Supply Cables are fitted with a plug at one end and socket at the other. This allows multiple plug-in meters to be energised from a common supply. Up to 32 meters can be powered in a 'daisy chain' arrangement using this method.

Two type of cable material are available:- LSZH (Low Smoke Zero Halogen).

RJ45 Connection Cable
The high quality low loss Category 5e RJ45 Connection Cable provides secondary connection between the plug-in current transformer and meter.

Fuse Combination Switches

All dimensions are in mm and exclude the handle.
Add 45mm to the depth to allow for the handle (110mm for 630 / 800A)

SPSN		Dimensions (mm)		
	Description	**Width**	**Height**	**Depth**
JFB202U	20A SPSN	200	250	150
JFB203U	32A SPSN	200	250	150
JFD206U	63A SPSN	300	325	150
JFE210U	100A SPSN	375	400	200

TPN		Dimensions (mm)		
	Description	**Width**	**Height**	**Depth**
JFB302U	20A TPN	200	250	150
JFB303U	32A TPN	200	250	150
JFD306U	63A TPN	300	325	150
JFE310U	100A TPN	375	400	200
JFG312U	125A TPN	375	500	200
JFG316U	160A TPN	375	500	200
JFG320U	200A TPN	375	500	200
JFG325U	250A TPN	375	500	200
JFH331U	315A TPN	500	650	300
JFH340U	400A TPN	500	650	300
JFI363U	630A TPN	600	800	350
JFI380U	800A TPN	600	800	350

TPSN		Dimensions (mm)		
	Description	**Width**	**Height**	**Depth**
JFB402U	20A TPSN	200	250	150
JFB403U	32A TPSN	200	250	150
JFD406U	63A TPSN	300	325	150
JFE410U	100A TPSN	375	400	200
JFG412U	125A TPSN	375	500	200
JFG416U	160A TPSN	375	500	200
JFG420U	200A TPSN	375	500	200
JFG425U	250A TPSN	375	500	200
JFH431U	315A TPSN	500	650	300
JFH440U	400A TPSN	500	650	300
JFI463U	630A TPSN	600	800	350
JFI480U	800A TPSN	600	800	350

Cable Extension Boxes for Fuse Combination Switches

		Dimensions (mm)		
	Rating	**Width**	**Height**	**Depth**
JZA701	125 / 250A	375	200	200
JZA702	315 / 400A	500	250	300
JZA703	630 / 800A	600	300	350

Switch Disconnectors

All dimensions are in mm and exclude the handle.

3 Pole		Dimensions (mm)			
	Description	**Width**	**Height**	**Depth**	**Handle Depth**
JAC316	160A TPN	250	300	150	195
JAE320	200A TPN	375	400	200	245
JAE325	250A TPN	375	400	200	245
JAG331	315A TPN	375	500	200	245
JAG340	400A TPN	375	500	200	245
JAH363	630A TPN	500	650	300	345
JAH380	800A TPN	500	650	300	345

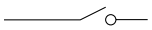
4 Pole		Dimensions (mm)			
	Description	**Width**	**Height**	**Depth**	**Handle Depth**
JAB402B	20A TPSN	175	232	65	78
JAB403B	32A TPSN	175	232	65	78
JAB406B	63A TPSN	175	232	65	81
JAB410B	100A TPSN	200	300	80	97
JAC412B	125A TPSN	200	300	80	97
JAC416	160A TPSN	250	300	150	195
JAE420	200A TPSN	375	400	200	245
JAE425	250A TPSN	375	400	200	245
JAG431	315A TPSN	375	500	200	245
JAG440	400A TPSN	375	500	200	245
JAH463	630A TPSN	500	650	300	345
JAH480	800A TPSN	500	650	300	345

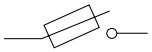
Data is subject to errors and technical modifications.

Thermal current Ith (40°C)	20A		32A		63A		100A		125A		160A		200A	
Fuse size: BS	A1		A1		A2-A3		A4		B1-B2		B1-B2		B1-B3	
Rated insulated voltage														
Ui (V)	800		800		800		800		800		800		800	
Impulse voltages Uimp	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	12000	12000	-	
Operational current Ie (A)	A	B	A	B	A	B	A	B	A	B	A	B	A	B
415V ac AC-22A/AC-23B	20	20	32	32	63	63	100	100	125	125	160	160	200	200
Motor power (kW) 400V ac	9		15		30		51		63		80		100	
Reactive power 400V ac (kVAR)	15		45		25		45		55		60		75	
Overload capacity														
Short-circuit with fuses (kA Rms)	50		50		50		50		50		50		50	
Fuse rating (A) BS 88	20		32		63		100		125		160		200	
Making & Breaking Capacity														
Breaking capacity 400V AC-23B (A RMS)	160		256		500		800		1000		1280		1600	
Making capacity 400V AC-22 (A RMS)	200		320		630		1000		1250		1600		2000	
Withstand mechanical (number of operations)	20,000		20,000		10,000		10,000		10,000		10,000		10,000	
Tightening torque	2		2		6		9		9		9		20	
Connection (mm²)														
Minimum Cu cable section	2.5		2.5		10		25		35		50		70	
Maximum Cu cable section	16		16		25		95		95		95		240	
Fuse types	NIT20		NIT32		TIS63		TCP100		TF125		TF160		TF200	

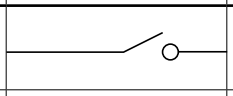
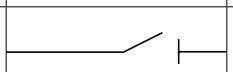
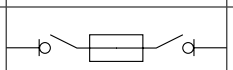
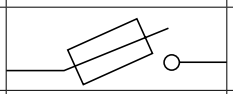
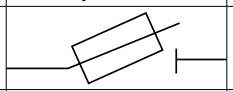
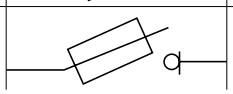
Thermal current I_{th} (40°C)	250A		315A		400A		630A		800A	
Fuse size: BS	B1-B3		B1-B4		B1-B4		C1-C2		C1-C2-C3	
Rated insulated voltage U_i (V)	800		800		800		1000		1000	
Operational current I_e (A) A = Frequent operation B = Infrequent operation	A	B	A	B	A	B	A	B	A	B
415V a.c. AC-22A/AC-23B	250	250	315	315	400	400	630	630	800	800
Motor power (kW) 400V a.c.	-		160	160	220	220	355	355	-	
Reactive power 400V a.c. (kVAR)	-		125		150		2 x 125		-	
Overload capacity										
Short-circuit with fuses (kA Rms)	50		50		50		50		50	
Fuse rating (A) BS 88	250		315		400		630		800	
Making & Breaking Capacity										
Breaking capacity 400V AC-23B (A R.M.S)	2000		2520		3200		-		-	
Making capacity 400V AC-23B (A R.M.S)	2500		3150		4000		-		-	
Withstand mechanical (number of operations)	10,000		10,000		10,000		8000		8000	
Tightening torque (Nm)	-		20		20		40		40	
Connection (mm²)										
Minimum Cu cable section	70		185		185		2 x 150		2 x 150	
Maximum Cu cable section	240		240		240		2 x 300		2 x 300	
Fuse types	TKF250		TKF315		TMF400		TTM630		TLM800	

Fuse - Combination Units - BS EN 60947-3
Many people are attracted to fuse-combination units by their simplicity in application and their reliability in operation. They are particularly useful for use on very high prospective fault level systems where the high energy limiting characteristic of the HRC fuse can be effectively utilised.
In the past fuse-combination units came in two forms:

Switch Fuse  A switch in which one or more poles have a fuse in series.

Fuse Switch  A switch in which one or more poles have a fuse carrier/link which forms the moving contact.

The definitions of these two basic types of fuse combination units have now been extended to include units suitable for making, breaking and isolation and units which are only suitable for providing isolation for maintenance work.

Definition	Symbol	Function
Switch Fuse		Making and breaking current
Disconnector Fuse		Isolating
Switch Disconnector Fuse		Making, breaking and isolating
Fuse Switch		Making and breaking current
Fuse Disconnector		Isolating
Fuse Switch Disconnector		Making, breaking and isolating

However, in order to keep the selection of fuse-combination units as simple as possible, Hager offer a range of high performance double break switch-fuses, which also satisfy the isolating requirement of the British standard. These are correctly shown as and defined as a Fuse Combination Switch.

Switch disconnectors - BS EN 60947-3. A range of switch disconnectors (isolators) are available for use on lower current ratings from 20A to 125A. These switches are rated at AC-22 and provide a cost effective alternative to the fuse combination switch, especially where the utilisation category AC-23 is not required. ie; mixed resistive and inductive loads.

Utilisation categories
Utilisation categories are not new but they are important because they help the designer or specifier identify the correct unit for a particular application.

The designation of the utilisation category is made up of three parts:

1. The prefix AC or DC, which indicates the nature of the current.
2. The two digit number, which indicates the type of application the unit is suitable for:
   - 20 Connecting and disconnecting under no-load.
   - 21 Switching of resistive loads.
   - 22 Switching of mixed resistive and inductive loads.
   - 23 Switching of highly inductive loads.
3. The suffix A or B, which indicates whether the unit is suitable for frequent or infrequent operation.

A Frequent operation
B Infrequent operation.

For example a fuse-combination unit feeding a 400V AC circuit of mixed resistive and inductive loads which would need to be operated frequently would require a minimum utilisation category of AC-22A.

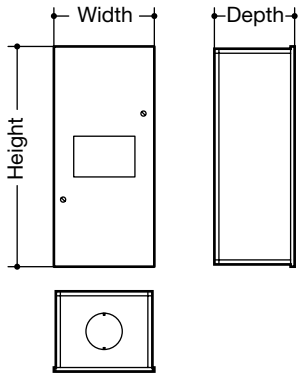
If the load was highly inductive, i.e. motor loads, then the minimum utilisation category would be AC-23A.

Generally, category AC-23 does not cover the switching of capacitors. Usually this is the subject of agreement between manufacturer and user.

Motor Power Circuit Protection
Fuse-combination units can be used very effectively for motor power circuit protection, the energy limiting HRC fuse offering very good protection to its associated starter. Category AC-23A should be specified for this duty. Special motor circuit protection fuse links are available which eliminate the need to fit a larger bodied fuse just to take care of the starting current of the motor.

The protection of motor power circuits should not be confused with the direct switching of a single motor. If a fuse-combination unit is required to perform this function then it must comply with the requirements of Appendix A of BS EN 60947-3 which makes provision for different utilisation categories for this application.

Data is subject to errors and technical modifications.



Switch Fuses

	Dimensions (mm)				
	Width	**Height**	**Depth**	**Depth with Door**	**Knockouts**
IU44-16	115	187	61.5	-	2 x 25mm
IU44-18	125	312	73.5	-	None
IU44-11	125	312	73.5	-	None
IU44-16-D	125	312	74	96	None
IU44-18-D	125	312	74	96	None
IU44-11-D	125	312	74	96	None

IP65 Enclosed Isolating Switch

All dimensions are in mm and exclude the handle.
Add 27mm to the depth to allow for the handle on 10-25A products.
Add 32mm to the depth to allow for the handle on 40-80A products.

		Dimensions (mm)		
Description		**Width**	**Height**	**Depth**
JG00S	10A TPN	100	136	74
JG01S	16A TPN	100	136	105
JG02S	25A TPN	100	136	105
JG03S	40A TPN	136	201	105
JG04S	63A TPN	136	201	118
JG05S	80A TPN	136	201	118

Enclosed thermal current I_{the}	**16**	**25**	**40**	**63**	**80**
Rated insulation voltage U_i (V)	690	690	690	690	690
Rated thermal current I_{the} (A)	25	40	63	80	100
Rated operational current					
AC21 400V Ie (A)	25	40	63	80	100
AC22 400V	16	25	40	63	100
AC22 400V cos phi 0.65	16	20	32	63	100
AC23 400V	16	20	32	63	100
AC23 400V cos phi 0.35	16	15	25	40	63
Rated operational power					
AC23 230V (kW)	4	5.5	7.5	11	15
AC23 400V	7.5	11	15	22	30
Rated fused short circuit current					
Back-up fuse (A)	63	63	63	80	100
R.M.S value Ik (kA)	50	50	50	50	50
Peak value (kA)	5.4	6.6	7.2	8.3	8.7
Rated short circuit making capacity (Icm) (kA) 690V	2.5	2.5	2.5	3.3	3.3
Rated short time withstand current (Icw) (kA) 690V (1s)	1	1.1	1.6	1.7	2.3
Rated breaking capacity Icn (A) AC23					
400V cos phi 0.35	250	270	320	480	504
Electrical endurance (number of operations)	3000	3000	3000	3000	-
Mechanical endurance (number of operations)	50,000	50,000	50,000	50,000	-
Terminals mm^2	1.5 - 16	1.5 - 16	1.5 - 16	2.5 - 35	2.3 - 35
Max. thermal torque (Nm)	1.8	1.8	1.8	2.5	2.5

Enclosed thermal current I_{the}	**20**	**32**	**63**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**630**	**800**
Rated insulation voltage U_i (V)	800	800	800	800	800	800	800	800	800	800	1000	1000
Rated thermal current I_{the} (A)	20	32	63	100	125	160	200	250	315	400	630	800
Rated operational current												
AC21A 500VAC	20	32	63	100	125	160	160	250	250	250	630	800
AC22A 500VAC	20	32	63	100	125	125	125	250	250	250	500	800
AC21A 690VAC	20	32	63	100	125	160	160	200	200	200	500	800
AC22A 690VAC	20	32	63	100	125	125	125	125	125	125	315	800
Overload capacity												
Icw rated short time withstand value (kA/s)	1.26	1.26	1.5	1.5	7	7	7	9	9	9	13	26
R.M.S value (kA)	0.16	0.256	0.504	0.64	1	1.28	1.28	2	2	2	5.04	6.4
Peak withstand value (kA)	-	-	-	-	20	20	18	30	23	23	45	55
Rated short circuit making capacity (kA)	1.8	1.8	2.1	2.1	11.9	11.9	11.9	15.3	15.3	15.3	26	54.6
Rated impulse withstand voltage Uimp (kV)	8	8	8	8	8	8	8	8	8	8	12	12
Mechanical endurance (number of operations)	100,000	100,000	100,000	100,000	10,000	10,000	10,000	10,000	10,000	5,000	5,000	5,000
Maximum cable size	16	16	50	50	50	95	95	150	185	240	2 x 300	2 x 300
Tightening torque (Nm)	2	2	4	4	9	9	9	20	20	20	20	-

Product Reference	**JAB402B**	**JAB403B**	**JAB406B**	**JAB410B**	**JAC412B**
Thermal Current In	20A	32A	63A	100A	125A
Switch	3PSN	3PSN	3PSN	3PSN	3PSN
Rated Insulation Voltage U_i	800V	800V	800V	800V	800V
Rated Impulse Voltage U_{imp}	8kV	8kV	8kV	8kV	8kV
Dimensions					
Height (mm)	232	232	232	232	300
Width (mm)	175	175	175	175	200
Depth (mm)	81	81	81	81	83
Operational Current Ie (A)					
415V AC - AC21A / AC21B	20/20	32/32	63/63	100/100	125/125
415V AC - AC22A / AC22B	20/20	32/32	63/63	100/100	125/125
415V AC - AC23A / AC23B	20/20	32/32	63/63	100/100	125/125
500V AC - AC21A / AC21B	20/20	32/32	63/63	100/100	125/125
500V AC - AC22A / AC22B	20/20	32/32	63/63	100/100	125/125
500V AC - AC23A / AC23B	20/20	25/25	63/63	80/80	100/100
690V AC - AC21A / AC21B	20/20	32/32	63/63	100/100	125/125
690V AC - AC22A / AC22B	20/20	32/32	40/63	80/100	100/126
690V AC - AC23A / AC23B	20/20	25/25	40/40	63/63	63/63
Operational Power in AC-23 (kW)					
At 415V AC	9	15	30	45	55
At 500V AC	9	15	30	45	55
At 690V AC	11	15	30	45	55
Overload Capacity					
Fuse rating	20	32	63	100	125
Fused Icc	50	50	50	25	25
I_{cw} (kA)	2.5 / 0.3s	2.5 / 0.3s	3.0 / 0.3s	5.0 / 0.3s	5.0 / 0.3s
I_{pk} (kA)	6	6	9	12	12
Cable Connection					
Max Cu cable CSA mm^2	16	16	35	70	70

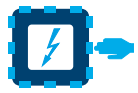
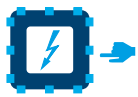
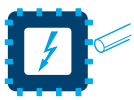
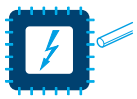
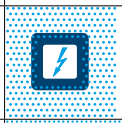
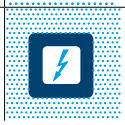
Data is subject to errors and technical modifications.

The IP rating for all low voltage enclosures up to 1000 V a.c. and 1500 V d.c. is defined in identical fashion by the standards EN 60529 - IEC 529. It comprises the letters IP followed by two character numerals and or additional/ supplementary letters.

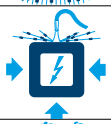
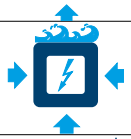
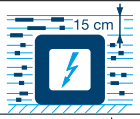
The first character numeral indicates the degree of protection provided by the enclosure against access to hazardous parts by preventing or limiting the ingress of a part of the human body or an object held by a person and ingress of solid foreign objects.

The second character numeral indicates the degree of protection provided by the enclosure with respect to harmful effects on the equipment due to the ingress of water. An X signifies that the tests are not applicable to the product.

The first character numeral:
Protection against foreign objects

IP	Description	
0		Non-protected
1		Protected against solid objects ≥ than 50mm
2		Protected against solid objects ≥ than 12.5mm
3		Protected against solid objects ≥ than 2.5mm
4		Protected against solid objects ≥ than 1.0mm
5		Dust-protected
6		Dust-tight

The second character numeral:
Protection against ingress of water with harmful effects

IP	Description	
0		Non-protected
1		Protected against dripping water
2		Protected against dripping water when tilted up to 15°
3		Protected against spraying water
4		Protected against splashing water
5		Protected against jetting
6		Protected against powerful jetting
7		Protected against the effect of temporary immersion
8		Protected against continuous immersion

Additional letter (optional)
Protection of people against access to hazardous parts

	Description
A	Protected against access to hazardous parts with the back of the hand
B	Protected against access to hazardous parts with a finger
C	Protected against access to hazardous parts with a tool - ø 2.5mm
D	Protected against access to hazardous parts with a tool - ø 1mm

Additional letter (optional)
Specific information on the product

	Description
H	High voltage apparatus
M	Motion during water test
S	Stationary during water test
W	Weather conditions

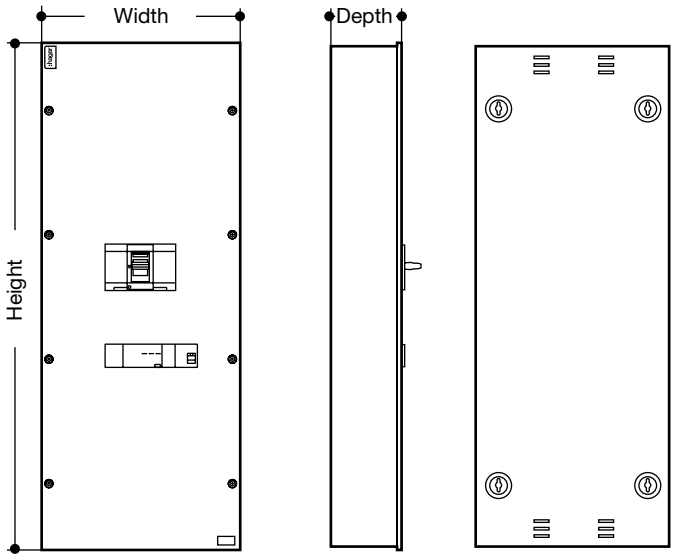
Interface Characteristics	**JG44BM, JG45BM, JG46BS, JG47BS**	**JG48BM, JG50BS, JG49BM, JG51BS**	**JG36BM, JG37BM, JG40BM, JG42BS, JG41BM, JG43BS**	**JG37BR, JG38BR**	**JG45BR**
Rated & operational voltage (U_n / U_e)	415V a.c. 50Hz				
Rated insulation voltage (U_i)	690V a.c. 50Hz				
Rated impulse withstand voltage (U_{imp})	6kV				
Rated current of the Assembly (I_{nA})	400A	630A	**JG36BM, JG37BBM** -160A **JG40BM, JG42BS, JG41BM, JG43BS** - 250A	**JG37BR** - 160A **JG38BR** - 200A	375A
Rated conditional short-circuit current of the assembly (I_{cc})*	50kA		25kA		50kA
Rated peak withstand current (I_{pk})	105kA		52.5kA		105kA
Standards - Enclosed MCCB assembly	BS EN 61439-2				
Standards - MCCB only	BS EN 60947-2				
Rated frequency (fn)	50 Hz				
Pollution degree	3				
Types of system earthing for which the ASSEMBLY is designed	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671				
Intended locations	Indoor use only				
Stationary assembly external design	Wall mounted				
Degree of protection	IP30 with cover fitted				
Intended use	Skilled persons only				
Electromagnetic compatibility (EMC) classification	EMC Environment B				
External design	Wall-mounted, surface type, enclosed assembly.				
Mechanical impact protection	IK05				
Form of seperation	Form 2a				
Connection of functional unit: Incoming/outgoing circuit protection	F (fixed)				
Incoming Line Terminal(s)	M10 Bolt	M12 Bolt	M8 Socket Cap Screw		M10 Bolt
Incoming Neutral Terminal	M10 Bolt		**JG37BM, JG41BM, JG43BS -** M8 Socket Cap Screw **JG36BM, JG40BM, JG42BS** - M10 Bolt	M8 Socket Cap Screw	M10 Bolt
Enclosure Earth Stud	M10	M12	M8		M10

Enclosed MCCB (63A - 125A)

Characteristics

Series	**JG25BM, JG26BM, JG27BM, JG27BR, JG28BM, JG29BM, JG30BM, JG31BM, JG32BM, JG33BM, JG30BR, JG34BS, JG35BS**
MCCB	63A to 125A MCCB
MCCB + RCCB Add on block	63A & 100A
Voltage rating in AC	240 / 415 V
IP Protection	IP3X
Enclosure body type	Steel
Enclosure paint type	Powder coat Grey white BS 4800 00A01
Terminal Connection capacity	
Maximum terminal capacity	95mm²
Enclosure earth stud	M8
Installation	
Mounting	Wall

Data is subject to errors and technical modifications.



	Dimensions (mm)			(kg)
	Height	**Depth**	**Width**	**Weight**
JG25BM	420	106	200	3.9
JG26BM	420	106	200	4.5
JG27BM	420	106	200	4.5
JG27BR	420	106	300	20
JG28BM	420	106	200	3.9
JG29BM	420	106	200	4.5
JG30BM	420	106	200	4.5
JG31BM	420	106	200	3.9
JG32BM	420	106	200	4.5
JG33BM	420	106	200	4.5
JG30BR	420	106	300	8
JG34BS	420	106	200	4.5
JG35BS	420	106	200	4.5
JG44BM	900	151	400	21.9
JG46BS	900	151	400	21.9
JG45BM	900	151	400	23.2
JG47BS	900	151	400	23.2
JG48BM	1130	153	500	29.6
JG50BS	1130	153	500	29.6
JG49BM	1130	153	500	32.1
JG51BS	1130	153	500	32.1
JG36BM	660	135	260	10.5
JG37BM	660	135	260	10.5
JG40BM	660	135	260	10.5
JG42BS	660	135	260	10.5
JG41BM	660	135	260	10.5
JG43BS	660	135	260	10.5
JG37BR	865	120	260	11.5
JG38BR	865	120	260	11.5
JG45BR	1019	151	400	21.9

Torque settings	
M8	13Nm
M10	22Nm
M12	45-65Nm

Electrical Characteristics

	MLN	MTN	NBN	NCN	NDN	HMF*	HMC*	HMD*
Poles	SP+SN	SP	SP DP TP 4P	SP DP TP 4P	SP DP TP 4P	SP DP TP 4P		
Rated Operational Voltage U_e (V)	230	230	230 / 400	230 / 400	230 / 400	230/400		
Nominal Current	6 - 40A	6 - 63A	6 - 63A	0.5 - 63A	0.5 - 63A	80 - 125A		
Breaking Capacity (I_{cn}) to BS EN 60898	6kA	6kA	10kA	10kA	10kA	10kA	15kA	
Breaking Capacity (I_{cs}) to BS EN 60898	6kA	6kA	7.5kA	7.5kA	7.5kA	7.5kA	7.5kA	
Breaking Capacity (I_{cu}) to BS EN 60947 Part 2	N/A	N/A	15kA	15kA	15kA	N/A	15kA	
Breaking Capacity (I_{cs}) to BS EN 60947 Part 2	N/A	N/A	7.5kA	7.5kA	7.5kA	N/A	7.5kA	
Rated Insulation Voltage U_i (V)	500V	500V	500V	500V	500V	500V		
Rated Impulse Voltage U_{imp} (kV)	4kV	4kV	6kV	6kV	6kV	6kV		
Electrical Endurance	10,000 cycles	10,000 cycles						
Connection of Auxiliaries	No		Yes					

Table 1

*Din rail mount only, not for use in fixed busbar distribution boards.

Power Loss
The power loss of MCB's is closely controlled by the standards and is calculated on the basis of the voltage drop across the main terminals measured at rated current. The power loss of our circuit breakers is very much lower than that required by the British Standard, so in consequences run cooler and are less affected when mounted together.

The table below gives the watts loss per pole at rated current.

MCB Rated current (A)	0.5	1	2	3	4	6	10	13	16	20	25	32	40	50	63
Watts loss per pole	1.2	1.3	1.5	2.0	1.8	1.4	1.9	2.1	2.5	2.8	3.2	3.8	4.0	4.5	5.1

For use with DC
Because of their quick make and break design and excellent arc quenching capabilities, our circuit breakers are suitable for DC applications.

The following parameters must be considered:
1. System voltage:
Determined by the number of poles connected in series (see ***Table 14***).

2. Short circuit current:
(See ***Table 14***).

3. Tripping Characteristics:
If the thermal trip remains unchanged the magnetic trip will become less sensitive requiring derating by √2 the ac value (See ***Table 14***).

No. of poles	**1 pole**		**2 poles in series**	
Range	max voltage	breaking capacity L/R=15ms	Max voltage	breaking capacity L/R=15ms
MTN	60V	6kA	125V	6kA
NCB NCN NDN	60V	10kA	125V	10kA

Table 13

Characteristic curve	**B**		**C**		**D**	
Magnetic strip	50Hz	dc	50Hz	dc	50Hz	dc
Irm1	3In	4.5 In	5In	7.5 In	10 In	15 In
Irm2	5In	7.5 In	10In	15 In	20 In	30 In

Table 14

Data is subject to errors and technical modifications.

Connection
The circuit breaker can have the line\load connected to either the top or bottom terminals

Temperature Derating
MCBs are designed and calibrated to carry their rated current and to operate within their designated thermal time/current zone at 30ºC. Testing is carried out with the breaker mounted singly in a vertical plane in a controlled environment. Therefore if the circuit breaker is required to operate in conditions which differ from the reference conditions, certain factors have to be applied to the standard data.

I_n (A)	-25ºC	-20ºC	-15ºC	-10ºC	-5ºC	0ºC	5ºC	10ºC	15ºC	20ºC	25ºC	30ºC	35ºC	40ºC	45ºC	50ºC	55ºC	60ºC
0.5	0.72	0.7	0.68	0.66	0.64	0.62	0.6	0.58	0.56	0.54	0.52	0.5	0.48	0.46	0.44	0.42	-	-
1	1.44	1.4	1.36	1.32	1.28	1.24	1.2	1.16	1.12	1.08	1.04	1	0.96	0.92	0.88	0.84	0.8	0.76
2	2.88	2.8	2.72	2.64	2.56	2.48	2.4	2.32	2.24	2.16	2.08	2	1.92	1.84	1.76	1.68	1.6	1.52
3	4.32	4.2	4.08	3.96	3.84	3.72	3.6	3.48	3.36	3.24	3.12	3	2.88	2.76	2.64	2.52	2.4	2.28
4	5.76	5.6	5.44	5.28	5.12	4.96	4.8	4.64	4.48	4.32	4.16	4	3.84	3.68	3.52	3.36	3.2	3.04
6	8.64	8.4	8.16	7.92	7.68	7.44	7.2	6.96	6.72	6.48	6.24	6	5.76	5.52	5.28	5.04	4.8	4.56
10	14.4	14	13.6	13.2	12.8	12.4	12	11.6	11.2	10.8	10.4	10	9.6	9.2	8.8	8.4	8	7.6
13	18.7	18.2	17.7	17.2	16.6	16.1	15.6	15.1	14.6	14.0	13.5	13	12.5	12	11.4	10.9	10.4	9.9
15	21.6	21	20.4	19.8	19.2	18.6	18	17.4	16.8	16.2	15.6	15	14.4	13.8	13.2	12.6	12	11.4
16	23	22.4	21.8	21.1	20.5	19.8	19.2	18.6	17.9	17.3	16.6	16	15.4	14.7	14.1	13.4	12.8	12.2
20	28.8	28	27.2	26.4	25.6	24.8	24	23.2	22.4	21.6	20.8	20	19.2	18.4	17.6	16.8	16	15.2
25	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19
32	46.1	44.8	43.5	42.2	41	39.7	38.4	37.1	35.8	34.6	33.3	32	30.7	29.4	28.2	26.9	25.6	24.3
40	57.6	56	54.4	52.8	51.2	49.6	48	46.4	44.8	43.2	41.6	40	38.4	36.8	35.2	33.6	32	30.4
50	-	-	-	-	-	62	60	58	56	54	52	50	48	46	44	42	40	38
63	-	-	-	-	-	-	-	-	-	-	-	63	60.5	58	55.4	52.9	50.4	47.9

Diversity Factor - Commercial Distribution boards to BS EN 61439-3
Consideration should be given to the proximity heating effect of the breakers when fully loaded and mounted together in groups.

Adjacent circuit breakers having a load 'on' time exceeding 30 minutes or where the load not exceeding 30 minutes has an 'off' time less than the 'on' time, will need to have the rated diversity factor applied.

No. of Outgoing Circuits	Assumed Loading Factor
2 and 3	0.8
4 and 5	0.7
6 to 9 inclusive	0.6
10 and above	0.5

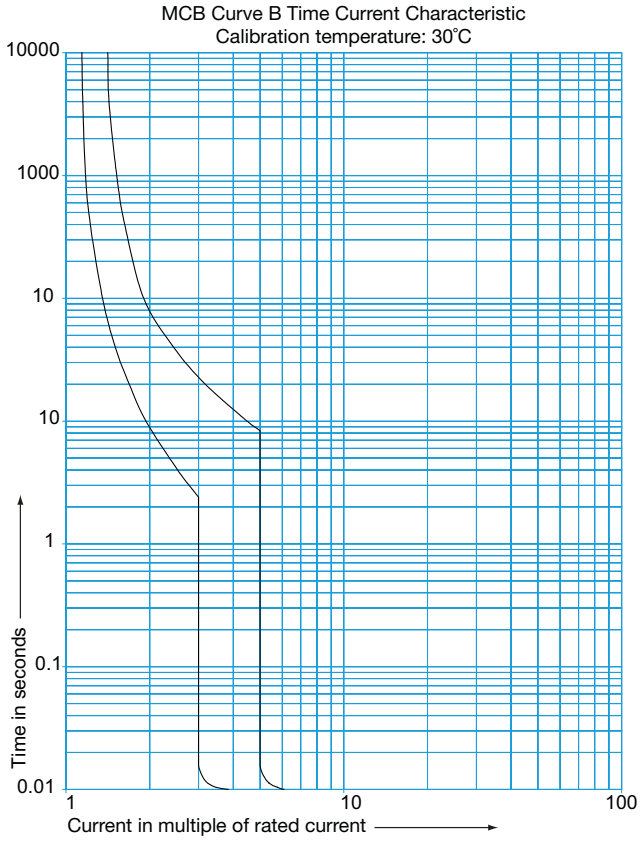
Frequency
Circuit breakers are designed to operate at a frequency of 50-60Hz. Should the supply differ from this then the following factors should be applied
Thermal – unchanged
Magnetic – value multiplied by coefficient K

F (Hz)	17Hz - 60Hz	100Hz	200Hz	400Hz
K	1	1.1	1.2	1.5

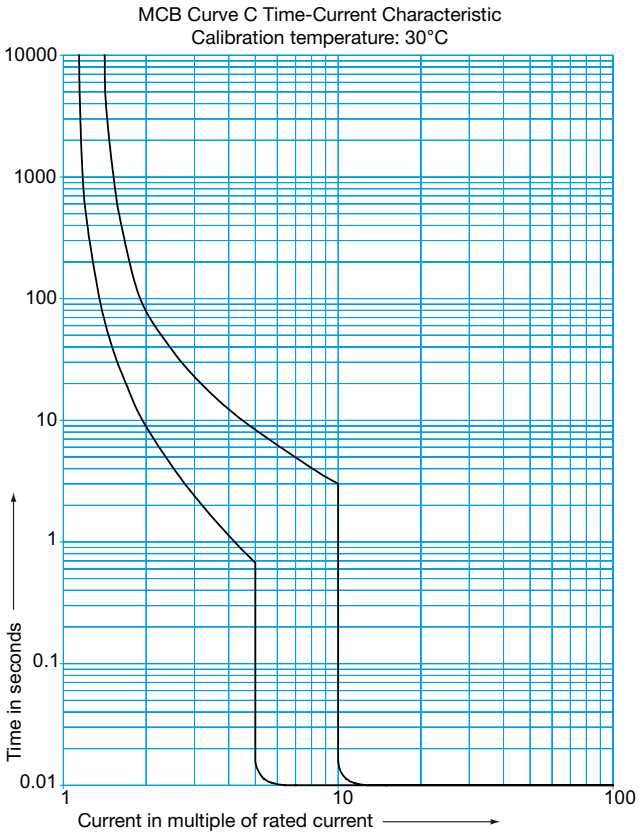
Consideration should be given to the proximity heating effect of the breakers when fully loaded and mounted together in groups. (continuously & simultaneously loaded).

Commercial Distribution

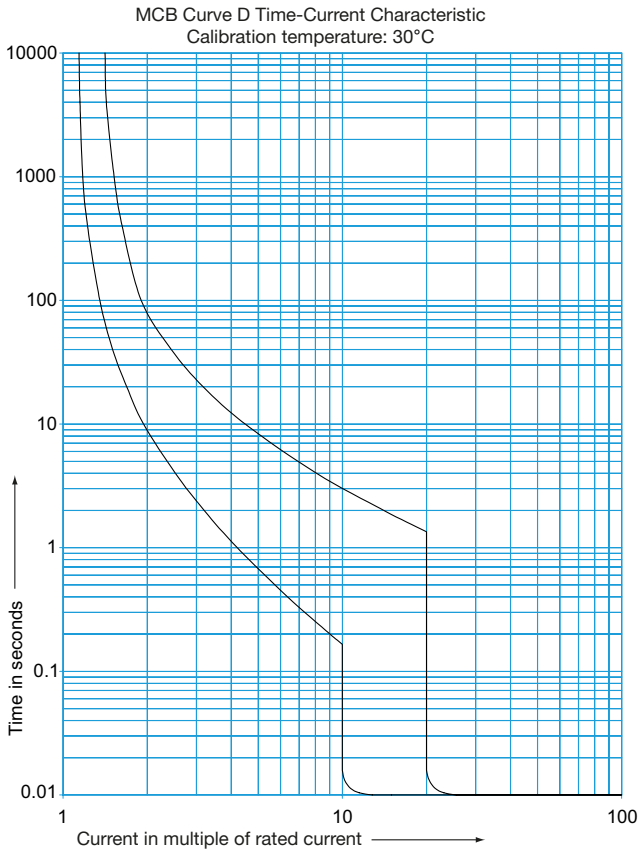
B Curve (BS EN 60898)
MCBs: MTN rated 6 - 63A
NBN rated 6 - 63A



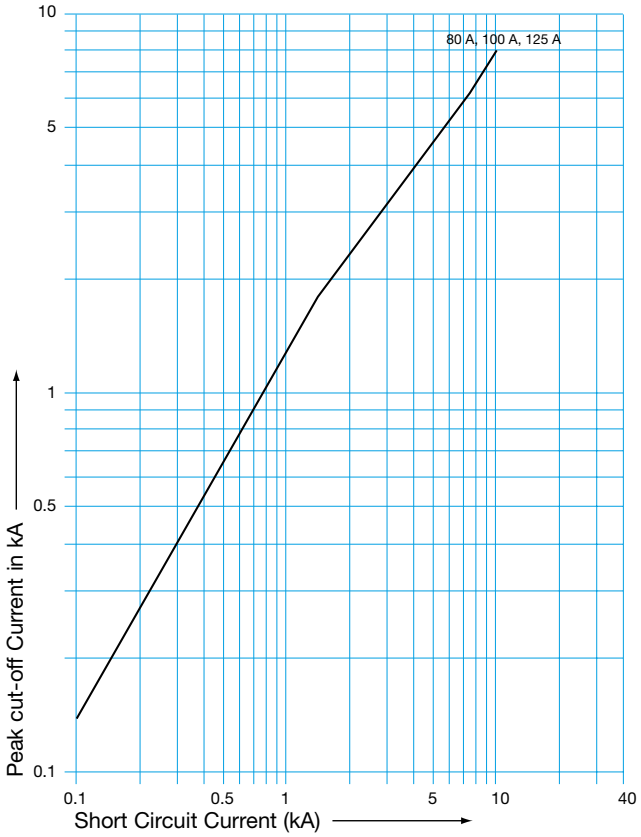
C Curve (BS EN 60898)
MCBs: NCN rated 0.5 - 63A
MLN rated 2 - 32A
HMF/HMC rated 80 - 125A

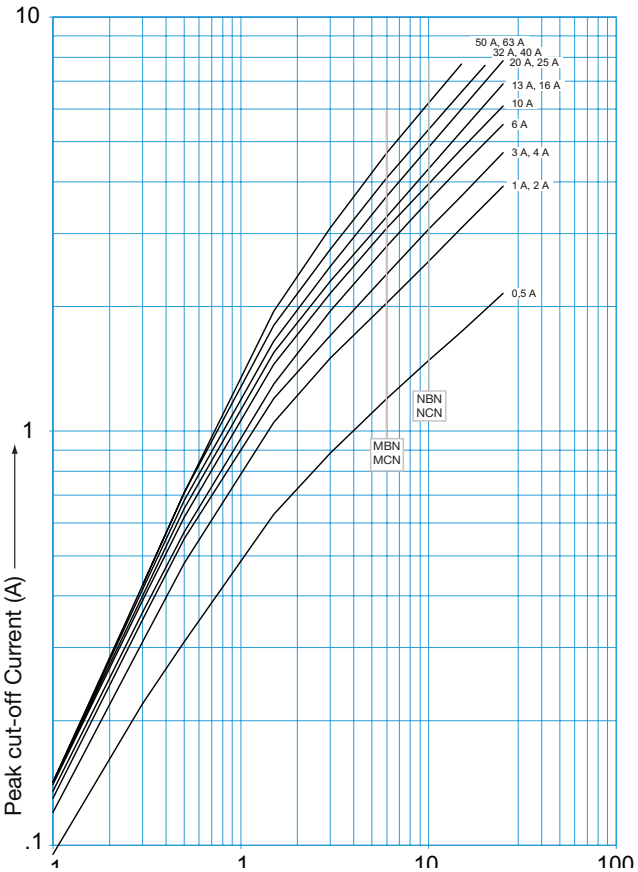


D Curve (BS EN 60898)
MCBs: NDN rated 6 - 63A
HMD rated 80 - 125A



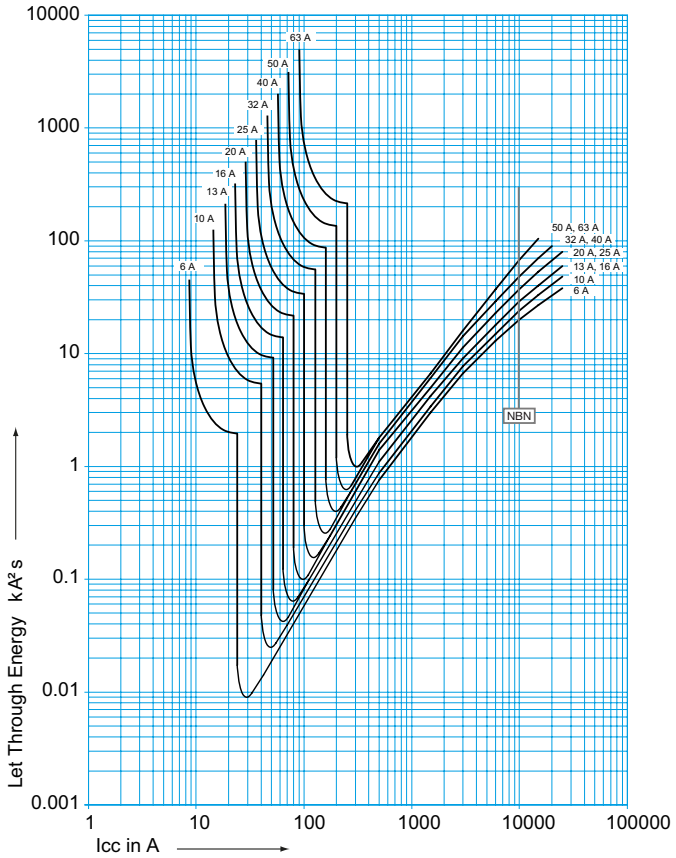
Data is subject to errors and technical modifications.



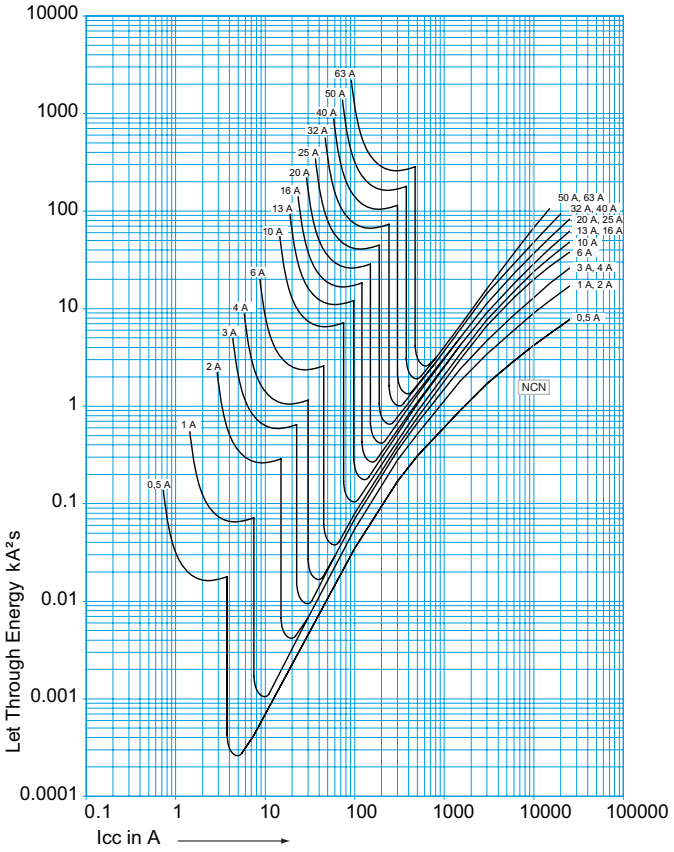


Commercial Distribution

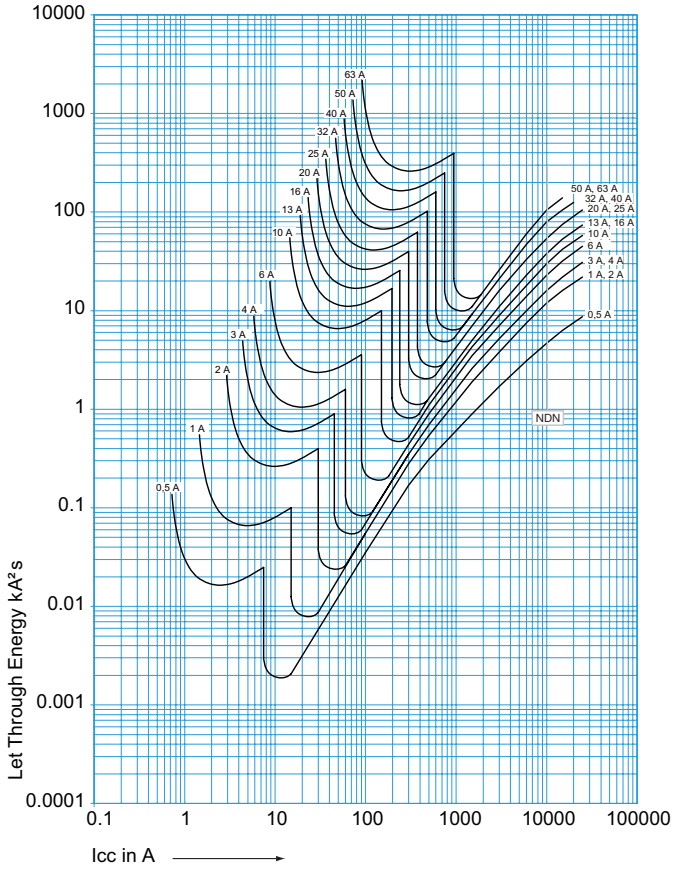
B Curve



C Curve



D Curve



Data is subject to errors and technical modifications.

Functions
Tripping and indication auxiliary contacts are common to the range of multi-pole 10kA MCBs, and RCCBs. They should be mounted on the left hand side of the device.

Auxiliary Contact MZ201 (*Fig 9*)
Allows remote indication of the status of the device contacts to which it is associated.

Auxiliary Contact and Alarm Contact MZ202
This accessory has two separate functions. Like the **MZ201** auxiliary contact, however the alarm contact will provide indication if the breaker trips under fault conditions.

Wiring Diagram
MZ201 Auxiliary Contact and Alarm Contract

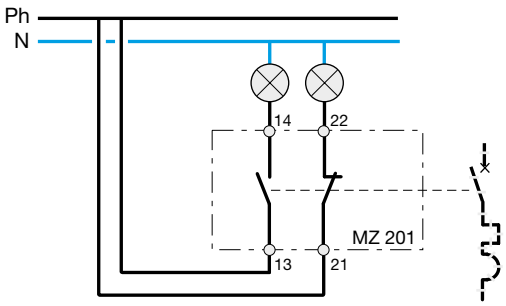


Fig. 9

Electrical Characteristics

MZ201/MZ206	MZ203	MZ206
1 x O 1 x C Contact 230V ~ 6A AC-1		
	230 - 415~ 110 - 130...	230V~ 50Hz

MZ203 Shunt Trip*
Allows tripping of the device by feeding the coil. The contacts also allow for remote indication of operation.

MZ206 Under Voltage Release* (*Fig 10*)
Allows the MCB to trip when the voltage drops or by pressing a remote off switch (i.e. emergency stop).

* Indication that the product has tripped due to the voltage release is provided by a flag on the product.

MZ206 Under Voltage Release

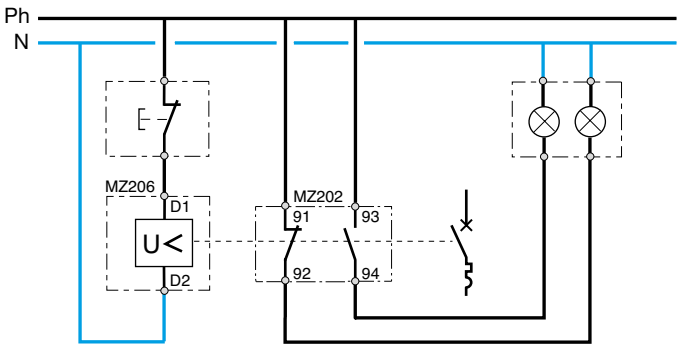


Fig. 10

Electrical connection
By terminal fitted with fixed clamp screws wiring capacity.
Flexible : 2 x 1.5mm2
Rigid : 2 x 1.5mm2

MZ203
Power - 8VA
tolerance : -15% of U_n

MZ206
Latching voltage is between 35 and 70% of U_n 230V~
Coil consumption 3VA

Grouping / Combination of Several Auxiliaries
On 2, 3 and 4 pole MCBs it is possible to associate 3 auxiliaries – 2 indication auxiliaries and 1 release auxiliary. In this case, it is important to first fix the indication auxiliary (**MZ201** and **MZ202**) and then the release auxiliary (**MZ203** and **MZ206**).

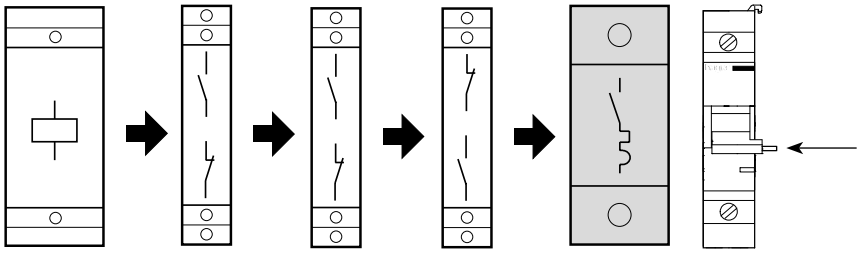


Fig. 11

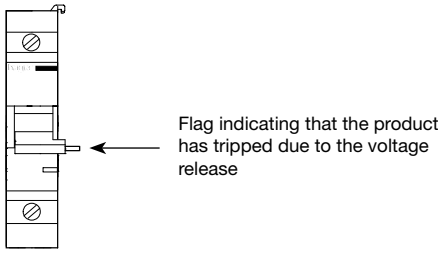


Fig. 12

Earth Fault Loop impedance (Z_S) values for MCBs and MCCBs
Below are the maximum permissible values of Z_S to obtain disconnection for compliance with BS 7671:2008 Amendment 3

	Max Let-Through Energy (kA^2s) at PSCC			Max Z_S (ohms)	
I_n	3kA	6kA	10kA	0.2 - 1s sec	5 sec
MTN/NBN (B Curve)					
6	5.9	10.5	15	7.28	7.28
10	6.5	12.2	21.5	4.37	4.37
16	8.0	17.5	30	2.73	2.73
20	8.8	19.5	34	2.19	2.19
25	10	21	38	1.75	1.75
32	11	24	42	1.37	1.37
40	12.5	29	50	1.09	1.09
50	15	34	61	0.87	0.87
63	16	38	72	0.69	0.69
NCN/HM (C Curve)					
0.5	0.01	0.01	0.01	43.7	62.43
1	4.0	7.0	10	21.85	31.21
2	4.0	7.0	10	10.93	15.61
3	5.0	10.0	15	7.28	10.40
4	5.9	10.5	15	5.46	7.80
6	5.9	10.5	15	3.64	5.20
10	6.5	12.2	21.5	2.19	3.12
16	8.0	17.5	30	1.37	1.95
20	8.8	19.5	34	1.09	1.56
25	10	21	38	0.87	1.25
32	11	24	42	0.68	0.98
40	12.5	29	50	0.55	0.78
50	15	34	61	0.44	0.62
63	16	38	72	0.35	0.50
80	-	-	-	0.27	0.39
100	-	-	-	0.22	0.31
125	-	-	-	0.1	0.25
NDN (D Curve)					
0.5	0.01	0.01	0.01	21.85	62.43
1	4.0	7.0	10	10.93	31.21
2	4.0	7.0	10	5.46	15.61
3	5.0	10.0	15	3.64	10.40
4	5.9	10.5	15	2.73	7.80
6	5.9	10.5	15	1.82	5.20
10	6.5	12.2	21.5	1.09	3.12
16	8.0	17.5	30	0.68	1.95
20	8.8	19.5	34	0.55	1.56
25	10	21	38	0.44	1.25
32	11	24	42	0.34	0.98
40	12.5	29	50	0.27	0.78
50	15	34	61	0.22	0.62
63	16	38	72	0.17	0.50
80				0.14	0.39
100				0.11	0.31
125				0.09	0.25

Data is subject to errors and technical modifications.

Residual Current Devices
A residual current device (RCD) is the generic term for a device which simultaneously performs the functions of detection of the residual current, comparison of this value with the rated residual operating value and opening the protected circuit when the residual current exceeds this value. These devices can take several different forms I.e. Residual Current Circuit Breaker (RCCB), Residual Current Circuit Breaker with integral Overload protection (RCBO), or a residual current device incorporated within a socket outlet or other accessory (SRCD)

Residual current circuit breakers (RCCB) protect against earth faults only and not short circuits. They are usually therefore used in conjunction with overcurrent protective devices.

MCB/RCCB Co-ordination

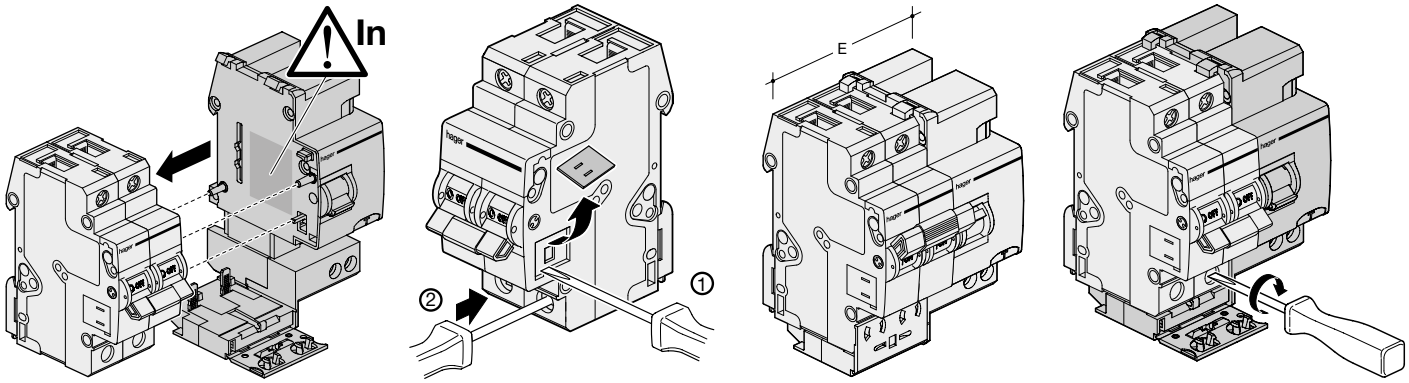
Short circuit capacity of the RCCB only		With MCB's			
RCCB		**MTN 6-63A B**	**NBN 6-63A B**	**NCN 6-63A C**	**NDN 6-63A D**
2 poles					
16A	1500A	6kA	10kA	10kA	6kA
25A	1500A	6kA	10kA	10kA	6kA
40A	1500A	6kA	10kA	10kA	6kA
63A	1500A	6kA	10kA	10kA	6kA
80A	1500A	6kA	10kA	10kA	6kA
100A	1500A	6kA	10kA	10kA	6kA
4 poles					
16A	1500A	6kA	6kA	6kA	4.5kA
25A	1500A	6kA	6kA	6kA	4.5kA
40A	1500A	6kA	6kA	6kA	4.5kA
63A	1500A	6kA	6kA	6kA	4.5kA
80A	1500A	6kA	6kA	6kA	4.5kA
100A	1500A	6kA	6kA	6kA	4.5kA

Data is subject to errors and technical modifications.

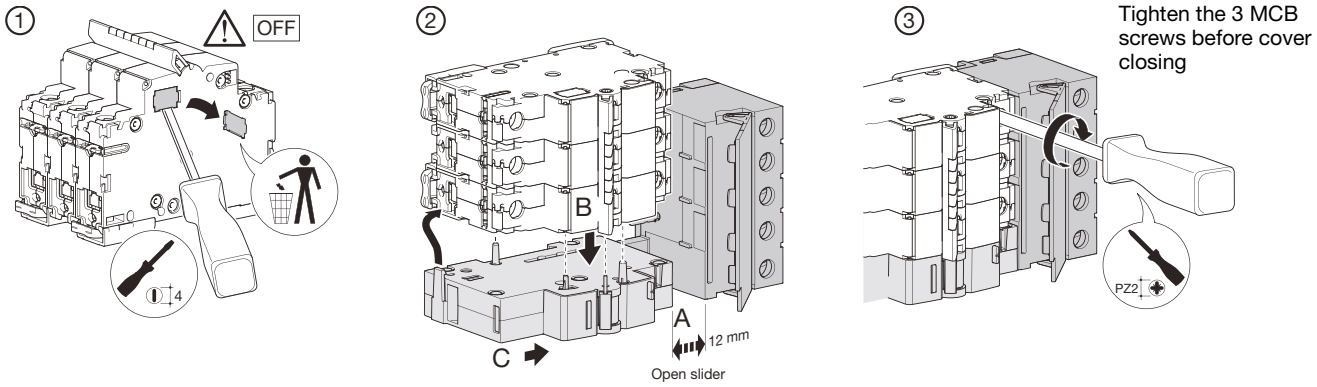
	Double Pole RCCB Add-on Block			Four Pole RCCB Add-on Block			3 Phase Earth Leakage Protection		
I_n	≤63A								
Sensitivity	30mA	100mA	300mA	30mA	100mA	300mA	30mA	100mA	300mA
Cat ref. (Standard)	**BD264**	**BE264**	**BF264**	**BD464**	**BE464**	**BF464**	**BD163T**	**BE163T**	**BF163T**
Cat ref. (Time Delayed)	**BN264**	**BP264**		**BN464**	**BP464**				
MCB Suitability									
NBN	6-63A	6-63A	6-63A	6-63A	6-63A	6-63A	6-63A	6-63A	6-63A
NCN	0.5-63A	0.5-63A	0.5-63A	0.5-63A	0.5-63A	0.5-63A	0.5-63A	0.5-63A	0.5-63A
NDN	0.5-63A	0.5-63A	0.5-63A	0.5-63A	0.5-63A	0.5-63A	0.5-63A	0.5-63A	0.5-63A
Width when combined with MCB	4 Module 70mm			7 Module 122.5mm			4 Module 70mm		

Commercial Distribution

Mounting
Double Pole RCCB Add-on Block



Mounting
Three Pole RCCB Add-on Block



Transformer Protection
Tables 19 & 20 show the recommended MCB's for the protection of single phase (230V) and three phase (400V) transformers.

Single Phase 230V

		Recommended MCB		
Transformer Rating (VA)	Primary Current	**NBN**	**NCN**	**NDN**
50	0.22	-	1	6
100	0.43	-	2	6
200	0.87	-	3	6
250	1.09	6	4	6
300	1.30	10	4	6
400	1.74	10	6	6
500	2.17	16	10	6
750	3.26	16	10	6
1000	4.35	25	16	10
2500	10.87	63	40	20
5000	21.74	-	63	32
7500	32.60	-	-	50
10000	43.48	-	-	63

Three Phase 400V

		Recommended MCB		
Transformer Rating (VA)	Primary Current	**NBN**	**NCN**	**NDN**
500	0.72	-	3	6
750	1.08	6	4	6
1000	1.44	10	6	6
2000	2.88	16	10	6
3000	4.33	25	16	10
4000	5.77	32	20	10
5000	7.21	40	25	16
7500	10.82	63	32	20
10000	14.43	-	50	25
15000	21.64	-	63	32
20000	28.86	-	-	50
25000	36.07	-	-	63

Motor Circuit Protection
Tables 28,29,30 and 31 give general recommendations for the selection of circuit breakers and HRC fuses for the protection of motor power circuits and are based on the assumptions shown in Table 28 for a cage motor running at approximately 1400 Rev/Min.

Motor Rating	DOL Starting Conditions	Assisted Start Conditions
Up to 0.75kW	5 x FLC for 6 secs	2.5 x FLC for 15 secs
1.1 to 7.5kW	6 x FLC for 10 secs	2.5 x FLC for 15 secs
11 to 75kW	7 x FLC for 10 secs	2.5 x FLC for 15 secs
90 to 160kW	6 x FLC for 15 secs	2.5 x FLC for 20 secs

1 Phase 230V DOL Starting

			Recommended Circuit Breaker			
kW	hp	FLC A	(A) **NBN**	(A) **NCN**	(A) **NDN**	Fuse (A)
0.18	0.25	2.8	16	10	10	10
0.25	0.33	3.2	16	10	10	16
0.37	0.5	3.5	16	10	10	16
0.55	0.75	4.8	20	16	16	16
0.75	1.0	6.2	25	20	20	20
1.1	1.5	8.7	40	25	25	25
1.5	2.0	11.8	50	32	32	32
2.2	3.0	17.5	-	50	50	40
3.0	4.0	20	-	63	63	50
3.75	5.0	24	-	-	-	63
5.5	7.5	36	-	-	-	80
7.5	10	47	-	-	-	100

3 Phase 400V Assisted Starting Star-Delta

			Recommended Circuit Breaker		
kW	hp	FLC A	(A) **NCN**	(A) **NDN**	HRC Fuse (A)
3	4	6.3	16	10	16
4	5.5	8.2	20	10	16
5.5	7.5	11.2	32	16	20
7.5	10	14.4	40	25	25
11	15	21	50	32	32
15	20	27	-	40	35
18.5	25	32	-	50	40
22	30	38	-	63	50
30	40	51	-	-	63
37	50	63	-	-	80
45	60	76	-	-	80
55	75	91	-	-	100
75	100	124	-	-	160
90	125	154	-	-	200
110	150	183	-	-	200
132	175	219	-	-	250
150	200	240	-	-	315
160	220	257	-	-	315

Data is subject to errors and technical modifications.

3 Phase 400V DOL Starting

			Recommended Circuit Breaker			
kW	hp	FLC A	(A) **NBN**	(A) **NCN**	(A) **NDN**	HRC Fuse (A)
0.18	0.25	0.87	-	2	-	4
0.25	0.33	1.17	-	3	-	4
0.37	0.5	1.2	-	3	-	4
0.55	0.75	1.8	-	4	-	6
0.75	1.0	2.0	10	6	6	6
1.1	1.5	2.6	16	10	6	10
1.5	2.0	3.5	16	10	10	16
2.2	3.0	4.4	20	16	16	16
3.0	4.0	6.3	25	20	20	20
4.0	5.5	8.2	32	25	25	25
5.5	7.5	11.2	50	40	40	32
7.5	10	14.4	63	50	50	40
11	15	21	-	-	-	63
15	20	27	-	-	-	80
18.5	25	32	-	-	-	80
22	30	38	-	-	-	80
30	40	51	-	-	-	100
37	50	63	-	-	-	125
45	60	76	-	-	-	125
55	75	91	-	-	-	160
75	100	124	-	-	-	200
90	125	154	-	-	-	250
110	150	183	-	-	-	315
132	175	219	-	-	-	355
150	200	240	-	-	-	355
160	220	257	-	-	-	355

		SPN801 / SPN801R	SPN802 / SPN802R	
Tested to		EN 61643-11 (VDE0675-6-11) 2002-12	EN 61643-11 (VDE0675-6-11) 2002-12	
		L1/L2/L3/N => PE	L1/L2/L3 => N	N => PE
SPD type / class		Type 1 + Type 2 / I / B		
Type of connection		Parallel connection		
Type of power supply system		TN-S - System	TT - System	
Type of protection		Common modes	Common and differential modes	
Nominal voltage	U_N	230V / 400V ac		
Rated voltage	U_c	255V ac		
Voltage protection level	U_p	≤ 1.5kV		255V ac
TOV-voltage	U_T	440V / 5s		1200V / 200ms
Rated load current	I(L)	315A		
	I(L-L)	125A		
Follow current interrupting rating	I_{fi}	50 kA		100kA
Nominal discharge current (8/20)	I_n	100kA	25kA	100kA
Impulse current (10/350)	I_{imp}	100kA	25kA	100kA
Residual current	I_{PE}	≤ 100mA		
Max. rating of overcurrent protection	fuse	125A gL / gG serial or 315A parallel		
	MCCB	125A serial or 160A parallel		
Short-circuit withstand capability with max. overcurrent protection	fuse	50kA ac	25kA ac	
	MCCB	50kA ac	25kA ac	
Response time	t_A	< 100ns		
Operating temperature range		- 40°C ….+ 60°C		
Indication of SPD disconnector		Green - red on L1, L2, L3, N		
Cross sectional area	min	10mm² solid / flexible		
L1, L2, L3, PE	max	50mm² multi-stranded / 35mm² flexible		
Tightening torque for terminals		7.0 Nm		
Mounting on		35mm DIN rail in accordance with EN 60715		
Enclosure material		grey thermoplastic, UL 94V-0		
Degree of protection		IP20		
Modular width		8	8	
Weight		1260 g	1272 g	
Approval marking		VDE		

Data is subject to errors and technical modifications.

		SPA201	SPA401
Tested to		EN 61643-11 2002-12	
SPD type / class		Type 1 + Type 2 / Class I	
Energy-coordinated protection effect on terminal equipment		Type 1 + Type 2	
Energy-coordinated protection effect on terminalequipment ≤ 5 m		Type 1 + Type 2 + Type 3	
Type of connection		Parallel connection	
Type of power supply system		TT / TN system	
Type of protection		common and differential modes	
Nominal voltage	U_N	230V/400V ac	
Rated voltage	U_c	255V ac	
Voltage protection level	U_p	≤ 1.5kV	
TOV Voltage	U_T	440V / 5s 1200V / 200ms	
Rated load current	I(L)	n/a	
	I(L-L)	n/a	
Follow current interrupting rating	I_{fi}	25kA rms 100A rms	
Nominal discharge current (8/20)	I_n	12.5kA 25kA	12.5kA 50kA
Impulse current (10/350)	I_{imp}	12.5kA 25kA	12.5kA 50kA
Max. rating of overcurrent protection	fuse	160A gL / gG	
	MCCB	n/a	160A
Short-circuit withstand capability with max. overcurrent protection	fuse	25kA rms	
	MCB	n/a	
Response time	t_A	≤ 100ns	
Operating temperature range		- 40°C ….+ 80°C	
Indication of SPD disconnector		Green/Red flag on L and N	Green/Red flag on L1, L2, L3 and N
Cross sectional area	min	1,5mm² solid / flexible	
	max	35mm² stranded / 25mm² flexible	
Tightening torque for terminals		4 Nm	
Mounting on		35mm DIN rail in accordance with EN 60715	
Enclosure material		grey thermoplastic, UL 94V-0	
Degree of protection		IP20	
Modular width		2	4
Weight		275 g	480 g
Approval marking		KEMA	

		SPN215D/R	SPN415D/R	SPN440D/R
Tested to		EN 61643-11 (VDE0675-6-11) 2002-12		
SPD type		Type 2 according to EN 61643-11		
SPD class		Class II according to IEC 61643-1		
Type of connection		Parallel connection		
Maximum continuous operationg voltage U_c	Line / Neutal	≤ 255V		
	Neutral/ PE	≤ 275V		
Voltage protection level	U_p	≤ 1kV	≤ 1kV	≤ 1.2kV
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE]	I_n	5kA	5kA	15kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE]	I_{max}	15kA	15kA	40kA
Short-circuit withstand capability with max. overcurrent protection		10kA - 32A	10kA - 32A	20kA - 32A
Operating temperature range		- 40°C ….+ 80°C		
Indication of SPD disconnector		Green - Yellow - Red		
Cross sectional area	min	1,5mm² solid / flexible		
	max	35mm² multi-stranded / 25mm² flexible		
Tightening torque for terminals		4.0 Nm		
Mounting on		35mm DIN rail in accordance with EN 60715		
Enclosure material		grey thermoplastic, UL 94V-0		
Degree of protection		IP20		
Modular width (DIN 43880)		2	2	4
Auiliary contact. Voltage/ nominal current (only applicable on the R suffix products)		230V/ 0.5A 12Vdc 10mA		

		SPV325
Tested to		EN 61643-11 (VDE0675-6-11) 2002-12
SPD type		Type 2 according to EN 61643-11
SPD class		Class II according to IEC 61643-1
Type of connection		Parallel connection
Maximum continuous operationg voltage	Uc_{PV}	≤ 1000V
Voltage protection level	U_p	≤ 4kV
Voltage protection level for 5kA	U_p	≤ 3,5kV
Total discharge current (8/20 µs)	I_{total}	40kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE]	I_n	12.5kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE]	I_{max}	25kA
Short-circuit withstand capability with max. overcurrent protection	I_{scwPV}	50 A / 1000 V DC
Response time	t_A	≤ 25ns
Operating temperature range		- 40°C ….+ 80°C
Indication of SPD disconnector		green - red
Cross sectional area	min	1.5mm² solid / flexible
	max	35mm² multi-stranded / 25mm² flexible
Tightening torque for terminals		4.0 Nm
Mounting on		35mm DIN rail in accordance with EN 60715
Enclosure material		Grey thermoplastic, UL 94V-0
Degree of protection		IP20
Installation width		3 modules, DIN 43880
Weight		316g

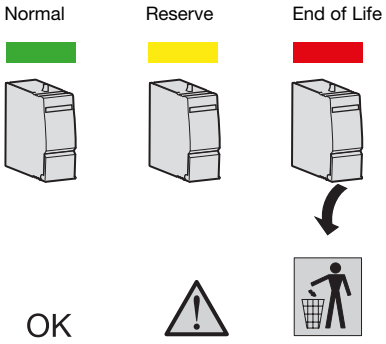
Data is subject to errors and technical modifications.

Characteristics		
Tested to		EN 61643-11 (VDE0675-6-11) 2007-08
SPD type / class		Type 3 / III
Ports		one port
Type of connection		Parallel connection
Type of power supply system		TT / TN system
Nominal voltage	U_N	230V ac
Rated voltage	U_c	255V ac
Voltage protection level (L- N)	U_p	≤ 1.25kV
Voltage protection level (L/N - PE)	U_p	≤ 1.5kV
TOV - Characteristic (L - N)	U_T	335V / 5s
TOV - Characteristic (L/N - PE) (I)	U_T	400V / 5s
TOV - Characteristic (L/N - PE) (II)	U_T	1200V / 200 ms
Rated load current	IL	16 Aeff
Nominal discharge current (8/20)	I_n	3kA
Maximal discharge current (8/20)	I_{max}	5kA
Combination wave (1,2/50 - 8/20) (L - N)	U_{oc}	6 kV
Combination wave (1,2/50 - 8/20) (L/N - PE)	U_{oc}	10 kV
Residual current	IPE	≤ 5µA
Remplacement cartridge		NO
Maximal rating of overcurrent protection	fuse	16 A gL / gG
	MCB	16A B curve
Short-circuit withstand capability with max. overcurrent protection	fuse	6kA eff ac
	MCB	1kA eff ac
Response time	t_A	≤ 25ns
Operating temperature range		- 25°C ….+ 40°C
Indication of SPD disconnector		NO
Remote signalisation contact		Green light off
Cross sectional area	min	1.5mm² solid / flexible
	max	10mm² stranded / 6mm² flexible
Tightening torque for terminals		1.2 Nm
Mounting on		35mm DIN rail in accordance with EN 60715
Enclosure material		Grey thermoplastic, UL 94V-2
Degree of protection		IP20
Installation width		2 modules, DIN 43880

Commercial Distribution

Reserve Indicator Light

Neutral cartridges cannot be put into spares reserved for phase cartridges and visa versa.



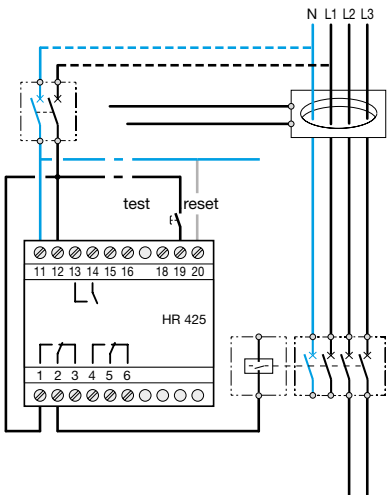
	Non-Adjustable		Adjustable						
	HR500	**HR502**	**HR510**	**HR520**	**HR522**	**HR523**	**HR525/HR534**	**HR440**	**HR441**
Supply Voltage ~50/60Hz	220-240V								
Residual Voltage ~50/60Hz	500V Maximum								
Power Absorbed	3VA	5VA							
Output	Volt Free Contacts								
Contact Rating	6A / 250V AC-1								
Sensitivity IΔn	30mA	300mA	30mA / 100mA / 300mA / 500mA / 1A / 3A / 10A			500mA / 1A / 3A / 5A / 10A / 20A / 30A	30mA / 100mA / 300mA / 500mA / 1A / 3A / 5A / 10A / 30A	30mA / 100mA / 300mA / 500mA / 1A / 3A	
Instantaneous / Time Delay	Instantaneous		Instantaneous or Time Delay 0.1 - 0.3 - 0.4 - 0.5 - 1 - 3 seconds		Instantaneous or Time Delay 0.1 - 0.2 - 0.25 - 0.3 - 0.4 - 0.5 seconds		Instantaneous or Time Delay 0.02 - 0.1 - 0.3 - 0.4 - 0.5 - 1 - 3 - 5 - 10 seconds	Instantaneous or Time Delay 0.1 - 0.3s - 0.5s - 0.75s - 1s	
Torroid Withstand Capacity	50kA / 0.2s								
Distance between Torroid and Relay	50 Meter Maximum								
Relay Cable Connection • Rigid • Flexible	1.5mm² to 10mm² 1mm² to 6mm²								
Torroid Cable Conection • Rigid • Flexible	1.5mm² to 4mm² 1mm² to 2.5mm²								
Relay • Working Temperature • Storage Temperature	-10°C to +55°C -25°C to +40°C		-5°C to +55°C -25°C to +40°C						
Torroid • Working Temperature • Storage Temperature	-10°C to +70°C -40°C to +70°C		-10°C to +70°C -40°C to +70°C						

Main Characteristics
"Reset" Button
When pressed, the output remains switched and return to normal is obtained by either: by pressing the "reset" clear pushbutton or cutting off the power supply. If the "reset" button is not pressed the device remains in the fault position.

Test Button
Pressing the test button allows a fault simulation which operates the relay and the output contacts.The fault level display is shown by an LED on the front of the product.

IΔn Selector
Sensitivity setting: 0.03A instantaneous
0.1A/0.3A/1A and 3A time delay

Time Delay Selector
Adjustable time setting - instantaneous / 0.13s / 0.3s / 1s and 3s



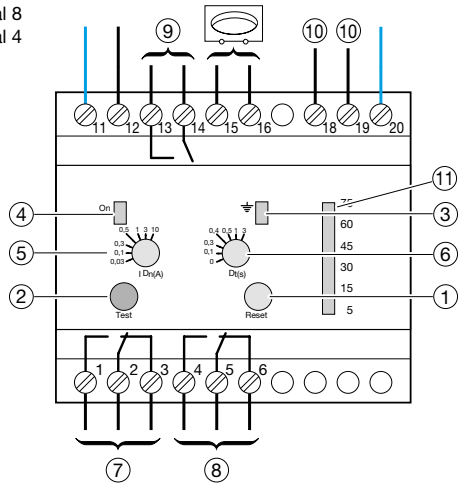
Sealable Settings
A sealable cover prevents interference once the settings have been made.

Standard Output (1 C/O contact)
Switching to state 1 on:
• Failure of the core/relay connection
• Fault current in the monitored installation

Positive Safety Outlet (1 C/O contact)
Switching to state 1: Switching on the power
Switching to state 0: Failure of the core/relay connection
fault current in the monitored installation
failure of relay supply
internal failure of relay

Optical scale display by 5 LEDs of the fault in % of $I_{\Delta n}$
Optical scale display by (5 LEDs) of the fault in % of $I_{\Delta n}$
Common pin 6:
State 1 : output terminal 8
State 0 : output terminal 4

1. Reset push button
2. Test push button
3. Fault signal LED
4. Device on indicator
5. Sensitivity setting
6. Time delay setting
7. Standard output
8. Safety output
9. Prealarm output
10. Remore reset
11. Optical scale



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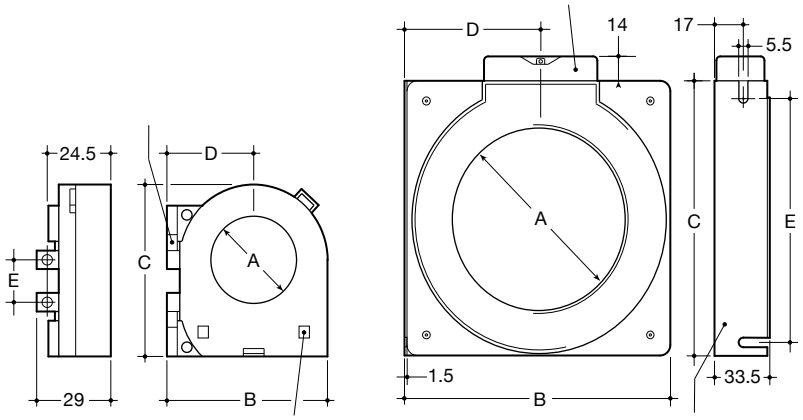
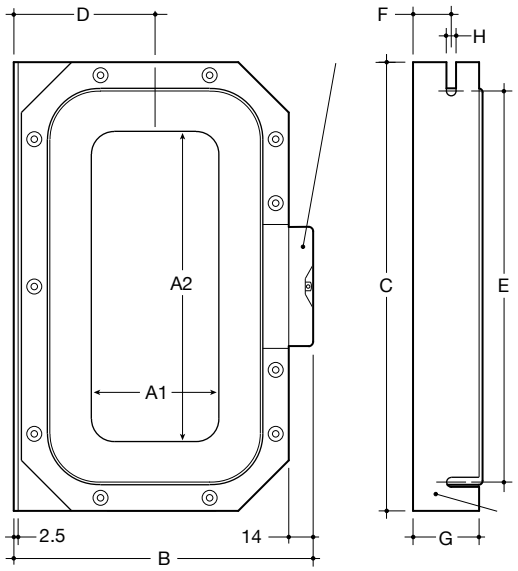
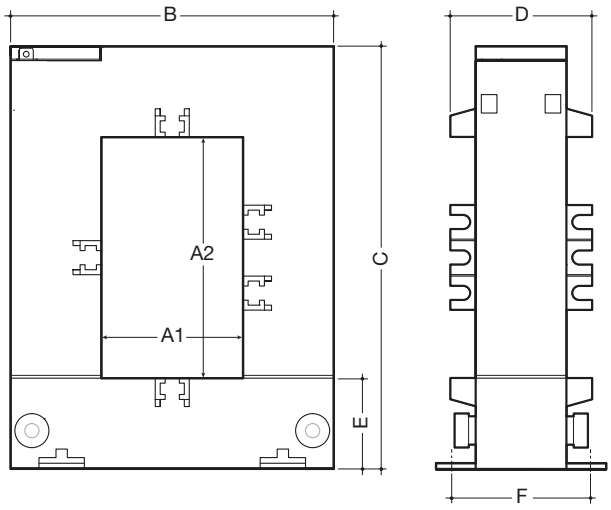


Cat ref.	Dimensions (mm)				
	A	**B**	**C**	**D**	**E**
HR700	30	70	70	30	-
HR701	35	92	86	43.5	74
HR702	70	115	118	60.5	97
HR703	105	158	162.5	84.5	140
HR704	140	218	200	103.5	183
HR705	210	290	295	150	265



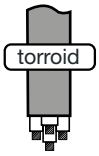
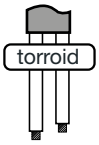
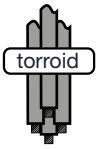
Cat ref.	Type	Dimensions (mm)								
		A1	**A1**	**B**	**C**	**D**	**E**	**F**	**G**	**H**
HR830	70x175	70	175	176	260	85	225	22	40	7.5
HR831	115x305	115	305	239	400	116	360	25	50	8.5
HR832	150x350	150	350	284	460	140	415	28	50	8.5



Cat ref.	Dimensions (mm)						
	A1	**A1**	**B**	**C**	**D**	**E**	**F**
HR820	20	30	89	110	41	32	46
HR821	50	80	114	145	50	32	46
HR822	80	80	145	145	50	32	46
HR823	80	121	145	185	50	32	46
HR824	80	161	184	244	70	37	46

Commercial Distribution

Mounting of Circular Torroids

	With Cables							
		U 1000 R2V Sinlge Pole	U 1000 R2V Single Pole	U 1000 R2V Multi Pole	U 1000 R2V Multi Pole	U 1000 R2V Multi Pole	H07 V - U Single Pole	H07 V - U Single Pole
Ø	Type of Torroids							
30	**HR700**	4 x 16mm²	2 x 50mm²	35mm²	35mm²	50mm²	4 x 35mm²	2 x 70mm²
35	**HR701**	4 x 25mm²	2 x 70mm²	50mm²	35mm²	70mm²	4 x 50mm²	2 x 95mm²
70	**HR702**	4 x 185mm²	2 x 400mm² or 4 x 150mm²	240mm²	35mm²	300mm²	4 x 240mm²	2 x 400 or 4 x 185mm²
105	**HR703**	4 x 500mm²	2 x 630mm² or 4 x 185mm²	300mm²	35mm²	300mm²	4 x 400mm²	2 x 400 or 4 x 240mm²
140	**HR704**	4 x 630mm²	2 x 630mm² or 4 x 240mm²	300mm²	35mm²	300mm²	4 x 400mm²	2 x 400 or 4 x 240mm²
210	**HR705**	4 x 630mm²	2 x 630mm² or 4 x 240mm²	300mm²	35mm²	300mm²	4 x 400mm²	2 x 400 or 4 x 240mm²
70 x 175	**HR830**	4 x 630mm²	2 x 630mm² or 4 x 240mm²	300mm²	35mm²	300mm²	4 x 400mm²	2 x 400 or 4 x 240mm²
115 x 305	**HR831**	4 x 630mm²	2 x 630mm² or 4 x 240mm²	300mm²	35mm²	300mm²	4 x 400mm²	2 x 400 or 4 x 240mm²
150 x 350	**HR832**	4 x 630mm²	2 x 630mm² or 4 x 240mm²	300mm²	35mm²	300mm²	4 x 400mm²	2 x 400 or 4 x 240mm²
20 x 30	**HR820**	4 x 16mm²	2 x 70mm²	10mm²	35mm²	16mm²	4 x 10mm²	2 x 35mm²
50 x 80	**HR821**	4 x 240mm²	2 x 630mm² or 4 x 185mm²	120mm²	35mm²	150mm²	4 x 185mm²	2 x 240mm²
80 x 80	**HR822**	4 x 500mm²	2 x 630mm² or 4 x 185mm²	300mm²	35mm²	300mm²	4 x 400mm²	2 x 400 or 4 x 240mm²
80 x 120	**HR823**	4 x 630mm²	2 x 630mm² or 4 x 240mm²	300mm²	35mm²	300mm²	4 x 400mm²	2 x 400 or 4 x 240mm²
80 x 160	**HR824**	4 x 630mm²	2 x 630mm² or 4 x 240mm²	300mm²	35mm²	300mm²	4 x 400mm²	2 x 400 or 4 x 240mm²

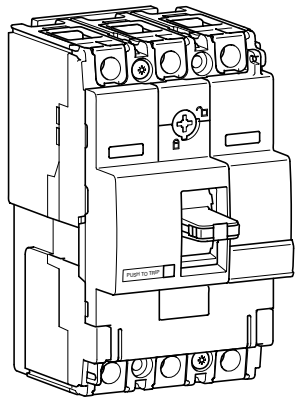
Data is subject to errors and technical modifications.

Frame			**x160**				**x250**		
Product			**MCS Switch**	**MCCB**			**MCS Switch**	**MCCB**	
Reference			**HCA**	**HDA**	**HHA**	**HNA**	**HCB**	**HHB**	**HNB**
Number of poles		[No.]	3-4	1-2-3-4	1-2-3-4	3-4	3-4		
Electrical characteristics									
Rated current	I_n	[A]	160				250		
Current rated range		[A]	125-160	16-125 (1P), 16-160 (2, 3, 4P)			250	100-250	
Rated service voltage, (AC)	U_e	[V]	220-440				220-440		
Frequency	F	[Hz]	50/60				50/60		
Rated insulation voltage	U_i	[V]	690				800		
Rated impulse withstand voltage	U_{imp}	[kV]	8				8		
Rated ultimate short-circuit breaking capacity, (I_{cu})									
(AC) 50-60 Hz 220/230 V	I_{cu}	[kA]	-	25	35	85	-	35	85
(AC) 50-60 Hz 380/415 V	I_{cu}	[kA]	-	18	25	40	-	25	40
(AC) 50-60 Hz 480/500/525 V	I_{cu}	[kA]	-	6	7.5	12.5	-	-	10
(AC) 50-60 Hz 660/690 V	I_{cu}	[kA]	-	-	-	6	-	-	4
(DC) 250 V - 2 poles in series	I_{cu}	[kA]	-	12.5	20	25	-	25	25
Rated service short-circuit breaking capacity, (I_{cs})									
(AC) 50-60 Hz 220/230 V	I_{cs}	[kA]	-	25	25	40	-	25	40
(AC) 50-60 Hz 380/415 V	I_{cs}	[kA]	-	18	20	20	-	20	20
(AC) 50-60 Hz 480/500/525 V	I_{cs}	[kA]	-	3	4	7.5		-	7.5
(AC) 50-60 Hz 660/690 V	I_{cs}	[kA]	-	-	-	3	-	-	2
(DC) 250 V - 2 poles in series	I_{cs}	[kA]	-	7	10	13	-	13	13
Rated short-circuit making capacity	I_{cm}	[kA]	2.8	-	-	-	6	-	-
Rated short-time withstand current for 1s	I_{cw}	[kA]	2	-	-	-	3	-	-
Category of use (EN 60947-2)			-	A			-	A	
Calibration temperature			-	50°C			-	50°C	
Derating 40°C			-	100%			-	100%	
	50°C		-	100%			-	100%	
	55°C		-	95%			-	94%	
	60°C		-	93%			-	91%	
	65°C		-	90%			-	88%	
Suitability for isolation			ok				ok		
Electric endurance in number of cycles			10000				10000		
Mechanical endurance in number of operations			20000				20000		
Operating temperature			-25 to +70°C				-25 to +70°C		
Storage temperature			-35 to +70°C				-35 to +70°C		
Power loss (at I_n for 3P)		[W]	39				60		
Reference standard			IEC 60947-3	IEC 60947-2			IEC 60947-3	IEC 60947-2	
Releases: switch			ok	-			ok	-	
Releases: TM (thermomagnetic)			-	ok			-	ok	
T fixed, M fixed			-	ok (1P)			-	ok	
T adjustable, M fixed			-	ok			-	-	
T adjustable, M adjustable			-	-			-	ok	
Thermal adjustment value			-	0.63 to 1 x I_n			-	0.63 to 1 x I_n	
Magnetic adjustment value			-	-			-	6-8-10-13 x I_n (200A) 5-7-9-11 I_n (250A)	
Releases: LSI (electronic)			-	-			-	-	
Long delay			-	-			-	-	
Short delay			-	-			-	-	
Time delay			-	-			-	-	
Terminations									
Standard terminal type			cage				lugs		
Maximum terminal capacity			95 mm²				185 mm² (cage)		
Terminal width		mm	-				25		
Terminal shields			ok				ok		
Cage terminal			integrated				ok		
Extended connections			ok				ok		
Rear connections			no				ok		
Dimensions									
Height		mm	130				165		
Width	1P	mm	-	25		-	-		
	2P	mm	-	50		-	-		
	3P	mm	75				105		
	4P	mm	100				140		
Depth		mm	68				68		
Weight	1P	kg	-	0.29		-	-		
	2P	kg	-	0.48		-	-		
	3P	kg	0.715				1.3		
	4P	kg	0.95				1.6		

Product Frame		Add-on blocks		
		x160	x160	x250
Number of poles		3 , 4	3 , 4	4
Tripping Access		mechanical	mechanical	mechanical
Standards CEI/EN 60947-2 appendix B		✓	✓	✓
Electrical Characteristics				
Max rated current (40) I_n A	I_n	125A	125 - 160A	160 - 250A
Rated service voltage U_e V AC (50/60Hz)	U_e	240 - 415V	240 - 415V	240 - 415V
Mechanical Characteristics				
Top and bottom supply		✓	✓	✓
For tripping, no additional external electrical sources		✓	✓	✓
Possible operating with two active phases		✓	✓	✓
Settings				
Sensitivity $I_{\Delta n}$	$I_{\Delta n}$ (A)	300mA	0.03, 0.1, 0.3, 1, 3, 6A	0.03, 0.1, 0.3, 1, 3, 6A
Time delay Δt	Δt (s)	inst.	inst., 0.06, 0.15, 0.3, 0.5, 1	inst., 0.06, 0.15, 0.3, 0.5, 1
Max. opening time	ms	10	10	10
Delay add-on block is not possible if $I_{\Delta n}$ = 30mA		-	✓	✓
Selective product		-	✓	✓
Mechanical test button		✓	✓	✓
Isolating test without cable removal		✓	✓	✓
Electrical test button		✓	✓	✓
Reset button		✓	✓	✓
Sealable setting button		-	✓	✓
Isolation level signaling by led 25 and 50%		-	✓	✓
I_n running signalisation by led		-	✓	✓
Residual default signaling contact		✓	✓	✓
Signaling contact 50% Idn		-	✓	✓
Anti-transient	type AC	✓	✓	✓
Pulsating DC current	type A	✓	✓	✓
High immunity	type HI	✓	✓	✓
-25°C		✓	✓	✓
Accessories and connection				
Steel terminal cage (x3/x4)		✓	✓	accessories
Connection by lugs		-	-	✓
Extended connections (x4)		✓	✓	✓
Spreaders (x4)		✓	✓	✓
Terminal covers (3P/4P)		-	-	✓
Interphase barriers (x3)		✓	✓	✓
Rigid cables connection capacity mm²		4 - 95	4 - 95	35 - 185
Flexible cables connection capacity mm²	(with terminal)	4 - 70	4 - 70	35 - 150
Tightening torque Nm		6	6	12
Copper bar (width) in mm		-	-	25
Mounting				
Clips on DIN rail		✓	✓	-
Fixed on mounting plate		-	-	✓
Fixation type		side	side	bottom
Mounting by customer		✓	✓	✓
Dimensions and weight				
Dimensions (WxHxD) in mm Side mounted 4P	W	100	100	140
	H	165	165	107.5
	D	95	95	85
Weight	3P	1.4	1.4	-
	4P	1.55	1.55	1.2

Data is subject to errors and technical modifications.

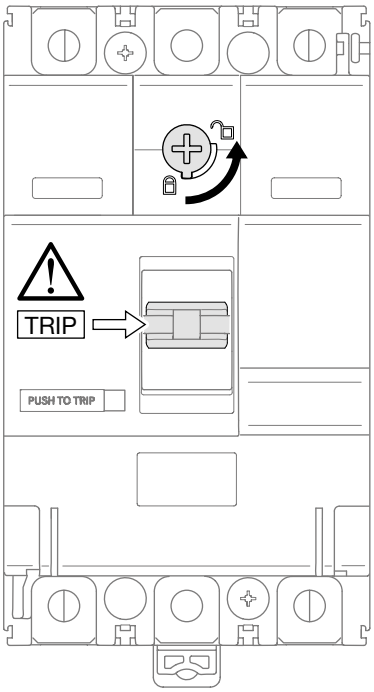
MCCBs



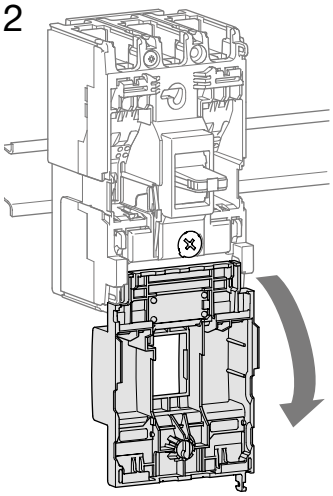
		220/240V AC IEC 60 947-2	380/415V AC IEC 60 947-2
HDA	I_{cu}	25 kA	18 kA
	I_{cs}	25 kA	18 kA
HHA	I_{cu}	35 kA	25 kA
	I_{cs}	25 kA	20 kA
HCA	I_{cm}	-	2.8 kA
	I_{cw}	-	2 kA - 1s

Thermal settings

1

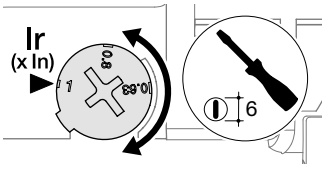


2



For DIN rail mounting, use **HYA033H**.

3



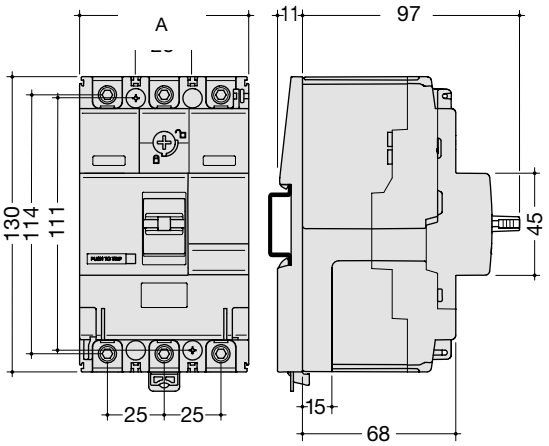
Thermal adjustment from 0.63 to 1 x I_n

Magnetic adjustment fixed > 10 x I_n

I_n	16 - 50 A	63 - 80 A	100 - 125 A	160 A
I_{mag}	600 A	1000 A	1500 A	1600 A

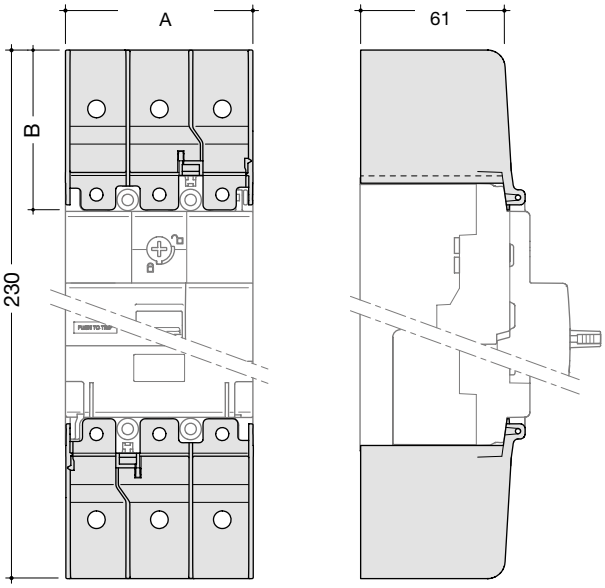
Dimensions

MCCB x160



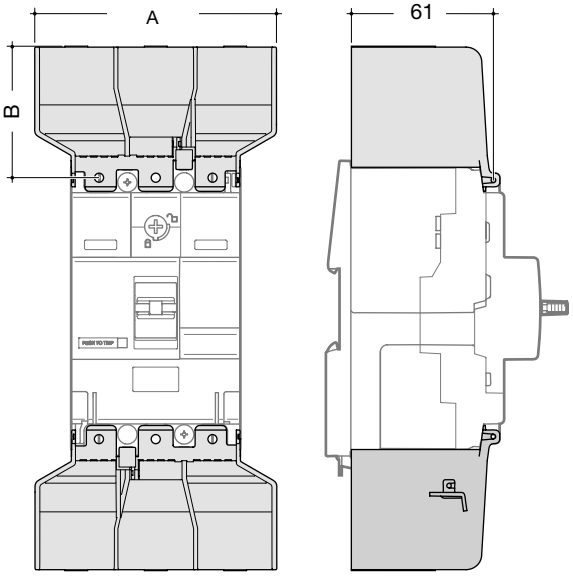
	A (mm)
1P	24.8
3P	74.5
4P	99.5

Terminal covers for extended straight connections



	A (mm)
1P	24.4
3P	74.5
4P	99.5

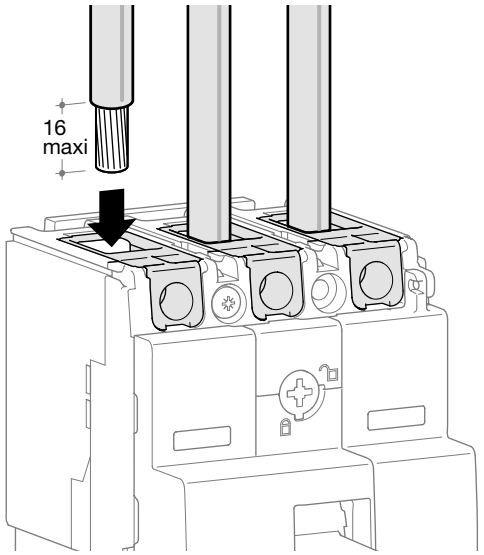
Terminal cover for extended spreader connections



	A (mm)
3P	106.5
4P	141.5

Data is subject to errors and technical modifications.

Connection with terminals



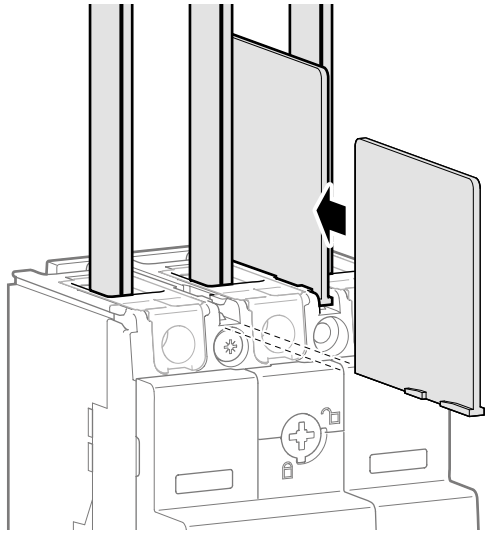
Terminals for copper conductors (standard)

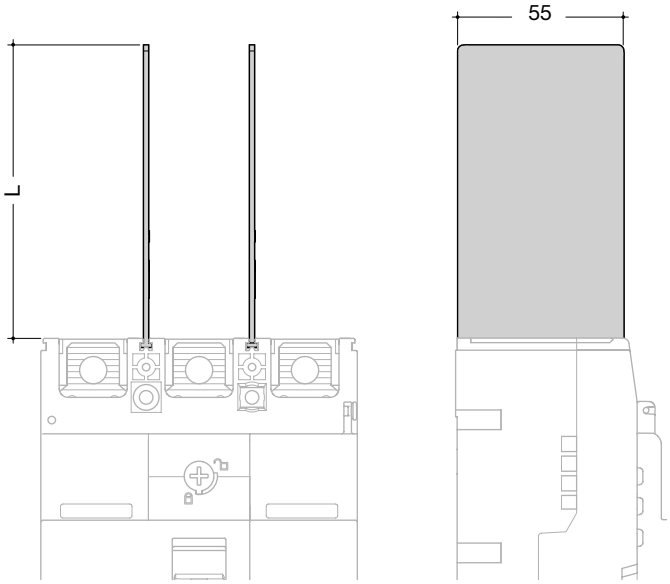
	min. 6 mm²	max. 70 mm²
	min. 6 mm²	max. 95 mm²
4	6 Nm	

Terminals for aluminium / copper conductors (accessory)
HYA005H, HYA006H

	min. 35 mm²	max. 70 mm²
5	10 Nm	

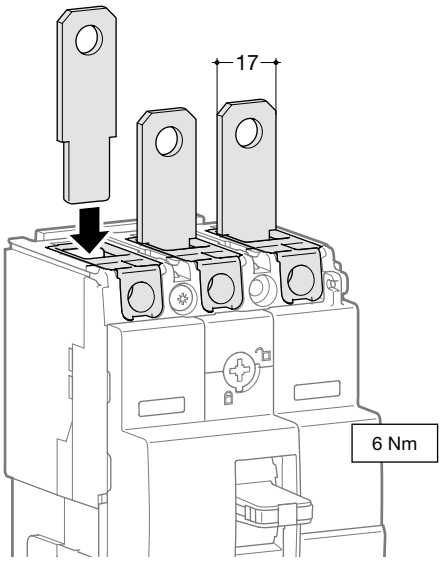
Interphase barriers

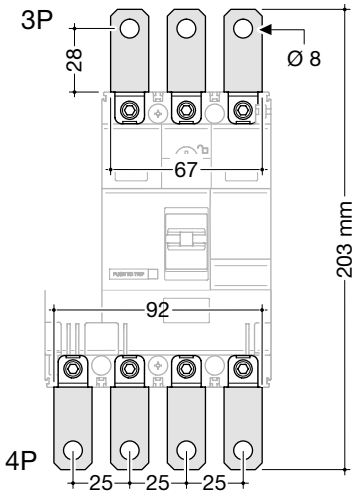




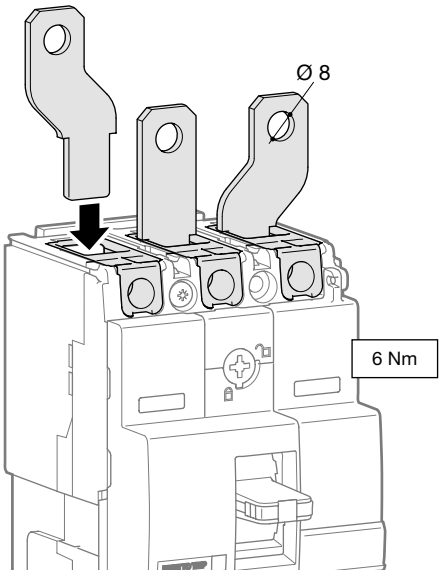
	L (mm)
HYA019H	50
HYB019H	97

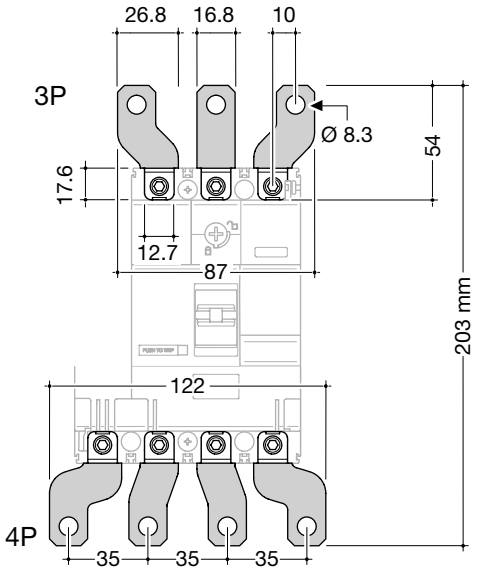
Extended straight connections





Extended spreader connections





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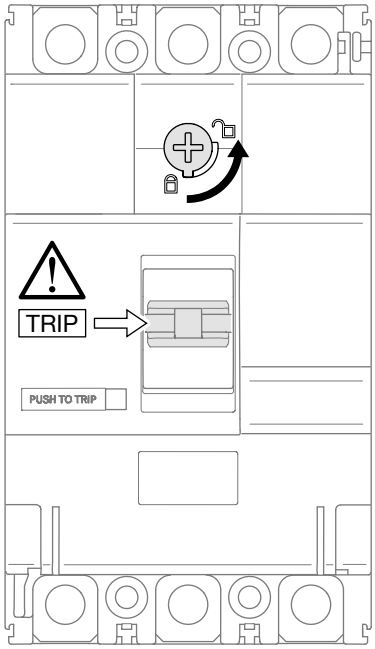
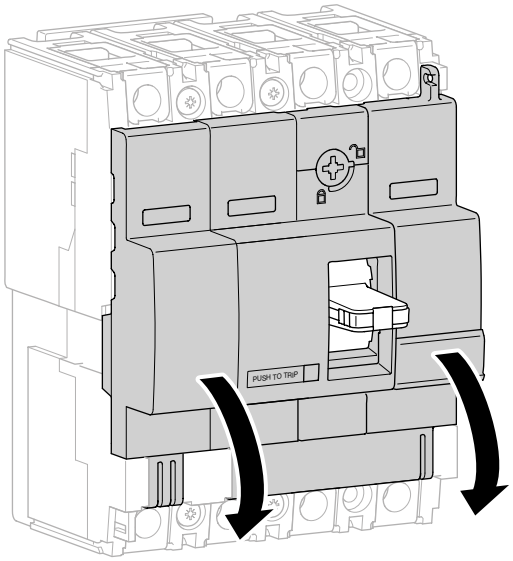
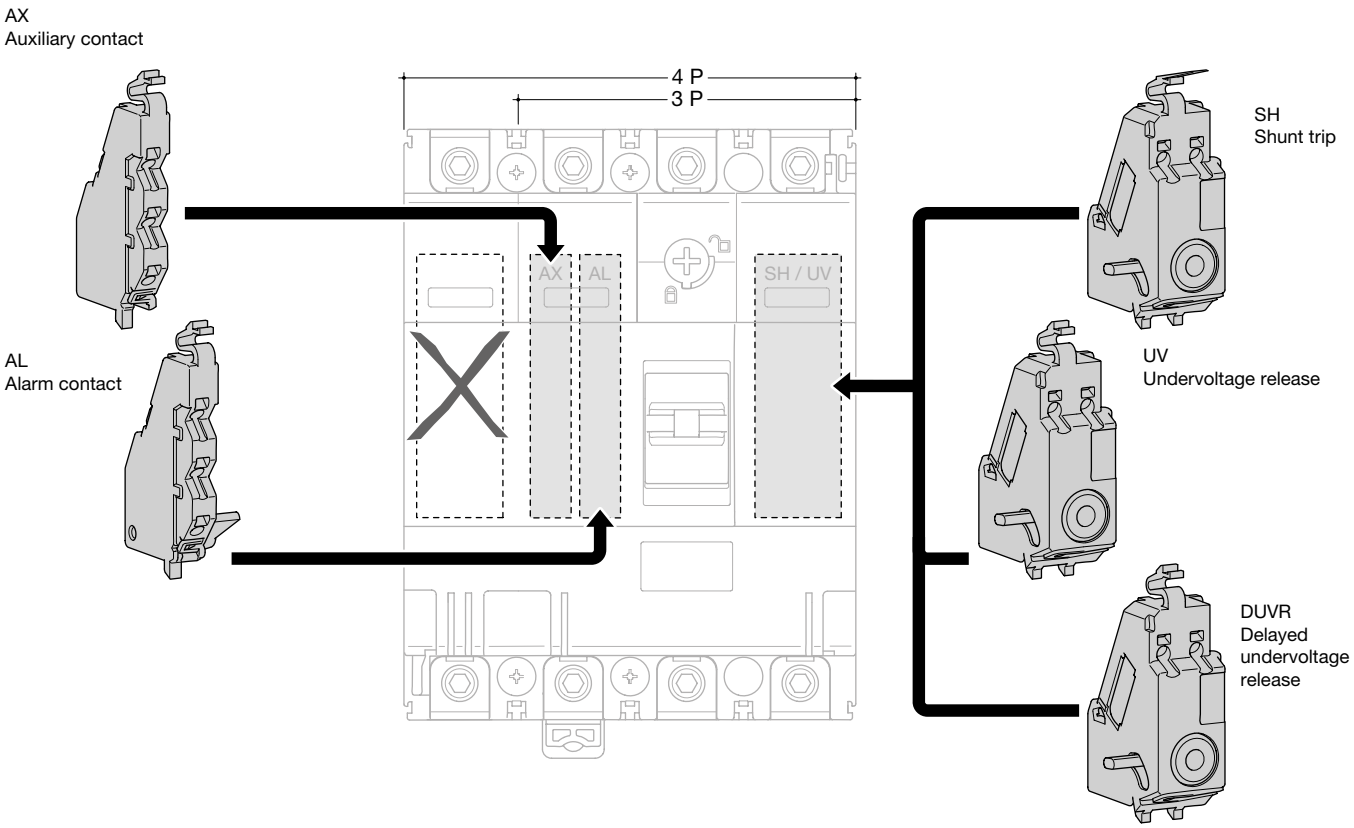
Auxiliaries

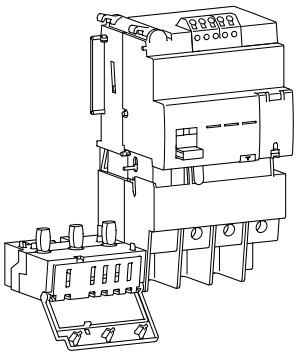
Auxiliaries for MCCBs and moulded case switches





Mounting combination for auxiliaries and releases





When associated with MCCB, the add-on block provides an earth fault protection and protects against electrical shocks by direct or indirect contact.

The add-on blocks are protected against nuisance tripping caused by transient voltages. It's able to detect sinusoidal alternating currents and residual pulsating direct currents (A type). It also avoids miss tripping (HI type - High Immunity).

Characteristics

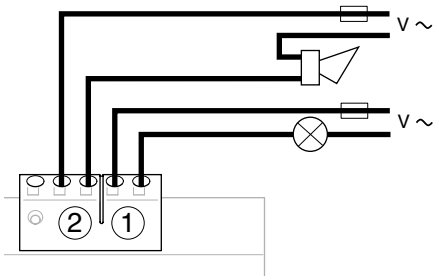
Reset button :
Signals add-on block tripping and must be reset before switching on the installation.

Test button for RCD function :
Checks the electrical operating of the MCCB / Add-on block association.

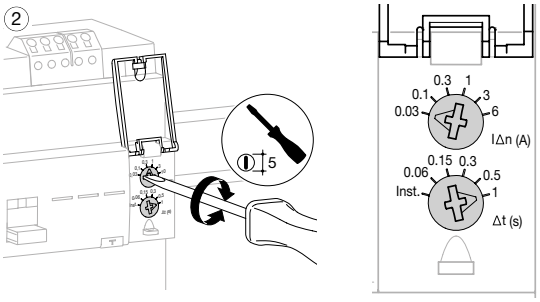
Mechanical test button :
Checks the mechanical operating of the MCCB / Add-on block association.

LED signaling residual current level in the installation:
25% (orange) and 50% (red) $I_{\Delta n}$; green light to signal correct operating.

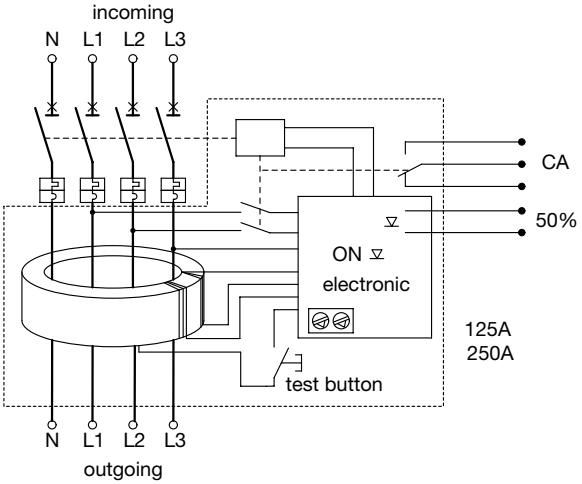
Remote tripping and advanced warning (50% $I_{\Delta n}$) signaling thanks to these contacts:



Earth leakage current ($I_{\Delta n}$) and delay ($_{\Delta t}$) setting



Add-on block operating



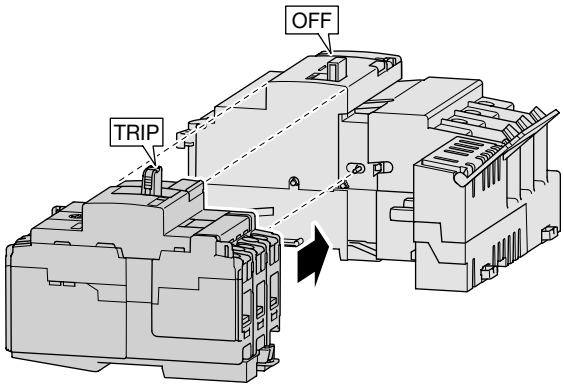
S (Δt)

A ($I_{\Delta n}$)						
	0.03	0.1	0.3	1	3	6
Inst.	OK	OK	OK	OK	OK	OK
0.06	no	OK	OK	OK	OK	OK
0.15	no	OK	OK	OK	OK	OK
0.3	no	OK	OK	OK	OK	OK
0.5	no	OK	OK	OK	OK	OK
1	no	OK	OK	OK	OK	OK

Data is subject to errors and technical modifications.

Add-on block mounting

①



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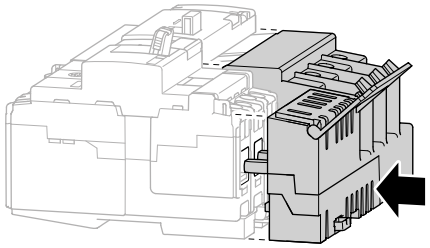

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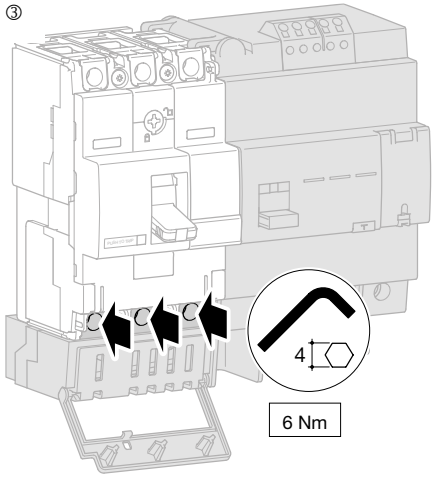
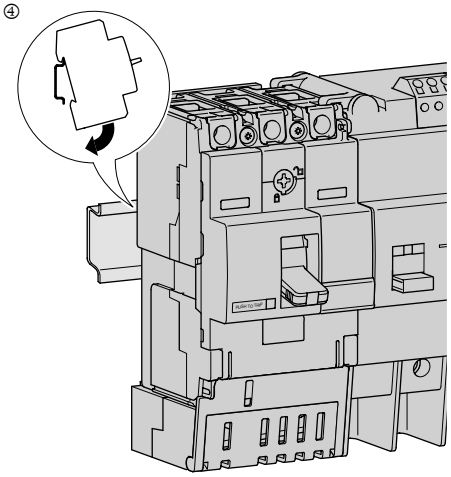


④

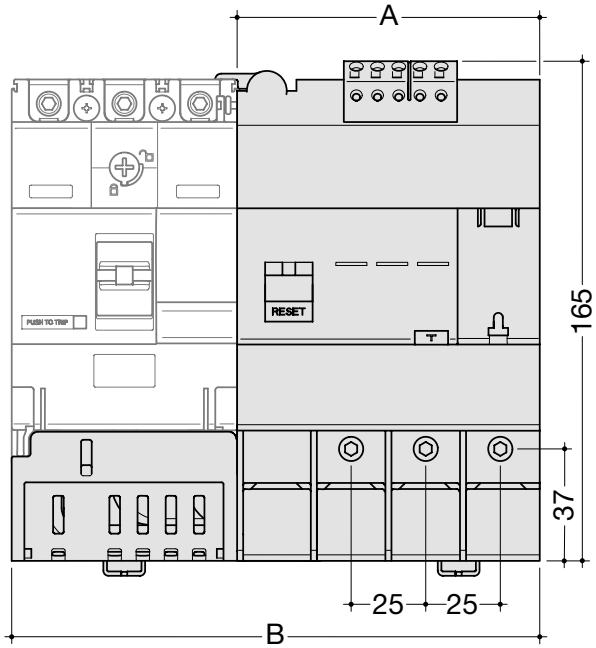


Exclusive drawer assembly system allows quick mounting and makes MCCB and add-on block association a complete monoblock unit.

Reinforced insulation connection (class II)

System avoids the omission of terminal tightening

Dimensions

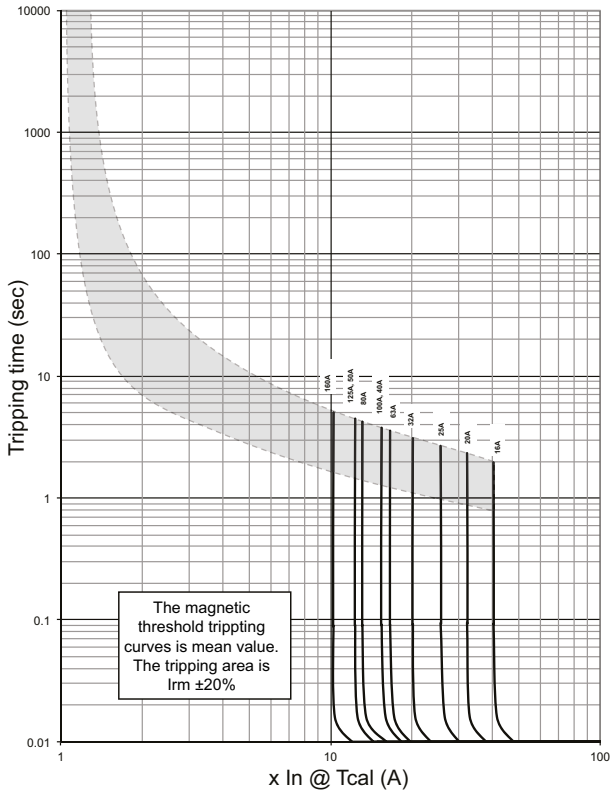


	3P	4P
A (mm)	100	100
B (mm)	174.5	199.5

Commercial Distribution

Tripping curve

MCCB x160



MCCB Disconnection Data

Earth Fault Loop Impedance Data
Disconnection time 0.2s, 0.4s, 1s

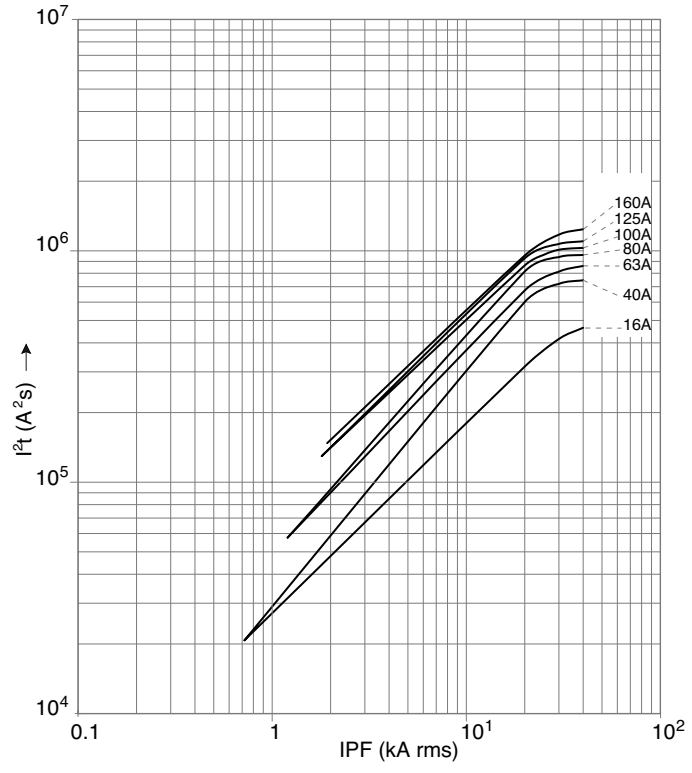
Device rating (A)	Instantaneous trip (xI_n)	Instantaneous trip (A)	add 20% tolerance (I_a)	Zs = (230 x 0.95) / I_a
16	40.3	644.8	773.8	0.28
20	32.2	644.0	773	0.28
25	25.7	643	771	0.28
32	20.13	644.2	773.0	0.28
40	15.0	600.0	720.0	0.30
50	12.0	600.0	720.0	0.30
63	16.6	1045.8	1255.0	0.17
80	13.1	1048.0	1258	0.17
100	15.4	1540.0	1848.0	0.12
126	12.3	1538	1845.0	0.12
160	10.22	1635.2	1962.2	0.11

Disconnection time 5s

Device rating (A)	trip (xI_n)	I_a (A)	Zs = (230 x 0.95) / I_a
16	10	160	1.37
20	10	200	1.09
25	10	250	0.87
32	10	320	0.68
40	10	400	0.55
50	10	500	0.44
63	10	630	0.35
80	10	800	0.27
100	10	1000	0.22
125	10	1250	0.17
160	10	1600	0.14

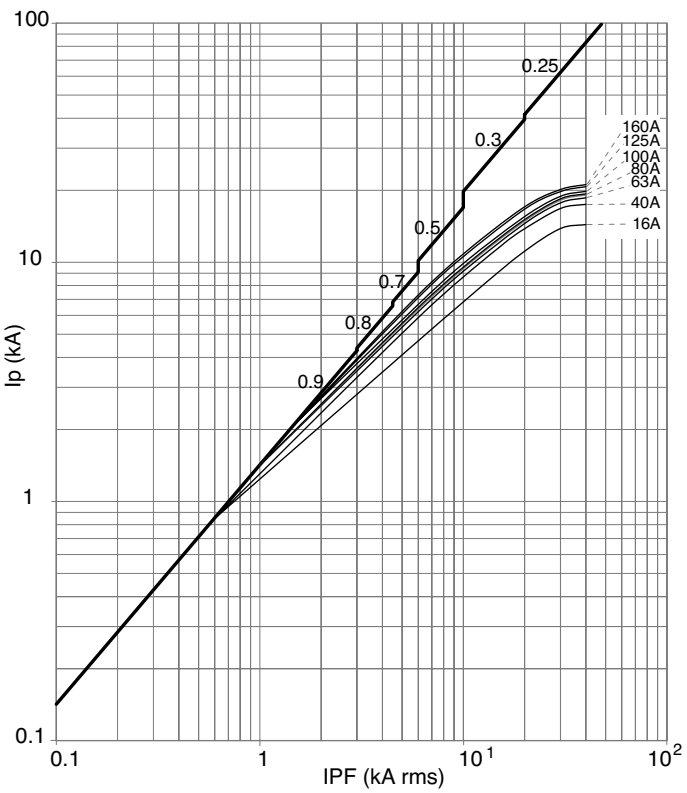
Thermal constraint curve at 400V (Let-through energy)

MCCB x160



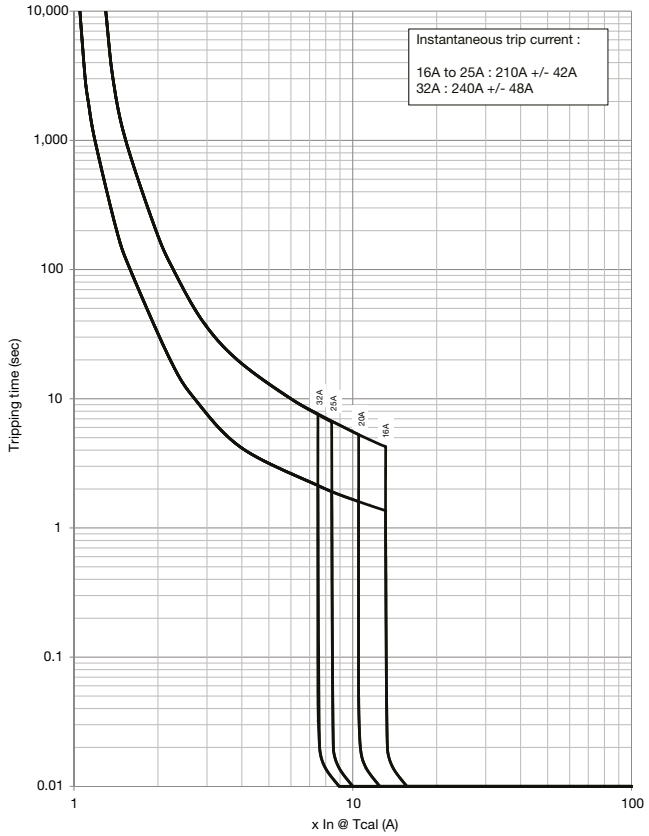
Current limiting curve at 400V (Let-through peak current)

MCCB x160



Data is subject to errors and technical modifications.

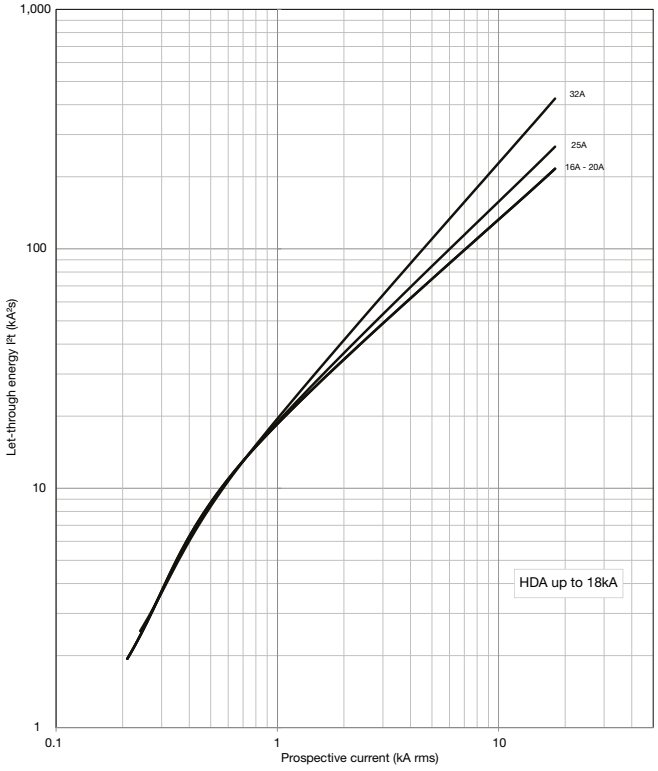
Tripping Curve SP MCCB x160 16A - 32A



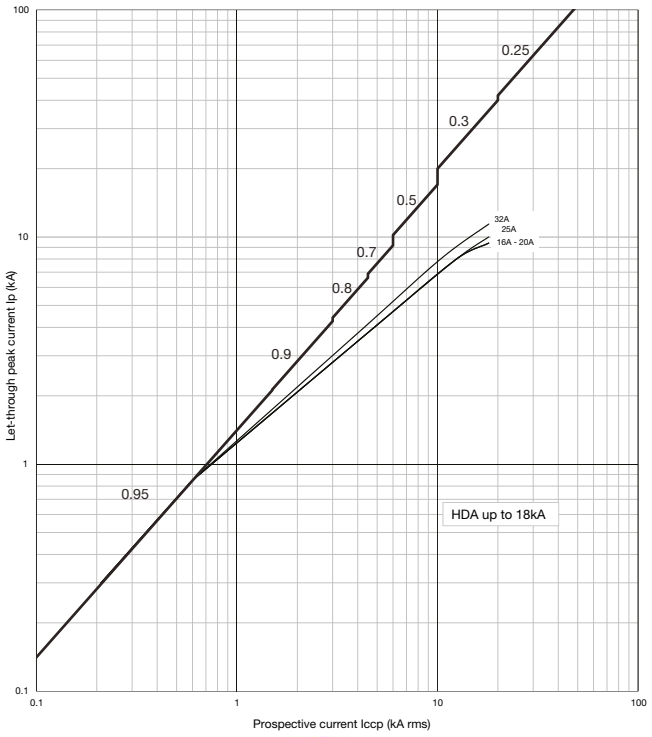
Earth Fault Loop Impedance Data	To BS 7671:2018			
Disconnection time 0.2s, 0.4s, 1s				
Device rating (A)	Instantaneous trip (xIn)	Instantaneous trip (A)	add 20% tolerance (Ia)	Zs = 230 x Cmin / Ia
16	13.0	210.0	252.0	0.87
20	10.5	210.0	252.0	0.87
25	8.5	210.0	252.0	0.87
32	7.5	240.0	288.0	0.76

Earth Fault Loop Impedance Data	To BS 7671:2018			
Disconnection time 5s				
Device rating (A)	Instantaneous trip (xIn)	Instantaneous trip (A)	If Magnetic trip add 20% tolerance (Ia)	Zs = 230 x Cmin / Ia
16	11.0	176.0	176.0	1.24
20	10.5	210.0	210.0	0.99
25	8.5	212.5	255.0	0.86
32	7.5	240.0	288.0	0.76

Thermal constraint curve at 230V (Let through energy)



Current limiting curve at 230V (Let through peak current)

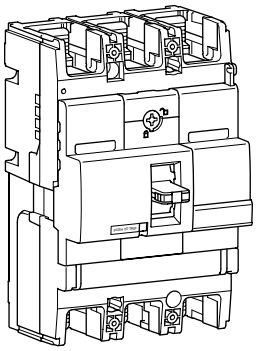


The earth fault loop impedance requirements for larger devices can be calculated by the formula given in BS7671:2008

$$Zs \leq \frac{230 \times Cmin}{I_a}$$

Where $I_a = I_n$ of MCCB x Mag setting x 1.2

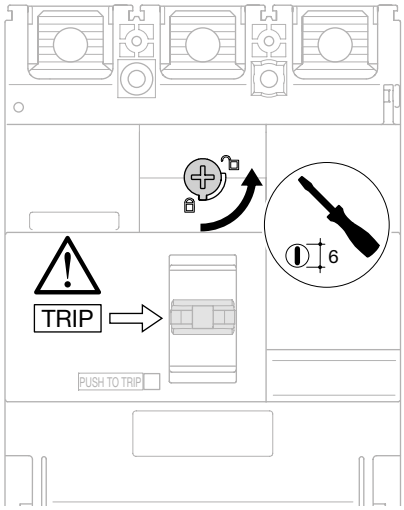
MCCBs



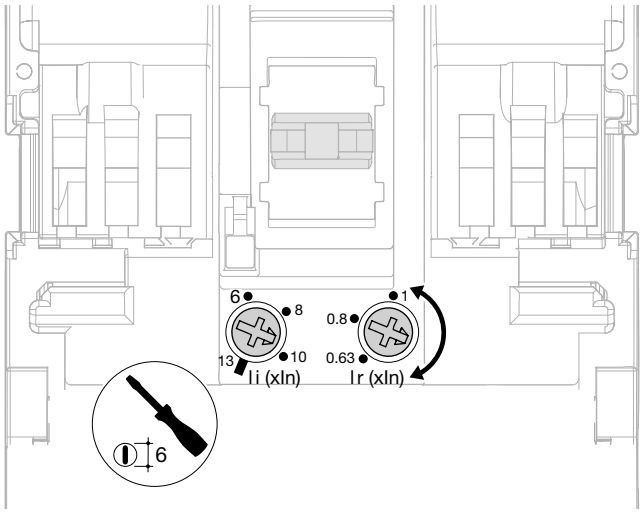
		220/240V AC IEC 60 947-2	380/415V AC IEC 60 947-2
HHB	Icu	35 kA	25 kA
	Ics	25 kA	20 kA
HNB	Icu	85 kA	40 kA
	Ics	40 kA	20 kA
HCB	Icm	-	9 kA
	Icw	-	3 kA - 1s

Magnetic and thermal settings

1



2

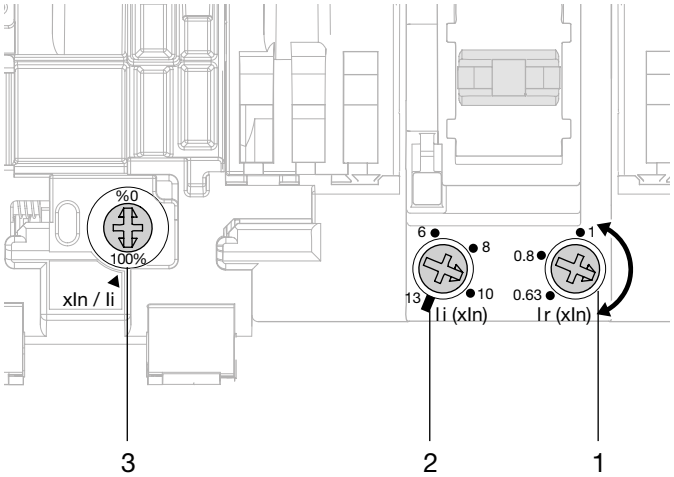


Thermal adjustment from 0.63, 0.8, 1 x I_n

Magnetic adjustment from 6 to 13 x I_n (100 - 200A)

from 5 to 11 x I_n (250A)

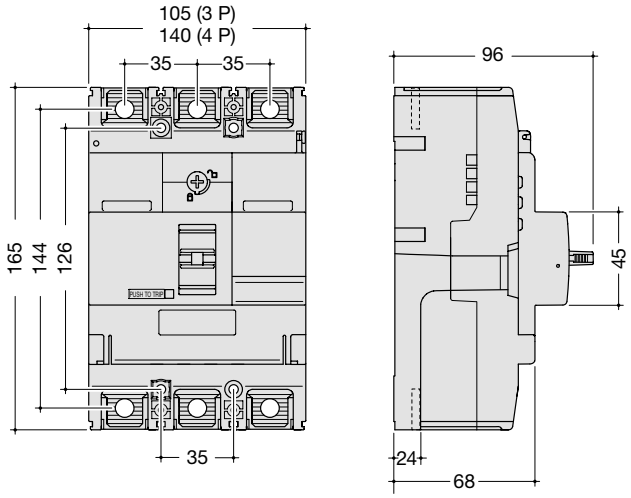
	100 - 200A	250A
I_r (x I_n) 1	0.63 - 0.8 - 1 x I_n	
I_i (x I_n) 2	6 - 8 - 10 - 13 x I_n	5 - 7 - 9 - 11 x I_n
x I_n/I_i 3	0 - 100%	
	0 - 60%	



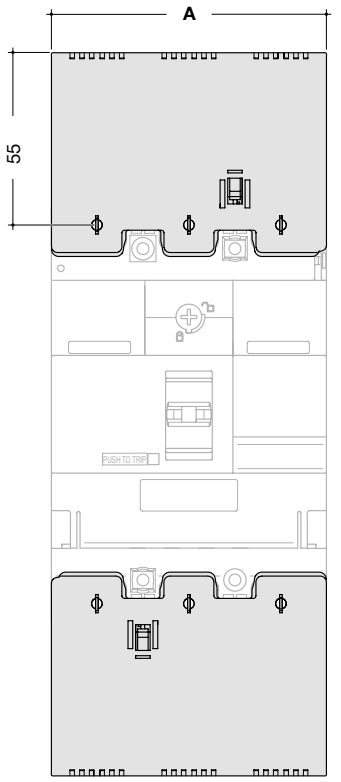
Data is subject to errors and technical modifications.

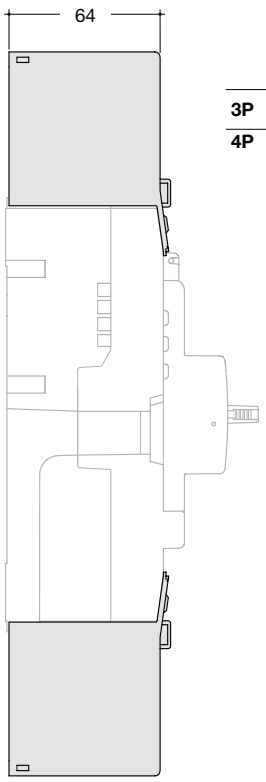
Dimensions

MCCB x250



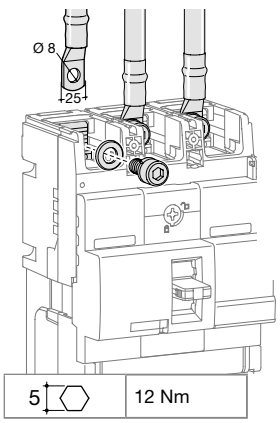
Terminal covers for extended straight connections

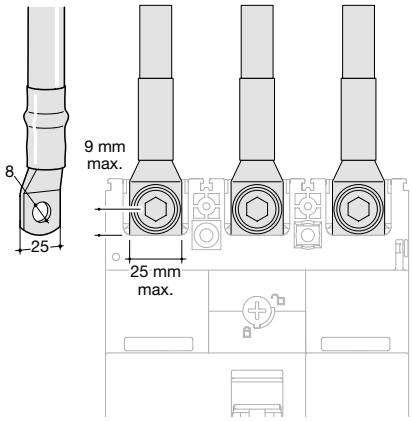




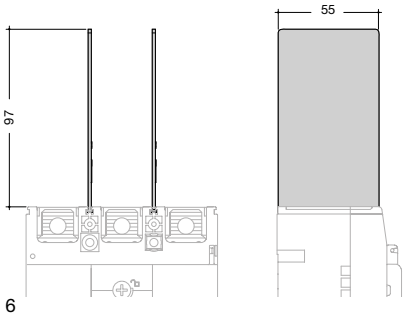
	A (mm)
3P	105
4P	140

Connection with end lugs





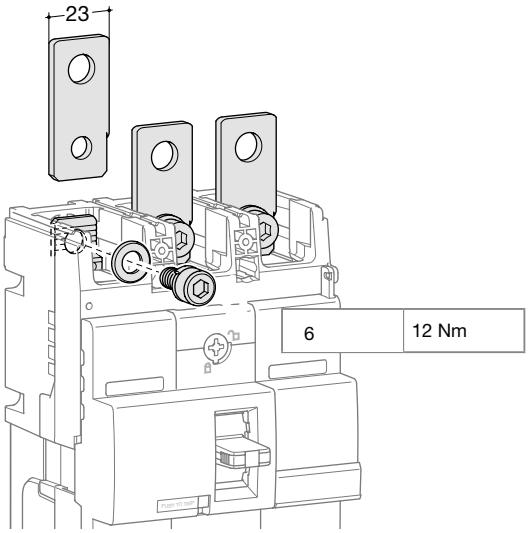
Interphase barriers

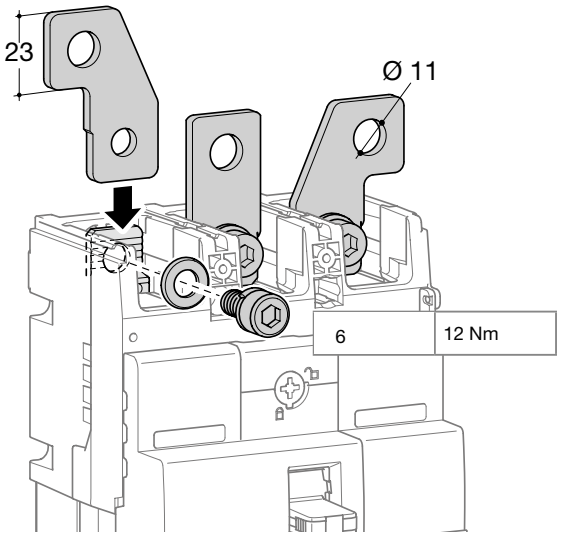


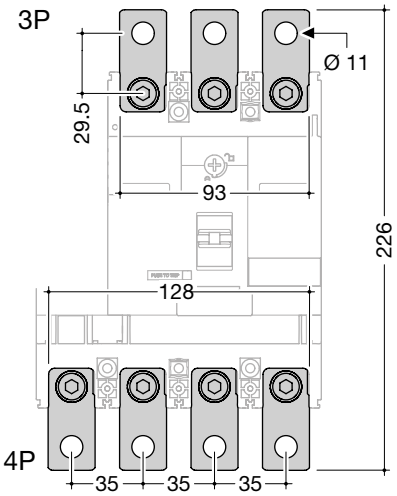
Commercial Distribution

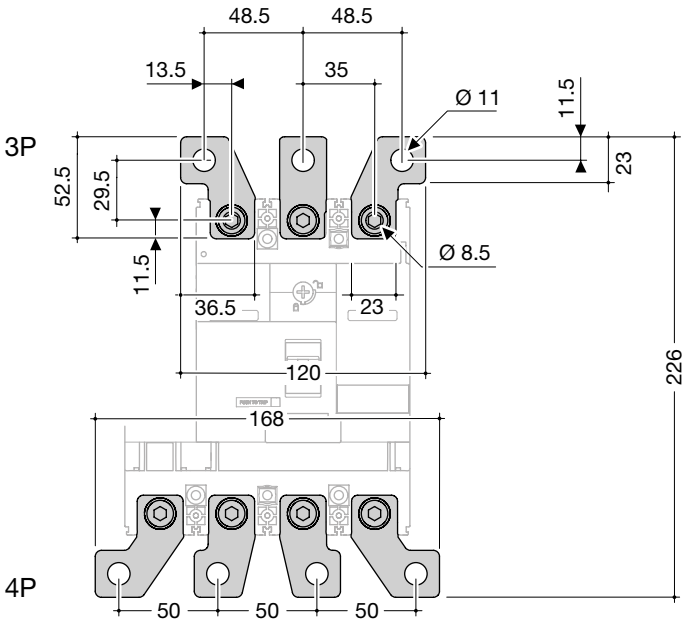
Connection

Extended straight and spreader connections



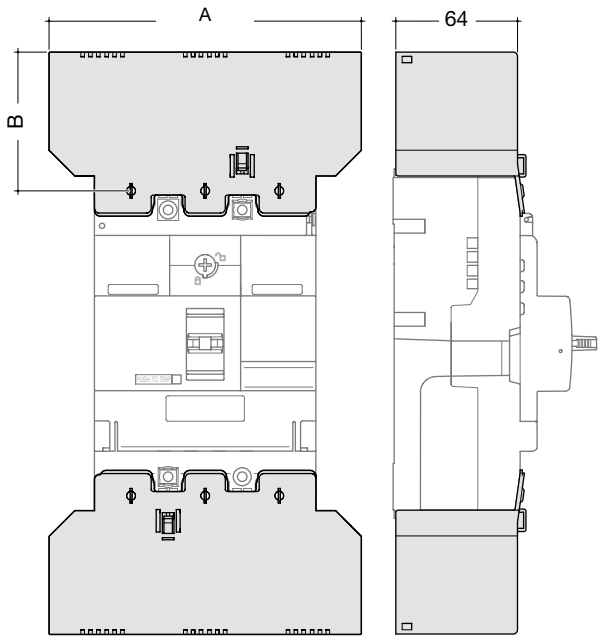






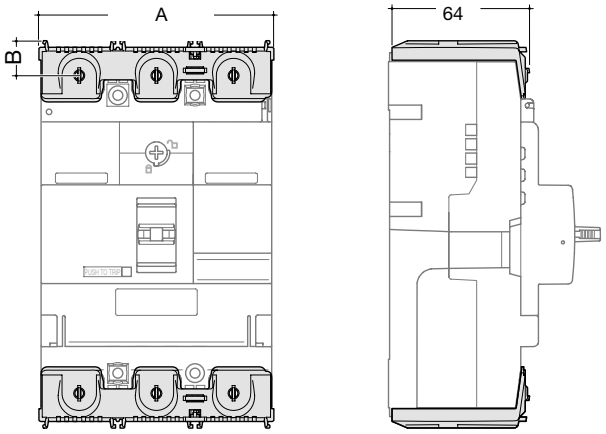
Accessories

Terminal cover for extended spreader connections



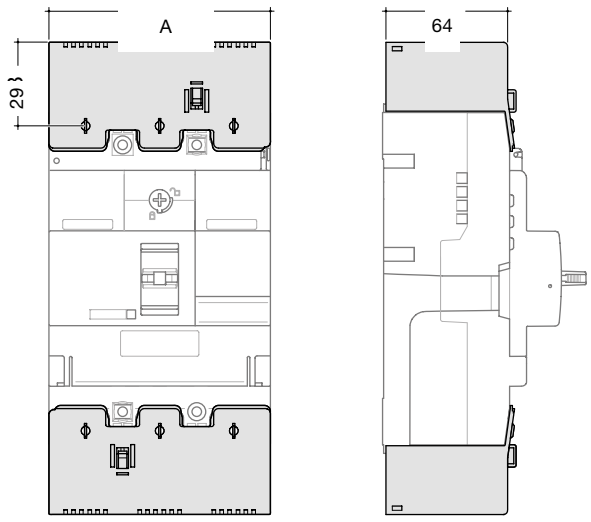
	A (mm)	**B** (mm)	**C** (mm)
3P	147.5	54.5	64
4P	196	54.5	64

Terminal cover for rear connections



	A (mm)
3P	105
4P	140

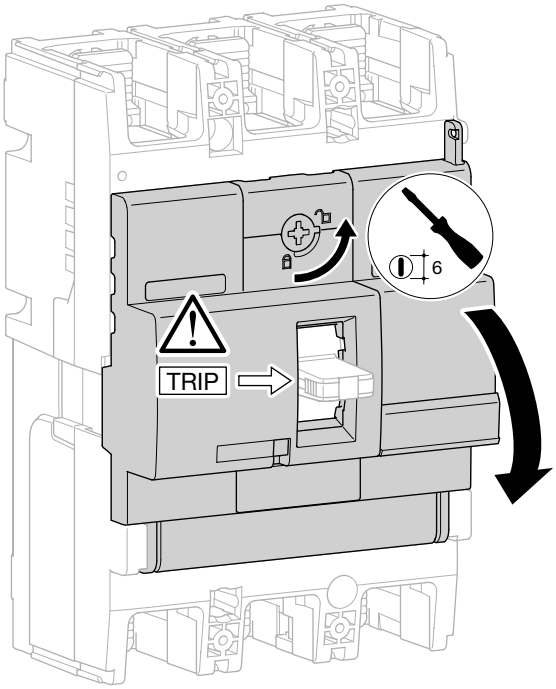
Terminal covers for collar terminals



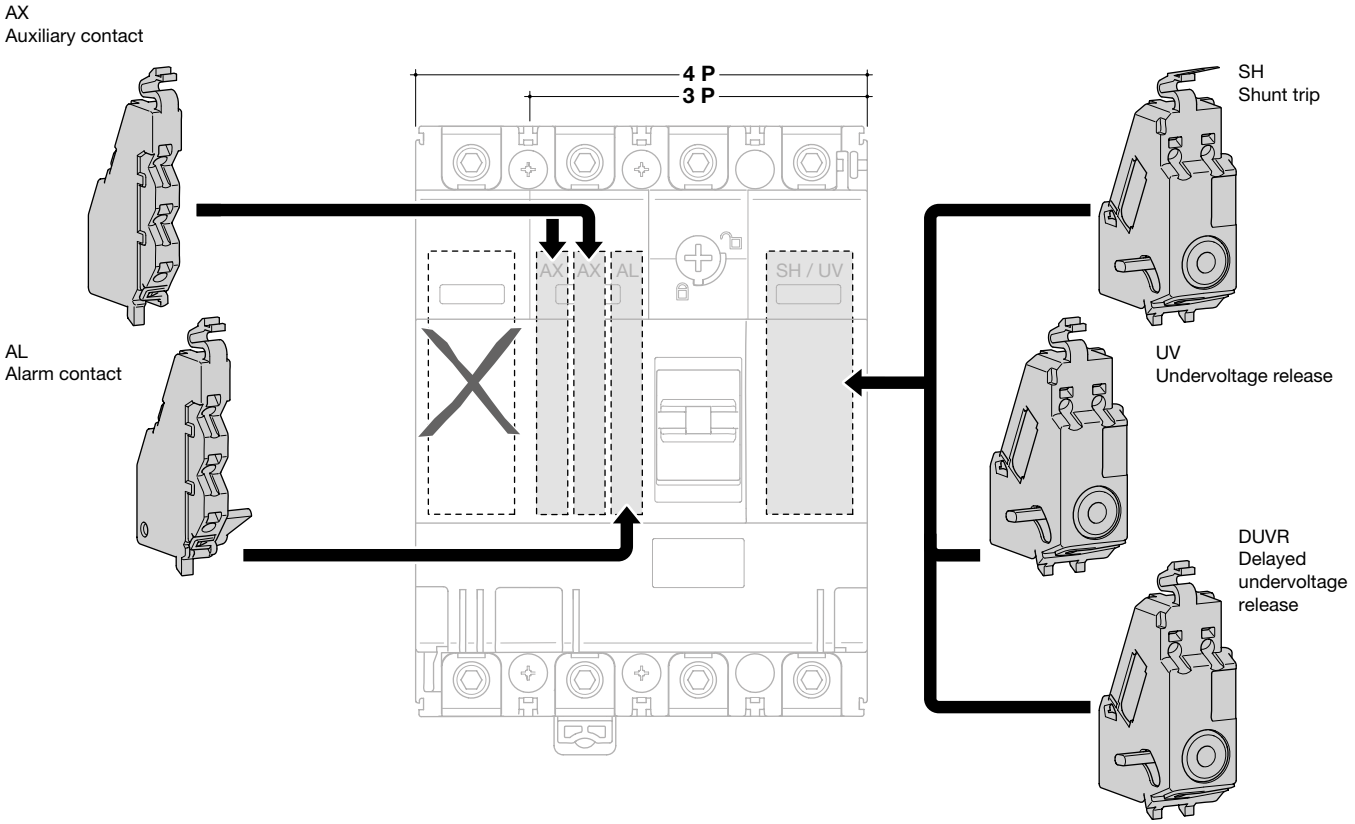
	A (mm)
3P	105
4P	140

Auxiliaries

Auxiliaries for MCCBs and moulded case switches



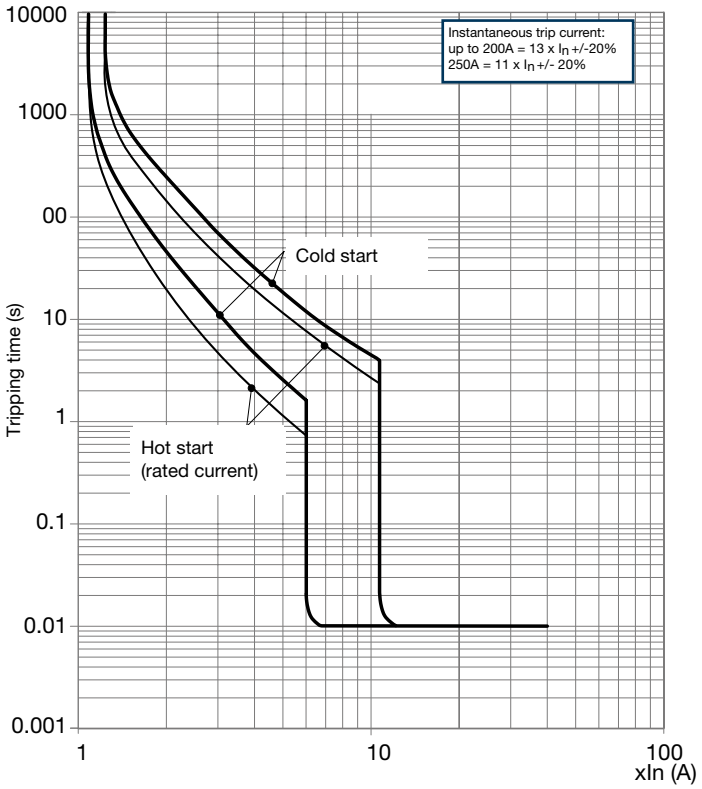
Mounting combination for auxiliaries and releases



Data is subject to errors and technical modifications.

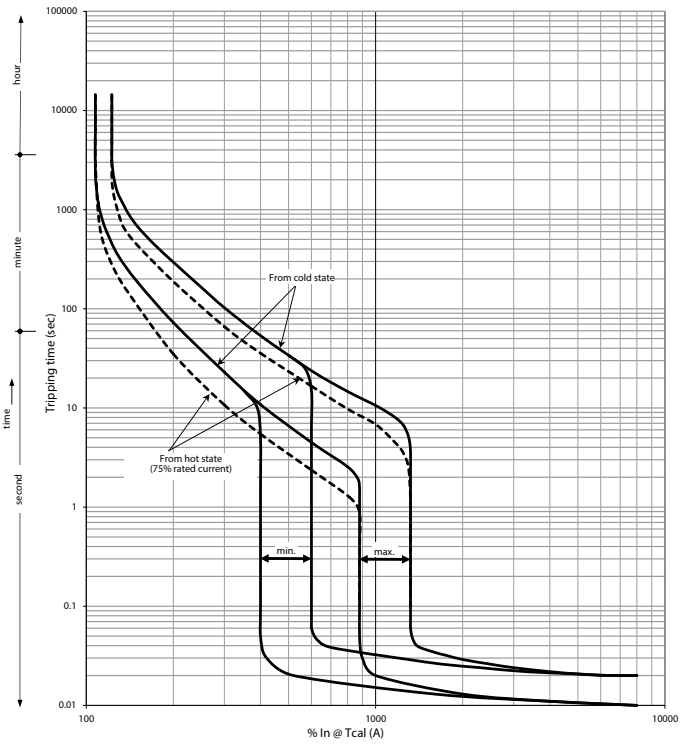
Tripping curve

MCCB x250



Tripping curve

MCCB h250 TM



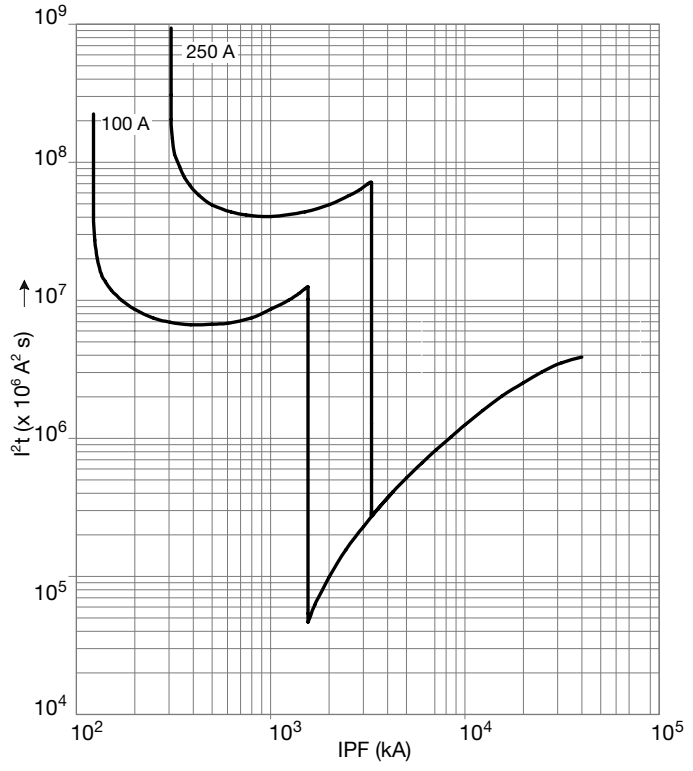
Earth fault loop impedance (Zs) can be calculated from the formula

$Zs \leq \frac{230 \times 0.95}{I_a}$

Where $I_a = I_n$ of MCCB x mag setting x 1.2

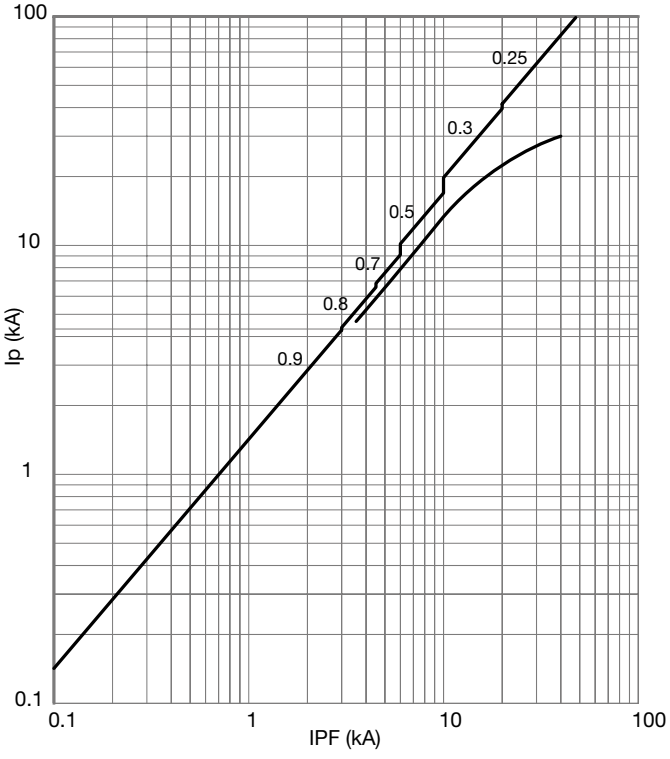
Thermal constraint curve at 400V (Let-through energy)

MCCB x250



Current limiting curve at 400V (Let-through peak current)

MCCB x250



Commercial Distribution

Upstream

Max Values (kA)		**Fuse BS 88**										
	I_n (A)	10	16	20	25	32	40	45	50	63	80	100
MTN B Curve	6A	80	80	80	80	80	80	80	80	80	6	6
	10A	80	80	80	80	80	80	80	80	80	6	6
	16A	-	80	80	80	80	80	80	80	80	42	6
	20A	-	-	80	80	80	80	80	80	80	42	6
	25A	-	-	-	80	80	80	80	80	80	42	6
	32A	-	-	-	-	80	80	80	80	80	42	6
	40A	-	-	-	-	-	80	80	80	80	42	6
	50A	-	-	-	-	-	-	-	80	80	42	6
	63A	-	-	-	-	-	-	-	-	80	42	23
NBN B Curve	6A	80	80	80	80	80	80	80	80	80	80	15
	10A	80	80	80	80	80	80	80	80	80	80	15
	16A	-	80	80	80	80	80	80	80	80	80	80
	20A	-	-	80	80	80	80	80	80	80	80	80
	25A	-	-	-	80	80	80	80	80	80	80	80
	32A	-	-	-	-	80	80	80	80	80	80	80
	40A	-	-	-	-	-	80	80	80	80	80	80
	50A	-	-	-	-	-	-	-	80	80	80	80
	63A	-	-	-	-	-	-	-	-	80	80	80
NCN C Curve	0,5A	80	15	15	15	15	15	15	15	15	15	15
	1A	80	80	80	80	80	80	80	15	15	15	15
	2A	80	80	80	80	80	80	80	15	15	15	15
	3A	80	80	80	80	80	80	80	80	80	15	15
	4A	80	80	80	80	80	80	80	80	80	15	15
	6A	80	80	80	80	80	80	80	80	80	80	15
	10A	80	80	80	80	80	80	80	80	80	80	80
	16A	-	80	80	80	80	80	80	80	80	80	80
	20A	-	-	80	80	80	80	80	80	80	80	80
	25A	-	-	-	80	80	80	80	80	80	80	80
	32A	-	-	-	-	80	80	80	80	80	80	80
	40A	-	-	-	-	-	80	80	80	80	80	80
	50A	-	-	-	-	-	-	-	80	80	80	80
	63A	-	-	-	-	-	-	-	-	80	80	80
NDN D Curve	0,5A	80	15	15	15	15	15	15	15	15	15	15
	1A	80	80	80	80	80	80	80	15	15	15	15
	2A	80	80	80	80	80	80	80	15	15	15	15
	3A	80	80	80	80	80	80	80	80	80	15	15
	4A	80	80	80	80	80	80	80	80	80	15	15
	6A	80	80	80	80	80	80	80	80	80	80	15
	10A	80	80	80	80	80	80	80	80	80	80	80
	16A	-	80	80	80	80	80	80	80	80	80	80
	20A	-	-	80	80	80	80	80	80	80	80	80
	25A	-	-	-	80	80	80	80	80	80	80	80
	32A	-	-	-	-	80	80	80	80	80	80	80
	40A	-	-	-	-	-	80	80	80	80	80	80
	50A	-	-	-	-	-	-	-	80	80	80	80
	63A	-	-	-	-	-	-	-	-	80	80	80
HMC / HMF C Curve	80A	-	-	-	-	-	-	-	-	-	80	80
	100A	-	-	-	-	-	-	-	-	-	-	80
	125A	-	-	-	-	-	-	-	-	-	-	-
HMD D Curve	80A	-	-	-	-	-	-	-	-	-	80	80
	100A	-	-	-	-	-	-	-	-	-	-	80
	125A	-	-	-	-	-	-	-	-	-	-	-

Downstream

Data is subject to errors and technical modifications.

Max Values (kA)

Upstream

Fuse BS 88

Downstream

	In	10A	16A	20A	25A	32A	40A	45A	50A	63A	80A	100A
ADA3G** B Curve, 6kA, Type A	6A	80	80	80	80	80	80	80	80	80	6	6
	10A	80	80	80	80	80	80	80	80	80	42	6
	16A	-	80	80	80	80	80	80	80	80	42	6
	20A	-	-	80	80	80	80	80	80	80	42	6
	32A	-	-	-	-	80	80	80	80	80	42	6
	40A	-	-	-	-	-	80	80	80	80	42	6
	45A	-	-	-	-	-	-	80	80	80	42	6
ADA1U** B Curve, 10kA, Type A	6A	80	80	80	80	80	80	80	80	80	80	10
	10A	80	80	80	80	80	80	80	80	80	80	10
	16A	-	80	80	80	80	80	80	80	80	80	10
	20A	-	-	80	80	80	80	80	80	80	80	10
	25A	-	-	-	80	80	80	80	80	80	80	10
	32A	-	-	-	-	80	80	80	80	80	80	80
	40A	-	-	-	-	-	80	80	80	80	80	80
	45A	-	-	-	-	-	-	80	80	80	80	80
ADA1U** C Curve, 6kA, Type A	6A	80	80	80	80	80	80	80	80	80	80	10
	10A	80	80	80	80	80	80	80	80	80	80	10
	16A	-	-	80	80	80	80	80	80	80	80	10
	20A	-	-	-	80	80	80	80	80	80	80	10
	25A	-	-	-	-	80	80	80	80	80	80	80
	32A	-	-	-	-	-	80	80	80	80	80	80
	40A	-	-	-	-	-	-	80	80	80	80	80

Upstream

Max Values (kA)		NBN B Curve										NCN C Curve													
	I_n (A)	6	10	13	16	20	25	32	40	50	63	0.5	1	2	3	4	6	10	13	16	20	25	32	40	50	63
Downstream ADA1**U B Curve, 10kA Type A	6A	15	15	15	15	15	15	15	15	15	15	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15
	10A	-	15	15	15	15	15	15	15	15	15	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15
	16A	-	-	-	15	15	15	15	15	15	15	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15
	20A	-	-	-	-	15	15	15	15	15	15	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15
	25A	-	-	-	-	-	15	15	15	15	15	-	-	-	-	-	-	-	-	-	-	15	15	15	15	15
	32A	-	-	-	-	-	-	15	15	15	15	-	-	-	-	-	-	-	-	-	-	-	15	15	15	15
	40A	-	-	-	-	-	-	-	15	15	15	-	-	-	-	-	-	-	-	-	-	-	-	15	15	15
	45A	-	-	-	-	-	-	-	-	15	15	-	-	-	-	-	-	-	-	-	-	-	-	-	15	15
Downstream ADA1**U C Curve, 10kA, Type A	6A	15	15	15	15	15	15	15	15	15	15	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15
	10A	-	15	15	15	15	15	15	15	15	15	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15
	16A	-	-	-	15	15	15	15	15	15	15	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15
	20A	-	-	-	-	15	15	15	15	15	15	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15
	25A	-	-	-	-	-	15	15	15	15	15	-	-	-	-	-	-	-	-	-	-	15	15	15	15	15
	32A	-	-	-	-	-	-	15	15	15	15	-	-	-	-	-	-	-	-	-	-	-	15	15	15	15
	40A	-	-	-	-	-	-	-	15	15	15	-	-	-	-	-	-	-	-	-	-	-	-	15	15	15
	45A	-	-	-	-	-	-	-	-	15	15	-	-	-	-	-	-	-	-	-	-	-	-	-	15	15

Upstream

Max Values (kA)		NDN D Curve															HMB B Curve			HMC / HMF C Curve			HMD D Curve		
	I_n (A)	0.5	1	2	3	4	6	10	13	16	20	25	32	40	50	63	80	100	125	80	100	125	80	100	125
Downstream ADA1**U B Curve, 10kA Type A	6A	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	10A	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	16A	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	20A	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	25A	-	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	32A	-	-	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15
	40A	-	-	-	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15
	45A	-	-	-	-	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15
Downstream ADA1**U C Curve, 10kA, Type A	6A	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	10A	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	16A	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	20A	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	25A	-	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	32A	-	-	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15
	40A	-	-	-	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15
	45A	-	-	-	-	-	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15

Upstream

Max Values (kA)		NKN / NBN / NCN / NDN	HMC / HMF C Curve	HMD D Curve
	Icn	15kA	15kA	15kA
Downstream **ARC9*** ** B Curve	6kA	15	12	12
ARC9* ** C Curve	6kA	15	12	12
ARC5* ** B Curve	10kA	15	15	15
ARC5* ** C Curve	10kA	15	15	15

Data is subject to errors and technical modifications.

Upstream

Downstream: Max Values (kA)	x160			x250		H250 TM		H250 TM+		H250 LSI	
	18kA	25kA	40kA	25kA	40kA	25kA	50kA	50kA	70kA	50kA	70kA
	TM			TM		TM		TM+		LSI	
NBN /NCN / NDN	18	20	40	25	40	25	50	23	50	23	50
HMC C Curve	18	25	40	25	40	25	50	23	50	23	50
HMD D Curve	18	25	40	25	40	25	50	23	50	23	50

Upstream

Downstream	Max Values (kA)	HDA x160 18 / 25kA											x250 25 / 40kA				
	In	16	20	25	32	40	50	63	80	100	125	160	100A	125A	160A	200A	250A
RCBO - ADA1U** B Curve, 10kA Type A	6A	18	18	18	18	18	18	18	18	18	18	18	13	13	13	13	13
	10A	18	18	18	18	18	18	18	18	18	18	18	13	13	13	13	13
	16A	18	18	18	18	18	18	18	18	18	18	18	13	13	13	13	13
	20A	-	18	18	18	18	18	18	18	18	18	18	13	13	13	13	13
	25A	-	-	18	18	18	18	18	18	18	18	18	13	13	13	13	13
	32A	-	-	-	18	18	18	18	18	18	18	18	13	13	13	13	13
	40A	-	-	-	-	18	18	18	18	18	18	18	13	13	13	13	13
	45A	-	-	-	-	-	18	18	18	18	18	18	13	13	13	13	13
	6A	18	18	18	18	18	18	18	18	18	18	18	13	13	13	13	13
RCBO - ADA1U** C Curve, 10kA, Type A	10A	18	18	18	18	18	18	18	18	18	18	18	13	13	13	13	13
	16A	18	18	18	18	18	18	18	18	18	18	18	13	13	13	13	13
	20A	-	18	18	18	18	18	18	18	18	18	18	13	13	13	13	13
	25A	-	-	18	18	18	18	18	18	18	18	18	13	13	13	13	13
	32A	-	-	-	18	18	18	18	18	18	18	18	13	13	13	13	13
	40A	-	-	-	-	18	18	18	18	18	18	18	13	13	13	13	13
	45A	-	-	-	-	-	18	18	18	18	18	18	13	13	13	13	13

Upstream

Downstream: Max Values (kA)			HDA / HHA x160 TM		HHB / HNB x250 TM		HHG / HNG / HEG h250 TM			HNC / HEC h250 LSI		HND / HED h630 LSI		HNE / HEE h1000 LSI		HNF / HEF h1600 LSI	
			18kA	25kA	25kA	40kA	25kA	50kA	65kA	50kA	70kA	50kA	70kA	50kA	70kA	50kA	70kA
HDA / HHA x160 TM		18kA	-	25kA	25kA	40kA	25kA	40kA	40kA	40kA	40kA	40kA	40kA	40kA	40kA	40kA	40kA
		25kA	-	-	-	40kA	-	50kA	65kA	50kA	70kA	50kA	50kA	50kA	50kA	50kA	50kA
HHB / HNB x250 TM		25kA	-	-	-	40kA	-	50kA	65kA	50kA	70kA	50kA	50kA	50kA	50kA	50kA	50kA
		40kA	-	-	-	-	-	50kA	65kA	50kA	70kA	50kA	70kA	50kA	70kA	50kA	50kA
HHG / HNG / HEG h250 TM		25kA	-	-	-	40kA	-	50kA	65kA	50kA	70kA	50kA	50kA	50kA	50kA	50kA	50kA
		50kA	-	-	-	-	-	-	65kA	-	70kA	-	70kA	-	70kA	-	70kA
		65kA	-	-	-	-	-	-	-	-	70kA	-	70kA	-	70kA	-	70kA
HNC / HEC h250 LSI		50kA	-	-	-	-	-	-	-	-	70kA	-	70kA	-	70kA	-	70kA
		70kA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HND / HED h630 LSI		50kA	-	-	-	-	-	-	-	-	-	-	70kA	-	70kA	-	70kA
		70kA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HNE / HEE h1000 LSI		50kA	-	-	-	-	-	-	-	-	-	-	-	-	70kA	-	70kA
		70kA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HNF / HEF h1600 LSI		50kA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70kA
		70kA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Upstream

Max Values (kA)		Fuse BS88										
	I_n	10A	16A	20A	25A	32A	40A	45A	50A	63A	80A	100A
MTN B Curve	6A	0.20	0.20	0.30	0.40	0.60	1.30	1.80	2.50	4.00	T	T
	10A	-	0.20	0.30	0.40	0.50	1.10	1.50	2.10	3.30	T	T
	16A	-	-	0.30	0.30	0.40	0.90	1.20	1.70	2.70	5.30	T
	20A	-	-	-	0.30	0.40	0.80	1.10	1.50	2.30	4.70	T
	25A	-	-	-	-	0.40	0.70	0.90	1.30	2.10	4.10	T
	32A	-	-	-	-	-	-	0.50	0.70	1.10	2.20	T
	40A	-	-	-	-	-	-	-	0.90	1.50	2.90	T
	50A	-	-	-	-	-	-	-	-	1.30	2.50	T
	63A	-	-	-	-	-	-	-	-	-	2.10	5.30
NBN B curve	6A	-	-	-	-	-	0.80	1.10	1.60	2.80	6.40	T
	10A	-	-	-	-	-	0.70	1.00	1.40	2.40	5.10	T
	16A	-	-	-	-	-	0.60	0.80	1.10	1.90	4.10	13.60
	20A	-	-	-	-	-	0.50	0.70	1.00	1.70	3.60	11.00
	25A	-	-	-	-	-	-	0.60	0.90	1.50	3.10	9.00
	32A	-	-	-	-	-	-	0.60	0.80	1.30	2.70	7.40
	40A	-	-	-	-	-	-	-	0.70	1.10	2.30	6.10
	50A	-	-	-	-	-	-	-	0.60	1.00	1.90	5.10
	63A	-	-	-	-	-	-	-	-	-	1.60	4.30
NCN C curve	0,5A	8.70	T	T	T	T	T	T	T	T	T	T
	1A	-	-	-	-	0.90	3.40	6.50	T	T	T	T
	2A	-	-	-	-	0.70	2.70	4.80	T	T	T	T
	3A	-	-	-	-	0.50	1.50	2.20	3.30	6.20	T	T
	4A	-	-	-	-	-	1.30	2.00	3.00	5.50	T	T
	6A	-	-	-	-	-	1.00	1.40	1.90	3.10	6.50	T
	10A	-	-	-	-	-	0.80	1.10	1.50	2.20	4.00	11.40
	16A	-	-	-	-	-	0.70	1.00	1.20	1.90	3.40	8.40
	20A	-	-	-	-	-	0.70	0.90	1.10	1.70	3.10	7.40
	25A	-	-	-	-	-	0.60	0.80	1.00	1.60	2.90	6.70
	32A	-	-	-	-	-	-	-	0.90	1.40	2.70	6.20
	40A	-	-	-	-	-	-	-	-	1.30	2.40	5.70
	50A	-	-	-	-	-	-	-	-	-	1.90	4.80
	63A	-	-	-	-	-	-	-	-	-	-	4.40
NDN D curve	0,5A	12.70	T	T	T	T	T	T	T	T	T	T
	1A	-	-	-	0.50	1.00	3.40	5.90	T	T	T	T
	2A	-	-	-	-	0.90	3.00	5.10	T	T	T	T
	3A	-	-	-	-	0.70	1.80	2.70	3.90	7.30	T	T
	4A	-	-	-	-	0.50	1.30	2.10	3.10	5.60	T	T
	6A	-	-	-	-	-	1.00	1.40	1.80	2.90	5.60	T
	10A	-	-	-	-	-	0.90	1.20	1.50	2.30	4.30	14.80
	16A	-	-	-	-	-	0.70	1.00	1.30	2.00	3.60	8.90
	20A	-	-	-	-	-	-	0.90	1.10	1.70	3.20	7.80
	25A	-	-	-	-	-	-	-	1.00	1.50	2.90	7.00
	32A	-	-	-	-	-	-	-	-	1.30	2.50	5.90
	40A	-	-	-	-	-	-	-	-	-	2.20	5.10
	50A	-	-	-	-	-	-	-	-	-	-	4.20
	63A	-	-	-	-	-	-	-	-	-	-	-

Downstream

Data is subject to errors and technical modifications.

Upstream

Downstream	Max Values (kA)	I_n	Fuse BS88									
			10A	16A	20A	25A	32A	40A	50A	63A	80A	100A
ADA3G** B Curve, 6kA, 30mA Type A		6A	0.10	0.20	0.30	0.40	0.50	1.00	1.60	3.00	T	T
		10A	-	0.20	0.30	0.40	0.50	0.90	1.50	2.70	6.00	T
		16A		-	0.20	0.30	0.50	0.90	1.40	2.30	4.80	T
		20A				0.30	0.40	0.80	1.30	2.10	4.30	T
		32A					-	0.60	1.10	1.50	3.10	T
		40A						-	1.00	1.40	2.80	T
		45A							1.10	1.60	2.90	T
ADA1U** B Curve, 10kA, 30mA Type A		6A	0.10	0.20	0.30	0.40	0.50	1.00	1.60	3.00	7.10	T
		10A	-	0.20	0.30	0.40	0.50	0.90	1.50	2.70	6.00	T
		16A			0.20	0.30	0.50	0.90	1.40	2.30	4.80	T
		20A				0.30	0.40	0.80	1.30	2.10	4.30	T
		25A				-	0.40	0.70	1.20	1.80	4.00	T
		32A					-	0.60	1.10	1.50	3.10	8.40
		40A						-	1.00	1.40	2.80	7.70
		45A							1.10	1.60	2.90	7.00
ADA1U** C Curve, 10kA, 30mA Type A		6A	0.10	0.10	0.20	0.30	0.50	1.10	2.00	3.30	6.80	T
		10A	-	-	0.20	0.30	0.40	0.90	1.50	2.50	5.40	T
		13A		-	-	-	0.40	0.80	1.40	2.20	4.50	T
		16A			-	-	-	0.70	1.20	1.90	3.70	T
		20A				-	-	-	1.10	1.70	3.50	T
		25A					-	-	-	1.30	2.60	7.50
		32A						-	-	-	2.40	6.60
		40A							-	1.30	2.60	6.20

Upstream

Downstream	Max Values (kA)		I_{cn}	I_n max	10A	16A	20A	25A	32A	35A	40A	50A	63A	80A	100A
ARCxxx 1Ph+N B	**ARC906D**		6kA	6A	0.50	1.00	2.30	2.80	3.80	T	T	T	T	T	T
	ARC910D			10A	-	0.70	1.40	1.70	2.20	3.50	4.30	T	T	T	T
	ARC916D			16A	-	0.50	1.30	1.50	1.90	2.90	3.30	T	T	T	T
	ARC920D			20A	-	-	1.10	1.30	1.70	2.60	3.00	T	T	T	T
	ARC925D			25A	-	-	-	1.10	1.50	2.40	2.80	5.40	T	T	T
ARCxxx 1Ph+N C	**ARC956D**		6kA	6A	0.80	1.10	2.40	2.80	4.00	T	T	T	T	T	T
	ARC960D			10A	0.50	0.80	1.40	1.60	2.10	3.40	4.10	T	T	T	T
	ARC966D			16A	-	-	1.30	1.50	1.90	3.00	3.50	T	T	T	T
	ARC970D			20A	-	-	-	-	1.50	2.30	2.60	5.20	T	T	T
	ARC975D			25A	-	-	-	-	-	2.20	2.50	4.80	T	T	T
ARCxxx 1Ph+N B	**ARC506D**		10kA	6A	0.50	1.00	2.30	2.80	3.80	7.00	8.70	T	T	T	T
	ARC510D			10A	-	0.70	1.40	1.70	2.20	3.50	4.30	T	T	T	T
	ARC516D			16A	-	0.50	1.30	1.50	1.90	2.90	3.30	6.90	T	T	T
	ARC520D			20A	-	-	1.10	1.30	1.70	2.60	3.00	6.00	T	T	T
	ARC525D			25A	-	-	-	1.10	1.50	2.40	2.80	5.40	8.80	T	T
ARCxxx 1Ph+N C	**ARC556D**		10kA	6A	0.80	1.10	2.40	2.80	4.00	7.20	8.40	T	T	T	T
	ARC560D			10A	0.50	0.80	1.40	1.60	2.10	3.40	4.10	T	T	T	T
	ARC566D			16A	-	-	1.30	1.50	1.90	3.00	3.50	7.50	T	T	T
	ARC570D			20A	-	-	-	-	1.50	2.30	2.60	5.20	T	T	T
	ARC575D			25A	-	-	-	-	-	2.20	2.50	4.80	9.10	T	T

Max Values (kA)		Upstream: NBN B curve										Upstream													
	I_n	6A	10A	13A	16A	20A	25A	32A	40A	50A	63A	1A	2A	3A	4A	6A	10A	13A	16A	20A	25A	32A	40A	50A	63A
Downstream NBN B curve	6A	-	0.06	0.10	0.14	0.20	0.25	0.45	0.59	0.75	0.93	-	-	-	-	-	0.20	0.27	0.38	0.56	0.79	0.89	1.13	1.44	1.77
	10A	-	-	-	0.10	0.15	0.20	0.38	0.54	0.68	0.85	-	-	-	-	-	-	0.23	0.32	0.51	0.73	0.81	1.03	1.32	1.63
	13A	-	-	-	0.10	0.15	0.20	0.38	0.54	0.68	0.85	-	-	-	-	-	-	0.23	0.32	0.51	0.73	0.81	1.03	1.32	1.63
	16A	-	-	-	-	0.11	0.14	0.28	0.46	0.60	0.75	-	-	-	-	-	-	-	-	-	-	0.72	0.92	1.17	1.45
	20A	-	-	-	-	-	0.11	-	0.39	0.56	0.70	-	-	-	-	-	-	-	-	-	-	0.67	0.85	1.09	1.35
	25A	-	-	-	-	-	-	-	0.33	0.51	0.64	-	-	-	-	-	-	-	-	-	-	0.61	0.78	1.00	1.24
	32A	-	-	-	-	-	-	-	-	0.41	0.57	-	-	-	-	-	-	-	-	-	-	-	0.70	0.90	1.11
	40A	-	-	-	-	-	-	-	-	0.30	0.51	-	-	-	-	-	-	-	-	-	-	-	-	0.80	0.99
	50A	-	-	-	-	-	-	-	-	-	0.38	-	-	-	-	-	-	-	-	-	-	-	-	-	0.87
	63A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Downstream NCN C curve	0,5A	0.06	0.13	0.19	0.66	2.17	4.35	T	T	T	T	0.01	0.04	0.06	0.10	0.16	0.45	0.75	T	T	T	T	T	T	T
	1A	0.03	0.06	0.08	0.12	0.16	0.18	0.28	0.38	0.50	0.79	-	0.02	0.03	0.04	0.05	0.11	0.14	0.25	0.35	0.57	0.71	1.18	1.98	3.08
	2A	0.03	0.05	0.07	0.10	0.13	0.15	0.23	0.31	0.41	0.55	-	-	0.02	0.03	0.05	0.11	0.13	0.21	0.29	0.44	0.50	0.84	1.43	2.24
	3A	-	0.05	0.06	0.08	0.10	0.11	0.17	0.22	0.28	0.35	-	-	-		-	0.09	0.11	0.15	0.21	0.30	0.34	0.44	0.64	0.99
	4A	-	0.04	0.06	0.07	0.10	0.11	0.16	0.21	0.27	0.34	-	-	-	-	-	0.09	0.11	0.15	0.20	0.29	0.32	0.42	0.58	0.87
	6A	-	-	0.06	0.07	0.09	0.10	0.15	0.19	0.24	0.30	-	-	-	-	-	0.08	0.10	0.13	0.18	0.25	0.28	0.36	0.47	0.63
	10A	-	-	-	-	0.08	0.09	0.14	0.17	0.22	0.28	-	-	-	-	-	-	0.09	0.12	0.16	0.24	0.27	0.35	0.45	0.59
	13A	-	-	-	-	0.08	0.09	0.14	0.17	0.22	0.28	-	-	-	-	-	-	0.09	0.12	0.16	0.24	0.27	0.35	0.45	0.59
	16A	-	-	-	-	-	-	0.13	0.17	0.22	0.27	-	-	-	-	-	-	-	-	-	0.23	0.26	0.33	0.43	0.54
	20A	-	-	-	-	-	-	-	0.17	0.21	0.26	-	-	-	-	-	-	-	-	-	0.22	0.25	0.32	0.41	0.52
	25A	-	-	-	-	-	-	-	-	-	0.26	-	-	-	-	-	-	-	-	-	-	0.24	0.31	0.40	0.50
	32A	-	-	-	-	-	-	-	-	-	0.25	-	-	-	-	-	-	-	-	-	-	-	0.31	0.39	0.48
	40A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39	0.48
	50A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.48
	63A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Downstream NDN D curve	0,5A	0.05	0.10	0.15	0.45	1.14	2.19	T	T	T	T	0.01	0.02	0.04	0.06	0.10	0.25	0.33	8.51	T	T	T	T	T	T
	1A	0.03	0.05	0.07	0.12	0.16	0.19	0.30	0.41	0.58	0.88	-	-	0.02	0.04	0.05	0.11	0.13	0.27	0.38	0.65	0.80	1.28	2.06	3.10
	2A	-	0.05	0.06	0.10	0.13	0.16	0.26	0.35	0.47	0.70	-	-	-	0.03	0.05	0.10	0.13	0.23	0.32	0.52	0.65	1.02	1.64	2.44
	3A	-	0.04	0.06	0.08	0.10	0.12	0.18	0.24	0.31	0.41	-	-	-	-	-	0.09	0.11	0.16	0.22	0.34	0.38	0.51	0.81	1.18
	4A	-	-	-	0.07	0.09	0.11	0.17	0.22	0.29	0.37	-	-	-	-	-	0.08	0.10	0.15	0.21	0.31	0.35	0.47	0.70	1.03
	6A	-	-	-	-	0.09	0.10	0.14	0.19	0.24	0.30	-	-	-	-	-	-	0.10	0.13	0.18	0.26	0.29	0.37	0.49	0.66
	10A	-	-	-	-	-	-	-	0.17	0.22	0.28	-	-	-	-	-	-	-	-	-	0.24	0.27	0.34	0.45	0.59
	13A	-	-	-	-	-	-	-	0.17	0.22	0.28	-	-	-	-	-	-	-	-	-	0.24	0.27	0.34	0.45	0.59
	16A	-	-	-	-	-	-	-	-	-	0.26	-	-	-	-	-	-	-	-	-	-	-	0.32	0.42	0.53
	20A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.31	0.40	0.50
	25A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.40	0.49
	32A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.48
	40A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	50A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	63A																								

Upstream

Max Values (kA)		NDN D curve														HMC C curve			HMD D curve		
	I_n	0,5A	1A	2A	3A	4A	6A	10A	16A	20A	25A	32A	40A	50A	63A	80A	100A	125A	80A	100A	125A
NBN B curve	6A	-	-	-	-	-	0.14	0.35	0.67	0.80	1.06	1.49	1.62	2.33	2.65	2.61	3.08	3.2	5.2	4.65	5.45
	10A	-	-	-	-	-	-	-	0.61	0.73	0.97	1.37	1.49	2.14	2.44	2.4	2.84	2.95	4.8	4.29	5.03
	13A	-	-	-	-	-	-	-	0.61	0.73	0.97	1.37	1.49	2.14	2.44	2.4	2.84	2.95	4.8	4.29	5.03
	16A	-	-	-	-	-	-	-	-	-	0.86	1.21	1.32	1.91	2.17	2.14	2.53	2.63	4.29	3.84	4.5
	20A	-	-	-	-	-	-	-	-	-	0.80	1.13	1.23	1.78	2.02	1.99	2.36	2.45	4.01	3.58	4.2
	25A	-	-	-	-	-	-	-	-	-	-	1.04	1.13	1.64	1.86	1.84	2.17	2.26	3.7	3.3	3.88
	32A	-	-	-	-	-	-	-	-	-	-	-	1.01	1.47	1.67	1.65	1.96	2.03	3.33	2.97	3.49
	40A	-	-	-	-	-	-	-	-	-	-	-	-	1.31	1.50	1.48	1.75	1.82	2.99	2.67	3.13
	50A	-	-	-	-	-	-	-	-	-	-	-	-	-	1.32	1.3	1.54	1.61	2.64	2.36	2.77
	63A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.13	1.34	1.39	2.29	2.04	2.4
Downstream **NCN** C curve	0,5A	0.01	0.02	0.06	0.10	0.16	0.26	1.44	T	T	T	T	T	T	T	T	T	T	T	T	T
	1A	-	-	0.03	0.05	0.07	0.10	0.20	0.44	0.58	1.03	2.13	2.54	5.48	7.56	7.26	T	T	T	T	T
	2A	-	-	-	0.04	0.06	0.09	0.17	0.36	0.44	0.73	1.53	1.84	4.05	5.34	5.17	7.8	8.64	T	T	T
	3A	-	-	-	-		-	0.14	0.25	0.30	0.41	0.69	0.82	1.74	2.27	2.2	3.12	3.37	T	7.6	T
	4A	-	-	-	-		-	0.14	0.24	0.29	0.39	0.62	0.73	1.50	1.93	1.87	2.6	2.8	7.27	5.85	7.96
	6A	-	-	-	-	-	-	0.12	0.21	0.26	0.34	0.48	0.54	0.95	1.16	1.13	1.47	1.56	3.29	2.77	3.53
	10A	-	-	-	-	-	-	-	0.20	0.24	0.32	0.47	0.51	0.87	1.05	1.03	1.31	1.38	2.8	2.38	2.99
	13A	-	-	-	-	-	-	-	0.20	0.24	0.32	0.47	0.51	0.87	1.05	1.03	1.31	1.38	2.8	2.38	2.99
	16A	-	-	-	-	-	-	-	-	0.23	0.31	0.44	0.48	0.79	0.95	0.93	1.17	1.24	2.44	2.09	2.61
	20A	-	-	-	-	-	-	-	-	-	0.30	0.43	0.47	0.75	0.89	0.87	1.09	1.15	2.22	1.91	2.36
	25A	-	-	-	-	-	-	-	-	-	0.29	0.42	0.46	0.73	0.86	0.85	1.06	1.11	2.13	1.84	2.27
	32A	-	-	-	-	-	-	-	-	-	-	-	0.44	0.68	0.81	0.79	0.99	1.04	1.98	1.71	2.11
	40A	-	-	-	-	-	-	-	-	-	-	-	-	0.67	0.80	0.78	0.97	1.02	1.92	1.66	2.04
	50A	-	-	-	-	-	-	-	-	-	-	-	-	-	0.80	0.78	0.96	1.01	1.84	1.6	1.95
	63A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.74	0.91	0.95	1.73	1.51	1.84
NDN D curve	0,5A	-	0.02	0.08	0.14	0.25	0.46	4.05	T	T	T	T	T	T	T	T	T	T	T	T	T
	1A	-	-	0.03	0.04	0.06	0.10	0.19	0.48	0.66	1.13	2.20	2.59	5.27	7.35	7	T	T	T	T	T
	2A	-	-	-	0.04	0.06	0.08	0.16	0.41	0.53	0.90	1.74	2.05	4.12	5.27	5.12	7.66	8.54	T	T	T
	3A	-	-	-	-	0.05	0.08	0.14	0.28	0.34	0.47	0.86	1.00	1.96	2.48	2.41	3.28	3.51	9.71	7.35	T
	4A	-	-	-	-	-	-	0.13	0.25	0.31	0.43	0.75	0.87	1.71	2.16	2.1	2.86	3.06	8.08	6.1	9.07
	6A	-	-	-	-	-	-	0.12	0.21	0.26	0.35	0.51	0.57	0.99	1.20	1.18	1.51	1.6	3.32	2.8	3.55
	10A	-	-	-	-	-	-	-	0.20	0.24	0.32	0.47	0.51	0.87	1.05	1.03	1.31	1.38	2.8	2.38	2.99
	13A	-	-	-	-	-	-	-	0.20	0.24	0.32	0.47	0.51	0.87	1.05	1.03	1.31	1.38	2.8	2.38	2.99
	16A	-	-	-	-	-	-	-	-	0.22	0.30	0.43	0.47	0.77	0.92	0.9	1.13	1.19	2.34	2	2.49
	20A	-	-	-	-	-	-	-	-	-	0.29	0.42	0.46	0.73	0.87	0.85	1.07	1.12	2.16	1.86	2.3
	25A	-	-	-	-	-	-	-	-	-	-	0.41	0.45	0.71	0.84	0.82	1.02	1.07	2.03	1.76	2.16
	32A	-	-	-	-	-	-	-	-	-	-	-	0.43	0.69	0.81	0.8	0.99	1.04	1.94	1.68	2.06
	40A	-	-	-	-	-	-	-	-	-	-	-	-	0.67	0.79	0.77	0.96	1	1.86	1.61	1.97
	50A	-	-	-	-	-	-	-	-	-	-	-	-	-	0.76	-	0.92	0.97	1.76	1.53	1.86
	63A															-	-	0.94	1.68	1.47	1.78

Upstream

Downstream	Max Values (kA) In	NBN B Curve									NCN C Curve												
		6A	10A	16A	20A	25A	32A	40A	50A	63A	0,5A	1A	2A	3A	4A	6A	10A	16A	20A	25A	32A	40A	50A	63A
ADA1U** B Curve, 10kA Type A	6A	-	0.05	0.08	0.09	0.11	0.16	0.20	0.25	0.31	-	-	-	-	-	-	0.09	0.14	0.19	0.26	0.29	0.37	0.48	0.61
	10A	-	-	0.07	0.09	0.11	0.15	0.19	0.24	0.30	-	-	-	-	-	-	-	0.14	0.18	0.26	0.29	0.36	0.46	0.58
	16A	-	-	-	0.09	0.10	0.15	0.19	0.23	0.29	-	-	-	-	-	-	-	-	-	0.25	0.28	0.35	0.45	0.56
	20A	-	-	-	-	-	0.15	0.18	0.23	0.29	-	-	-	-	-	-	-	-	-	-	0.27	0.34	0.44	0.55
	25A	-	-	-	-	-	0.14	0.18	0.23	0.28	-	-	-	-	-	-	-	-	-	-	0.27	0.34	0.43	0.53
	32A	-	-	-	-	-	-	-	0.22	0.27	-	-	-	-	-	-	-	-	-	-	-	-	-	0.51
	40A	-	-	-	-	-	-	-	-	0.27	-	-	-	-	-	-	-	-	-	-	-	-	-	0.50
	45A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADA1U** C Curve, 10kA, Type A	6A	-	-	0.08	0.09	0.11	0.15	0.19	0.24	0.30	-	-	-	-	-	-	0.09	0.14	0.18	0.26	0.29	0.37	0.47	0.60
	10A	-	-	-	0.09	0.10	0.15	0.19	0.24	0.29	-	-	-	-	-	-	-	0.14	0.18	0.25	0.28	0.36	0.45	0.57
	16A	-	-	-	-	-	0.15	0.19	0.23	0.29	-	-	-	-	-	-	-	-	-	0.25	0.28	0.35	0.45	0.56
	20A	-	-	-	-	-	-	0.18	0.23	0.29	-	-	-	-	-	-	-	-	-	-	0.27	0.34	0.44	0.54
	25A	-	-	-	-	-	-	-	0.22	0.28	-	-	-	-	-	-	-	-	-	-	-	0.33	0.42	0.52
	32A	-	-	-	-	-	-	-	-	0.27	-	-	-	-	-	-	-	-	-	-	-	-	-	0.50
	40A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.48
	45A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Upstream

Downstream	Max Values (kA) I_n	NDN D Curve														HMC / HMF C Curve			HMD D Curve		
		0,5A	1A	2A	3A	4A	6A	10A	16A	20A	25A	32A	40A	50A	63A	80A	100A	125A	80A	100A	125A
ADA1U** B Curve, 10kA Type A	6A	-	-	-	-	-	-	0.14	0.22	0.27	0.35	0.49	0.55	0.86	1.01	1.00	1.23	1.29	2.92	2.38	3.18
	10A	-	-	-	-	-	-	-	0.22	0.26	0.34	0.48	0.52	0.81	0.95	0.93	1.14	1.19	2.60	2.11	2.83
	16A	-	-	-	-	-	-	-	-	0.25	0.33	0.46	0.50	0.77	0.90	0.89	1.08	1.13	2.34	1.92	2.54
	20A	-	-	-	-	-	-	-	-	-	0.32	0.45	0.49	0.76	0.88	0.87	1.06	1.11	2.17	1.81	2.34
	25A	-	-	-	-	-	-	-	-	-	-	0.44	0.48	0.73	0.85	0.84	1.02	1.07	2.05	1.71	2.21
	32A	-	-	-	-	-	-	-	-	-	-	-	-	0.69	0.80	0.79	0.94	0.99	1.77	1.49	1.90
	40A	-	-	-	-	-	-	-	-	-	-	-	-	-	0.78	0.76	0.92	0.95	1.67	1.43	1.80
	45A	-	-	-	-	-	-	-	-	-	-	-	-	-	0.84	0.83	0.97	1.01	1.71	1.46	1.83
ADA1U** C Curve, 10kA, Type A	6A	-	-	-	-	-	-	0.13	0.22	0.26	0.34	0.48	0.53	0.84	0.99	0.97	1.20	1.26	2.84	2.31	3.09
	10A	-	-	-	-	-	-	-	0.21	0.25	0.33	0.47	0.51	0.80	0.93	0.91	1.12	1.17	2.51	2.04	2.72
	16A	-	-	-	-	-	-	-	-	-	0.33	0.46	0.50	0.77	0.89	0.87	1.06	1.11	2.24	1.84	2.43
	20A	-	-	-	-	-	-	-	-	-	-	0.45	0.49	0.75	0.87	0.85	1.03	1.08	2.10	1.74	2.27
	25A	-	-	-	-	-	-	-	-	-	-	-	0.47	0.72	0.83	0.81	0.99	1.03	1.96	1.62	2.11
	32A	-	-	-	-	-	-	-	-	-	-	-	-	-	0.78	0.77	0.92	0.96	1.70	1.45	1.83
	40A	-	-	-	-	-	-	-	-	-	-	-	-	-	0.75	0.73	0.88	0.92	1.62	1.40	1.74
	45A	-	-	-	-	-	-	-	-	-	-	-	-	-	0.82	0.80	0.95	0.98	1.63	1.42	1.75

Data is subject to errors and technical modifications.

Upstream

Max Values (kA)		I_{cn}		NBN B curve									NCN C curve												
			I_n max	6A	10A	16A	20A	25A	32A	40A	50A	63A	0,5A	1A	2A	3A	4A	6A	10A	16A	20A	25A	32A	40A	50A	63A
AFDD **ARCxxx** 1Ph+N B	**ARC906D**	6kA	6A	-	0.04	0.07	0.08	0.09	0.15	0.20	0.26	0.34	-	-	-	-	-	-	0.08	0.13	0.18	0.28	0.32	0.44	0.59	0.77
	ARC910D		10A	-	-	0.07	0.08	0.09	0.14	0.19	0.25	0.32	-	-	-	-	-	-	-	0.13	0.17	0.26	0.30	0.40	0.53	0.68
	ARC916D		16A	-	-	-	-	0.09	0.14	0.18	0.24	0.31	-	-	-	-	-	-	-	-	-	-	0.29	0.39	0.51	0.65
	ARC920D		20A	-	-	-	-	-	0.14	0.18	0.23	0.30	-	-	-	-	-	-	-	-	-	-	0.28	0.37	0.48	0.61
	ARC925D		25A	-	-	-	-	-	0.14	0.18	0.23	0.29	-	-	-	-	-	-	-	-	-	-	-	0.36	0.48	0.60
AFDD **ARCxxx** 1Ph+N C	**ARC956D**	6kA	6A	-	-	0.07	0.08	0.09	0.15	0.20	0.26	0.34	-	-	-	-	-	-	0.08	0.13	0.18	0.28	0.32	0.44	0.60	0.77
	ARC960D		10A	-	-	-	0.08	0.09	0.14	0.19	0.24	0.32	-	-	-	-	-	-	-	0.13	0.17	0.26	0.30	0.39	0.53	0.67
	ARC966D		16A	-	-	-	-	-	0.14	0.18	0.24	0.31	-	-	-	-	-	-	-	-	-	-	0.29	0.38	0.51	0.64
	ARC970D		20A	-	-	-	-	-	-	0.18	0.23	0.30	-	-	-	-	-	-	-	-	-	-	0.28	0.37	0.48	0.60
	ARC975D		25A	-	-	-	-	-	-	-	0.23	0.29	-	-	-	-	-	-	-	-	-	-	-	0.36	0.47	0.59
AFDD **ARCxxx** 1Ph+N B	**ARC506D**	10kA	6A	-	0.04	0.07	0.08	0.09	0.15	0.20	0.26	0.34	-	-	-	-	-	-	0.08	0.13	0.18	0.28	0.32	0.44	0.59	0.77
	ARC510D		10A	-	-	0.07	0.08	0.09	0.14	0.19	0.25	0.32	-	-	-	-	-	-	-	0.13	0.17	0.26	0.30	0.40	0.53	0.68
	ARC516D		16A	-	-	-	-	0.09	0.14	0.18	0.24	0.31	-	-	-	-	-	-	-	-	-	-	0.29	0.39	0.51	0.65
	ARC520D		20A	-	-	-	-	-	0.14	0.18	0.23	0.30	-	-	-	-	-	-	-	-	-	-	0.28	0.37	0.48	0.61
	ARC525D		25A	-	-	-	-	-	0.14	0.18	0.23	0.29	-	-	-	-	-	-	-	-	-	-	-	0.36	0.48	0.60
AFDD **ARCxxx** 1Ph+N C	**ARC556D**	10kA	6A	-	-	0.07	0.08	0.09	0.15	0.20	0.26	0.34	-	-	-	-	-	-	0.08	0.13	0.18	0.28	0.32	0.44	0.60	0.77
	ARC560D		10A	-	-	-	0.08	0.09	0.14	0.19	0.24	0.32	-	-	-	-	-	-	-	0.13	0.17	0.26	0.30	0.39	0.53	0.67
	ARC566D		16A	-	-	-	-	-	0.14	0.18	0.24	0.31	-	-	-	-	-	-	-	-	-	-	0.29	0.38	0.51	0.64
	ARC570D		20A	-	-	-	-	-	-	0.18	0.23	0.30	-	-	-	-	-	-	-	-	-	-	0.28	0.37	0.48	0.60
	ARC575D		25A	-	-	-	-	-	-	-	0.23	0.29	-	-	-	-	-	-	-	-	-	-	-	0.36	0.47	0.59

Downstream

Max Values (kA)		I_{cn}		NDN D curve														HMC C curve			HMD D curve		
			I_n max	0,5A	1A	2A	3A	4A	6A	10A	16A	20A	25A	32A	40A	50A	63A	80A	100A	125A	80A	100A	125A
AFDD **ARCxxx** 1Ph+N B	**ARC906D**	6kA	6A	-	-	-	-	-	-	0.12	0.23	0.29	0.40	0.62	0.69	1.09	1.27	1.25	1.57	1.72	5.27	4.07	5.87
	ARC910D		10A	-	-	-	-	-	-	-	0.22	0.27	0.37	0.55	0.61	0.93	1.08	1.06	1.29	1.35	3.37	2.68	3.71
	ARC916D		16A	-	-	-	-	-	-	-	-	-	0.36	0.53	0.58	0.88	1.02	1.01	1.22	1.27	2.91	2.34	3.19
	ARC920D		20A	-	-	-	-	-	-	-	-	-	-	0.50	0.55	0.83	0.95	0.94	1.13	1.17	2.43	1.98	2.65
	ARC925D		25A	-	-	-	-	-	-	-	-	-	-	0.49	0.54	0.81	0.93	0.91	1.10	1.14	2.20	1.84	2.37
AFDD **ARCxxx** 1Ph+N C	**ARC956D**	6kA	6A	-	-	-	-	-	-	0.12	0.23	0.29	0.40	0.62	0.69	1.09	1.28	1.25	1.57	1.70	4.58	3.64	5.03
	ARC960D		10A	-	-	-	-	-	-	-	0.21	0.27	0.37	0.55	0.60	0.92	1.07	1.05	1.27	1.33	3.30	2.62	3.63
	ARC966D		16A	-	-	-	-	-	-	-	-	-	0.36	0.53	0.58	0.87	1.01	0.99	1.20	1.26	2.85	2.29	3.12
	ARC970D		20A	-	-	-	-	-	-	-	-	-	-	0.50	0.55	0.82	0.94	0.92	1.11	1.16	2.36	1.92	2.56
	ARC975D		25A	-	-	-	-	-	-	-	-	-	-	-	0.53	0.79	0.91	0.89	1.07	1.11	2.19	1.79	2.38
AFDD **ARCxxx** 1Ph+N B	**ARC506D**	10kA	6A	-	-	-	-	-	-	0.12	0.23	0.29	0.40	0.62	0.69	1.09	1.27	1.25	1.57	1.69	4.57	3.64	5.03
	ARC510D		10A	-	-	-	-	-	-	-	0.22	0.27	0.37	0.55	0.61	0.93	1.08	1.06	1.29	1.35	3.10	2.53	3.38
	ARC516D		16A	-	-	-	-	-	-	-	-	-	0.36	0.53	0.58	0.88	1.02	1.01	1.22	1.27	2.73	2.24	2.96
	ARC520D		20A	-	-	-	-	-	-	-	-	-	-	0.50	0.55	0.83	0.95	0.94	1.13	1.17	2.33	1.93	2.52
	ARC525D		25A	-	-	-	-	-	-	-	-	-	-	0.49	0.54	0.81	0.93	0.91	1.10	1.14	2.14	1.81	2.30
AFDD **ARCxxx** 1Ph+N C	**ARC556D**	10kA	6A	-	-	-	-	-	-	0.12	0.23	0.29	0.40	0.62	0.69	1.09	1.28	1.25	1.56	1.68	4.12	3.35	4.48
	ARC560D		10A	-	-	-	-	-	-	-	0.21	0.27	0.37	0.55	0.60	0.92	1.07	1.05	1.27	1.33	3.04	2.47	3.31
	ARC566D		16A	-	-	-	-	-	-	-	-	-	0.36	0.53	0.58	0.87	1.01	0.99	1.20	1.26	2.68	2.20	2.90
	ARC570D		20A	-	-	-	-	-	-	-	-	-	-	0.50	0.55	0.82	0.94	0.92	1.11	1.16	2.25	1.88	2.43
	ARC575D		25A	-	-	-	-	-	-	-	-	-	-	-	0.53	0.79	0.91	0.89	1.07	1.11	2.12	1.76	2.29

Data is subject to errors and technical modifications.

Upstream

Downstream		**Max Values (kA)**	**x160** 18/25/40kA TM **HDA**											**x250** 25/40kATM					**H250** 50/70kA LSI		
RCBO **ADA1**U** B Curve 10kA type A		I_n	16A	20A	25A	32A	40A	50A	63A	80A	100A	125A	160A	100A	125A	160A	200A	250A	40A	125A	250A
		6A	1.35	1.35	1.35	1.35	1.35	1.35	3.33	3.33	7.07	7.07	7.98	4.35	6.72	T	T	T	T	T	T
		10A	1.26	1.26	1.26	1.26	1.26	1.26	2.96	2.96	6.31	6.31	7.15	3.87	5.99	9.78	T	T	T	T	T
		16A	-	1.19	1.19	1.19	1.19	1.19	2.64	2.64	5.45	5.45	6.13	3.42	5.19	8.18	T	T	T	T	T
		20A		-	1.16	1.16	1.16	1.16	2.44	2.44	4.73	4.73	5.27	3.08	4.53	6.97	T	T	T	T	T
		25A			-	1.12	1.12	1.12	2.30	2.30	4.49	4.49	5.00	2.92	4.29	6.59	9.81	T	T	T	T
		32A				-	1.03	1.03	1.98	1.98	3.77	3.77	4.19	2.49	3.61	5.45	8.22	9.15	T	T	T
		40A					-	1.00	1.87	1.87	3.59	3.59	3.99	2.35	3.43	5.20	7.85	8.75	T	T	T
		45A						1.05	1.90	1.90	3.56	3.56	3.94	2.38	3.41	5.09	7.38	8.12	T	T	T
RCBO **ADA1**** C curve 10kA type A		6A	1.33	1.33	1.33	1.33	1.33	1.33	3.23	3.23	6.91	6.91	7.85	4.22	6.55	T	T	T	T	T	T
		10A	1.23	1.23	1.23	1.23	1.23	1.23	2.85	2.85	6.00	6.00	6.81	3.71	5.71	9.35	T	T	T	T	T
		16A	-	1.17	1.17	1.17	1.17	1.17	2.54	2.54	5.22	5.22	5.87	3.28	4.97	7.92	T	T	T	T	T
		20A			1.13	1.13	1.13	1.13	2.36	2.36	4.69	4.69	5.25	3.01	4.48	7.03	T	T	T	T	T
		25A			-	1.08	1.08	1.08	2.20	2.20	4.38	4.38	4.90	2.81	4.18	6.50	9.84	T	T	T	T
		32A					1.01	1.01	1.90	1.90	3.65	3.65	4.06	2.40	3.50	5.30	7.96	8.85	T	T	T
		40A						0.97	1.80	1.80	3.42	3.42	3.79	2.26	3.27	4.92	7.25	8.03	T	T	T
		45A						1.02	1.81	1.81	3.40	3.40	3.76	2.27	3.26	4.86	7.13	7.92	T	T	T

Data is subject to errors and technical modifications.

Upstream

Max Values (kA)		x160 18 / 25 / 40kA TM											x250 25 / 40kA TM					H250 25 / 50 / 65kA TM									H250 50 / 70kA LSI		
	I_n	16A	20A	25A	32A	40A	50A	63A	80A	100A	125A	160A	100A	125A	160A	200A	250A	20	32	50	63	100	125	160	200	250	40A	125A	250A
NBN B curve	6A	1.20	1.63	2.22	3.13	4.26	5.81	7.92	T	T	T	T	T	T	T	T	T	1.63	2.22	3.13	4.26	5.81	7.92	T	T	T	T	T	T
	10A	1.11	1.52	2.07	2.91	3.97	5.41	7.35	T	T	T	T	T	T	T	T	T	1.52	2.07	2.91	3.97	5.41	7.35	T	T	T	T	T	T
	16A	-	1.34	1.83	2.59	3.54	4.83	6.61	8.97	T	T	T	9.94	T	T	T	T	1.34	1.83	2.59	3.54	4.83	6.61	T	T	T	T	T	T
	20A	-	-	1.70	2.40	3.27	4.46	6.13	8.38	T	T	T	9.30	T	T	T	T	-	1.70	2.40	3.27	4.46	6.13	T	T	T	T	T	T
	25A	-	-	-	2.24	3.04	4.13	5.68	7.73	T	T	T	8.56	T	T	T	T	-	-	2.24	3.04	4.13	5.68	T	T	T	-	T	T
	32A	-	-	-	-	2.74	3.73	5.14	7.03	9.30	9.30	T	7.77	T	T	T	T	-	-	-	2.74	3.73	5.14	T	T	T	-	T	T
	40A	-	-	-	-	-	3.33	4.57	6.32	8.36	8.36	9.06	6.99	9.24	T	T	T	-	-	-	-	3.33	4.57	T	T	T	-	T	T
	50A	-	-	-	-	-	-	4.01	5.57	7.42	7.42	8.04	6.20	8.19	T	T	T	-	-	-	-	-	4.01	T	T	T	-	T	T
	63A	-	-	-	-	-	-	-	4.78	6.45	6.45	6.99	5.34	7.13	9.68	T	T	-	-	-	-	-	-		T	T	-	T	T
NCN C curve	0,5A	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	1A	2.05	6.26	T	T	T	T	T	T	T	T	T	T	T	T	T	T	6.26	T	T	T	T	T	T	T	T	T	T	T
	2A	0.56	2.46	8.16	T	T	T	T	T	T	T	T	T	T	T	T	T	2.46	T	T	T	T	T	T	T	T	T	T	T
	3A	-	-	1.28	3.81	8.22	T	T	T	T	T	T	T	T	T	T	T	-	3.81	T	T	T	T	T	T	T	T	T	T
	4A	-	-	0.79	2.88	7.43	T	T	T	T	T	T	T	T	T	T	T	-	2.88	T	T	T	T	T	T	T	T	T	T
	6A	-	-	-	0.81	1.78	3.89	7.47	T	T	T	T	T	T	T	T	T	-	0.81	3.89	7.47	T	T	T	T	T	T	T	T
	10A	-	-	-	0.67	1.34	2.69	5.53	9.18	T	T	T	T	T	T	T	T	-	0.67	2.69	5.53	T	T	T	T	T	T	T	T
	16A	-	-	-	0.58	0.97	1.63	2.79	4.87	7.76	7.76	8.79	5.86	9.06	T	T	T	-	0.58	1.63	2.79	5.86	9.06	T	T	T	-	T	T
	20A	-	-	-	0.56	0.91	1.50	2.50	4.25	6.80	6.80	7.65	5.08	7.87	T	T	T	-	0.56	1.50	2.50	5.08	7.87	T	T	T	-	T	T
	25A	-	-	-	0.54	0.88	1.44	2.39	4.05	6.48	6.48	7.25	4.83	7.45	T	T	T	-	0.54	1.44	2.39	4.83	7.45	T	T	T	-	T	T
	32A	-	-	-	-	0.84	1.37	2.26	3.80	6.12	6.12	6.79	4.52	6.96	T	T	T	-	-	1.37	2.26	4.52	6.96	T	T	T	-	T	T
	40A	-	-	-	-	-	1.31	2.13	3.50	5.56	5.56	6.29	4.13	6.46	9.78	T	T	-	-	1.31	2.13	4.13	6.46	9.78	T	T	-	T	T
	50A	-	-	-	-	-	-	1.99	3.23	5.07	5.07	5.78	3.80	5.96	8.66	T	T	-	-	-	1.99	3.80	5.96	8.66	T	T	-	-	T
	63A	-	-	-	-	-	-	-	3.11	4.85	4.85	5.51	3.65	5.68	8.29	T	T	-	-	-	-	3.65	5.68	8.29	T	T	-	-	T
NDN D curve	0,5A	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	1A	-	2.94	T	T	T	T	T	T	T	T	T	T	T	T	T	T	2.94	T	T	T	T	T	T	T	T	T	T	T
	2A	-	1.41	9.75	T	T	T	T	T	T	T	T	T	T	T	T	T	1.41	T	T	T	T	T	T	T	T	T	T	T
	3A	-	-	0.84	3.54	8.47	T	T	T	T	T	T	T	T	T	T	T	-	3.54	T	T	T	T	T	T	T	T	T	T
	4A	-	-	0.66	2.58	7.29	T	T	T	T	T	T	T	T	T	T	T	-	2.58	T	T	T	T	T	T	T	T	T	T
	6A	-	-	-	0.70	1.61	3.69	7.40	T	T	T	T	T	T	T	T	T	-	0.70	3.69	7.40	T	T	T	T	T	T	T	T
	10A	-	-	-	0.63	1.25	2.47	5.00	8.48	T	T	T	9.90	T	T	T	T	-	0.63	2.47	5.00	9.90	T	T	T	T	-	T	T
	16A	-	-	-	0.56	0.95	1.62	2.81	4.96	7.83	7.83	8.83	6.00	9.09	T	T	T	-	0.56	1.62	2.81	6.00	9.09	T	T	T	-	T	T
	20A	-	-	-	0.54	0.89	1.47	2.47	4.24	6.74	6.74	7.52	5.07	7.72	T	T	T	-	0.54	1.47	2.47	5.07	7.72	T	T	T	-	T	T
	25A	-	-	-	0.52	0.85	1.39	2.32	3.93	6.32	6.32	7.05	4.68	7.24	T	T	T	-	0.52	1.39	2.32	4.68	7.24	T	T	T	-	-	T
	32A	-	-	-	-	0.83	1.34	2.18	3.62	5.82	5.82	6.52	4.30	6.68	T	T	T	-	-	1.34	2.18	4.30	6.68	T	T	T	-	-	T
	40A	-	-	-	-	-	1.26	2.04	3.33	5.28	5.28	6.02	3.93	6.18	9.25	T	T	-	-	1.26	2.04	3.93	6.18	9.25	T	T	-	-	T
	50A	-	-	-	-	-	-	1.94	3.11	4.85	4.85	5.51	3.65	5.68	8.29	T	T	-	-	-	1.94	3.65	5.68	8.29	T	T	-	-	-
	63A	-	-	-	-	-	-	-	2.93	4.49	4.49	5.08	3.41	5.24	7.77	9.58	T	-	-	-	-	3.41	5.24	7.77	9.58	T	-	-	-
HMC / HMF C curve	80A	-	-	-	-	-	-	-	-	3.29	3.29	3.65	2.61	3.74	5.58	7.03	7.51	-	-	-	-	2.61	3.74	5.58	7.03	7.51	-	T	T
	100A	-	-	-	-	-	-	-	-	-	3.29	3.65	-	3.74	5.58	7.03	7.51	-	-	-	-	-	3.74	5.58	7.03	7.51	-	T	T
	125A	-	-	-	-	-	-	-	-	-	-	3.65	-	-	5.58	7.03	7.51	-	-	-	-	-	-	5.58	7.03	7.51	-	-	T
HMD D curve	80A	-	-	-	-	-	-	-	-	3.25	3.25	3.52	2.71	3.59	4.90	5.86	6.27	-	-	-	-	2.71	3.59	4.90	5.86	6.27	-	T	T
	100A	-	-	-	-	-	-	-	-	-	-	-	-	-	4.90	5.86	6.27	-	-	-	-	-	-	4.90	5.86	6.27	-	-	T
	125A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.86	6.27	-	-	-	-	-	-	-	5.86	6.27	-	T	T

Downstream

Data is subject to errors and technical modifications.

MCCB - MCCB
Technical Data - Selectivity

Upstream

Downstream	Max. values (kA)	x160 TM 18 / 25 kA											x250 TM 25 / 40 kA					h250 TM 25 / 50 / 65 kA									h250 LSI 70 kA			h630 LSI 50 / 70 kA			h1000 LSI 50 / 70 kA			h1600 LSI 50 / 70 kA	
	In (A)	16	20	25	32	40	50	63	80	100	125	160	100	125	160	200	250	20	32	50	63	100	125	160	200	250	40	125	250	250	400	630	630	800	1000	1250	1600
x160TM 18 / 25 kA	16	-	-	-	-	-	-	2	2	2.9	2.9	3	2.15	2.9	4.1	5.6	5.4	-	-	-	1.2	2.15	2.9	4.1	5.6	5.4	T	T	T	T	T	T	T	T	T	T	T
	20	-	-	-	-	-	-	2	2	2.9	2.9	3	2.15	2.9	4.1	5.6	5.4	-	-	-	1.2	2.15	2.9	4.1	5.6	5.4	T	T	T	T	T	T	T	T	T	T	T
	25	-	-	-	-	-	-	2	2	2.9	2.9	3	2.15	2.9	4.1	5.6	5.4	-	-	-	1.2	2.15	2.9	4.1	5.6	5.4	T	T	T	T	T	T	T	T	T	T	T
	32	-	-	-	-	-	-	1.8	1.8	2.6	2.6	2.7	2	2.6	3.6	5	4.8	-	-	-	1.15	2	2.6	3.6	5	4.8	T	T	T	T	T	T	T	T	T	T	T
	40	-	-	-	-	-	-	1.6	1.6	2.35	2.35	2.4	1.8	2.35	3.3	4.3	4.2	-	-	-	1.1	1.8	2.35	3.3	4.3	4.2	-	T	T	T	T	T	T	T	T	T	T
	50	-	-	-	-	-	-	1.6	1.6	2.35	2.35	2.4	1.8	2.35	3.15	4.25	4.15	-	-	-	1.1	1.8	2.35	3.15	4.25	4.15	-	T	T	T	T	T	T	T	T	T	T
	63	-	-	-	-	-	-	-	-	2.15	2.15	2.2	1.7	2.15	3	4.05	3.9	-	-	-	-	1.7	2.15	3	4.05	3.9	-	T	T	T	T	T	T	T	T	T	T
	80	-	-	-	-	-	-	-	-	2.15	2.15	2.2	1.7	2.15	2.9	3.9	3.8	-	-	-	-	1.7	2.15	2.9	3.9	3.8	-	T	T	T	T	T	T	T	T	T	T
	100	-	-	-	-	-	-	-	-	-	-	2.1	-	1.95	2.75	3.7	3.6	-	-	-	-	-	1.95	2.75	3.7	3.6	-	T	T	T	T	T	T	T	T	T	T
	125	-	-	-	-	-	-	-	-	-	-	2.1	-	-	2.65	3.5	3.4	-	-	-	-	-	-	2.65	3.5	3.4	-	1.65	T	T	T	T	T	T	T	T	T
	160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.45	3.35	-	-	-	-	-	-	-	3.45	3.35	-	-	T	T	T	T	T	T	T	T	T
x250 TM 25 / 40kA	100	-	-	-	-	-	-	-	-	-	-	-	-	1.95	2.5	3.15	3.3	-	-	-	-	-	1.95	2.5	3.15	3	-	T	T	T	T	T	T	T	T	T	T
	125	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	3.15	3.3	-	-	-	-	-	-	2.5	3.15	3	-	1.65	T	T	T	T	T	T	T	T	T
	160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.15	3.3	-	-	-	-	-	-	-	3.15	3	-	-	T	T	T	T	T	T	T	T	T
	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.3	-	-	-	-	-	-	-	-	3	-	-	T	T	T	T	T	T	T	T	T
	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.25	T	T	T	T	T	T	T	T
h250TM 25 / 50 / 65kA	20	-	-	-	-	-	-	-	-	-	-	-	1.55	1.95	2.5	3.15	3.3	-	0.41	0.6	1	1.55	1.95	2.5	3.15	3	T	T	T	T	T	T	T	T	T	T	T
	32	-	-	-	-	-	-	-	-	-	-	-	1.55	1.95	2.5	3.15	3.3	-	-	0.6	1	1.55	1.95	2.5	3.15	3	T	T	T	T	T	T	T	T	T	T	T
	50	-	-	-	-	-	-	-	-	-	-	-	1.55	1.95	2.5	3.15	3.3	-	-	-	1	1.55	1.95	2.5	3.15	3	-	T	T	T	T	T	T	T	T	T	T
	63	-	-	-	-	-	-	-	-	-	-	-	1.55	1.95	2.5	3.15	3.3	-	-	-	-	1.55	1.95	2.5	3.15	3	-	T	T	T	T	T	T	T	T	T	T
	100	-	-	-	-	-	-	-	-	-	-	-	-	1.95	2.5	3.15	3.3	-	-	-	-	1.55	1.95	2.5	3.15	3	-	T	T	T	T	T	T	T	T	T	T
	125	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	3.15	3.3	-	-	-	-	1.55	1.95	2.5	3.15	3	-	1.65	T	T	T	T	T	T	T	T	T
	160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.15	3.3	-	-	-	-	1.55	1.95	2.5	3.15	3	-	-	T	T	T	T	T	T	T	T	T
	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.3	-	-	-	-	-	-	-	-	3	-	-	T	T	T	T	T	T	T	T	T
	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.25	T	T	T	T	T	T	T	T
h250LSI 70kA	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.63	3.25	T	T	T	T	T	T	T	T
	125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.25	T	T	T	T	T	T	T	T
	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	T	T	T	T	T	T	T
h630LSI 50 / 70kA	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.2	T	T	T	T	T	T
	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	T	T	T	T	T
	630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	T	T	T
h1000LSI 50 / 70kA	630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	T	T
	800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	T	T
	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	T
h1600LSI 50 / 70kA	1250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T
	1600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Data is subject to errors and technical modifications.

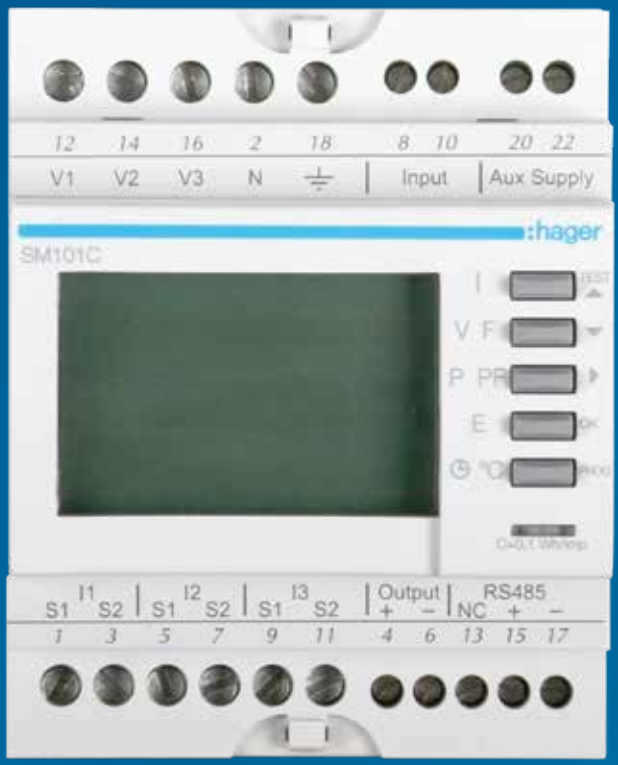
Upstream

Max Values (kA)				**x160** 18/25/40kA TM											**x250** 25/40kA TM				
	IEC60898-1	I_{cn}	I_n max	16A	20A	25A	32A	40A	50A	63A	80A	100A	125A	160A	100A	125A	160A	200A	250A
AFDD **ARCxxx** 1Ph+N B	**ARC906D**	6kA	6A	1.89	1.89	1.89	1.89	1.89	1.89	T	T	T	T	T	T	T	T	T	T
	ARC910D		10A	1.42	1.42	1.42	1.42	1.42	1.42	3.90	3.90	T	T	T	5.25	T	T	T	T
	ARC916D		16A	-	1.33	1.33	1.33	1.33	1.33	3.34	3.34	T	T	T	4.44	T	T	T	T
	ARC920D		20A	n/a	-	1.23	1.23	1.23	1.23	2.76	2.76	T	T	T	3.61	5.58	T	T	T
	ARC925D		25A	n/a	n/a	-	1.20	1.20	1.20	2.47	2.47	4.80	4.80	5.35	3.13	4.59	T	T	T
AFDD **ARCxxx** 1Ph+N C	**ARC956D**	6kA	6A	1.85	1.85	1.85	1.85	1.85	1.85	5.29	5.29	T	T	T	T	T	T	T	T
	ARC960D		10A	1.40	1.40	1.40	1.40	1.40	1.40	3.81	3.81	T	T	T	5.15	T	T	T	T
	ARC966D		16A	-	1.32	1.32	1.32	1.32	1.32	3.27	3.27	T	T	T	4.35	T	T	T	T
	ARC970D		20A	n/a	-	1.21	1.21	1.21	1.21	2.68	2.68	T	T	T	3.49	5.36	T	T	T
	ARC975D		25A	n/a	n/a	-	1.16	1.16	1.16	2.49	2.49	5.24	5.24	T	3.24	4.98	T	T	T
AFDD **ARCxxx** 1Ph+N B	**ARC506D**	10kA	6A	1.84	1.84	1.84	1.84	1.84	1.84	5.28	5.28	T	T	T	7.12	T	T	T	T
	ARC510D		10A	1.42	1.42	1.42	1.42	1.42	1.42	3.53	3.53	7.50	7.50	8.48	4.61	7.12	T	T	T
	ARC516D		16A	-	1.33	1.33	1.33	1.33	1.33	3.08	3.08	6.35	6.35	7.14	3.99	6.05	T	T	T
	ARC520D		20A	n/a	-	1.23	1.23	1.23	1.23	2.62	2.62	5.21	5.21	5.83	3.35	4.98	7.72	T	T
	ARC525D		25A	n/a	n/a	-	1.20	1.20	1.20	2.38	2.38	4.42	4.42	4.88	2.97	4.24	6.28	8.97	T
AFDD **ARCxxx** 1Ph+N C	**ARC556D**	10kA	6A	1.81	1.81	1.81	1.81	1.81	1.81	4.69	4.69	T	T	T	6.14	9.52	T	T	T
	ARC560D		10A	1.40	1.40	1.40	1.40	1.40	1.40	3.46	3.46	7.40	7.40	8.37	4.53	7.03	T	T	T
	ARC566D		16A	-	1.32	1.32	1.32	1.32	1.32	3.03	3.03	6.24	6.24	7.02	3.91	5.94	9.43	T	T
	ARC570D		20A	n/a	-	1.21	1.21	1.21	1.21	2.53	2.53	4.94	4.94	5.51	3.21	4.72	7.25	T	T
	ARC575D		25A	n/a	n/a	-	1.16	1.16	1.16	2.39	2.39	4.72	4.72	5.28	3.04	4.51	6.97	T	T

Downstream

Modular Devices & Enclosures

Dimmers, time switches, meters and thermostats are among our varied range of devices, and they can all be perfectly housed in our expansive range of enclosures to tailor a building's energy to an individual's style. It's just like a home, miniaturised.



02

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The relevant part of the BS EN 61439 series applies to the integration of mechanical and electrical components (switching devices, control devices, busbars, functional units, etc.), into an enclosure. Hager systems such as consumer unit, distribution board and panel board ranges are certified to the appropriate part of the BS EN 61439 series. When selecting other device / enclosure arrangements, please contact Hager technical support for guidance - 01952 675689.

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VM004

DIN Rail Enclosure - Design 30

Characteristics:
- Metal DIN rail enclosures, 1 row from 4 to 22 modules.
- Design 30 enclosures come supplied with a full metal DIN rail, full complement of earth and neutral terminals along with marking labels, instructions & cable protector plate for rear knockouts.
- Optional health & safety padlock bracket & keylock available (see page: 4.19).
- Conforms to BS EN 62208.
- For dimensions see page 2.37.

Description	Size	Cat ref.	Cat ref. with Knockouts
4 Module DIN Rail Enclosure	2	**VM004**	**VM004K**
8 Module DIN Rail Enclosure	3	**VM008**	**VM008K**
12 Module DIN Rail Enclosure	4	**VM012**	**VM012K**
16 Module DIN Rail Enclosure	5	**VM016**	**VM016K**
18 Module DIN Rail Enclosure	6	**VM018**	**VM018K**
22 Module DIN Rail Enclosure	7	**VM022**	**VM022K**

VML004

DIN Rail Enclosure - Design 10

Characteristics:
- Metal DIN rail enclosures, 1 row from 4 to 22 modules.
- Design 10 enclosures come supplied with a full metal DIN rail, full complement of earth and neutral terminals along with marking labels & instructions.
- Conforms to BS EN 62208.
- For dimensions see page 2.37.

Description	Size	Cat ref.
4 Module DIN Rail Enclosure	2	**VML004**
8 Module DIN Rail Enclosure	3	**VML008**
12 Module DIN Rail Enclosure	4	**VML012**
16 Module DIN Rail Enclosure	5	**VML016**
18 Module DIN Rail Enclosure	6	**VML018**
22 Module DIN Rail Enclosure	7	**VML022**

GD102E

GD106E

Mini Gamma

Characteristics:
- Insulated enclosures 1 row from 2 to 10 modules.
- Surface mounted enclosures with a rigid chassis, housing a DIN rail, IP30 Rated.
- Supplied with earth terminals (except **GD102E**), marking labels and sealing grommets.

Options: Keylock, plain or transparent door, terminals and terminal supports.
- For dimensions see page 2.38.

Description	Cat ref.
2 Modules Empty Enclosure	**GD102E**
4 Modules E: 2 x 16mm² + 2 x 10mm² (capacity to fit an additional 4 hole terminal bar on existing support)	**GD104E**
6 Modules E: 2 x 16mm² + 2 x 10mm² (capacity to fit an additional two 4 hole terminal bars or one 7 hole terminal bar on existing support)	**GD106E**
8 Modules E: 3 x 16mm² + 4 x 10mm² (capacity to fit an additional two 4 hole terminal bars or one 7 hole terminal bar on existing support)	**GD108E**
10 Modules E: 3 x 16mm² + 4 x 10mm² (capacity to fit an additional three 4 hole terminal bars or two 7 hole terminal bars on existing support)	**GD110E**

Data is subject to errors and technical modifications.

Mini Gamma Plain Doors

Characteristics:
- Plain door with integrated handle (use of door increases IP rating to IP40).

Description	Cat ref.
Plain Door for **GD102E**	**GP102P**
Plain Door for **GD104E**	**GP104P**
Plain Door for **GD106E**	**GP106P**
Plain Door for **GD108E**	**GP108P**
Plain Door for **GD110E**	**GP110P**

GP108P

Mini Gamma Transparent Doors

Characteristics:
- Transparent door with integrated handle (use of door increases IP rating to IP40).

Description	Cat ref.
Transparent Door for **GD102E**	**GP102T**
Transparent Door for **GD104E**	**GP104T**
Transparent Door for **GD106E**	**GP106T**
Transparent Door for **GD108E**	**GP108T**
Transparent Door for **GD110E**	**GP110T**

GP110T

Terminal Support

Characteristics:
- Terminals not included.

Description	Cat ref.
Terminal Support for **GD104E**	**GZ104S**
Terminal Support for **GD106E**	**GZ106S**
Terminal Support for **GD108E**	**GZ108S**
Terminal Support for **GD110E**	**GZ110S**

GZ108S

Terminals (63A Rating)

Cable Capacity	Cat ref. Neutral (Blue)	Cat ref. Earth (Green)
Cable Capacity: 2 x 16mm² + 2 x 10mm²	**GZ04N**	**GZ04E**
Cable Capacity: 3 x 16mm² + 4 x 10mm²	**GZ07N**	**GZ07E**

GZ04E

Keylock

Description	Cat ref.
Keylock for Plain or Transparent Door	**VZ313**

VZ313

IU41

IU Enclosures

Characteristics:
- 1 row boxes 1-5 modules.
- Ideally suited for the installation of individual modular devices. (RCCBs, MCBs, RCBOs, switch disconnectors etc).
- Available without door, with plain door or with glazed door.
- Where larger cables need to be accommodated (for switch disconnectors etc.) extra cabling space is provided in the extended height versions (Recommended maximum cable size: extended height = 35mm², all other references = 6mm²).
- All boxes from 2-5 modules are fitted with an earth bar as standard and for those with doors the catch can be replaced with the optional key locking facility.
- For dimensions see page 2.38.

Description	Cat ref. Without Door	Cat ref. Plain Door	Cat ref. Glazed Door
2 Modules	**IU2**	**IU2/D**	**IU2/GD**
3 Modules	**IU3**	**IU3/D**	**-**
4 Modules	**IU4**	**IU4/D**	**-**
1 Module Extended Height	**IU41**	**IU41-D**	**-**
2 Modules Extended Height	**IU42**	**IU42/D**	**-**
4 Modules Extended Height	**IU44**	**IU44/D**	**IU44/GD**
5 Modules Extended Height	**IU45**	**-**	**-**

Accessories for IU Enclosures

Description	Cat ref.
Keylock with 2 Keys Suitable for All **IU** Enclosures Fitted with Door	**IKL1**

Data is subject to errors and technical modifications.

Vega Enclosures

VB118PT

Characteristics:
- Insulated enclosure rated IP40, 1 to 3 rows, 18 to 54 modules (RAL 9010) available with transparent or plain doors.
- **VB118**** & **VB218**** - 90A max. total load. **VB318**** & **VB418**** - 125A max. total load.
- Features a removable chassis with DIN rails for ease of installation.
- Top and bottom cable entry plates are removable and interchangeable. The door is also reversible with an integral flush handle.

Options: Door lock
Note: Not suitable for single module RCBO's.
- For dimensions see page 2.38.

Description	Quick Connect Earth Terminals	Cat ref. Plain Door	Cat ref. Glazed Door
1 Row, 18 Module Surface Mounted Enclosure	4 x 25mm², 14 x 4mm²	**VB118PP**	**VB118TP**
2 Rows, 36 Module Surface Mounted Enclosure	6 x 25mm², 20 x 4mm²	**VB218PP**	**VB218TP**
3 Rows, 54 Module Surface Mounted Enclosure	9 x 25mm², 31 x 4mm²	**VB318PP**	**VB318TP**
4 Rows, 72 Module Surface Mounted Enclosure	12 x 25mm², 40 x 4mm⁴	**VB418PP**	**VB418TP**

Accessories

Description	Pack quantity	Cat ref.
Key Lock for Vega Type 1242E White	1	**VZ310PVB**
Key Lock for Vega Type 1242E Transparent	1	**VZ310TVB**
Key Lock for Vega Type 405E White	1	**VZ311PVB**
Key Lock for Vega Type 405E Transparent	1	**VZ311TVB**
Door White, Vega, 18 Module	1	**VZ118P**
Door Transparent, Vega, 18 Module	1	**VZ118T**
Door White, Vega, 36 Module	1	**VZ218P**
Door Transparent, Vega, 36 Module	1	**VZ218T**
Door White, Vega, 54 Module	1	**VZ318P**
Door Transparent, Vega, 54 Module	1	**VZ318T**
Door White, Vega, 72 Module	1	**VZ418P**
Door Transparent, Vega, 72 Module	1	**VZ418T**
Door Hinges for Vega	2	**VZ004VB**
Brass Terminal Support VF/VS 18/22 M	1	**VZ704N**
QC Terminal Support VF/VS 18/22 M	1	**VZ708N**
Slider for Trunking, Vega	1	**VZ001VB**
Labeling Set for Vega 18 Module	4	**VZ011VB**
Kit for Horizontal Juction of 2 Enclosure	1	**VZ005VB**
Kit for Vertical Juction of 2 Enclosure	1	**VZ006VB**
Clip for Circuit Designation Table	1	**VZ535**

VZ004VB

VZ708N

Terminal Blocks

Description	Length (mm)	No. Quick connect Terminals (4mm²)	No. Screw Terminals 25mm²	Cat ref. Neutral	Cat ref. Earth
6 Connection Terminal Block	30	5	1	**KN06N**	**KN06E**
10 Connection Terminal Block	45	8	2	**KN10N**	**KN10E**
14 Connection Terminal Block	60	11	3	**KN14N**	**KN14E**
18 Connection Terminal Block	75	14	4	**KN18N**	**KN18E**
22 Connection Terminal Block	90	17	5	**KN22N**	**KN22E**
26 Connection Terminal Block	105	20	6	**KN26N**	**KN26E**
Pack of 10 Terminal Inter-connectors		-	-	**KN99N**	**KN99E**

KN14E

KN10N

VE212U

Vector II Enclosures

Characteristics:
- Insulated IP55 rated enclosure, 1 to 3 rows, 3 to 36 modules (RAL 7035).
- 63A max. total load.
- Features an adjustable depth DIN rail (except **VE103U**).
- Supplied with sealing plugs to re-instate IP rating after fixing.
- 3-10 modules - vertically hinged, retainable in open position at 90º.
- 12-36 modules - horizontal hinged, can be reversed left or right.

Options: Door lock
Note: Not suitable for single module RCBO's.
- For dimensions see page 2.38.

Description	Moulded Blanks (in front cover)	Cat ref.
1 Row 3 Module IP55 Surface Mount, Transparent Door	2 x 1/2	**VE103U**
1 Row 6 Module IP55 Surface Mount, Transparent Door	2 x 1	**VE106U**
1 Row 10 Module IP55 Surface Mount, Transparent Door	2 x 1	**VE110U**
1 Row 12 Module IP55 Surface Mount, Transparent Door	-	**VE112U**
2 Row 24 Module IP55 Surface Mount, Transparent Door	-	**VE212U**
3 Row 36 Module IP55 Surface Mount, Transparent Door	-	**VE312U**

VZ428

VZ403

VZ744

Terminal Support Assembly

Characteristics Single Phase:
- 2 x (3 x 16mm² + 4 x 10mm²) 270mm wide
- Maximum current (I_n): 63A
- To fit 12 module wide enclosure only

Characteristics Three Phase:
- 3 x (3 x 16mm² + 2 x 10mm²) 270mm wide
- Neutral: 1 x (5 x 16mm² + 6 x 10mm²)
- Maximum current (I_n): 63A
- To fit 12 module wide enclosure only.
- **VZ744** - For fixing of additional terminal supports in bottom part of enclosure (**VE112U** and above)

Description	Cat ref.
Single Phase Connector Assembly for Vector II Enclosures (Requires **VZ744**)	**VZ403**
Three Phase Connector Assembly for Vector II Enclosures (Requires **VZ744**)	**VZ428**
Mounting Support for **VZ403** & **VZ428** (1 Set = 2 Supports)	**VZ744**

VZ311

Key Lock

Description	Cat ref.
For All Vector Enclosures with 2 Keys	**VZ311**

Data is subject to errors and technical modifications.

Orion - Steel Enclosures

FL110A

Characteristics:
- Steel (1.5mm) IP65 rated enclosure, insulation class: I (RAL 7035).
- Mounting plates and modular chassis' are required for the installation of devices, see page 2.9.
- 2 removable gland plates for cable entry on top and bottom.
- IP65 with door closed, complies with BS EN 60529.
- Earth studs on both body and door.
- Plain, easily removable door equipped with one or two locks with triangular 8mm bit centres.

Options: Key lock, wall fixing brackets, mounting plate, equipment kits for modular devices.
Note: Not suitable for outdoor use.
- For full dimensions see page 2.39.

Description	Dimensions (H x W x D mm)	No. of locks	Cat ref. Plain Door	Cat ref. Glazed Door
IP65 Surface Mount Enclosure	300 x 250 x 160	1	**FL102A**	**-**
IP65 Surface Mount Enclosure	350 x 300 x 160	1	**FL104A**	**FL154A**
IP65 Surface Mount Enclosure	350 x 300 x 200	1	**FL105A**	**FL155A**
IP65 Surface Mount Enclosure	500 x 300 x 200	1	**FL110A**	**FL160A**
IP65 Surface Mount Enclosure	500 x 400 x 200	1	**FL112A**	**FL162A**
IP65 Surface Mount Enclosure	650 x 400 x 200	2	**FL117A**	**FL167A**
IP65 Surface Mount Enclosure	650 x 400 x 250	2	**FL118A**	**FL168A**
IP65 Surface Mount Enclosure	650 x 500 x 250	2	**FL120A**	**FL170A**
IP65 Surface Mount Enclosure	800 x 600 x 300	2	**FL124A**	**FL174A**
IP65 Surface Mount Enclosure	950 x 600 x 300	2	**FL126A**	**FL176A**
IP65 Surface Mount Enclosure	950 x 800 x 300	2	**FL128A**	**FL178A**

Orion - GRP Enclosures

FL216B

Characteristics:
- GRP IP65 rated enclosure, (RAL 7035). Door made of glass reinforced polyester (GRP).
- Mounting plates and modular chassis' are required for the installation of devices, see page 2.9.
- IP65 with door closed, complies with BS EN 60529.
- Earth studs on both body and door.
- Plain, easily removable door equipped with one or two locks with triangular 8mm bit centres.

Options: Key lock, wall fixing brackets, mounting plate, equipment kits for modular devices.
Note: Not suitable for outdoor use.
- **FL201B** made of polycarbonate.
- For full dimensions see page 2.40.

Description	Dimensions (H x W x D mm)	No. of locks	Cat ref. Plain Door	Cat ref. Glazed Door
IP65 Surface Mount Enclosure	350 x 300 x 160	1	**FL204B**	**FL254B**
IP65 Surface Mount Enclosure	500 x 300 x 200	2	**FL209B**	**FL259B**
IP65 Surface Mount Enclosure	500 x 400 x 200	2	**FL213B**	**FL263B**
IP65 Surface Mount Enclosure	650 x 400 x 200	2	**FL216B**	**FL266B**
IP65 Surface Mount Enclosure	650 x 500 x 250	2	**FL221B**	**FL271B**
IP65 Surface Mount Enclosure	800 x 600 x 300	2	**FL229B**	**FL279B**
IP65 Surface Mount Enclosure	1200 x 850 x 300	1	**FL327B**	**FL527B**

Orion Accessories

FL96Z

FL80Z

FL95Z

Description	Cat ref.
Key lock to be mounted on the triangular lock, supplied with 2 keys no 427 for h ≤ 800	**FL96Z**
Key lock to be mounted on the triangular lock, supplied with 2 keys no 427 for h ≤ 1150	**FL98Z**
Replacement lock 1 set of 2 locks with male square 8mm with 1 key	**FL81Z**
Replacement lock 1 set of locks double-bar 3mm with 1 key	**FL97Z**
Plastic wall fixing brackets delivered with fixing screws M 6x12 on enclosure set of 4 pieces	**FL863Z**
Depth adjustment slide for enclosures 300mm	**FL672E**

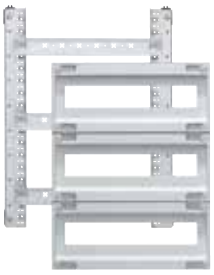
FL408A

Plain Mounting Plates for Orion Enclosures

Characteristics:
- Steel sheet, zinc plated, 2mm thickness.
- Fixed directly to the back or sides of the enclosure allowing adjustable depth setting (Fixing Braket - **FL450A**).
- For dimensions see page 2.39.

For Enclosure	Dimensions (H x W x D mm)	Cat ref. Glazed Door
FL102A, FL152A	300 x 250	**FL402A**
FL104A, FL105A, FL204B, FL154A, FL155A, FL254B	350 x 300	**FL404A**
FL110A, FL209B, FL160A, FL259B	500 x 300	**FL407A**
FL112A, FL213B, FL162A, FL263B	500 x 400	**FL408A**
FL117A, FL118A, FL216B, FL167A, FL168A, FL266B	650 x 400	**FL412A**
FL120A, FL221B, FL170A, FL271B	650 x 500	**FL413A**
FL124A, FL229B, FL174A, FL279B	800 x 600	**FL415A**
FL126A, FL176A	900 x 600	**FL416A**
FL128A, FL178A	950 x 800	**FL417A**
FL327B, FL527B	1150 x 850	**FL522E**
Adjustable Depth Fixing Bracket	-	**FL450A**

FL981A



FL992A

Functional Frames for Orion Enclosures

- Mounted to enclosure only for **FL980A** and **FL981A**.

On Chassis
- Comprises of: DIN rails (slide length 44mm) assembled on chassis and adjustable in depth (of front plates with slide).

On Vertical Rail
- Comprises of: 2 vertical rails, DIN rail (slide length 44mm), front plates with slit and a cross-rail allowing for the assembly of bars on to the base and slides.

For Enclosure	Rows (modules)	Cat ref. Glazed Door
FL102A, FL104A, FL105A, FL154A, FL155A	2 rows (24)	**FL979A**
FL204B, FL254B	2 rows (24)	**FL980A**
FL110A, FL209B, FL160A, FL259B	3 Rows (36)	**FL981A**
FL112A, FL213B, FL162A, FL162A, FL263B	3 rows (48)	**FL992A**
FL117A, FL118A, FL216B, FL167A, FL168A, FL266B	4 rows (64)	**FL993A**
FL120A, FL221B, FL170A, FL271B	4 rows (88)	**FL994A**
FL124A, FL229B, FL174A, FL279B	5 rows (130)	**FL996A**
FL126A, FL176A	6 rows (156)	**FL997A**
FL128A, FL178A	6 rows (222)	**FL998A**

Data is subject to errors and technical modifications.

Brass Terminals ≤ 60A With Support

KM04L

KM13N

Characteristics
- Brass terminals with or without support for neutral/earth/phase connections.

Colour Coded Supports
- Neutral = Blue, Earth = Green/Yellow, Phase = Brown.
- Insulated support can be fitted on DIN rail with **KZ060** rail clip or flat bar 12 x 2mm.

Connections: number + section	Neutral Cat ref.	Earth Cat ref.	Phase Cat ref.
2 x 16 + 2 x 10mm² 4 Connections Length 30mm	-	-	**KM04L**
3 x 16 + 4 x 10mm² 7 Connections Length 49mm	**KM07N**	**KM07E**	**KM07L**
5 x 16 + 5 x 10mm² 10 Connections Length 67mm	**KM10D**	**KM10F**	-
5 x 16 + 6 x 10mm² 11 Connections Length 73mm	**KM11N**	**KM11E**	**KM11L**
2 x 16 (Double Drive) + 8 x 10mm² 10 Connections Length 69mm	**KM10N**	**KM10E**	-
6 x 16 + 7 x 10mm² 13 Connections Length 85mm	**KM13N**	**KM13E**	-
1 x 25 + 5 x 16 + 5 x 10mm² 11 Connections Length 85mm	-	**KM11B**	-
1 x 25 + 8 x 16 + 8 x 10mm² 17 Connections Length 121mm	**KM17N** (2 supports)	**KM17E**	-
1 x 25 + 11 x 16 + 13 x 10mm² 25 Connections Length 169mm	**KM25N**	**KM25E**	-

Brass Terminals ≤ 60A Without Support

K144

Connections: number + section	Cat ref.
2 x 16 + 2 x 10mm² 4 Connections Length 30mm	**K140**
3 x 16 + 4 x 10mm² 7 Connections Length 49mm	**K142**
5 x 16 + 5 x 10mm² 10 Connections Length 67mm	**K143**
5 x 16 + 6 x 10mm² 11 Connections Length 73mm	**K144**
2 x 16 (Double Drive) + 8 x 10mm² 10 Connections Length 69mm	**K145**
6 x 16 + 7 x 10mm² 13 Connections Length 85mm	**K148**
1 x 25 + 5 x 16 + 5 x 10mm² 11 Connections Length 85mm	**K151**
1 x 25 + 8 x 16 + 8 x 10mm² 17 Connections Length 121mm	**K156**
1 x 25 + 11 x 16 + 13 x 10mm² 25 Connections Length 169mm	**K158**
1 x 25 + 8 x 16 + 29 x 10mm² Long Length Terminals Length 242mm	**K159**
1 x 25 + 16 x 16 + 61 x 10mm² Fixing on Flat Bar 12 x 2 with Supports Length 482mm	**K160F**

Terminal Supports (For K140 - K160, terminals insulating material M4 x 8 fixing screws)

KZ012

Description	Cat ref.
Blue Support for Neutral	**KZ012**
Green / Yellow Support for Earth	**KZ013**
Beige Support	**KZ014**

Rail Clip (For fixing terminals on DIN Rails, not for: KM04L, KM10D, KM10F, KM10N, KM10E)

KZ060

Description	Cat ref.
Mounts on DIN Rail Width 50mm	**KZ060**

Neutral Assembly

Description	Cat ref.
DIN Rail Mounted 5 x 16mm² and 9 x 10mm²	**KM14N**

KXA02LH

Feed Through Rail Mounted Terminals

Description
- To prewire incoming & outgoing circuits in distribution boards.

Colour Code
- Neutral = Blue
- Earth = Green / Yellow
- Phase = Beige

Phase	Rated Current	Neutral	Rated Current
KXA02LH	24A	**KXA02NH**	24A
KXA04LH	32A	**KXA04NH**	32A
KXA06LH	41A	**KXA06NH**	41A
KXA10L	57A	**KXA10N**	57A
KXA16L	76A	**KXA16N**	76A
KXA35L	125A	**KXA35N**	125A
KXB70LH	192A	**KXB70NH**	192A

Nominal	Min-Max	Rated Voltage	Phase Cat ref.	Neutral Cat ref.	Earth Cat ref.
2.5mm²	(0.5mm² - 4mm²)	800V	**KXA02LH**	**KXA02NH**	**KXA02E**
4mm²	(0.5mm² - 6mm²)	800V	**KXA04LH**	**KXA04NH**	**KXB04E**
6mm²	(0.5mm² - 10mm²)	1000V	**KXA06LH**	**KXA06NH**	**KXB06E**
10mm²	(1.5mm² - 16mm²)	400V	**KXA10L**	**KXA10N**	**KXA10E**
16mm²	(1.5mm² - 25mm²)	400V	**KXA16L**	**KXA16N**	**KXA16E**
35mm²	(6mm² - 50mm²)	400V	**KXA35L**	**KXA35N**	**KXB35E**
70mm²	(16mm² - 95mm²)	1000V	**KXB70LH**	**KXB70NH**	**KXB70E**

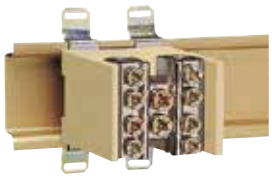
Beige End Plates

Description	Width in mm	Cat ref.
For **KXA02LH** & **KXA04LH**	1.5	**KWE01G**
For **KXA10L** & **KXA16L**	-	**KWE04G**
For **KXA35L**	1.5	**KWE03G**

KWB01

End Stops

Description	Width in mm	Cat ref.
Insulated material	8.5	**KWB01**


K037

125A Single Pole Connection Blocks

Description	Width in mm	Cat ref.
Incoming 2 x 25mm², Outgoing 4 x 16mm²	2.5	**K018**
Incoming 2 x 35mm², Outgoing 4 x 25mm²	2.5	**K037**

Data is subject to errors and technical modifications.

Insulated Busbars - Prong

Description	Cat ref.
Insulated Double Pole Busbars	
63A 13 Modules Single Pole Brown Insulation (Phase)	**KB163P**
63A 13 Modules Single Pole Blue Insulation (Neutral)	**KB163N**
100A 24 Modules Single Pole	**K171UK**
10 Endcaps for Single Pole Busbars	**KZ021**
Insulated Double Pole Busbars	
63A 24 Modules Double Pole	**KB263C**
80A 56 Modules Double Pole	**KB280B**
10 Endcaps for Double Pole Busbars	**KZ023A**
Insulated Triple Pole Busbars	
63A 24 Modules Triple Pole	**KB363C**
80A 57 Modules Triple Pole	**KB380B**
10 Endcaps for Triple Pole Busbars	**KZ023A**
Insulated Four Pole Busbars	
63A 24 Modules Four Pole	**KB463C**
80A 56 Modules Four Pole	**KB480B**
10 Endcaps for Four Pole Busbars	**KZ024**

KB163P

KB263C

KB363C

KB463C

Insulated Busbars - Fork

Description	Cat ref.
100A 57 Modules Single Pole (Section: 20mm²)	**KD190B**
63A 24 Modules Double Pole (Section: 10mm²)	**KDN263B**
63A 57 Modules Triple Pole (Section: 10mm²)	**KDN363B**
63A 56 Modules Four Pole (Section 10mm²)	**KDN463B**

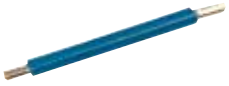
KD190B

KDN263B

Insulated Flexible Links 100A Rating

Ends of connectors	Colour	Length	Cat ref.
⬭ ⬭	Brown	122mm	**KE01R**
⬭ ⬭	Blue	122mm	**KE01B**
⬭ ⬭	Brown	236mm	**KE02R**
⬭ ⬭	Blue	236mm	**KE02B**
⬭ ⬭	Brown	330mm	**KE03R**
⬭ ⬭	Blue	300mm	**KE03B**
⬭ ⬭	Blue	355mm	**KE04B**
⬭ ⬭	Brown	500mm	**KE06R**
⬭ ⬭	Blue	550mm	**KE07B**

KE01R


KE01B

⬭ Connection to modular device
⬭ Connection to terminal bar

Insulating Strip

Description	Cat ref.
Insulation Strip for Shrouding Forked Busbars 5 Modules	**KZ059**

KZ059

Cable Connectors

Description	Cat ref.
Connection terminal - Cable connection up to 50mm² Direct busbar connection 160A/ 690V	**KF50SB**
Prong Type Connection from the Top for Cables 25mm²	**KF81A**
Prong Type Connection from the Top for Cables 16mm²	**KF82A**
Prong Type Connection from the Side for Cables 35mm²	**KF83D**
Fork Type Connection from the Side for Cables 25mm²	**KF84A**

KF83D

EC050

Single Phase kWh Meters

Description:
- Energy meters are used to measure the active energy consumed by an installation. They allow the user to understand the real cost of an installation and to identify the consumption between the different appliances.

Characteristics:
- Complies with EN 50470-3.
- Class B
- Accuracy ±1%.
- Energy readout: 7 digits.
- Backlit display.
- Indication of instantaneous power consumption.
- Total / partial counter.
- Pulsed output.
- Unlimited saving of measurements.
- LED flashes according to consumption.
- Display indication in case of incorrect wiring.
- Voltage 230V a.c. 50Hz.
- Direct connection.
- Current = 320mA - 32A.
- For technical data, see page 2.41.

Note:
- Use of heat dissipation inserts (cat ref. **LZ060**) are recommended on each side of direct connection meters.

Description	Width (1 Mod =17.5mm)	Cat ref.
Total counter, non resettable counter	1 Mod	**EC050**
Total counter, non resettable counter, pulsed output 1 pulse = 100Wh	1 Mod	**EC051**

EC150

EC154M

Single Phase kWh Meters - Direct 63A

Description:
- Energy meters are used to measure the active energy consumed by an installation. They allow the user to understand and control the real cost of an installation and to divide the consumption between the different appliances.
- MID approval for sub billing on **EC154M**.

Characteristics:
- Fully compliant with the European standard EN 50470-3.
- Class B
- Accuracy ±1%.
- Energy readout: 7 digits.
- Backlit display.
- Indication of instantaneous power consumption.
- Total / partial counter (expected MID references).
- Pulsed output.
- Unlimited saving of measurements.
- LED flashes according to consumption.
- Tariff 1/ tariff 2 options.
- Display indication in case of incorrect wiring.
- Voltage 230V a.c. 50/60Hz.
- Current = 40mA - 63A.
- Max cable size = 16mm.
- For technical data, see page 2.41.

Note:
- Use of heat dissipation inserts (cat ref. **LZ060**) are recommended on each side of direct connection meters.

Description	Width (1 Mod =17.5mm)	Cat ref.
Energy meter with pulsed output and total/partial counter	3 Mod	**EC150**
Energy meter with pulsed output - total/partial counter and 2 tariffs	3 Mod	**EC152**
Energy meter with pulsed output - with MID approval	3 Mod	**EC154M**

Data is subject to errors and technical modifications.

Three Phase kWh Meters - Direct 63A

EC350

Description:
- Energy meters are used to measure the active energy consumed by an installation. They allow the user to understand and control the real cost of an installation and to divide the consumption between the different appliances.

Characteristics
- Fully compliant with the European standard EN 50470-3
- Class B
- Accuracy ±1%
- Energy readout: 7 digits
- Backlit display
- Indication of instantaneous power consumption
- Total / partial counter (expected MID references)
- Pulsed output
- Unlimited saving of measurements
- LED flashes according to consumption
- Option: tariff 1/ tariff 2
- Three phase energy meters are adapted to all kind of networks
- Display indication in case of incorrect wiring
- Voltage 230/400V a.c. 50/60Hz
- Operating Current: 0.04 A to 63 A
- Max cable size = 16mm
- For technical data, see page 2.41.

Note:
- Use of heat dissipation inserts (cat ref. **LZ060**) are recommended on each side of direct connection meters.

Description	Width (1 Mod =17.5mm)	Cat ref.
Energy meter with pulsed output and total / partial counter	4 Mod	**EC350**
Energy meter with pulsed output - total / partial counter and 2 tariffs	4 Mod	**EC352**

Three Phase kWh Meters - Direct 100A

EC364M

Description:
- Energy meters are used to measure the active energy consumed by an installation. They allow the user to understand and control the real cost of an installation and to divide the consumption between the different appliances.
- MID approval for sub billing on **EC364M**.

Characteristics
- Fully compliant with the European standard EN 50470-3
- Class B
- Accuracy ±1%
- Energy readout: 7 digits
- Backlit display
- Indication of instantaneous power consumption
- Total / partial counter (expected MID references)
- Pulsed output
- Unlimited saving of measurements
- LED flashes according to consumption
- Option: tariff 1/ tariff 2
- Three phase energy meters are adapted to all kind of networks
- Display indication in case of incorrect wiring
- Voltage 230/400V a.c. 50/60Hz
- Operating Current: 0.08 A to 100 A
- Max cable size = 35mm
- For technical data, see page 2.41.

Note:
- Use of heat dissipation inserts (cat ref. **LZ060**) are recommended on each side of direct connection meters.

Description	Width (1 Mod =17.5mm)	Cat ref.
Energy meter with pulsed output and total / partial counter	7 Mod	**EC360**
Energy meter with pulsed output - total / partial counter and 2 tariffs	7 Mod	**EC362**
Energy meter with pulsed output - with MID approval	7 Mod	**EC364M**
Energy meter with bidirectional counter	7 Mod	**EC365B**
Energy meter with KNX output	7 Mod	**TE360**

EC370

Three Phase kWh Meters - Connection via Current Transformers

Description:
- Energy meters are used to measure the active energy consumed by an installation. They allow the user to understand and control the real cost of an installation and to divide the consumption between the different appliances.

Characteristics
- Fully compliant with the European standard EN 50470-3
- Class B
- Accuracy ±1%
- Energy readout: 7 digits
- Backlit display
- Indication of instantaneous power consumption
- Total / partial counter (expected MID references)
- Pulsed output
- Unlimited saving of measurements
- LED flashes according to consumption
- Option: tariff 1/ tariff 2
- Three phase energy meters are adapted to all kind of networks
- Display indication in case of incorrect wiring
- To be connected to CT with 5A on the secondary
- Voltage 230/400V a.c. 50/60Hz
- Starting current = 10mA
- Max current on CT secondary = 6A
- For technical data, see page 2.41.

Note:
- Use of heat dissipation inserts (cat ref. **LZ060**) are recommended on each side of direct connection meters.

Description	Width (1 Mod =17.5mm)	Cat ref.
Energy meter with pulsed output and total / partial counter	4 Mod	**EC370**
Energy meter with pulsed output - total / partial counter and 2 tariffs	4 Mod	**EC372**
Energy meter with KNX output	4 Mod	**TE370**

SRA00505

Current Transformers (CT)

Characteristics:
- Current transformers are used to feed analogue and digital ammeters and kilowatt hour meters.
- The current on the secondary circuit (0 - 5A) is proportional to the current on primary circuit class: 1.
- Suitable for use with copper bar or cable.
- Can be mounted on a DIN rail (up to 600A CT).
- For complete list of dimensions see page 2.42.

Description	Ratio	Cat ref.
DIN Rail Mountable CT, 50A	50:5	**SRA00505**
DIN Rail Mountable CT, 100A	100:5	**SRA01005**
DIN Rail Mountable CT, 150A	150:5	**SRA01505**
DIN Rail Mountable CT, 200A	200:5	**SRA02005**
DIN Rail Mountable CT, 250A	250:5	**SRA02505**
DIN Rail Mountable CT, 300A	300:5	**SRI03005**
DIN Rail Mountable CT, 400A	400:5	**SRC04005**
DIN Rail Mountable CT, 600A	600:5	**SRC06005**
CT, 800A	800:5	**SRD08005**
CT, 1000A	1000:5	**SRD10005**
CT, 1500A	1500:5	**SRD15005**
CT, 2000A	2000:5	**SRE20005**
DIN Rail Mounting for CTs up to 600A.	-	**SRZH01**

Data is subject to errors and technical modifications.

Multifunction Meter

Functions		SM101E	SM101C
Current ($3P_h$ and I_n)	Inst	✓	✓
	Max	✓	✓
	THD		✓
Voltage (L-L)	Inst	✓	✓
	THD		✓
Voltage (L-N)	Inst	✓	✓
	THD		✓
Frequency (F)	Inst	✓	✓
Power (3P, 3Q, 3S)	Inst	✓	✓
Power (∑P, ∑Q, ∑S)	Inst	✓	✓
	Max	✓	✓
Power Factor (3PF, ∑PF)	Inst	✓	✓
Energy	+kWh		✓
	+kVar		✓
Hours counter	h	✓	✓
Internal temperature	°C		✓

SM101E

SM101C

Description:
- Dedicated to monitoring and reporting of electrical networks (balanced or unbalanced – 1, 2, 3 or 4 wires) The meters are connected through a CT to the network and measure all the parameters (TRMS).
- Allows communication via pulsed output and/or RS485 Jbus/Modbus.
- For technical data, see page 2.43.

Standards
- IEC 61557-12.
- IEC 62053-22 (class 0.5s).
- IEC 62053-23 (class 2).
- Connection solid & stranded 4mm² (power).
- 2.5mm² (communication).

Description	Width (1 Mod =17.5mm)	Cat ref.
Multifunction Meter	4 Mod	**SM101E**
Multifunction Meter with Communication Pulsed output, RS485 Jbus/Modbus communication	4 Mod	**SM101C**

ECM01

Panel & DIN Rail Meters

- No cables supplied with these meters
- Meter supply cable - **JF130VMF**
- For technical data, see page 2.44 - 2.46.

Description	Cat ref.
Panel Mounted Multi-Function Meter Pulsed/Modbus DIN 96	**ECM01**
DIN Mounted Multi-Function Meter Pulsed/Modbus Single Input	**JKM01**
DIN Mounted Multi-Function Meter Pulsed/Modbus Dual Input	**JKM02**

JKM01

JFA03

Converter

- For technical data, see page 2.47.

Description	Cat ref.
Standard CT to plug in adapter	**JFA03**

Data is subject to errors and technical modifications.

Plug-in CTs

- No leads supplied with these CTs (RJ45 connection cable)
- For technical data, see page 2.48.

EC1260CT

Description	Cat ref.
125A Frame Size 60A 3 Phase CT	**EC1260CT**
125A Frame Size 100A 3 Phase CT	**EC12100CT**
125A Frame Size 125A 3 Phase CT	**EC12125CT**
125A Frame Size 160A 3 Phase CT	**EC12160CT**
250A Frame Size 60A 3 Phase CT	**EC2560CT**
250A Frame Size 100A 3 Phase CT	**EC25100CT**
250A Frame Size 125A 3 Phase CT	**EC25125CT**
250A Frame Size 160A 3 Phase CT	**EC25160CT**
250A Frame Size 200A 3 Phase CT	**EC25200CT**
250A Frame Size 250A 3 Phase CT	**EC25250CT**
400A Frame Size 250A 3 Phase CT	**EC40250CT**
400A Frame Size 400A 3 Phase CT	**EC40400CT**
400A Frame Size 630A 3 Phase CT	**EC40630CT**
800A Frame Size 800A 3 Phase CT	**EC80800CT**

3 Phase CT Splitter Box

- This 3 Phase CT Splitter Box allows the separate monitoring of each phase of a three phase current transformer on individual energy meters.
- For technical data, see page 2.49.

JFS03

Description	Cat ref.
3 Phase CT Splitter Box	**JFS03**

Meter Voltage Supply Cable - Low Smoke Zero Halogen - 1mm

PGM500

Description	Cat ref.
1m - Voltage Supply Cable with Fuse Carrier (For JF Meter Enclosures)	**JF130VMF**
1m - Voltage Supply Cable with Fuse Carrier (For JN Meter Enclosures)	**JN130VMF**

Meter Voltage Supply Cable - PVC - 1mm

Description	Cat ref.
0.30m - Hi Flex Voltage Supply Cable	**PGMF300**
0.50m - Hi Flex Voltage Supply Cable	**PGMF500**
1.00m - Hi Flex Voltage Supply Cable	**PGMF1000**
1.30m - Hi Flex Voltage Supply Cable	**PGMF1300**
2.00m - Hi Flex Voltage Supply Cable	**PGMF2000**
3.00m - Hi Flex Voltage Supply Cable	**PGMF3000**

Meter to Meter Supply Cable - PVC - 1mm

Description	Cat ref.
0.15m - Hi Flex Meter to Meter Supply Cable	**PGMFT150**
0.30m - Hi Flex Meter to Meter Supply Cable	**PGMFT300**
0.50m - Hi Flex Meter to Meter Supply Cable	**PGMFT500**
1.00m - Hi Flex Meter to Meter Supply Cable	**PGMFT1000**
1.30m - Hi Flex Meter to Meter Supply Cable	**PGMFT1300**
2.00m - Hi Flex Meter to Meter Supply Cable	**PGMFT2000**
3.00m - Hi Flex Meter to Meter Supply Cable	**PGMFT3000**

PGRJ1000

Meter to Meter Supply Cable - PVC - 1mm

Description	Cat ref.
0.30m - RJ45 Connector Cable 67 7003	**PGRJ300**
0.50m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ500**
1.00m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ1000**
1.50m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ1500**
2.00m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ2000**
3.00m - RJ45 Connector Cable 67 L7005 LSZH	**PGRJ23000**

PG9522FEMALE

Supply Voltage Connector Plugs

Characteristics:
- For those who want to make up their own power cable looms

Description	Cat ref.
Voltage IN (Male) Connector	**PG9523MALE**
Voltage OUT (Female) connector	**PG9522FEMALE**

JFT03

CT Output & RJ45 Lead Tester

Description	Cat ref.
CT Output and RJ45 Lead Tester	**JFT03**

Data is subject to errors and technical modifications.

Hour Counter

Characteristics:
- To measure the total operating time of any circuit/load non resettable.
- For technical data, see page 2.50.

Application Example:
- Total time of plant running.
- Connection in parallel with contactor coil.
- Recording of lighting hours for relamping purposes.

Voltage	Width (1 Mod =17.5mm)	Cat ref.
230V - 50Hz	2 Mod	**EC100**

EC100

Analogue Voltmeters

Characteristics:
- Single phase: direct connection.
- Three phase: use of a voltmeter selector switch **SK602** (see page 2.21).
- Frequency: 50 Hz.
- Accuracy: ± 2%.
- For technical data, see page 2.50.

Connection Capacity
- Rigid conductor 10mm².
- Flexible conductor 6mm².

Consumption	Width (1 Mod =17.5mm)	Cat ref.
2.5VA	4 Mod	**SM500**

SM500

Analogue Ammeters

Characteristics:
- For domestic and commercial installations.
- Indirect reading via current transformers: 50-100-150-250-400A.
- Accuracy: ± 2%.
- Connection via a current transformer (CT).
- For technical data, see page 2.50.

Scale	Width (1 Mod =17.5mm)	Cat ref.
0 - 50A	4 Mod	**SM050**
0 - 100A	4 Mod	**SM100**
0 - 150A	4 Mod	**SM150**
0 - 250A	4 Mod	**SM250**
0 - 400A	4 Mod	**SM400**

SM050

Digital Voltmeters

Characteristics:
- Three phase: use of a voltmeter selector switch **SK602** (see page 2.21).
- Voltage rating: 220/230V; 50/60Hz.
- Accuracy: ± 2%.
- Consumption: 4 VA.
- For technical data, see page 2.51.

Scale	Width (1 Mod =17.5mm)	Cat ref.
0-500V	4 Mod	**SM501**

SM501

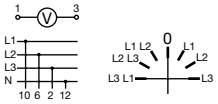
Digital Ammeters

Characteristics:
- **SM151, SM401, SM601**: reading via a current transformer (see below).
- Voltage rating: 220/230V; 50/60Hz.
- Accuracy: ± 1%.
- Consumption: 4 VA.
- For technical data, see page 2.51.

Description	Scale	Width (1 Mod =17.5mm)	Cat ref.
Reading via CT 150/5 (SRA01505)	0 - 150A	4 Mod	**SM151**
Reading via CT 400/5 (SRC04005)	0 - 400A	4 Mod	**SM401**
Reading via CT 600/5 (SRC06005)	0 - 600A	4 Mod	**SM601**

SM401

SK602



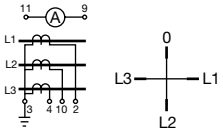
Voltmeter Selector

Characteristics:
- For use with Voltmeters.
- Complies with IEC 947-3, BS EN 60947-3
- Isolating voltage 500V a.c.
- Nominal current 10-20A
- 3 Ph&N
- 3 Readings between phases
- 3 Readings between phase & neutral
- Null position (no reading)

Terminal Capacity
- 1 - 6mm² Flexible
- 1.5 - 10mm² Rigid

Description	Width (1 Mod =17.5mm)	Cat ref.
20A 400V a.c.	3 Mod	**SK602**

SK603



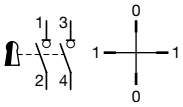
Ammeter Selector

Characteristics:
- For use with Ammeters.
- Complies with IEC 947-3, BS EN 60947-3
- Isolating voltage 500V a.c.
- Nominal current 10-20A
- 4 Positions
- Use in 3 Ph&N
- Reading by phase
- Null position (no reading)
- Should be used with Current Transformer (see page 2.50)

Terminal Capacity
- 1 - 6mm² Flexible
- 1.5 - 10mm² Rigid

Description	Width (1 Mod =17.5mm)	Cat ref.
20A 400V a.c.	3 Mod	**SK603**

SK606



Lockable Rotary Switch

Characteristics:
- For use with Voltmeters and Ammeters.
- Complies with IEC 947-3, BS EN 60947-3
- Isolating voltage 500V a.c.
- Nominal current 10-20A
- On / Off (4 Positions)

Terminal Capacity
- 1 - 6mm² Flexible
- 1.5 - 10mm² Rigid

Description	Width (1 Mod =17.5mm)	Cat ref.
10A 400V a.c.	3 Mod	**SK606**

Data is subject to errors and technical modifications.

Switch Disconnectors

I_n: 25 -32A
- Shrouded cable terminal.
- Connection capacity: 16mm² rigid conductor, 10mm² flexible conductor.

I_n: 40 - 63A
- Shrouded cable terminal.
- Connection capacity: 25mm² rigid conductor, 16mm² flexible conductor.

I_n: 80 - 125A
- Shrouded cable terminal.
- Connection capacity: 50mm² rigid conductor, 35mm² flexible conductor.

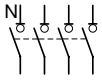
Characteristics
- Complies with BS EN 60947-3 all ratings.
- On position "I" in red & Off position "0" in green giving positve contact indication.
- For technical details see 2.52.

SBN140

SBN240

SBN340

SBN440

	Description	Width (1 Mod =17.5mm)	Cat ref.
	Single Pole Switch Disconnector		
	1x 25A 250V	1 Mod	**SBN125**
	1x 25A 250V Indicator Light	1 Mod	**SBB125**
	1x 32A 250V	1 Mod	**SBN132**
	1x 32A 250V Indicator Light	1 Mod	**SBB132**
	1x 40A 250V	1 Mod	**SBN140**
	1x 63A 250V	1 Mod	**SBN163**
	1x 80A 250V	1 Mod	**SBN180**
	1x 100A 250V	1 Mod	**SBN190**
	Double Pole Switch Disconnector		
	2x 25A 250V	1 Mod	**SBN225**
	2x 25A 250V Indicator Light	1 Mod	**SBB225**
	2x 32A 400V	1 Mod	**SBN232**
	2x 32A 250V Indicator Light	1 Mod	**SBB232**
	2x 40A 400V a.c.	2 Mod	**SBN240**
	2x 63A 400V a.c.	2 Mod	**SBN263**
	2x 80A 400V a.c.	2 Mod	**SBN280**
	2x 100A 400V a.c.	2 Mod	**SBN290**
	Triple Pole Switch Disconnector		
	3x 25A 400V a.c.	2 Mod	**SBN325**
	3x 32A 400V a.c.	2 Mod	**SBN332**
	3x 40A 400V a.c.	3 Mod	**SBN340**
	3x 63A 400V a.c.	3 Mod	**SBN363**
	3x 80A 400V a.c.	3 Mod	**SBN380**
	3x 100A 400V a.c.	3 Mod	**SBN390**
	3x 125A400V a.c.	3 Mod	**SBN399**
	Four Pole Switch Disconnector		
	4x 25A 400V Neutral Left	2 Mod	**SBN425**
	4x 32A 400V Neutral Left	2 Mod	**SBN432**
	4x 40A 400V Neutral Left	4 Mod	**SBN440**
	4x 63A 400V Neutral Left	4 Mod	**SBN463**
	4x 80A 400V Neutral Left	4 Mod	**SBN480**
	4x 100A 400V Neutral Left	4 Mod	**SBN490**
	4x 125A 400V Neutral Left	4 Mod	**SBN499**

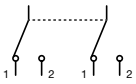
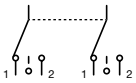
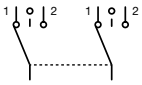
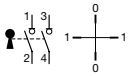
SFH125

SFT225

SK606

Changeover Switches

Characteristics
- Complies with BS EN 60947-3.
- For technical details see page 2.53.

	Description	Width (1 Mod =17.5mm)	Cat ref.
	2 Way Single Pole		
	1 x 25A 1P 250V a.c.	1 Mod	**SFH125**
	1 NO x 1 NC Double Pole		
	2 x 25A NO/NC 1P 250V a.c.	1 Mod	**SFM125**
	**2 Way Double Pole**		
	2 x 25A 2P 250V a.c.	2 Mod	**SFH225**
	Centre-off Changeover Single Pole		
	1 x 25A 1P 250V a.c.	1 Mod	**SFT125**
	**Centre-off Changeover Double Pole**		
	2 x 25A 2P 250V a.c.	2 Mod	**SFT225**
	2 x 40A 2P 400V a.c.	2 Mod	**SFT240**
SFT225 / 240	2 x 63A 2P 400V a.c.	4 Mod	**SF263**
			
SF263			
	**Lockable Rotary Switch On/Off (4 Positions)**		
	10A 400V a.c.	3 Mod	**SK606**

Data is subject to errors and technical modifications.

Light Sensitive Switch

EEN100

Characteristics
- A photo-electric cell measures the light level and in conjunction with the relay provides on/off control of a circuit.
- This device controls lighting circuits in relation to ambient light, based on user settings.
- Sealable front cover.
- Outputs: 1 changeover AC1 contact 16A - 230V a.c.
- Maximum distance: 50m between photocell and controller

Application Example:
- Street lighting, display lighting, illuminated signs etc.

Connection
- Capacity: Rigid: 1.5 to 10mm², Flexible: 1 to 6mm².
- On board LED shows status of changeover contact.

Technical Data
- 4 position override switch allowing: auto, on, off, test
- 2 sensitivity ranges: 5 to 50 lux, 50 to 2000 lux.
- Supplied with a separate surface-mounted photo-electric cell **EE003.**
- Must be used in conjunction with a suitably rated contactor where load conditions demand.
- For technical data, see page 2.54.

Description	Width (1 Mod =17.5mm)	Cat ref.
Light Sensitive Switch	1 Mod	**EEN100**

Light Sensitive Programmer

EE171

Characteristics
- To control the lighting installation in relation to time and ambient light.
- A weekly programmer associated with a light sensitive switch.
- Outputs: 1 changeover AC1 contact 16A - 230V a.c.
- Maximum distance: 50m between photocell and controller.

Working Principle
- The user programmes both on/off periods and a desired light level. The cell measures the light level within the on period. Depending on the light level (below or above the programmed threshold) the output will be switched on/off.
- 20 program steps, 1 minute switching increments.

Programming Function
- Programming by keys and display on LCD screen.
- On/off override facility, permanent working.
- Display and control of the programme.
- Test setting for easy adjustment.
- 2 sensitivity ranges: 5 to 50 lux, 50 to 2000 lux.
- Supplied with a separate surface-mounted photo-electric cell **EE003**.
- Must be used in conjunction with a suitably rated contactor where load conditions demand.
- For technical data, see page 2.54.

Description	Width (1 Mod =17.5mm)	Cat ref.
Light Sensitive Programmer	3 Mod	**EE171**

Replacement Photo Electric Cell

EE002

EE003

Description	For Cat ref.	Pack qty.	Cat ref.
Flush-mounted Photo Electric Cell	**EEN100**, **EE171**	1	**EE002**
Surface-mounted Photo Electric Cell	**EEN100**, **EE171**	1	**EE003**

Emergency Lighting Module

EE960

Application
- For both residential and commercial applications.
- Installed in a consumer unit or distribution board. Can be configured to provide emergency lighting.
- It can also be withdrawn from it's base, to act as a mini torch with an operating duration of 1 hour 30 mins.

Description	Width (1 Mod =17.5mm)	Cat ref.
Emergency Lighting Module	3 Mod	**EE960**

EVN011

EVN004

Universal Dimmers

Functional Characteristics Load

	EVN011	EVN012	EVN002	EVN004
230V Incandescent/halogen lamps	300W	300W	500W	500W
ELV Halogen lamps via fermagnetic transformer (transformer shall not be used under 75% of its nominal load)	300VA	300VA	500VA	500VA
ELV halogen & dimmable ELV LED via electronic transformer (maximum number of lamps allowed shall be calculated based on transformers output)	300VA	300VA	500VA	500VA
Dimmable compact fluorescent	60W	60W	100W	100W
230V dimmable LED lamps	60W	60W	100W (10 lamps)	100W (10 lamps)
No load consumption	0.2W	0.2W	0.2W	0.2W

Characteristics

- Controls the lighting level of all types of light source: incandescent, LV halogen, ELV halogen with electronic or ferromagnetic transformer, LED lamps, ELV LED lamps with electronic transformer, fluorescent with electronic ballast.
- The EVN 300W and 500W dimmers also allow lighting level adjustment for dimmable CFL and dimmable LED lamps.
- Dimming controlled by push button: start / stop by short press, increasing / decreasing by maintaining pressure.
- Automatic load recognition.
- Soft start (progressive start) to increase the working life of lamps.
- Remembers previous dimming level.
- Protection against overheating.
- 3 modes for load learning: auto, advanced, expert (comfort version).
- Can replace a latching relay, with light level function.
- Push button (line or neutral).
- Comfort version includes scene setting by two short presses on the push button, progressive switch-off & night light.

Description	Width (1 Mod =17.5mm)	Cat ref.
300W Standard Version	1	**EVN011**
300W Comfort Version	1	**EVN012**
500W Standard Version	2	**EVN002**
500W Comfort Version	2	**EVN004**

Data is subject to errors and technical modifications.

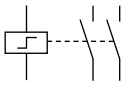
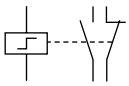
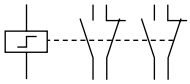
Latching Relays

Description
- Operate when impulsed by a signal voltage.
- The impulse can be provided via a pushbutton or pushswitch. The first pulse operates the relay and latches it to its set (opposite) state, the next operation of the pushbutton returns the relay to its reset (original) state.
- Auxiliary contacts **(EPN050, EPN051)**.
- Are available for remote signalling and centralised control applications and can be easily combined with the latching relays.
- Connection: 10mm² flexible, 6mm² rigid.
- For technical details see page 2.56.

EPN510

EPN520

EPN518

	Coil	Power Circuit AC1	Width (1 Mod =17.5mm)	Cat ref.
	Latching Relay 1 NO			
	230V 50Hz	16A - 250V a.c.	1 Mod	**EPN510**
	24V 50Hz	16A - 250V a.c.	1 Mod	**EPN513**
	**Latching Relay 2 NO**			
	230V 50Hz	16A - 250V a.c.	1 Mod	**EPN520**
	24V 50Hz	16A - 250V a.c.	1 Mod	**EPN524**
	12V 50Hz	16A - 250V a.c.	1 Mod	**EPN521**
	**Latching Relay 1 NC + 1 NO**			
	230V 50Hz	16A - 250V a.c.	1 Mod	**EPN515**
	24V 50Hz	16A - 250V a.c.	1 Mod	**EPN518**
	12V 50Hz	16A - 250V a.c.	1 Mod	**EPN519**
	**Latching Relay 2 NC + 2 NO**			
	230V 50Hz	16A - 250V a.c.	2 Mod	**EPN525**
	24V 50Hz	16A - 250V a.c.	2 Mod	**EPN528**
	12V 50Hz	16A - 250V a.c.	2 Mod	**EPN529**
	Latching Relay 4 NO			
	230V 50Hz	16A - 400V a.c.	2 Mod	**EPN540**
	24V 50Hz	16A - 400V a.c.	2 Mod	**EPN541**

Auxiliary Contacts

EPN050

Description	Power Circuit	Width (1 Mod =17.5mm)	Cat ref.
Auxiliary Contact	2A - 250V a.c.	½ Mod	**EPN051**
Auxlliary Contacts for Centralised Control	110-230V a.c.	½ Mod	**EPN050**

Relays

Characteristics
- To provide control of low power circuits max 16A; associated with switches, time switches etc for remote control applications.
- The relays will accept an auxiliary contact for remote signalling applications (**ESC080**).
- For the command of ELV circuits use interface relays **EN145** and **EN146**.
- For the command of high power circuits (20, 40 & 63 Amps) use contactors as shown on page 2.27.

ERD218

Coil AC Voltage	Power Circuit AC1	Width (1 Mod =17.5mm)	Cat ref.
Relays 1 NC + 1 NO			
230V 50Hz	16A - 250V~	1 Mod	**ERC218**
24V 50Hz	16A - 250V~	1 Mod	**ERD218**
8/12V 50Hz	16A - 250V~	1 Mod	**ERL218**
Relays 2 NC + 2 NO			
230V 50Hz	16A - 250V~	2 Mod	**ERC418**
24V 50Hz	16A - 250V~	2 Mod	**ERD418**
8/12V 50Hz	16A - 250V~	1 Mod	**ERL418**

ESC225S

Low Noise Contactors

Description
- For the remote switching and control of power circuits where noise may be a concern i.e. hotel bedrooms etc.

Technical Data
- The choice of contactor depends upon a number of parameters, e.g. The nature of the supply, the power it is switching, the characteristics of the load, the control voltage required & number of operations.
- All contactor ratings are for AC1 loads only – if the load differs from AC1 the contactor may need de-rating
- The use of **LZ060** (heat dissipation inserts) between all contactors installed or between contactors and adjacent devices is required.
- For technical data, see page 2.57.

Options
- Contact choice: Normally open (NO), Normally closed (NC).

ESC463S

Description	Coil AC Voltage	Power Circuit	Width (1 Mod =17.5mm)	Cat ref.
25A 2NO	230V 50Hz	25A - 400V a.c.	1 Mod	**ESC225S**
40A 2NO	230V 50Hz	40A - 400V a.c.	3 Mod	**ESC240S**
63A 2NO	230V 50Hz	63A - 400V a.c.	3 Mod	**ESC263S**
25A 3NO	230V 50Hz	25A - 400V a.c.	2 Mod	**ESC325S**
40A 3NO	230V 50Hz	40A - 400V a.c.	3 Mod	**ESC340S**
25A 3NO + 1NC	230V 50Hz	25A - 400V a.c.	2 Mod	**ESC428S**
25A 4NO	230V 50Hz	25A - 400V a.c.	2 Mod	**ESC425S**
40A 4NO	230V 50Hz	40A - 400V a.c.	3 Mod	**ESC440S**
63A 4NO	230V 50Hz	63A - 400V a.c.	3 Mod	**ESC463S**
25A 4NC	230V 50Hz	25A - 400V a.c.	2 Mod	**ESC426S**

Auxiliaries & Accessories

ESC001

ESC002

ESC080

Description	Power Circuit	Width (1 Mod =17.5mm)	Cat ref.
Heat Dissipation Insert	-	½ Mod	**LZ060**
Sealable Terminal Cover for 1 Module Contactors	-	-	**ESC001**
Sealable Terminal Cover for 2 Module Contactors	-	-	**ESC002**
Sealable Terminal Cover for 3 Module Contactors	-	-	**ESC003**
1NO + 1NC Auxiliary Contact	6A - 250V a.c.	½ Mod	**ESC080**

Data is subject to errors and technical modifications.

Standard Contactors

ESC225

ESC425

Description
- For the remote switching and control of power circuits (25A-63A AC1)

Technical Data
- The choice of contactor depends upon a number of parameters, e.g. the nature of the supply, the power it is switching, the characteristics of the load, the control voltage required, number of operations.
- All contactor ratings are for AC1 loads only – if the load differs from AC1 the contactor may need de-rating (see technical characteristics on page 2.58).
- The use of **LZ060** (heat dissipation inserts) between all contactors installed or between contactors and adjacent devices is required.

Options
- Contact choice
- Normally open (NO)
- Normally closed (NC)

Auxiliary
- All contactors will accept auxiliary, **ESC080** contact.

Description	Coil AC voltage	Power circuit AC1	Width (1 Mod =17.5mm)	Cat ref.
25A 1NO	230V 50Hz	25A - 250V~	1 Mod	**ESC125**
25A 2NO	230V 50Hz	25A - 250V~	1 Mod	**ESC225**
25A 2NO Manual Override	230V 50Hz	25A - 250V~	1 Mod	**ERC225**
40A 2NO	230V 50Hz	40A - 400V~	3 Mod	**ESC240**
63A 2NO	230V 50Hz	63A - 400V~	3 Mod	**ESC263**
25A 2NO	24V 50Hz	25A - 250V~	1 Mod	**ESD225**
25A 2NO Manual Override	24V 50Hz	25A - 250V~	1 Mod	**ERD225**
40A 2NO	24V 50Hz	40A - 250V~	3 Mod	**ESD240**
25A 2NC	230V 50Hz	25A - 250V~	1 Mod	**ESC226**
25A 1NO 1NC	24V 50Hz	25A - 250V~	1 Mod	**ESD227**
25A 3NO	230V 50Hz	25A - 400V~	2 Mod	**ESC325**
25A 3NO Manual Override	230V 50Hz	25A - 400V~	3 Mod	**ERC326**
40A 3NO	230V 50Hz	40A - 400V~	3 Mod	**ESC340**
40A 3NO + 1NC	230V 50Hz	40A - 400V~	3 Mod	**ESC443**
63A 3NO + 1NC	230V 50Hz	63A - 400V~	3 Mod	**ESC466**
25A 4NO	230V 50Hz	25A - 400V~	2 Mod	**ESC425**
40A 4NO	230V 50Hz	40A - 400V~	3 Mod	**ESC440**
63A 4NO	230V 50Hz	63A - 400V~	3 Mod	**ESC463**
25A 4NO	24V 50Hz	25A - 400V~	2 Mod	**ESD425**
25A 4NC	230V 50Hz	25A - 400V~	2 Mod	**ESC426**
40A 4NC	230V 50Hz	40A - 400V~	3 Mod	**ESC441**
63A 4NC	230V 50Hz	63A - 400V~	3 Mod	**ESC464**
63A 2NC + 2NO	230V 50Hz	63A - 250V~	3 Mod	**ESC465**

ETC225S

ETC340

ETC425

Override Contactors

Description
- Manual override facility allows temporary override, with automatic return at next coil energisation. Permanent off can also be selected. **ETC225S** is a low noise version.

Technical Data
- The choice of contactor depends upon a number of parameters, e.g. the nature of the supply, the power it is switching, the characteristics of the load, the control voltage required, number of operations.
- All contactors ratings are for AC1 loads only – if the load differs from AC1 the contactor may need de-rating (see technical characteristics on page 2.58).
- The use of **LZ060** (heat dissipation inserts) between all contactors installed or between contactors and adjacent devices is
- recommended.

Options
- Contact choice
- Normally open (NO)
- Normally closed (NC)

Auxiliary
- All contactors will accept auxiliary, **ESC080** contact.

Coil AC voltage	Power circuit AC1	Width (1 Mod =17.5mm)	Cat ref.
2 NO			
230V 50 Hz	25A - 250V~	1 Mod	**ETC225S**
230V 50 Hz	25A - 250V~	1 Mod	**ETC225**
3 NO			
230V 50 Hz	20A - 400V~	2 Mod	**ETC325**
230V 50 Hz	40A - 400V~	3 Mod	**ETC340**
4 NO			
230V 50 Hz	20A - 400V~	2 Mod	**ETC425**
230V 50 Hz	40A - 400V~	3 Mod	**ETC440**

Auxiliary for 25A Contactors

Power circuit AC1	Width (1 Mod =17.5mm)	Cat ref.
2A - 250V~	½ Mod	**ESC080**

Accessories

Description	Width (1 Mod =17.5mm)	Cat ref.
Heat Dissipation Insert	½ Mod	**LZ060**

Data is subject to errors and technical modifications.

Impulse & Latching

Description
- Modular pushbuttons to actuate loads either directly or via contactors etc.

Terminal Capacity
- 10mm² rigid conductor.
- 6mm² flexible conductor.
- BS EN 60947-5-1

Characteristics	Width (1 Mod =17.5mm)	Cat ref.
Pushbuttons (Impulse) 16A - 250V a.c. Without Indicator Light		
Contacts: 1 NO	1 Mod	**SVN311**
Contacts: 2 NO	1 Mod	**SVN331**
Contacts: 2 NO, Double Pushbutton	1 Mod	**SVN371**
Contacts: 1 NC	1 Mod	**SVN321**
Contacts: 2 NC	1 Mod	**SVN341**
Contacts: 1 NO + 1 NC	1 Mod	**SVN351**
Contacts: 1 NO + 1 NC, Double Pushbutton	1 Mod	**SVN391**
Pushbuttons (Impulse) 16A - 250V a.c. With Indicator Light		
Contacts: 1 NO : Green	1 Mod	**SVN411**
Contacts: 2 NO : Red	1 Mod	**SVN432**
Contacts: 1 NC : Red	1 Mod	**SVN422**
Contacts: 2 NC : Green	1 Mod	**SVN441**
Contacts: 1 NO + 1 NC	1 Mod	**SVN452**
Pushbuttons (Latching) 16A - 250V a.c. Without Indicator Light		
Contacts: 1 NO	1 Mod	**SVN312**
Contacts: 2 NO	1 Mod	**SVN332**
Contacts: 1 NC	1 Mod	**SVN322**
Contacts: 2 NC	1 Mod	**SVN342**
Contacts: 1 NO + 1 NC	1 Mod	**SVN352**
Pushbuttons (Latching) 16A - 250V a.c. With Indicator Light		
Contacts: 1 NO : Green	1 Mod	**SVN413**
Contacts: 2 NO : Green	1 Mod	**SVN433**

SVN311

SVN411

SVN312

SVN413

SVN121

SVN127

Indicator Lights

Characteristics
- Available with red, green, orange, blue & transparent lens.

Light Technology
- LED.

Options
- DIN rail mountable.

Connection
- Cage terminals.

Capacity
- 10mm² rigid conductor.
- 6mm² flexible conductor.
- BS EN 62094-1.

Description	Width (1 Mod =17.5mm)	Cat ref.
Indicator Lights 230V a.c.		
Indicator Colour: Green	1 Mod	**SVN121**
Indicator Colour: Red	1 Mod	**SVN122**
Indicator Colour: Orange	1 Mod	**SVN123**
Indicator Colour: Blue	1 Mod	**SVN124**
Indicator Colour: Transparent	1 Mod	**SVN125**
Indicator Colour: Red & Green (Double Indicator)	1 Mod	**SVN126**
Indicator Colour: Red x3 (Triple Indicator)	1 Mod	**SVN127**
Indicator Lights 12/48V		
Indicator Colour: Green	1 Mod	**SVN131**
Indicator Colour: Red	1 Mod	**SVN132**

ST313

Safety Transformers

Characteristics
- Provide Separated Extra Low Voltage (SELV) 8, 12, 24V a.c.

Technical Data
- Secondary voltages: 8V, 12V, 24V a.c.
- Cable capacities: 6mm²
- For technical data, see page 2.62.

Note:
- The transformers have a higher no load voltage. The stated voltages correspond to the voltages on nominal load.

Description	Width (1 Mod =17.5mm)	Cat ref.
230V/12-24V a.c. 50Hz, 25VA 50/60 Hz	4 Mod	**ST312**
230V/12-24V a.c. 50Hz, 16VA 50/60 Hz	4 Mod	**ST313**
230V/12-24V a.c. 50Hz, 40VA 50/60 Hz	4 Mod	**ST314**
230V/12-24V a.c. 50Hz, 63VA 50/60 Hz	6 Mod	**ST315**

ST301

Bell Transformers

Characteristics
- Provide Separated Extra Low Voltage (SELV) 8, 12, 24V a.c.

Technical Data
- Secondary voltages: 8V, 12V, 24V a.c.
- Cable capacities: 6mm².
- Bell transformers are short-circuit protected.
- For technical data, see page 2.62.

Note:
- When a bell transformer is installed in an enclosure with mains voltage equipment, 230V cable should be used on the secondary side of the transformer or extra low voltage cable should be sheathed within the enclosure.

Description	Width (1 Mod =17.5mm)	Cat ref.
230V/8V a.c. 50/60 Hz, 8-12V, 4VA	2	**ST301**
230V/8-12V a.c. 50/60 Hz, 8-12V, 8VA	2	**ST303**
230V/8-12V a.c. 50/60 Hz, 8-12V, 16VA	3	**ST305**

Data is subject to errors and technical modifications.

Bells

Technical Data
- Cable capacities: 6mm²
- Bells: Max. continuous duty ≤ 30 minutes.

Output
- Bells: 85 dBA.

Description	Width (1 Mod =17.5mm)	Cat ref.
8/12V a.c., 5VA - 0.33A	1 Mod	**SU212**
230V a.c., 6.5VA - 0.03A	1 Mod	**SU213**

SU212

Buzzers

Technical Data
- Cable capacities: 6mm².
- Buzzers: Max. continuous duty ≤ 30 minutes.

Output
- Buzzers: 78dBA.

Description	Width (1 Mod =17.5mm)	Cat ref.
8/12V a.c., 4VA - 0.33A	1 Mod	**SU214**
230V a.c., 6.5VA - 0.03A	1 Mod	**SU215**

SU214

EH010

EH171

Electromechanical Time Switches

Characteristics
- For hourly, daily or weekly programming.
- To control lighting, heating, ventilation, household appliances etc. to save energy and to improve comfort.

Technical Data
- Programming by captive segments.
- Manual override for 1 module products: Automatic, Permanent ON.
- Manual override for 3 module products: Automatic, Permanent ON, Permanent OFF.
- Minimum Switching Time: 15 min for daily dial, 2h for weekly dial.
- Supply failure reserve where applicable 200 hours, after being connected for 120 hours.
- For a selection chart see page 2.64, for technical data see page 2.63.

Connection
- 1-4mm².

Description	Voltage Supply	Width (1 Mod =17.5mm)	Cat ref.
1 Channel Time Switches without Supply Failure Reserve			
Daily Dial, 1 Changeover Contact, 16A 250V a.c. AC1	230V a.c. 50Hz	1 Mod	**EH010**
Daily Dial, 1 NO Contact, 16A 250V a.c. AC1	230V a.c. 50Hz	3 Mod	**EH110**
1 Channel Time Switches with Supply Failure Reserve			
Daily Dial, 1 Changeover Contact, 16A 250V a.c. AC1	230V a.c. 50/60Hz	1 Mod	**EH011**
Daily Dial, 1 NO Contact, 16A 250V a.c. AC1	230V a.c. 50/60Hz	3 Mod	**EH111**
Weekly Dial, 1 NO Contact, 16A 250V a.c. AC1	230V a.c. 50/60Hz	3 Mod	**EH171**

EG071

EG103

EG203

Digital Time Switches

Characteristics
- For the control of lighting, heating, household appliances, shop windows, signage etc. to improve comfort and to save energy.

EG103 and **EG203** (Basic Version)
- Automatic change of summer / winter time.

EG103E/V and **EG203E** (Advanced Version)
- Automatic change of summer / winter time.
- Holiday mode: forcing ON or OFF between two dates, presence simulation with random switching.
- Backlit screen.
- Impulse programming capability (1s to 30 min).

Programming Key
- To allow easy back up and re-installation of the program to allow permanent program overrides.
- Programming per day or group of days.
- 56 ON / OFF programme steps.
- Permanent ON/OFF overrides.
- Temporary ON/OFF overrides bar graph indication showing the daily profile.
- Ability to disable device button controls with **EG004**.
- Programming can be completed without the need to be energised.

Connection
- **EG010** / **EG071**: 0.5 to 4mm².
- **EG103** and **EG203/E**: 1 to 6mm² Flexible, 1.5 to 10mm² Rigid.

Operating Voltage
- 230 a.c. 50/60 Hz (except **EG103V** - 12/24V AC/DC).
- For a selection chart see page 2.64, for technical data see pages 2.63 - 2.67.

Description	Width (1 Mod =17.5mm)	Cat ref.
1 Channel Digital Time Switch (not compatible with program key)		
Daily Cycle, 5 Adjustable pre-recorded programs 6 Switchings per day (3 on and 3 off), Output: 1 changeover contact 16A - 250V a.c. AC 1, 3 year reserve	1 Mod	**EG010**
Weekly Cycle, Capacity 20 program steps Output: 1 changeover contact 16A - 250V a.c. AC 1, 3 year reserve	1 Mod	**EG071**
1 Channel Digital Time Switch		
Weekly Cycle (Basic Version), Output: 1 changeover contact 16A - 250V a.c. AC 1, Delivered with key **EG005**	2 Mod	**EG103**
Weekly Cycle (Advanced Version), Output: 1 changeover contact 16A - 250V a.c. AC 1, Delivered with key **EG005**	2 Mod	**EG103E**
2 Channel Digital Time Switch		
Weekly Cycle (Basic Version), Output: 2 changeover contact 16A - 250V a.c. AC 1, Delivered with key **EG005**	2 Mod	**EG203**
Weekly Cycle (Advanced Version), Output: 2 changeover contact 16A - 250V a.c. AC 1, Delivered with key **EG005**	2 Mod	**EG203E**

Data is subject to errors and technical modifications.

4 Channel Digital Time Switches

EG493E

Weekly and Annual Cycle
- In commercial premises timed programming often requires the use of multi-circuit equipment with large programming capacities for a weekly or annual cycle.

Applications
- Command of lighting circuits, control of heating, ventilation control, bells, alarms.

Functions
- Summer/winter time pre-programmed.
- External input for override (permanent, temporary, timed)
- The output can be defined as ON/OFF, impulse or cycle.
- 4 different cycles can be defined.
- Calculates automatically all dates linked with Easter.
- Programming for holiday period, including random mode.
- 10 specific weekly programs.
- Hour counter on each channel.
- Ability to disable device button controls with PIN code.

Connection
- Quick connect terminals.
- Capacity: 0.75 to 2.5mm².
- For a selection chart see page 2.64.

Description	Cat ref.
4 Channel Yearly Time Switch	**EG493E**
Spare grey programming key for timers **EG493E**	**EG007**
USB interface between PC & key interface module, with software on CD	**EG003G**

Astronomical Time Switches

Characteristics
- Programming of lighting loads, with automatic change of winter / summer time.
- Expert program with individual astronomical program steps.
- Programming for day or group of days.
- Weekly programming.
- Permanent or temporary override.
- Programming for holiday period.
- Can be programmed via the PC software and the associated interface (**EG003**).
- For technical information see page 2.67.

EE180

Description	Width (1 Mod =17.5mm)	Cat ref.
1 Channel Astronomical Time Switch		
Weekly Cycle, 230V a.c., 50Hz Changeover Contact 16A AC1, Operating reserve lithium battery 5 years, Delivered with key **EG005**	2 Mod	**EE180**
2 Channel Astronomical Time Switch		
Weekly Cycle, 230V a.c., 50Hz 2 Changeover Contact 16A AC1, Operating reserve lithium battery 5 years, Delivered with key **EG005**	2 Mod	**EE181**

EE181

PC Interface & Software Tools

Description	Pack qty.	Cat ref.
USB interface between PC & key interface module, with software on CD	1	**EG003G**
Yellow locking key to prevent unauthorised re-programming of all EG time clocks (except **EG010**, **EG071**)	1	**EG004**
Spare grey programming key for timers **EG103**, **EG103V**,**EG203**, **EG103E**, **EG203E**	1	**EG005**
DIN rail storage module for **EG004** or **EG005**	1	**EG006**

EG003G

EG005

EMN001

EMN005

Time Lag Switches

Characteristics
- Provides control of lighting circuits with automatic switch-off after a pre-set time.
- Compact design with a 2 position switch, permanent / timed lighting control facility.

Basic Staircase Time Lag Switches
- Adjustable time delay setting 30 sec. to 10 minutes.

Multifunction Staircase Time Lag Switches
- Incorporates a pre-warning of switch OFF improving safety.
- Double delay function: 30 sec. to 10 min. 1 hour on override by pressing the push-button for more than 3 seconds. Double delay with pre-warning mode.
- For technical data see page 2.68.

Description	Pack qty.	Cat ref.
Basic Staircase Time Lag Switches		
Supply voltage 230V a.c. 50/60Hz 16A - 250V AC1 2300W incandescent halogen and fluorescent	1 Mod	**EMN001**
Multifunction Staircase Time Lag Switches		
Supply voltage 230V a.c. 50/60Hz 16A - 250V AC1 2300W incandescent halogen and fluorescent	1 Mod	**EMN005**

EZN001

EZN002

EZN004

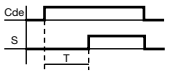
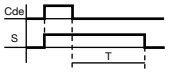
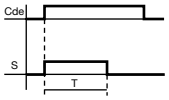
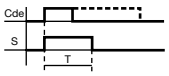
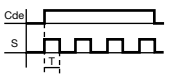
Delay Timers

Characteristics
- For timing and automation in domestic and commercial premises. The input signal can be via various switching devices (pushbutton, latching switch, timeclock etc.) and the timed output used to control the application.

Applications
- To provide all types of automatic control i.e. lighting, ventilation, watering, machine pre-heating, cycle control etc. with automatic switch off / on after preset time.

Terminal Capacity
- 6mm² max flexible.
- 1.5 - 10mm² rigid.

Technical Data
- Voltage range: 12 to 48V DC, 12 to 230V AC.
- Adjustable: Time delay from 0.1s to 10hrs.
- Complies with BS EN 60669-2-1.
- For technical data see page 2.69 - 2.70.

	Description	Pack qty.	Cat ref.
	**Delay On** 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN001**
	**Delay Off** 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN002**
	**Adjustable Time On** 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN003**
	**Timer** 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN004**
	**Symmetrical Flasher** 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN005**
	Delay On / Off, Adjustable Time On / Off, Timer, Symmetrical Flasher 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN006**

Data is subject to errors and technical modifications.

Multi-range Thermostats

EK186

Description
- Electronic thermostats for any application requiring temperature control (from cold rooms to steam rooms).

Characteristics
- 3 working modes are possible (selected by wiring): permanent off, permanent on, cyclic operation.
- Output status is indicated via an LED.

Technical Data
- Requires sensor head, **EK081** or **EK083**.
- Voltage rating: 230V a.c. - 50/60 Hz.
- Output: 1 changeover contact, 2A AC1 - 230V a.c.
- 4 ranges: -30 to 0°C, 0 to +30°C, 30 to +60°C, 60 to +90°C.
- For technical data see page 2.71.

Description	Width (1 Mod =17.5mm)	Cat ref.
Multi-range Thermostat (Requires sensor head, **EK081** or **EK083**)	3 Mod	**EK186**

Multi-Channel Thermostats

EK187

Description
- Electronic thermostats for any application requiring temperature control (from cold rooms to steam rooms).

Characteristics
- 3 working modes are possible (selected by wiring): permanent off, permanent on, cyclic operation
- Output status is indicated via an LED.

Technical Data
- Two adjustable temperature levels are selected by external signals (operation by time switch or digital programmer).
- Additionally there is an adjustable low level temperature for frost protection etc. In the event of probe disconnection the heating system is switched on one minute in every four.
- Accuracy ±0.2°C, Voltage rating: 230V a.c. - 50/60 Hz.
- Output: 1 changeover contact, 2A AC1 - 230V a.c.
- Temperature Level 1 (Comfort) Adjustable 5 - 30°C.
- Temperature Level 2 (Night setting) Adjustable 2 - 8°C less than Level 1 setting.
- Temperature Level 3 (Frost setting) Adjustable 5 - 30°C.
- For technical data see page 2.72.

Description	Width (1 Mod =17.5mm)	Cat ref.
Multi-channel Thermostat (Requires sensor head, **EK081** or **EK083**)	3 Mod	**EK187**

Sensor Head for Electronic Thermostats

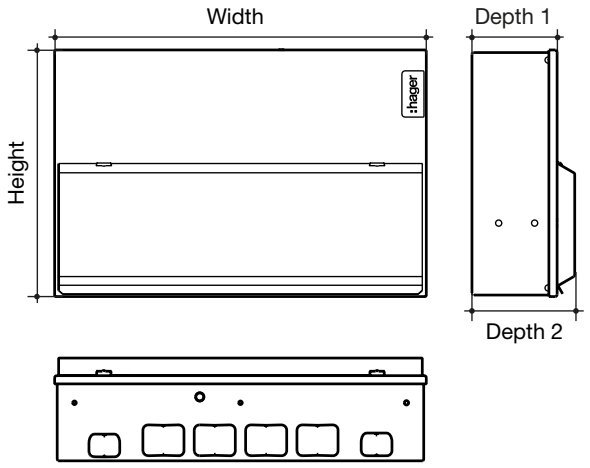
Description
- Sensor to provide temperature reading to electronic thermostat.
- Can be associated with: **EK186**, **EK187** thermostats.
- For technical data see page 2.73.

EK081

EK082

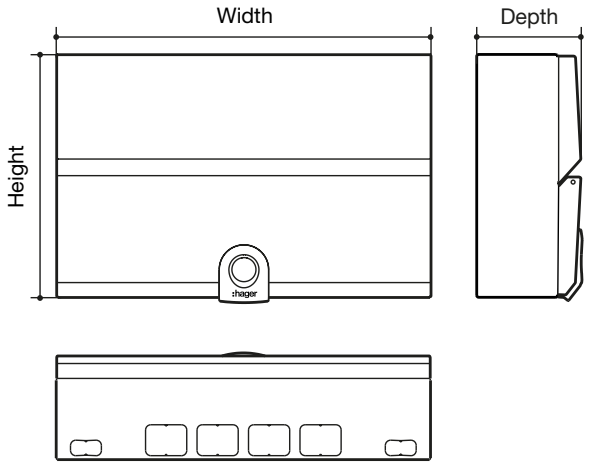
EK083

Description	Cat ref.
Fixed Ambient Sensor Head	**EK081**
Adjustable Ambient Sensor Head	**EK082**
Universal Sensor Head	**EK083**



Design 10 Dimensions (mm)

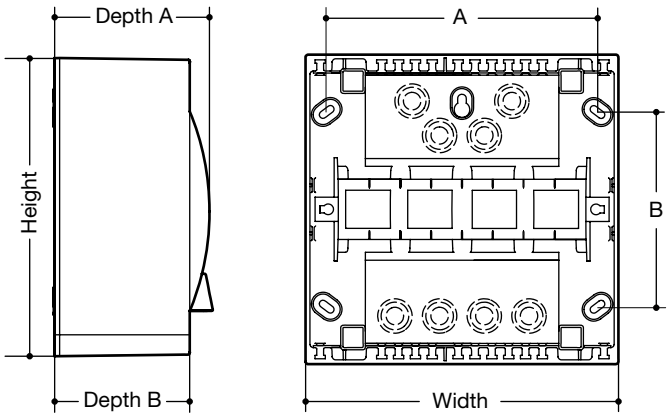
	Enclosure Size					
	2	**3**	**4**	**5**	**6**	**7**
A	147	219	290	362	398	470
B	240	240	240	240	240	240
C	83	83	83	83	83	83
D	100	100	100	100	100	100



Design 30 Dimensions (mm)

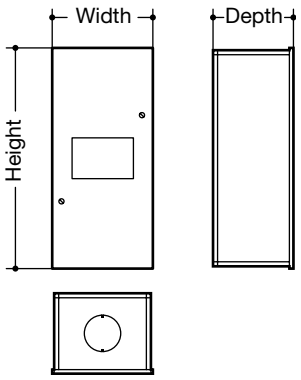
	Enclosure Size					
	2	**3**	**4**	**5**	**6**	**7**
A	168	220	290	360	400	480
B	240	240	240	240	240	240
C	102	102	102	102	102	102

Data is subject to errors and technical modifications.



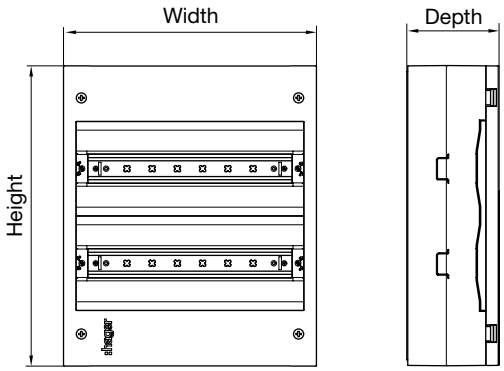
Mini Gamma Dimensions (mm)

	GD102E	GD104E	GD106E	GD108E	GD110E
Width	55	110	146	182	218
Height	160	180	180	180	180
Depth A	94	94	94	94	94
Depth B	82	82	82	82	82
A	-	86	122	159	195
B	-	114	114	114	114



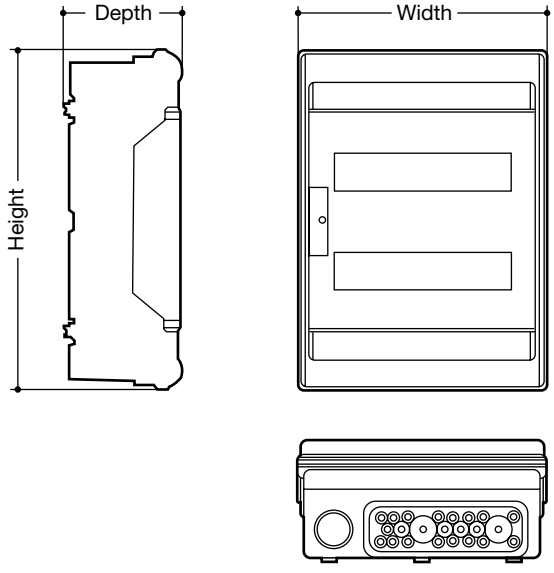
IU Enclosures Dimensions (mm)

	IU41	IU2 IU3	IU2/D IU2/GD IU3/D	IU42	IU42/D	IU4	IU4/D	IU44 IU45	IU44/D IU44/GD
Width	50	80	80	80	80	115	115	125	125
Height	152	152	152	312	312	187	187	312	312
Depth	61.5	61.5	87.5	61.5	100	61.5	87.5	73.5	99.5
Connection	EARTH ONLY								
Knockouts	2 x 20mm							None	



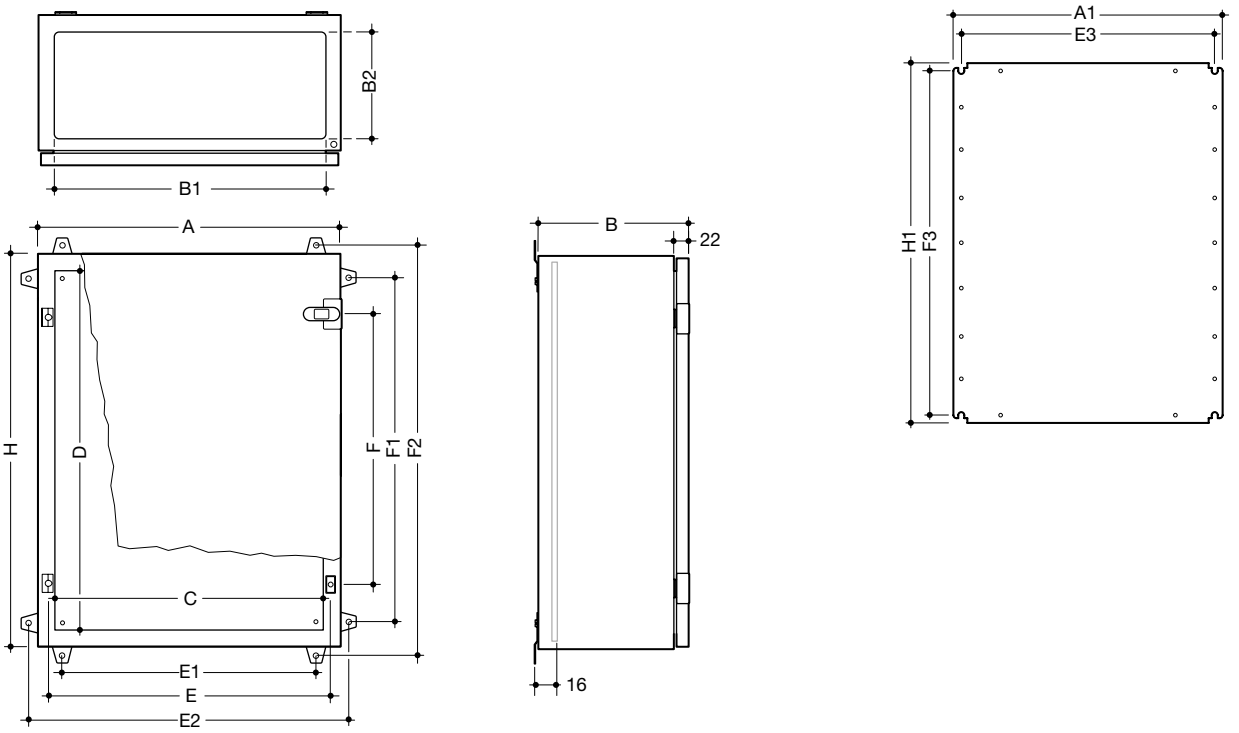
Vega Dimensions (mm)

	VB118TP VB118PP	VB218TP VB218PP	VB318TP VB318PP	VB418TP VB418PP
Width	400	400	400	400
Height	325	475	625	775
Depth	146	146	146	146
DIN Rail Distance	150	150	150	150



Vector II Dimensions (mm)

	VE103U	VE106U	VE110U	VE112U	VE212U	VE312U
Width	110	164	236	310	310	310
Height	175	190	210	302	427	552
Depth	93	113	114	151	151	151



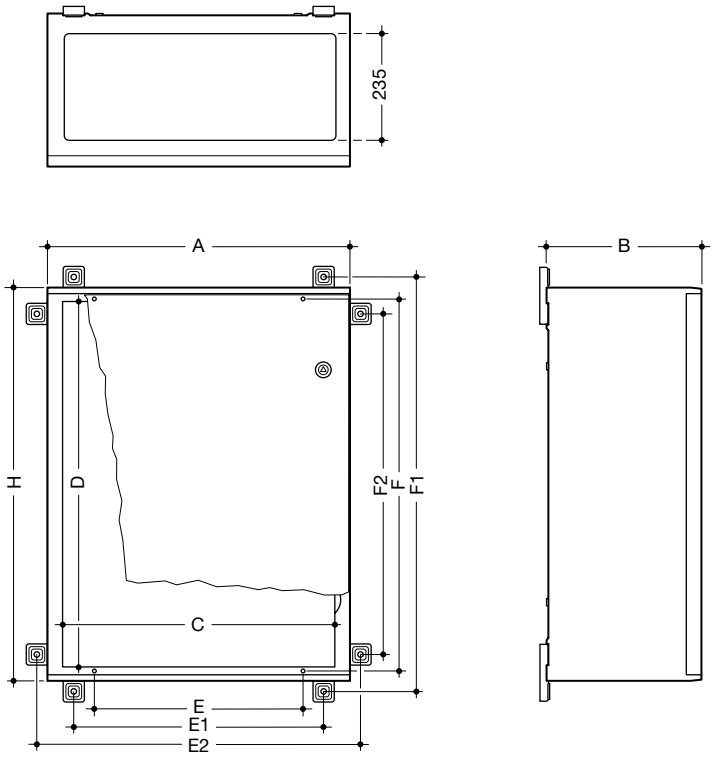
Steel Enclosures Dimensions

			Dimensions (mm)							Outside Fixing				Inside Fixing	
Cat ref. Plain Door	**Cat ref. Glazed Door**	**Rows**	**A**	**H**	**B**	**B1**	**B2**	**C**	**D**	**E1**	**E2**	**F1**	**F2**	**E**	**F**
FL102A	-	-	250	300	160	195	80	200	250	210	320	220	332	169	208
FL104A	**FL154A**	2	300	350	160	245	80	250	300	260	370	272	382	219	258
FL105A	**FL155A**	2	300	350	200	245	120	250	300	260	370	272	382	219	258
FL110A	**FL160A**	3	300	500	200	245	120	250	450	260	370	422	532	219	408
FL112A	**FL162A**	3	400	500	200	345	120	350	450	360	470	422	532	319	408
FL117A	**FL167A**	4	400	650	200	3458	120	350	600	360	470	572	682	319	558
FL118A	**FL168A**	4	400	650	250	345	170	350	600	360	470	572	682	319	558
FL120A	**FL170A**	4	500	650	250	445	170	450	600	460	570	572	682	419	558
FL124A	**FL174A**	5	600	800	300	545	220	550	750	560	670	722	832	519	708
FL126A	**FL176A**	6	600	950	300	545	220	550	900	560	670	872	982	519	858
FL128A	**FL178A**	6	800	950	300	745	220	750	900	760	870	872	982	719	858

Mounting Plate Dimensions

		Plate dimensions (mm)		Fixing points (mm)	
Cat ref.	**For enclosures**	**A1**	**H1**	**E3**	**F3**
FL402A	**FL102A**	193	280	169	208
FL404A	**FL104A,FL105A, FL204B**	243	330	219	258
FL407A	**FL110A, FL209B**	243	480	219	258
FL408A	**FL112A, FL213B**	343	480	219	408
FL412A	**FL117A, FL118A, FL216B**	343	630	319	408
FL413A	**FL120A, FL221B**	443	630	319	558
FL415A	**FL123A, FL124A, FL229B**	543	780	319	558
FL416A	**FL125A, FL126A**	543	930	419	558
FL417A	**FL127A, FL128A**	743	930	419	558
FL522E	**FL327B, FL527B**	693	1080	719	858

Data is subject to errors and technical modifications.



GRP Enclosure Dimensions

			Dimensions (mm)						Inside Fixing		Outside Fixing		
Cat ref. Plain Door	**Cat ref. Glazed Door**	**Rows**	**A**	**H**	**B**	**C**	**D**	**E**	**F**	**E1**	**E2**	**F1**	**F2**
FL204B	**FL254B**	2	300	350	160	250	300	219	258	339	339	269	389
FL209B	**FL259B**	3	300	500	200	250	450	219	408	339	339	419	539
FL213B	**FL263B**	3	400	500	200	350	450	319	408	439	439	419	539
FL216B	**FL266B**	4	400	650	200	350	600	319	558	439	439	569	689
FL221B	**FL271B**	4	500	650	250	450	600	419	558	539	539	569	689
FL229B	**FL279B**	5	600	800	300	550	750	519	708	639	639	719	839
FL327B	**FL527B**	-	850	1200	300	750	1050	-	-	-	-	-	-

Torque Settings

			Cables >1.5mm² Tightening torque (N.m)		Cables ≤1.5mm² Tightening torque (N.m)		Cable Stripping (mm)
	Pz No.	**(mm)**	**Single Cable**	**Multi Cables**	**Single Cable**	**Multi Cable**	
Consumer unit terminals							
Earth and neutral terminal bars	2	6.5	2	2	1.5	1.5	10
Isolation							
SB switch disconnectors	2	6.5	3.6	3.6	3.6	3.6	15
Circuit protection							
MTN MCB	2	6.5	2.8	2.8	2.8	2.8	13
NBN/NCN/NDN MCB	2	6.5	2.8	2.8	2.8	2.8	13
RCBO	2	5.5	2.1	2.1	2.1	2.1	13
RCCB	2	5.5	2.8	2.8	2.8	2.8	13

	EC150	EC152	EC154M	EC350	EC352	EC360	EC362	EC364M	EC365B	TE360	EC370	EC372	TE370
Electrical Characteristics													
Voltage	230V~ ±15%			230V~ ±15% 400V~ ±15%									
Frequency	50/60Hz			50/60Hz									
Consumption	< 10VA and 1W			< 10 VA and 3W									
Data													
Connection	Direct										Via current transformer		
Display	Digital - 7 digits												
Accuracy	± 1% - Class B according to EN 50470-3												
I_{max}	63A					100A					6A on CT secondary		
$I_{starting}$	40mA					80mA					10mA on CT secondary		
Base current	10A					20A					5A		
LED													
	1000 blinking per kWh					500 blinking per kWh					1000 blinking per kWh		
Pulsed Ouput													
	1 pulse = 100Wh / 100ms / 27V DC max (excepted on KNX meters)												
Tariff													
	1	2	2	1	2	1	2	2	1	2	1	2	2
Mechanical Characteristics													
Width	3 Modules			4 Modules		7 Modules					4 Modules		
Protection degree	IP20 - IP51 (front part)												
Temperature	Storage temperature: -20ºC to +70ºC, Operating temperature: -10ºC to +55ºC												
Connection capacity	Rigid: 1.5 to 16mm² Flexible: 1 to 16mm²					Rigid: 1.5 to 35mm² Flexible: 1 to 35mm²					Rigid: 1.5 to 10mm² Flexible: 1 to 6mm²		

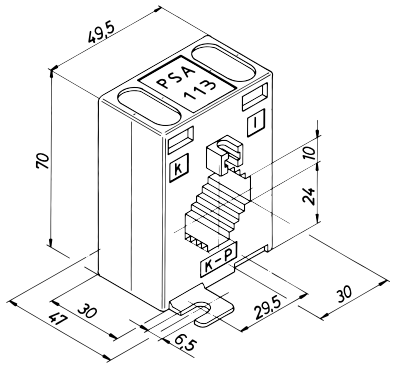
Data is subject to errors and technical modifications.

Technical Data (to EN/IEC60044-1)

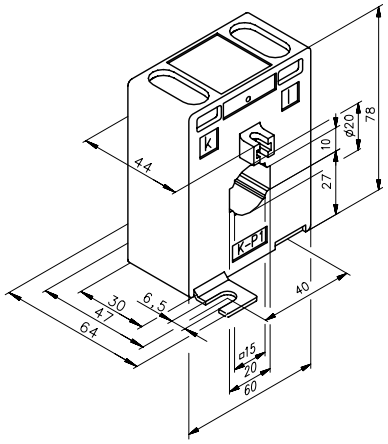
Primary rated current	50 A - 2000 A
Rated secondary current	5 A
Rated frequency	50 - 60 Hz
Highest voltage for equipment U_m	720 V
Rated power-frequency withstand voltage (r.m.s.)	3 kV
Instrument security factor (FS)	FS 5
Rated continuous thermal current	1,2 x I_n
current rating	120 %
Rated short time thermal current	I_{th} = 60 x I_n (max 50 kA)
Rated dynamic current:	I_{dyn} = 2,5 x I_{th} (max 120 kA)
Permissible ambient temperature	-40 °C to + 40 °C
Class of insulation in accordance with IEC 60085	E
Degree of protection DIN/EN 60529 / VDE 0470 T1	IP 20
Recommended tightening torque secondary terminals	1,5 - 2 Nm

	Prim. [A]	Sec. [A]	Power [VA]	Accuracy class	Dimensions	Max. Busbar and cable Size
SRA01005	100	5	2.5	1	70 x 49,5 x 30 mm	30 x 10 mm 25 x 15 mm 20 x 20 mm
SRA01505	150	5	2.5	1		
SRA02005	200	5	2.5	1		
SRA02505	250	5	2.5	1		
SRC04005	400	5	5	1		
SRC06005	600	5	5	1		
SRA00505	50	5	1.5	1	78 x 60 x 30 mm	20 x 10 mm 15 x 15 mm Ø 20 mm
SRI03005	300	5	5	1	78 x 60 x 30 mm	40 x 12 mm Ø 28 mm
SRD08005	800	5	5	1	108 x 85 x 30 mm	60 x 10 mm 50 x 30 mm Ø 45 mm
SRD10005	1000	5	5	1		
SRD15005	1500	5	5	1		
SRE20005	2000	5	15	1	122 x 100 x 40 mm	80 x 10 mm 60 x 30 mm Ø 60 mm

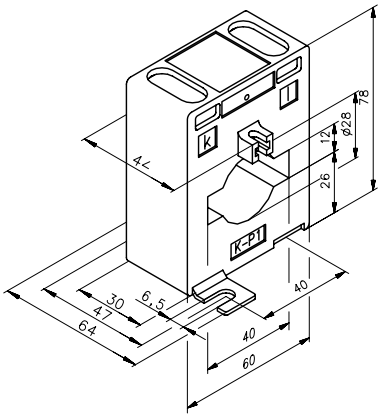
SRA01005, SRA01505, SRA02005, SRA02505, SRC04005, SRC06005



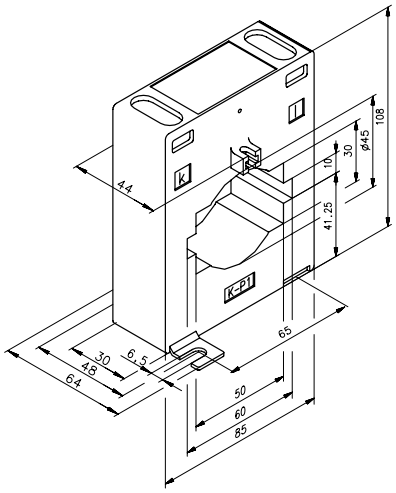
SRA00505



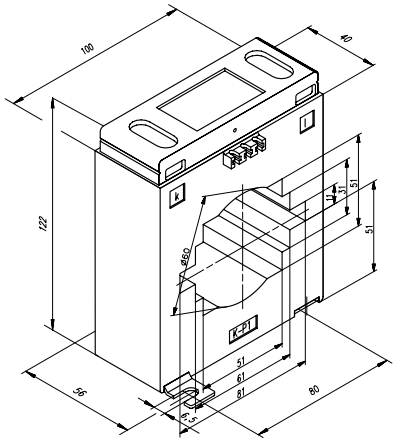
SRI03005



SRD08005, SRD10005, SRD15005



SRE20005

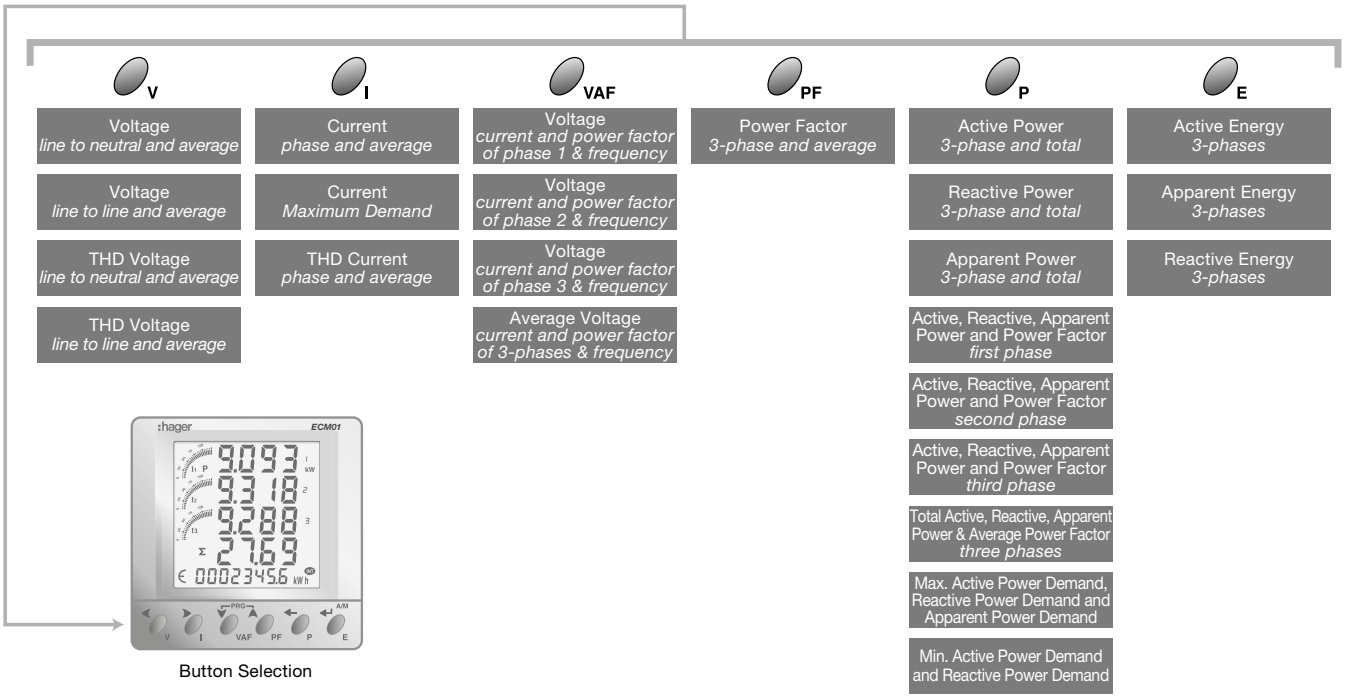


	SM101E	SM101C
Current (TRMS)		
I (1st CT)	5A...9999A	
I (2nd CT)	5A	
In	Calculated	
Minimum measuring current (2nd CT)	5mA	
Input consumption	<0.6VA per phase	
Permanent overload (2nd CT)	6A	
Accuracy	±0.2%	
THD		±1%
Update period	1s	
Voltage (TRMS)		
U	50V a.c....520V a.c. (Ph-Ph) 28V a.c....300V a.c. (Ph-N)	
Input consumption	<0.1VA per phase	
Permanent overload (2nd CT)	760V a.c.	
Accuracy	±0.2%	
THD		±1%
Update period	1s	
Power		
Accuracy (P,Q)	±0.5%	
Accuracy (S)	±1%	
Accuracy (PF)	±0.02%	
Update period	1s	
Energy		
Accuracy (Ea)		Class 0.5s
Accuracy (Er)		Class 2
Update period		1s
Frequency		
F	45Hz...65Hz	
Accuracy	±0.1%	
Update period	1s	
Supply		
Voltage	200V a.c....277V a.c. ±15%	
Frequency	50/60Hz	
Consumption	<5VA	
Environment		
Protection degree	IP51 (front panel) IP20 (case)	
Operating temperature	-10°C to +55°C	
Storage temperature	-20°C to +70°C	
Insulation category	III (300V a.c. Ph-Ph)	
Degree of pollution	PD2	
Communication		
Metrological LED	N/A	0.1Wh / pulse
Pulse output	N/A	30V d.c. / 27mA Max
Communication	N/A	RS485 2/3 wires half duplex Jbus/Modbus 2,400bds...38,400bds Parity (no,odd,even) 1 or 2 Stop bytes
Connection		
Network	1BL 2BL 3BL/3NBL 4BL/4NBL	
Current/Voltage input	4mm² (solid or stranded)	
Others	2.5mm² (solid or stranded)	
Max torque	0.6Nm	
Shape		
Weight	205g	215g
Size	4M, 73mm x 90mm x 67mm	

Data is subject to errors and technical modifications.

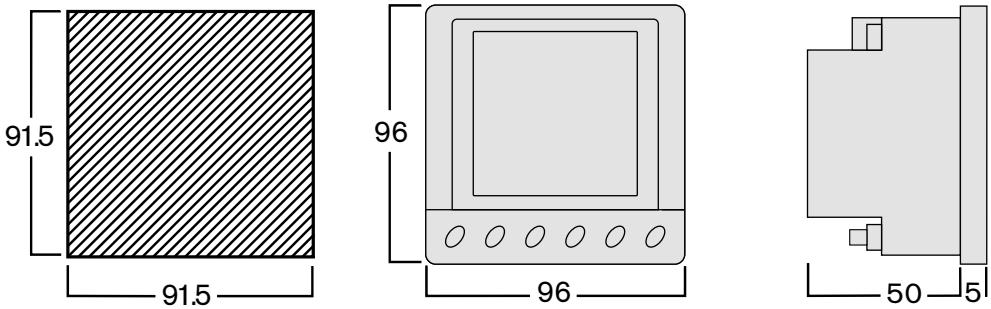
- 96 x 96mm Flush mounting
- Single phase or 3 phase 4 wire network balanced or unbalanced load
- Built in energy pulsed output or with pulsed output and RS485 (modbus)
- Backlit LCD display with bargraph current indication on every page
- Automatic or manual scrolling display
- 330mV current transformer input
- Active energy class 1 (EN62053-21)
- Reactive energy class 2 (EN62053-23)
- Programmable VT ratio
- 3-phase: 140…460Vac measured voltage
- Single phase: 80…265Vac measured voltage
- THD up to 31st harmonic for voltage and current
- Self supplied auxiliary
- Programmable CT ratio 5 to 10,000A
- Frequency 45/65Hz
- Wide range of measured parameters (see table below)
- Selectable CT phase correction allows reversal of L1 and L3
- Single CT Connection
- Weight 230g

Function Diagram

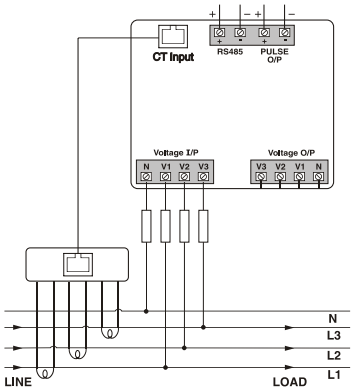


Button Selection

Dimensions Diagram (mm)

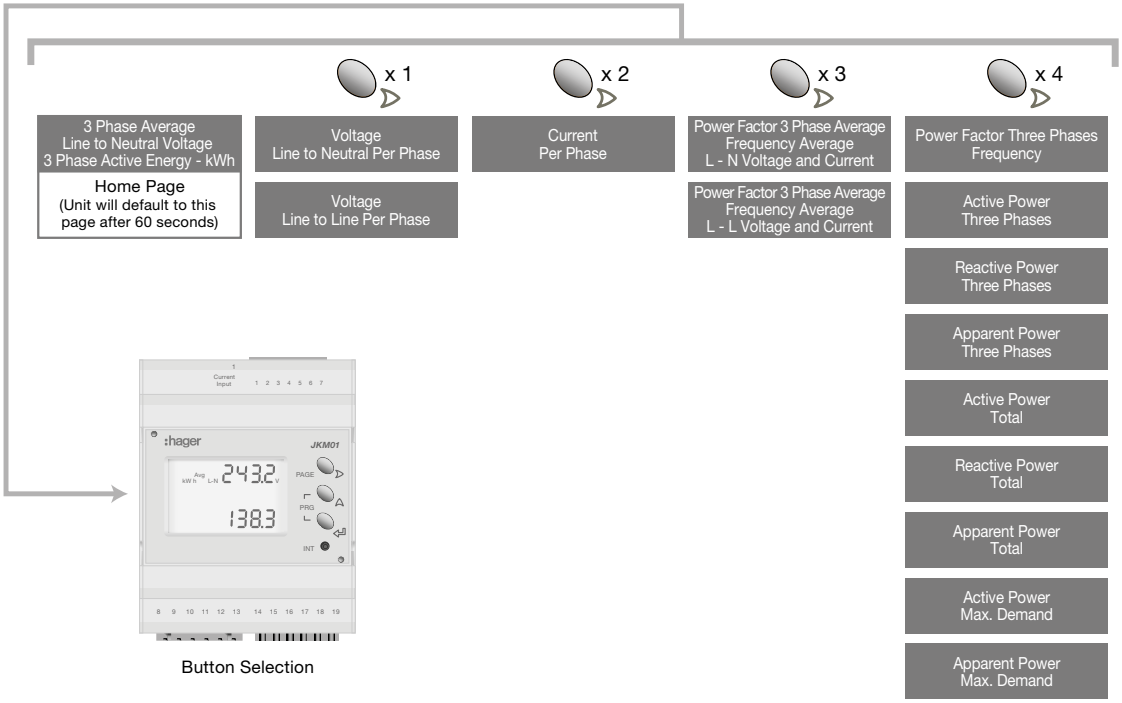


Please allow space at the rear of the meter for cable connections.



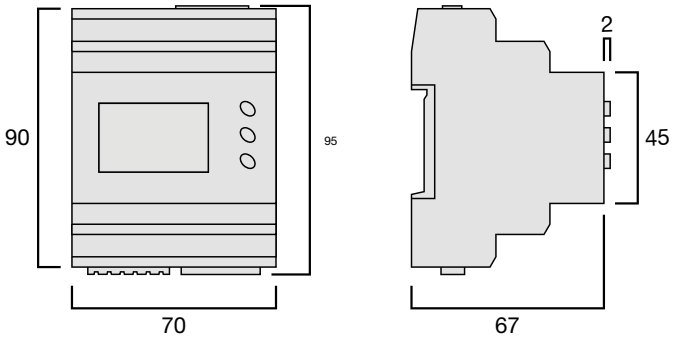
- 4 Module DIN rail mounting
- Single phase or 3 phase (4 wire) network balanced or unbalanced load
- Built-in energy pulse output and RS485 MODBUS communication
- Wide range of measured parameters (see table below)
- High quality backlit LCD display
- 330mV current transformer input
- Active energy class 1 (EN62053-21)
- Reactive energy class 2 (EN62053-23)
- THD up to 31st harmonic for voltage and current
- 3-phase: 140…460Vac measured voltage
- Single phase: 80…265Vac measured voltage
- Self supplied auxiliary
- Programmable CT ratio 5…10,000A
- Programmable VT ratio
- Frequency 45/65Hz
- Selectable CT phase correction allows reversal of L1 and L3
- Single CT Connection
- Weight 190g

Function Diagram

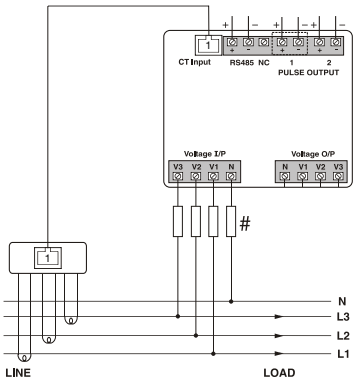


Button Selection

Dimension Diagrams (mm)



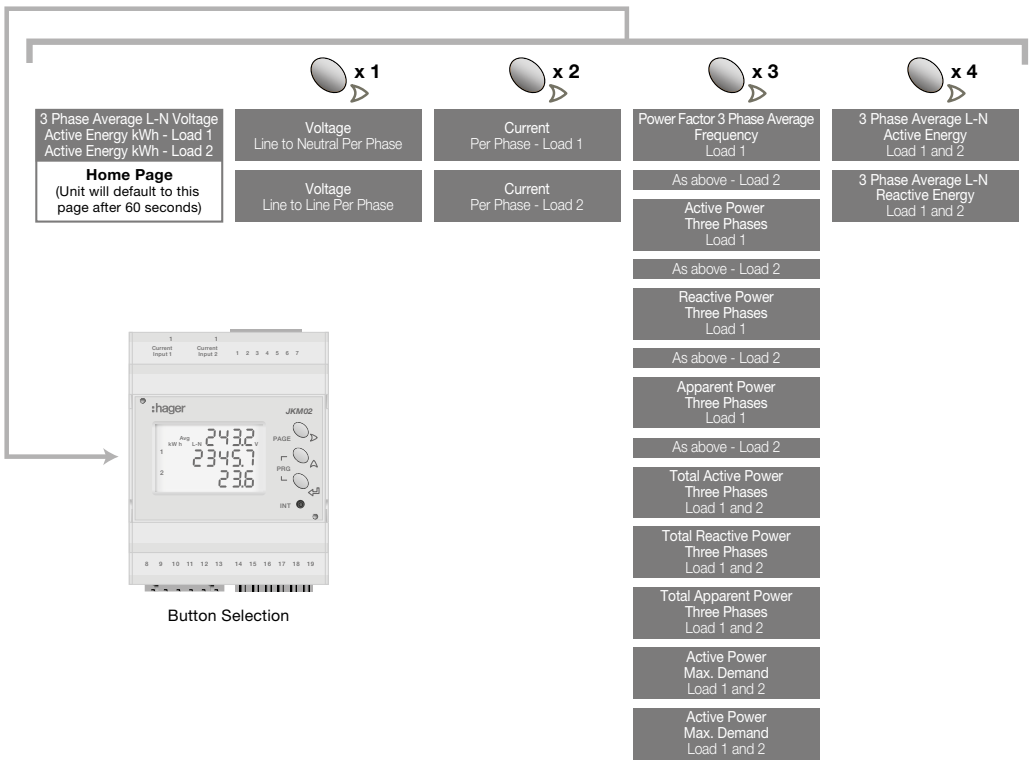
Please allow space above and below the meter for cable connections.



Data is subject to errors and technical modifications.

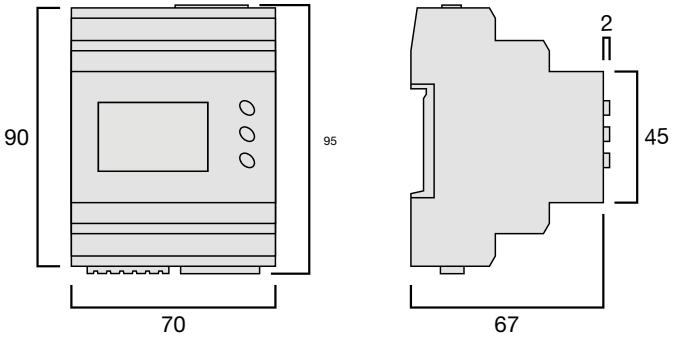
- Split Load, Dual CT input meter
- 4 Module DIN rail mounting
- Single phase or 3 phase (4 wire) network balanced or unbalanced load
- Built-in dual energy pulse output, one for each load and RS485 MODBUS communication
- Wide range of measured parameters (see table below)
- High quality backlit LCD display
- 330mV current transformer input
- Active energy class 1 (EN62053-21)
- Reactive energy class 2 (EN62053-23)
- THD upto 31st harmonic for voltage and current
- Three-phase: 140…460Vac measured voltage
- Single phase: 80…265Vac measured voltage
- Self supplied auxiliary
- Programmable CT ratio 5…10,000A per load
- Programmable VT ratio
- Frequency 45/65Hz
- Selectable CT phase correction allows reversal of L1 and L3
- Weight 200g

Function Diagram

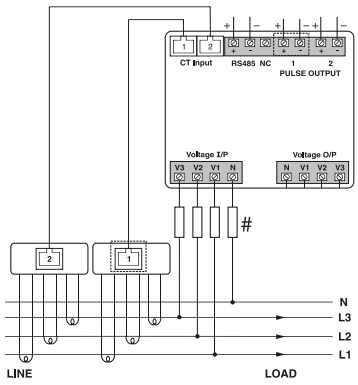


Button Selection

Dimension Diagrams (mm)



Please allow space above and below the meter for cable connections.

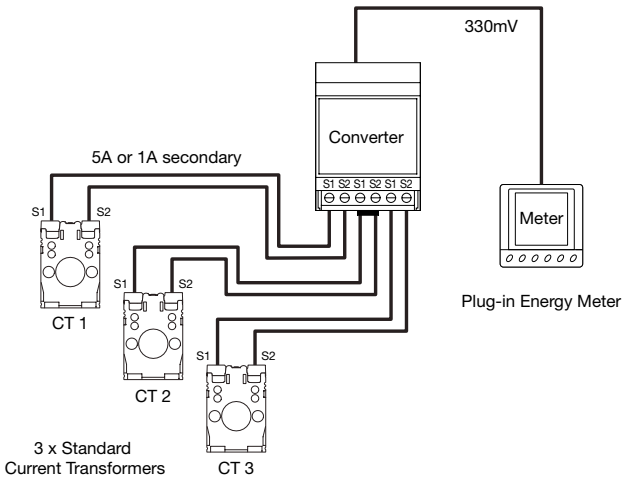


- Connect up to 3 standard or split core CT's (1A or 5A secondaries)
- Integrated protection circuitry

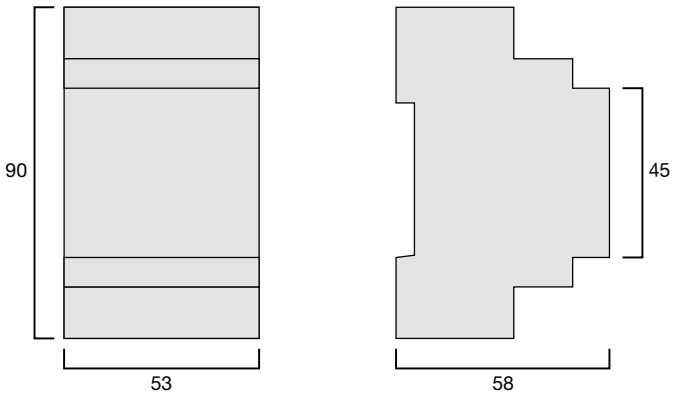
Standard CT to plug-in Adaptor
The JFA03 converter allows for the connection of up to three standard current transformers, or standard split-core current transformers (with 1A or 5A secondary's), to the plug-in system.

The unit has integrated protection circuitry allowing for disconnection from meter under load conditions for maintenance.

Important Note
This converter does not provide electrical isolation.
Current transformer secondaries may not be earthed and should be wired as shown.



Dimension Diagrams (mm)



Technical Characteristics

Burden:	<2VA per channel (5A Version) <0.5VA per channel (1A Version)
Accuracy:	0.4%
Suggested Cable Size: (CT to Adaptor)	1.5mm2 or 2.5mm2 (2.5mm2 Max.)
Mounting:	DIN rail 35mm
Termination:	CT to adaptor - Rising clamp screw terminals Adaptor to Meter - RJ45 Patch Cable
Operating Temperature:	–10°C…+45°C
Storage Temperature:	–25°C…+70°C

Data is subject to errors and technical modifications.

Description
Designed for use with Hager x160 MCCBs and the plug-in multifunction power meters.

Internal safety circuitry is provided which limits the output voltage to a safe level, allowing the transformer secondary to be left disconnected under load.

Installation
The CT uses plug-in technology allowing much faster installation saving you time and money. Additionally, all our three phase current transformers have been designed with hole centres and apertures to fit most standard industrial circuit breakers.

	EC1260CT, EC12100CT, EC12125CT, EC12160CT	EC2560CT, EC25100CT, EC2512CT, EC25160CT, EC25200CT, EC25250CT	EC40250CT, EC40400CT, EC40630CT	EC80800CT
Accuracy Class	1	1	1	1
Aperture	3 @ 15.5 x 30mm	3 @ 21 x 25mm	3 @ 31 x 31mm	3 @ 54 x 50mm
Width	75mm	105mm	140mm	215mm
Primary Current	60 to 160A	60 to 250A	250 to 630A	800A
Hole Centres	25mm	35mm	45mm	70mm
Housing Material	Self extinguishing Nylon IEC185 classification VO according to UL-94			
Reference Standard	EN6004-8			
Weight	500g	550g	680g	1200g

EC1260CT, EC12100CT, EC12125CT, EC12160CT

Current Transformer Ratios

Primary Current	Output	
60	330	**060**
100	330	**100**
125	330	**125**
160	330	**160**

330mV Secondary

EC2560CT, EC25100CT, EC2512CT, EC25160CT, EC25200CT, EC25250CT

Current Transformer Ratios

Primary Current	Output	
60	330	**060**
100	330	**100**
125	330	**125**
160	330	**160**
200	330	**200**
250	330	**250**

330mV Secondary

EC40250CT, EC40400CT, EC40630CT

Current Transformer Ratios

Primary Current	Output	
250	330	**250**
400	330	**400**
630	330	**630**

330mV Secondary

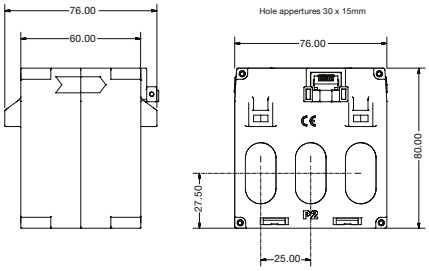
EC80800CT

Current Transformer Ratios

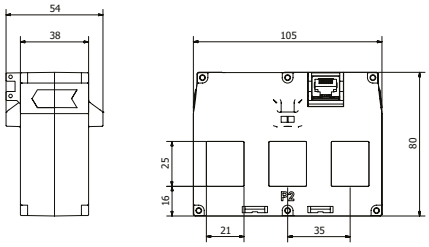
Primary Current	Output	
A	mV	Code
800	330	**800**

330mV Secondary

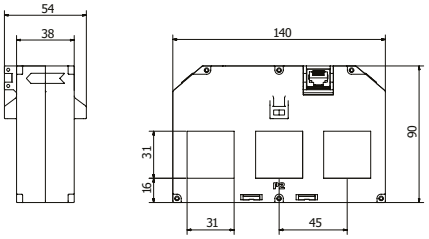
EC1260CT, EC12100CT, EC12125CT, EC12160CT



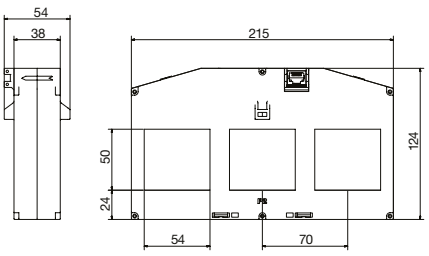
EC2560CT, EC25100CT, EC2512CT, EC25160CT, EC25200CT, EC25250CT



EC40250CT, EC40400CT, EC40630CT



EC80800CT



CT Output and RJ45 Lead Tester
This device makes it possible to test the RJ45 patch lead used to connect the current transformer to the meter. It also enables a standard electricians multimeter to measure the individual secondary outputs of the current transformer.

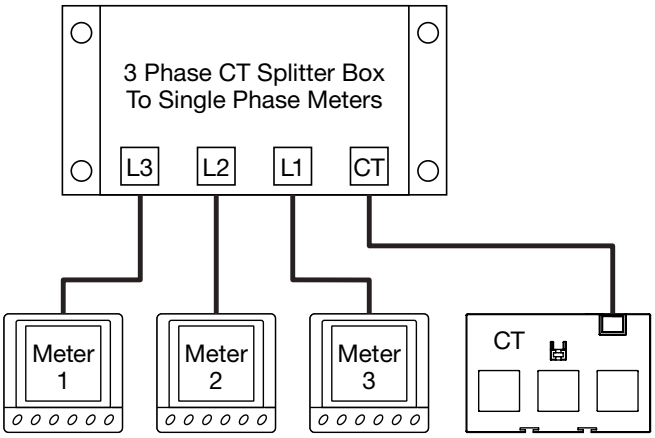
To test the RJ45 patch lead, simply disconnect the lead from the meter and current transformer. Plug one end into socket 1 and the other end into socket 2 on the test box. Press the test button - the Green LED will light to indicate the lead is OK or the Red LED will light to indicate a faulty lead. When the lead is proven to be OK you can then check the individual secondary outputs of the current transformer.

To measure the secondary output plug one end of the RJ45 patch lead into the current transformer and the other end into socket 2 on the test box. You can now use a standard multimeter to test the secondaries using the test points on the front of the test box. The output measured for each phase should be between 0 and 330mV a.c.

Cat ref. **JFT03**

3 Phase CT Splitter Box
This 3 Phase CT Splitter Box allows the separate monitoring of each phase of a three phase current transformer on individual energy meters.

Cat ref. **JFS03**



Meter Voltage Supply Cable
Our high quality Meter Voltage Supply Cables are fitted with a plug at one end and insulated bootlace ferrules at the other and provide power to the plug-in meter from your mains supply.

Cable type: PVC

Meter to Meter Supply Cable
Our high quality Meter to Meter Voltage Supply Cables are fitted with a plug at one end and socket at the other. This allows multiple plug-in meters to be energised from a common supply. Up to 32 meters can be powered in a 'daisy chain' arrangement using this method.

Cable type: PVC

RJ45 Connection Cable
The high quality low loss Category 5e RJ45 Connection Cable provides secondary connection between the plug-in current transformer and meter.

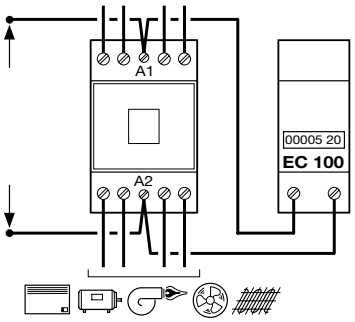
Data is subject to errors and technical modifications.

Hours Counter
Technical Specifications

Electrical Characteristics
Working voltage: 230V~

Electrical Connection
Connection in parallel on the command of the receiver (contactor coil)

Electrical Connection



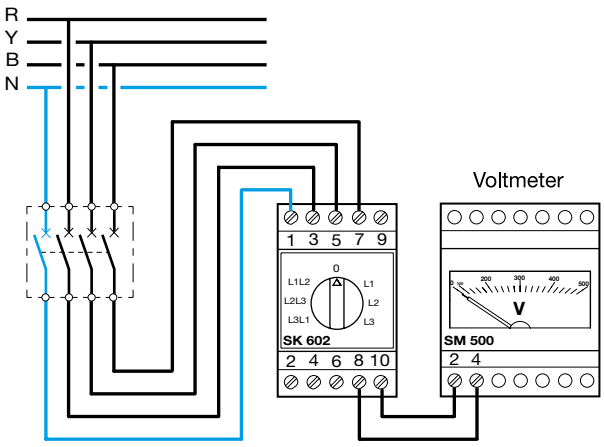
Technical Specification

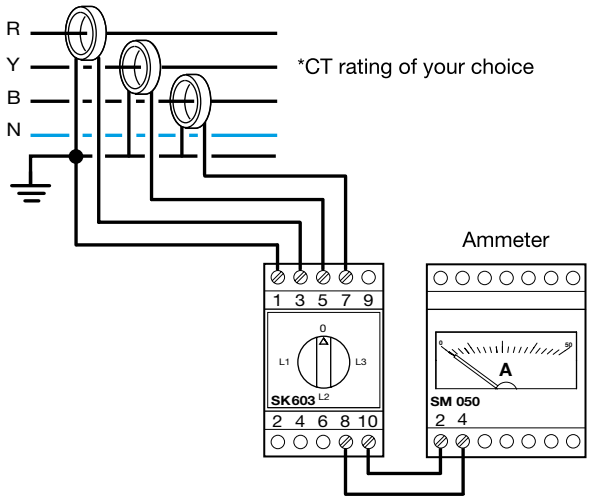
Environment
Working Temperature: -25 to +50 °C
Storage Temperature: -40 to +80 °C

Connection
Flexible: 1 to 6mm²
Rigid: 1.5 to 10mm²

Cat ref.	Product	Range	Consump.	Accuracy %	Ref Temp °C	Accuracy Variation °C	Maximum Continuous	Momentary Maximum	Frequency Hz	Isolating Voltage
SM500	Voltmeter	500V	≤3 VA	1.5	23 ± 2°C	± 0.03% / °C	1.2 U_n	2U_n / 5 sec	45 - 65	2kV/50H z-1min
SM050	Ammeter with CT	0-50A	≤1.1 VA	1.5	23 ± 2°C	± 0.03% / °C	1.2 U_n	10U_n / 5 sec	45 - 65	2kV/50H z-1min
SM100		0-100A								
SM150		0-150A								
SM250		0-250A								
SM400		0-400A								

Electrical Connection

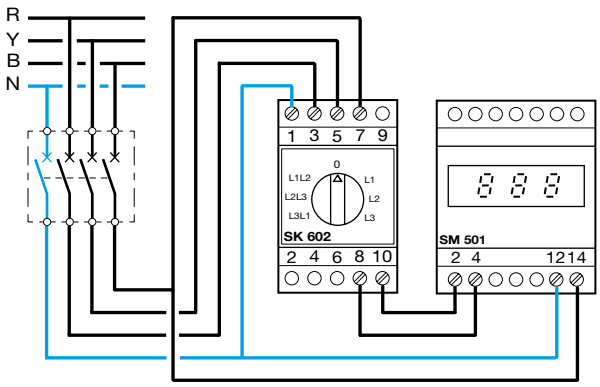


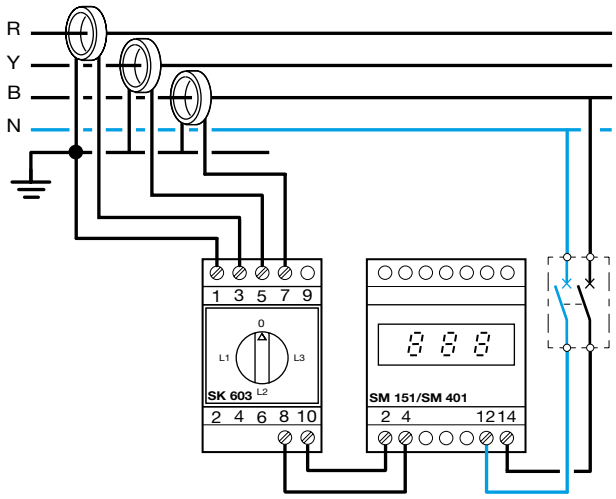


- Technical Specification
- Working voltage : 230 V~ 50/60 Hz - resolution : 1 unit
- Update of the display: 3 / seconds
- Input impedance > 1 MV for the voltmeter SM501
- Isolating resistance : 10 MV
- Maximum voltage: 660 V - number of digits : 3
- Connection
- Flexible: 6mm², Rigid: 10mm²
- Environment
- Working temperature: -10 to +55 °C
- Storage temperature : -40 to +70 °C

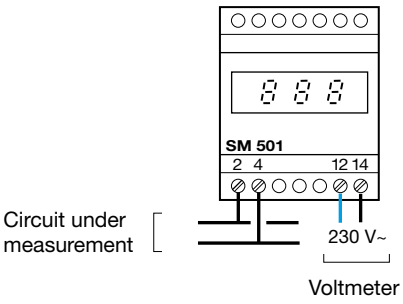
Cat ref.	Product	Range	Consump.	Accuracy %	Ref Temp °C	Accuracy Variation °C	Maximum Continuous	Momentary Maximum	Frequency Hz	Isolating Voltage
SM501	Voltmeter	500V	≤4.5 VA	±1	23 ± 1°C	± 0.03% / °C	1.2 U_n	2 U_n / 5 sec.	45-65	2kV/50Hz - 1 min
SM151 **SM401**	Ammeter with CT	0-150A 0-400A	≤1 VA	±1	23 ± 1°C	± 0.03% / °C	2 I_n	10 I_n / 5 sec.	45-65	2kV/50Hz - 1 min

Electrical Connection

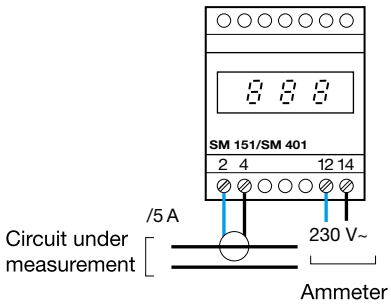




Electrical Connection
SM501



SM151, SM401



Data is subject to errors and technical modifications.

Electrical Characteristics

Family		SB							
Number of poles		1P - 2P - 3P - 4P							
Frame size		Frame size 1			Frame size 2		Frame size 3		
Thermal current Ith (40°C)		16A	25A	32A	40A	63A	80A	100A	125A
Operational frequency		50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Rated insulation voltage (Ui)		500 V	500 V	500 V	500 V	500 V	500 V	500 V	500 V
Rated impulse withstand voltage U_{imp}		3 KV	3 KV	3 KV	6 KV	6 KV	6 KV	6 KV	6 KV
Protection degree		2	2	2	3	3	3	3	3
Working temperature		-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C
Storage temperature		-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C

Operational Currents I_e

Rated voltage		Load duty category								
Single Phase	Multi Phase									
230V AC	400V AC	AC 21A	16A	25A	32A	40A	63A	80A	100A	125A
230V AC	400V AC	AC 22B	16A	25A	32A	40A	63A	80A	100A	125A
230V AC	400V AC	AC 22A	16A	25A	32A	40A	63A	80A	100A	125A
230V AC	400V AC	AC 23A	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA

Short circuit characteristic

Rated short time withstand current 1s I_{cw} (rms)	IEC 60947-3	480A / 1sec			945A / 1 sec		1500A / 1sec		
Prospective short circuit current (rms)	EN 60669	3kA	3kA	3kA	6kA	6kA	n/a	n/a	n/a
Associated fuse links (gG)		16A	25A	32A	40A	63A	n/a	n/a	n/a

Mechanical characteristic

Rigid cable section		16 mm²	16 mm²	16 mm²	25 mm²	25 mm²	50 mm²	50 mm²	50 mm²
flexible cable section		10 mm²	10 mm²	10 mm²	16 mm²	16 mm²	35 mm²	35 mm²	35 mm²
Tightening torque		1.8 Nm	1.8 Nm	1.8 Nm	2.8 Nm	2.8 Nm	3.6 Nm	3.6 Nm	3.6 Nm
IP protection degree		20	20	20	20	20	20	20	20
Mechanical endurance (number of cycle)		100,000	100,000	100,000	30,000	30,000	20,000	20,000	20,000
Electrical endurance @ AC22 (number of cyles)		25,000	25,000	25,000	5,000	5,000	2,500	2,500	2,500

Overall dimension

Width (mm)	1P	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
	2P	17.5	17.5	17.5	35	35	35	35	35
	3P	35	35	35	52.5	52.5	52.5	52.5	52.5
	4P	35	35	35	70	70	70	70	70
Height (mm)		83	83	83	83	83	83	83	83
Depth (mm)		72	72	72	72	72	72	72	72

Electrical Characteristics

Family		SF						
Modular size		1 module			2 module			4 module
Cat ref.		**SFH125**	**SFM125**	**SFT125**	**SFH225**	**SFT225**	**SFT240**	**SF263**
Thermal current Ith (40°C)		25A	25A	25A	25A	25A	40A	63A
Operational frequency		50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Rated operation voltage in AC		230V						
Rated insulation voltage (U_i)		440V	440V	440V	440V	440V	440V	500V
Rated impulse withstand voltage U_{imp}		4 KV	4 KV	3 KV	6 KV	6 KV	6 KV	4 KV
Protection degree		2	2	2	3	2	2	2
Working temperature		-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C
Storage temperature		-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C
Operational Currents I_e								
Rated voltage	Load duty category							
400V AC	AC 22A	25A	25A	25A	25A	25A	40A	63A
400V AC	AC 22B	25A	25A	25A	25A	25A	40A	63A
Short circuit characteristic								
Rated short time withstand current 1s Icw (rms)	IEC 60947-3	375A / 1sec					600A / 1sec	4.5kA cond.
Prospective short circuit current (rms)	EN 60669	3kA	3kA	3kA	6kA	6kA	n/a	n/a
Mechanical characteristic								
Rigid cable section		35 mm²	35 mm²	35mm²	25 mm²	25 mm²	25 mm²	25 mm²
flexible cable section		10 mm²	10 mm²	10 mm²	16 mm²	16 mm²	16 mm²	16 mm²
Tightening torque		1.8 Nm	1.8 Nm	1.8 Nm	1.8 Nm	1.8 Nm	1.8 Nm	1.8 Nm
IP protection degree		20	20	20	20	20	20	20
Mechanical endurance (number of cycle)		200,000	200,000	200,000	200,000	200,000	200,000	100,000
Electrical endurance @ AC22 (number of cyles)		25,000	25,000	25,000	5,000	5,000	2,500	5,000
Overall dimension								
Width (mm)		17.5	17.5	17.5	35	35	35	71.5
Height (mm)		83	83	83	83	83	83	90
Depth (mm)		68	68	68	68	68	70	68

Data is subject to errors and technical modifications.

Light Sensitive Switches
Using light sensitive switches can prevent the unnecessary use of lighting circuits where sufficient daylight exists. The benefit of modular devices is the facility to set the ambient lighting level at which the device will operate, and as the device is fitted at the distribution point prevent unauthorised tampering. The remote photocell unit can be mounted up to a distance of 50 metres from the device. Two devices are available the standard **EEN100** light sensitive switch and an enhanced programmable version the **EE171** that also allows time clock control.

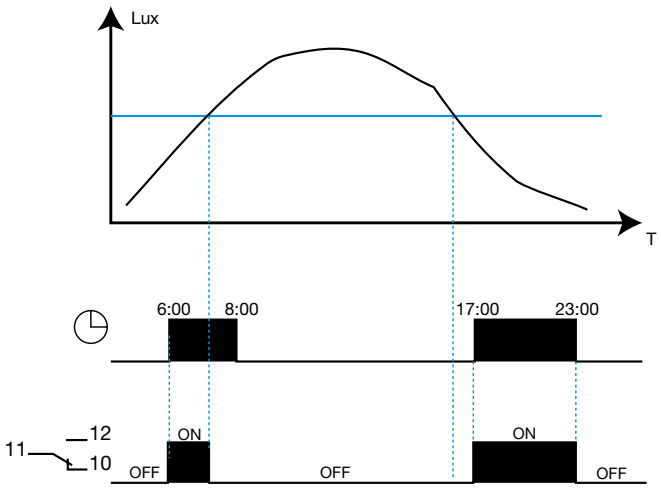
Principle of Operation
Both devices control lighting systems according to natural illumination;
- The user sets the working level:
- The photo cell measures the external light level

The output of the **EEN100** is:
- ON, when the measured level is lower than the pre-set light level
- OFF, when the measured level is higher than the pre-set light level

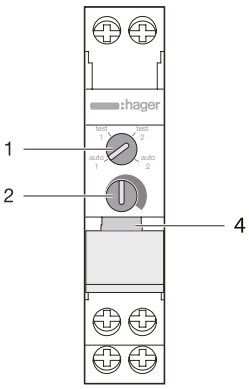
The output of the **EE171** during the programmed ON time period is:
- ON, when the measured level is lower than the pre-set light level
- OFF, when the measured level is higher than the pre-set light level

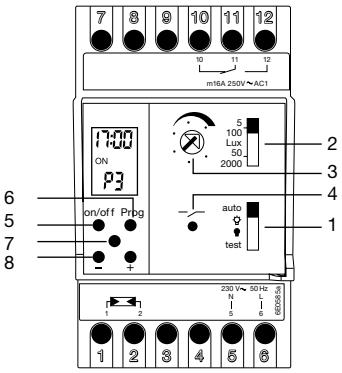
The output of the **EE171** during the programmed off time period is:
- OFF, regardless of the lighting level

The light sensitive switches include a built in time delay which avoids unnecessary switching due to temporary factors such as car headlight beams etc...



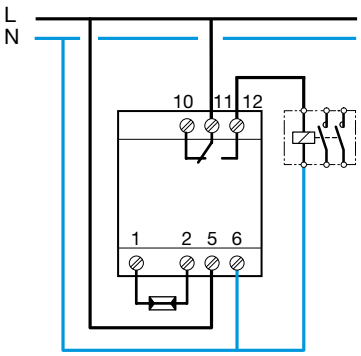
Description





The programmable light sensitive switch **EE171** has two main functions:
Light sensitive switch comprising
1. Override selector switch to allow permanent ON or OFF, auto or test mode
2. Lighting range selector
3. Potentiometer to set light level
4. Indicator to show output switching status

A programmer to establish the automatic operating cycle
The programmer comprises 4 keys:
5. **ON / OFF** to choose whether the circuit is on or off.
6. **Prog** to set the program and scroll program steps
7. **Reset**
8. **+** and **-** to change settings



Mounting the Cell
To ensure correct operation of the light sensitive switch, the cell must not be influenced by artificial light or direct solar radiation and should be sheltered from dust and humidity. In case of disconnection of the link between the cell and the light sensitive switch, the output of the device will be switched on. Make sure the light sensitive switch is unplugged before connecting the cell.

	EE002	**EE003**
Type	Flush Mounting	Surface Mounting
Dimensions (mm)	89 x 48 x 32	25 x 25 x 20 Hole 25mm
Connection	Cable 1m 2 x 0.75mm^2	0.75 to 4mm^2
Protection Class	IP54	IP54
Working & Storage Temperature	-30ºC to +60ºC	-30ºC to +60ºC

Adjustment of the Working Level
The test position of the override selector 1 makes setting the preset level easier by removing the ON and OFF delay.

Select the sensitivity range which suits your application (selector 1)
5 to 100 lux (low light level) application examples; public lighting, shop windows, signals...

50 to 2000 lux (high light level) application examples; controls of shades

At the appropriate moment of the day, put the selector 1 in test position; turn the potentiometer 2 up to the switching point (the indicator 4 lights); put the selector back to position ‘auto’ the normal operating mode of the device.

Technical Specification

Electrical Specification	
Voltage Rating	230V +10 -15% 50Hz
Consumption	1.5VA Max
Output	1 Voltage Free Changeover Contact
Max Breaking Capacity	AC1 16A 250V~
Incandescent Lamp	2000W 230V~
Halogen Lamp	1000W 230V~
Fluorescent Lamp Uncompensated	1000W 230V~
Compensated in Series (10µF)	1000W 230V~
// Compensated (15µF)	200W 230V~
Duo	1000W 230V~
Functional Characteristics	
Sensitivity Range	5 to 100 lux, 50 to 2000 lux
Cycle	Weekly
Programs	8 Pre-defined Program
Program Setting	1 Minute Increments*
Accuracy	+6min / annum*
Operating Reserve	Lithium Battery Total of 3 Years Supply Failure*
On and Off Delay	15 to 60s
Working Temperature	-30ºC to +60ºC (cell) -10ºC to +50ºC (modular device)
Storage Temperature	-20ºC to +60ºC
Protection Class (cell)	IP54
Insulation Class	II
Connection Capacity	
Modular Device	0.5 to 4mm^2
Cell	0.75 to 2.5mm^2
Max Length between Cell and Modular Device	50m
Mounting of the Cell with 2 Screws	2.5mm

* **EE171** only

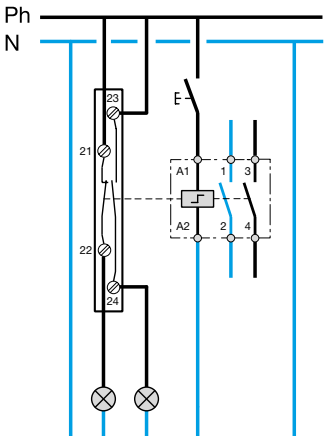
Data is subject to errors and technical modifications.

Technical Characteristics

	EPN510 EPN515 EPN520	EPN513 EPN518 EPN524	EPN519 EPN521	EPN525 EPN540	EPN528 EPN541	EPN529
Voltage	230V	24V	12V	230V	24V	12V
Start Consumption	24VA	24VA	24VA	48VA	47VA	TBC
Contact Rating AC1	-	-	16A 250V~[1]	-	-	-
Electrical Endurace AC1 - 16A	150,000 Operations					
Mechanical Endurance	500,000 Operations					
Current in Open Position	8 mA					
Max Duration of Voltage Supply to Coil	1h					
Min Duration of Current Supply to Coil	0.1s					
Working Temperature	-5 to +40°C					
Storage Temperature	-40 to +80°C					
Connections						
Coil: Flexible Rigid	0.5 to 4mm² 1 to 6mm²					
Power: Flexible Rigid	1 to 6mm² 1.5 to 10mm²					

[1] 400~ for **EPN540** and **EPN541**.

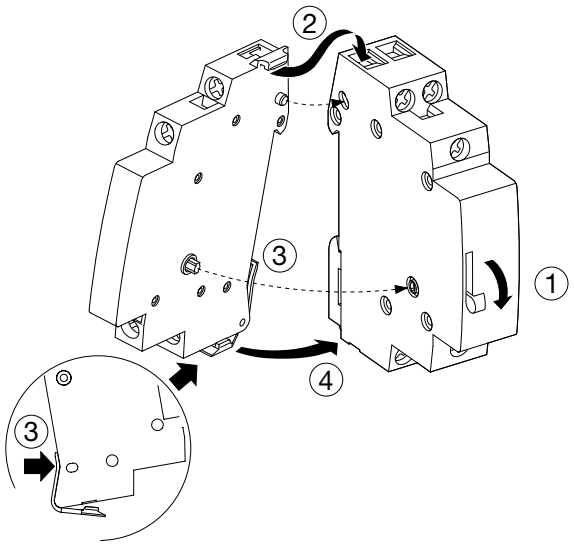
Auxiliary Contacts (EPN051)
The range of latching relays have been designed for use with an auxiliary contact. The devices simply clip on the side of the relay.



Technical Characteristics

	EPN051
Voltage	-
Contact Rating	2A / 250V
Imin / 230V	15mA

[1] Voltage dependant on associated relay



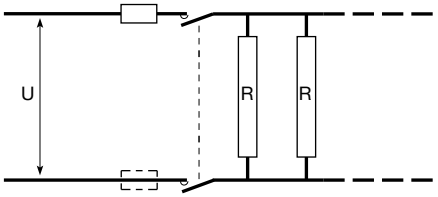
Heating
The choice of the contactor depends on the mechanical endurance (number of operations) and on the electrical heating load
i.e. resistive elements, infra-red element, convectors.

Choice of Contactors
The choice of contactor is dependant upon many parameters
i.e. operating voltage, size of contacts, number of operations, ambient temperature, type of load supplied etc.

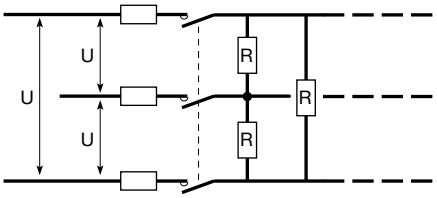
Type of Load
Loads are categorised into various AC ratings, (AC1, AC2, AC3 etc.) and the higher the AC rating the more inductive the load becomes.
All Hager contactor ratings are given at AC1, therefore they must be de-rated if used on other types of AC load.

Heat Dissipation Inserts
The ambient temperature around a contactor can affect its life expectancy, therefore, we strongly recommend that heat dissipation inserts (**LZ060**) are fitted between all contactors and adjacent devices.

Single Phase



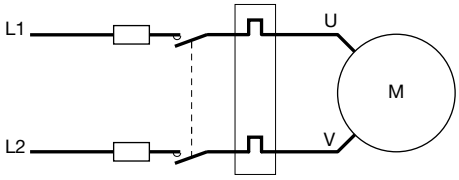
Three Phase



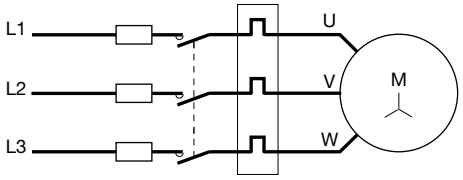
			Number of operations				
			100,000	**150,000**	**200,000**	**500,000**	**1,000,000**
Max. load in kW	230V	16A	3	2.5	1.9	0.85	0.7
		25A	4.6	4	3	1.35	1
		40A	7.3	6.3	4.7	2.2	1.6
		63A	11.6	10	7.5	3.5	2.5
	400V	16A	8.9	8	5.8	2.8	2
		25A	13.8	12	8.6	4.3	3
		40A	22	18.5	14.385	6.3	5
		63A	35	30	22.6	10.2	7.6

Contactor selection when using with motors

Single Phase 230V (AC3 or AC7b)



Three Phase 400V (AC3 or AC7b)



			Choice of Contactor According to control diagram	
	Single Phase with Capacitor 230V	**Three Phase (AC3 or AC7) 400V**	**2 Wires**	**3 Wires**
Maximum load in kW	0.88		2 pole 25A	
	2.6		2 pole 40A	
		2.6		3 pole 25A
		7.8		3 pole 40A
		10		3 pole 63A

Requirements of Use
Influence of Working Temperature
Derating factor between 40°C and 50°C : 0.9
Example: Heating with convector
The maximum load of **ESC225** is 4.6kW for 50,000 operations and for a temperature <40°C.
between 40°C and 50°C, the load is 4.6 x 0.9 i.e. 4.14kW

Close Fitting
It is necessary to put a heat dissipation insert (reference **LZ060**) between each contactor.

Data is subject to errors and technical modifications.

Description			Modular contact						Auxiliary contact
Standard conformity			EN 61095						
Approvals			NF - VDE- IMQ - KEMA - RMC / CCC						
			Relay	Contactor	Relay	Contactor	Contactor	Contactor	Contactor
Number of modules			1		2		3		½
Thermal current Ith (40°C)			16A	25A	16A	25A	40A	63A	6A
Rated frequency			50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Rated insulation voltage (U_i)			250V	250V	440V	440V	440V	440V	250V
Rated impulse withstand voltage (U_{imp})			4kV	4kV	4kV	4kV	4kV	4kV	4kV
Protection Degree			2	2	2	2	2	2	2
Rated Operating currents and power ratings in AC									
AC-1 / AC-7a	Rated operational currents Ie		16A	16A	16A	25A	40A	63A	-
	Rated operational power	230V	3kW	4.6kW	3kW	4.6kW	7.3kW	11.6kW	-
		400V	-	-	8.9kW	13.8kW	22kW	35kW	-
AC-3 / AC-7b	Rated operational currents Ie		5.5A	8.5A	5.5A	8.5A	25A	32A	-
	Rated operational power	230V	570W	880W	570W	880W	2.6kW	3.3kW	-
		400V	-	-	1.7kW	2.6kW	7.8kW	10kW	-
AC-12	Rated operational currents i.e. @ 230V		-	-	-	-	-	-	6A
AC-15	Rated operational currents i.e. @ 230V		-	-	-	-	-	-	2A
Mechanical and Electrical Endurances									
Mechanical endurance		Number of operations	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Electrical endurance @ Ie AC7a (AC12 for aux contact)		Number of operations	60,000	60,000	60,000	60,000	60,000	60,000	60,000
MCB Protected short-circuit withstand									
Prospected short-circuit current		rms	1kA	3kA	1kA	3kA	3kA	3kA	1kA
Associated protection			MCB C16-6kA	MCB C25-6kA	MCB C16-6kA	MCB C25-6kA	MCB C40-10kA	MCB C63-10kA	6A 10x38 gG Fuse
Power dissipation									
Power dissipation per current path			1W	1.5W	1W	1.5W	3.2W	5W	0.4W
Magnetic system for Eco and standard contactor									
Pick-up			2.2W	2.2W	2.8W	2.8W	5W	5W	-
Coil consumption			2.2W	2.2W	2.8W	2.8W	5W	5W	-
Closing delay			25ms	25ms	25ms	25ms	25ms	25ms	-
Opering delay			15ms	15ms	15ms	15ms	20ms	20ms	-
Connection									
Main contact cable section		Rigid	1...10mm²	1...10mm²	1...10mm²	1...10mm²	4...25mm²	4...25mm²	1...6mm²
		Flexible	1...6mm²	1...6mm²	1...6mm²	1...6mm²	4...16mm²	4...16mm²	1...6mm²
Main contact connection screw		Type	M3.4	M3.4	M3.4	M3.4	M5	M5	M3.4
		Posidrive	PZ2	PZ2	PZ2	PZ2	PZ2	PZ2	PZ2
		Max. tight. torque	1.2Nm	1.2Nm	1.2Nm	1.2Nm	2Nm	2Nm	1.2Nm
Coil connection cable section		Rigid	1...10mm²	1...10mm²	1...10mm²	1...10mm²	1...10mm²	1...10mm²	-
		Flexible	1...6mm²	1...6mm²	1...6mm²	1...6mm²	1...6mm²	1...6mm²	-
Coil connection screw		Type	M3.5	M3.5	M3.5	M3.5	M4	M4	-
		Posidrive	PZ2	PZ2	PZ2	PZ2	PZ2	PZ2	-
		Max. tight. torque	1.2Nm	1.2Nm	1.2Nm	1.2Nm	1.5Nm	1.5Nm	-
Working temperature									
			-10°C to +50°C						
Storage temperature									
			-40°C to +80°C						

Lighting systems with electronic ballasts cause inrush current peaks. Therefore we recommend you use the chart below to determinate the maximum amount of lamps that can be connected to a Hager contactor: The chart gives the maximum amount of lamps per contact. In 2014 the performances of the contactors in combination with lights increased. The products identified on the front face with the '+' can accept a higher number of lamps. For these products, see the figures in the column with the '+' in the header.

	Lamp Power	16A	25A	16A +	25A +	40A	63A
Compact fluo lamps							
Compact fluo lamp with external electronic ballast	5W	11	15	17	27	49	76
	7W	11	15	17	27	49	76
	9W	9	13	16	26	40	63
	11W	9	13	16	26	40	63
	15W	7	11	14	22	36	57
	18W	7	11	14	22	36	57
	20W	7	11	14	22	36	57
	23W	7	11	14	22	36	57
	26W	7	11	14	22	36	57
Compact fluo lamp with integrated electronic ballast	5W	17	27	34	54	86	135
	7W	17	27	34	54	86	135
	9W	17	27	34	54	86	135
	11W	17	27	34	54	86	135
	15W	17	27	34	54	86	135
	18W	13	20	25	40	63	100
	20W	13	20	25	40	63	100
	23W	13	20	25	40	63	100
	26W	13	20	25	40	63	100
Incandescent lamps							
Tungsten & halogen lamps 230V	40W	32	50	36	57	76	120
	60W	21	33	28	45	67	105
	75W	17	27	24	38	63	100
	100W	13	20	17	28	41	65
	150W	8	13	11	18	29	45
	200W	6	9	8	14	22	35
	300W	4	7	6	10	15	23
	500W	2	3	3	6	9	14
	1000W	0	0	1	2	4	7
Tungsten & halogen lamps 12 ou 24V	20W	13	20	25	40	139	218
	35W	8	13	16	26	82	129
	50W	6	9	11	18	60	94
	75W	4	6	7	12	52	82
	100W	2	3	3	6	35	55
	150W	1	2	2	4	20	31
LED							
LED 230V with integrated electronic ballast - non dimmable	4W	17	27	34	54	86	135
	4.5W	17	27	34	54	86	135
	6W	17	27	34	54	86	135
	7W	17	27	34	54	86	135
	8W	17	27	34	54	86	135
	12W	17	27	34	54	86	135
	17W	13	20	25	40	63	101
	18W	13	20	25	40	63	101
	22W	13	20	25	40	63	101
	30W	9	14	17	28	44	70
	34W	9	14	17	28	44	70
	40W	9	14	17	28	44	70
	50W	7	11	14	22	35	55
LED 230V with integrated electronic ballast - dimmable	4W	38	60	76	120	159	250
	5.5W	38	60	76	120	159	250
	6W	38	60	76	120	159	250
	7W	38	60	76	120	159	250
	8W	38	60	76	120	159	250
	12W	38	60	76	120	159	250
	17W	28	44	56	88	118	185
	18W	28	44	56	88	118	185
	22W	28	44	56	88	118	185
	30W	20	31	39	62	82	130
	34W	20	31	39	62	82	130
	40W	20	31	39	62	82	130
	50W	16	24	30	48	65	102
LED 230V headlight with integrated electronic ballast	100W	-	-	3	5	6	9
	150W	-	-	1	3	4	6
	200W	-	-	1	2	4	6
LED 12V with separated transformer - dimmable	1W	38	60	76	120	180	220
	2.5W	38	60	76	120	180	220
	4W	38	60	76	120	180	220
	5W	38	60	76	120	180	220
	7W	38	60	76	120	160	200
	10W	38	60	76	120	160	200
	15W	28	44	56	88	160	200

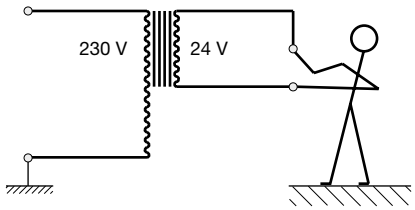
Data is subject to errors and technical modifications.

	Lamp Power	16A	25A	16A +	25A +	40A	63A
Fluorescent tubes							
T5 double - uncompensated	2 x 18W	13	20	25	40	50	78
	2 x 20W	12	19	24	38	50	78
	2 x 36W	12	15	19	30	44	69
	2 x 40W	10	13	16	26	40	63
	2 x 42W	9	12	15	24	40	63
	2 x 58W	7	9	11	18	27	42
	2 x 65W	6	8	10	16	27	42
	2 x 80W	5	7	8	14	22	35
	2 x 115W	4	5	6	10	16	25
T5 double - serie compensation	2 x 18W	7	11	14	22	34	53
	2 x 20W	7	11	14	22	29	45
	2 x 36W	6	10	12	20	27	42
	2 x 40W	6	10	12	20	27	42
	2 x 42W	6	10	12	20	27	42
	2 x 58W	6	10	12	20	25	39
	2 x 65W	5	7	8	14	23	36
	2 x 80W	5	7	8	14	20	31
	2 x 115W	4	5	6	10	17	25
T5 single - electronic ballast	15W	7	11	14	22	36	57
	18W	7	11	14	22	36	57
	20W	7	11	14	22	36	57
	36W	7	11	14	22	34	53
	40W	7	11	14	22	29	45
	42W	7	11	14	22	29	45
	58W	6	10	12	20	27	42
	65W	6	10	12	20	27	42
	80W	6	10	12	20	27	42
	115W	6	10	12	20	25	39
T5 double - electronic ballast	2 x 18W	7	11	14	22	34	53
	2 x 20W	7	11	14	22	29	45
	2 x 36W	6	10	12	20	27	42
	2 x 40W	6	10	12	20	27	42
	2 x 42W	6	10	12	20	27	42
	2 x 58W	6	10	12	20	25	39
	2 x 65W	5	7	8	14	23	36
	2 x 80W	5	7	8	14	20	31
	2 x 115W	4	5	6	10	17	25
Fluorescent tubes							
T5 single - uncompensated	15W	13	20	19	30	70	100
	18W	13	20	19	30	70	100
	20W	12	19	19	30	70	100
	36W	12	15	17	28	60	90
	40W	10	13	16	26	60	90
	42W	9	12	15	24	55	83
	58W	7	9	10	17	35	56
	65W	6	8	10	17	35	56
	80W	5	7	9	15	30	48
	115W	4	5	6	10	20	32
	140W	3	5	6	10	16	26
T5 single - paralell compensation	15W	7	11	12	20	36	57
	18W	7	11	12	20	36	57
	20W	7	11	12	20	36	57
	36W	7	11	12	20	34	53
	40W	7	11	12	20	29	45
	42W	7	11	12	20	29	45
	58W	6	10	9	15	27	42
	65W	6	10	9	15	27	42
	80W	6	10	9	15	27	42
	115W	6	10	9	15	25	39

	Lamp Power	16A	25A	16A +	25A +	40A	63A
Discharge lamps							
High-pressure mercury-vapor lamps - without compensation	50W	9	14	17	28	32	50
	80W	6	9	11	18	24	37
	125W	3	5	6	10	18	28
	250W	2	3	3	6	10	15
	400W	1	1	1	2	6	9
	700W	0	0	0	0	4	5
High-pressure mercury-vapor lamps - paralell compensation	50W	7	11	14	22	26	40
	80W	5	8	10	16	22	34
	125W	3	5	6	10	15	23
	250W	2	3	3	6	9	14
	400W	1	1	1	2	5	8
	700W	0	0	0	0	3	5
	1000W	0	0	0	0	2	3
Low pressure sodium lamps - without compensation	18W	8	10	8	12	17	23
	35W	4	6	7	9	14	20
	55W	3	6	7	9	14	20
	90W	2	4	5	6	9	14
	135W	1	3	3	4	6	8
	180W	1	2	2	4	6	8
Low pressure sodium lamps - paralell compensation	18W	5	7	5	8	12	24
	35W	4	6	4	7	10	23
	55W	3	5	3	5	10	19
	90W	2	3	3	4	8	16
	135W	1	2	1	2	5	7
	180W	1	2	1	2	5	6
High pressure sodium lamps - without compensation	35W	11	14	15	24	30	50
	50W	9	12	10	15	22	34
	70W	8	9	8	12	18	28
	110W	6	8	6	10	14	22
	150W	4	7	5	8	10	16
	250W	2	4	3	5	6	10
	400W	0	1	1	2	4	6
	1000W	0	1	1	1	2	3
High pressure sodium-vapour lamps - electronic ballast or parallel compensation	35W	6	9	11	18	31	50
	50W	6	9	11	18	22	35
	70W	4	6	7	12	16	25
	110W	3	5	6	8	13	21
	150W	3	5	4	6	8	13
	250W	2	3	3	4	7	11
	400W	1	1	1	2	5	8
	1000W	0	0	0	1	2	3
Metal halide lamps - without compensation	35W	12	24	19	30	42	55
	70W	10	15	12	17	26	36
	150W	6	7	8	12	14	20
	250W	3	5	5	8	9	14
	400W	1	2	2	4	6	9
	1000W	0	0	0	0	3	5
Metal halide lamps - electronic ballast or parallel compensation	35W	6	10	12	18	22	39
	70W	5	8	10	13	22	39
	150W	3	5	6	8	12	22
	250W	3	5	6	7	9	16
	400W	1	1	1	2	5	7
	1000W	0	0	0	1	2	3

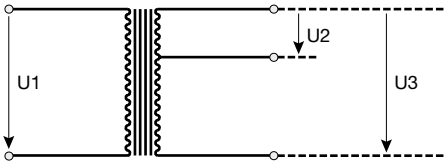
Data is subject to errors and technical modifications.

Safety Transformers
These transformers are designed to ensure personal safety, their primary winding are electrically separated from their secondary windings and they are intended to feed separated extra low voltage circuits U ≤ 50V. A thermal overload, in the primary windings, ensures that if a short circuit or an overload occurs in the output it will not damage the device.



Bell Transformers
Bell transformers are similar to safety transformers but the secondary voltages do not exceed 24 volts, they are also similarly protected against short circuits and overloads, by thermal protection in the primary winding.

Compliance with the Standards
The bell and safety transformers conform with BS EN 61558.
Where transformers are to be used in a common enclosure with other devices heat dissipation inserts LZ060 should be used.



Recommendation of Use
- To link only one secondary (never link both simultaneously)
- Do not connect (in series or in parallel) secondaries of different transformers

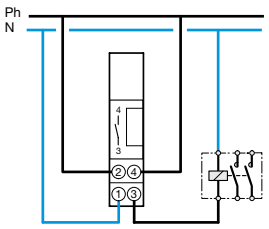
Technical Specification

		ST301	ST303	ST305	ST312	ST313	ST314	ST315
Nominal Power		4VA	8VA	16VA	25VA	16VA	40VA	63VA
Designation		Bell	Bell	Bell	Safety	Safety	Safety	Safety
Primary Voltage		230 Volts	230 Volts	230 Volts	230 Volts	230 Volts	230 Volts	230 Volts
Secondary Voltage	U2	8 Volts	8 Volts	8 Volts	12 Volts	12 Volts	12 Volts	12 Volts
		I_n = 0.5A	I_n =1A	I_n = 2A	I_n = 2.08A	I_n = 1.33A	I_n = 3.33A	I_n = 5.25A
	U3	12 Volts	12 Volts	12 Volts	24 Volts	24 Volts	24 Volts	24 Volts
		I_n = 0.33A	I_n = 0.67A	I_n = 1.33A	I_n = 1.04A	I_n = 0.67A	I_n = 1.67A	I_n = 2.63A
No Load	U2	12 Volts	15 Volts	12 Volts	14 Volts	16 Volts	14 Volts	14 Volts
Secondary Voltage	U3	18 Volts	22 Volts	19 Volts	29 Volts	30 Volts	27Volts	27 Volts
Galvanic Insulation		4kV	4kV	4kV	4kV	4kV	4kV	4kV
Max Functional Temperature		35ºC	35ºC	35ºC	35ºC	35ºC	35ºC	35ºC
Overload and S/C Protection		Thermal cut out in the primary winding						
Insulation Class		H	H	B	B	B	B	H

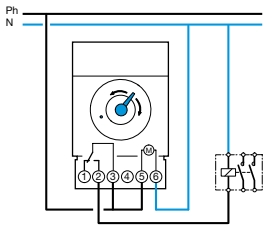
Technical Specifications

	EH011	EH010	EH111	EH110	EH171	EG103	EG103E	EG203	EG203E	EG493E
Version	Daily				Weekly					Weekly & Annual
Voltage Supply	230V 50/60Hz	230V 50Hz	230V 50/60Hz	230V 50Hz	230V 50/60Hz	230V AC 50/60Hz	230V AC 50/60Hz	230V AC 50/60Hz	230V AC 50/60Hz	230V AC 50/60Hz
Consumption	0.5VA	0.5VA	0.5VA	0.5VA	0.5VA	6VA	6VA	6VA	6VA	6VA
Output	1 NO Contact Volt Free	1 NO Contact Volt Free	1 C/O Contact Volt Free	1 C/O Contact Volt Free	1 C/O Contact Volt Free	1 Volt Free Change-over Contact	1 Volt Free Change-over Contact	2 Volt Free Change-over Contacts	2 Volt Free Change-over Contacts	2 Volt Free 2 NO Changeover Contact Contacts
Switching Capacity										
AC 1	16A / 250V	16A / 250V	16A / 250V	16A / 250V	16A / 250V	16A AC 1 / 250V 4A DC 1 / 12V	16A AC 1 / 250V 4A DC 1 / 12V	16A AC 1 / 250V 4A DC 1 / 12V	16A AC 1 / 250V 4A DC 1 / 12V	10A AC 1 / 250V
Inductive Load cos 0.6	4A / 250V	4A / 250V	4A / 250V	4A / 250V	2.5A / 250V	10A / 250V	10A / 250V	10A / 250V	10A / 250V	10A / 250V
Incandescent Lamp	900W	900W	900W	900W	900W	2300W	2300W	2300W	2300W	1500W
Halogen Lighting 230V	-	-	-	-	-	2300W	2300W	2300W	2300W	1500W
Compensated Fluorescent Tubes (max 45µF)	-	-	-	-	-	400W	400W	400W	400W	400W
Non Compensated Fluorescent Tubes Compensated in Series	-	-	-	-	-	1000W	1000W	1000W	1000W	800W
Compact Fluorescent Tubes	-	-	-	-	-	500W	500W	500W	500W	400W
Minimum Current AC 1	-	-	-	-	-	100mA / 250V	100mA / 250V	100mA / 250V	100mA / 250V	100mA / 250V
Minimum Current DC 1	-	-	-	-	-	-	-	-	-	-
Galvanic Insulation Between Power Supply and Output	-	-	-	-	-	< 4 kV	< 4 kV	< 4 kV	< 4 kV	< 4 kV
Characteristics										
Technology	Quartz	Quartz	Quartz	Quartz	Quartz	-	-	-	-	-
Dial	24hrs	24hrs	24hrs	24hrs	7 days	-	-	-	-	-
Minimum Switching	5min	5min	5min	5min	2h	-	-	-	-	-
Programming Capacity	-	-	-	-	-	56 Steps	56 Steps	56 Steps	56 Steps	300 Steps
Minimum Time Between 2 Steps	-	-	-	-	-	1min	1min	1min	1min	1min
Working Accuracy	1sec per day	1sec per day	1sec per day	1sec per day	1sec per day	±1.5sec / 24h	±1.5sec / 24h	±1.5sec / 24h	±1.5sec / 24h	±0.2sec / 24h
Supply Failure Reserve	200hrs	No	200hrs	No	200hrs	5 years lithium battery	5 years lithium battery	5 years lithium battery	5 years lithium battery	5 Years Lithium Battery
Reached in	120h	120h	120h	120h	120h	-	-	-	-	-
Manual Switch Type	On Auto On	Off Auto On	Off Auto On	Off Auto On	Off Auto On	-	-	-	-	-
Protection Degree	-	-	-	-	-	IP20	IP20	IP20	IP20	IP20
Environment										
Working Temperature	-10°C to +45°C	-10°C to +45°C	-10°C to +45°C	-10°C to +45°C	-10°C to +45°C	-5°C to +45°C	-5°C to +45°C	-5°C to +45°C	-5°C to +45°C	-10°C to +45°C
Storage Temperature	-100°C to +50°C	-100°C to +50°C	-100°C to +50°C	-100°C to +50°C	-100°C to +50°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Connection										
Flexible	0.5 to 4mm²	0.5 to 4mm²	0.5 to 4mm²	0.5 to 4mm²	0.5 to 4mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1 to 4mm²
Rigid	-	-	-	-	-	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²	1.5 to 6mm²

EH010 / EH011
230 VM ±10% 50/60Hz



EH110 / EH111 / EH171
230 VM ±10% 50/60Hz



Data is subject to errors and technical modifications.

Time Clocks/Switches Selection Chart

	Electromechanical Time Clocks		**Digital Time Clocks**			
	1 Channel		**1 Channel**		**2 Channels**	**4 Channels**
	1 Modules	3 Modules	1 Modules	2 Modules	2 Modules	4 Modules
	EH010 **EH011**	**EH110** **EH111** **EH171**	**EG071** **EG010**	**EG103** **EG103E**	**EG203** **EG203E**	**EG493E**

Programming Cycle	Electromechanical		Digital			
	1 Channel **1 Module**	**3 Modules**	**1 Channel** **1 Modules**	**2 Modules**	**2 Channels** **2 Modules**	**4 Channels** **4 Modules**
24 Hours	**EH010** **EH011**	**EH110** **EH111**	**EG010**			
7 Days		**EH171**	**EG071**	**EG103** **EG103E**	**EG203** **EG203E**	
Annual						**EG493E**

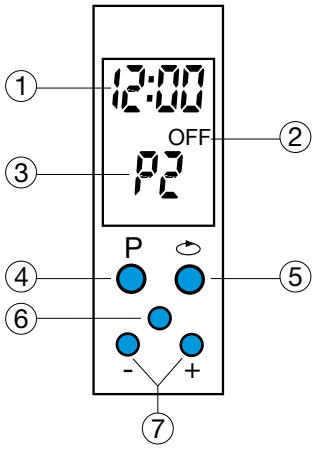
Technical Characteristics - EG010

Electrical Characteristics	
Voltage Supply	230V ±10% 50/60Hz
Consumption	1VA
Output	1 Changeover contact 16A - 250V AC 1 3A - 250V cosw = 0.6 1000W Incandescent lighting
Functional Characteristics	
Number of programs	5 Adjustable Pre-recorded Programs
Accuracy	±6min per year
Supply Failure Reserve	Total of 3 years
Environment	
Working Temperature	-10°C to +50°C
Storage Temperature	-10°C to +60°C
Cable Capacity	1 to 4mm²
Main Characteristics	Easy to program: 5 programs are pre-recorded. The user just has to select the program which corresponds to its use and modify time switches if necessary.

The 5 pre-registered programs are as follows:

P	Prog
P0	OFF
P1	ON
P2	6.00 — 23.00
P3	6.00 — 8.00 — 17.00 — 23.00
P4	6.00 — 8.00 — 11.00 — 13.00 — 17.00 — 23.00

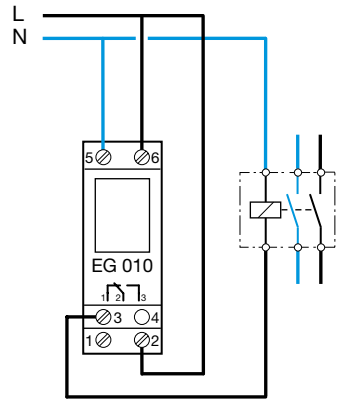
Product Presentation



Display
1. Time
2. Circuit Status
3. Program Selection

Buttons
4. P to select the program to apply
5. Reset
6. ↻ to scroll program steps
7. + and - : to input time

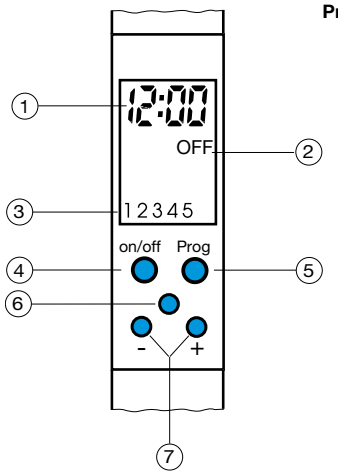
Electrical Connection



Technical Characteristics - EG071

Electrical Characteristics	
Voltage Supply	230V ±10% 50/60Hz
Consumption	1VA
Output	1 Changeover contact 16A - 250V AC 1 3A - 250V cosw = 0.6 1000W Incandescent lighting
Functional Characteristics	
Number of programs	20 Program Steps (each program step can be applied to one of several days)
Accuracy	±6min per year
Supply Failure Reserve	Total of 3 years
Environment	
Working Temperature	-10°C to +50°C
Storage Temperature	-10°C to +60°C
Cable Capacity	1 to 4mm²

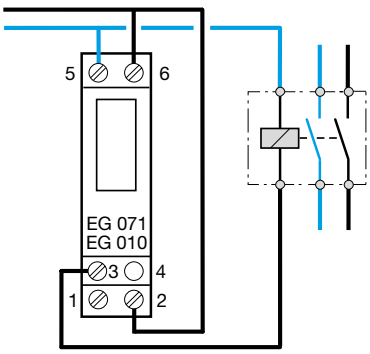
Product Presentation



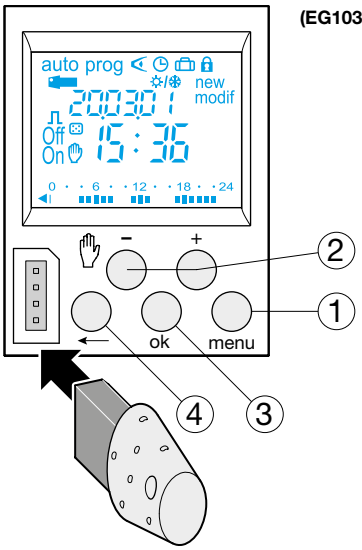
Display
1. Time
2. Circuit Status
3. Days of the week

Buttons
4. ON / OFF : to select the circuit status
5. Reset
6. Prog: to program the device and scroll program steps
7. To input time and day

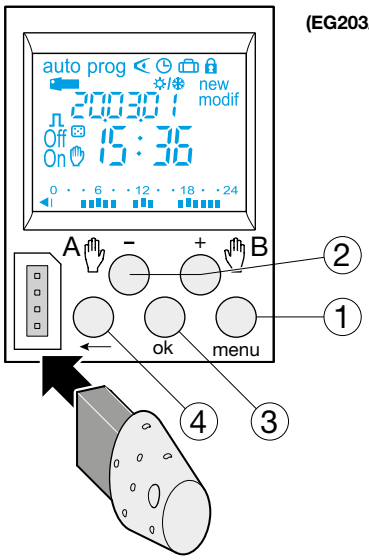
Electrical Connection



Data is subject to errors and technical modifications.



(EG103/EG103E)



(EG203/EG203E)

Keys

1.	Menu	Selection of operating mode
	Auto	Mode of running according to the program selected
	Prog	New for programming mode
	Prog	To modify an existing program
	◀	Checking of the program
	◷	Modification of time, date and selection of the winter/summer time change mode.
	🧳	Holidays
2.	+ / -	Navigation or setting of values
	✋	In auto, mode, selection of overrides, waivers or random operation
3.	OK	To validate flashing information on display
4.	←	To return to the previous step

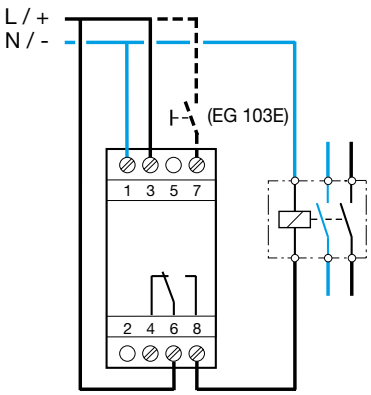
You may return into auto mode at any moment using menu.
If no action is taken for 1 min, the switch returns to auto mode.

Major Characteristics

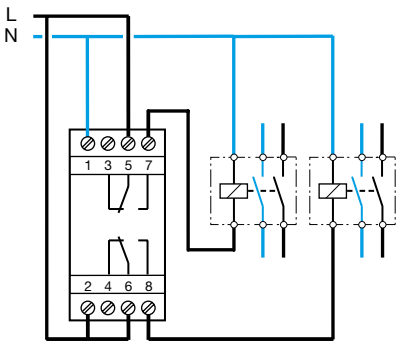
- Product delivered with current time and date set
- Automatic change of winter / summer time ☼/❄
- Programming key
  - For permanent waivers
  - For program copy or save
- Programming for day or group of days
- 56 program steps On, Off
- Impulses ⎍ (1 sec to 30 min)*
- Permanent overrides On or Off (✋ permanent light on)
- Temporary overrides On or Off (✋ flashing)
- Holiday mode 🧳 : overrides On or Off between two dates*
- Simulation of presence ⚄ *
- Display bar graph of daily profile
- Keyboard locking possible 🔒
- Programmable with power off
- Back lit display*

* Evolution models E or V only

Connection Diagram EG103*



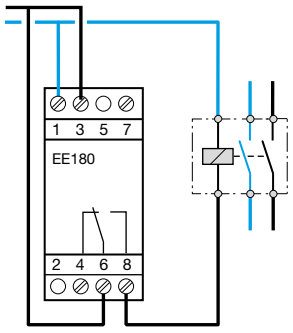
Connection Diagram EG203*



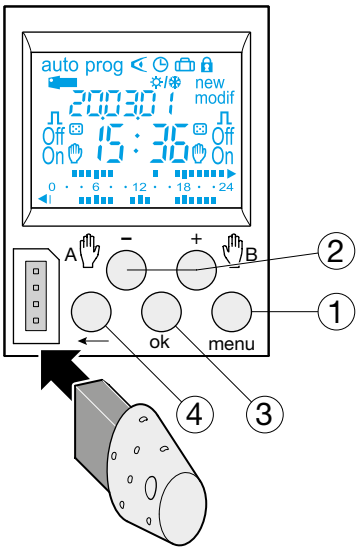
Technical Characteristics

	EE180 (1 Channel)	EE181 (2 Channel)
Width in 17.5mm Modules	2	2
Supply Voltage	230V AC (+10 % / -15%, 50/60Hz	
Number of Outputs	1	2
Characterisitics of Relay	Change over contact 16A C 1 250V /10A cos phi = 0.6	
Incandescent	2300W	
230V Halogen	2300W	
Standards	CE + CTICK and CEI 60-669	
Connection		
Flexible	1 to 6mm²	
Rigid	1.5 to 10mm²	
Environment		
Storage Temperature	-20°C to +60°C	
Working Temperature	-10°C to +55°C	
IP	IP20	
Functional Characteristics		
Display LCD	Without backlight screen	
Operating reserve	Lithium battery 5 years	
Precision	+/- 1.5s/day	
Programming Key	Yes	
Automatic change of winter / summer time	Yes	
Functions available in free programming	Weekly programming / permanent override / temporary override	
Astro Functions		
Astro mode	Yes	Independent programming for each channel
Programming of the lighting interrution	Yes (if channel Astro)	
Temporary override	15 / 30 / 60min	
Maintained ON	Adjustment common to the 2 channels	
Anticipation ON	Adjustment common to the 2 channels	

Electrical Connection
EE180 : 1 Channel



Product Presentation

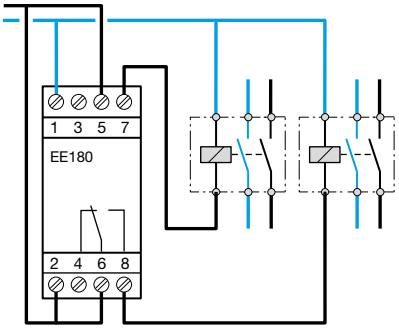


Keys

1.	Menu	Selection of operating mode
	Auto	Mode of running according to the program selected
	Prog	New for programming mode
	Prog	To modify an existing program
	◀	Checking of the program
	🕒	Modification of time, date and selection of the winter/ summer time change mode
	Astro	Astronomical mode
	★	Indicated that the channel is in astronomical mode
2.	+ / -	Navigation or setting of values
A	✋	In auto, mode, selection of overrides, waiver or random operation
B	✋	
3.	OK	To validate flashing information on display
4.	←	To return to the previous step

You may return into auto mode at any moment using menu.
If no action is taken for 1 min, the switch returns to auto mode.

EE181 : 2 Channels



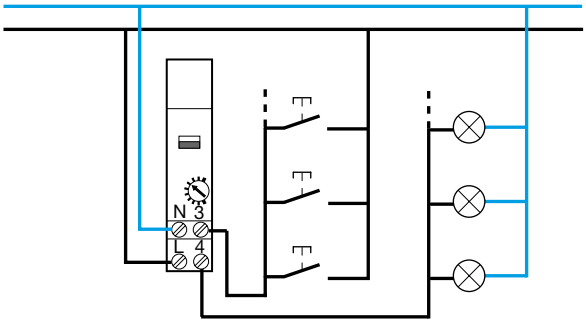
Data is subject to errors and technical modifications.

Time Lag Switches
A common area where time delay devices are used is stairways and corridors in multi occupancy buildings where they provide a level of energy efficiency. The EMN001 device provides basic time lag control.

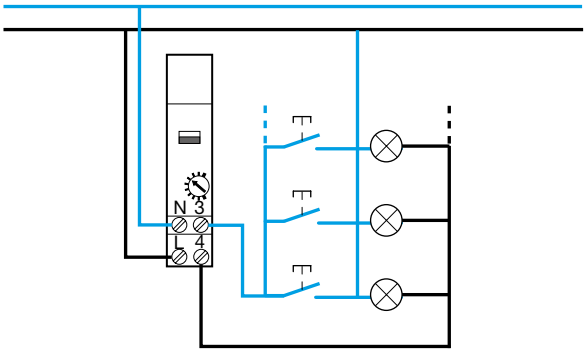
Technical Specification

	EMN001	EMN002	EMN005
Electrical Characteristics			
Supply voltage	230V +10 -15% 50/60Hz	230V +10 -15% 50/60Hz	230V +10 -15% 50/60Hz
Consumption	1VA	0.5W Permanent 8W Max.	1VA
Size (Module)	1	-	1
Breaking Capacity			
AC1	16A 230V AC	4A 230V~	16A
Incandescent	2300W	1000W	2300W
Halogen 230V	2300W	1000W	2300W
Ferro Magnetic Transformer	1600W	-	-
Parallel Compensated	Capacitor 112µF	-	-
Fluorescent Lamps	1000W		1000W
Series Compensated	3600W	-	1000W
Electronic Transformer	2300W	-	-
Compact Fluorescent Lamps with Electronic Ballast with Conventional Ballast	60 x 7W or 40 x 11W or 32 x 15W or 20 x 23W 23000W	- -	- -
Functional Characteristics			
Time Delay	30s to 10min	24s	30s to 10min
Retrigger	Yes	-	-
Max. Current in Rest Position	100mA	-	-
Automatic 3/4 Recognition	Yes	-	-
Local Command	Automatic / Override On	-	Automatic / Override On
Environment			
Working Temperature	-10 to +55°C	-15 to +55°C	-10 to +55°C
Storage Temperature	-20 to +60°C	-25 to +70°C	-20 to +60°C
Connection			
Flexible	1 to 6mm²	1 to 6mm²	1 to 6mm²
Rigid	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²
Connection **EM001/EM002**	-	2 wires 1.5	-

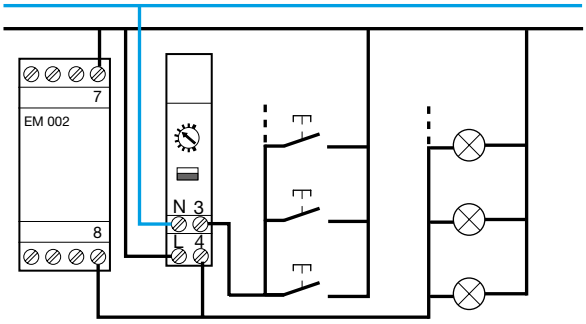
Wiring Diagrams
4-Wire



3-Wire



Combination EMN002 with EMN001

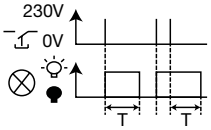


A: Basic Mode
Press push button to switch ON the light. After a set time (Adjustable “T”, the light will switch OFF automatically.

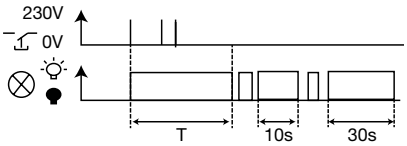
B: Prewarning Mode
A signal (blink) will appear before the end of the lighting period.

C: Double delay mode
Press push button to switch light ON. After a set time (Adjustable “T”, the light will switch OFF automatically. If you press the buton for more than 3 seconds, a time lag of one hour begin.

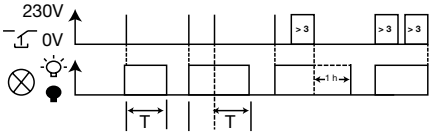
A



B



C

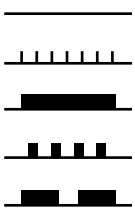


Delay Timers
Delay timer devices are used to control a variety of processes where the requirement is for switching circuits on, off or delaying the on or off switching for a pre-set period of time. Typical device types are:

- **Delay on** - intended to delay the starting or switching of a circuit for a set period of time following the command signal e.g. to delay the starting of motor loads where a large number of motors are to be started by the same switch to reduce the effects of the starting currents.
- **Delay off** - intended to delay the stopping or switching off of a circuit for a set period of time following the removal of the command signal e.g. to overrun an extractor following the switching off of a process that creates fumes.
- **Adjustable time on** - intended to switch on for a set period, the command signal must remain on throughout the set period e.g. to switch on two sets of heaters with one set (the boost) switching off after the set period.
- **Impulse timer** - intended to switch on for a set period, the command signal length is not important e.g. to boost a time clock controlled circuit such as a water storage heater.
- **Symmetrical timer** - intended to toggle a circuit on and off in regular time patterns e.g. to run an extractor intermittently.

Multifunction Timer - 6 Individual Functions
A = Timer.
B = Delay off (output relay opens either at end of command or after set time period - which ever is shorter).
C = Delay off.
D = Delay on.
E = Delay on (output relay closes either at end of command or after set time period - which ever is shorter).
F = Symmetrical timer.

On selection - contact permanently closed
Off selection - contact permanently open



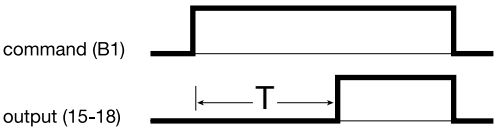
Output relay open - with no command

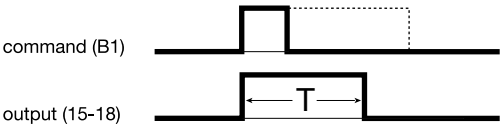
Output relay open - with command signal running

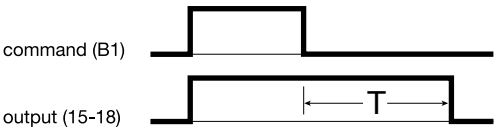
Output relay closed - with command signal running

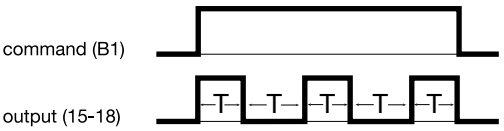
Output relay close - with command signal removed

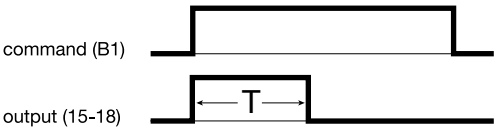
Output relay closed (**EZN005**)









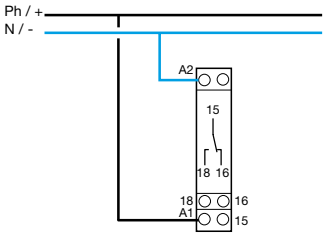


Data is subject to errors and technical modifications.

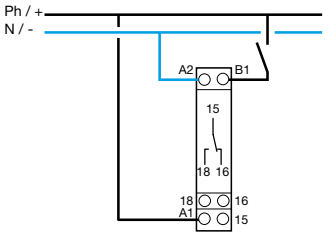
Technical Specifications

	EZN001, EZN002, EZN003, EZN004, EZN005, EZN006
Electrical Characteristics	
Supply Voltage	24-28 Vdc 12-48 Vdc (+10%) Terminals A1 & A2 12-230 Vac (+10%) Terminals A3 & A2
Output	1 Volt Free C/O Contact
Life Expectancy	
Max Load AC 1	8A / 230V~ 50,000 Cycles
Incandescent	450W~ 500,000 Cycles
Fluorescent Non Comp.	600W~ 50,000 Cycles
Inductive Load 0.6pf	5A / 230V~ 100,000 Cyles
Min Power	
AC	100mA at 230V
DC	100mA at 12V
Galvanic Isolation	2kV
Standard / Norm	BS EN 60669-2-1
Functional Characteristics	
Timer Range	0.1s - 10 hours
Min. Command Period	
AC	50ms
DC	30ms
Operating Temperature	
Working	-20°C to +50°C
Storage	-40°C to +50°C
Connection Capacity	
Flexible	1 to 6mm²
Rigid	1.5 to 10mm²

Functional characteristics
EZN001, EZN003, EZN005, EZ006
(functions D,E,F)
CD : Command.
O : Output.
T : Time delay.



EZN002, EZN004, EZN006
(functions A,B,C)
indicator light (for versions with NO contact).
ON
OFF



Technical Specifications

Electrical Characteristics	
Voltage Supply	230V +10 -15% 50/60Hz
Consumption	1.5VA
Output	1 Changeover Contact 2A 230V AC1
Functional Characteristics	
4 Temperature Ranges	-30 to 0°C 0 to +30°C +30 to +60°C +60°C to +90°C (Varying accuracy)
Environment	
Working Temperature	-10 to +50°C
Storage Temperature	-20 to +70°C
Connection Capacity	
Flexible	1 to 6mm²
Rigid	1.5 to 10mm²
Probe	Maximum Distance 50m

Main Characteristics

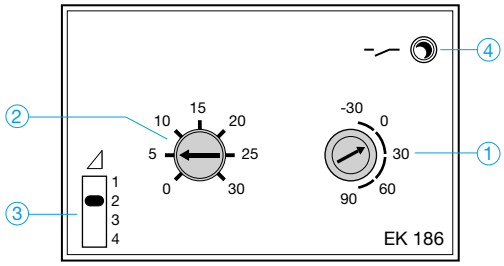
Multiple Applications
A single device to solve all your problems of regulation or temperature control, from cold room to incubator.

Varying Accuracy
The accuracy can be adapted according to the application. e.g.: low for ambient temperature regulation, high for incubator regulation.

Safety Feature for Probe Failure
To protect the installation in case of disconnection from the probe. Various connections can be made so the thermostat will be:
- Permanent OFF
- Permanent ON
- Cyclical operation: output ON 1 minute in every 4

Display
State of output.

Product Presentation



1. Selection of the range
2. Adjustment of the temperature setting
3. Selection of temperature range
4. Display of state of output

Working Principle
The **EK186** regulates the temperature according to all or nothing principle, it can be associated with different probes, according to the application the accuracy is a function of the temperature range and is selected by a slide switch.

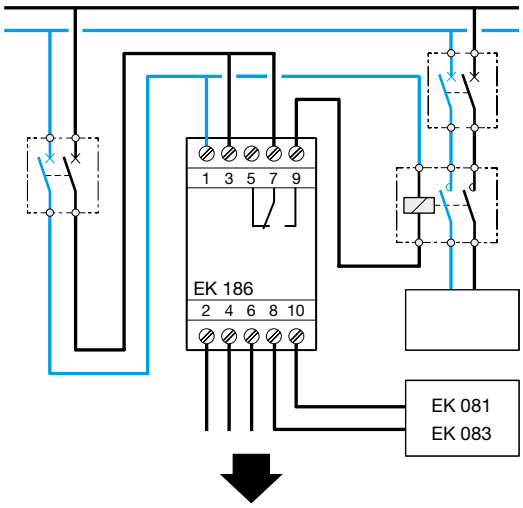
	Temperature range °C			
Position on Slide Switch	**-30 to 0**	**0 to 30**	**30 to 60**	**60 to 90**
1	**± 2.15**	± 2.54	± 2.98	± 3.43
2	± 0.15	**± 0.18**	± 0.21	± 0.24
3	± 0.38	± 0.45	**± 0.53**	± 0.61
4	± 1.23	± 1.45	± 1.70	**± 1.96**

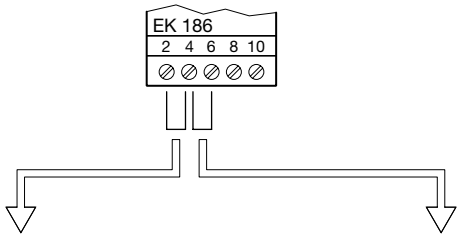
Bold - Preferential accuracies for each temperature range.

Example of Choice of Accuracy
- Regulation of ambient temperature
  Range: 0 to +30°C
  Accuracy: ± 0.18°C = 2

- Control of hot water outgoing circuit
  Range: 30 to +60°C
  Accuracy: ± 0.53°C = 3

Electrical Connection Caution





When the temperature ranges 30 to 60°C and 60 to 90°C are selected and the temperature measured by the probe is below 30°C, the safety feature for probe failure must be “permanent on”, until the measured temperature reaches the minimum temperature corresponding to the range (i.e. 30°C for the range 30°C to 60°C and 60°C for the range 60°C to 90°C).

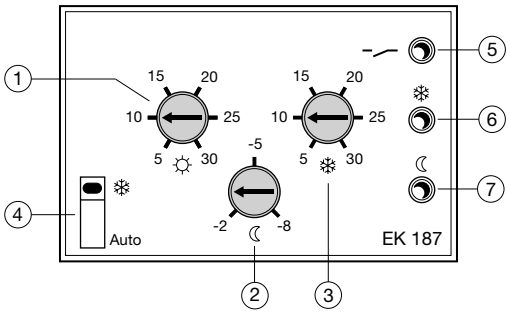
Data is subject to errors and technical modifications.

Technical Specifications

Electrical Characteristics	
Voltage Supply	230V +10 -15% 50/60Hz
Consumption	1.5VA
Output	1 Changeover Contact 2A 230V AC1
Functional Characteristics	
3 Temperature Ranges Controllable by External Setting	Comfort: Adjustable from +5 to +30°C Reduced: Decrease 2 to 8°C in Comparison with Comfort Setting Frost setting: Adjustable from +5 to +30°C Accuracy ±0.2°C
Environment	
Working Temperature	-10 to +50°C
Storage Temperature	-20 to +70°C
Connection Capacity	
Flexible	1 to 6mm²
Rigid	1.5 to 10mm²
Probe	Maximum Distance 50m

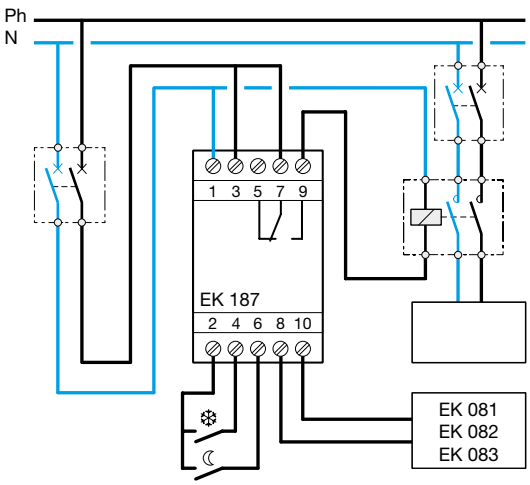
Product Presentation

1. Reference setting: comfort TO
2. Decrease in comparison with reference setting: reduced to TO
3. Frost setting
4. Frost setting override



5. Display of state of output i.e. contact position
6. LED indicating the frost override is on.
7. LED indicating the regulation in comparison with a reduced setting

Electrical Connection



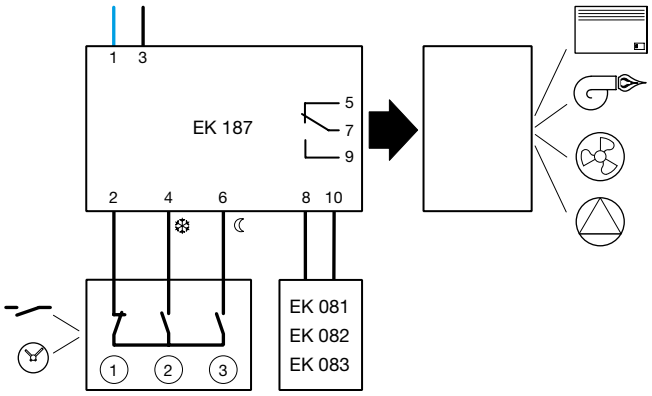
Main Characteristics

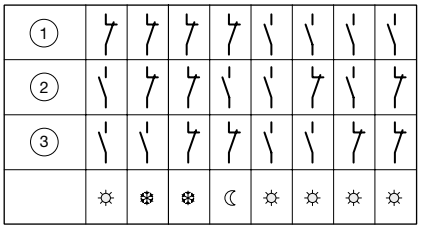
- **Temperature settings controllable by external setting** when associating a digital time switch, it is possible to regulate the heating in relation with a program established by the user.
- **2 wires link** between the probe and the unit, enables the easy replacement of the ambient thermostats of an existing installation.
- **Safety feature for "probe failure"** in case of probe disconnection, the output will be switched 1 minute in every 4; so that in case of disconnection during winter, it will protect the installation from frost.
- **Display** of state of the output and of the setting.

Working Principle

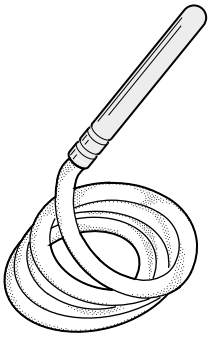
EK187 adjusts the temperature under the "all or nothing" principle it is associated to an ambient probe and thus works in closed loop the temperature settings are selected by external settings (contacts free of potential).

EK187 is thus generally associated to a time switch or a digital time switch in the case of absence of external signal, EK187 regulates the heating in comparison with the reference setting, a switch enables the override of the dispensation setting.





EK083 Universal Probe

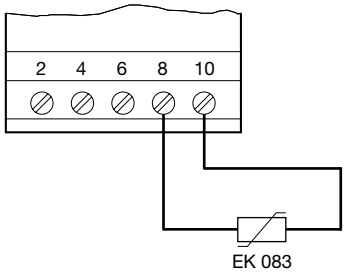


- To associate with **EK186** thermostat
- To associate with **EK187** thermostat and **EK618** time programmable thermostat (for those applications insert in series with the probe a resistance of 1500Ω)

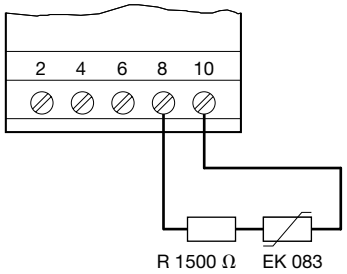
EK083: 10 kOhms at 25ºC
cable length: 4m

Environment
- Working temperature: –30 to +90ºC
- Storage temperature: –30 to +100ºC

Electrical Connection
- Associated with **EK186**

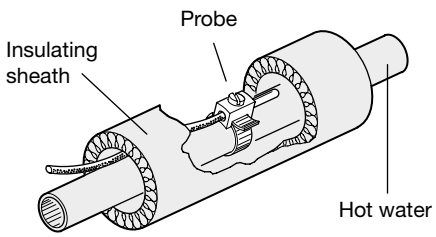


- Associated with **EK187 - EK618**

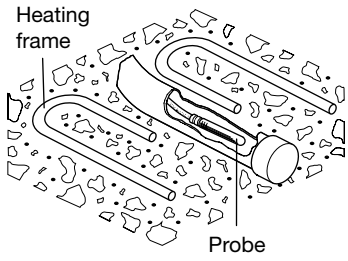


Examples of Applications

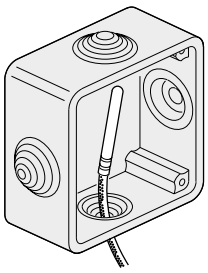
Use with the clamp collar
- For the control of hot water



Use with the clamp collar
- Protected by a sheath for the control of floor temperature



- Used as an external probe in a weatherproof box.



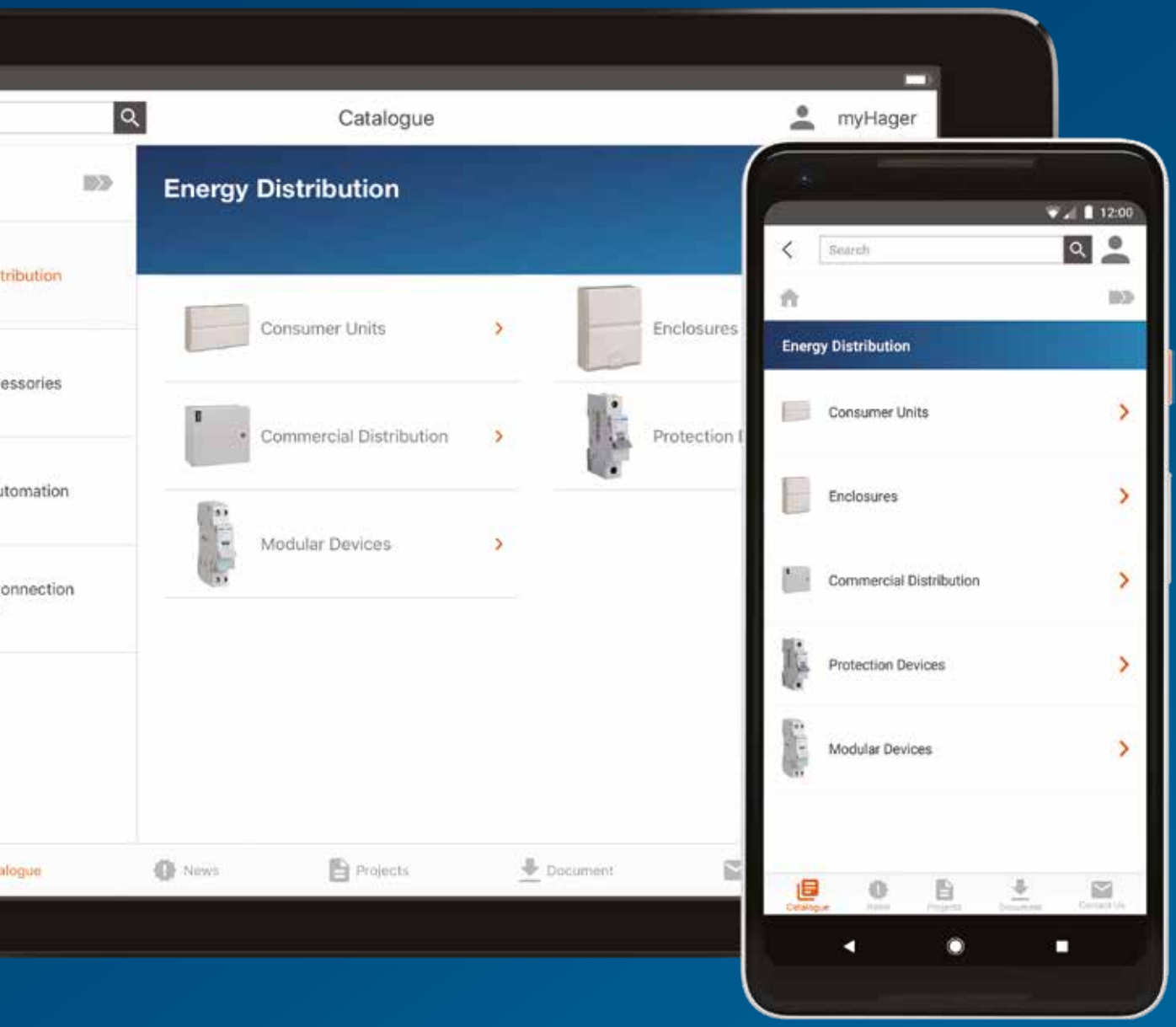
Resistance of Probes According to Temperature

Temperature ºC	EK083 R (KΩ)	EK081* R (KΩ)	EK081** EK082 R (KΩ)
+90	0.91	On a wall	-
+80	1.25	1.25	2.83
+70	1.75	1.75	3.33
+50	3.60	3.60	5.18
+30	8.06	8.06	9.64
+25	10	10	11.58
+20	12.49	12.49	14.07
+15	15.71	15.71	17.28
+10	19.90	19.90	21.48
+5	25.39	25.39	26.98
+0	32.65	32.65	34.23

Temperature ºC	EK083 R (KΩ)	EK081* R (KΩ)	EK081** EK082 R (KΩ)
-5		42.31	-
-10	55.29	-	-
-15	72.89	-	-
-20	96.97	-	-
-25	130.24	-	-
-30	176.68	-	-

Face value at 25ºC
Note: *Association with **EK186**
Association with **EK187 and **EK618**

Data is subject to errors and technical modifications.



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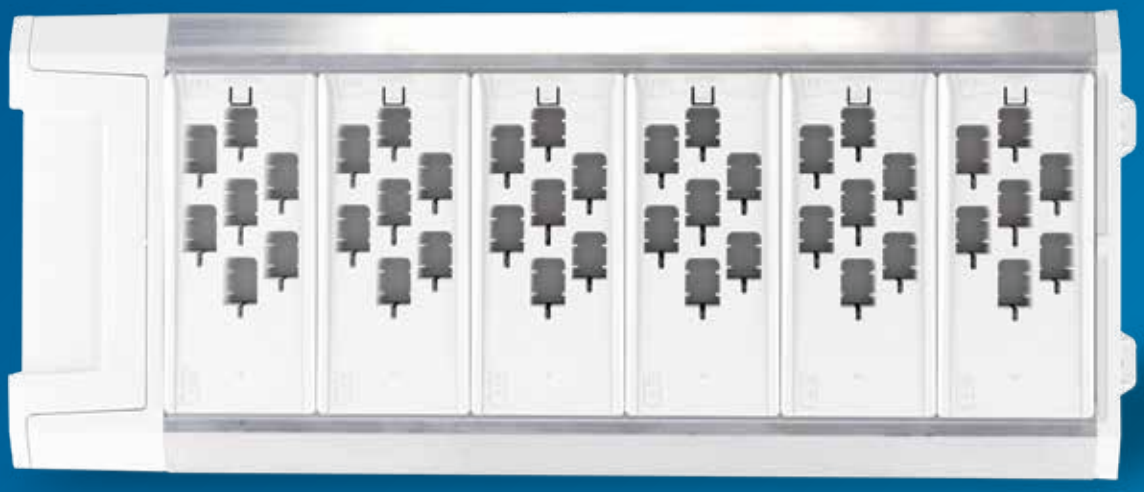
:hager

Lighting, Connection & Control

Lighting creates an impression. Klik, our lighting connection system provides the roots to a buildings lighting system, allowing it to adapt and grow with ease. Controls, including occupancy sensors, ensure that light is only available when needed and tailored to a users needs.

Our lighting offer also extends to our new range of LED lights and IP55 outdoor sensors, which will brighten up the night and secure your surroundings.



03

Page

Klik

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Controls

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Lighting

- Outdoor Lighting

Technical Pages 3.24

KLMB4W

Marshalling Boxes - Wire In, Plug Out

Characteristics:
- The KLMB marshalling box allows the connection and control of multiple luminaires. The marshalling box utilises a robust extruded aluminium body.
- 7 Pole.
- 4, 6, 8, 10 & 12 outlets.
- 16A Rated BS 5733:2010 .
- Short circuit tested: 1500A conditional rating.

Description	Cat ref.
Marshalling Box, Single Supply, Wire In, Plug Out	
4 Way	**KLMB4W**
6 Way	**KLMB6W**
8 Way	**KLMB8W**
10 Way	**KLMB10W**
12 Way	**KLMB12W**
Marshalling Box, Dual Channel, Wire In, Plug Out	
8 Way, 4/4	**KLMB244W**
10 Way, 5/5	**KLMB255W**
12 Way, 6/6	**KLMB266W**

KLMB5P

Marshalling Boxes - Plug In, Plug Out

Characteristics:
- The KLMB marshalling box allows the connection and control of multiple luminaires. The marshalling box utilises a robust extruded aluminium body.
- 7 Pole.
- 5, 7, 9 & 11 outlets.
- 16A Rated BS 5733:2010 .
- Short circuit tested: 1500A conditional rating.

Description	Cat ref.
Marshalling Box, Single Supply, Plug In, Plug out	
5 Way	**KLMB5P**
7 Way	**KLMB7P**
9 Way	**KLMB9P**
11 Way	**KLMB11P**

K7B1M075WPCR

Klik 7 Pre-wired Plugs with Sockets

Characteristics:
- Connections to the luminaire are made via a pre-wired plug and lead. All leads are low smoke zero halogen and are factory connected and tested.
- Standard, digital and emergency luminaires.
- Short circuit tested: 1500A conditional rating.
- Cable standard BS 7211.

Description	Cat ref.
Pre-wired Plugs and Sockets for Standard Luminaires	
6A Luminaire Lead 1.5m 0.75mm² 3 Core Plug to Wire + KLPCR7	**K7B1M075WPCR ★**
6A Luminaire Lead 3m 0.75mm² 3 Core Plug to Wire + KLPCR7	**K7B3M075WPCR ★**
Pre-wired Plugs and Sockets for Standard Luminaires with Emergency	
6A Luminaire Lead 1.5m 0.75mm² 4 Core Plug to Wire + KLPCR7	**K7J1M075WPCR ★**
6A Luminaire Lead 3m 0.75mm² 4 Core Plug to Wire + KLPCR7	**K7J3M075WPCR ★**
Pre-wired Plugs and Sockets for Dimmable Luminaires	
6A Luminaire Lead 1.5m 0.75mm² 5 Core Plug to Wire + KLPCR7	**K7P1M075WPCR ★**
6A Luminaire Lead 3m 0.75mm² 5 Core Plug to Wire + KLPCR7	**K7P3M075WPCR ★**
Pre-wired Plugs and Sockets for Dimmable Luminaires with Emergency	
6A Luminaire Lead 1.5m 0.75mm 6 Core Plug to Wire + KLPCR7	**K7T1M075WPCR ★**
6A Luminaire Lead 3m 0.75mm 6 Core Plug to Wire + KLPCR7	**K7T3M075WPCR ★**

Data is subject to errors and technical modifications. ★ **New.**

Klik 7 Pre-wired Plugs

Characteristics:
- Connections to the luminaire are made via a pre-wired plug and lead. All leads are low smoke zero halogen and are factory connected and tested.
- Standard, digital and emergency luminaires.
- Short circuit tested: 1500A conditional rating.
- Cable standard BS 7211.
- New for 2019 - references with 1m cable length will be provided as 1.5m.

We have recently improved our range of Klik 7 pre-wired leads. As part of this process, we have changed how our part references work. For example **KLB/3/0-75W** will now become **K7B3M075W**. For a full supersession chart, see page 3.21.

K7	B	3M	075	W
Range	**Function**	**Length**	**Core Size**	**Wired or Plug End**

A Link Lead, Power
B Standard Luminaire
E Emergency Exit Luminaire
G Link Lead, Power, Emergency
J Standard Luminaire, Emergency
F Switch Drop Lead
K Link Lead, Power, Emergency, Switched Line
P Dimmable Luminaire
W Control, +/- & Cpc
Z Link Lead, Power, Emergency, Switched Line, Control
T Dimmable Luminaire, Emergency

K7B1M075W

K7J1M075W

Description	Cat ref.
Pre-wired Plugs for Standard Luminaires	
6A Luminaire Lead 1.5m 0.75mm² 3 Core Plug to Wire	K7B1M075W ★
6A Luminaire Lead 3m 0.75mm² 3 Core Plug to Wire	K7B3M075W ★
6A Luminaire Lead 5m 0.75mm² 3 Core Plug to Wire	K7B5M075W ★
6A Luminaire Lead 7m 0.75mm² 3 Core Plug to Wire	K7B7M075W ★
10A Luminaire Lead 1.5m 1mm² 3 Core Plug to Wire	K7B1M1W ★
10A Luminaire Lead 3m 1mm² 3 Core Plug to Wire	K7B3M1W ★
10A Luminaire Lead 5m 1mm² 3 Core Plug to Wire	K7B5M1W ★
10A Luminaire Lead 7m 1mm² 3 Core Plug to Wire	K7B7M1W ★
16A Luminaire Lead 3m 1.5mm² 3 Core Plug to Wire	K7B3M15W ★
16A Luminaire Lead 5m 1.5mm² 3 Core Plug to Wire	K7B5M15W ★
Pre-wired Plugs for Standard Luminaires with Emergency	
6A Luminaire Lead 1.5m 0.75mm² 4 Core Plug to Wire	K7J1M075W ★
6A Luminaire Lead 3m 0.75mm² 4 Core Plug to Wire	K7J3M075W ★
6A Luminaire Lead 5m 0.75mm² 4 Core Plug to Wire	K7J5M075W ★
6A Luminaire Lead 7m 0.75mm² 4 Core Plug to Wire	K7J7M075W ★
6A Luminaire Lead 9m 0.75mm² 4 Core Plug to Wire	K7J9M075W ★
10A Luminaire Lead 1.5m 1mm² 4 Core Plug to Wire	K7J1M1W ★
10A Luminaire Lead 3m 1mm² 4 Core Plug to Wire	K7J3M1W ★
10A Luminaire Lead 5m 1mm² 4 Core Plug to Wire	K7J5M1W ★
10A Luminaire Lead 7m 1mm² 4 Core Plug to Wire	K7J7M1W ★
10A Luminaire Lead 9m 1mm² 4 Core Plug to Wire	K7J9M1W ★
16A Luminaire Lead 3m 1.5mm² 4 Core Plug to Wire	K7J3M15W ★
16A Luminaire Lead 5m 1.5mm² 4 Core Plug to Wire	K7J5M15W ★
16A Luminaire Lead 3m 1.5mm² 4 Core Plug to Plug	K7J3M15P ★
16A Luminaire Lead 5m 1.5mm² 4 Core Plug to Plug	K7J5M15P ★
16A Luminaire Lead 7m 1.5mm² 4 Core Plug to Plug	K7J7M15P ★
Pre-wired Plugs for Emergency Exit Luminaires	
16A Luminaire Lead 3m 1.5mm² 3 Core Plug to Wire	K7E3M15W ★
16A Luminaire Lead 5m 1.5mm² 3 Core Plug to Wire	K7E5M15W ★
16A Luminaire Lead 7m 1.5mm² 3 Core Plug to Wire	K7E7M15W ★
16A Luminaire Lead 11m 1.5mm² 3 Core Plug to Wire	K7E11M15W ★

K7T3M075W

Klik 7 Pre-wired Plugs for Dimmable Luminaires

Description	Cat ref.
Pre-wired Plugs for Dimmable Luminaires	
6A Luminaire Lead 1.5m 0.75mm² 5 Core Plug to Wire	K7P1M075W ★
6A Luminaire Lead 3m 0.75mm² 5 Core Plug to Wire	K7P3M075W ★
6A Luminaire Lead 5m 0.75mm² 5 Core Plug to Wire	K7P5M075W ★
6A Luminaire Lead 7m 0.75mm² 5 Core Plug to Wire	K7P7M075W ★
10A Luminaire lead 1.5m 1mm² 5 core Plug to Wire	K7P1M1W ★
10A Luminaire Lead 3m 1mm² 5 Core Plug to Wire	K7P3M1W ★
10A Luminaire Lead 5m 1mm² 5 Core Plug to Wire	K7P5M1W ★
10A Luminaire Lead 7m 1mm² 5 Core Plug to Wire	K7P7M1W ★
16A Luminaire lead 1.5m 1.5mm² 5 core Plug to Wire	K7P1M15W ★
16A Luminaire Lead 3m 1.5mm² 5 Core Plug to Wire	K7P3M15W ★
16A Luminaire Lead 5m 1.5mm² 5 Core Plug to Wire	K7P5M15W ★
16A Luminaire Lead 7m 1.5mm² 5 Core Plug to Wire	K7P7M15W ★
Pre-wired Plugs for Dimmable Luminaires with Emergency	
6A Luminaire Lead 1.5m 0.75mm² 6 Core Plug to Wire	K7T1M075W ★
6A Luminaire Lead 3m 0.75mm² 6 Core Plug to Wire	K7T3M075W ★
6A Luminaire Lead 5m 0.75mm² 6 Core Plug to Wire	K7T5M075W ★
6A Luminaire Lead 7m 0.75mm² 6 Core Plug to Wire	K7T7M075W ★
10A Luminaire Lead 1.5m 1mm² 6 Core Plug to Wire	K7T1M1W ★
10A Luminaire Lead 3m 1mm² 6 Core Plug to Wire	K7T3M1W ★
10A Luminaire Lead 5m 1mm² 6 Core Plug to Wire	K7T5M1W ★
10A Luminaire Lead 7m 1mm² 6 Core Plug to Wire	K7T7M1W ★
16A Luminaire Lead 3m 1.5mm² 6 Core Plug to Wire	K7T3M15W ★
16A Luminaire Lead 5m 1.5mm² 6 Core Plug to Wire	K7T5M15W ★
16A Luminaire Lead 3m 1.5mm² 6 Core Plug to Plug	K7T3M15P ★
16A Luminaire Lead 5m 1.5mm² 6 Core Plug to Plug	K7T5M15P ★
16A Luminaire Lead 7m 1.5mm² 6 Core Plug to Plug	K7T7M15P ★

Data is subject to errors and technical modifications. ★ **New.**

Klik 7 Pre-wired Marshalling Box Link Leads

K7A3M15P

Characteristics:
- The link leads are used to connect KLMB to KLMB. All leads are low smoke zero halogen and are factory connected and tested. Note: to ensure correct link lead selection see the connection key on page .
- 1.5mm² CSA.
- 3m, 5m & 10m lengths.
- Standard, Digital and Emergency Luminaires.
- 16A Rated.
- BS 5733:2010, BS EN 61535.
- Short circuit tested: 1500A conditional rating.
- Cable standard BS 6500 & BS 7211.

Description	Cat ref.
Pre-wired Link Leads - L, N, CPC	
16A Luminaire Lead 10m 1.5mm² 3 Core Plug to Plug	**K7A10M15P ★**
16A Luminaire Lead 5m 1.5mm² 3 Core Plug to Plug	**K7A5M15P ★**
Pre-wired Link Leads - L, N, CPC, Emergency	
16A Link Lead 10m 1.5mm² 4 Core Plug to Plug	**K7G10M15P ★**
16A Link Lead 5m 1.5mm² 4 Core Plug to Plug	**K7G5M15P ★**
Pre-wired Link Leads - L, N, SL, CPC, Emergency	
16A Link Lead 5m 1.5mm² 5 Core Plug to Plug	**K7K5M15P ★**
Pre-wired Link Leads - CPC, DA+, DA-	
6A DALI Link Lead 3m 0.75mm² 3 Core Plug to Wire	**K7W3M075W ★**
6A DALI Link Lead 5m 0.75mm² 3 Core Plug to Wire	**K7W5M075W ★**
Pre-wired Link Leads - L, N, SL, CPC, DA+, DA-, Emergency	
16A Link Lead 3m 1.5mm² 7 Core Plug to Plug	**K7Z3M15P ★**
16A Link Lead 5m 1.5mm² 7 Core Plug to Plug	**K7Z5M15P ★**

Ceiling Roses

KLPCR7

Characteristics:
- 7 Pole conduit box / surface connector to allow the easy connection of digital lighting within traditional fixed wire installations. The connector is fitted directly to trunking or conduit allowing the luminaire to be connected / disconnected via the pluggable luminaire lead.
- 7 Pole.
- 16A Rated.
- Standards: BS 5733:2010.
- Short circuit tested: 1500A conditional rating.

Description	Cat ref.
16A 7 Pin Ceiling Rose	**KLPCR7 ★**
16A 7 Pin Wireable Plug & Ceiling Rose	**K7PLUGPCR ★**

K7PLUGPCR

Wireable / Rewireable Plug

K7PLUG

Characteristics:
- 7 Terminal plug, enabling you to make leads on site to the configuration required.
- Complies with BS EN 61535-2009+A1-2013
- Enables you to add the plug after cable routing, for example when cables pass through walls.

Description	Cat ref.
16A Wireable Klik 7 Plug	**K7PLUG ★**

EEK515P

EEK001

Occupancy Sensors with Remote Programming & Control Options

Characteristics:
- **EEK520B** - Detector for control of digital (DSI/DALI) luminaires
- Direct control of a light load.
- Lux level and ON delay adjustable via potentiometers or **EEK001** remote control.
- DALI/DSI bus output accommodates up to 24 ballasts.
- 230V wall switch override.
- Presence or absence detection available.
- **EEK523P** - As **EEK520B** but pre-wired with 3m Lead
- **EEK525P** - As **EEK520B** but pre-wired with 5m Lead
- **EEK513P** - detector for control of standard luminaires (On/Off)
- Presence or Absence detection available.
- Programmable from **EEK001**
- 7m Range
- **EEK515P** - As **EEK513P** but pre-wired with 5m Lead
- **EEK001** - IR programming tool
- Installer remote control to commission settings.
- **EEK002** - IR remote control
- Customer remote control for override operation.
- Complies with BS EN 60669-1 & BS EN 60669-2-1.

Description	Cat ref.
Wireable Digital PIR Occupancy Sensor - Dimmable & Daylight Linked	**EEK520B**
Pluggable Digital PIR Occupancy Sensor 3m lead - Dimmable & Daylight Linked	**EEK523P**
Pluggable Digital PIR Occupancy Sensor 5m lead - Dimmable & Daylight Linked	**EEK525P**
Pluggable PIR Occupancy Sensor 3m lead - On / Off & Daylight Linked	**EEK513P**
Pluggable PIR Occupancy Sensor 5m lead - On / Off & Daylight Linked	**EEK515P**
Pre-Wired PIR Occupancy Sensor 3m lead - On / Off & Daylight Linked	**EEK513W**
Programming Tool	**EEK001**
Remote Control for the End User	**EEK002**
Backbox Accessory for Surface BESA Detectors	**EEK005**

Data is subject to errors and technical modifications. ★ **New.**

Semi-Recessed Occupancy Sensor

EE810

Characteristics:
- The presence area is especially suitable in offices, where there may be notional corridors.
- **EE810** - 1 channel detector
- Provides direct control of a light load or can be used as a slave with **EE811** for enlargement of detection area.
- Lux level and ON delay (duration or pulse) defined via potentiometers.
- Test mode in order to set lux level and the detection pattern.
- **EE811** - 2 channel detector
- Lux level and ON delay adjustable via potentiometers.
- Input for slave (**EE810**) and/or remote push button.
- 230V wall switch override.
- Complies with BS EN 60669-1 & BS EN 60669-2-1.

Description	Cat ref.
Presence Detector 1 Channel	**EE810**
Presence Detector 2 Channel	**EE811**
Surface Mounting Box for **EE810** and **EE811**	**EE813**

Hyper Frequency Detector

EE883

Characteristics:
- The detection range diameter is adjustable from one to eight metres. The hyper frequency sensor allows for detection of movement through partitions (drywall, wood, glass) independent of temperature detection.

Features
- 230V AC.
- IP54 rated.
- Detection area 360º.
- Complies with BS EN 60669-1, BS EN 60669-2-1.

Description	Cat ref.
360º Hyper Frequency Sensor	**EE883**
Protection Basket for Hyper Frequency Sensor	**EEK006**

Corridor Motion Detector

EE880

Characteristics:
- Infra-red corridor motion detector for surface mounting.

Features
- 230V AC.
- IP54 rated.
- Detection zone of 4m x 20m.
- Overrun timer from 5 seconds to 15 minutes.
- Complies with BS EN 60669-1 & BS EN 60669-2-1.

Description	Cat ref.
PIR Corridor Motion Detector	**EE880**

KLCM413W

KlikLink App (Shown on iPad, not included)

Lighting Control Module with KlikLink

Characteristics:
- The KLCM allows connection and control of multiple luminaires with four separate channels.
- Switching, dimming (DSI & DALI), corridor hold, partition switching, daylight switching & dimming, scene settings, integral emergency test times, reset profiles, light level offset (channel to channel).
- Setting up of **KLCM** is acomplished via KlikLink app, available on iOS for iPad.

Description	Cat ref.
12 Way 4 Channel LCM Plug in, Plug out	**KLCM412P**
13 Way 4 Channel LCM Wire in, Plug out	**KLCM413W**
KlikLink iPad App	**Search KlikLink in iPad App Store**

KLCM-OS

KLCM-5OS

Lighting Control Module Occupancy Sensors

Characteristics:
- Klik LCM occupancy sensors come complete with a 10m RJ11 lead and have integrated daylight sensing.
- Sensing options are selected via the Kliklink app (e.g. presence/absence).
- **KLCM-3OS** is designed for use as a corridor sensor.
- **KLCM-5OS** is designed for use as a whole room sensor.

Description	Cat ref.
Klik LCM Occupancy Sensor with 1 Sensor Head	**KLCM-OS**
Klik LCM Corridor Sensor with 3 Sensor Heads	**KLCM-3OS**
Klik LCM Wide Area Sensor with 5 Sensor Heads	**KLCM-5OS**

Data is subject to errors and technical modifications. ★ **New.**

Lighting Control Module Switch Drop Leads (Grey)

KLO15RJ45G

Characteristics:
- RJ45 to switch (wire-in) lead available in a variety of lengths.
- SELV.
- Cables supplied standard with RJ45 plug on both ends.

Note: for retractive wall switch, please see page 5.17, for grid versions see page 5.33.

Description	Cat ref.
RJ45 SELV Switch Drop Lead	
5m	**KLO5RJ45G**
10m	**KLO10RJ45G**
15m	**KLO15RJ45G**
20m	**KLO20RJ45G**
30m	**KLO30RJ45G**
40m	**KLO40RJ45G**
50m	**KLO50RJ45G**

Lighting Control Module Link Leads (Red)

KLO15RJ45R

Characteristics:
- RJ45 to switch (wire-in) lead available in a variety of lengths.
- SELV.
- Cables supplied standard with RJ45 plug on both ends.

Description	Cat ref.
RJ45 SELV Link Lead	
5m	**KLO5RJ45R**
10m	**KLO10RJ45R**
15m	**KLO15RJ45R**
20m	**KLO20RJ45R**
30m	**KLO30RJ45R**
40m	**KLO40RJ45R**
50m	**KLO50RJ45R**
RJ45 Splitter	**KLORJ45CON**

KLDS4

KLDS12

Marshalling Boxes

Characteristics:
- Klik marshalling boxes are used in conjunction with Klik 3 and 4 pin plugs to connect luminaires within an area. The Klik marshalling box can be separated into two independently switched circuits. These circuits can be controlled via wall switch or occupancy sensor.
- Complies with BS 5733:2010.
- Main terminal rating: 16 Amps.
- Socket outlet rating: 6 Amps.
- Separate terminals for flexible conductors, rating: 10 Amps.
- Short circuit tested 1500A conditional rating.
- Socket outlets accept either Klik lighting (3 pin) plugs, Klik auxiliary (4 pin) plugs.

Description	Cat ref.
4 Way Klik Lighting Distribution Unit	**KLDS4**
6 Way Klik Lighting Distribution Unit	**KLDS6**
8 Way Klik Lighting Distribution Unit	**KLDS8**
10 Way Klik Lighting Distribution Unit	**KLDS10**
12 Way Klik Lighting Distribution Unit	**KLDS12**

PCR2000/1.0

3 Pin Pre-wired 6A Plug-in Ceiling Rose

Characteristics:
- 6A pre-wired plug-in ceiling roses are used to connect luminaires to a fixed wiring installation.
- Complies with BS 6972 and BS 5733:2010.
- PVC flexible cord complies with BS EN 50525-2-11.
- Low smoke zero halogen flexible cord, complies with BS EN 50525-3-11.
- All leads have prepared ends.

Description	Box Quantity	PVC Cat ref.	LSZH Cat ref.
6A Plug-in Ceiling Rose with 0.75mm² Flexible Cord			
1 Metre	10	**PCR2000/1 .0**	**PCR2000/LSF/1.0**
2 Metre	10	**PCR2000/2.0**	**PCR2000/LSF/2.0**
3 Metre	5	**PCR2000/3.0**	**PCR2000/LSF/3.0**
4 Metre	5	**PCR2000/4.0**	**PCR2000/LSF/4.0**
6A Plug-in Ceiling Rose with 1mm² Flexible Cord			
2 Metre	10	**PCR2000/1.0PVC/2**	**PCR2000/1.0LSF/2**
3 Metre	5	**PCR2000/1.0PVC/3**	**PCR2000/1.0LSF/3**
4 Metre	5	**PCR2000/1.0PVC/4**	**PCR2000/1.0LSF/4**
5 Metre	5	**PCR2000/1.0PVC/5**	**PCR2000/1.0LSF/5**

CR64AX/1.0

4 Pin (Including Auxiliary) Pre-wired 6A Plug-in Ceiling Rose

Characteristics:
- Auxiliary 6A pre-wired plug-in ceiling roses are used to connect luminaires to a fixed wiring installation.
- Complies with BS 6972 and BS 5733:2010.
- PVC flexible cord complies with BS EN 50525-2-11.
- Low smoke zero halogen flexible cord, complies with BS EN 50525-3-11.
- All leads have prepared ends.

Description	Box Quantity	PVC Cat ref.	LSZH Cat ref.
6A Pre-wired Ceiling Rose with 0.75mm² Flexible Cord			
1 Metre	10	**CR64AX/1.0**	**CR64AX/LSF/1.0**
2 Metre	10	**CR64AX/2.0**	**CR64AX/LSF/2.0**
3 Metre	5	**CR64AX/3.0**	**CR64AX/LSF/3.0**
4 Metre	5	**CR64AX/4.0**	**CR64AX/LSF/4.0**
6A Pre-wired Ceiling Rose with 1mm² Flexible Cord			
2 Metre	10	**CR64AX/1.0PVC/2**	**CR64AX/1.0LSF/2**
3 Metre	5	**CR64AX/1.0PVC/3**	**CR64AX/1.0LSF/3**
4 Metre	5	**CR64AX/1.0PVC/4**	**CR64AX/1.0LSF/4**
5 Metre	5	**CR64AX/1.0PVC/5**	**CR64AX/1.0LSF/5**

Data is subject to errors and technical modifications. ★ New.

3 Pin Pre-wired 6A Plugs

P22/1.0

Characteristics:
- 6A pre-wired plugs are used to connect luminaires to a Klik ceiling rose or marshalling box. All leads have prepared ends.
- Complies with BS 6972 and BS 5733:2010.
- PVC flexible cord complies with BS EN 50525-2-11.
- Low smoke zero halogen flexible cord, complies with BS EN 50525-3-11.

Description	Quantity	PVC Cat ref.	LSZH Cat ref.
6A Pre-wired Plugs with 0.75mm² Flexible Cord			
1 Metre	10	**P22/1.0**	**P22/LSF/1.0**
2 Metre	10	**P22/2.0**	**P22/LSF/2.0**
3 Metre	5	**P22/3.0**	**P22/LSF/3.0**
4 Metre	5	**P22/4.0**	**P22/LSF/4.0**
6A Pre-wired Plugs with 1mm² Flexible Cord			
2 Metre	10	**P22/1.0PVC/2**	**P22/1.0LSF/2**
3 Metre	5	**P22/1.0PVC/3**	**P22/1.0LSF/3**
4 Metre	5	**P22/1.0PVC/4**	**P22/1.0LSF/4**
5 Metre	5	**P22/1.0PVC/5**	**P22/1.0LSF/5**

4 Pin (Including Auxiliary) Pre-wired 6A Plugs - White

P64AX/1.0

Characteristics:
- Klik auxiliary 6A pre-wired plugs are used to connect luminaires to a Klik ceiling rose or marshalling box.
- Complies with BS 6972 and BS 5733:2010.
- PVC flexible cord complies with BS EN 50525-2-11.
- Low smoke zero halogen flexible cord, complies with BS EN 50525-3-11.
- All leads have prepared ends.

Description	Quantity	PVC Cat ref.	LSZH Cat ref.
6A Pre-wired Plugs with 0.75mm² Flexible Cord			
1 Metre	10	**P64AX/1.0**	**P64AX/LSF/1.0**
2 Metre	10	**P64AX/2.0**	**P64AX/LSF/2.0**
3 Metre	5	**P64AX/3.0**	**P64AX/LSF/3.0**
4 Metre	5	**P64AX/4.0**	**P64AX/LSF/4.0**
6A Pre-wired Plugs with 1mm² Flexible Cord			
2 Metre	10	**P64AX/1.0PVC/2**	**P64AX/1.0LSF/2**
3 Metre	5	**P64AX/1.0PVC/3**	**P64AX/1.0LSF/3**
4 Metre	5	**P64AX/1.0PVC/4**	**P64AX/1.0LSF/4**
5 Metre	5	**P64AX/1.0PVC/5**	**P64AX/1.0LSF/5**

4 Pin (Including Auxiliary) Pre-wired 6A Plugs - Red

P64AXR/1.0

Characteristics:
- Klik auxiliary 6A pre-wired plugs are used to connect luminaires to a Klik ceiling rose or marshalling box.
- Complies with BS 6972 and BS 5733:2010.
- PVC flexible cord complies with BS EN 50525-2-11.
- Low smoke zero halogen flexible cord, complies with BS EN 50525-3-11.
- All leads have prepared ends.

Description	Quantity	PVC Cat ref.	LSZH Cat ref.
6A Pre-wired Plugs with 0.75mm² Flexible Cord			
1 Metre	10	**P64AXR/1.0**	**P64AXR/LSF/1.0**
2 Metre	10	**P64AXR/2.0**	**P64AXR/LSF/2.0**
3 Metre	5	**P64AXR/3.0**	**P64AXR/LSF/3.0**
4 Metre	5	**P64AXR/4.0**	**P64AXR/LSF/4.0**
6A Pre-wired Plugs with 1mm² Flexible Cord			
2 Metre 1.00mm² Flexible Cord	10	**P64AXR/1.0PVC/2**	**P64AXR/1.0LSF/2**
3 Metre 1.00mm² Flexible Cord	5	**P64AXR/1.0PVC/3**	**P64AXR/1.0LSF/3**
4 Metre 1.00mm² Flexible Cord	5	**P64AXR/1.0PVC/4**	**P64AXR/1.0LSF/4**
5 Metre 1.00mm² Flexible Cord	5	**P64AXR/1.0PVC/5**	**P64AXR/1.0LSF/5**

PCR2000

3 Pin Plug-in Ceiling Rose & Cover

Characteristics:
- The 6A plug-in ceiling rose is used to offer a pluggable connection for luminaires. The luminaire can be connected and disconnected under load.
- Complies with BS 5733:2010.
- Sockets have 4 terminations: line, neutral, CPC and loop-in.
- Plugs have 3 terminations: line, neutral and CPC.
- Fixing: 50.8mm Standard Diagonal (BESA).

Description	Quantity	Cat ref.
3 Pin Plug-in Ceiling Rose White	10	**PCR2000**

CR64AX/R

4 Pin (including Auxiliary) Plug-in Ceiling Rose & Cover

Characteristics:
- Klik 6A pre-wired plug-in ceiling roses are used to connect luminaires to a fixed wiring installation. Auxiliary contact available, a typical use is for emergency lighting.
- Complies with BS 6972 and BS 5733:2010.
- Sockets have 5 terminations: line, neutral, CPC, auxiliary and loop-in.
- Plugs have 4 terminations: line, neutral, CPC and auxiliary.

Description	Quantity	Cat ref.
4 Pin Plug-in Ceiling Rose White	10	**CR64AX**
4 Pin Plug-in Ceiling Rose Red	10	**CR64AX/R**

A1/R

Spare Ceiling Rose Cover

Description	Quantity	Cat ref.
Ceiling Rose Cover White	10	**A1**
Ceiling Rose Cover Red	10	**A1/R**

P22

3 Pin Plug

Characteristics:
- Klik 3 pin plugs are used to connect into a Klik socket giving a pluggable connection to luminaires.
- Complies with BS 6972 and BS 5733:2010.
- Suitable for use with any Klik 3 or 4 pin socket.
- **P22** plug is supplied in a plug-in ceiling rose, cat ref. **PCR2000**.
- Plugs have 3 terminations: line, neutral and CPC.

Warning: Plugs must not be fitted on the supply side of any installation - they must be connected to the load / fitting / appliance side of the installation.

Description	Quantity	Cat ref.
3 Pin Plug White	10	**P22**

P64AX

4 Pin (Including Auxiliary) Plug

Characteristics:
- Klik plugs with auxiliary pin are used to connect into the Klik sockets giving a pluggable connection to luminaires.
- Complies with BS 6972 and BS 5733:2010.
- Suitable for use with any Klik 4 pin sockets.
- **P64AX** plug is supplied in a plug-in ceiling rose, Cat. ref. **CR64AX**.
- Plugs have 4 terminations: line, neutral, CPC and auxiliary.

Warning: Plugs must not be fitted on the supply side of any installation - they must be connected to the load / fitting / appliance side of the installation.

Description	Quantity	Cat ref.
4 Pin Plug White	10	**P64AX**
4 Pin Plug Red	10	**P64AX/R**

Data is subject to errors and technical modifications. ★ **New.**

3 Pin Plug Socket Outlets

Characteristics:
- 6A socket outlets are used in conjunction with 6A plugs to provide a pluggable connection to luminaires.
- Complies with BS 6972 and BS 5733:2010.
- Suitable for use with standard Klik 3 pin plug.
- **S27** socket is supplied in plug-in ceiling rose, Cat. Ref. **PCR2000**.
- **S27** socket will accept **A1** cover.
- **S26/TC** socket is an **S26** architrave socket pre-assembled with a trunking clamp.

Description	Quantity	Cat ref.
Ultra Flush Socket White	10	**S21**
Architrave Socket White	10	**S26**
Architrave Socket comes with Trunking Clamp	10	**S26/TC**
3 Pin Round Socket White	10	**S27**
Ultra Flush Round Socket White	10	**S28**

S27

4 Pin (Including Auxiliary) Plug Socket Outlets

Characteristics:
- Klik auxiliary 6A socket outlets are used in conjunction with Klik auxiliary 6A plugs to provide a pluggable connection to luminaires.
- Complies with BS 6972 and BS 5733:2010.
- Suitable for use with standard Klik 4 pin plug.
- **S64AX** socket is supplied in plug-in ceiling rose, Cat. Ref. **PCR2000**.
- **S64AX** socket will accept **A1** cover.
- **S65AX** socket is a square variant.
- All sockets have 5 terminations: line, neutral, CPC, auxiliary and loop-in.
- Can be used with Klik 3 or 4 pin plug.

Description	Quantity	Cat ref.
4 Pin Round Socket White	10	**S64AX**
4 Pin Square Socket White	10	**S65AX**

S64AX

S65AX

Moulded Mounting Boxes

Description	Quantity	Cat ref.
Round Surface Box White	10	**MB2**

MB2

EEK513W

Occupancy Sensors with Remote Programming & Control Options

Characteristics:
- Comes complete with integral photocell and the facility for wall switch override.
- Can be programmed for absence or presence.
- Range 7m diameter for large movements, 5m diameter for small movements.
- Factory presets, lux = 400, time = 20 min, presence detection.

Description	Cat ref.
Flush Mounted Standard Occupancy Sensor, Pre-Wired 3m	**EEK513W**
Flush Mounted Standard Occupancy Sensor (without cable)	**EEK510B**
Klik Occupancy Sensor 6 Amp Long Range	**KLOS6LR**

EEK001

EEK002

Remote Controls for EEK Sensors Only

Characteristics:
- **EEK001** programming tool is easy to use with 2 memory settings to enable repeatability.
- **EEK002** remote control comes with a wall mounting bracket for storage and allows room occupant to have control of lighting output.

Description	Cat ref.
Programming Tool	**EEK001**
Remote Control	**EEK002**

EE005

Accessories

Description	Cat ref.
Backbox Accessory for Surface BESA Detectors	**EEK005**

Data is subject to errors and technical modifications. ★ **New.**

Occupancy Sensors

Characteristics:
- Adjustment achieved by potentiometer only
- Automatic switching of electric loads depending on heat motion and ambient brightness
- **EE804A**: Surface-mounted installation
- **EE805A**: Cavity/Flush installation (75mm hole diameter)
- Combination of presence and motion detector with enhanced detection sensitivity in the central presence-detection area
- Response brightness adjustable
- Delay time adjustable
- Coverage 360 degrees, Diameter 6m @ 2.5m, (motion) enhanced detection area 4m Diameter (presence) @ 2.5m
- Factory presets: Lux = 200, Time = 3 Minutes

Description	Cat ref.
Movement Detector 360° Surface Mounted	**EE804A** ★
Movement Detector 360° Flush Mounted	**EE805A** ★

EE804A

EE805A

EE820

EE861

EE806

Outdoor IP55 Motion Detectors

- These devices are made for automatic control of lighting.
- Detection head with fresnel lenses and PIR detectors.

Features:
- Available with a variety of detection zones.
- Enhanced versions include a secondary detection zone directly beneath the sensor head.
- Time, lux and sensitivity can be adjusted locally via potentiometers.
- The enhanced range can be set with a remote control providing speed and convenience when setting final adjustments.
- Detectors can be mounted in corners or to ceilings, utilising the relevant mounting accessory.

Power Supply:
- Basic detector: 230V AC (50/60Hz)
- Switching capacity: 10A AC1 relay and cut phase.
- Enhanced detector: 230V AC Output: 16A AC1 relay potential free.
- Complies with EN 60669-1 & EN 60669-2-1.

Description	Cat ref.
Basic Motion Detector 140° White	**EE820**
Basic Motion Detector 360° White	**EE840**
Enhanced Motion Detector Comfort 220° White	**EE860**
Enhanced Motion Detector Comfort 220° Anthracite	**EE861**
Enhanced Motion Detector Comfort 220/360° White	**EE870**
Enhanced Motion Detector Comfort 220/360° Anthracite	**EE871**

Remote Control for Motion Detector Comfort **EE85./86./87**.	**EE806**
Ceiling Mounting Accessory for Motion Detector White **EE820/830**	**EE827**
Corner Bracket for Motion Detector White **EE820/830**	**EE825**
Corner Bracket for Motion Detector Comfort White **EE840/850/860/870**	**EE855**
Corner Bracket for Motion Detector Comfort Anthracite **EE841/851/861/871**	**EE856**

Data is subject to errors and technical modifications. ★ **New.**

LED Lamp & Floodlight

Characteristics:
- LED lights with a built-in infra-red sensor to ensure automatic operation of lighting.
- LED energy saving technology.
- 140° or 220/360° detection up to 12m.
- IP55 rated.
- Settings can be adjusted locally or with the **EE806** PIR remote control.

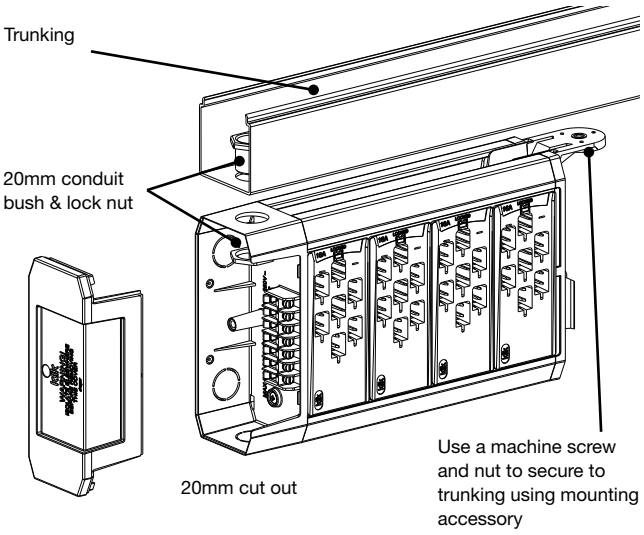
Description	Cat ref.
LED Floodlight with PIR 220/360° White	**EE600**
LED Decorative Lamp with PIR Detector White	**EE610**

EE600

EE610

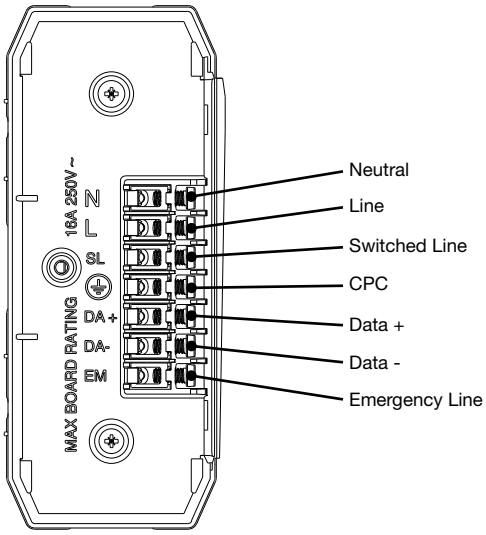
Mounting Options for Trunking

Mounting Accessory can be clipped into the rear or top channel slot.
It can be easily removed by inserting a screwdriver in the RELEASE slot.



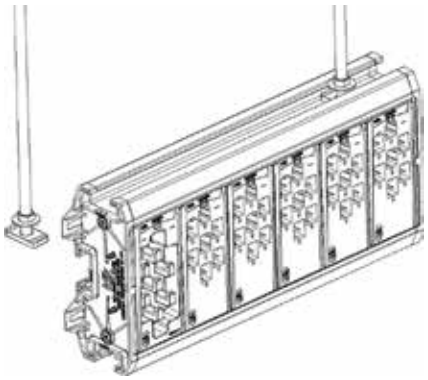
Fixed Wiring Connection

Klik 7 Pin LMB has seven screw terminals available to the installer and are arranged in the end cap as per diagram. DA+/DA- connections can be used for DALI/DSI control.

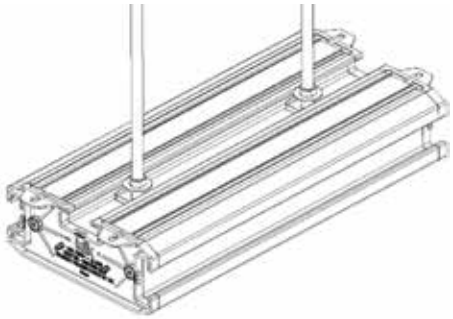


Mounting Options for Drop Rod (Lighting Marshalling Box)

Option 1.
Klik 7 Pin LMB features open ends to allow you to slide the box into position before tightening for easier installation, or push the box up on to the nut and rotate to locate and tighten to secure.

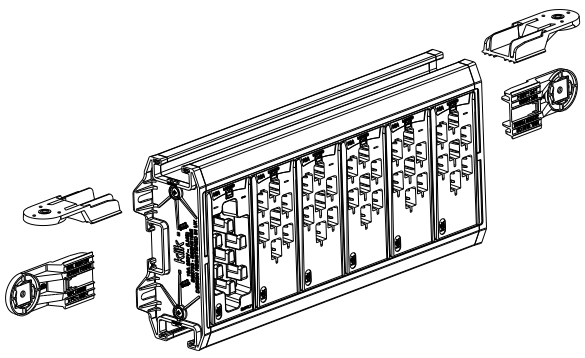


Option 2.
Single sided LMB can be mounted from the top as option 1 or from the rear as shown. Note: Double sided LMBs can only be mounted with option 1.

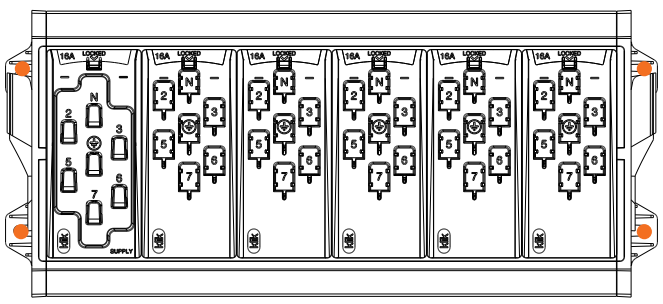


Mounting Options for Wall & Ceiling

Klik 7 Pin LMB includes the Klik mounting accessory, this makes it much easier to mount LMB with Nail Guns or traditional fixings. 2 accessories are included with each LMB. Mounting Accessory can be clipped into the rear or top channel slot. It can be easily removed by inserting a screwdriver in the RELEASE slot.
Note: Double sided LMB can only be mounted on top channel slot.

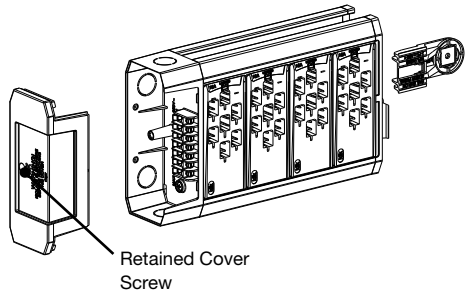


Screw mounting tabs (x4)



Data is subject to errors and technical modifications.

Lighting Marshalling Boxes (LMB) - Fixed Wiring
16A Rated LMB Complying to BS 5733:2010



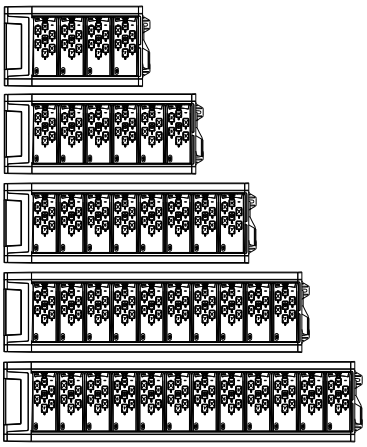
KLMB4W

KLMB6W

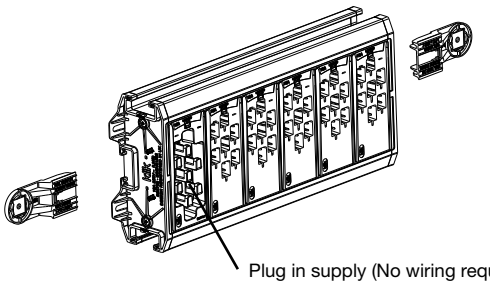
KLMB8W

KLMB10W

KLMB12W



Lighting Marshalling Boxes (LMB) - Pluggable
16A Rated LMB Complying to BS 5733:2010

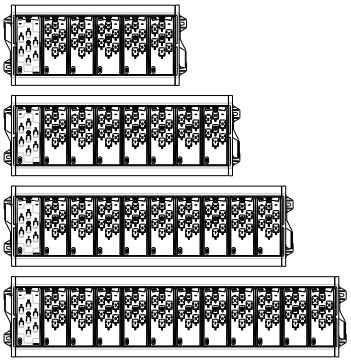


KLMB5P

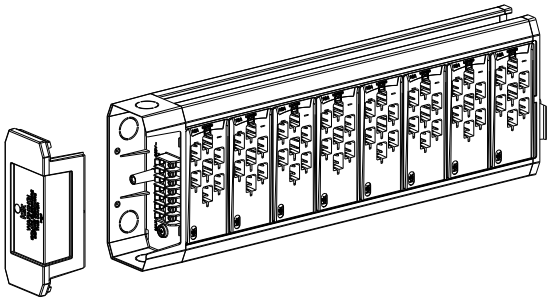
KLMB7P

KLMB9P

KLMB11P



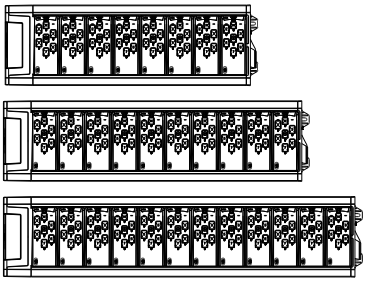
Dual Channel Lighting Marshalling Boxes (LMB) - Fixed Wiring
16A Rated LMB complying to BS 5733:2010



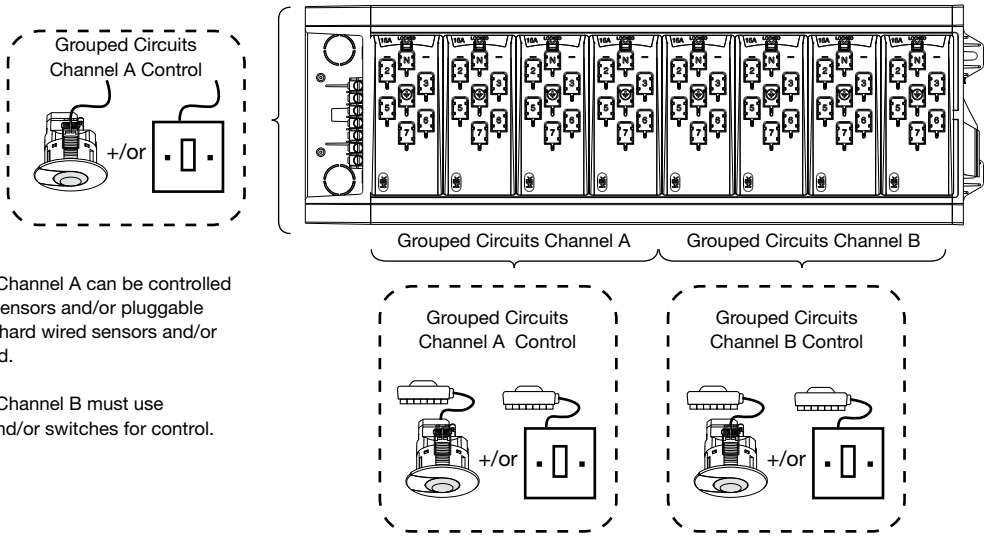
KLMB244W

KLMB255W

KLMB266W



Grouped Circuits - Control



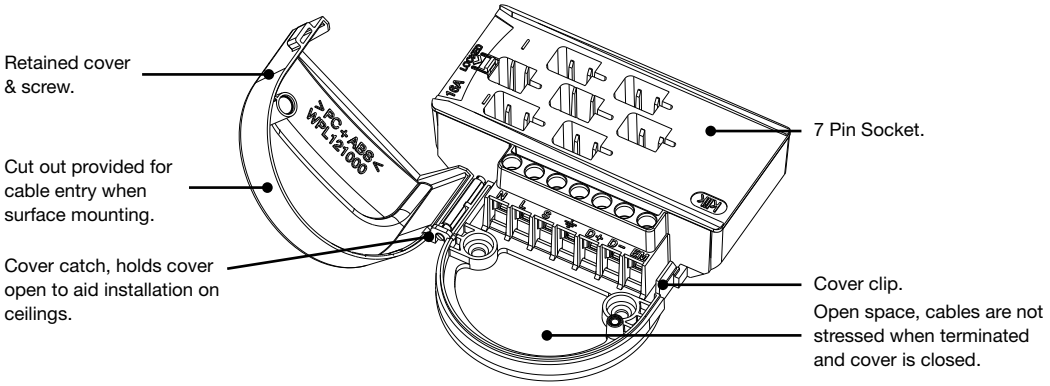
1. Grouped Circuits Channel A can be controlled by using pluggable sensors and/or pluggable switch. Alternatively hard wired sensors and/or switches can be used.

2. Grouped Circuits Channel B must use pluggable sensors and/or switches for control.

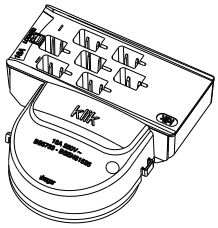
Previous Part Reference	Description	New Part Reference	New Description
KLA/10/1-5P	16A Lighting Link Lead 10m 1.5mm 3 Core P-P	**K7A10M15P ★**	16A Lighting Link Lead 10m 1.5mm 3 Core P-P
KLA/5/1-5P	16A Lighting Link Lead 5m 1.5mm 3 Core P-P	**K7A5M15P ★**	16A Lighting Link Lead 5m 1.5mm 3 Core P-P
KLB/1/0-75W	16A Lighting Lead 1m 0.75mm 3 Core P-W	**K7B1M075W ★**	16A Lighting Lead 1.5m 0.75mm 3 Core P-W
KLB/1/1W	16A Lighting Lead 1m 1mm 3 Core P-W	**K7B1M1W ★**	16A Lighting Lead 1.5m 1mm 3 Core P-W
KLB/3/0-75W	16A Lighting Lead 3m 0.75mm 3 Core P-W	**K7B3M075W ★**	16A Lighting Lead 3m 0.75mm 3 Core P-W
KLB/3/1W	16A Lighting Lead 3m 1mm 3 Core P-W	**K7B3M1W ★**	16A Lighting Lead 3m 1mm 3 Core P-W
KLB/5/0-75W	16A Lighting Lead 5m 0.75mm 3 Core P-W	**K7B5M075W ★**	16A Lighting Lead 5m 0.75mm 3 Core P-W
KLB/5/1W	16A Lighting Lead 5m 1mm 3 Core P-W	**K7B5M1W ★**	16A Lighting Lead 5m 1mm 3 Core P-W
KLE/3/1-5W	16A Lighting Lead 3m 1.5mm 3 Core P-W	**K7E3M15W ★**	16A Lighting Lead 3m 1.5mm 3 Core P-W
KLE/5/1-5W	16A Lighting Lead 5m 1.5mm 3 Core P-W	**K7E5M15W ★**	16A Lighting Lead 5m 1.5mm 3 Core P-W
KLG/10/1-5P	16A Lighting Link Lead 10m 1.5mm 4 Core P-P	**K7G10M15P ★**	16A Lighting Link Lead 10m 1.5mm 4 Core P-P
KLG/5/1-5P	16A Lighting Link Lead 5m 1.5mm 4 Core P-P	**K7G5M15P ★**	16A Lighting Link Lead 5m 1.5mm 4 Core P-P
KLJ/1/0-75W	16A Lighting Lead 1m 0.75mm 4 Core P-W	**K7J1M075W ★**	16A Lighting Lead 1.5m 0.75mm 4 Core P-W
KLJ/1/1W	16A Lighting Lead 1m 1mm 4 Core P-W	**K7J1M1W ★**	16A Lighting Lead 1.5m 1mm 4 Core P-W
KLJ/3/0-75W	16A Lighting Lead 3m 0.75mm 4 Core P-W	**K7J3M075W ★**	16A Lighting Lead 3m 0.75mm 4 Core P-W
KLJ/3/1-5P	16A Lighting Lead 3m 1.5mm 4 Core P-P	**K7J3M15P ★**	16A Lighting Lead 3m 1.5mm 4 Core P-P
KLJ/3/1W	16A Lighting Lead 3m 1mm 4 Core P-W	**K7J3M1W ★**	16A Lighting Lead 3m 1mm 4 Core P-W
KLJ/5/0-75W	16A Lighting Lead 5m 0.75mm 4 Core P-W	**K7J5M075W ★**	16A Lighting Lead 5m 0.75mm 4 Core P-W
KLJ/5/1-5P	16A Lighting Lead 5m 1.5mm 4 Core P-P	**K7J5M15P ★**	16A Lighting Lead 5m 1.5mm 4 Core P-P
KLJ/5/1W	16A Lighting Lead 5m 1mm 4 Core P-W	**K7J5M1W ★**	16A Lighting Lead 5m 1mm 4 Core P-W
KLK/5/1-5P	16A Lighting Link Lead 5m 1.5mm 5 Core P-P	**K7K5M15P ★**	16A Lighting Link Lead 5m 1.5mm 5 Core P-P
KLP/1/0-75W	16A Lighting Lead 1m 0.75mm 5 Core P-W	**K7P1M075W ★**	16A Lighting Lead 1.5m 0.75mm 5 Core P-W
KLP/1/1-5W	16A Lighting lead 1m 1.5mm2 5 core P-W	**K7P1M15W ★**	16A Lighting lead 1.5m 1.5mm2 5 core P-W
KLP/1/1W	10A Lighting lead 1m 1mm2 5 core P-W	**K7P1M1W ★**	10A Lighting lead 1.5 1mm2 5 core P-W
KLP/3/0-75W	16A Lighting Lead 3m 0.75mm 5 Core P-W	**K7P3M075W ★**	16A Lighting Lead 3m 0.75mm 5 Core P-W
KLP/3/1-5W	16A Lighting Lead 3m 1.5mm 5 Core P-W	**K7P3M15W ★**	16A Lighting Lead 3m 1.5mm 5 Core P-W
KLP/3/1W	16A Lighting Lead 3m 1mm 5 Core P-W	**K7P3M1W ★**	16A Lighting Lead 3m 1mm 5 Core P-W
KLP/5/0-75W	16A Lighting Lead 5m 0.75mm 5 Core P-W	**K7P5M075W ★**	16A Lighting Lead 5m 0.75mm 5 Core P-W
KLP/5/1-5W	16A Lighting Lead 5m 1.5mm 5 Core P-W	**K7P5M15W ★**	16A Lighting Lead 5m 1.5mm 5 Core P-W
KLP/5/1W	16A Lighting Lead 5m 1mm 5 Core P-W	**K7P5M1W ★**	16A Lighting Lead 5m 1mm 5 Core P-W
KLT/1/0-75W	16A Lighting Lead 1m 0.75mm 6 Core P-W	**K7T1M075W ★**	16A Lighting Lead 1.5m 0.75mm 6 Core P-W
KLT/1/1W	16A Lighting Lead 1m 1mm 6 Core P-W	**K7T1M1W ★**	16A Lighting Lead 1.5m 1mm 6 Core P-W
KLT/3/0-75W	16A Lighting Lead 3m 0.75mm 6 Core P-W	**K7T3M075W ★**	16A Lighting Lead 3m 0.75mm 6 Core P-W
KLT/3/1-5P	16A Lighting Lead 3m 1.5mm 6 Core P-P	**K7T3M15P ★**	16A Lighting Lead 3m 1.5mm 6 Core P-P
KLT/3/1W	16A Lighting Lead 3m 1mm 6 Core P-W	**K7T3M1W ★**	16A Lighting Lead 3m 1mm 6 Core P-W
KLT/5/0-75W	16A Lighting Lead 5m 0.75mm 6 Core P-W	**K7T5M075W ★**	16A Lighting Lead 5m 0.75mm 6 Core P-W
KLT/5/1-5P	16A Lighting Lead 5m 1.5mm 6 Core P-P	**K7T5M15P ★**	16A Lighting Lead 5m 1.5mm 6 Core P-P
KLT/5/1W	16A Lighting Lead 5m 1mm 6 Core P-W	**K7T5M1W ★**	16A Lighting Lead 5m 1mm 6 Core P-W
KLTB/1/1-5W	16A T Connector 1m 1.5mm 3 Core P-W	**K7TB1M15W ★**	16A T Connector 1.5m 1.5mm 3 Core P-W
KLTJ/1/1-5W	16A T Connector 1m 1.5mm 4 Core P-W	**K7TJ1M15W ★**	16A T Connector 1.5m 1.5mm 4 Core P-W
KLTP/1/1-5W	16A T Connector 1m 1.5mm 5 Core P-W	**K7TP1M15W ★**	16A T Connector 1.5m 1.5mm 5 Core P-W
KLTT/1/1-5W	16A T Connector 1m 1.5mm 6 Core P-W	**K7TT1M15W ★**	16A T Connector 1.5m 1.5mm 6 Core P-W
KLZ/3/1-5P	16A Lighting Link Lead 3m 1.5mm 7 Core P-P	**K7Z3M15P ★**	16A Lighting Link Lead 3m 1.5mm 7 Core P-P
KLZ/5/1-5P	16A Lighting Link Lead 5m 1.5mm 7 Core P-P	**K7Z5M15P ★**	16A Lighting Link Lead 5m 1.5mm 7 Core P-P

Data is subject to errors and technical modifications. ★ **New.**

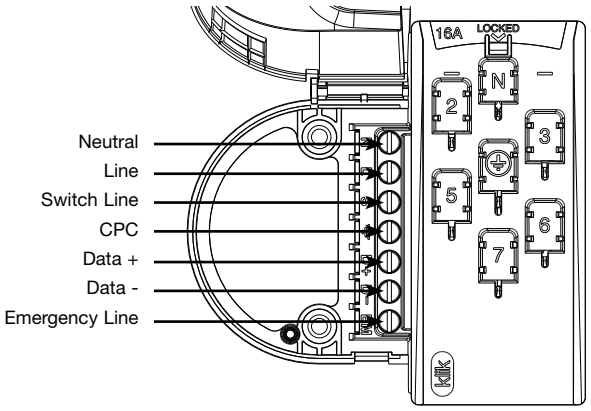
KLPCR - Surface Mount Connector



PCR can be mounted in two ways, firstly on to conduit box or secondly direct on to a surface.



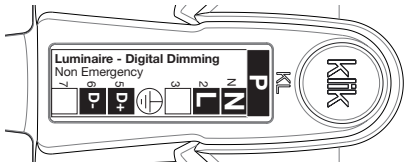
Terminating cables.
Terminal screws are retained in pockets.
Max Terminal Capacity 2x4mm²
Conductor strip length: 10mm.



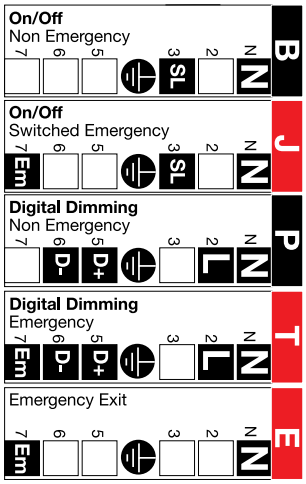
K7PLUG Wireable Plug Configurations and Labels

Self Adhesive ID Labels:
Apply label for the type of lead you are making.

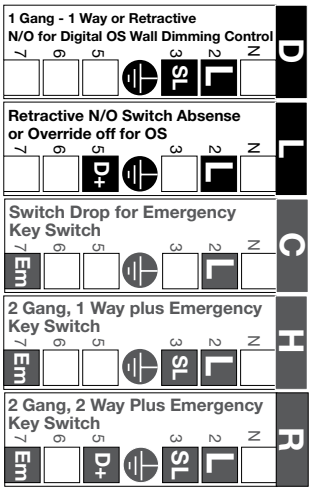
Lighting configurations for on / off and dimmable solutions.



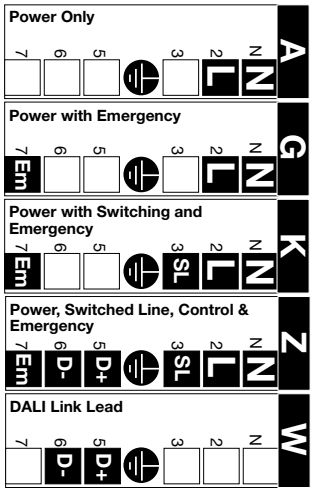
Luminaire Connections



Switch Drops

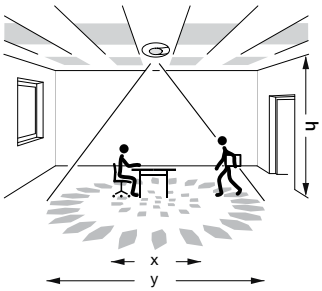


Link Lead

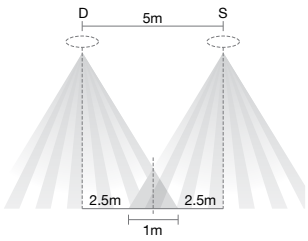


EEK Sensors

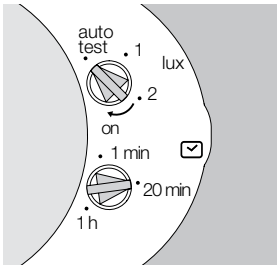
Detection areas



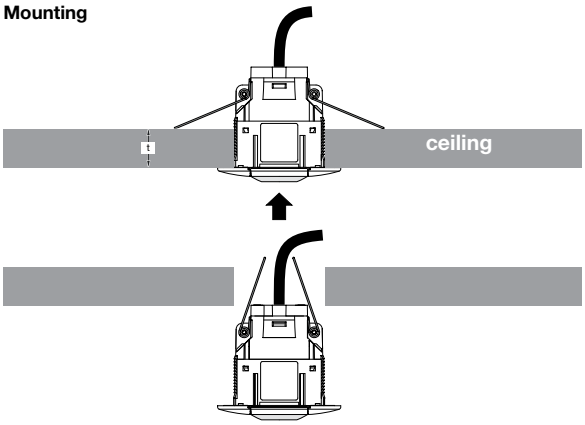
H	2.5m	3m	3.5m
X	5m	5m	5m
Y	7m	8m	9m

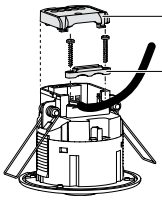


Settings EEK513P/EEK515P EEK523P/EEK525P



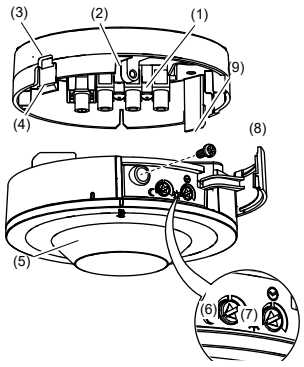
Mounting

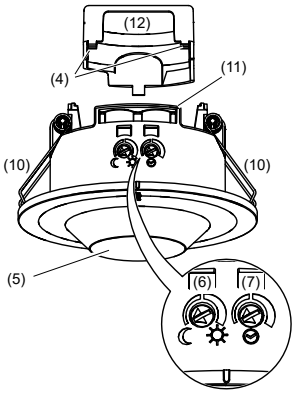


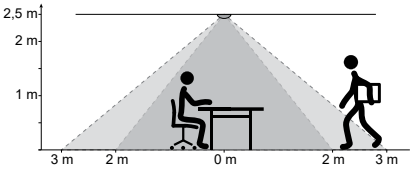


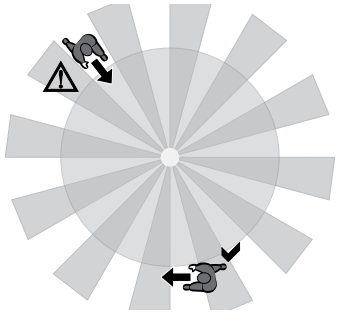
For programming and control see page 3.25.

EE804A / EE805A Sensors



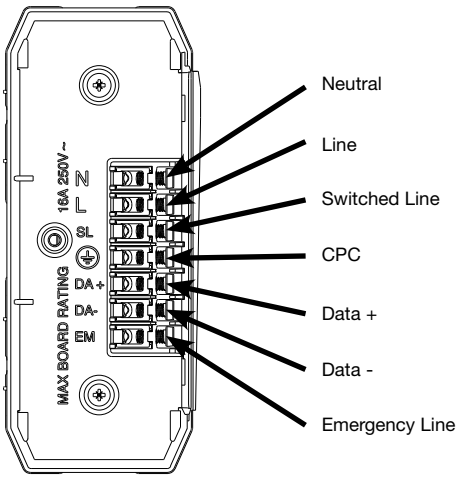




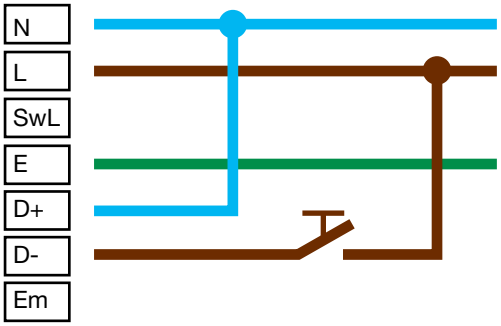


1. Connecting terminals
2. Mounting device locking screw
3. Release opening
4. Fastening grids
5. Detector lens
6. Response brightness potentiometer
7. Potentiometer delay time
8. Cover for potentiometer
9. Locking screw
10. Fixing springs
11. Strain relief with mounting device for cable ties
12. Cover for connection compartment

Manual dimming with retractable switch (no OS)



Hager Sollysta retractable wall switch reference: **WMSGS13R**



Data is subject to errors and technical modifications.

Klik 7 Pin Product Standards

Product Description	Klik Product identification	BS number	Description
Klik 7 pin Marshalling Boxes	**KLMB*W**	BS 5733:2010	General Requirements for Electrical Accessories.
Occupancy Sensor	**EEK***	IEC 60669-1, IEC 60669-2-1	Switches for household & similar fixed electrical installations Part 2-1 for Electronic switches.
Conduit Box / **Surface Connector**	**KLPCR/7**	BS 5733:2010	General requirements for Luminaire supporting couplers for domestic, light industrial & commercial use.
Luminaire Leads	**KLB*, KLJ*, KLP*, KLT***	BS 5733:2010 BS EN 61535	Thermosetting insulated & thermoplastic sheathed cables for voltages up to & including 450 / 750 V for electric power & lighting & having low emission of smoke & corrosive gases when affected by fire.
LS0H Flexible Cord	**Supplied with luminaire lead**	BS 6500:2000 BS 7211:2012	Thermosetting insulated & thermoplastic sheathed cables for voltages up to & including 450 / 750 V for electric power & lighting & having low emission of smoke & corrosive gases when affected by fire.

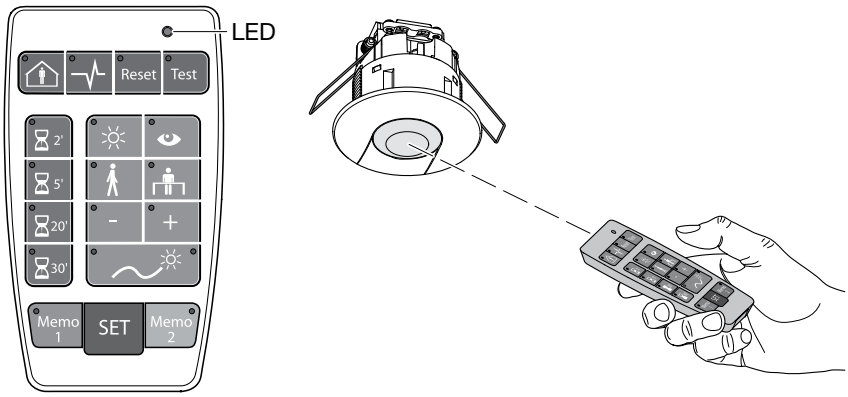
Klik 4 Pin Product Standards

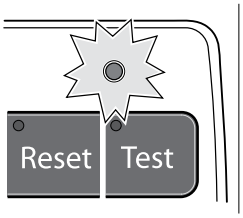
Product Description	Klik Product identification	BS number	Description
Klik Distribution Boxes	KLDS KLMB	BS 5733:2010	General requirements for Electrical Accessories
Occupancy Sensor	EEK*W	BS EN 60669-1, BS EN 60669-2-1	Switches for household & similar fixed electrical installations Part 2-1 for Electronic switches.
Mounting Boxes	MB	BS 5733:2010	General requirements for Electrical Accessories
Klik Ceiling Roses, Plugs, Outlets & Pre-Wired Leads	S, P, PCR K7*	BS 5733:2010 BS 6972:1988	General requirements for Electrical Accessories General requirements for Luminaire supporting couplers for domestic, light industrial & commercial use Installation couplers intended for permanent connection in fixed installations
PVC Flexible Cord	PVC	BS 6500:2000	Thermosetting insulated & thermoplastic sheathed cables for voltages up to & including 450 / 750 V for electric power & lighting & having low emission of smoke & corrosive gases when affected by fire.
LSF Flexible Cord	LS0H	BS 6500:2000 BS 7211:1998	Thermosetting insulated & thermoplastic sheathed cables for voltages up to & including 450 / 750 V for electric power & lighting & having low emission of smoke & corrosive gases when affected by fire.

Product Materials
Klik plugs and sockets feature solid brass terminals and phosphor bronze contacts for good conductivity. Moulded components are manufactured from high quality thermoplastics.

Klik Terminal Capacities

	Number of Conductors				
	0.75mm²	**1.0mm²**	**1.5mm²**	**2.5mm²**	**4.0mm²**
Socket Outlets	-	5	4	3	2
Plugs P22, P64X, P26 **K7PLUG**	1	1	1	-	-





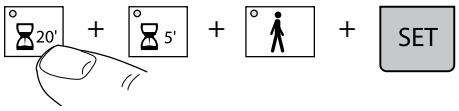
The acknowledgment LED blinks during the sending of the IR message.

Technical specification
Power supply:1x 3V CR2032
Shelf life of battery: 2½ years
Protection index: IP 30

Use
The remote control allows the user to set or modify presence detector settings. When the potentiometer is on auto test it allows single and multiple settings.
The SET key is used to send the IR messages to the occupancy sensors. Multiple settings can be stored in Memo 1 and Memo 2 and re-called to set several devices.

Single setting
Example: reset

Multiple settings
Define the parameters to be changed and press SET to send.
Example: for 25 minutes and corridor use, press 20', 5' and corridor.

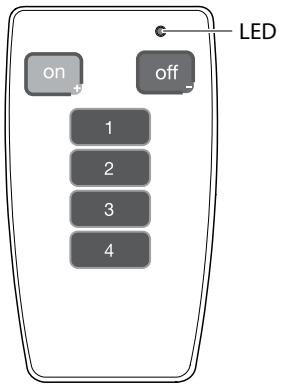


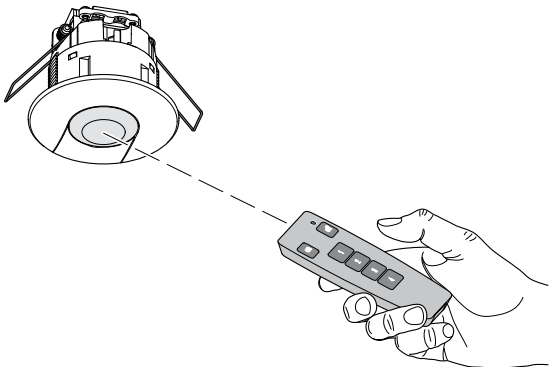
In the case of 2 opposite states the green LED denotes ON and red LED denotes OFF (except Presence / Absence).
When no function is selected all LED's are OFF.

Settings available

Key	Meaning	Indication	Function
	Presence	Green LED on	Presence on (automation mode)
	Absence	Red LED on	Absence on (semi automatic mode)
	Power Up	Green LED on	The light is automatically switched on for 30 seconds after power up
		Red LED on	During warm up phase, the light output is off
Reset	Reset	LED on	To return to factory settings (Lux = 400, time = 20 min, presence on, power up off and cell active)
Test	Test	LED on	To validate the detection area
	Time	LED on	To set the time It is possible to add times together e.g. press 2' and 5' for a time value of 7'
	Day level 1000 Lux	LED on	To set the value to 1000 Lux
	Learn	LED on	To learn the current Lux level
	Corridor 200 Lux	LED on	To set the value to 200 Lux
	Office 400 Lux	LED on	To set the value to 400 Lux
+	Lux +	LED on	To increase the Lux level (+100)
-	Lux -	LED on	To decrease the Lux level (-100)
	Active cell	Green LED on	The light is continuously measured
	Passive cell	RED LED on	The sensor will not switch the light off even if the ambient luminosity is sufficient
Memo and set Key	**Meaning**	**Indication**	**Function**
Memo 1	Press	LED is on until a setting is changed	To load/unload Memo 1
	Long press	LED is on for 5s, then will blink until released. After release, the LED goes off in case of setting change	To save the current setting as Memo 1
Memo 2	Press	LED is on until a setting is changed	To load/unload Memo 2
	Long press	LED is on for 5s, then will blink until released. After release, the LED goes off in case of setting change	To save the current setting as Memo 2
SET	Short press (<5s)	LED flashes	To send an IR message of the current setting
	Long press (>5s but <10s) only available if no setting active	LED blinks until release press	To toggle automatic mode on DALI/DSI

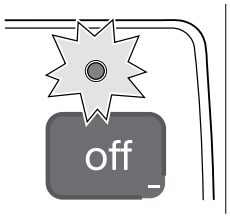
Data is subject to errors and technical modifications.





Use
The remote control allows the user to set or modify settings on the presence detectors **EEK513W** and **EEK510B**.

Each button corresponds to a command.



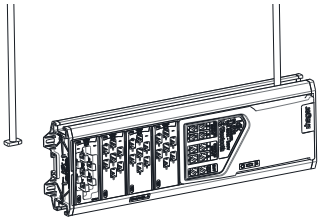
The acknowledgment LED blinks during the sending of the IR message.

Technical specification
Power supply: 1x 3V CR2032
Shelf life of battery: 3½ years
Protection index: IP 30

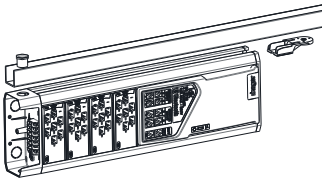
Settings available

Key	Action	Function	Product Type
on +	Short Press (< 5s.)	On	**EEK513W / EEK510B**
	Long Press (> 5s.)	Dim up	**EEK513W / EEK510B**
off -	Short Press	Off	**EEK513W / EEK510B**
	Long Press (> 5s.)	Dim down	**EEK513W / EEK510B**
1	Short Press	To start scene 1	
2	Short Press	To start scene 2	
3	Short Press	To start scene 3	
4	Short Press	To start scene 4	

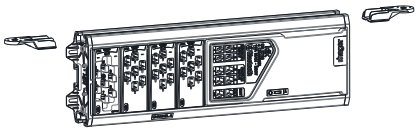
Fixing Methods



Drop Rods



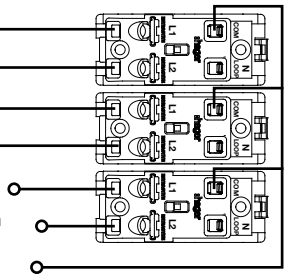
Trunking
(Not possible for plug-in **KLCM412P**)



Direct: e.g. nail gun or screw fixing
(not possible for hard-wire **KLCM413W**)

Switch inputs - 1 to 4 (retractive wall switch ref: WMGS13R)

Orange/White	Scene 1
Orange	Scene 2
Green/White	Scene 3
Blue	Scene 4
Brown/White	On/Dim Up
Blue/White	Off/Dim Down
Brown	0V (Common)
Green	12V (Not Used, must not be connected.)



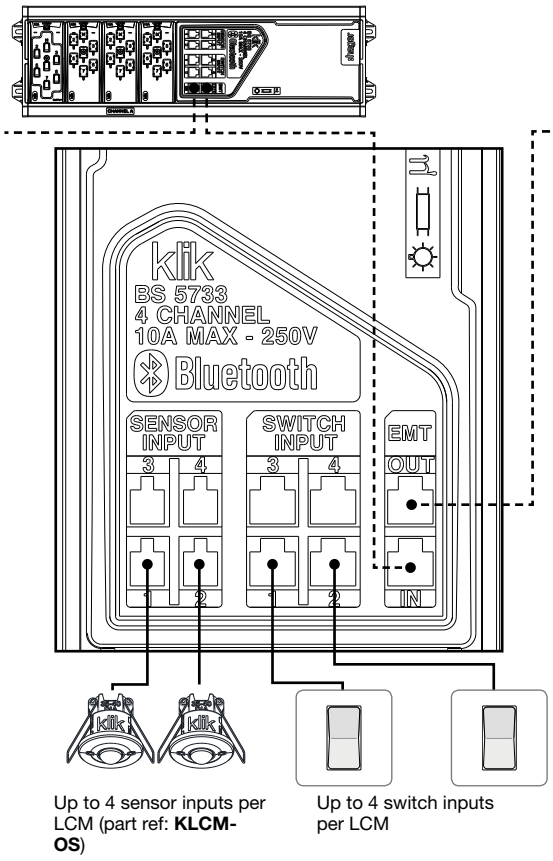
Emergency test in & out

Orange/White	Override - All Outputs On
Orange	Override - All Outputs Off
Green/White	Corridor Hold Line
Blue	Emergency Test (Timer 1)
Blue/White	Emergency Test (Timer 2)
Green	Emergency Test (Timer 3)
Brown	Common
Brown/White	Not Used.

Occupancy Sensor Technical Characteristics

Technical Characteristics	**KLCM-OS**	**KLCM-3OS**	**KLCM-5OS**
Supply Voltage	12V DC	SELV (12VDC)	SELV (12VDC)
Detection Area	Motion area: diameter 6m (product installed at 2½m height) presence area: diameter 6m (product installed at 2½m height)	360º 5m to 15m	360º 15m
Receiver Class	2	2	2
Parasitic Power		.672mW	1.044mW
Duration of lighting output operation	Via KlikLink App & LCM	Via KlikLink App & LCM	Via KlikLink App & LCM
Luminocity threshold	Via KlikLink App & LCM	Via KlikLink App & LCM	Via KlikLink App & LCM
Recommended installation height	2.5m	2.5m	2.5m
Operating temperature	-20C to +60C	-20ºC to +50ºC	-20ºC to +50ºC
Storage temperature	-2-C to +70C	-35ºC to +70ºC	-35ºC to +70ºC
Insulation class	II	II	II
Protection rating	IP41	IP41	IP41
Standards	BS EN 55015:2013	BS EN55015:2013, BS EN61547:2009	BS EN55015:2013, BS EN61547:2009
Maximum installation altitude	2000m	2000m	2000m
Polution degree	2	2	2
Connection	RJ11	RJ11 6P4C	RJ11 6P4C
Dimensions		High: 70mm, Diameter: 101mm	High: 70mm, Diameter: 101mm
Weight		110 grams	110 grams
Mounting hole diameter		85mm	85mm

Data is subject to errors and technical modifications.



Up to 4 sensor inputs per LCM (part ref: **KLCM-OS**)

Up to 4 switch inputs per LCM

- Plug-in sensor and switch control
- Any port can be configured via the KlikLink App.
- Grouping LCMs via RJ45 leads for corridor hold and groups for emergency test
- Programmed via the KlikLink app. Download from the App Store.

Wiring accessories from the Sollysta Grid range

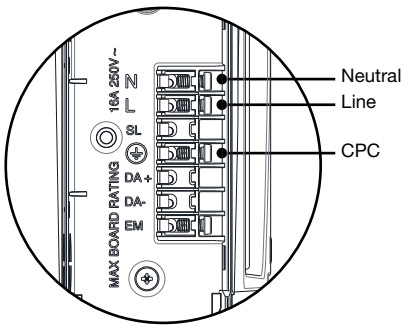
Centre off retractive switch module	**WMGS13R**
White moulded Grid Plates	**WMGPx** (1,2,3,4,6 & 8) G
Grid Frames	**WMGFx** (1,2 & 3/4) G

Technical Characteristics

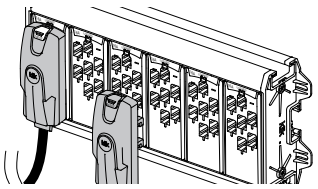
Number of channels	4			
Number of outputs per channel	3 (hard wired LCM has 4 outputs on channel A)			
Number of sensor inputs	4 (**KLCM-OS**)			
Number of switch inputs	4			
Supply Voltage	230V AC 50Hz			
Rated current	10A (total load)			
Rated current each connector	10A			
Complies with	BS 5733:2010, BS EN 60669-2-5 BS EN 61535:2009 - (Excluding clauses 10.1 and 10.3 due to Aluminium enclosure)			
IP protection	IP20			
Connection for programming	Bluetooth Smart (Bluetooth 4) (only available on Apple iPad)			
Dimensions	Height 145mm	Width 440mm	Depth 58mm	Weight 1.9kg

Supply input connection

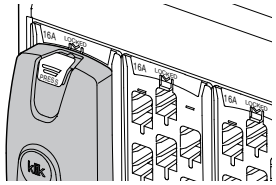
Hard wired



Pluggable



- Connecting the supply lead: plug in and push down
- Disconnecting the supply lead: press button and push up.



Plug colour coding
White: Luminaire Lead
Red: Luminaire & Emergency
Black: Link Lead

Klik 4

	+ 3m Lead, Flush Mount	**Wireable, Flush Mount**	**Klik 4 Direct Plug-In**	**Wireable, Surface Mount**	**Wireable, Flush Mount**
Technical characteristics	**EEK513W**	**EEK510B**	**KLOS6LR**	**EE804A**	**EE805A**
Supply voltage	230V~ 50Hz	230V~ 50Hz	230V - 50Hz	230V - 50Hz	230V - 50Hz
Detection type	Presence	Presence	Presence	Motion / Presence	Motion / Presence
Parasitic power	270mW	270mW	-	0.3W	0.3W
Detection (Length)	7m	7m	25m	6m	6m
Detection (Width)	7m	7m	-	6m	6m
Detection angle	360°	360°	6-18°	360°	360°
Detection frequency	-	-	-	-	-
Receiver class	-	-	-	-	-
Standby consumption	2.4VA/270mW	2.4VA/270mW	-	-	-
Duration of lighting output operation (S1)	1min to 1hour	1min to 1hour	10 Secs to 40 Mins	5s - 30min	5s - 30min
Duration of time delay (S2)	-	-	-	-	-
Luminosity threshold	5 to 1000 Lux	5 to 1000 Lux	30 Lux	5 - 1000	5 - 1000
Recommended installation height	2.5m	2.5m	2.5m	2.5m	2.5m
Operating temperature	-10°C to +45°C	-10°C to +45°C	-	-5 - +45	-5 - +45
Storage temperature	-20°C to +60°C	-20°C to +60°C	-	-25 - +70	-25 - +70
Insulation class	II	II	-	11	11
Protection rating	IP41	IP41	IP20	IP21	IP21
Standards	BS EN 60669-1 BS EN 60669-2-1	BS EN 60669-1 BS EN 60669-2-1	-		
Pollution degree	2	2	-		
Connection stranded	0.5mm² to 1.5mm²	0.5mm² to 1.5mm²	-	1mm - 2.5mm	1mm - 2.5mm
Connection solid	0.5mm² to 1.5mm²	0.5mm² to 1.5mm²	-	1mm - 2.5mm	1mm - 2.5mm
Switching channel	1	1	1	1	1
Lighting loads 230V~ AC1	16A	16A	6A	10A	10A
Switching capacity (Incandescent)	2300W	2300W	1500W	2300W	2300W
Halogen lamps LV	-	-	-		
Halogen ELV (12 or 24V) via ferromagnetic or electronic transformer	1500W	1500W	-	2300W	2300W
Compact fluorescent	23 X 23W	23 X 23W	1500W Max	20 x 20W	20 x 20W
LED	20 X20W	20 X20W	500W Max	20 x 20W	20 x 20W
Parallel compensated fluorescent tubes	1000W	1000W	500W Max	1000W	1000W
Fluorescent tubes non-compensated	1000W	1000W	-	1000W	1000W
Electronic ballast	-	-	750W-	1000W	1000W
DSI/DALI ballast	-	-	-	-	-
Remote programming	EEK001	EEK001	-	-	-
Remote control	EEK002	EEK002	-	-	-
Adjustable shutters (supplied)	×	×	×	×	×
Dimensions (L*W*H)	80 x 80 x 70mm	80 x 80 x 70mm	80 x 80 x 50mm	ø 100 x 50mm	ø 90 x 61mm

Data is subject to errors and technical modifications.

Klik 7

Special Applications

On / Off, Plug-In Flush, 3m / 5m

EEK513P
EEK515P

Digital, Plug-In Flush, 3m / 5m

EEK523P
EEK525P

Digital, Wireable, Flush

EEK520B

Wireable, Surface Mount, Corridor

EE880

Wireable, Surface Mount, Hyper Frequency

EE883

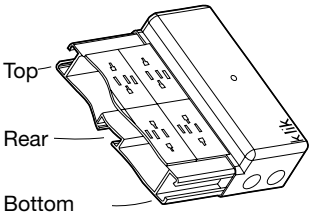
Wireable, Semi-Recessed, 1 / 2 Channel

EE810 / EE811

230V~ 50Hz	230V~ 50Hz	230V~ 50Hz	230V~ 50Hz	230V~ 50Hz	230V~ 50Hz	
Presence	Presence	Presence	Motion	Motion	Presence	
60mW	60mW	60mW	1W	1W	1.2W	
7m	7m	7m	20m	1m to 8m	15.5m	
7m	7m	7m	4m	1m to 8m	8m	
360°	360°	360°	360°	360°	360°	
-	-	-	-	5.8 Ghz ± 0.075 Ghz	-	
-	-	-	-	2	-	
60mW	60mW	60mW	1W	1W	1.2W	
1min to 1hour	1min to 1hour	1min to 1hour	5sec to 15 min	5sec to 15 min	1min to 30min	
-	-	-	-	-	30sec to 60min	
5 to 1000 Lux	5 to 1000 Lux	5 to 1000 Lux	2 to 2000 lux	2… 2000 lux	5 to 1200Lux	
2.5m	2.5m	2.5m	3 m	2.5 m	3 m	
-10°C to +45°C	-10°C to +45°C	-10°C to +45°C	20°C to +50°C	20°C to +50°C	0°C to +45°C	
-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	35°C to +70°C	35°C to +70°C	10°C to +60°C	
II	II	II	II	II	II	
IP41	IP41	IP41	IP54	IP54	IP41	
BS EN 60669-1 BS EN 60669-2-1	BS EN 60669-1 BS EN 60669-2-1	BS EN 60669-1 BS EN 60669-2-1	BS EN 60669-1 BS EN 60669-2-1	BS EN 60669-2-1 EN 300 440-1 V1.3.1	BS EN 60669-1 BS EN 60669-2-1	
2	2	2	2	2	2	
0.5mm² to 1.5mm²	0.5mm² to 1.5mm²	0.5mm² to 1.5mm²	Max 1.5mm²	Max 1.5mm²	1mm² to 4mm²	
0.5mm² to 1.5mm²	0.5mm² to 1.5mm²	0.5mm² to 1.5mm²	Max 1.5mm²	Max 1.5mm²	1mm² to 4mm²	
1	1	1	1	1	1	2
-	-	-	10A	10A	16A	2A
-	-	-	2300W	2300W	2300W	
-	-	-	2300W	2300W	-	
-	-	-	1500VA	1500VA	1500W	
-	-	-	20 x 20W	20 x 20W	20 X 18W	
-	-	-	20 x 20W	20 x 20W	20 X 18W	
-	-	-	1000W/C=110µf	1000W/C=110µf	290W/C=32µf	
-	-	-	1200W	1200W	-	
-	-	-	580W	580W	1000W	
Yes (24)	Yes (24)	Yes (24)	-	-	-	
EEK001	EEK001	EEK001	×	×	×	
EEK002	EEK002	EEK002	×	×	×	
×	×	×	×	×	×	
80 x 80 x 70mm	80 x 80 x 70mm	80 x 80 x 70mm	125 x 125 x 60mm		110 x 110 x 70mm	

Mounting Methods

- Hanging from ceiling suspension system with Caddy Clips™
- Direct fixing to lighting trunking
- Direct fixing to ceiling or wall with No. 8 screws

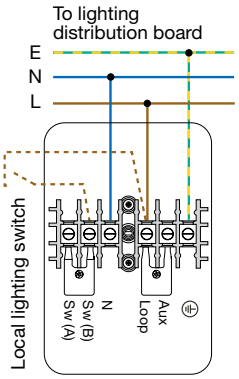


Drop rods on sides

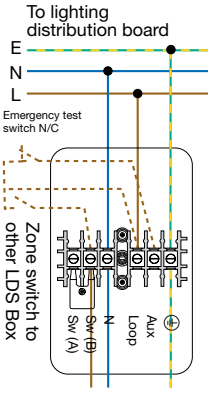
Screw to surface

Drop rods on rear

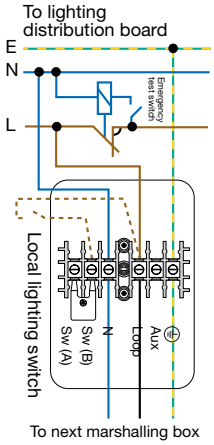
Local Lighting Switch Control
Permanent emergency feed



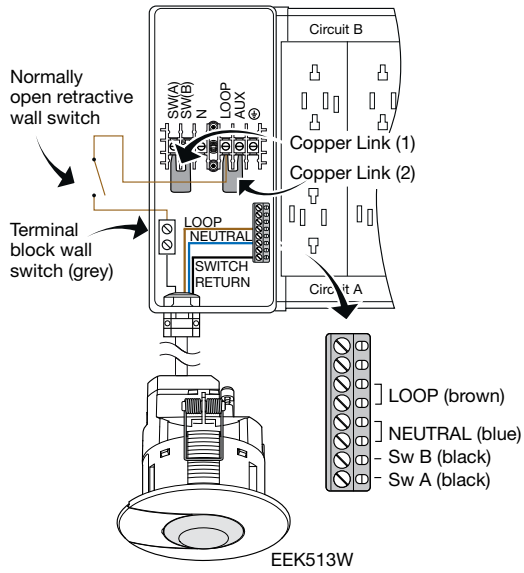
Local Lighting Switch Control
Centralised emergency test via key switch



Zone Lighting Control
Local emergency test control

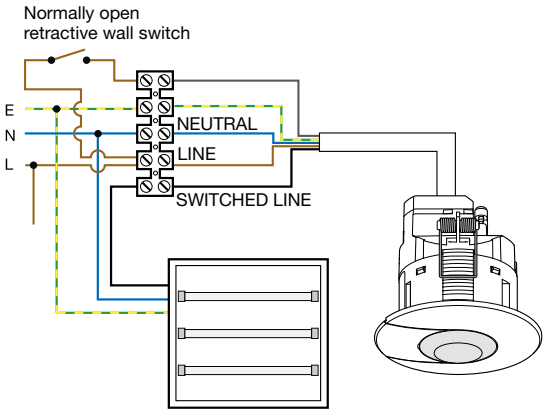


All ways switched by a single Hager EEK513W occupancy sensor

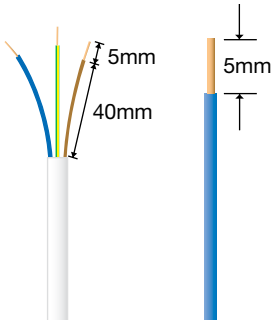


Switch wire to be connected as required.

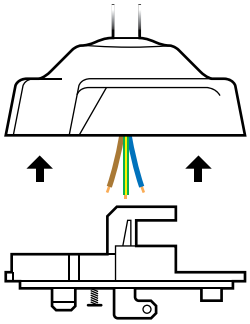
Connected directly to a single luminaire



Data is subject to errors and technical modifications.

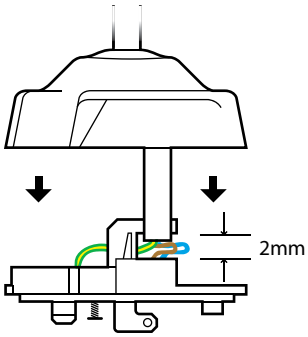


1. Strip cable as above -
Note: Trim cable tails to double over for better terminal contact.



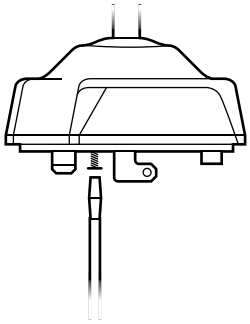
2. Remove plug cover.

3. Pass cable through plug cover centre hole.



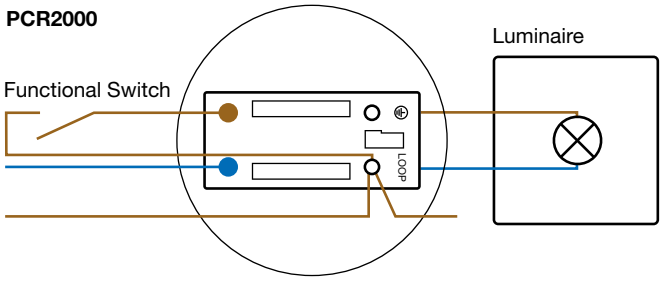
4. Terminate conductors into terminals.

5. Push outer sheath of cable firmly into jaws of sheath grip, making sure that at least 2mm of sheath protrudes below the grip.

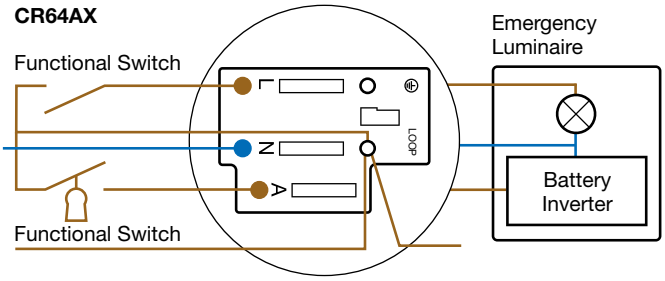


6. Refit cover.

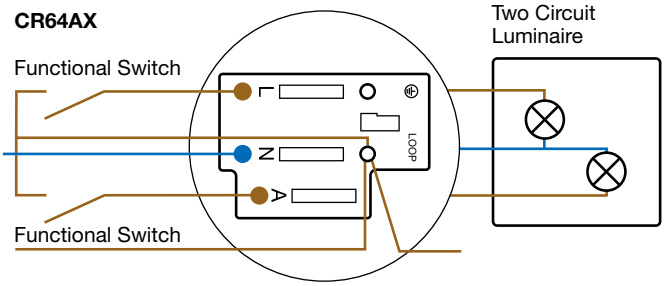
PCR2000



CR64AX



CR64AX



Note: earth connections omitted for clarity

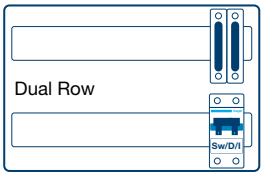
Residential Distribution

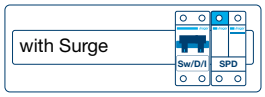
Functional, stylish, and innovative, our Design Range of consumer units provide an exceptional option for any home. In addition, we offer MCB's and RCBO's as well as new surge protection and arc fault detection solutions to provide optimal protection.

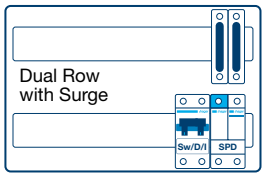
	Page
Consumer Units	
100A Rated Surface Mounted Consumer Units	4.3
100A Rated Flush Mounted Consumer Units	4.11
63A Rated Surface Mounted Consumer Unit	4.13
63A Rated Flush Mounted Consumer Unit	4.17
Consumer Unit Accessories	4.19
Protection Devices	
MCBs	4.21
RCBOs	4.21
Locking Kit	4.21
Arc Fault Protection	4.22
Surge Protection	4.23
Technical Pages	4.25

100 A I_{nA} Consumer unit enabling conformity with 18th Edition wiring regulations for overload protection of RCCBs and switches, in any single phase residential application regardless of the current rating of the supply authority fuse. Type A RCDs are provided, these devices can detect AC sinusoidal waveforms and pulsating DC components.

VM106





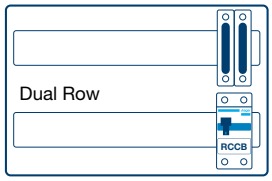


Switch Disconnector Incomer

Characteristics:
- Metal switch disconnector incomer consumer units, single row from 2 to 20 and dual row from 6+6 to 20+20 outgoing ways.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 4.25 for knockout sizes.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Recommended for use with TT systems when utilising RCBO on outgoing circuits.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
6 Way 100A Switch Disconnector Incomer	3	**VM106**	**VM106K**
10 Way 100A Switch Disconnector Incomer	4	**VM110**	**VM110K**
14 Way 100A Switch Disconnector Incomer	5	**VM114**	**VM114K**
20 Way 100A Switch Disconnector Incomer	7	**VM120**	**VM120K**
8 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	4	**VM108SPD** ★	**VM108KSPD** ★
12 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	5	**VM112SPD** ★	**VM112KSPD** ★
18 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	7	**VM118SPD** ★	**VM118KSPD** ★
6+6 Way Dual Row 100A Switch Disconnector Incomer	3 (2)	**VM10606**	**VM10606K**
10+10 Way Dual Row 100A Switch Disconnector Incomer	4 (2)	**VM11010**	**VM11010K**
14+14 Way Dual Row 100A Switch Disconnector Incomer	5 (2)	**VM11414**	**VM11414K**
20+20 Way Dual Row 100A Switch Disconnector Incomer	7 (2)	**VM12020**	**VM12020K**
8 + 10 Way Dual Row 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	4(2)	**VM10810SPD** ★	**VM10810KSPD** ★
12 + 14 Way Dual Row 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	5(2)	**VM11214SPD** ★	**VM11214KSPD** ★
16 + 20 Way Dual Row 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	7(2)	**VM11820SPD** ★	**VM11820KSPD** ★

VM410AH



RCCB Incomer

Characteristics:
- Metal RCCB incomer consumer units, single row from 2 to 14 and dual row contains 6+6 outgoing ways.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, 40A, 63A or 100A 30mA RCCB incomer and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
6 Way 100A 30mA Type A RCCB Incomer	3	**VM306AH** ★	**VM306AHK** ★
10 Way 100A 30mA Type A RCCB Incomer	4	**VM310AH** ★	**VM310AHK** ★
14 Way 100A 30mA Type A RCCB Incomer	5	**VM314AH** ★	**VM314AHK** ★

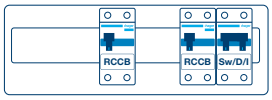
Data is subject to errors and technical modifications. ★ **New.**

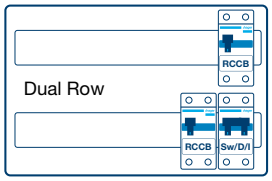
Split Load

VM955H

Characteristics:
- Metal split load and configurable consumer units, single row from 6 to 16 and dual row from 4+6 to 18+20 outgoing ways.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, 100A switch disconnector incomer, 2 100A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
10 Way Split Load 5+5 100A Switch 2x 100A 30mA RCCB	5	VM955H ★	VM955HK ★
12 Way Split Load 6+6 100A Switch 2x 100A 30mA RCCB	6	VM966H ★	VM966HK ★
4+6 Way Dual Row 100A Switch 2x 100A 30mA RCCB	3 (2)	VM946H ★	VM946HK ★
8+10 Way Dual Row 100A Switch 2x 100A 30mA RCCB	4 (2)	VM90810H ★	VM90810HK ★
12+14 Way Dual Row 100A Switch 2x 100A 30mA RCCB	5 (2)	VM91214H ★	VM91214HK ★
18+20 Way Dual Row 100A Switch 2x 100A 30mA RCCB	7 (2)	VM91820H ★	VM91820HK ★



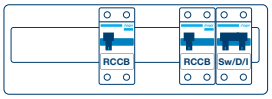


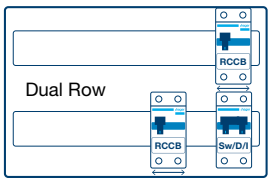
Configurable

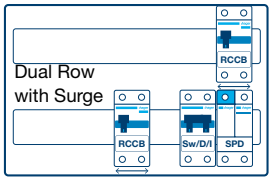
VM916CU

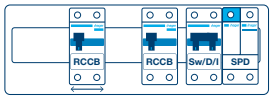
Characteristics:
- Metal split load and configurable consumer units with ability to protect selected circuits with RCBOs and the remainder of circuits split across two RCCBs. Single row from 10 to 16 and dual row from 8+10 to 18+20 outgoing ways.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, 100A switch disconnector incomer, 2 100A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
10 Way High Integrity 100A Switch 2x 100A 30mA RCCB	5	VM910CU ★	VM910CUK ★
12 Way High Integrity 100A Switch 2x 100A 30mA RCCB	6	VM912CU ★	VM912CUK ★
16 Way High Integrity 100A Switch 2x 100A 30mA RCCB	7	VM916CU ★	VM916CUK ★
8 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	5	VM908CUSPD ★	VM908CUKSPD ★
10 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	6	VM910CUSPD ★	VM910CUKSPD ★
14 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	7	VM914CUSPD ★	VM914CUKSPD ★
8+10 Way Dual Row High Integrity 100A Switch 2x 100A	4(2)	VM90810CU ★	VM90810CUK ★
12+14 Way Dual Row High Integrity 100A Switch 2x 100A	5(2)	VM91214CU ★	VM91214CUK ★
18+20 Way Dual Row High Integrity 100A Switch 2x 100A	7(2)	VM91820CU ★	VM91820CUK ★
6+10 Way Dual Row High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	4(2)	VM90610CUSPD ★	VM90610CUKSPD ★
10+14 Way Dual Row High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	5(2)	VM91014CUSPD ★	VM91014CUKSPD ★
15+20 Way Dual Row High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	7(2)	VM91620CUSPD ★	VM916CUKSPD ★
12 Way Configurable, 100A Switch 1x 100A 30mA RCCB (Remaining Ways for RCBOs)	5	VM512AC ★	VM512ACK ★
18 Way Configurable, 100A Switch 1x 100A 30mA RCCB (Remaining Ways for RCBOs)	7	VM518AC ★	VM518ACK★





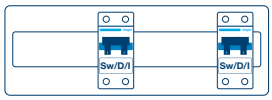


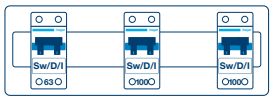


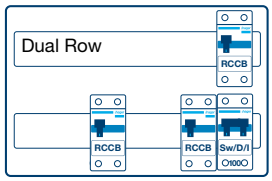
with Surge

100 A I_{nA} Consumer unit enabling conformity with 18th Edition wiring regulations for overload protection of RCCBs and switches, in any single phase residential application regardless of the current rating of the supply authority fuse. Type A RCDs are provided, these devices can detect AC sinusoidal waveforms and pulsating DC components.

VM918C





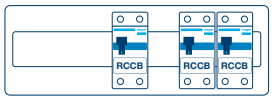


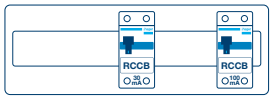
Multi Tariff

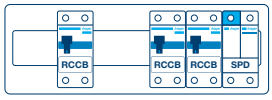
Characteristics:
- Metal switch disconnector incomer consumer units, single row 12 or 18 and dual row 10+14 outgoing ways.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, multiple switch disconnector incomers and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
12 Way Multi Tariff 6+5+1 2x 100A 1x 63A	6	**VM9651**	**VM9651K**
18 Way Twin Tariff Configurable 2x 100A Switch	7	**VM918C**	**VM918CK**
10 Way Dual Row Split Load 5+5 100A Switch 2x 100A RCCB 1x 100A RCCB Incomer 14 Ways	5 (2)	**VM955914H** ★	**VM955914HK** ★

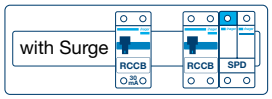
VM912TG







with Surge

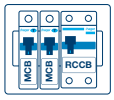


Time Delayed RCCB Incomer

Characteristics:
- Metal RCCB incomer consumer units, single row 12 outgoing ways.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, 100A 100mA time delayed incomer, 63A 30mA RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Recommended for use with TT systems (meter tail clamp secures meter tails to prevent accidental disconnection and contact with metal enclosure).
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
12 Way 100A 100mA Time Delayed + 2x 100A RCCB	6	**VM966TG** ★	**VM966TGK** ★
12 Way Configurable 100A 100mA Time Delayed RCCB +100A 30mA	5	**VM912TG** ★	**VM912TGK** ★
10 Way 100A 100mA Time Delayed + 2x 100A RCCB with Factory Fitted **Surge Protection**	6	**VM955TGSPD** ★	**VM955TGKSPD** ★
10 Way Configurable 100A 100mA Time Delayed RCCB + 100A 30mA with Factory Fitted **Surge Protection**	5	**VM910TGSPD** ★	**VM910TGKSPD** ★

VM24AH



Garage Board

Characteristics:
- Consumer unit comes complete with Type A RCCBs, 40A 30mA RCCB Incomer, 32A MCB and 6A MCB, earth & neutral connections, busbar, cable protector plate, grommet strip, meter tail clamp, marking labels & instructions.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 4.25 for knockout sizes.
- For dimensions see page 4.25, refer to board sizes below.

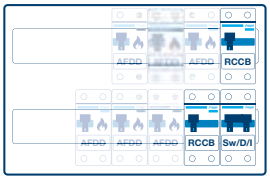
Description	Size	Cat ref.	Cat ref. With Knockouts
2 Way 40A 30mA Type A RCCB with 1x 32A & 1x 6A MCB	2	**VM24AH** ★	**VM24AHK** ★

Data is subject to errors and technical modifications. ★ **New.**

Arc Fault Detection

VMA933H

Characteristics:
- Metal split load board with 100A incomer and 2 x 100A RCCBs.
- Supplied with Type A RCCBs
- Supplied with double pole busbar system.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Conforms to BS EN 61439-3
- Suitable for use with Hager AFDD ARC***
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.



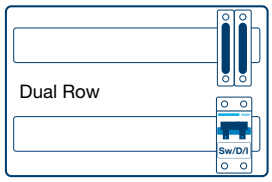
Description	Size	Cat ref.	Cat ref. With Knockouts
100A Switch Disconnector 2x 100A 30mA RCCB 3+3, 2 Pole Busbar, for Arc Fault Detection Devices	7	**VMA933H** ★	**VMA933HK** ★
5+4 Way, Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, for Arc Fault Detection Devices	4(2)	**VMA90504H** ★	**VMA90504HK** ★
6+7 Way, Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, for Arc Fault Detection Devices	5(2)	**VMA90607H** ★	**VMA90607HK** ★
9+10 Way, Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, for Arc Fault Detection Devices	7(2)	**VMA90910H** ★	**VMA90910HK** ★

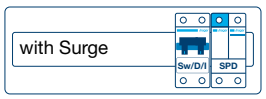
100 A I_{nA} Consumer unit enabling conformity with 18th Edition wiring regulations for overload protection of RCCBs and switches, in any single phase residential application regardless of the current rating of the supply authority fuse. Type A RCDs are provided, these devices can detect AC sinusoidal waveforms and pulsating DC components.

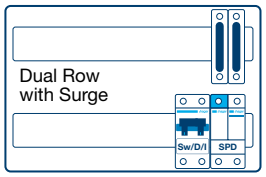
VML106

Switch Disconnector Incomer

Characteristics:
- Metal switch disconnector incomer consumer units, single row from 2 to 20 and dual row from 6+6 to 20+20 outgoing ways.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 4.25 for knockout sizes.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Recommended for use with TT systems when utilising RCBO on outgoing circuits.
- We also recommend the use of cable clamp (**VA10MT**) for use on TT systems, available as an accessory.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.





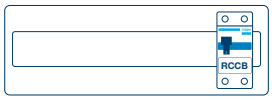


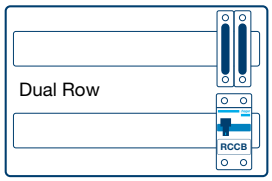
Description	Size	Cat ref.
6 Way 100A Switch Disconnector Incomer	3	**VML106**
10 Way 100A Switch Disconnector Incomer	4	**VML110**
14 Way 100A Switch Disconnector Incomer	5	**VML114**
20 Way 100A Switch Disconnector Incomer	7	**VML120**
8 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	4	**VML108SPD** ★
12 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	5	**VML112SPD** ★
18 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	7	**VML118SPD** ★
6 + 6 Way Dual Row 100A Switch Disconnector Incomer	3 (2)	**VML10606**
10 + 10 Way Dual Row 100A Switch Disconnector Incomer	4 (2)	**VML11010**
14 + 14 Way Dual Row 100A Switch Disconnector Incomer	5 (2)	**VML11414**
20 + 20 Way Dual Row 100A Switch Disconnector Incomer	7 (2)	**VML12020**
8 + 10 Way Dual Row 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	4(2)	**VML10810SPD** ★
12 + 14 Way Dual Row 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	5(2)	**VML11214SPD** ★
16 + 20 Way Dual Row 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	7(2)	**VML11820SPD** ★

VML410AH

RCCB Incomer

Characteristics:
- Metal RCCB incomer consumer units, single row from 2 to 14 and dual row 6+6 outgoing ways.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, 40A, 63A or 100A 30mA RCCB incomer and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.





Description	Size	Cat ref.
6 Way 100A 30mA Type A RCCB Incomer	3	**VML306AH** ★
10 Way 100A 30mA Type A RCCB Incomer	4	**VML310AH** ★
14 Way 100A 30mA Type A RCCB Incomer	5	**VML314AH** ★

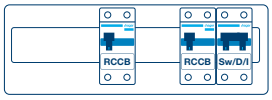
Data is subject to errors and technical modifications. ★ **New.**

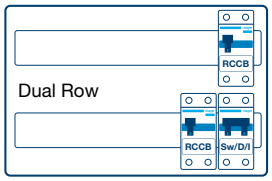
Split Load

VM966H

Characteristics:
- Metal split load and configurable consumer units, single row from 6 to 16 and dual row from 4+6 to 18+20 outgoing ways.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, 100A switch disconnector incomer and 2 RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25.

Description	Size	Cat ref.
10 Way 5+5 100A Switch 2x 100A 30mA RCCB	5	VML955H ★
12 Way 6+6 100A Switch 2x 100A 30mA RCCB	6	VML966H ★
14 Way 6+6+2 100A Switch 3x 100A 30mA RCCB	7	VML9662 ★
4 + 6 Way Dual Row 100A Switch 2x 100A 30mA RCCB	3(2)	VML946H ★
8 + 10 Way Dual Row 100A Switch 2x 100A 30mA RCCB	4(2)	VML90810H ★
12 + 14 Way Dual Row 100A Switch 2x 100A 30mA RCCB	5(2)	VML91214H ★
18 + 20 Way Dual Row 100A Switch 2x 100A 30mA RCCB	7(2)	VML91820H ★



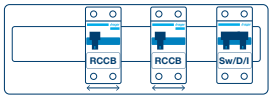


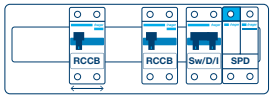
Configurable

VML912C

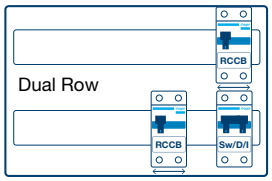
Characteristics:
- Metal split load and configurable consumer units with the ability to protect selected circuits with RCBOs and the remainder of circuits split across two RCCBs. Single row from 10 to 16 and dual row from 8+10 to 18+20 outgoing ways.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, 100A switch disconnector incomer, 2 RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25.

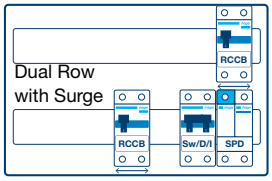
Description	Size	Cat ref.
10 Way 100A Switch 2x 100A 30mA RCCB	5	VML910C ★
12 Way 100A Switch 2x 100A 30mA RCCB	6	VML912C ★
16 Way 100A Switch 2x 100A 30mA RCCB	7	VML916C ★
10 Way High Integrity 100A Switch 2x 100A 30mA RCCB	5	VML910CU ★
12 Way High Integrity 100A Switch 2x 100A 30mA RCCB	6	VML912CU ★
16 Way High Integrity 100A Switch 2x 100A 30mA RCCB	7	VML916CU ★
8 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	5	VML908CUSPD ★
10 Way High Integrity 100A Switch 2x 100A 30mA with Factory Fitted **Surge Protection**	6	VML910CUSPD ★
14 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	7	VML914CUSPD ★
8+10 Way Dual Row High Integrity 100A Switch 2x 100A	4(2)	VML90810CU ★
12+14 Way Dual Row High Integrity 100A Switch 2x 100A	5(2)	VML91214CU ★
18+20 Way Dual Row High Integrity 100A Switch 2x 100A	7(2)	VML91820CU ★
6+10 Way Dual Row High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	4(2)	VML90610CUSPD ★
10+14 Way Dual Row High Integrity 100A Switch 2x 100A 30mA Type RCCB with Factory Fitted **Surge Protection**	5(2)	VML91014CUSPD ★
16+20 Way Dual Row High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	7(2)	VML91620CUSPD ★
12 Way Configurable, 100A Switch 1x 100A 30mA RCCB (Remaining Ways for RCBOs)	5	VML512AC ★
18 Way Configurable, 100A Switch 1x 100A 30mA RCCB (Remaining Ways for RCBOs)	7	VML518AC ★





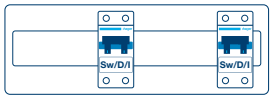
with Surge

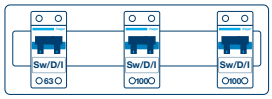


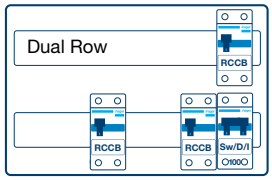


100 A I_{nA} Consumer unit enabling conformity with 18th Edition wiring regulations for overload protection of RCCBs and switches, in any single phase residential application regardless of the current rating of the supply authority fuse. Type A RCDs are provided, these devices can detect AC sinusoidal waveforms and pulsating DC components.

VML918C





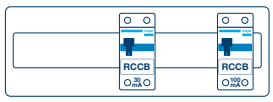


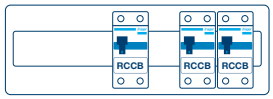
Multi Tariff

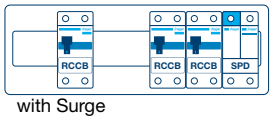
Characteristics:
- Metal switch disconnector incomer consumer units, single row 12 or 18 and dual row 10+14 outgoing ways.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, multiple switch disconnector incomers and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25.

Description	Size	Cat ref.
18 Way Twin Tariff Configurable 2x 100A Switch	7	**VML918C**
12 Way Multi Tariff 6+5+1 2x100A 1x 63A Switch	6	**VML9651**
10 Way Split Load 5+5 100A Switch 2x 100A Type A RCCB 1x 100A Type A RCCB Incomer 14 Ways Dual Row	4 (2)	**VML955914H** ★

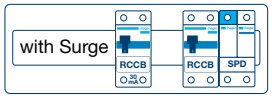
VML912TG







with Surge

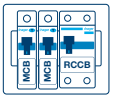


Time Delayed RCCB Incomer

Characteristics:
- Metal RCCB incomer consumer units, single row 12 outgoing ways.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail 100A 100mA time delayed incomer and 100A 30mA RCCB incomers and a full complement of earth and neutral terminals along with marking labels, busbar, meter tail clamp and instructions.
- Recommended for use with TT systems (meter tail clamp secures meter tails to prevent accidental disconnection and contact with metal enclosure).
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

Description	Size	Cat ref.
12 Way Configurable 100A 100mA Time Delay Type A RCCB 100A 30mA Type A RCCB	5	**VML912TG** ★
12 Way 100A 100mA Time Delay Type A RCCB 2x 100A 30mA Type A RCCB	6	**VML966TG** ★
10 Way 100A 100mA TD + 2 x 100A RCCB with Factory Fitted **Surge Protection**	6	**VML955TGSPD** ★
10 Way Configurable 100A 100mA TD RCCB +100A 30mA with Factory Fitted **Surge Protection**	5	**VML910TGSPD** ★

VML24AH



Garage Boards

Characteristics:
- Consumer unit comes complete with Type A RCCB, 40A 30mA RCCB Incomer, 32A MCB and 6A MCB, earth & neutral connections, busbar, grommet strip, marking labels & Instructions.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 4.25 for knockout sizes.
- Cable protector plate for rear knockouts is available as an accessory. (**VM02CE**)
- Conforms to BS EN 61439-3
- For dimensions see page 4.25.

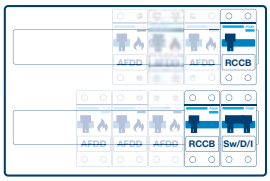
Description	Size	Cat ref.
2 Way 40A 30mA Type A RCCB with 1x 32A & 1x 6A MCB	2	**VML24AH** ★

Data is subject to errors and technical modifications. ★ **New.**

Arc Fault Protection

VMLA933H

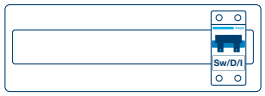
Characteristics:
- Metal split load board with 100A incomer and 2 x 100A RCCBs.
- Supplied with Type A RCCBs
- Supplied with double pole busbar system.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- Conforms to BS EN 61439-3, Annex ZB (16kA Rating)
- Suitable for use with Hager AFDD ARC***
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

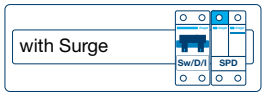


Description	Size	Cat ref.
3 + 3 Way, 100A Switch Disconnector 2x100A 30mA RCCB, 2 Pole Busbar, for ARC Fault Detection devices	7	**VMLA933H** ★
5 + 4 Way Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, for Arc Fault Detection devices	4(2)	**VMLA90504H** ★
6 + 7 Way Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, for Arc Fault Detection devices	5(2)	**VMLA90607H** ★
9 + 10 Way Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, for Arc Fault Detection devices	7(2)	**VMLA90910H** ★

100 A I_{nA} Consumer unit enabling conformity with 18th Edition wiring regulations for overload protection of RCCBs and switches, in any single phase residential application regardless of the current rating of the supply authority fuse. Type A RCDs are provided, these devices can detect AC sinusoidal waveforms and pulsating DC components.

VSR114



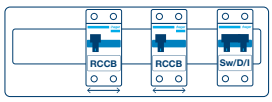


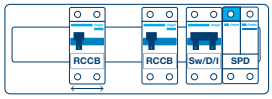
Switch Disconnector Incomer

Characteristics:
- Metal switch disconnector incomer consumer units, single row from 10 to 20 outgoing ways.
- All consumer units contain rear cable entry, along with top & bottom knockouts.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Recommended for use with TT systems when utilising RCBO on outgoing circuits.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 including Annex ZB (16kA rating).
- Adjustable depth in wall 72mm-92mm.
- For dimensions see page 4.25.

Description	Size	Cat ref.
10 Way 100A Switch Disconnector Incomer	4	**VSR110**
14 Way 100A Switch Disconnector Incomer	5	**VSR114**
20 Way 100A Switch Disconnector Incomer	7	**VSR120**
12 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	5	**VSR112SPD** ★
18 way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	7	**VSR118SPD** ★

VSR910C





with Surge

Configurable

Characteristics:
- Metal split load and configurable consumer units with the ability to protect selected circuits with RCBOs and the remainder of circuits split across two RCCBs. Single row from 10 to 16 outgoing ways.
- All consumer units contain rear cable entry, along with top & bottom knockouts.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and 2 Type A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- Adjustable depth in wall 72mm-92mm.
- For dimensions see page 4.25.

Description	Max Unprotected Ways	Size	Cat ref.
10 Way High Integrity Split Load 100A Switch 2x 100A 30mA RCCB	3	5	**VSR910CU** ★
12 Way High Integrity Split Load 100A Switch 2x 100A 30mA RCCB	3	6	**VSR912CU** ★
16 Way High Integrity Split Load 100A Switch 2x 100A 30mA RCCB	6	7	**VSR916CU** ★
8 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	3	5	**VSR908CUSPD** ★
10 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	3	6	**VSR910CUSPD** ★
14 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	6	7	**VSR914CUSPD** ★

Switch Disconnector Incomer

Characteristics:
- Metal switch disconnector incomer consumer units, single row from 10 to 20 outgoing ways.
- All consumer units contain rear cable entry, along with top & bottom knockouts.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Recommended for use with TT systems when utilising RCBO on outgoing circuits.
- Conforms to BS EN 61439-3 including Annex ZB (16kA rating).
- Adjustable depth in wall 72mm-92mm.
- For dimensions see page 4.26.

VMLF110

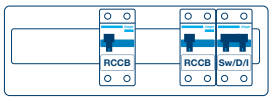
Description	Size	Cat ref.
10 Way Flush 100A Switch Disconnector Incomer	4	**VMLF110**
14 Way Flush 100A Switch Disconnector Incomer	5	**VMLF114**
20 Way Flush 100A Switch Disconnector Incomer	7	**VMLF120**

Split Load

Characteristics:
- Metal split load and configurable consumer units, single row from 10 to 16 outgoing ways.
- All consumer units contain rear cable entry, along with top & bottom knockouts.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and 2 Type A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Conforms to BS EN 61439-3 including Annex ZB (16kA rating).
- Adjustable depth in wall 72mm-92mm.
- For dimensions see page 4.26.

VMLF910C

Description	Size	Cat ref.
10 Way Flush 100A Switch 2x 100A 30mA Type A RCCB	5	**VMLF910C** ★
12 Way Flush 100A Switch 2x 100A 30mA Type A RCCB	6	**VMLF912C** ★
16 Way Flush 100A Switch 2x 100A 30mA Type A RCCB	7	**VMLF916C** ★

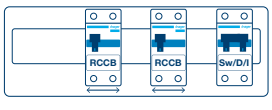


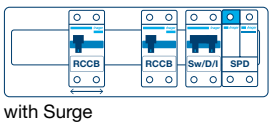
Configurable

Characteristics:
- Metal split load and configurable consumer units with ability to protect selected circuits with RCBOs and the remainder of circuits split across two RCCBs. Single row from 10 to 16 outgoing ways.
- All consumer units contain rear cable entry, along with top & bottom knockouts.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and 2 Type A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- Adjustable depth in wall 72mm-92mm.
- For dimensions see page 4.26.

VMLF910CU

Description	Max Unprotected Ways	Size	Cat ref.
10 Way Flush High Integrity 100A Switch 2x 100A 30mA Type A RCCB	3	5	**VMLF910CU** ★
12 Way Flush High Integrity 100A Switch 2x 100A 30mA Type A RCCB	3	6	**VMLF912CU** ★
16 Way Flush High Integrity 100A Switch 2x 100A 30mA Type A RCCB	6	7	**VMLF916CU** ★
8 Way High Integrity 100A Switch 2x 100A 30mA RCCB Type A with Factory Fitted **Surge Protection**		5	**VMLF908CUSPD** ★
10 Way High Integrity 100A Switch 2x 100A 30mA RCCB Type A with Factory Fitted **Surge Protection**		6	**VMLF910CUSPD** ★
14 Way High Integrity 100A Switch 2x 100A 30mA RCCB Type A with Factory Fitted **Surge Protection**		7	**VMLF914CUSPD** ★

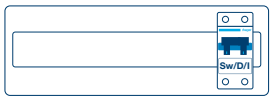




with Surge

63 A I_{nA} consumer unit enabling conformity with the 18th Edition wiring regulations for overload protection of RCCBs and switches only when the current rating of the upstream overcurrent protective device is known to be 60/63 A. Type A RCDs are provided, these devices can detect AC sinusoidal waveforms and pulsating DC components.

VM106



Switch Disconnector Incomer

Characteristics:
- Metal switch disconnector incomer consumer units, single row from 2 to 6 outgoing ways.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 4.25 for knockout sizes.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Recommended for use with TT systems when utilising RCBO on outgoing circuits.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
2 Way 63A Switch Disconnector Incomer	2	**VM202**	**VM202K**
6 Way 63A Switch Disconnector Incomer	3	**VM206**	**VM206K**

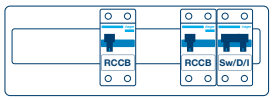
VM410AH

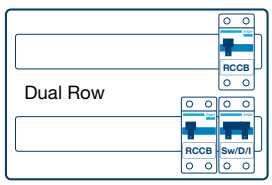
RCCB Incomer

Characteristics:
- Metal RCCB incomer consumer units, single row from 2 to 10 outgoing ways.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, 40A or 63A 30mA RCCB incomer and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
2 Way 40A 30mA Type A RCCB Incomer	2	**VM402AH** ★	**VM402AHK** ★
6 Way 63A 30mA Type A RCCB Incomer	3	**VM406AH** ★	**VM406AHK** ★
10 Way 63A 30mA Type A RCCB Incomer	4	**VM410AH** ★	**VM410AHK** ★

VM655H





Split Load

Characteristics:
- Metal split load and configurable consumer units, single row from 6 to 16 and dual row from 4+6 to 18+20 outgoing ways.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 4.25 for knockout sizes.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer, 2 Type A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
6 Way 3+3 63A Switch 2x 63A 30mA Type A RCCB	4	**VM633H** ★	**VM633HK** ★
10 Way 5+5 63A Switch 2x 63A 30mA Type A RCCB	5	**VM655H** ★	**VM655HK** ★
12 Way 6+6 63A Switch 2x 63A 30mA Type A RCCB	6	**VM666H** ★	**VM666HK** ★
4+6 Way Dual Row 63A Switch 2x 63A 30mA RCCB	3(2)	**VM646H** ★	**VM646HK** ★
8+10 Way Dual Row 63A Switch 2x 63A 30mA RCCB	4(2)	**VM60810H** ★	**VM60810HK** ★
12+14 Way Dual Row 63A Switch 2x 63A 30mA RCCB	5(2)	**VM61214H** ★	**VM61214HK** ★
18+20 Way Dual Row 63A Switch 2x 63A 30mA RCCB	7(2)	**VM61820H** ★	**VM61820HK** ★

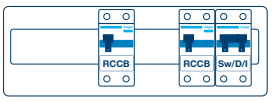
Data is subject to errors and technical modifications. ★ **New.**

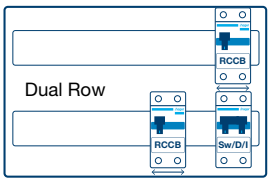
Configurable

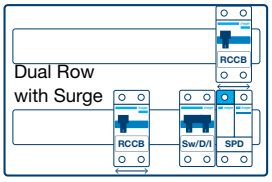
VM616CU

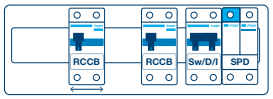
Characteristics:
- Metal split load and configurable consumer units with ability to protect selected circuits with RCBOs and the remainder of circuits split accross two RCCBs. Single row from 10 to 16 and dual row from 8+10 to 18+20 outgoing ways.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is **provid**ed as standard - see page 4.25 for knockout sizes.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer, 2 Type A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
10 Way High Integrity 63A Switch 2x 63A 30mA Type A RCCB	5	VM610CU ★	VM610CUK ★
12 Way High Integrity 63A Switch 2x 63A 30mA Type A RCCB	6	VM612CU ★	VM612CUK ★
16 Way High Integrity 63A Switch 2x 63A 30mA Type A RCCB	7	VM616CU ★	VM616CUK ★
8 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	5	VM608CUSPD ★	VM608CUKSPD ★
10 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	6	VM610CUSPD ★	VM610CUKSPD ★
14 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	7	VM614CUSPD ★	VM614CUKSPD ★
8+10 Way Dual Row High Integrity 63A Switch 2x 63A 30mA RCCB	4 (2)	VM60810CU ★	VM60810CUK ★
12+14 Way Dual Row High Integrity 63A Switch 2x 63A 30mA RCCB	5 (2)	VM61214CU ★	VM61214CUK ★
18+20 Way Dual Row High Integrity 63A Switch 2x 63A 30mA RCCB	7 (2)	VM61820CU ★	VM61820CUK ★
6+10 Way Dual Row High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	4(2)	VM60610CUSPD ★	VM60610CUKSPD ★
12+14 Way Dual Row High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	5(2)	VM61014CUSPD ★	VM61014CUKSPD ★
16+20 Way Dual Row High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	7(2)	VM61620CUSPD ★	VM61620CUKSPD ★









with Surge

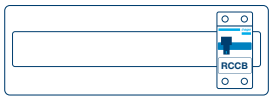
VML106

Switch Disconnector Incomer

Characteristics:
- Metal switch disconnector incomer consumer units, single row from 2 to 6 outgoing ways.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 4.25 for knockout sizes.
- Supplied with a full metal DIN rail, 40A & 63A switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- Recommended for use with TT systems when utilising RCBO on outgoing circuits.
- We also recommend the use of cable clamp (**VA10MT**) for use on TT systems, available as an accessory.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

Description	Size	Cat ref.
2 Way 63A Switch Disconnector Incomer	2	**VML202**
6 Way 63A Switch Disconnector Incomer	3	**VML206**

VML410AH

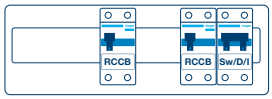


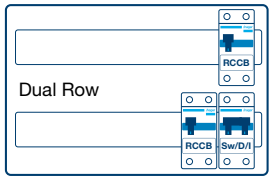
RCCB Incomer

Characteristics:
- Metal RCCB incomer consumer units, single row from 2 to 14 and dual row 6+6 outgoing ways.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 4.25 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, 40A, 63A or 100A 30mA RCCB incomer and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25, refer to board sizes below.

Description	Size	Cat ref.
2 Way 40A 30mA Type A RCCB Incomer	2	**VML402AH** ★
6 Way 63A 30mA Type A RCCB Incomer	3	**VML406AH** ★
10 Way 63A 30mA Type A RCCB Incomer	4	**VML410AH** ★

VML633H





Split Load

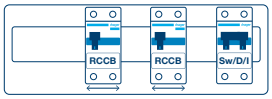
Characteristics:
- Metal split load and configurable consumer units, single row from 6 to 16 and dual row from 4+6 to 18+20 outgoing ways.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 4.25 for knockout sizes.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and 2 Type A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25.

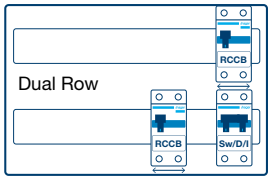
Description	Size	Cat ref.
6 Way 3+3 63A Sw 2*63A 30mA Type A RCCB	4	**VML633H** ★
10 Way 5+5 63A Sw 2*63A 30mA Type A RCCB	5	**VML655H** ★
12 Way 6+6 63A Sw 2*63A 30mA Type A RCCB	6	**VML666H** ★
4+6 Way Dual Row 63A Sw 2*63A 30mA RCCB	3(2)	**VML646H** ★
8+10 Way Dual Row 63A Sw 2*63A 30mA RCCB	4(2)	**VML60810H** ★
12+14 Way Dual Row 63A Sw 2*63A 30mA RCCB	5(2)	**VML61214H** ★
18+20 Way Dual Row 63A Sw 2*63A 30mA RCCB	7(2)	**VML61820H** ★

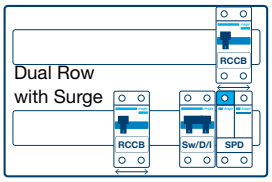
Configurable

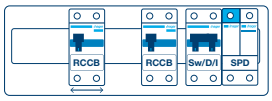
VML616C

Characteristics:
- Metal split load and configurable consumer units with the ability to protect selected circuits with RCBOs and the remainder of circuits split across two RCCBs. Single row from 10 to 16 and dual row from 8+10 to 18+20 outgoing ways.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 4.25 for knockout sizes.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer, 2 Type A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25.







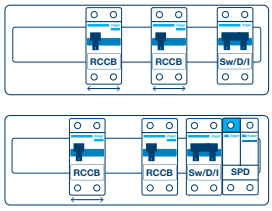


with Surge

Description	Size	Cat ref.
10 Way High Integrity 63A Switch 2x 63A 30mA Type A RCCB	5	**VML610C** ★
10 Way High Integrity Configurable 63A Switch 2x 63A 30mA Type A RCCB	5	**VML610CU** ★
12 Way High Integrity 63A Switch 2x 63A 30mA Type A RCCB	6	**VML612C** ★
12 Way High Integrity Configurable 63A Switch 2x 63A 30mA Type A RCCB	6	**VML612CU** ★
16 Way High Integrity 63A Switch 2x 63A 30mA Type A RCCB	7	**VML616C** ★
16 Way High Integrity Configurable 63A Switch 2x 63A 30mA Type A RCCB	7	**VML616CU** ★
8 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	5	**VML608CUSPD** ★
10 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	6	**VML610CUSPD** ★
14 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	7	**VML614CUSPD** ★
8+10 Way Dual Row High Integrity 63A Switch 2x 63A 30mA RCCB	4(2)	**VML60810CU** ★
12+14 Way Dual Row High Integrity 63A Switch 2x 63A 30mA RCCB	5(2)	**VML61214CU** ★
18+20 Way Dual Row High Integrity 63A Switch 2x 63A 30mA RCCB	7(2)	**VML61820CU** ★
6+10 Way Dual Row High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	4(2)	**VML60610CUSPD** ★
10+14 Way Dual Row High Integrity 63A Switch 2x 63A Type A RCCB with Factory Fitted **Surge Protection**	5(2)	**VML61014CUSPD** ★
15+20 Way Dual Row High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	7(2)	**VML61620CUSPD** ★

63 A I_{nA} consumer unit enabling conformity with the 18th Edition wiring regulations for overload protection of RCCBs and switches only when the current rating of the upstream overcurrent protective device is known to be 60/63 A. Type A RCDs are provided, these devices can detect AC sinusoidal waveforms and pulsating DC components.

VSR610C



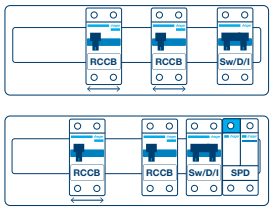
with Surge

Configurable

Characteristics:
- Metal split load and configurable consumer units with the ability to protect selected circuits with RCBOs and the remainder of circuits split across two RCCBs. Single row from 10 to 16 outgoing ways.
- All consumer units contain rear cable entry, along with top & bottom knockouts.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and 2 Type A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- Adjustable depth in wall 72mm-92mm.
- For accessories see page 4.19, for dimensions see page 4.26.

Description	Size	Cat ref.
10 Way High Integrity 63A Switch 2x 63A 30mA RCCB	5	**VSR610CU** ★
12 Way High Integrity 63A Switch 2x 63A 30mA RCCB	6	**VSR612CU** ★
16 Way High Integrity 63A Switch 2x 63A 30mA RCCB	7	**VSR616CU** ★
8 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	5	**VSR608CUSPD** ★
10 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	6	**VSR610CUSPD** ★
14 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	7	**VSR614CUSPD** ★

VMLF610CU



with Surge

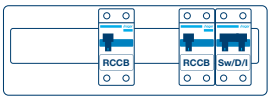
Configurable

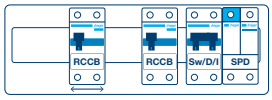
Characteristics:
- Metal split load and configurable consumer units with ability to protect selected circuits with RCBOs and the remainder of circuits split across two RCCBs. Single row from 10 to 16 outgoing ways.
- All consumer units contain rear cable entry, along with top & bottom knockouts.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and 2 Type A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- Adjustable depth in wall 72mm-92mm.
- For accessories see page 4.19, for dimensions see page 4.26.

Description	Size	Cat ref.
10 Way High Integrity 63A Switch 2x 63A 30mA RCCB	5	**VMLF610CU** ★
12 Way High Integrity 63A Switch 2x 63A 30mA RCCB	6	**VMLF612CU** ★
16 Way High Integrity 63A Switch 2x 63A 30mA RCCB	7	**VMLF616CU** ★
8 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	5	**VML608CUSPD** ★
10 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	6	**VMLF610CUSPD** ★
14 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection**	7	**VMLF614CUSPD** ★

Design 10 100A (I_{nA})

VML966RK





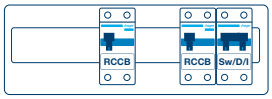
with Surge

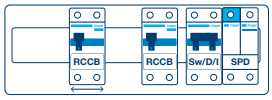
Characteristics:
- These boards come with round knockouts, for knockout sizes see page 4.25
- Metal split load and configurable consumer units, single row from 10 to 16 outgoing ways.
- Supplied with Type A RCCBs, a full metal DIN rail, 100A switch disconnector incomer and 2 Type A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25.

Description	Size	Cat ref.
10 Way 5+5 100A Switch 2x 100A 30mA with Round Knockouts	5	**VML955RK** ★
12 Way 6+6 100A Switch 2x 100A 30mA with Round Knockouts	6	**VML966RK** ★
16 Way High Integrity 100A Switch 2x 100A 30mA with Round Knockouts	7	**VML916CURK** ★
8 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection** & Round Knockouts	5	**VML908CUSPDRK** ★
10 Way High Integrity 100A Switch 2x 100A 30mA with Factory Fitted **Surge Protection** & Round Knockouts	6	**VML910CUSPDRK** ★
14 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection** & Round Knockouts	7	**VML914CUSPDRK** ★

Design 10 63A (I_{nA})

VML666RK

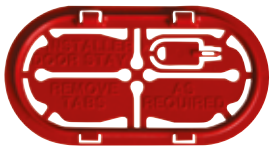




with Surge

Characteristics:
- These boards come with round knockouts, for knockout sizes see page 4.25
- Metal split load and configurable consumer units, single row from 10 to 16 outgoing ways.
- Supplied with Type A RCCBs, a full metal DIN rail, 100A switch disconnector incomer and 2 Type A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 4.19, for dimensions see page 4.25.

Description	Size	Cat ref.
10 Way 5+5 63A Switch 2x 63A 30mA Type A with Round Knockouts	5	**VML655RK** ★
12 Way 6+6 63A Switch 2x 63A 30mA Type A with Round Knockouts	6	**VML666RK** ★
16 Way High Integrity 63A Switch 2x 63A 30mA Type A with Round Knockouts	7	**VML616CURK** ★
10 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection** & Round Knockouts	6	**VML610CUSPDRK** ★
8 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection** & Round Knockouts	5	**VML608CUSPDRK** ★
14 Way High Integrity 63A Switch 2x 63A 30mA RCCB with Factory Fitted **Surge Protection** & Round Knockouts	7	**VML614CUSPDRK** ★



VM02CE

Cable Protector Plate

Characteristics:
- Provides protection against sharp edges for cables entering a consumer unit.
- **VM01CE**: Simply insert protector plate and bend over tabs inside board.
- **VM02CE**: Designed to fit into the aperture left by the removal of a rear knockout on the Design 10, Design 30 & Design 50 Consumer Unit. (Included as standard with Design 30 & 50 consumer units). Break away sections as required and simply push into place.
- **VM03/04**: Simply clip into place to allow cable entry or blanking of removed knockouts.

VM03CB

VM03CE

VM04CB

VM04CE

Description	Quantity	Cat ref.
Cable Protector Plate (Metal)	1	**VM01CE**
Cable Protector Plate (Insulated)	5	**VM02CE**
Top Wall Cable Protector Plate (30mm x 40mm)	10	**VM03CE**
Top Wall Cable Protector Plate (30mm x 40mm) Closed	10	**VM03CB**
Meter Tail Entry Cable Protector Plate (25mm x 30mm)	10	**VM04CE**
Meter Tail Entry Cable Protector Plate (25mm x 30mm) Closed	10	**VM04CB**

VM10MT

Cable Clamp

Characteristics:
- Secures supply cables on entry to main incoming device, eliminating any movement of the cables being transmitted to the terminals.
- Simply insert supply cables through clamp into incoming device & secure with fixing provided.
- (Included as standard with Design 30 & 50 consumer units)

Description	Cat ref.
Cable Clamp for Meter Tails	**VA10MT**

VMLOCK

Locks

Characteristics:
- **VMLOCK** allows door to be lockable. Simply remove the centre of the lock surround and the knockout behind, and fit lock.
- Provides the ability to lock the consumer unit during the installation process.
- Can only be used with Design 30 consumer units.

Description	Cat ref.
Design 30 Door Locking Kit	**VMLOCK**
Health & Safety Padlock Bracket	**VMHBL**
Padlock	**JK25A**

VMGROM

Grommets & Grommet Strip

Characteristics:
- Grommet for protecting against sharp edges on knockouts.

Description	Quantity	Cat ref.
Grommet strip 5 metres	1 Strip	**VM05GS**
38mm open grommet for use with VMLF* back boxes	10	**VMGROM**

VM01SP

Stand-off Plate

Characteristics:
- The rear stand off plate provides 12mm of clearance at the rear of the consumer unit to allow surface mounted cables to enter the board from the rear avoiding any potential IP issues with the top of the board. Supplied with two cable protector plates as standard.

Description	Cat ref.
Rear stand off plates VM & VML VM01SP	**VM01SP**

Data is subject to errors and technical modifications. ★ New.

Design 50 Accessories

Description	Cat ref.
Design 50 Safety Lock (Pack of 6, Supplied without Padlock)	**VSRHBL**
Padlock (Accessory for Design 50 Safety Lock, Sold Individually)	**JK25A**
Design 50 Door Locking Device	**VSRLOCK**

VSRHBL

VSRLOCK

Other Accessories

Description	Cat ref.
1 Module Busbar Blank	**JK01B**
Neutral Link	**VAN00**
Dual Tariff Link Kit	**VAK0D**
Split Load Link Kit	**VAK0S**
Triple Tariff Link Kit	**VAK0T**
8 Module Busbar	**VAB08**
12 Module Busbar	**VAB12**
16 Module Busbar	**VAB16**
21 Module Busbar	**VAB21**
Spare Terminal Bar Support Clips (Quantity - 5)	**VAT00**
Terminal Bar 2 Way with Two Support Clips	**VAT02**
Terminal Bar 3 Way with Two Support Clips	**VAT03**
Terminal Bar 4 Way with Two Support Clips	**VAT04**
Terminal Bar 5 Way with Two Support Clips	**VAT05**
Terminal Bar 6 Way with Two Support Clips	**VAT06**
Terminal Bar 7 Way with Two Support Clips	**VAT07**
Terminal Bar 8 Way with Two Support Clips	**VAT08**
Terminal Bar 9 Way with Two Support Clips	**VAT09**
Terminal Bar 10 Way with Two Support Clips	**VAT10**
Terminal Bar 11 Way with Two Support Clips	**VAT11**
Terminal Bar 12 Way with Two Support Clips	**VAT12**
Terminal Bar 13 Way with Two Support Clips	**VAT13**
Terminal Bar 14 Way with Two Support Clips	**VAT14**
Terminal Bar 15 Way with Two Support Clips	**VAT15**
Terminal Bar 16 Way with Two Support Clips	**VAT16**
Terminal Bar 17 Way with Two Support Clips	**VAT17**
Terminal Bar 18 Way with Two Support Clips	**VAT18**
Terminal Bar 19 Way with Two Support Clips	**VAT19**
Terminal Bar 20 Way with Two Support Clips	**VAT20**
Terminal Bar 21 Way with Two Support Clips	**VAT21**
Terminal Bar 22 Way with Two Support Clips	**VAT22**
Terminal Bar 23 Way with Two Support Clips	**VAT23**
Terminal Bar 24 Way with Two Support Clips	**VAT24**
Label Pack	**VAP00**

JK01B

VAB08

VAN00

MTN106

MCBs - Single Pole, B Curve, 6kA

Characteristics:
- Protection and control of circuits against overloads and short circuits for use in domestic installations.
- Complies with BS EN 60898.
- Voltage rating: 230V
- Current rating: 6 - 63A
- Connection capacity: Rigid = 25mm², Flexible = 16mm²
- Calibration temperature: 30°C

Description	Width (1 Mod =17.5mm)	Cat ref.
6A	1 Mod	**MTN106**
10A	1 Mod	**MTN110**
16A	1 Mod	**MTN116**
20A	1 Mod	**MTN120**
25A	1 Mod	**MTN125**
32A	1 Mod	**MTN132**
40A	1 Mod	**MTN140**
50A	1 Mod	**MTN150**
63A	1 Mod	**MTN163**

ADA332G

Reduced Height RCBO - Single Pole, B Curve, 6kA, 30mA, Type A

Characteristics
- Protection devices which combine the overcurrent functions of an MCB with the earth fault functions of an RCCB.
- Complies with BS EN 61009-1, BS IEC 1009-2-2
- Single module width
- Sensitivity: 30mA
- Current rating: 6 - 32A
- Connection capacity: Rigid = 16mm², Flexible = 10mm²
- Flying neutral lead: 300mm
- Single pole & solid neutral
- Type A (Pulsating DC Sensitive)
- Operational Voltage: 127-230V AC

Description	Cat ref.
6A	**ADA306G**
10A	**ADA310G**
16A	**ADA316G**
20A	**ADA320G**
25A	**ADA325G**
32A	**ADA332G**

Full Height RCBO - Single Pole, B Curve, 6kA, 30mA, Type A

40A	**ADA140G ★**
45A	**ADA145G ★**

MZN175

Locking Kit

Characteristics:
- Allows MCBs, RCCBs and RCBOs to be locked in the off position.
- Will accept two padlocks with hasps of 4.75mm diameter max (supplied without padlock).

Description	Cat ref.
Padlockable Locking Kit for MCB, RCCB & RCBO (Padlock not Included)	**MZN175**
Padlock with 2 keys 3/4"	**JK25A**

Data is subject to errors and technical modifications. ★ **New.**

Arc Fault Detection Devices

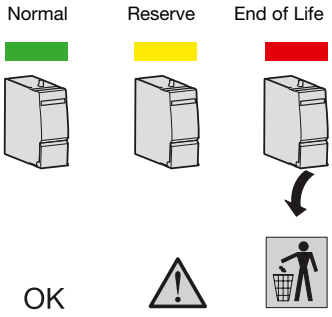
ARC906U

Characteristics:
- Protection device which combines an MCB with an Arc Fault Detection Device.
- Complies with BS EN 62606
- Current rating 6A - 40A 6kA
- Available in B & C curve
- Connection capacity - Rigid=25mm², Flexible = 16mm²

Description	Width (1 Mod =17.5mm)	Cat ref. B Curve	Cat ref. C Curve
6A	2 Mod	**ARC906U** ★	**ARC956U** ★
10A	2 Mod	**ARC910U** ★	**ARC960U** ★
16A	2 Mod	**ARC916U** ★	**ARC966U** ★
20A	2 Mod	**ARC920U** ★	**ARC970U** ★
25A	2 Mod	**ARC925U** ★	**ARC975U** ★
32A	2 Mod	**ARC932U** ★	**ARC982U** ★
40A	2 Mod	**ARC940U** ★	**ARC990U** ★

Reserve Indicator Light

Neutral cartridges cannot be put into spares reserved for phase cartridges and visa versa.



Surge Protection

Characteristics

- SPD's protect electrical and electronic equipment against transients, originating from lightning, switching of transformers, lighting and motors. These transient voltages can cause premature ageing of equipment, downtime, or complete destruction of electronic components and materials. SPDs are strongly recommended on installations that are exposed to transient voltages, to protect sensitive and expensive electrical equipment such as TV, video, Hi-Fi, PC, alarm etc.
- The range of SPDs is separated into 3 types of protection:
  1. Main protection - Type 1 - SPDs with higher discharge current (I_{max} 10/350), to evacuate as much of the transient over-voltages associated with lightning strikes
  2. Main protection - Type 2 - With a discharge current (I_{max} 8/20), to evacuate as much of the transient over-voltage to earth as possible protection level (Up ≤ 1000V).
  3. Main protection - Type 3 - To cut-down the transient surge as low as possible to protect very sensitive equipment.

Technical Data

- Complies with IEC61643-1.
- D Versions: end of life indicator, auxiliary contact for remote indication.
- R Versions: reserve status indicator, signalling.
- Connection Capacity (terminal blocks L, N & E): Rigid conductor: 10mm², Flexible conductor: 6mm².
- 230V a.c. 1A. 12V...10mA.

Installation and Connection

- The main protection SPDs are installed directly after the main incoming switch or RCCB
- Connected in parallel to the equipment to be protected.
- Protection is assured in both common and differential modes.

Replacement Cartridges

- Allow simple replacement without the need to cut-off the power supply.
- Cartridges are available for all discharge currents, (40kA and 15kA) with and without condition indication.
- A keying system exists to prevent a line cartridge being interchanged by mistake with a neutral one and visa versa neutral cartridges have a discharge current of 65kA.
- For technical details see page 4.29.

Data is subject to errors and technical modifications. ★ New.

Surge Protection Devices

SPN240R

Type 1 + 2 (Type 1 + 2 + 3 if less than 5m) (with lifetime indicator)

I_n kA L-N	I_n kA N-PE	I_{imp} L-N	I_{imp} N-PE	U_p kV	Width (mm)	Cat ref.	Cat ref. with remote contact
-	-	12.5	25	≤1.5	35	**SPA201**	**-**

Type 2 (with lifetime indicator)

5	15	-	-	≤ 1.2	17.5	**SPN115D**	**SPN115R**
5	15	-	-	≤ 1.2	35	**SPD215D** ★	**SPN215R**
15	40	-	-	≤ 1.2	35	**SPN240D**	**SPN240R**

Type 3 (Fine Protection) (with lifetime indicator)

3	3	-	-	≤ 1.5	17.5	**SPN203N**	**-**

PV Applications (DC side) (with lifetime indicator)

12.5	25		≤ 4	52.5	**SPV325**	**-**

Replacement Cartridges

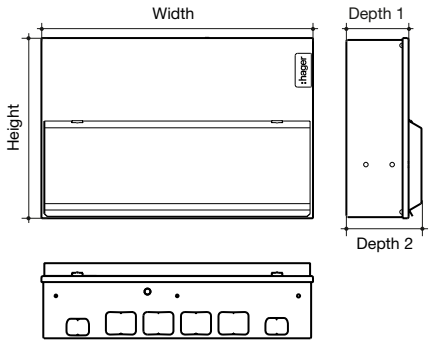
SPN040D

Description	Cat ref.
Phase replacement for **SPD215D**	**SPD015D**
Phase replacement for **SPN215R**	**SPN015R**
Phase replacement for **SPN240D**	**SPN040D**
Phase replacement for **SPN240R**	**SPN040R**
Neutral replacement for **SPD215D**, **SPN215R, SPN240D, SPN240R**	**SPD040N**
Neutral replacement for **SPN203N**	**SPN023N**

Consumer Unit Kit Type 2 SPD with SPN215D (with lifetime indicator)

- Consists of: 6mm² neutral, live & earth cables, 1x Double Pole SPD's.

Poles	I_n kA L-N	I_n kA N-PE	U_p kV	Width (mm)	Cat ref.
2	5	15	≤ 1.2	35	**VM02SPD**

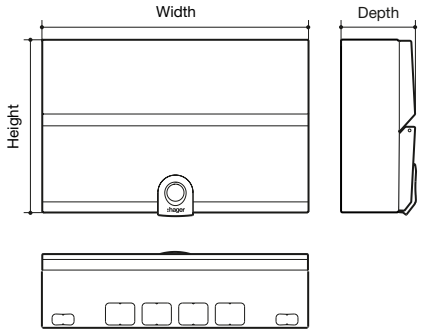


Design 10 Dimensions (mm)

	Enclosure Size					
	2	**3**	**4**	**5**	**6**	**7**
Height	246	246	246	246	246	246
Width	155	227	299	370	406	478
Depth 1	83	83	83	83	83	83
Depth 2	100	100	100	100	100	100

	Boards with Square Knockouts	**Number of Knockouts**					
	Top Face 30 x 25 (mm)	2	2	2	2	2	2
	Top Face 40 x 30 (mm)	0	2	4	4	6	6
	Back 100 x 50 (mm)	1	1	1	3	3	3
	Bottom Face 30 x 25 (mm)	2	3	4	4	5	5

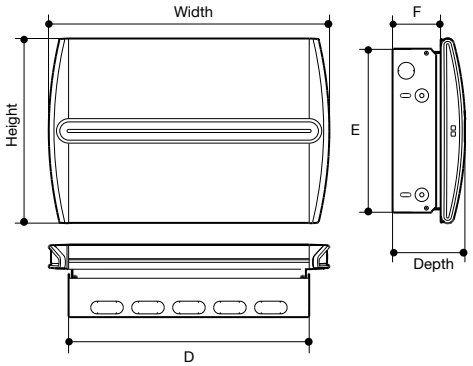
	Boards with Round Knockouts	**Number of Knockouts**					
	Top/Bottom Face 20mm	x	x	x	5	6	8
	Top/Bottom Face 25mm	x	x	x	2	2	2
	Top/Bottom Face 32mm	x	x	x	2	2	2
	Back 100 x 50mm	x	x	x	3	3	3



Design 30 Dimensions (mm)

	Enclosure Size					
	2	**3**	**4**	**5**	**6**	**7**
Height	240	240	240	240	240	240
Width	149	221	293	364	400	472
Depth	102.5	102.5	102.5	102.5	102.5	102.5

		Number of Knockouts					
	Top Face 30 x 25 (mm)	2	2	2	2	2	2
	Top Face 40 x 30 (mm)	0	2	4	4	6	6
	Back 100 x 50 (mm)	1	1	1	3	3	3
	Bottom Face 30 x 25 (mm)	2	3	4	4	5	5



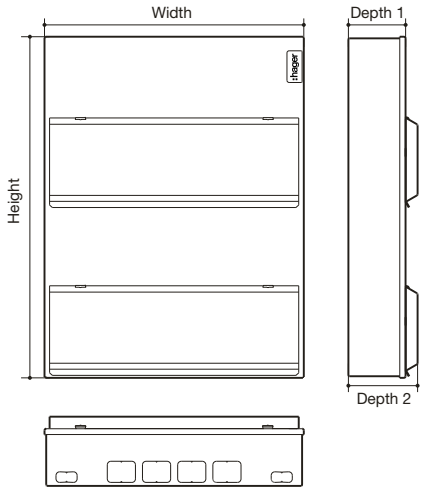
Design 50 Dimensions (mm)

	Enclosure Size			
	4	**5**	**6**	**7**
Height	284	284	284	284
Width	359	431	467	539
Depth	105	105	105	105
D	298	370	406	478
E	252	252	252	252
F	72	72	72	72

		Number of Knockouts			
	Top Face 50 x 20 (mm)	4	5	6	7
	Bottom Face 50 x 20 (mm)	4	5	6	7
	Back 100 x 50 (mm)	2	2	2	3
	Left Face 20.8 (mm)	1	1	1	1

Adjustable Depth Base
The base assembly is adjustable from 72mm to 92mm. At 72mm this allows for a 60mm studwork and 12mm of plasterboard.

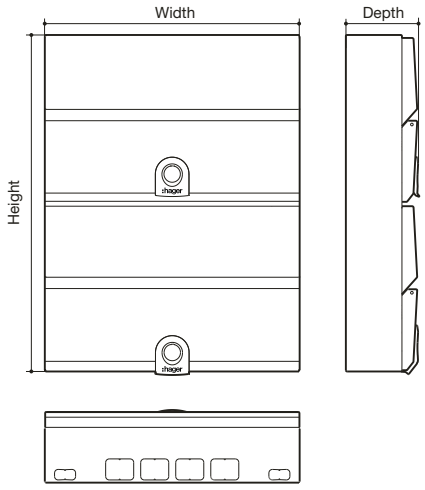
Data is subject to errors and technical modifications.



Dual Row Design 10 Dimensions (mm)

	Enclosure Size				
	3 (2)	**4 (2)**	**5 (2)**	**6 (2)**	**7 (2)**
Height	486	486	486	486	486
Width	227	299	370	406	478
Depth 1	83	83	83	83	83
Depth 2	100	100	100	100	100

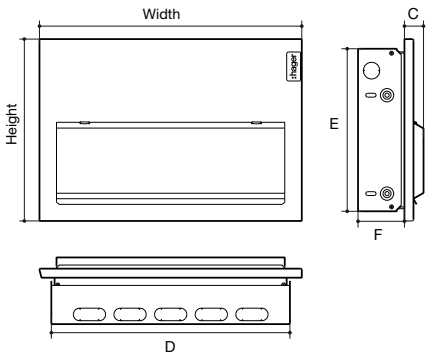
	Number of Knockouts				
Top Face 30 x 25 (mm)	2	2	2	2	2
Top Face 40 x 30 (mm)	2	4	4	6	6
Back 100 x 50 (mm)	2	2	6	6	6
Bottom Face 30 x 25 (mm)	3	4	4	5	5



Dual Row Design 30 Dimensions (mm)

	Enclosure Size				
	3 (2)	**4 (2)**	**5 (2)**	**6 (2)**	**7 (2)**
Height	480	480	480	480	480
Width	221	293	364	400	472
Depth	102.5	102.5	102.5	102.5	102.5

	Number of Knockouts				
Top Face 30 x 25 (mm)	2	2	2	2	2
Top Face 40 x 30 (mm)	2	4	4	6	6
Back 100 x 50 (mm)	2	2	6	6	6
Bottom Face 30 x 25 (mm)	3	4	4	5	5



Flush Design 10 Dimensions (mm)

	Enclosure Size			
	4	**5**	**6**	**7**
Height	282	282	282	282
Width	335	407	443	515
C	32	32	32	32
D	298	370	406	478
E	252	252	252	252
F	72	72	72	72

	Number of Knockouts			
Top Face 50 x 20 (mm)	4	5	6	7
Bottom Face 50 x 20 (mm)	4	5	6	7
Back 100 x 50 (mm)	2	2	2	3
Left Face 20.8 (mm)	1	1	1	1

Consumer Unit
Maximum Unprotected Ways

	Enclosure Size					
	5	**6**	**7**	**4(2)**	**5(2)**	**7(2)**
Max Unprotected Ways	3	3	6	3	7	11

Torque Settings

			Cables >1.5mm² Tightening torque (N.m)		Cables ≤1.5mm² Tightening torque (N.m)		Cable Stripping (mm)
	Pz No.	**(mm)**	**Single Cable**	**Multi Cables**	**Single Cable**	**Multi Cable**	
Consumer unit terminals							
Earth and neutral terminal bars	2	6.5	2	2	1.5	1.5	10
Isolation							
Switch Disconnectors / Surge	2	6.5	3.6	3.6	3.6	3.6	15
Circuit protection							
MCB	2	6.5	2.8	2.8	2.8	2.8	13
RCBO	2	5.5	2.1	2.1	2.1	2.1	13
RCCB	2	5.5	2.8	2.8	2.8	2.8	13
AFDD	2	2	2.1	2.1	2.1	2.1	13

MTN Electrical Characteristics.

Poles	Rated Operational Voltage U_e (V)	Nominal Current	Breaking Capacity (I_{cn}) to BS EN 60898	Breaking Capacity (I_{cs}) to BS EN 60898	Rated Insulation Voltage UI (V)	Rated Impulse Voltage Uimp (kV)	Electrical Endurace	Connection of Auxiliaries
Single Pole	230	6 - 63A	6kA	6kA	500V	4kV	10,000 cycles	No

Power Loss
The power loss of MCB's is closely controlled by the standards and is calculated on the basis of the voltage drop across the main terminals measured at rated current. The power loss of hager circuit breakers is very much lower than that required by the British Standard, so in consequences run cooler and are less affected when mounted together.

The table below gives the watts loss per pole at rated current.

MCB Rated current (A)	0.5	1	2	3	4	6	10	13	16	20	25	32	40	50	63
Watts loss per pole	1.2	1.3	1.5	2.0	1.8	1.4	1.9	2.1	2.5	2.8	3.2	3.8	4.0	4.5	5.1

Data is subject to errors and technical modifications.

Connection
The circuit breaker can have the line\load connected to either the top or bottom terminals

Temperature Derating
MCBs are designed and calibrated to carry their rated current and to operate within their designated thermal time/current zone at 30ºC. Testing is carried out with the breaker mounted singly in a vertical plane in a controlled environment. Therefore if the circuit breaker is required to operate in conditions which differ from the reference conditions, certain factors have to be applied to the standard data.

I_n (A)	-25ºC	-20ºC	-15ºC	-10ºC	-5ºC	0ºC	5ºC	10ºC	15ºC	20ºC	25ºC	30ºC	35ºC	40ºC	45ºC	50ºC	55ºC	60ºC
6	8.64	8.4	8.16	7.92	7.68	7.44	7.2	6.96	6.72	6.48	6.24	6	5.76	5.52	5.28	5.04	4.8	4.56
10	14.4	14	13.6	13.2	12.8	12.4	12	11.6	11.2	10.8	10.4	10	9.6	9.2	8.8	8.4	8	7.6
16	23	22.4	21.8	21.1	20.5	19.8	19.2	18.6	17.9	17.3	16.6	16	15.4	14.7	14.1	13.4	12.8	12.2
20	28.8	28	27.2	26.4	25.6	24.8	24	23.2	22.4	21.6	20.8	20	19.2	18.4	17.6	16.8	16	15.2
25	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19
32	46.1	44.8	43.5	42.2	41	39.7	38.4	37.1	35.8	34.6	33.3	32	30.7	29.4	28.2	26.9	25.6	24.3
40	57.6	56	54.4	52.8	51.2	49.6	48	46.4	44.8	43.2	41.6	40	38.4	36.8	35.2	33.6	32	30.4
50	-	-	-	-	-	62	60	58	56	54	52	50	48	46	44	42	40	38
63	-	-	-	-	-	-	-	-	-	-	-	63	60.5	58	55.4	52.9	50.4	47.9

SPA201 Technical Characteristics

		SPA201
Tested to		EN 61643-11 2002-12
SPD type / class		Type 1 + Type 2 / Class I
Energy-coordinated protection effect on terminal equipment		Type 1 + Type 2
Energy-coordinated protection effect on terminalequipment ≤ 5 m		Type 1 + Type 2 + Type 3
Type of connection		Parallel connection
Type of power supply system		TT / TN system
Type of protection		common and differential modes
Nominal voltage	U_N	230V/400V ac
Rated voltage	U_c	255V ac
Voltage protection level	U_p	≤ 1.5kV
TOV Voltage	U_T	440V / 5s 1200V / 200ms
Rated load current	I(L)	n/a
	I(L-L)	n/a
Follow current interrupting rating	I_{fi}	25kA rms 100A rms
Nominal discharge current (8/20)	I_n	12.5kA 25kA
Impulse current (10/350)	I_{imp}	12.5kA 25kA
Max. rating of overcurrent protection	fuse	160A gL / gG
	MCCB	n/a
Short-circuit withstand capability with max. overcurrent protection	fuse	25kA rms
	MCB	n/a
Response time	t_A	≤ 100ns
Operating temperature range		- 40°C ….+ 80°C
Indication of SPD disconnector		Green/Red flag on L and N
Cross sectional area	min	1,5mm² solid / flexible
	max	35mm² stranded / 25mm² flexible
Tightening torque for terminals		4 Nm
Mounting on		35mm DIN rail in accordance with EN 60715
Enclosure material		grey thermoplastic, UL 94V-0
Degree of protection		IP20
Modular width		2
Weight		275 g
Approval marking		KEMA

SPN215D/R Technical Characteristics

		SPN215D/R
Tested to		EN 61643-11 (VDE0675-6-11) 2002-12
SPD type		Type 2 according to EN 61643-11
SPD class		Class II according to IEC 61643-1
Type of connection		Parallel connection
Maximum continuous operationg voltage U_c	Line / Neutal	≤ 255V
	Neutral/ PE	≤ 275V
Voltage protection level	U_p	≤ 1kV
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE]	I_n	5kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE]	I_{max}	15kA
Short-circuit withstand capability with max. overcurrent protection		10kA - 32A
Operating temperature range		- 40°C ….+ 80°C
Indication of SPD disconnector		Green - Yellow - Red
Cross sectional area	min	1,5mm² solid / flexible
	max	35mm² multi-stranded / 25mm² flexible
Tightening torque for terminals		4.0 Nm
Mounting on		35mm DIN rail in accordance with EN 60715
Enclosure material		grey thermoplastic, UL 94V-0
Degree of protection		IP20
Modular width (DIN 43880)		2
Auiliary contact. Voltage/ nominal current (only applicable on the R suffix products)		230V/ 0.5A 12Vdc 10mA

Data is subject to errors and technical modifications.

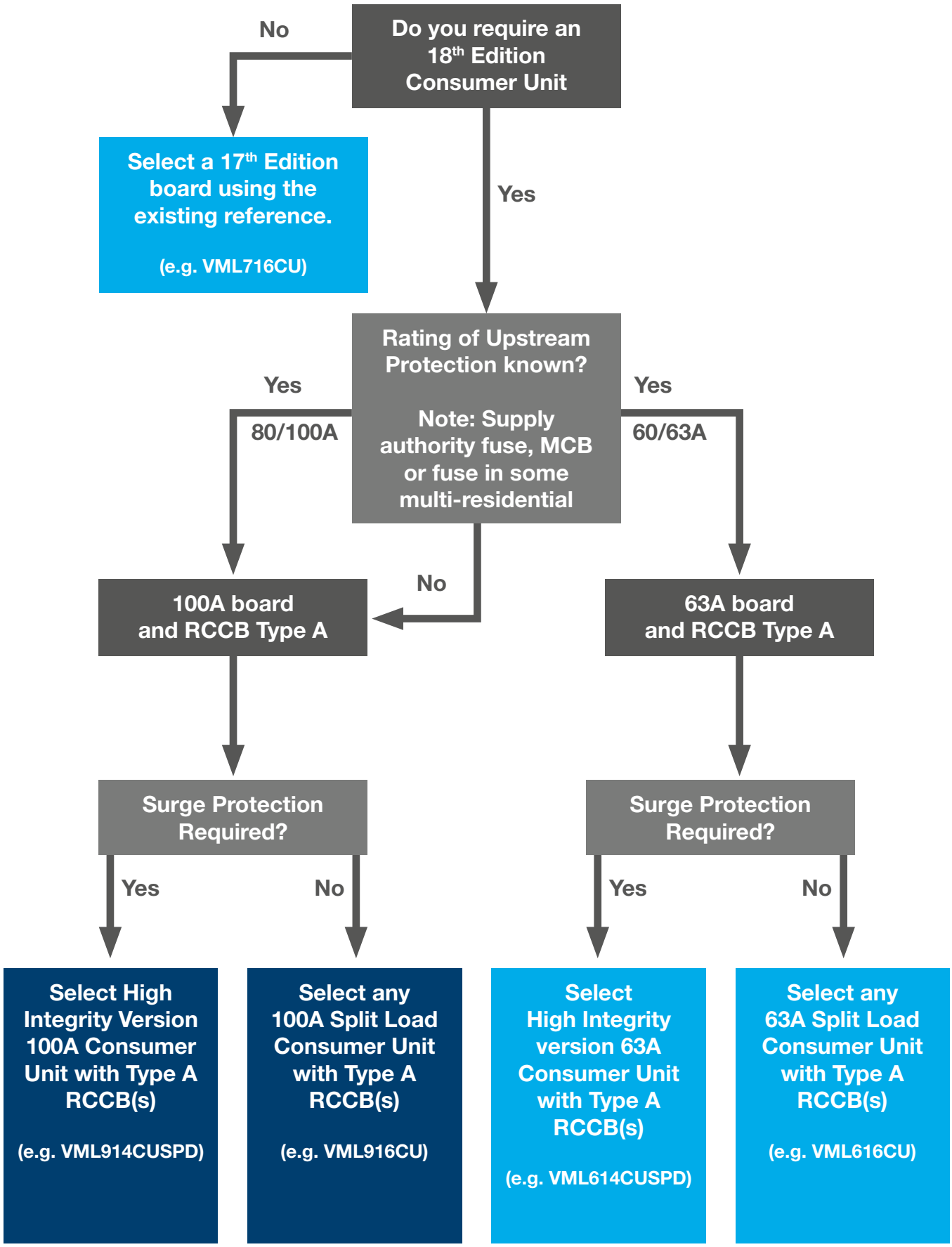
SPV325 Technical Characteristics

		SPV325
Tested to		EN 61643-11 (VDE0675-6-11) 2002-12
SPD type		Type 2 according to EN 61643-11
SPD class		Class II according to IEC 61643-1
Type of connection		Parallel connection
Maximum continuous operationg voltage	Uc_{PV}	≤ 1000V
Voltage protection level	U_p	≤ 4kV
Voltage protection level for 5kA	U_p	≤ 3,5kV
Total discharge current (8/20 µs)	I_{total}	40kA
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE]	I_n	12.5kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE]	I_{max}	25kA
Short-circuit withstand capability with max. overcurrent protection	I_{scwPV}	50 A / 1000 V DC
Response time	t_A	≤ 25ns
Operating temperature range		- 40°C ….+ 80°C
Indication of SPD disconnector		green - red
Cross sectional area	min	1.5mm² solid / flexible
	max	35mm² multi-stranded / 25mm² flexible
Tightening torque for terminals		4.0 Nm
Mounting on		35mm DIN rail in accordance with EN 60715
Enclosure material		Grey thermoplastic, UL 94V-0
Degree of protection		IP20
Installation width		3 modules, DIN 43880
Weight		316g

SPN203N Technical Characteristics

		SPN203N
Tested to		EN 61643-11 (VDE0675-6-11) 2007-08
SPD type / class		T3 / III
Ports		one port
Type of connection		Parallel connection
Type of power supply system		TT / TN system
Nominal voltage	U_N	230V ac
Rated voltage	U_c	255V ac
Voltage protection level (L- N)	U_p	≤ 1.25kV
Voltage protection level (L/N - PE)	U_p	≤ 1.5kV
TOV - Characteristic (L - N)	U_T	335V / 5s
TOV - Characteristic (L/N - PE) (I)	U_T	400V / 5s
TOV - Characteristic (L/N - PE) (II)	U_T	1200V / 200 ms
Rated load current	IL	16 Aeff
Nominal discharge current (8/20)	I_n	3kA
Maximal discharge current (8/20)	I_{max}	5kA
Combination wave (1,2/50 - 8/20) (L - N)	U_{oc}	6 kV
Combination wave (1,2/50 - 8/20) (L/N - PE)	U_{oc}	10 kV
Residual current	IPE	≤ 5µA
Remplacement cartridge		NO
Maximal rating of overcurrent protection	fuse	25A gL / gG
	MCB	25A B curve
Short-circuit withstand capability with max. overcurrent protection	fuse	6kA eff ac
	MCB	1kA eff ac
Response time	t_A	≤ 25ns
Operating temperature range		- 25°C ….+ 40°C
Indication of SPD disconnector		NO
Remote signalisation contact		Green light off
Cross sectional area	min	1.5mm² solid / flexible
	max	10mm² stranded / 6mm² flexible
Tightening torque for terminals		1.2 Nm
Mounting on		35mm DIN rail in accordance with EN 60715
Enclosure material		Grey thermoplastic, UL 94V-2
Degree of protection		IP20
Installation width		2 modules, DIN 43880

Data is subject to errors and technical modifications.



Data is subject to errors and technical modifications.

Q. What is different about Hager 100A I_{nA}, 100A I_{nc} (VML955H) Consumer unit in relation to the 17th Edition consumer unit (VML755H)?

A. The 100A I_{nA}, 100A I_{nc} Hager consumer unit has been designed to allow the board to meet the requirements of the 18th edition for both overload protection of RCCBs and to meet the requirements for RCD selection where there is expected to be electronic loads connected to the circuit(s) which could induce a pulsating DC component onto the sinusoidal waveform.

Q. Where can I install the 100A board?

A. In any single phase residential application.

Q. Where can fit a 63A I_{nA} board?

A. Only on installations where the upstream protection device (MCB or Fuse) is known to be 60/63 A or below and the building owner is in control of this device.

Q. How do I know if I need Surge Protection?

A. If using the risk assessment method CRL = $f_{env}/(L_p \times N_g)$ where;

f_{env} - Environmental factor. Is the installation in an urban or rural/suburban environment? (Factor of 850 for urban or 85 for rural/suburban)
L_p - Length of cable supplying installation (if unknown a factor of 1(km) should be used)
N_g - Flash density of location.

Note if location is rural/suburban and the length of cable supplying the installation is unknown (hence factor of 1 is used) regardless of the location of the installation the risk assessment will result in surge protection being required even if lowest flash density factor 0.1 is used.
If CRL is less than 1000, surge protection is required.

e.g.
Rural/suburban locations
CRL = 85 /(1 x 0.1)
CRL = 850 Surge Protection required

For Urban locations where the length of cable is unknown, with a flash density of above 0.8 surge protection is required.

e.g
Urban location with flash density (N_g) of 0.8
CRL = 850/ (1 x 0.8)
CRL = 1062.5 Surge protection not required

Urban location with flash density (N_g) of 1.0
CRL=850/(1x1)
CRL = 850 Surge Protection required.

Wiring Accessories

Our expansive range of Sollysta Wiring Accesories have been designed from the beginning to be installer friendly, tactile & safe.

Connect cables and install lamps securely with our Ceiling Accessories and Junction Boxes.

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WMPS11

Wall Switches

Characteristics:
- Unique patented loop terminal allows neutral looping at the switch.
- Complies with BS EN 60669-1, a.c only.
- 'X' rated - No need to derate for fluorescent loads.
- Clear terminal markings: 1-way L1, 2-way L2
- Capacity of each terminal - 2 x 4.0mm² conductors.
- For mounting boxes see selection chart on page 5.47.
- For multigang switches use of a 25mm mounting box will provide increased wiring space.
- Supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref.
10AX Wall Switches	
1 Gang 1 Way	**WMPS11**
1 Gang 1 Way Printed 'Fan'	**WMPS11/FAN**
1 Gang 2 Way	**WMPS12**
2 Gang 2 Way	**WMPS22**
3 Gang 2 Way	**WMPS32**
4 Gang 2 Way	**WMPS42**
6 Gang 2 Way	**WMPS62**
1 Gang 2 Way Wide Rocker	**WMPS12W**
2 Gang 2 Way Wide Rocker	**WMPS22W**

WMPS16

Intermediate Switches

Characteristics:
- Complies with BS EN 60669-1, a.c only.
- 'X' rated - No need to derate for fluorescent loads.
- Clear terminal markings.
- Capacity of each terminal - 2 x 4.0mm² conductors.
- For mounting boxes see selection chart on page 5.47.
- For multigang switches use of a 25mm mounting box will provide increased wiring space.
- Supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref.
Intermediate Switch	**WMPS16**

WMPS12W

Push Switches

Characteristics:
- Unique patented loop terminal allows neutral looping at the switch.
- Complies with BS EN 60669-1, a.c only.
- 'X' rated - No need to derate for fluorescent loads.
- Clear terminal markings: 1-way L1, 2-way L2
- Capacity of each terminal - 2 x 4.0mm² conductors.
- For mounting boxes see selection chart on page 5.47.
- For multigang switches use of a 25mm mounting box will provide increased wiring space.
- Supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref.
Push Switches	
Retractive Switch	**WMPS12R**
With Bell Symbol	**WMPS12RB**
With Wide Rocker	**WMPS12RW**

Data is subject to errors and technical modifications.

Push Button Dimmer Switches

Characteristics:
- Stylish flush button with quick press for on/off.
- Hold button down to dim or brighten light level.
- Leading edge.
- Soft start feature prolongs lamp life.
- Suitable for dimming mains and dimmable transformer extra low voltage lamps.
- Complies with BS EN 60669-2-1 (including BS EN 55015).
- Automatic switch off in event of transformer instability, protects the dimmer and the transformer.
- Supplied with M3.5 x 30mm long fixing screws.

WMDS1

Description	Cat ref.
Push Button Dimmer Switches	
1 Gang 400W	**WMDS1**
2 Gang 250W	**WMDS2**
3 Gang 250W	**WMDS3**
4 Gang 250W	**WMDS4**
Resistive Load for LED Applications	**WMRESLOAD**

Rotary Push Button Dimmer Switches

Characteristics:
- Quick press for on/off with rotary dimming control.
- 1 or 2 way switching.
- Supplied with M3.5 x 30mm long fixing screws.
- Suitable for mains halogen lamps without the need for derating.
- Not suitable for fluorescent, LED or inductive loads.
- Complies with BS EN 60669-2-1 (excluding clause 26 EMC requirements).

WMDR1/400R

Description	Cat ref.
Rotary Push Button Dimmer Switches	
1 Gang 400W	**WMDR1/400R**
2 Gang 250W	**WMDR2/250R**

Isolator Switches

Characteristics:
- Complies with BS EN 60669-2-4
- Rated conditional short circuit current (I_{nc}) 1500A tested with Hager **MTN110** 6kA B curve MCB.
- Capacity of each terminal 2 x 4.0mm² conductors.
- For mounting boxes see selection chart on page 5.47.
- Supplied with M3.5 x 20mm long fixing screws.

WMPS3PIF

Description	Cat ref.
3 Pole Isolator Switches	
Isolator Switch	**WMPS3PI**
Isolator Switch with Fan Symbol	**WMPS3PIF**

WMSS82

WMS51

WMSS82USB

Switched & Unswitched Socket Outlets

Characteristics:
- Unique patented three part safety shutter.
- Complies with BS 1363-2, a.c only.
- Double pole switching mechanism on switched sockets.
- Twin socket comes with twin earth as standard.
- All terminal screws grouped in-line and upward facing for ease of installation.
- Clear printed and engraved terminal markings.
- Capacity of each terminal: 3 x 4mm² conductors switched & unswitched (for other sized conductors see terminal capacities on page 5.48).
- **WMSS82USB(S) - Warning:** To avoid possible damage to the product or spurious insulation readings, please disconnect the product before carrying out insulation resistance testing.
- **WMSS82USB(S)** USB output: 5V d.c. 2.4A total max.
- For mounting boxes see selection chart on page 5.47.
- Supplied with M3.5 x 30mm long fixing screws.

Description	Cat ref.
Switched Socket Outlets	
13A 1 Gang Double Pole	**WMSS81**
13A 2 Gang Double Pole Dual Earth	**WMSS82**
13A 2 Gang Double Pole Dual Earth & Two USB Ports	**WMSS82USB**
13A 2 Gang Double Pole Dual Earth & Two USB Ports & 10mm Spacer	**WMSS82USBS**
10mm Spacer for 2 Gang Sockets	**WMUSBS**
13A 2 Gang Double Pole Dual Earth Outboard Rockers	**WMSS82O**
13A 1 Gang Double Pole with LED Indicator	**WMSS81N**
13A 2 Gang Double Pole Dual Earth with LED Indicator	**WMSS82N**
13A 2 Gang Double Pole Dual Earth Outboard Rockers & LED Indicator	**WMSS82ON**
15A 1 Gang	**WMSS115**
Unswitched Socket Outlets	
13A 1 Gang	**WMS81**
13A 2 Gang Dual Earth	**WMS82**
5A 1 Gang	**WMS51**

WMCC50

WMCC50N

Cooker Control Unit

Characteristics:
- Complies with BS 4177.
- Switch and socket are double pole.
- Twin earth as standard.
- Main switch is suitable for isolation.
- All terminals are upward facing for ease of installation.
- Clearly printed terminal marking.
- Capacity of terminals: 2 x 6.0mm², 1 x 16.0mm².
- For mounting boxes see selection chart on page 5.47.
- Supplied with M3.5 x 30mm long fixing screws.

Description	Cat ref.
45A Cooker Control Unit	**WMCC50**
45A Cooker Control Unit with LED Indicator	**WMCC50N**

WMP2FO

Outlet Plates

Characteristics:
- Complies with BS 5733
- Terminal capacity: 20A 2 x 6.0mm², 45A 2 x 10.0mm² conductors
- 20A plate features 2 separate terminals for each of Line, Neutral and Earth so flexible and fixed wiring do not occupy the same terminal.
- Single screw fast fix cable clamp.
- Supplied with M3.5 x 30mm long fixing screws.
- 45A features large open brass terminals for ease of installation.
- Protective red washer must be used under cable clamp to prevent damage to cable.

Description	Cat ref.
Outlet Plates	
20A Flex Outlet Plate	**WMP2FO**
45A Cooker Cable Outlet with Terminals	**WMP50FO**

Data is subject to errors and technical modifications.

Switched & Unswitched Fused Connection Units (13A)

Characteristics:
- Complies with BS 1363-4.
- Single screw fast fix cable clamp, accommodates up to 1.5mm² flexible cord.
- All terminals are upward facing with clearly printed terminal markings for ease of installation.
- Capacity of each terminal 2 x 6.0mm² conductors.
- Supplied with M3.5 x 30mm long fixing screws.
- For mounting boxes see selection chart on page 5.47.
- We also offer a bespoke printing service for your individual requirements. Please contact our Estimation Team on 01952 675594 for further details.

WMSSU83

WMSSU83N

Description	Cat ref.
13A Switched Fused Connection Units	
FCU	**WMSSU83**
FCU With Flex Outlet	**WMSSU83FO**
FCU With LED Indicator	**WMSSU83N**
FCU With LED Indicator & Flex Outlet	**WMSSU83FON**
FCU With 3A Fuse	**WMSSU83/3A**
13A Unswitched Fused Connection Units	
FCU	**WMSU83**
With Flex Outlet	**WMSU83FO**
13A Unswitched Fused Connection Units - Printed Text	
Printed - 'Plinth Heater'	**WMSU83PH**
Printed - 'Storage Heater'	**WMSU83SH**
Printed - 'Towel Rail'	**WMSU83TR**
13A Switched Fused Connection Units - Printed Text	
Printed 'Boiler'	**WMSSU83/BO**
Printed 'Central Heating'	**WMSSU83/CTLHTG**
Printed 'Dishwasher'	**WMSSU83/DW**
Printed 'Extract Fan'	**WMSSU83/EF**
Printed 'Fan'	**WMSSU83/FAN**
Printed 'Fridge Freezer'	**WMSSU83/FF**
Printed 'Freezer'	**WMSSU83/FRE**
Printed 'Fridge'	**WMSSU83/FRI**
Printed 'Heating'	**WMSSU83/HTG**
Printed 'Heater'	**WMSSU83/HTR**
Printed 'Shower Pump'	**WMSSU83/SHWRPUMP**
Printed 'Socket Below'	**WMSSU83/SKTBELOW**
Printed 'Tumble Dryer'	**WMSSU83/TD**
Printed 'Washing Machine'	**WMSSU83/WM**
13A Switched Fused Connection Units with Flex Outlet - Printed Text	
Printed 'Boiler'	**WMSSU83FO/BO**
Printed 'Dishwasher'	**WMSSU83FO/DW**
Printed 'Extractor Fan'	**WMSSU83FO/EF**
Printed 'Fridge Freezer'	**WMSSU83FO/FF**
Printed 'Freezer'	**WMSSU83FO/FRE**
Printed 'Fridge'	**WMSSU83FO/FRI**
Printed 'Heating'	**WMSSU83FO/HTG**
Printed 'Heater'	**WMSSU83FO/HTR**
Printed 'Tumble Dryer'	**WMSSU83FO/TD**
Printed 'Washing Machine'	**WMSSU83FO/WM**

Continued overleaf

Unswitched & Switched Fused Connection Units (13A) - Continued

Description	Cat ref.
13A Switched Fused Connection Units with LED Indicator - Printed Text	
Printed 'Boiler'	**WMSSU83N/BO**
Printed 'Dishwasher'	**WMSSU83N/DW**
Printed 'Extractor Fan'	**WMSSU83N/EF**
Printed 'Fan'	**WMSSU83N/FAN**
Printed 'Freezer'	**WMSSU83N/FRE**
Printed 'Fridge'	**WMSSU83N/FRI**
Printed 'Hob'	**WMSSU83N/HB**
Printed 'Heating'	**WMSSU83N/HTG**
Printed 'Tumble Dryer'	**WMSSU83N/TD**
Printed 'Washing Machine'	**WMSSU83N/WM**
13A Switched Fused Connection Units with LED Indicator & Flex Outlet - Printed Text	
Printed 'Boiler'	**WMSSU83FON/BO**
Printed 'Dishwasher'	**WMSSU83FON/DW**
Printed 'Extractor Fan'	**WMSSU83FON/EF**
Printed 'Fan'	**WMSSU83FON/FAN**
Printed 'Freezer'	**WMSSU83FON/FRE**
Printed 'Fridge'	**WMSSU83FON/FRI**
Printed 'Hob'	**WMSSU83FON/HB**
Printed 'Heating'	**WMSSU83FON/HTG**
Printed 'Tumbledryer'	**WMSSU83FON/TD**
Printed 'Washing Machine'	**WMSSU83FON/WM**

WMDP84FON

Double Pole Switches (20A)

Characteristics:
- Complies with BS EN 60669-1, a.c. only.
- Single screw fast fix cable clamp, accommodates up to 1.5mm² flexible cord.
- All terminals are upward facing with clearly printed terminal markings for ease of installation.
- Capacity of each terminal 2 x 6.0mm² conductors.
- For mounting boxes see selection chart on page 5.47.
- Supplied with M3.5 x 30mm long fixing screws.
- We also offer a bespoke printing service for your individual requirements. Please contact our Estimation Team on 01952 675594 for further details.

Description	Cat ref.
20A Double Pole Switches	
20A Double Pole Switch	**WMDP84**
With Flex Outlet	**WMDP84FO**
With LED Indicator	**WMDP84N**
With LED Indicator & Flex Outlet	**WMDP84FON**
20A Double Pole Switched - Printed Text	
Printed 'Dishwasher'	**WMDP84DW**
Printed 'Freezer'	**WMDP84/FRE**
Printed 'Fridge'	**WMDP84/FRI**
Printed 'Tumble Dryer'	**WMDP84/TD**
Printed 'Washing Machine'	**WMDP84/WM**
20A Double Pole Switches with Flex Outlet - Printed Text	
Printed 'Freezer'	**WMDP84FO/FRE**
Printed 'Fridge'	**WMDP84FO/FRI**
Printed 'Tumble Dryer'	**WMDP84FO/TD**
Printed 'Washing Machine'	**WMDP84FO/WM**

Data is subject to errors and technical modifications.

Double Pole Switches (20A) (Continued)

WMDP85N

20A Double Pole Switches with LED Indicator & Flex Outlet - Printed Text	
Printed 'Dishwasher'	**WMDP84FON/DW**
Printed 'Fan'	**WMDP84FON/FAN**
Printed 'Freezer'	**WMDP84FON/FRE**
Printed 'Fridge'	**WMDP84FON/FRI**
Printed 'Tumble Dryer'	**WMDP84FON/TD**
Printed 'Washing Machine'	**WMDP84FON/WM**
Printed 'Waterheater'	**WMDP85FON**

20A Double Pole Switches with LED Indicator - Printed Text	
Printed 'Dishwasher'	**WMDP84N/DW**
Printed 'Fan'	**WMDP84N/FAN**
Printed 'Freezer'	**WMDP84N/FRE**
Printed 'Fridge'	**WMDP84N/FRI**
Printed 'Tumble Dryer'	**WMDP84N/TD**
Printed 'Washing Machine'	**WMDP84N/WM**
Printed 'Waterheater'	**WMDP85N**

Double Pole Switches (50A)

Characteristics:
- Complies with BS EN 60669-2-4.
- Rated conditional short circuit current (I_{nc}) 1500A tested with Hager **MTN150** 6kA B curve MCB.
- All terminal screws upward facing for ease of installation.
- Clearly printed terminal marking.
- Capacity of each terminal: 2 x 6mm^2, 1 x 10mm^2.
- For mounting boxes see selection chart on page 5.47.
- Supplied with M3.5 x 30mm long fixing screws.
- We also offer a bespoke printing service for your individual requirements. Please contact our Estimation Team on 01952 675594 for further details.

WMDP50N

Description	Cat ref.
50A Double Pole Switches	
With LED Indicator (1 Gang)	**WMDP50N**
Vertical with LED Indicator (2 Gang)	**WMDP50VN**

50A Double Pole Switches with LED Indicator - Printed Text	
Printed 'Cooker'	**WMDP50N/CK**
Printed 'Hob'	**WMDP50N/HB**
Printed 'Oven'	**WMDP50N/OV**
Printed 'Shower'	**WMDP50N/SH**

50A Double Pole Vertical Switches with LED Indicator - Printed Text	
Printed 'Cooker' (2 Gang)	**WMDP50VN/CK**
Printed 'Hob' (2 Gang)	**WMDP50VN/HB**
Printed 'Oven' (2 Gang)	**WMDP50VN/OV**

WMSO100

Shaver Socket

Characteristics:
- Complies with BS EN 61558-2-5.
- Capacity of each terminal 2 x 2.5mm² conductors.
- Designed for use in bathrooms and shower rooms and incorporates a double wound transformer for an earth free supply.
- Designed to supply electric shavers rated 50 VA or less.
- Input 230V a.c. output dual voltage 230V a.c. and 115V a.c. outlets. Rating 20VA on either voltage.
- Primary circuit protected by a self resetting thermal overload device.
- Insertion of shaver plug automatically switches on the transformer.
- Supplied with M3.5 x 30mm long fixing screws.

Description	Cat ref.
Shaver Socket 115/230 Volt	**WMSO100**

WMBTM

Telephone & Data

Characteristics:
- BT sockets comply with BS 6312-2.
- Supplied with fitted cable tie.
- Quick connection with insulation displacement terminals.
- Clearly printed terminal marking.
- Supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref.
Telephone & Data	
BT Master Telephone Outlet	**WMBTM**
BT Secondary Telephone Outlet	**WMBTS**
RJ11 Socket	**WMRJ11**
RJ45 Socket	**WMRJ45**
IDC Tools (bag of 10)	**IDCTOOL**

WMQX

TV & Satellite

Characteristics:
- TV outlets comply with BS 3041.
- Satellite outlets comply with BS EN 50083-2.
- Fully screened.
- DAB compatible.
- Supplied with M3.5 x 20mm fixing screws.

Description	Cat ref.
TV & Satellite	
Single F Type Satellite Outlet Screened	**WMSAT**
Single Co-Ax TV Socket Outlet Male	**WMTVM**
Single Co-Ax TV Socket Outlet Female	**WMTVF**
Double TV & FM/DAB Co-Ax Socket Outlet	**WMDX**
Triplexer TV, FM/DAB & Satellite Outlet	**WMTX**
Quadplexer TV, FM/DAB, Satellite 1 & Satellite 2 Outlet	**WMQX**

Data is subject to errors and technical modifications.

Euro Style Accommodation Plates

Characteristics:
- Carrier plates facilitate installation of industry standard modules.
- Easy to configure for all applications.
- Robust retention of modules in operation.
- Quick release of modules for maintenance.

WMP2EU

Description	Cat ref.
Euro Style Accommodation Plates	
1 Module	**WMP1EU**
2 Modules	**WMP2EU**
4 Modules	**WMP4EU**

Euro Style Modules

Characteristics:
- Please note: these euro modules are industry standard units and are not colour matched to Sollysta plates.

WMMBTM

WMMSAT

Description	Mod Width	Cat ref. (White)	Cat ref. (Black)
Euro Style Modules			
BT Telephone Master	1	**WMMBTM**	**WMMBTMB**
BT Telephone Secondary	1	**WMMBTS**	**WMMBTSB**
RJ11 - Modem	1	**WMMRJ11**	**WMMRJ11B**
RJ45 - Cat 6 UTP	1	**WMMRJ45**	**WMMRJ45B**
Phono Plugs - Red/Black - Gold Plated	1	**WMMPP**	**-**
Speaker Terminal Posts - Gold Plated	1	**WMMSP**	**-**
Single IEC Female Non Isolated	1	**WMMTVF**	**WMMTVFB**
Single IEC Male Non Isolated	1	**WMMTVM**	**WMMTVMB**
Single Satellite F Connector	1	**WMMSAT**	**WMMSATB**
Single Blank	1	**WMMB**	**WMMBB**
PIR Occupancy Sensor 5m	1	**WMMPIR05X**	**-**
PIR Occupancy Sensor 10m	1	**WMMPIR10X**	**-**
HDMI	2	**WMMHDMI**	**WMMHDMIB**
USB with Twin USB	2	**WMMUSB**	**WMMUSBB**
Diplexer - TV & FM Radio	2	**WMMDX**	**WMMDXB**
Triplexer - TV, Satellite & FM Radio	2	**WMMTX**	**WMMTXB**
Quadplexer - TV, Satellite, FM Radio & Return	2	**WMMQX**	**WMMQXB**

WMMQXB

WMCS11

Light Switches

Characteristics:
- Complies with BS EN 60669-1.
- 'X' rated - no need to de-rate for fluorescent loads.
- Earth terminal in base.
- Switch will operate at up to an angle of 45º.
- Pull cords 1.5m long.
- Capacity of each terminal: 2 x 1.5mm² conductors.

Description	Cat ref.
6A Ceiling Switch	
1 Way	**WMCS11**
2 Way	**WMCS12**

WMCS3PIF

Fan Isolator Switches

Characteristics:
- Complies with BS EN 60669-2-4.
- Terminal capacity: 3 x 1.5mm².
- Supplied with M3.5 x 30mm long fixing screws.

Description	Cat ref.
10A 3 Pole Ceiling Switch	
Printed with Fan Symbol & 'Isolator'	**WMCS3PIF**
Printed 'Isolator'	**WMCS3PI**
Printed with Fan Symbol	**WMCS3PF**

WMCS50N

Shower Switches

Characteristics:
- Complies with BS EN 60669-2-4.
- Rated conditional short circuit current (I_{nc}) 1500A tested with Hager **MTN150** 6kA B Curve MCB.
- Suitable for use with showers up to 11.5kW.
- Position of the contacts shown by flag indicator.
- Supplied with M3.5 x 30mm fixing screws.
- Capacity of each terminal: 1 x 16mm² conductors.

Description	Cat ref.
50A 2 Pole Isolating with LED Indicator	**WMCS50N**

Accessories for Ceiling Switches

Description	Cat ref.
Single Spare Pull Cord	**PULLCORD**

Data is subject to errors and technical modifications.

Grid Plates

Description	Cat ref.
Grid Plates	
1 Gang	**WMGP1**
2 Gang	**WMGP2**
3 Gang	**WMGP3**
4 Gang	**WMGP4**
6 (2 x 3) Gang	**WMGP6**
8 (2 x 4) Gang Grid Plate	**WMGP8**
1 Gang Grid Plate Grey	**WMGP1G**
2 Gang Grid Plate Grey	**WMGP2G**
3 Gang Grid Plate Grey	**WMGP3G**
4 Gang Grid Plate Grey	**WMGP4G**
6 (2 x 3) Gang Grid Plate Grey	**WMGP6G**
8 (2 x 4) Gang Grid Plate Grey	**WMGP8G**

WMGP2

Grid Frames

Description	Cat ref.
1 Gang	**WMGF1**
2 Gang	**WMGF2**
3/4 Gang	**WMGF34**

WMGF34

Grid Switches

Characteristics:
- Complies with BS EN 606691-1 switches, BS 5733 fuse carrier.
- Shallowest switch modules which clip in from the front for ease of installation and maintenance.
- Terminal screw can be accessed with modules clipped into frames.
- Frames locate to finished wall level.
- Frames clip together to ease alignment for 6 gang and 8 gang applications.
- We also offer a bespoke printing service for your individual requirements. Please contact our Sales Service Centre on 01952 675612 for further details.

Description	Cat ref. White Insert	Cat ref. Black Insert
Grid Switches		
Blank Module	**WMGB1**	**-**
20AX 2 Way Single Pole Switch	**WMGS12**	**-**
20A Intermediate Switch	**WMGS16**	**-**
20A 2 Way Retractive Switch	**WMGS22R**	**-**
20A 1 Way Double Pole Switch	**WMGSDP2**	**-**
20A 1 Way Double Pole Switch with LED Indicator	**WMGSDP2N**	**-**
20A Double Pole Key Switch	**WMGKS**	**WMGKSB**
20A Double Pole Key Switch Printed 'Emergency Lighting Test'	**WMGKS/EL**	**-**
13A Fuse Carrier	**WMGFU13**	**-**
Dimmer Slave Switch	**WMGSD1S**	**WMGSD1SB**
Dimmer Switch Leading Edge	**WMGSD1L**	**WMGSD1LB**
Dimmer Switch Trailing Edge	**WMGSD1T**	**WMGSD1TB**
Red Indicator	**WMINDRED**	**WMINDREDB**
2 Way & Centre Off Latching Switch	**WMGS13L**	**WMGS13LB**
2 Way & Centre Off Latching Switch Red Rocker	**WMGS13LR**	**-**
2 Way & Centre Off Retractive Switch	**WMGS13R**	**WMGS13RB**
2 Way & Centre Off Retractive Switch Red Rocker	**WMGS13RR**	**-**
13A Fused Connection Unit Unswitched with LED Indicator	**WMGSU83N**	**-**

WMGKS

WMGB1

WMINDRED

WMGSDP2/CHD

WMGSDP2/EF

Grid Switches (Continued)

Characteristics:
- Complies with BS EN 606691-1 switches, BS 5733 fuse carrier.
- Shallowest switch modules which clip in from the front for ease of installation and maintenance.
- Terminal screw can be accessed with modules clipped into frames.
- Frames locate to finished wall level.
- Frames clip together to ease alignment for 6 gang and 8 gang applications.
- We also offer a bespoke printing service for your individual requirements. Please contact our Sales Service Centre on 01952 675612 for further details.

Description	Cat ref. White Insert	Cat ref. Black Insert
20A 1 Way Double Pole Grid Switches - Printed		
Printed 'Cooker Hood'	**WMGSDP2/CHD**	**WMGSDP2B/CHD**
Printed 'Dishwasher'	**WMGSDP2/DW**	**WMGSDP2B/DW**
Printed 'Extract Fan'	**WMGSDP2/EF**	**WMGSDP2B/EF**
Printed 'Fridge Freezer'	**WMGSDP2/FF**	**WMGSDP2B/FF**
Printed 'Freezer'	**WMGSDP2/FRE**	**WMGSDP2B/FRE**
Printed 'Fridge'	**WMGSDP2/FRI**	**WMGSDP2B/FRI**
Printed 'Hob'	**WMGSDP2/HB**	**WMGSDP2B/HB**
Printed 'Heating'	**WMGSDP2/HTG**	**WMGSDP2B/HTG**
Printed 'Microwave'	**WMGSDP2/MW**	**WMGSDP2B/MW**
Printed 'Micro Wave'	**WMGSDP2/MW2**	**WMGSDP2B/MW2**
Printed 'Tumble Dryer'	**WMGSDP2/TD**	**WMGSDP2B/TD**
Printed 'Waste Disposal'	**WMGSDP2/WD**	**WMGSDP2B/WD**
Printed 'Washing Machine'	**WMGSDP2/WM**	**WMGSDP2B/WM**
Printed 'Oven'	**WMGSDP2/OV**	**WMGSDP2B/OV**
Printed 'Wine Cooler'	**WMGSDP2/WC**	**WMGSDP2B/WC**
Printed 'Hot Water'	**WMGSDP2/HW**	**WMGSDP2B/HW**
Printed 'Coffee Maker'	**WMGSDP2/CM**	**WMGSDP2B/CM**
Printed 'Hot Drawer'	**WMGSDP2/HD**	**WMGSDP2B/HD**
Printed 'Fan Boost'	**WMGSDP2/FB**	**WMGSDP2B/FB**
Printed 'Outside Socket'	**WMGSDP2/OS**	**WMGSDP2B/OS**
Printed 'Steam Oven'	**WMGSDP2/SOV**	
Printed 'Boiler'	**WMGSDP2/BOI**	**-**
Printed 'Outside Light'	**WMGSDP2/OL**	**-**
Printed 'Plinth Heater'	**WMGSDP2/PH**	**-**
20A 1 Way Double Pole Grid Switches with LED Indicator - Printed		
Printed 'Cooker Hood'	**WMGSDP2N/CHD**	**WMGSDP2NB/CHD**
Printed 'Dishwasher'	**WMGSDP2N/DW**	**WMGSDP2NB/DW**
Printed 'Extract Fan'	**WMGSDP2N/EF**	**WMGSDP2NB/EF**
Printed 'Fridge Freezer'	**WMGSDP2N/FF**	**WMGSDP2NB/FF**
Printed 'Freezer'	**WMGSDP2N/FRE**	**WMGSDP2NB/FRE**
Printed 'Fridge'	**WMGSDP2N/FRI**	**WMGSDP2NB/FRI**
Printed 'Hob'	**WMGSDP2N/HB**	**WMGSDP2NB/HB**
Printed 'Heating'	**WMGSDP2N/HTG**	**WMGSDP2NB/HTG**
Printed 'Microwave'	**WMGSDP2N/MW**	**WMGSDP2NB/MW**
Printed 'Tumble Dryer'	**WMGSDP2N/TD**	**WMGSDP2NB/TD**
Printed 'Waste Disposal'	**WMGSDP2N/WD**	**WMGSDP2NB/WD**
Printed 'Washing Machine'	**WMGSDP2N/WM**	**WMGSDP2NB/WM**
Printed 'Oven'	**WMGSDP2N/OV**	**WMGSDP2NB/OV**
Printed 'Outside Socket'	**WMGSDP2N/OS**	**-**
Printed 'Outside Light'	**WMGSDP2N/OL**	**-**
Printed 'Plinth Heater'	**WMGSDP2N/PH**	**-**

Data is subject to errors and technical modifications.

Blank Plates

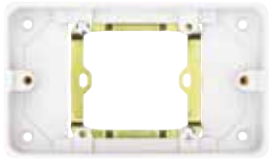
Single Blank Plate	**WMP1**
Twin Blank Plate	**WMP2**

WMP1

WMP2

Pattress Boxes

Characteristics:
- Complies with BS EN 60670-1.
- Depth quoted is internal depth.
- Colour and footprint match all Sollysta White Moulded wiring accessories.



WMPB2/20

Description	Cat ref.
Single 20mm Deep Moulded Box	**WMPB1/20**
Single 28mm Deep Moulded Box	**WMPB1/28**
Single 46mm Deep Moulded Box	**WMPB1/46**
Twin 28mm Deep Moulded Box	**WMPB2/28**
Twin 46mm Deep Moulded Box with Cable Clamps	**WMPB2/46CC**
46mm Deep Moulded Shaver Box	**WMPB2/46**
20mm Single to Twin Converter Frame	**WMPB2/20**
Single 14mm Deep Spacer for Base Flex Outlet	**WMPB1/BFO**

Accessories

Description	Cat ref.
Single Spare Pull Cord	**PULLCORD**
Pack of 100 Push Fit Screw Covers	**SCREWCOVER**
IDC Tools (bag of 10)	**IDCTOOL**

PULLCORD

Hotel Key Card Switch

Characteristics:
- Includes indicator light to aid locating which is switched off when the card is inserted.
- Complies with BS EN 60669-1.
- Supplied with M3.5 x 25mm long fixing screws.

Description	Quantity	Cat ref.
Key Tag Switch with Key Card (time delay 60s)	5	**XH9001**

XH9001

WMSS82OG

WMPS12WG

Part M Wiring Accessories

Characteristics:
- Designed to satisfy Buildings Regulations Approved Document M (referred to as Part M)
- All products comply with their relevant British Standards
- Switches have wide rockers and dark face plates for clear visibility and ease of actuation
- Sockets have outboard rockers to ensure correct switching of appliances and dark face plates for ease of identification of switch position
- Grid modules can be found on page 5.12. Euro modules can be found on page 5.10.

Description	Cat ref. (Grey Faceplate)
Wall Switches	
10AX 1 Gang 2 Way Wide Rocker	**WMPS12WG**
10AX 2 Gang 2 Way Wide Rocker	**WMPS22WG**
Intermediate Switch	
Wide Rocker	**WMPS16WG**
Push Switches	
Wide Rocker	**WMPS12RWG**
Wide Rocker Printed 'Fan Boost'	**WMPS12RWG/FB**
Double Pole Switched Socket Outlets	
13A 1 Gang	**WMSS81G**
13A 2 Gang with Outboard Rockers	**WMSS82OG**
Switched Fused Connection Units	
13A with LED Indicator	**WMSSU83NG**
13A with LED Indicator Printed 'Extract Hood'	**WMSSU83NG/EH**
13A with LED Indicator Printed 'Panel Heater'	**WMSSU83NG/PH**
Double Pole Switches	
20A 1 Gang with LED Indicator	**WMDP84NG**
50A 2 Gang with LED Indicator	**WMDP50NG**
50A 2 Gang with LED Indicator Printed 'Cooker'	**WMDP50NG/CK**
Grid Plates	
1 Gang Grid Plate	**WMGP1G**
2 Gang Grid Plate	**WMGP2G**
3 Gang Grid Plate	**WMGP3G**
4 Gang Grid Plate	**WMGP4G**
6 Gang Grid Plate (2 x 3)	**WMGP6G**
8 Gang Grid Plate (2 x 4)	**WMGP8G**
Euro Style Accommodation Plates	
1 Module	**WMP1EUG**
2 Modules	**WMP2EUG**
4 Modules	**WMP4EUG**

Data is subject to errors and technical modifications.

Specific Equipment Wiring Accessories

Characteristics:
- Red rockers aid ease of identification for safe switching of specific equipment
- Red face plates ensure products are easy to locate
- A range of printed options is available for specific functions

Description	Cat ref. (White Faceplate, Red Rocker)	Cat ref. (Red Faceplate, Red Rocker)
Double Pole Switched Socket Outlets		
13A 1 Gang	**WMSS81R**	**WMSS81RR**
13A 2 Gang	**WMSS82R**	**WMSS82RR**
13A 2 Gang with Outboard Rockers	**WMSS82OR**	**WMSS82ORR**
13A 2 Gang Switched Socket Printed 'Cleaners Socket'	**WMSS82R/CS**	-
13A 2 Gang Switched Socket Printed 'Emergency Supply'	**WMSS82R/ES**	-
13A 2 Gang Switched Socket Printed 'Do Not Switch Off'	**WMSS82R/DNS**	-
13A 2 Gang Switched Socket Printed 'UPS Protected'	**WMSS82R/UPS**	-
Switched Fused Connection Units		
13A Fused Connection Unit Switched	**WMSSU83R**	-
13A Fused Connection Unit Red Face (White Fuse Cover)	**WMSU83R**	-
13A Fused Connection Unit Switched	-	**WMSSU83RR**

WMSS82R/CS

WMSS82ORR

WMSSU83RR

WRPS12PSB

WRPS12BSB

WRPS12PBW

WRPS12BNB

Wall Switches Raised Plate

Characteristics:
- Unique patented LOOP terminal to allow neutral looping at the switch.
- Complies with BS EN 60669-1, a.c only.
- 'X' rated - No need to de-rate for fluorescent loads.
- Capacity of each terminal 2 x 4.0mm² conductors.
- For mounting boxes see selection chart on page 5.47.
- For multi-gang switches, use of a 25mm mounting box will provide increased wiring space.
- Supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref. White Insert	Cat ref. Black Insert
Raised Plate 10AX 1 Gang 2 Way		
Polished Steel	**WRPS12PSW**	**WRPS12PSB**
Brushed Steel	**WRPS12BSW**	**WRPS12BSB**
Polished Brass	**WRPS12PBW**	**WRPS12PBB**
Black Nickel	**-**	**WRPS12BNB**
Raised Plate 10AX 2 Gang 2 Way		
Polished Steel	**WRPS22PSW**	**WRPS22PSB**
Brushed Steel	**WRPS22BSW**	**WRPS22BSB**
Polished Brass	**WRPS22PBW**	**WRPS22PBB**
Black Nickel	**-**	**WRPS22BNB**
Raised Plate 10AX 3 Gang 2 Way		
Polished Steel	**WRPS32PSW**	**WRPS32PSB**
Brushed Steel	**WRPS32BSW**	**WRPS32BSB**
Polished Brass	**WRPS32PBW**	**WRPS32PBB**
Black Nickel	**-**	**WRPS32BNB**
Raised Plate 10AX 4 Gang 2 Way		
Polished Steel	**WRPS42PSW**	**WRPS42PSB**
Brushed Steel	**WRPS42BSW**	**WRPS42BSB**
Polished Brass	**WRPS42PBW**	**WRPS42PBB**
Black Nickel	**-**	**WRPS42BNB**
Raised Plate 10AX 1 Gang 2 Way Wide Rocker		
Polished Steel	**WRPS12WPSW**	**WRPS12WPSB**
Brushed Steel	**WRPS12WBSW**	**WRPS12WBSB**
Polished Brass	**WRPS12WPBW**	**WRPS12WPBB**
Black Nickel	**-**	**WRPS12WBNB**
Raised Plate 10AX 2 Gang 2 Way Wide Rocker		
Polished Steel	**WRPS22WPSW**	**WRPS22WPSB**
Brushed Steel	**WRPS22WBSW**	**WRPS22WBSB**
Polished Brass	**WRPS22WPBW**	**WRPS22WPBB**
Black Nickel	**-**	**WRPS22WBNB**
Raised Plate Intermediate Switch		
Polished Steel	**WRPS16PSW**	**WRPS16PSB**
Brushed Steel	**WRPS16BSW**	**WRPS16BSB**
Polished Brass	**WRPS16PBW**	**WRPS16PBB**
Black Nickel	**-**	**WRPS16BNB**

Data is subject to errors and technical modifications.

Wall Switches Flat Plate

Characteristics:
- Unique patented LOOP terminal to allow neutral looping at the switch.
- Complies with BS EN 60669-1, a.c only.
- 'X' rated - No need to de-rate for fluorescent loads.
- Capacity of each terminal 2 x 4.0mm² conductors.
- For mounting boxes see selection chart on page 5.47.
- For multi-gang switches use of a 25mm mounting box will provide increased wiring space.
- Supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate 10AX 1 Gang 2 Way		
Polished Steel	**WFPS12PSW**	**WFPS12PSB**
Brushed Steel	**WFPS12BSW**	**WFPS12BSB**
Polished Brass	**WFPS12PBW**	**WFPS12PBB**
Black Nickel	**-**	**WFPS12BNB**
Flat Plate 10AX 2 Gang 2 Way		
Polished Steel	**WFPS22PSW**	**WFPS22PSB**
Brushed Steel	**WFPS22BSW**	**WFPS22BSB**
Polished Brass	**WFPS22PBW**	**WFPS22PBB**
Black Nickel	**-**	**WFPS22BNB**
Flat Plate 10AX 3 Gang 2 Way		
Polished Steel	**WFPS32PSW**	**WFPS32PSB**
Brushed Steel	**WFPS32BSW**	**WFPS32BSB**
Polished Brass	**WFPS32PBW**	**WFPS32PBB**
Black Nickel	**-**	**WFPS32BNB**
Flat Plate 10AX 4 Gang 2 Way		
Polished Steel	**WFPS42PSW**	**WFPS42PSB**
Brushed Steel	**WFPS42BSW**	**WFPS42BSB**
Polished Brass	**WFPS42PBW**	**WFPS42PBB**
Black Nickel	**-**	**WFPS42BNB**
Flat Plate 10AX 1 Gang 2 Way Wide Rocker		
Polished Steel	**WFPS12WPSW**	**WFPS12WPSB**
Brushed Steel	**WFPS12WBSW**	**WFPS12WBSB**
Polished Brass	**WFPS12WPBW**	**WFPS12WPBB**
Black Nickel	**-**	**WFPS12WBNB**
Flat Plate 10AX 2 Gang 2 Way Wide Rocker		
Polished Steel	**WFPS22WPSW**	**WFPS22WPSB**
Brushed Steel	**WFPS22WBSW**	**WFPS22WBSB**
Polished Brass	**WFPS22WPBW**	**WFPS22WPBB**
Black Nickel	**-**	**WFPS22WBNB**
Flat Plate Intermediate Switch		
Polished Steel	**WFPS16PSW**	**WFPS16PSB**
Brushed Steel	**WFPS16BSW**	**WFPS16BSB**
Polished Brass	**WFPS16PBW**	**WFPS16PBB**
Black Nickel	**-**	**WFPS16BNB**

WFPS22PSW

WFPS22WBSW

WFPS12PBW

WFPS12BNB

loop terminal

WRDS2BN

WRDS2BS

WRDS3PS

Dimmers Raised Plate

Characteristics:
- Quick press for ON/OFF, hold button down to dim or brighten light level.
- Leading edge.
- Soft start feature prolongs lamp life.
- Suitable for dimming mains and dimmable transformer extra low voltage lamps.
- Automatic switch off in the case of transformer instability, protects the dimmer and the transformer.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref.
Raised Plate 1 Gang Dimmer 400W	
Polished Steel	**WRDS1PS**
Brushed Steel	**WRDS1BS**
Polished Brass	**WRDS1PB**
Black Nickel	**WRDS1BN**
Raised Plate 2 Gang Dimmer 250W	
Polished Steel	**WRDS2PS**
Brushed Steel	**WRDS2BS**
Polished Brass	**WRDS2PB**
Black Nickel	**WRDS2BN**
Raised Plate 3 Gang Dimmer 250W	
Polished Steel	**WRDS3PS**
Brushed Steel	**WRDS3BS**
Polished Brass	**WRDS3PB**
Black Nickel	**WRDS3BN**
Raised Plate 4 Gang Dimmer 250W	
Polished Steel	**WRDS4PS**
Brushed Steel	**WRDS4BS**
Polished Brass	**WRDS4PB**
Black Nickel	**WRDS4BN**

WFDS1PB

WFDS1PS

Dimmers Flat Plate

Description	Cat ref.
Flat Plate 1 Gang Dimmer 400W	
Polished Steel	**WFDS1PS**
Brushed Steel	**WFDS1BS**
Polished Brass	**WFDS1PB**
Black Nickel	**WFDS1BN**
Flat Plate 2 Gang Dimmer 250W	
Polished Steel	**WFDS2PS**
Brushed Steel	**WFDS2BS**
Polished Brass	**WFDS2PB**
Black Nickel	**WFDS2BN**
Flat Plate 3 Gang Dimmer 250W	
Polished Steel	**WFDS3PS**
Brushed Steel	**WFDS3BS**
Polished Brass	**WFDS3PB**
Black Nickel	**WFDS3BN**
Flat Plate 4 Gang Dimmer 250W	
Polished Steel	**WFDS4PS**
Brushed Steel	**WFDS4BS**
Polished Brass	**WFDS4PB**
Black Nickel	**WFDS4BN**

Data is subject to errors and technical modifications.

Isolator Switches Raised Plate

Characteristics:
- Complies with BS EN 60669-2-4.
- Capacity of each terminal 2 x 4.0mm² conductors.
- For mounting boxes see selection chart on page 5.47.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref. White Insert	Cat ref. Black Insert
Raised Plate 3 Pole Fan Isolator Switch		
Polished Steel	**WRPS3PIPSW**	**WRPS3PIPSB**
Brushed Steel	**WRPS3PIBSW**	**WRPS3PIBSB**
Polished Brass	**WRPS3PIPBW**	**WRPS3PIPBB**
Black Nickel	**-**	**WRPS3PIBNB**

WRPS3PIPSW

Isolator Switches Flat Plate

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate 3 Pole Fan Isolator Switch		
Polished Steel	**WFPS3PIPSW**	**WFPS3PIPSB**
Brushed Steel	**WFPS3PIBSW**	**WFPS3PIBSB**
Polished Brass	**WFPS3PIPBW**	**WFPS3PIPBB**
Black Nickel	**-**	**WFPS3PIBNB**

WFPS3PIBNB

Socket Outlets Raised Plates

Characteristics:
- Unique patented three part safety shutter.
- Complies with BS 1363 Part 2, a.c only.
- Double pole switching mechanism on switched sockets.
- Twin socket comes with twin earth as standard.
- All terminals are upward facing with clearly printed terminal markings for ease of installation.
- Capacity of each terminal: 3 x 4mm² conductors, switched & unswitched (for other sized conductors see terminal capacities on page 5.48).
- For mounting boxes see selection chart on page 5.47.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.
- **Sockets with USB connections - Warning:** To avoid possible damage to the product or spurious insulation readings, please disconnect the product before carrying out insulation resistance testing.
- **Sockets with USB connections:** USB output: 5V d.c. 2.4A total max.
- All decorative USB sockets come with spacer colour matched to insert and 30mm & 20mm screws.

Description	Cat ref. White Insert	Cat ref. Black Insert
Raised Plate 1 Gang Double Pole Switched Socket		
Polished Steel	**WRSS81PSW**	**WRSS81PSB**
Brushed Steel	**WRSS81BSW**	**WRSS81BSB**
Polished Brass	**WRSS81PBW**	**WRSS81PBB**
Black Nickel	**-**	**WRSS81BNB**
Raised Plate 2 Gang Double Pole Switched Socket Dual Earth		
Polished Steel	**WRSS82PSW**	**WRSS82PSB**
Brushed Steel	**WRSS82BSW**	**WRSS82BSB**
Polished Brass	**WRSS82PBW**	**WRSS82PBB**
Black Nickel	**-**	**WRSS82BNB**
Raised Plate 5A 1 Gang Unswitched Socket		
Polished Steel	**WRS51PSW**	**WRS51PSB**
Brushed Steel	**WRS51BSW**	**WRS51BSB**
Polished Brass	**WRS51PBW**	**WRS51PBB**
Black Nickel	**-**	**WRS51BNB**
Raised Plate 2 Gang Double Pole Dual Earth Switched Socket & Two USB Ports		
Polished Steel	**WRSS82PSW-USB**	**WRSS82PSB-USB**
Brushed Steel	**WRSS82BSW-USB**	**WRSS82BSB-USB**
Polished Brass	**WRSS82PBW-USB**	**WRSS82PBB-USB**
Black Nickel		**WRSS82BNB-USB**

WRSS81PBW

WRSS81BNB

WRSS82PBB

WRSS82PSW-USB

WFSS81BSW

WFSS82PBW

WFSS82BNB-USB

WFSS82BSW-USB

Socket Outlets Flat Plates

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate 1 Gang Double Pole Switched Socket		
Polished Steel	**WFSS81PSW**	**WFSS81PSB**
Brushed Steel	**WFSS81BSW**	**WFSS81BSB**
Polished Brass	**WFSS81PBW**	**WFSS81PBB**
Black Nickel	**-**	**WFSS81BNB**
Flat Plate 2 Gang Double Pole Switched Socket Dual Earth		
Polished Steel	**WFSS82PSW**	**WFSS82PSB**
Brushed Steel	**WFSS82BSW**	**WFSS82BSB**
Polished Brass	**WFSS82PBW**	**WFSS82PBB**
Black Nickel	**-**	**WFSS82BNB**
Flat Plate 5A 1 Gang Unswitched Socket		
Polished Steel	**WFS51PSW**	**WFS51PSB**
Brushed Steel	**WFS51BSW**	**WFS51BSB**
Polished Brass	**WFS51PBW**	**WFS51PBB**
Black Nickel	**-**	**WFS51BNB**
Raised Plate 2 Gang Double Pole Dual Earth Switched Socket & Two USB Ports		
Polished Steel	**WFSS82PSW-USB**	**WFSS82PSB-USB**
Brushed Steel	**WFSS82BSW-USB**	**WFSS82BSB-USB**
Polished Brass	**WFSS82PBW-USB**	**WFSS82PBB-USB**
Black Nickel		**WFSS82BNB-USB**

WRCC50NPSB

WRCC50NBNB

Cooker Control Unit Raised Plate

Characteristics:
- Complies with BS 4177.
- Switch and socket are double pole with twin earth as standard.
- Main switch is suitable for isolation.
- All terminals are upward facing with clearly printed terminal markings for ease of installation.
- Capacity of terminals 2 x 6.0mm², 1 x 16.0mm².
- For mounting boxes see selection chart on page 5.47.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref. White Insert	Cat ref. Black Insert
Raised Plate 45A Cooker Control Unit		
Polished Steel	**WRCC50NPSW**	**WRCC50NPSB**
Brushed Steel	**WRCC50NBSW**	**WRCC50NBSB**
Polished Brass	**WRCC50NPBW**	**WRCC50NPBB**
Black Nickel	**-**	**WRCC50NBNB**

WFCC50NPSW

Cooker Control Unit Flat Plate

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate 45A Cooker Control Unit		
Polished Steel	**WFCC50NPSW**	**WFCC50NPSB**
Brushed Steel	**WFCC50NBSW**	**WFCC50NBSB**
Polished Brass	**WFCC50NPBW**	**WFCC50NPBB**
Black Nickel	**-**	**WFCC50NBNB**

Data is subject to errors and technical modifications.

Fused Connection Units Raised Plate

Characteristics:
- Complies with BS 1363-4.
- Single screw fast fix cable clamp accommodates up to 1.5mm² flexible cord.
- All terminals are upward facing with clearly printed terminal markings for ease of installation.
- Capacity of each terminal 2 x 6.0 mm² conductors.
- For mounting boxes see selection chart on page 5.47.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref. White Insert	Cat ref. Black Insert
Raised Plate 13A FCU Switched		
Polished Steel	**WRSSU83PSW**	**WRSSU83PSB**
Brushed Steel	**WRSSU83BSW**	**WRSSU83BSB**
Polished Brass	**WRSSU83PBW**	**WRSSU83PBB**
Black Nickel	**-**	**WRSSU83BNB**
Raised Plate 13A FCU Switched with Flex Outlet		
Polished Steel	**WRSSU83FOPSW**	**WRSSU83FOPSB**
Brushed Steel	**WRSSU83FOBSW**	**WRSSU83FOBSB**
Polished Brass	**WRSSU83FOPBW**	**WRSSU83FOPBB**
Black Nickel	**-**	**WRSSU83FOBNB**
Raised Plate 13A FCU Unswitched		
Polished Steel	**WRSU83PSW**	**WRSU83PSB**
Brushed Steel	**WRSU83BSW**	**WRSU83BSB**
Polished Brass	**WRSU83PBW**	**WRSU83PBB**
Black Nickel	**-**	**WRSU83BNB**

WRSSU83FOBSW

WRSSU83PBB

Fused Connection Units Flat Plate

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate 13A FCU Switched		
Polished Steel	**WFSSU83PSW**	**WFSSU83PSB**
Brushed Steel	**WFSSU83BSW**	**WFSSU83BSB**
Polished Brass	**WFSSU83PBW**	**WFSSU83PBB**
Black Nickel	**-**	**WFSSU83BNB**
Flat Plate 13A FCU Switched with Flex Outlet		
Polished Steel	**WFSSU83FOPSW**	**WFSSU83FOPSB**
Brushed Steel	**WFSSU83FOBSW**	**WFSSU83FOBSB**
Polished Brass	**WFSSU83FOPBW**	**WFSSU83FOPBB**
Black Nickel	**-**	**WFSSU83FOBNB**
Flat Plate 13A FCU Unswitched		
Polished Steel	**WFSU83PSW**	**WFSU83PSB**
Brushed Steel	**WFSU83BSW**	**WFSU83BSB**
Polished Brass	**WFSU83PBW**	**WFSU83PBB**
Black Nickel	**-**	**WFSU83BNB**

WFSU83BSW

WFSSU83FOBNB

WRDP84PBW

WRDP84BNB

Double Pole Switches Raised Plate (20A)

Characteristics:
- Complies with BS EN 60699-2-4 a.c. only.
- Single screw fast fix cable clamp accommodates up to 1.5mm² flexible cord.
- All terminals are upward facing with clearly printed terminal markings for ease of installation.
- Capacity of each terminal 2 x 6.0mm² conductors.
- For mounting boxes see selection chart on page 5.47.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref. White Insert	Cat ref. Black Insert
Raised Plate 20A Double Pole Switch		
Polished Steel	**WRDP84PSW**	**WRDP84PSB**
Brushed Steel	**WRDP84BSW**	**WRDP84BSB**
Polished Brass	**WRDP84PBW**	**WRDP84PBB**
Black Nickel	**-**	**WRDP84BNB**
Raised Plate 20A Double Pole Switch with Flex Outlet		
Polished Steel	**WRDP84FOPSW**	**WRDP84FOPSB**
Brushed Steel	**WRDP84FOBSW**	**WRDP84FOBSB**
Polished Brass	**WRDP84FOPBW**	**WRDP84FOPBB**
Black Nickel	**-**	**WRDP84FOBNB**
Raised Plate 20A Double Pole Switch with LED Indicator		
Polished Steel	**WRDP84NPSW**	**WRDP84NPSB**
Brushed Steel	**WRDP84NBSW**	**WRDP84NBSB**
Polished Brass	**WRDP84NPBW**	**WRDP84NPBB**
Black Nickel	**-**	**WRDP84NBNB**

WFDP84FOPSW

WFDP84BSW

Double Pole Switches Flat Plate (20A)

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate 20A Double Pole Switch		
Polished Steel	**WFDP84PSW**	**WFDP84PSB**
Brushed Steel	**WFDP84BSW**	**WFDP84BSB**
Polished Brass	**WFDP84PBW**	**WFDP84PBB**
Black Nickel	**-**	**WFDP84BNB**
Flat Plate 20A Double Pole Switch with Flex Outlet		
Polished Steel	**WFDP84FOPSW**	**WFDP84FOPSB**
Brushed Steel	**WFDP84FOBSW**	**WFDP84FOBSB**
Polished Brass	**WFDP84FOPBW**	**WFDP84FOPBB**
Black Nickel	**-**	**WFDP84FOBNB**
Flat Plate 20A Double Pole Switch with LED Indicator		
Polished Steel	**WFDP84NPSW**	**WFDP84NPSB**
Brushed Steel	**WFDP84NBSW**	**WFDP84NBSB**
Polished Brass	**WFDP84NPBW**	**WFDP84NPBB**
Black Nickel	**-**	**WFDP84NBNB**

Data is subject to errors and technical modifications.

Double Pole Switches Raised Plate (50A)

WRDP50NPBB

Characteristics:
- Complies with BS EN 60669-2-4.
- Rated conditional short circuit current (I_{nc}) 1500A tested with Hager **MTN150** 6kA B curve MCB.
- All terminals are upward facing with clearly printed terminal markings for ease of installation.
- Capacity of each terminal 2 x 6mm², 1 x 10mm².
- For mounting boxes see selection chart on page 5.47.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref. White Insert	Cat ref. Black Insert
Raised Plate 50A Double Pole Switch 1 Gang with LED Indicator		
Polished Steel	**WRDP50NPSW**	**WRDP50NPSB**
Brushed Steel	**WRDP50NBSW**	**WRDP50NBSB**
Polished Brass	**WRDP50NPBW**	**WRDP50NPBB**
Black Nickel	**-**	**WRDP50NBNB**

Double Pole Switches Flat Plate (50A)

WFDP50NPSB

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate 50A Double Pole Switch 1 Gang with LED Indicator		
Polished Steel	**WFDP50NPSW**	**WFDP50NPSB**
Brushed Steel	**WFDP50NBSW**	**WFDP50NBSB**
Polished Brass	**WFDP50NPBW**	**WFDP50NPBB**
Black Nickel	**-**	**WFDP50NBNB**

Shaver Socket Raised Plate

WRSO100PSW

Characteristics:
- Complies with BS EN 61558-2-5.
- Capacity of each terminal 2 x 2.5mm² conductors.
- Designed for use in bath/shower rooms & incorporates a double wound transformer for an earth free supply.
- Designed to supply electric shavers rated 50 VA or less.
- Input 230V a.c. output dual voltage 230V a.c. and 115V a.c. outlets.
- Rating 20VA on either voltage.
- Primary circuit protected by a self resetting thermal overload device.
- Insertion of shaver plug automatically switches on the transformer.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref. White Insert	Cat ref. Black Insert
Raised Plate 115/230V Shaver Socket		
Polished Steel	**WRSO100PSW**	**WRSO100PSB**
Brushed Steel	**WRSO100BSW**	**WRSO100BSB**
Polished Brass	**WRSO100PBW**	**WRSO100PBB**
Black Nickel	**-**	**WRSO100BNB**

Shaver Socket Flat Plate

WFSO100PSW

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate 115/230V Shaver Socket		
Polished Steel	**WFSO100PSW**	**WFSO100PSB**
Brushed Steel	**WFSO100BSW**	**WFSO100BSB**
Polished Brass	**WFSO100PBW**	**WFSO100PBB**
Black Nickel	**-**	**WFSO100BNB**

WRBTMBSW

WRBTMPBW

Telephone & Data Raised Plate

Characteristics:
- BT sockets comply with BS 6312-2.
- Supplied with fitted cable tie.
- Quick connection with insulation displacement terminals.
- Clearly printed terminal marking.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref. White Insert	Cat ref. Black Insert
Raised Plate BT Master Telephone Outlet		
Polished Steel	**WRBTMPSW**	**WRBTMPSB**
Brushed Steel	**WRBTMBSW**	**WRBTMBSB**
Polished Brass	**WRBTMPBW**	**WRBTMPBB**
Black Nickel	**-**	**WRBTMBNB**
Raised Plate BT Secondary Telephone Outlet		
Polished Steel	**WRBTSPSW**	**WRBTSPSB**
Brushed Steel	**WRBTSBSW**	**WRBTSBSB**
Polished Brass	**WRBTSPBW**	**WRBTSPBB**
Black Nickel	**-**	**WRBTSBNB**
Raised Plate RJ45 Socket		
Polished Steel	**WRRJ45PSW**	**WRRJ45PSB**
Brushed Steel	**WRRJ45BSW**	**WRRJ45BSB**
Polished Brass	**WRRJ45PBW**	**WRRJ45PBB**
Black Nickel	**-**	**WRRJ45BNB**

WFBTMBNB

WFBTMPSW

Telephone & Data Flat Plate

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate BT Master Telephone Outlet		
Polished Steel	**WFBTMPSW**	**WFBTMPSB**
Brushed Steel	**WFBTMBSW**	**WFBTMBSB**
Polished Brass	**WFBTMPBW**	**WFBTMPBB**
Black Nickel	**-**	**WFBTMBNB**
Flat Plate BT Secondary Telephone Outlet		
Polished Steel	**WFBTSPSW**	**WFBTSPSB**
Brushed Steel	**WFBTSBSW**	**WFBTSBSB**
Polished Brass	**WFBTSPBW**	**WFBTSPBB**
Black Nickel	**-**	**WFBTSBNB**
Flat Plate RJ45 Socket		
Polished Steel	**WFRJ45PSW**	**WFRJ45PSB**
Brushed Steel	**WFRJ45BSW**	**WFRJ45BSB**
Polished Brass	**WFRJ45PBW**	**WFRJ45PBB**
Black Nickel	**-**	**WFRJ45BNB**

Data is subject to errors and technical modifications.

TV & Satellite Raised Plate

Characteristics:
- TV outlets comply with BS 3041.
- Satellite outlets comply with BS EN 50083-2.
- Fully screened.
- DAB compatible.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref. White Insert	Cat ref. Black Insert
Raised Plate Single F Type Satellite Outlet Screened		
Polished Steel	**WRSATPSW**	**WRSATPSB**
Brushed Steel	**WRSATBSW**	**WRSATBSB**
Polished Brass	**WRSATPBW**	**WRSATPBB**
Black Nickel	**-**	**WRSATBNB**
Raised Plate Single CO-AX TV Outlet Female		
Polished Steel	**WRTVFPSW**	**WRTVFPSB**
Brushed Steel	**WRTVFBSW**	**WRTVFBSB**
Polished Brass	**WRTVFPBW**	**WRTVFPBB**
Black Nickel	**-**	**WRTVFBNB**
Raised Plate Double TV & FM/DAB CO-AX Socket Outlet		
Polished Steel	**WRDXPSW**	**WRDXPSB**
Brushed Steel	**WRDXBSW**	**WRDXBSB**
Polished Brass	**WRDXPBW**	**WRDXPBB**
Black Nickel	**-**	**WRDXBNB**
Raised Plate Triplexer TV, FM/DAB & Satellite Outlet		
Polished Steel	**WRTXPSW**	**WRTXPSB**
Brushed Steel	**WRTXBSW**	**WRTXBSB**
Polished Brass	**WRTXPBW**	**WRTXPBB**
Black Nickel	**-**	**WRTXBNB**
Raised Plate Quadplexer TV, FM/DAB, Satellite 1 & Satellite 2 Outlet		
Polished Steel	**WRQXPSW**	**WRQXPSB**
Brushed Steel	**WRQXBSW**	**WRQXBSB**
Polished Brass	**WRQXPBW**	**WRQXPBB**
Black Nickel	**-**	**WRQXBNB**

WRSATBSW

WRSATPSW

WRDXPBW

WRTXBNB

TV & Satellite Flat Plate

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate Single F Type Satellite Outlet Screened		
Polished Steel	**WFSATPSW**	**WFSATPSB**
Brushed Steel	**WFSATBSW**	**WFSATBSB**
Polished Brass	**WFSATPBW**	**WFSATPBB**
Black Nickel	**-**	**WFSATBNB**
Flat Plate Single CO-AX TV Outlet Female		
Polished Steel	**WFTVFPSW**	**WFTVFPSB**
Brushed Steel	**WFTVFBSW**	**WFTVFBSB**
Polished Brass	**WFTVFPBW**	**WFTVFPBB**
Black Nickel	**-**	**WFTVFBNB**

WFTVFBSW

WFDXBSW

TV & Satellite Flat Plate Continued

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate Double TV & FM/DAB CO-AX Socket Outlet		
Polished Steel	**WFDXPSW**	**WFDXPSB**
Brushed Steel	**WFDXBSW**	**WFDXBSB**
Polished Brass	**WFDXPBW**	**WFDXPBB**
Black Nickel	**-**	**WFDXBNB**
Flat Plate Triplexer TV, FM/DAB & Satellite Outlet		
Polished Steel	**WFTXPSW**	**WFTXPSB**
Brushed Steel	**WFTXBSW**	**WFTXBSB**
Polished Brass	**WFTXPBW**	**WFTXPBB**
Black Nickel	**-**	**WFTXBNB**
Flat Plate Quadplexer TV, FM/DAB, Satellite 1 & Satellite 2 Outlet		
Polished Steel	**WFQXPSW**	**WFQXPSB**
Brushed Steel	**WFQXBSW**	**WFQXBSB**
Polished Brass	**WFQXPBW**	**WFQXPBB**
Black Nickel	**-**	**WFQXBNB**

WRP1EUPBW

WRP1EUPSB

WRP1EUPSB

Euro Frontplates Raised Plate

Characteristics:
- Carrier plates facilitate installation of industry standard modules.
- Easy to configure for all applications.
- Quick release of modules for maintenance.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref. White Insert	Cat ref. Black Insert
Raised Plate 1 Module		
Polished Steel	**WRP1EUPSW**	**WRP1EUPSB**
Brushed Steel	**WRP1EUBSW**	**WRP1EUBSB**
Polished Brass	**WRP1EUPBW**	**WRP1EUPBB**
Black Nickel	**-**	**WRP1EUBNB**
Raised Plate 2 Modules		
Polished Steel	**WRP2EUPSW**	**WRP2EUPSB**
Brushed Steel	**WRP2EUBSW**	**WRP2EUBSB**
Polished Brass	**WRP2EUPBW**	**WRP2EUPBB**
Black Nickel	**-**	**WRP2EUBNB**
Raised Plate 4 Modules		
Polished Steel	**WRP4EUPSW**	**WRP4EUPSB**
Brushed Steel	**WRP4EUBSW**	**WRP4EUBSB**
Polished Brass	**WRP4EUPBW**	**WRP4EUPBB**
Black Nickel	**-**	**WRP4EUBNB**

Data is subject to errors and technical modifications.

Euro Frontplates Flat Plate

Characteristics:
- Carrier plates facilitate installation of industry standard modular data outlets.
- Easy to configure for all applications.
- Quick release of modules for maintenance.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate 1 Module		
Polished Steel	**WFP1EUPSW**	**WFP1EUPSB**
Brushed Steel	**WFP1EUBSW**	**WFP1EUBSB**
Polished Brass	**WFP1EUPBW**	**WFP1EUPBB**
Black Nickel	**-**	**WFP1EUBNB**
Flat Plate 2 Modules		
Polished Steel	**WFP2EUPSW**	**WFP2EUPSB**
Brushed Steel	**WFP2EUBSW**	**WFP2EUBSB**
Polished Brass	**WFP2EUPBW**	**WFP2EUPBB**
Black Nickel	**-**	**WFP2EUBNB**
Flat Plate 4 Modules		
Polished Steel	**WFP4EUPSW**	**WFP4EUPSB**
Brushed Steel	**WFP4EUBSW**	**WFP4EUBSB**
Polished Brass	**WFP4EUPBW**	**WFP4EUPBB**
Black Nickel	**-**	**WFP4EUBNB**

WFP1EUBSB

WFP1EUBNB

Euro Style Modules

Description	Mod Width	Cat ref. (White)	Cat ref. (Black)
BT Telephone Master Euromodule	1	**WMMBTM**	**WMMBTMB**
BT Telephone Secondary Euromodule	1	**WMMBTS**	**WMMBTSB**
RJ11 - Modem Euromodule	1	**WMMRJ11**	**WMMRJ11B**
RJ45 - Cat 6 UTP Euromodule	1	**WMMRJ45**	**WMMRJ45B**
Phono Plugs - Red/Black - Gold Plated Euromodule	1	**WMMPP**	**-**
Speaker Terminal Posts - Gold Plated Euromodule	1	**WMMSP**	**-**
Single IEC Female Non Isolated Euromodule	1	**WMMTVF**	**WMMTVFB**
Single IEC Male Non Isolated Euromodule	1	**WMMTVM**	**WMMTVMB**
Single Satellite F Connector Euromodule	1	**WMMSAT**	**WMMSATB**
Single Blank Euromodule	1	**WMMB**	**WMMBB**
PIR Occupancy Sensor Euromodule 5m	1	**WMMPIR05X**	**-**
PIR Occupancy Sensor Euromodule 10m	1	**WMMPIR10X**	**-**
HDMI Module	2	**WMMHDMI**	**WMMHDMIB**
USB Euromodule with Twin USB	2	**WMMUSB**	**WMMUSBB**
Diplexer - TV & FM Radio Euromodule	2	**WMMDX**	**WMMDXB**
Triplexer - TV, Satellite & FM Radio Euromodule	2	**WMMTX**	**WMMTXB**
Quadplexer - TV, Satellite, FM Radio & Return Euromodule	2	**WMMQX**	**WMMQXB**

WMMBTM WMMSAT

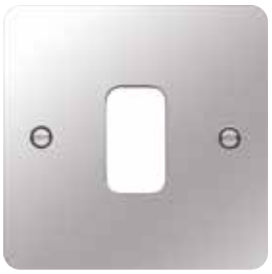
WMMQXB

WFTVLPPSW

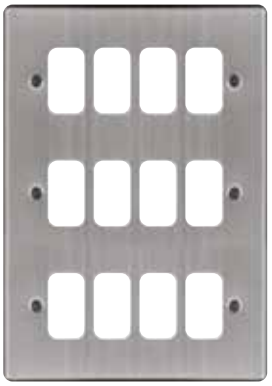
Euro Lounge Plates

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate Lounge Plate for TV, Power & Data		
Polished Steel	**WFTVLPPSW**	**WFTVLPPSB**
Brushed Steel	**WFTVLPBSW**	**WFTVLPBSB**
Black Nickel	**-**	**WFTVLPBNB**
White Metal	**WFTVLPWW**	**-**
Raised Plate Lounge Plate for TV, Power & Data		
White Metal	**WRTVLPWW**	**-**
Lounge Plate Back Box		
Steel	**WFTVBOX**	**-**

WRGP1PB



WFGP1PS



WRGP12BS

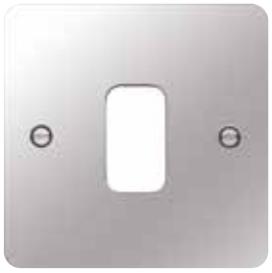
Grid Plates Raised Plate

Description	Cat ref.
Raised Plate 1 Gang Grid Plate	
Polished Steel	**WRGP1PS**
Brushed Steel	**WRGP1BS**
Polished Brass	**WRGP1PB**
Black Nickel	**WRGP1BN**
Raised Plate 2 Gang Grid Plate	
Polished Steel	**WRGP2PS**
Brushed Steel	**WRGP2BS**
Polished Brass	**WRGP2PB**
Black Nickel	**WRGP2BN**
Raised Plate 3 Gang Grid Plate	
Polished Steel	**WRGP3PS**
Brushed Steel	**WRGP3BS**
Polished Brass	**WRGP3PB**
Black Nickel	**WRGP3BN**
Raised Plate 4 Gang Grid Plate	
Polished Steel	**WRGP4PS**
Brushed Steel	**WRGP4BS**
Polished Brass	**WRGP4PB**
Black Nickel	**WRGP4BN**
Raised Plate 6 Gang (3 x 2) Grid Plate	
Polished Steel	**WRGP6PS**
Brushed Steel	**WRGP6BS**
Polished Brass	**WRGP6PB**
Black Nickel	**WRGP6BN**
Raised Plate 8 Gang (4 x 2) Grid Plate	
Polished Steel	**WRGP8PS**
Brushed Steel	**WRGP8BS**
Polished Brass	**WRGP8PB**
Black Nickel	**WRGP8BN**
Raised Plate 12 Gang (4 x 3) Grid Plate	
Polished Steel	**WRGP12PS**
Brushed Steel	**WRGP12BS**
Polished Brass	**WRGP12PB**
Black Nickel	**WRGP12BN**

Data is subject to errors and technical modifications.

Grid Plates Flat Plate

Description	Cat ref.
Flat Plate 1 Gang Grid Plate	
Polished Steel	**WFGP1PS**
Brushed Steel	**WFGP1BS**
Polished Brass	**WFGP1PB**
Black Nickel	**WFGP1BN**
Flat Plate 2 Gang Grid Plate	
Polished Steel	**WFGP2PS**
Brushed Steel	**WFGP2BS**
Polished Brass	**WFGP2PB**
Black Nickel	**WFGP2BN**
Flat Plate 3 Gang Grid Plate	
Polished Steel	**WFGP3PS**
Brushed Steel	**WFGP3BS**
Polished Brass	**WFGP3PB**
Black Nickel	**WFGP3BN**
Flat Plate 4 Gang Grid Plate	
Polished Steel	**WFGP4PS**
Brushed Steel	**WFGP4BS**
Polished Brass	**WFGP4PB**
Black Nickel	**WFGP4BN**
Flat Plate 6 Gang (3 x 2) Grid Plate	
Polished Steel	**WFGP6PS**
Brushed Steel	**WFGP6BS**
Polished Brass	**WFGP6PB**
Black Nickel	**WFGP6BN**
Flat Plate 8 Gang (4 x 2) Grid Plate	
Polished Steel	**WFGP8PS**
Brushed Steel	**WFGP8BS**
Polished Brass	**WFGP8PB**
Black Nickel	**WFGP8BN**
Flat Plate 12 Gang (4 x 3) Grid Plate	
Polished Steel	**WFGP12PS**
Brushed Steel	**WFGP12BS**
Polished Brass	**WFGP12PB**
Black Nickel	**WFGP12BN**



WFGP1PS

WFGP2BS

WFGP3PB

Grid Frames

Description	Cat ref.
Frames for White Moulded and Decorative Raised Plate ranges	
1 Gang Frame	**WMGF1**
2 Gang Frame	**WMGF2**
3/4 Gang Frame	**WMGF34**
Frames for Decorative Flat Plate ranges	
1 Gang Frame	**WFGF1**
2 Gang Frame	**WFGF2**
3/4 Gang Frame	**WFGF34**

WMGF34

WMGKS

WMGB1

WMINDRED

WMGSDP2/CHD

WMGSDP2/EF

Grid Switches - White Moulded Finish

Characteristics:
- Complies with BS EN 606691-1 switches, BS 5733 fuse carrier.
- Shallowest switch modules which clip in from the front for ease of installation and maintenance.
- Terminal screw can be accessed with modules clipped into frames.
- Frames locate to finished wall level.
- Frames clip together to ease alignment for 6 gang and 8 gang applications.
- We also offer a bespoke printing service for your individual requirements. Please contact our Sales Service Centre on 01952 675612 for further details.

Description	Cat ref. White Insert	Cat ref. Black Insert
Grid Switches		
Blank Module	**WMGB1**	**-**
20AX 2 Way Single Pole Switch	**WMGS12**	**-**
20A Intermediate Switch	**WMGS16**	**-**
20A 2 Way Retractive Switch	**WMGS22R**	**-**
20A 1 Way Double Pole Switch	**WMGSDP2**	**-**
20A 1 Way Double Pole Switch with LED Indicator	**WMGSDP2N**	**-**
20A Double Pole Key Switch	**WMGKS**	**WMGKSB**
20A Double Pole Key Switch Printed 'Emergency Lighting Test'	**WMGKS/EL**	**-**
13A Fuse Carrier	**WMGFU13**	**-**
Dimmer Slave Switch	**WMGSD1S**	**WMGSD1SB**
Dimmer Switch Leading Edge	**WMGSD1L**	**WMGSD1LB**
Dimmer Switch Trailing Edge	**WMGSD1T**	**WMGSD1TB**
Red Indicator	**WMINDRED**	**WMINDREDB**
2 Way & Centre Off Latching Switch	**WMGS13L**	**WMGS13LB**
2 Way & Centre Off Latching Switch Red Rocker	**WMGS13LR**	**-**
2 Way & Centre Off Retractive Switch	**WMGS13R**	**WMGS13RB**
2 Way & Centre Off Retractive Switch Red Rocker	**WMGS13RR**	**-**
13A Fused Connection Unit Unswitched with LED	**WMGSU83N**	**-**
20A 1 Way Double Pole Grid Switches - Printed		
Printed 'Cooker Hood'	**WMGSDP2/CHD**	**WMGSDP2B/CHD**
Printed 'Dishwasher'	**WMGSDP2/DW**	**WMGSDP2B/DW**
Printed 'Extract Fan'	**WMGSDP2/EF**	**WMGSDP2B/EF**
Printed 'Fridge Freezer'	**WMGSDP2/FF**	**WMGSDP2B/FF**
Printed 'Freezer'	**WMGSDP2/FRE**	**WMGSDP2B/FRE**
Printed 'Fridge'	**WMGSDP2/FRI**	**WMGSDP2B/FRI**
Printed 'Hob'	**WMGSDP2/HB**	**WMGSDP2B/HB**
Printed 'Heating'	**WMGSDP2/HTG**	**WMGSDP2B/HTG**
Printed 'Microwave'	**WMGSDP2/MW**	**WMGSDP2B/MW**
Printed 'Micro Wave'	**WMGSDP2/MW2**	**WMGSDP2B/MW2**
Printed 'Tumble Dryer'	**WMGSDP2/TD**	**WMGSDP2B/TD**
Printed 'Waste Disposal'	**WMGSDP2/WD**	**WMGSDP2B/WD**
Printed 'Washing Machine'	**WMGSDP2/WM**	**WMGSDP2B/WM**
Printed 'Oven'	**WMGSDP2/OV**	**WMGSDP2B/OV**
Printed 'Wine Cooler'	**WMGSDP2/WC**	**WMGSDP2B/WC**
Printed 'Hot Water'	**WMGSDP2/HW**	**WMGSDP2B/HW**
Printed 'Coffee Maker'	**WMGSDP2/CM**	**WMGSDP2B/CM**
Printed 'Hot Drawer'	**WMGSDP2/HD**	**WMGSDP2B/HD**
Printed 'Fan Boost'	**WMGSDP2/FB**	**WMGSDP2B/FB**
Printed 'Outside Socket'	**WMGSDP2/OS**	**WMGSDP2B/OS**
Printed 'Steam Oven'	**WMGSDP2/SOV**	
Printed 'Boiler'	**WMGSDP2/BOI**	**-**
Printed 'Outside Light'	**WMGSDP2/OL**	**-**
Printed 'Plinth Heater'	**WMGSDP2/PH**	**-**

Data is subject to errors and technical modifications.

Grid Switches - Printed

Characteristics:
- Complies with BS EN 606691-1 switches, BS 5733 fuse carrier.
- Shallowest switch modules which clip in from the front for ease of installation and maintenance.
- Terminal screw can be accessed with modules clipped into frames.
- Frames locate to finished wall level.
- Frames clip together to ease alignment for 6 gang and 8 gang applications.
- We also offer a bespoke printing service for your individual requirements. Please contact our Sales Service Centre on 01952 675612 for further details.

Description	Cat ref. White Insert	Cat ref. Black Insert
20A 1 Way Double Pole Grid Switches with LED Indicator - Printed		
Printed 'Cooker Hood'	**WMGSDP2N/CHD**	**WMGSDP2NB/CHD**
Printed 'Dishwasher'	**WMGSDP2N/DW**	**WMGSDP2NB/DW**
Printed 'Extract Fan'	**WMGSDP2N/EF**	**WMGSDP2NB/EF**
Printed 'Fridge Freezer'	**WMGSDP2N/FF**	**WMGSDP2NB/FF**
Printed 'Freezer'	**WMGSDP2N/FRE**	**WMGSDP2NB/FRE**
Printed 'Fridge'	**WMGSDP2N/FRI**	**WMGSDP2NB/FRI**
Printed 'Hob'	**WMGSDP2N/HB**	**WMGSDP2NB/HB**
Printed 'Heating'	**WMGSDP2N/HTG**	**WMGSDP2NB/HTG**
Printed 'Microwave'	**WMGSDP2N/MW**	**WMGSDP2NB/MW**
Printed 'Tumble Dryer'	**WMGSDP2N/TD**	**WMGSDP2NB/TD**
Printed 'Waste Disposal'	**WMGSDP2N/WD**	**WMGSDP2NB/WD**
Printed 'Washing Machine'	**WMGSDP2N/WM**	**WMGSDP2NB/WM**
Printed 'Oven'	**WMGSDP2N/OV**	**WMGSDP2NB/OV**
Printed 'Outside Socket'	**WMGSDP2N/OS**	**-**
Printed 'Outside Light'	**WMGSDP2N/OL**	**-**
Printed 'Plinth Heater'	**WMGSDP2N/PH**	**-**

WMGSDP2N/CHD

WMGSDP2N/DW

WMGSDP2N/EF

WMGSDP2N/FF

WMGB1BSW

WMGS12PBW

WMGS12PSB

WMGB1BNB

WMGB1BSW

Grid Switches - Decorative Finish

Characteristics:
- Complies with BS EN 606691-1 switches, BS 5733 fuse carrier.
- Shallowest switch modules for ease of installation.
- Modules clip from the front for ease of installation and maintenance.
- Terminal screw can be accessed with modules clipped into frames.
- Frames locate to finished wall level.
- Frames clip to ease alignment for 6 gang and 8 gang applications.

Description	Cat ref. White Insert	Cat ref. Black Insert
20AX 2 Way Single Pole Switch		
Polished Steel	**WMGS12PSW**	**WMGS12PSB**
Brushed Steel	**WMGS12BSW**	**WMGS12BSB**
Polished Brass	**WMGS12PBW**	**WMGS12PBB**
Black Nickel	**-**	**WMGS12BNB**
20A Intermediate Switch		
Polished Steel	**WMGS16PSW**	**WMGS16PSB**
Brushed Steel	**WMGS16BSW**	**WMGS16BSB**
Polished Brass	**WMGS16PBW**	**WMGS16PBB**
Black Nickel	**-**	**WMGS16BNB**
20A 2 Way Retractive Switch		
Polished Steel	**WMGS22RPSW**	**WMGS22RPSB**
Brushed Steel	**WMGS22RBSW**	**WMGS22RBSB**
Polished Brass	**WMGS22RPBW**	**WMGS22RPBB**
Black Nickel	**-**	**WMGS22RBNB**
20A 1 Way Double Pole Switch		
Polished Steel	**WMGSDP2PSW**	**WMGSDP2PSB**
Brushed Steel	**WMGSDP2BSW**	**WMGSDP2BSB**
Polished Brass	**WMGSDP2PBW**	**WMGSDP2PBB**
Black Nickel	**-**	**WMGSDP2BNB**
13A Fuse Carrier		
Polished Steel	**WMGFU13PSW**	**WMGFU13PSB**
Brushed Steel	**WMGFU13BSW**	**WMGFU13BSB**
Polished Brass	**WMGFU13PBW**	**WMGFU13PBB**
Black Nickel	**-**	**WMGFU13BNB**
Blank Module		
Polished Steel	**WMGB1PSW**	**WMGB1PSB**
Brushed Steel	**WMGB1BSW**	**WMGB1BSB**
Polished Brass	**WMGB1PBW**	**WMGB1PBB**
Black Nickel	**-**	**WMGB1BNB**

Data is subject to errors and technical modifications.

Blank Plates Raised Plate

Characteristics:
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref.
Raised Plate Switch Blank Plate	
Polished Steel	**WRP1PS**
Brushed Steel	**WRP1BS**
Polished Brass	**WRP1PB**
Black Nickel	**WRP1BN**
Raised Plate Twin Blank Plate	
Polished Steel	**WRP2PS**
Brushed Steel	**WRP2BS**
Polished Brass	**WRP2PB**
Black Nickel	**WRP2BN**

WRP2PS

WRP2PB

Blank Plates Flat Plate

Description	Cat ref.
Flat Plate Switch Blank Plate	
Polished Steel	**WFP1PS**
Brushed Steel	**WFP1BS**
Polished Brass	**WFP1PB**
Black Nickel	**WFP1BN**
Flat Plate Twin Blank Plate	
Polished Steel	**WFP2PS**
Brushed Steel	**WFP2BS**
Polished Brass	**WFP2PB**
Black Nickel	**WFP2BN**

WFP1BS

WFP2PB

WPPS12W

WPPS12

Metalclad Wall Switches (10A)

Characteristics:
- Unique patented LOOP terminal to allow neutral looping at the switch.
- Complies with BS EN 60669-1, a.c only.
- 'X' rated - No need to de-rate for fluorescent loads.
- Capacity of each terminal 2 x 4.0mm² conductors.

Description	Cat ref. Plate Only	Cat ref. With Backbox Without Knockouts	Cat ref. With Backbox With Knockouts
Wall Switches White			
10AX 1 Gang 2 Way Wall Switch	**WPPS12W**	**WPPS12BW**	**WPPS12BKOW**
10AX 2 Gang 2 Way Wall Switch	**WPPS22W**	**WPPS22BW**	**WPPS22BKOW**
10AX 3 Gang 2 Way Wall Switch	**WPPS32W**	**WPPS32BW**	**WPPS32BKOW**
10AX Push Switch	**WPPS12RW**	**WPPS12RBW**	**WPPS12RBKOW**
Wall Switches Grey			
10AX 1 Gang 2 Way Wall Switch	**WPPS12**	**WPPS12B**	**WPPS12BKO**
10AX 2 Gang 2 Way Wall Switch	**WPPS22**	**WPPS22B**	**WPPS22BKO**
10AX 3 Gang 2 Way Wall Switch	**WPPS32**	**WPPS32B**	**WPPS32BKO**
10AX Push Switch	**WPPS12R**	**WPPS12RB**	**WPPS12RBKO**

N LOOP loop terminal

WPDP84FO

Metalclad Wall Switches (20A)

Characteristics:
- Unique patented LOOP terminal to allow neutral looping at the switch.
- Complies with BS EN 60669-1, a.c only.
- Capacity of each terminal 2 x 6.0mm² conductors.

Description	Cat ref. Plate Only	Cat ref. With Backbox Without Knockouts	Cat ref. With Backbox With Knockouts
Wall Switches White			
20A Double Pole Switch with Flex Outlet	**WPDP84FOW**	**WPDP84FOBW**	**WPDP84FOBKOW**
20A Double Pole Switch with LED Indicator & Flex Outlet	**WPDP84FONW**	**WPDP84FONBW**	**WPDP84FONBKOW**
Wall Switches Grey			
20A Double Pole Switch with Flex Outlet	**WPDP84FO**	**WPDP84FOB**	**WPDP84FOBKO**
20A Double Pole Switch with LED Indicator & Flex Outlet	**WPDP84FON**	**WPDP84FONB**	**WPDP84FONBKO**

WPDP50N

Metalclad Wall Switches (50A)

Characteristics:
- Unique patented LOOP terminal to allow neutral looping at the switch.
- Complies with BS EN 60669-2-4.
- Capacity of each terminal 2 x 6.0mm² conductors.

Description	Cat ref. Plate Only	Cat ref. With Backbox Without Knockouts	Cat ref. With Backbox With Knockouts
Wall Switches White			
50A Double Pole Switch 1 Gang with LED Indicator	**WPDP50NW**	**WPDP50NBW**	**WPDP50NBKOW**
Wall Switches Grey			
50A Double Pole Switch 1 Gang with LED Indicator	**WPDP50N**	**WPDP50NB**	**WPDP50NBKO**

Data is subject to errors and technical modifications.

Metalclad Socket Outlets

Characteristics:
- Unique patented three part safety shutter.
- Complies with BS 1363-2, a.c only.
- Double pole switching mechanism on switched sockets.
- Twin socket comes with twin earth as standard.
- Terminal screws grouped in-line and upward facing for ease of installation with clear printed and engraved terminal markings.
- Capacity of each terminal: 5 x 2.5mm² conductors switched; 4 x 2.5mm² unswitched (for other sized conductors see terminal capacities on page 5.48).
- **Sockets with USB - Warning:** To avoid possible damage to the product or spurious insution readings, please disconnect the product before carrying out insulation resistance testing.
- **Sockets with USB** - USB output: 5V d.c. 2.4A total max.

WPSS81W

Description	Cat ref. Plate Only	Cat ref. With Backbox Without Knockouts	Cat ref. With Backbox With Knockouts
Switched Socket Outlets White			
1 Gang Double Pole Switched Socket	**WPSS81W**	**WPSS81BW**	**WPSS81BKOW**
1 Gang Double Pole Switched Socket with LED Indicator	**WPSS81NW**	**WPSS81NBW**	**WPSS81NBKOW**
2 Gang Double Pole Switched Socket	**WPSS82W**	**WPSS82BW**	**WPSS82BKOW**
2 Gang Double Pole Switched Socket with LED Indicator	**WPSS82NW**	**WPSS82NBW**	**WPSS82NBKOW**
2 Gang Double Pole Switched Socket Outboard Rockers	**WPSS82OW**	**WPSS82OBW**	**WPSS82OBKOW**
2 Gang Double Pole Switched Socket with Two USB Ports	**WPSS82W-USB**	**WPSS82BW-USB**	**WPSS82BKOW-USB**
Switched Socket Outlets Grey			
1 Gang Double Pole Switched Socket	**WPSS81**	**WPSS81B**	**WPSS81BKO**
1 Gang Double Pole Switched Socket with LED Indicator	**WPSS81N**	**WPSS81NB**	**WPSS81NBKO**
2 Gang Double Pole Switched Socket	**WPSS82**	**WPSS82B**	**WPSS82BKO**
2 Gang Double Pole Switched Socket with LED Indicator	**WPSS82N**	**WPSS82NB**	**WPSS82NBKO**
2 Gang Double Pole Switched Socket Outboard Rockers	**WPSS82O**	**WPSS82OB**	**WPSS82OBKO**
2 Gang Double Pole Switched Socket with Two USB Ports	**WPSS82-USB**	**WPSS82B-USB**	**WPSS82BKO-USB**

WPSS81

WPSS82W-USB

Metalclad Fuse Connection Units

Characteristics:
- Complies with BS 1363-4.
- Single screw fast fix cable clamp accommodates up to 1.5mm² flexible cord.
- All terminals are upward facing with clearly printed terminal markings for ease of installation.
- Capacity of each terminal 2 x 6.0 mm² conductors.

WPSSU83FOW

WPSSU83FON

Description	Cat ref. Plate Only	Cat ref. With Backbox Without Knockouts	Cat ref. With Backbox With Knockouts
Fuse Connection Units White			
13A FCU Unswitched with Flex Outlet	**WPSU83FOW**	**WPSU83FOBW**	**WPSU83FOBKOW**
13A FCU Switched with Flex Outlet	**WPSSU83FOW**	**WPSSU83FOBW**	**WPSSU83FOBKOW**
13A FCU Switched with LED Indicator & Flex Outlet	**WPSSU83FONW**	**WPSSU83FONBW**	**WPSSU83FONBKOW**
Fuse Connection Units Grey			
13A FCU Unswitched with Flex Outlet	**WPSU83FO**	**WPSU83FOB**	**WPSU83FOBKO**
13A FCU Switched with Flex Outlet	**WPSSU83FO**	**WPSSU83FOB**	**WPSSU83FOBKO**
13A FCU Switched with LED Indicator & Flex Outlet	**WPSSU83FON**	**WPSSU83FONB**	**WPSSU83FONBKO**

WPGP1W

WPGP1

Metalclad Grid Plates

Characteristics:
- For Grid Switches, please see page 5.31.

Description	Cat ref. Plate Only	Cat ref. With Backbox Without Knockouts	Cat ref. With Backbox With Knockouts
Grid Plates White			
Grid plate 1 Gang	**WPGP1W**	**WPGP1BW**	**WPGP1BKOW**
Grid plate 2 Gang	**WPGP2W**	**WPGP2BW**	**WPGP2BKOW**
Grid plate 3 Gang	**WPGP3W**	**WPGP3BW**	**WPGP3BKOW**
Grid plate 4 Gang	**WPGP4W**	**WPGP4BW**	**WPGP4BKOW**
Grid plate 6 Gang	**WPGP6W**	**WPGP6BW**	**WPGP6BKOW**
Grid plate 8 Gang	**WPGP8W**	**WPGP8BW**	**WPGP8BKOW**
Grid Plates Grey			
Grid plate 1 Gang	**WPGP1**	**WPGP1B**	**WPGP1BKO**
Grid plate 2 Gang	**WPGP2**	**WPGP2B**	**WPGP2BKO**
Grid plate 3 Gang	**WPGP3**	**WPGP3B**	**WPGP3BKO**
Grid plate 4 Gang	**WPGP4**	**WPGP4B**	**WPGP4BKO**
Grid plate 6 Gang	**WPGP6**	**WPGP6B**	**WPGP6BKO**
Grid plate 8 Gang	**WPGP8**	**WPGP8B**	**WPGP8BKO**

WMGF34

Grid Frames

Description	Cat ref.
Frames for White Moulded, Decorative & Metalclad Raised Plate ranges	
1 Gang Frame	**WMGF1**
2 Gang Frame	**WMGF2**
3/4 Gang Frame	**WMGF34**

WMGKS

WMGB1

WMINDRED

Grid Switches - White Moulded Finish

Characteristics:
- Complies with BS EN 606691-1 switches, BS 5733 fuse carrier.
- Shallowest switch modules which clip in from the front for ease of installation and maintenance.
- Terminal screw can be accessed with modules clipped into frames.
- Frames locate to finished wall level.
- Frames clip together to ease alignment for 6 gang and 8 gang applications.
- We also offer a bespoke printing service for your individual requirements. Please contact our Sales Service Centre on 01952 675612 for further details.

Description	Cat ref. White Insert	Cat ref. Black Insert
Grid Switches		
Blank Module	**WMGB1**	**-**
20AX 2 Way Single Pole Switch	**WMGS12**	**-**
20A Intermediate Switch	**WMGS16**	**-**
20A 2 Way Retractive Switch	**WMGS22R**	**-**
20A 1 Way Double Pole Switch	**WMGSDP2**	**-**
20A 1 Way Double Pole Switch with LED Indicator	**WMGSDP2N**	**-**
20A Double Pole Key Switch	**WMGKS**	**WMGKSB**
20A Double Pole Key Switch Printed 'Emergency Lighting Test'	**WMGKS/EL**	**-**
13A Fuse Carrier	**WMGFU13**	**-**
Dimmer Slave Switch	**WMGSD1S**	**WMGSD1SB**
Dimmer Switch Leading Edge	**WMGSD1L**	**WMGSD1LB**
Dimmer Switch Trailing Edge	**WMGSD1T**	**WMGSD1TB**
Red Indicator	**WMINDRED**	**WMINDREDB**
2 Way & Centre Off Latching Switch	**WMGS13L**	**WMGS13LB**
2 Way & Centre Off Latching Switch Red Rocker	**WMGS13LR**	**-**
2 Way & Centre Off Retractive Switch	**WMGS13R**	**WMGS13RB**
2 Way & Centre Off Retractive Switch Red Rocker	**WMGS13RR**	**-**
13A Fused Connection Unit Unswitched with LED	**WMGSU83N**	**-**

Data is subject to errors and technical modifications.

20A 1 Way Double Pole Grid Switches - Printed		
Printed 'Cooker Hood'	**WMGSDP2/CHD**	**WMGSDP2B/CHD**
Printed 'Dishwasher'	**WMGSDP2/DW**	**WMGSDP2B/DW**
Printed 'Extract Fan'	**WMGSDP2/EF**	**WMGSDP2B/EF**
Printed 'Fridge Freezer'	**WMGSDP2/FF**	**WMGSDP2B/FF**
Printed 'Freezer'	**WMGSDP2/FRE**	**WMGSDP2B/FRE**
Printed 'Fridge'	**WMGSDP2/FRI**	**WMGSDP2B/FRI**
Printed 'Hob'	**WMGSDP2/HB**	**WMGSDP2B/HB**
Printed 'Heating'	**WMGSDP2/HTG**	**WMGSDP2B/HTG**
Printed 'Microwave'	**WMGSDP2/MW**	**WMGSDP2B/MW**
Printed 'Micro Wave'	**WMGSDP2/MW2**	**WMGSDP2B/MW2**
Printed 'Tumble Dryer'	**WMGSDP2/TD**	**WMGSDP2B/TD**
Printed 'Waste Disposal'	**WMGSDP2/WD**	**WMGSDP2B/WD**
Printed 'Washing Machine'	**WMGSDP2/WM**	**WMGSDP2B/WM**
Printed 'Oven'	**WMGSDP2/OV**	**WMGSDP2B/OV**
Printed 'Wine Cooler'	**WMGSDP2/WC**	**WMGSDP2B/WC**
Printed 'Hot Water'	**WMGSDP2/HW**	**WMGSDP2B/HW**
Printed 'Coffee Maker'	**WMGSDP2/CM**	**WMGSDP2B/CM**
Printed 'Hot Drawer'	**WMGSDP2/HD**	**WMGSDP2B/HD**
Printed 'Fan Boost'	**WMGSDP2/FB**	**WMGSDP2B/FB**
Printed 'Outside Socket'	**WMGSDP2/OS**	**WMGSDP2B/OS**
Printed 'Steam Oven'	**WMGSDP2/SOV**	
Printed 'Boiler'	**WMGSDP2/BOI**	**-**
Printed 'Outside Light'	**WMGSDP2/OL**	**-**
Printed 'Plinth Heater'	**WMGSDP2/PH**	**-**

WMGSDP2/CHD

WMGSDP2/EF

Grid Switches with LED Indicator - Printed

Characteristics:
- Complies with BS EN 606691-1 switches, BS 5733 fuse carrier.
- Shallowest switch modules which clip in from the front for ease of installation and maintenance.
- Terminal screw can be accessed with modules clipped into frames.
- Frames locate to finished wall level.
- Frames clip together to ease alignment for 6 gang and 8 gang applications.
- We also offer a bespoke printing service for your individual requirements. Please contact our Sales Service Centre on 01952 675612 for further details.

Description	Cat ref. White Insert	Cat ref. Black Insert
20A 1 Way Double Pole Grid Switches with LED Indicator - Printed		
Printed 'Cooker Hood'	**WMGSDP2N/CHD**	**WMGSDP2NB/CHD**
Printed 'Dishwasher'	**WMGSDP2N/DW**	**WMGSDP2NB/DW**
Printed 'Extract Fan'	**WMGSDP2N/EF**	**WMGSDP2NB/EF**
Printed 'Fridge Freezer'	**WMGSDP2N/FF**	**WMGSDP2NB/FF**
Printed 'Freezer'	**WMGSDP2N/FRE**	**WMGSDP2NB/FRE**
Printed 'Fridge'	**WMGSDP2N/FRI**	**WMGSDP2NB/FRI**
Printed 'Hob'	**WMGSDP2N/HB**	**WMGSDP2NB/HB**
Printed 'Heating'	**WMGSDP2N/HTG**	**WMGSDP2NB/HTG**
Printed 'Microwave'	**WMGSDP2N/MW**	**WMGSDP2NB/MW**
Printed 'Tumble Dryer'	**WMGSDP2N/TD**	**WMGSDP2NB/TD**
Printed 'Waste Disposal'	**WMGSDP2N/WD**	**WMGSDP2NB/WD**
Printed 'Washing Machine'	**WMGSDP2N/WM**	**WMGSDP2NB/WM**
Printed 'Oven'	**WMGSDP2N/OV**	**WMGSDP2NB/OV**
Printed 'Outside Socket'	**WMGSDP2N/OS**	**-**
Printed 'Outside Light'	**WMGSDP2N/OL**	**-**
Printed 'Plinth Heater'	**WMGSDP2N/PH**	**-**

WMGSDP2N/CHD

WMGSDP2N/DW

WMGSDP2N/EF

WPP1EUW

WPP1EU

Metalclad Euro Plates

Characteristics:
- Carrier plates facilitate installation of industry standard modular data outlets.
- Easy to configure for all applications.
- Quick release of modules for maintenance.
- Available as plate only for installation with standard wall box.

Description	Cat ref. Plate Only	Cat ref. With Backbox Without Knockouts	Cat ref. With Backbox With Knockouts
Euro Plates White			
1 Module Euro Plate	**WPP1EUW**	**WPP1EUBW**	**WPP1EUBKOW**
2 Module Euro Plate	**WPP2EUW**	**WPP2EUBW**	**WPP2EUBKOW**
4 Module Euro Plate	**WPP4EUW**	**WPP4EUBW**	**WPP4EUBKOW**
Euro Plates Grey			
1 Module Euro Plate	**WPP1EU**	**WPP1EUB**	**WPP1EUBKO**
2 Module Euro Plate	**WPP2EU**	**WPP2EUB**	**WPP2EUBKO**
4 Module Euro Plate	**WPP4EU**	**WPP4EUB**	**WPP4EUBKO**

WMMBTM

WMMSAT

WMMQXB

Euro Style Modules

Description	Mod Width	Cat ref. (White)	Cat ref. (Black)
BT Telephone Master Euromodule	1	**WMMBTM**	**WMMBTMB**
BT Telephone Secondary Euromodule	1	**WMMBTS**	**WMMBTSB**
RJ11 - Modem Euromodule	1	**WMMRJ11**	**WMMRJ11B**
RJ45 - Cat 6 UTP Euromodule	1	**WMMRJ45**	**WMMRJ45B**
Phono Plugs - Red/Black - Gold Plated Euromodule	1	**WMMPP**	**-**
Speaker Terminal Posts - Gold Plated Euromodule	1	**WMMSP**	**-**
Single IEC Female Non Isolated Euromodule	1	**WMMTVF**	**WMMTVFB**
Single IEC Male Non Isolated Euromodule	1	**WMMTVM**	**WMMTVMB**
Single Satellite F Connector Euromodule	1	**WMMSAT**	**WMMSATB**
Single Blank Euromodule	1	**WMMB**	**WMMBB**
PIR Occupancy Sensor Euromodule 5m	1	**WMMPIR05X**	**-**
PIR Occupancy Sensor Euromodule 10m	1	**WMMPIR10X**	**-**
HDMI Module	2	**WMMHDMI**	**WMMHDMIB**
USB Euromodule with Twin USB	2	**WMMUSB**	**WMMUSBB**
Diplexer - TV & FM Radio Euromodule	2	**WMMDX**	**WMMDXB**
Triplexer - TV, Satellite & FM Radio Euromodule	2	**WMMTX**	**WMMTXB**
Quadplexer - TV, Satellite, FM Radio & Return Euromodule	2	**WMMQX**	**WMMQXB**

Data is subject to errors and technical modifications.

Metalclad Back Boxes

Description	Cat ref. Plate Only	Cat ref. With Backbox Without Knockouts	Cat ref. With Backbox With Knockouts
Accessories White			
Single Backbox	-	**WPB140W**	**WPB140KOW**
Twin Backbox	-	**WPB240W**	**WPB240KOW**
Two Row Twin Backbox	-	**WPB6840W**	**WPB6840KOW**
Accessories Grey			
Single Backbox	-	**WPB140**	**WPB140KO**
Twin Backbox	-	**WPB240**	**WPB240KO**
Two Row Twin Backbox	-	**WPB6840**	**WPB6840KO**

WPB140W

WPB140KO

Metalclad Blank Plates

Description	Cat ref. Plate Only	Cat ref. With Backbox Without Knockouts	Cat ref. With Backbox With Knockouts
Blank Plates White			
Single Blank Plate	**WPP1W**	**WPP1BW**	**WPP1BKOW**
Twin Blank Plate	**WPP2W**	**WPP2BW**	**WPP2BKOW**
Blank Plates Grey			
Single Blank Plate	**WPP1**	**WPP1B**	**WPP1BKO**
Twin Blank Plate	**WPP2**	**WPP2B**	**WPP2BKO**

WPP1W

WPP1

WXPPS12

Wall Switches

Characteristics:
- IP66 rating conforms to BS EN 60529 : 1992.
- Functional products tested and certified to BS EN 60669-1, a.c. only.
- Robust and rugged enclosures designed to withstand the elements.
- Cable entries: 90 x 90 = 4x20, 1x20 & 1x25

Description	Dimensions (mm) (W x H)	Cat ref.
10AX 1 Gang 2 Way Switch	90 x 90	**WXPPS12**
10AX 2 Gang 2 Way Switch	90 x 90	**WXPPS22**
20AX Double Pole 1 Gang 1 Way Switch	90 x 90	**WXPDP84**
10A 1 Gang Bell Push Switch	90 x 90	**WXPPS12B**

WXPSS82

Socket Outlets

Characteristics:
- IP66 rating conforms to BS EN 60529 : 1992.
- Functional products tested and certified to BS 1363 Part 2, a.c. only.
- Robust and rugged enclosures designed to withstand the elements.
- Unique double hinge allows lid to open a full 180 degrees.
- Fixing point for padlock.
- Cable entries: 103 x 116.5 = 4x20, 1x20 & 1x25
  164 x 116.5 = 6x20, 1x20 & 1x25

Description	Dimensions (mm) (W x H)	Cat ref.
13A 1 Gang Double Pole Unswitched Socket	103 x 116.5	**WXPS81**
13A 1 Gang Double Pole Switched Socket	103 x 116.5	**WXPSS81**
13A 2 Gang Double Pole Unswitched Socket	164 x 116.5	**WXPS82**
13A 2 Gang Double Pole Switched Socket	164 x 116.5	**WXPSS82**

WXPSSU83FO

Fused Connection Units

Characteristics:
- IP66 rating conforms to BS EN 60529 : 1992.
- Functional products tested and certified to BS 1363-4.
- Robust and rugged enclosures designed to withstand the elements.
- Unique double hinge allows lid to open a full 180 degrees.
- Fixing point for padlock.
- Cable entries: 103 x 116.5 = 4x20, 1x20 & 1x25

Description	Dimensions (mm) (W x H)	Cat ref.
13A Double Pole Fused Connect Unit with Flex Outlet	103 x 116.5	**WXPSSU83FO**

Data is subject to errors and technical modifications.

Robust & Safe

Manufactured from a tough, durable thermoplastic, the Sollysta IP66 range is ideal for indoor and outdoor applications where wiring accessories may be vulnerable to the potentially harmful effects of dust or water ingress.

See more about Sollysta IP66 on our website www.hager.co.uk

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J804

Maintenance Free Junction Box

Characteristics:
- Complies with BS EN 60670-22.
- Suitable for use in inaccessible areas.
- Spring fit terminals do not relax over time.
- Four separate cable terminations per connector.
- Comes complete with incoming and outgoing cable clamps.
- Junction box selection chart see page 5.50.

Description	Terminal capacity	Pack qty.	Cat ref.
Maintenance Free 32A - 3 Terminals	4 x 4mm² x (0.5 - 4.0)	10	**J803**
Maintenance Free 20A - 4 Terminals	4 x 4mm² x (0.5 - 4.0)	10	**J804**

J501

Downlighter Junction Box

Characteristics:
- Comes complete with incoming and outgoing cable clamps to prevent strain on terminations.
- Three plate terminals with separate terminals for flexible cords.
- Complies with BS EN 60670-22.
- Fits through a 58mm diameter hole.
- 3 plate terminal style with captive terminal screws.
- Separate terminals for flexible cords.
- Current rating: 16 Amp.
- Junction box selection chart see page 5.50.

Description	Terminal capacity	Pack qty.	Cat ref.
Downlighter Junction Box	3 x (3 x 1.5mm²) 1 x (2 x 1.5mm²)	10	**J501**

J501

Traditional Junction Box

Characteristics:
- Complies with BS EN 60670-22.
- Slot terminals are ideal for taking spurs off uncut ring or loop circuit cables.
- Solid machined brass terminals.
- Junction box covers secured by single centre screws.
- Junction box selection chart see page 5.50.

Description	Terminal capacity (mm²)	Pack qty.	Cat ref.
Knockout Slot Terminal Junction Box 20A 4 Terminal	3 x 1.5	10	**J201**
Selective Entry Slot Terminal Junction Box 20A 4 Terminal	3 x 1.5	10	**J301**
Selective Entry Slot Terminal Junction Box 30A 3 Terminal	4 x 2.5	10	**J401**
Selective Entry Slot Terminal Junction Box 20A 6 Terminal	3 x 1.5	10	**J601**

J701/TB

Junction / Adaptable Box

Characteristics:
- Junction box cover secured by two screws
- Accepts 16mm x 16mm and /or 16mm x 25mm mini-trunking.
- Junction box selection chart see page 5.50.

Description	Terminal capacity	Pack qty.	Cat ref.
No Terminals	-	10	**J701**
With Terminal Block, Cable Ties & Related Wiring Card	4 x 1.5mm²	10	**J701/TB**

Data is subject to errors and technical modifications.

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For a full list of the printing options available please visit hager.co.uk/printedproducts

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SEL212

SEL354

SEL96T

Safety Lampholders

Characteristics:
- Complies with BS EN 7895.
- T2 heat resistance rating: 210ºC.
- Automatically disconnect power at the contacts when the lamp is removed.
- 50.8mm fixing centres for non-access versions. Use with mounting blocks **MB326E/MT**.
- Body angle of angled battens set at 30º.
- Access lampholders have integral **RL624** ceiling rose base and heat resisting PVC tails.

Description	Pack qty.	Cat ref.
Safety Bayonet Cap Cord Grip Lampholders		
Cord Grip Lampholders - Short Skirt	20	**SEL212**
Cord Grip Lampholders - Home Office Shield	20	**SEL214**
Safety Straight Batten Lampholders		
Three Terminal - Home Office Shield	20	**SEL354**
Safety Access Batten Lampholders		
Straight 2 Terminal Body, 3 Terminal and Earth Base - Home Office Shield	10	**SEL96T**
Angled 2 Terminal Body, 3 Terminal and Earth Base - Home Office Shield	10	**SEL106T**
Safety Access Batten Lampholder with Safety Cover		
Batten Lampholder with Safety Cover	10	**SEL96TSC**

624SEL212/6

Safety Pendants Sets with Access Ceiling Rose

Characteristics:
- Pendant set complies with BS EN 60598-1.
- Capacity of each terminal: 3 x 1.00mm² conductor.
- Barriers between terminals.
- Flexible pendant cord restraining hooks.
- Fixing centres 50.8mm.
- Feet on base to aid mounting on uneven surfaces.
- Three separate knockouts accept 1, 2 or 3 x 1.5mm² conductors.
- Optional halo **RL602**.

Description	Pack qty.	Cat ref.
Safety Pendants Sets with Access Ceiling Rose		
Pendant Set 6” - Short Skirt	10	**624SEL212/6**
Pendant Set 9” - Short Skirt	10	**624SEL212/9**
Pendant Set 12” - Short Skirt	10	**624SEL212/12**
Shield Pendant Set 6”- Home Office Shield	10	**624SEL214/6**
Pendant Set with Access Ceiling Rose with Safety Cover		
Pendant Set 6” with Safety Cover	10	**624SEL212SC6**

Data is subject to errors and technical modifications.

Super Access Terminal Bank Type Ceiling Rose

Characteristics:
- Capacity of each terminal: 3 x 1.00mm² conductor
- Common base with 'access' batten lampholders.
- Barriers between terminals.
- Flexible pendant cord restraining hooks.
- Fixing centres 50.8mm.
- Feet on base to aid mounting on uneven surfaces.
- Three separate knockouts accept 1, 2 or 3 x 1.5mm² conductors.
- Optional halo **RL602** (see below)

Description	Dimensions	Pack qty.	Cat ref.
Three Terminals	81 Diameter x 26 (halo = 108mm diameter)	10	**RL624**

Low Energy Pendant

Description	Pack qty.	Cat ref.
Low Energy Pendant to accommodate GU10-L1 lamp	1	**LEL212/6**

LEL212/6

Mounting Blocks

Characteristics:
- Capacity of earth terminal for mounting blocks: 3 x 1.5mm².
- Cable knockout entries: **MB326E/MT** - centrally in base. Four on periphery will accept 16mm x 16mm or 16mm x 25mm mini trunking.

Description	Dimensions	Pack qty.	Cat ref.
Round Mounting Box with Earth Terminal	81 x 19	20	**MB326E/MT**
Round Surface Box 30mm Deep	84 x 30	10	**MB2**

MB326E/MT

Lampholder Skirts

Characteristics:
- Suitable for use with any lampholder or batten lampholder.

Description	Pack qty.	Cat ref.
Short Skirt	50	**HAL70**
Home Office Shield	50	**HAL72**

Halo

Description	Pack qty.	Cat ref.
Halo (108mm Diameter)	20	**RL602**

RL602

Product Reference	Product Description	Standard Surface Box Reference	Deep Surface Box Reference
WMBTM	BT Master Telephone Outlet	WMPB1/28	WMPB1/46
WMBTS	BT Secondary Telephone Outlet	WMPB1/28	WMPB1/46
WMCC50	50A Cooker Control Unit	WMPB2/46CC	N/A
WMCC50N	50A Cooker Control Unit with LED Indicator	WMPB2/46CC	N/A
WMDP50N	50A Double Pole Switch 1 Gang with LED Indicator	WMPB1/46	N/A
WMDP50VN	50A Double Pole Switch 2 Gang Vertical with LED Indicator	WMPB2/46	N/A
WMDP84	20A Double Pole Switch	WMPB1/28	WMPB1/46
WMDP84FO	20A Double Pole Switch with Flex Outlet	WMPB1/28	WMPB1/46
WMDP84FON	20A Double Pole Switch with LED Indicator & Flex Outlet	WMPB1/28	WMPB1/46
WMDP84N	20A Double Pole Switch with LED Indicator	WMPB1/28	WMPB1/46
WMDP85FON	20A Double Pole Switch with LED Indicator & Flex Outlet Printed Water Heater	WMPB1/28	WMPB1/46
WMDP85N	20A Double Pole Switch with LED Indicator Printed Water Heater	WMPB1/28	WMPB1/46
WMDS1	1 Gang Dimmer	WMPB1/28	WMPB1/46
WMDS2	2 Gang Dimmer	WMPB1/28	WMPB1/46
WMDS3	3 Gang Dimmer	WMPB2/28	WMPB2/46
WMDS4	4 Gang DImmer	WMPB2/28	WMPB2/46
WMDX	Double TV & FM/DAB CO-AX Socket Outlet	WMPB1/28	WMPB1/46
WMP1	Single Blank Plate	WMPB1/20	WMPB1/28
WMP2	Twin Blank Plate	WMPB2/28	N/A
WMP2FO	Flex Outlet Plate 20A	WMPB1/20	WMPB1/28
WMP50FO	Cooker Cable Outlet with Terminals	WMPB1/46	N/A
WMPS11	10AX 1 Gang 1 Way Wall Switch	WMPB1/20	WMPB1/28
WMPS12	10AX 1 Gang 2 Way Wall Switch	WMPB1/20	WMPB1/28
WMPS12R	Push Switch	WMPB1/20	WMPB1/28
WMPS12RB	Push Switch with Bell Symbol	WMPB1/20	WMPB1/28
WMPS12W	10AX 1 Gang 2 Way Wall Switch Wide Rocker	WMPB1/20	WMPB1/28
WMPS16	Intermediate Switch	WMPB1/20	WMPB1/28
WMPS22	10AX 2 Gang 2 Way Wall Switch	WMPB1/20	WMPB1/28
WMPS22W	10AX 2 Gang 2 Way Wall Switch Wide Rocker	WMPB1/20	WMPB1/28
WMPS32	10AX 3 Gang 2 Way Wall Switch	WMPB1/20	WMPB1/28
WMPS3PI	3 Pole Isolator Switch	WMPB1/20	WMPB1/28
WMPS3PIF	3 Pole Isolator Switch with Fan Symbol	WMPB1/20	WMPB1/28
WMPS42	10AX 4 Gang 2 Way Wall Switch	WMPB2/28	WMPB2/28
WMQX	Quadplexer TV & FM/DAB & SAT1 & SAT2	WMPB1/28	WMPB1/46
WMRJ11	RJ11 Socket	WMPB1/28	WMPB1/46
WMRJ45	RJ45 Socket	WMPB1/28	WMPB1/46
WMS51	5A 1 Gang Unswitched Socket	WMPB1/28	WMPB1/46
WMS81	13A 1 Gang Unswitched Socket	WMPB1/28	WMPB1/46
WMS82	13A 2 Gang Unswitched Socket Dual Earth	WMPB2/28	WMPB2/46
WMSAT	Single F Type Satellite Outlet Screened	WMPB1/28	WMPB1/46
WMSO100	115/230V Shaver Outlet	WMPB2/46	N/A
WMSS81	1 Gang Double Pole Switched Socket	WMPB1/28	WMPB1/46
WMSS82	2 Gang Double Pole Switched Socket Dual Earth	WMPB2/28	WMPB2/46
WMSS82O	2 Gang Double Pole Switched Outlet Outboard Rockers	WMPB2/28	WMPB2/46
WMSSU83	13A Fused Connection Unit Switched	WMPB1/28	WMPB1/46
WMSSU83FO	13A Fused Connection Unit Switched with Flex Outlet	WMPB1/28	WMPB1/46
WMSSU83FON	13A Fused Connection Unit Switched with LED Indicator & Flex Outlet	WMPB1/28	WMPB1/46
WMSSU83N	13A Fused Connection Unit Switched with LED Indicator	WMPB1/28	WMPB1/46
WMSU83	13A Fused Connection Unit Unswitched	WMPB1/28	WMPB1/46
WMSU83FO	13A Fused Connection Unit Unswitched with Flex Outlet	WMPB1/28	WMPB1/46
WMTVF	Single CO-AX TV Socket Outlet Female	WMPB1/28	WMPB1/46
WMTVM	Single CO-AX TV Socket Outlet Male	WMPB1/28	WMPB1/46
WMTX	TriplexerTV & FM/DAB & SAT Outlet	WMPB1/28	WMPB1/46

Data is subject to errors and technical modifications.

		Maximum number of conductors per terminal (Solid or Stranded conductors BS 6004)						
Accessory Type	**Rating**	**1.0 mm²**	**1.5 mm²**	**2.5 mm²**	**4.0 mm²**	**6.0 mm²**	**10.0 mm²**	**16.0 mm²**
Plate & Ceiling Accessories	10AX	4	4	3	2	-	-	-
Dimmer Switches	10AX	4	3	-	-	-	-	-
BS 546 Socket Outlet	5A	3	3	3	2	2	-	-
Shaver Socket	10A	4	3	2	-	-	-	-
Fused Connection Units	13A	-	-	3	2	2	-	-
BS 1363 Socket Outlets	13A	-	-	3	3	2	-	-
BS546 Socket Outlet	15A	-	-	3	3	2	-	-
Flex Outlet Plates	20A	5	4	3	2	2	-	-
Double Pole Switches	20A	-	-	3	2	2	1	-
Double Pole Switches	45/50A	-	-	-	3	2	1	1
Cooker Control Unit	45A	-	-	-	3	2	1	1
Cooker Connection Outlet	45A	-	-	-	2	3	-	-
Grid Switches	20AX	4	4	3	2	-	-	-

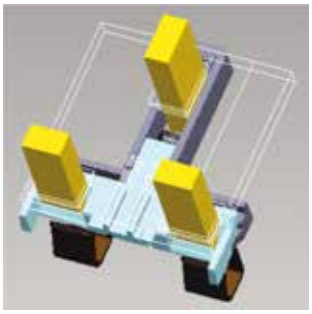
Printed Products
Many of our Sollysta wiring accessories are available with printed options, such as Washing Machine, Dishwasher etc.

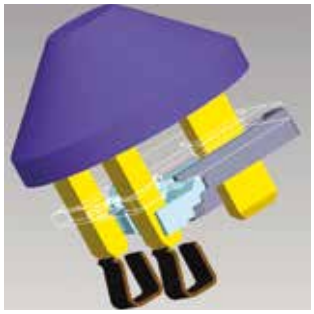
For a full list of products generally available from stock please go to www.hager.co.uk/printedproducts

We also offer a bespoke printing service for your individual requirements. Please contact our Sales Service Centre on 01952 675612 for further details.

Unique Safety Shutter
Socket outlets have apertures for plug pins and therefore will have a shutter mechanism that prevents access to live parts unless the earth pin is also present and has been inserted first. This however can be either intentionally or inadvertently defeated by inserting something into the earth pin aperture.

All Sollysta sockets have a unique patented three pin shutter system that not only requires the earth pin to be inserted first, but the simultaneous insertion of the live and neutral pins as well, before the shutter mechanism is activated. This enhances the safety by making it more difficult to defeat the mechanism and therefore reducing the risk of electric shock.



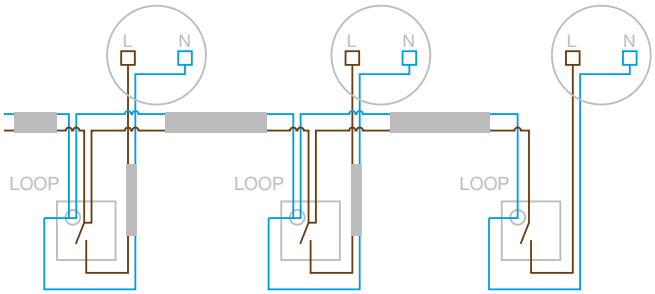


Neutral Loop Terminal
Today it is increasingly likely that there is a decorative light fitting or even downlighters fitted in place of a standard pendant. These fittings are rarely provided with a neutral loop terminal.

It has also become more popular to make the loop connection at the switch. This has the advantage of the connections being accessible and at a more convenient working height.

However, this leaves the problem of terminating the neutral conductor.

One solution is to connect the neutral to a connector block inside the wall box, which takes up extra space. Another is to use the Sollysta light switch which has a unique neutral loop terminal.

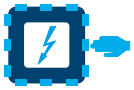
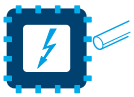
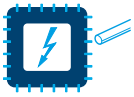
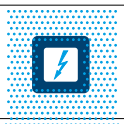
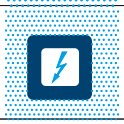


The IP rating for all low voltage enclosures up to 1000 V a.c. and 1500 V d.c. is defined in identical fashion by the standards EN 60529 - IEC 529. It comprises the letters IP followed by two character numerals and or additional/ supplementary letters.

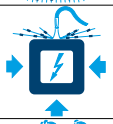
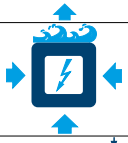
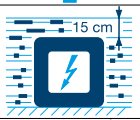
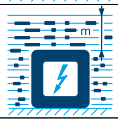
The first character numeral indicates the degree of protection provided by the enclosure against access to hazardous parts by preventing or limiting the ingress of a part of the human body or an object held by a person and ingress of solid foreign objects.

The second character numeral indicates the degree of protection provided by the enclosure with respect to harmful effects on the equipment due to the ingress of water. An X signifies that the tests are not applicable to the product.

The first character numeral:
Protection against foreign objects

IP	Description	
0		Non-protected
1		Protected against solid objects ≥ than 50mm
2		Protected against solid objects ≥ than 12.5mm
3		Protected against solid objects ≥ than 2.5mm
4		Protected against solid objects ≥ than 1.0mm
5		Dust-protected
6		Dust-tight

The second character numeral:
Protection against ingress of water with harmful effects

IP	Description	
0		Non-protected
1		Protected against vertically falling water drops
2		Protected against vertically falling water drops when enclosure titled up to 15°
3		Protected against spraying water
4		Protected against splashing water
5		Protected against water jets
6		Protected against powerful water jets
7		Protected against the effect of temporary immersion in water
8		Protected against continuous immersion in water

Additional letter (in option)
Protection of people against access to hazardous parts

	Description
A	Protected against access to hazardous parts with the back of the hand
B	Protected against access to hazardous parts with a finger
C	Protected against access to hazardous parts with a tool - ø 2.5mm
D	Protected against access to hazardous parts with a wire - ø 1mm

Additional letter (in option)
Specific information on the product

	Description
H	High voltage apparatus
M	Motion during water test
S	Stationary during water test
W	Weather conditions

Data is subject to errors and technical modifications.

Junction Box Selection Chart

Is the location accessible? Yes → Is there a suitable fixing position? Yes → **Traditional Junction Boxes Acceptable**

No → **Maintenance Free Terminals Required**

No → **Cable Clamping Recommended**

Description	Nº of Terminals	Terminal Rating	Reference	Benefits / Considerations
Downlighter Junction Box	3 x 3 x 1.5mm² 1 x 2 x 1.5mm²	16A	J501	Provided with cable clamps and separate terminals for flex
Maintenance Free Junction Box	3 x 4 x (0.5-4.0mm²)	32A	J803	Suitable for use in inaccessible locations
	4 x 4 x (0.5 - 4.0mm²)	20A	J804	
Traditional Junction Boxes	4	20A	J201	Acceptable for locations which are accessible
	4	20A	J301	
	3	30A	J401	
	6	20A	J601	

Conterfeiting: A plague gaining ground

The counterfeiting of products is gaining ground around the world. Counterfeiting does not only concern luxury items, but also covers electrical products where peoples safety is endangered.

Counterfeit products do not bring any guarantee of safety or quality. These products can be dangerous, contain inappropriate materials or be of poor quality. In certain cases only the external appearance is preserved and the vital functions are removed to reduce the costs.

check.hager.com

Authentication Process
All of our circuit breakers, switches and earth leakage circuit breakers have been assigned a unique identification number which can be located on the side of the product. The identification number from each product is then stored in a protected database. If it doesn't have a number, then please contact us immediately.

Dedicated Website
Our customers can access this database to check the authenticity of a hager product by going to 'check.hager.com'. The website will immediately check the validity of the identification number on the product and confirm if it is authentic or a suspected counterfeit.

Action Plan
If you think you have a counterfeit product, contact Hager on 01952 675612 along with the details of the wholesaler from which the product was purchased. We will then take all the appropriate information and collect the product for analysis. If necessary we will take appropriate legal action.

Ethical Charter
As a manufacturer we commit to:

- Providing our customers with the means to check the authenticity of our products
- Communicating the results of any investigations

Our distributors commit:

- To make sure that products purchased are not counterfeit.
- To inform the manufacturers of any offers to counterfeit products
- To support the actions of manufacturers.

To ensure customers can check the authenticity of our products we have set up a simple and rapid procedure called: check.hager.com

Conditions of Sale

1. In these Terms the following expressions shall have the following meanings:
   - 1.1 "Buyer" the purchaser of the Goods from the Seller.
   - 1.2 "Seller" Hager Limited.
   - 1.3 "Contract" the contract for the sale and purchase of the Goods made pursuant to these Terms.
   - 1.4 "Delivery" delivery of the Goods in accordance with these Terms.
   - 1.5 "Delivery Address" the location for Delivery agreed by the Seller and the Buyer (save where it is agreed that the Buyer shall collect the Goods from the Seller's premises).
   - 1.6 "Delivery Date" the date for Delivery agreed by the Seller and the Buyer.
   - 1.7 "Force Majeure" any circumstances beyond the reasonable control of the Seller.
   - 1.8 "Goods" the products which the Seller has agreed to supply to the Buyer pursuant to these Terms.
   - 1.9 "Loss" all actions claims demands losses (direct, indirect, consequential or otherwise) expenses costs actions and proceedings.
   - 1.10 "Payment Terms" the terms of payment in respect of the Price (and where relevant any delivery order or handling charges) which unless otherwise agreed by the Buyer and the Seller shall require payment not later than the last day of the month following that in which the Seller notifies the Buyer that the Goods are ready for despatch or have been dispatched.
   - 1.11 "Price" the price of the Goods as set out in the Seller's current price list at the date of despatch.
   - 1.12 "Quotation" includes any quotation, estimate, or tender given or made by the Seller.
   - 1.13 "Terms" the terms and conditions set out herein including any special terms and conditions agreed in writing by the Seller and the Buyer.
   - 1.14 "Product Lifetime" is the reasonable lifetime of a wiring accessory product in this catalogue and is taken to be 25 years from the date of manufacture.
2. All orders are accepted and all contracts are made subject to the Terms which shall prevail and be effective notwithstanding any variations or additions contained in any order or other document submitted by the Buyer including without limitation any standard conditions of purchase of the Buyer. No modification, of these Terms shall be binding upon the Seller unless made in writing by a duly authorised employee of the Seller.
3. A Quotation does not constitute an offer by the Seller to supply Goods and every acceptance of any Quotation by the Buyer shall be deemed an offer by the Buyer to purchase Goods from the Seller and will not be binding on the Seller until the Seller has given written acknowledgement or acceptance of such order.
4. The Seller reserves the right by giving notice to the Buyer at any time before Delivery to increase the price of the Goods or any installment of the Goods to reflect any increase in their cost of production, delivery, provision or otherwise which is due to Force Majeure, including but not by way of limitation any fluctuations in the cost of raw materials.
5. Unless otherwise agreed by the Buyer and the Seller, the Price shall be for Delivery to the Delivery Address. The Price shall include carriage and transit insurance costs to the Delivery Address. The Price is exclusive of any VAT (which will be applied in accordance with the legislation in force at the tax point date) for which the Buyer will be additionally liable.
6. In addition to the price, an order charge of £10 shall be payable by the buyer on orders under the value of £250 (per order number). The Seller reserves the right to charge the Buyer a reasonablehandling charge for special deliveries made at the Buyer's request.
7. The Seller shall be entitled to send the invoice for the Goods to the Buyer immediately the Goods have been dispatched or when they are ready for despatch but are prevented or delayed from being dispatched due to Force Majeure.
8. The Buyer shall pay the Price plus any VAT strictly in accordance with the Payment Terms. The Seller will afford the Buyer a 2.5% discount on the Price if payment is made on or before the due date. Non-compliance with the Seller's terms of payment shall constitute default without reminder. In case of default the Seller may without prejudice to any other of its rights under these Terms charge interest to accrue on a daily basis at the rate of 3% per month from the date upon which payment falls due to the actual date of payment such interest to be paid monthly. Except where insolvency laws provide otherwise the Buyer shall not be entitled to withhold or set off payment for Goods for any reason whatsoever.
9. If the Buyer shall fail to fulfil the Payment Terms in respect of any invoice of the Seller the Seller may demand payment of all outstanding balances from the Buyer whether due or not and/or cancel all outstanding orders and/ or decline to make further deliveries except upon receipt of cash or satisfactory securities.
10. In addition to any right or lien to which the Seller may by law be entitled the Seller shall in the event of the Buyer's insolvency or the Buyer failing to render payment for any Goods supplied by the Seller when due be entitled to a general lien on all goods of the Buyer in the Seller's possession for the unpaid price of any Goods sold and delivered by the Seller under the same or any other contract.
11. In addition and without prejudice to its other rights the Seller may on 14 days notice to the Buyer sell any goods of the Buyer on which the Seller has a lien and shall be deemed the Buyer's age for the purposes of effecting such sale. The Seller may apply the proceeds of sale towards the satisfaction of sums due from the Buyer without prejudice to the Seller's right to recover the balance thereof from the Buyer.
12. Any date or period set out in a Quotation or the Seller's acceptance of order or which is otherwise agreed by the Seller and the Buyer for the delivery of the Goods or any part of them is approximate only and time shall not be of the essence of such delivery. If the Seller is prevented from delivering any Goods at the time provided for delivery by reason of Force Majeure then the period for delivery shall in any event be extended by the time lost due to such Force Majeure.
13. Delivery shall be made by the Seller supplying the Goods to the Delivery Address and the Buyer shall be responsible for the unloading of the Goods at the Delivery Address and the cost thereof. Where the Seller and the Buyer agree in writing that the Buyer shall collect the Goods from the Seller's premises the Buyer shall arrange at its expense unless otherwise agreed in writing for the carriage of the Goods (including cost of insurance in transit) and the Goods shall be deemed to have been delivered upon their loading upon the carrier and for the purpose of these Terms "Delivery" shall be construed accordingly.
14. Should the Buyer fail to take Delivery on or before the Delivery Date the Seller shall be entitled:
   - 14.1 If it has not already done so to invoice such Goods forthwith and to take the invoice into account;
   - 14.2 To treat the Contract as repudiated by the Buyer and without prejudice to any other right it may have against the Buyer the Seller shall be entitled to resell the Goods and shall be entitled to be indemnified by the Buyer for any Loss which it suffers.
15. The Seller reserves the right to deliver the Goods by installments and where it does so each delivery shall constitute a separate contract and any failure by the Seller to deliver any one or more of the installments in accordance with these Terms or any claim by the Buyer in respect of any one or more installments shall not entitle the Buyer to treat the Contract as a whole as repudiated.
16. The Buyer shall store and transport the Goods in conditions that will preserve the Goods in good condition. The Buyer shall comply with all reasonable requests made by the Seller with regard to the conditions in which the Goods are to be stored and transported.
17. Packing cases and cartons in which the Goods are supplied are non-returnable and provided free of charge.
18.
   - 18.1 If the Goods are to be manufactured by the Seller in accordance with a specification submitted by the Buyer, the Buyer shall indemnify the Seller against all Loss suffered by the Seller in connection with any claim by a third party that the manufacture and/or supply of the Goods to such specification infringes the rights of any third party.
   - 18.2 Unless otherwise agreed in writing all copyright and design rights in any drawings created by the Seller in the performance of the Contract shall vest in the Seller and remainthe property of the Seller notwithstanding the purchase of the Goods by the Buyer.
19.
   - 19.1 Subject as expressly provided for herein all warranties, conditions, or other terms implied by statute or common law are excluded to the fullest extent permitted by law and the Seller shall have no liability to the Buyer other than as expressly set out herein.
   - 19.2 The Seller makes no warranty as to the accuracy of all general drawings including weights and dimensions issued by the Seller and such drawings and any descriptions and illustrations contained in any catalogue, price list or other advertising material are for information only and are a general description of the Goods and do not form part of the Contract.
   - 19.3 The Buyer shall be deemed to have inspected and quantified the Goods upon Delivery and the Seller shall have no liability to the Buyer in relation to short delivery or damage to the Goods in transit which was apparent on inspection or which would have been apparent on reasonable inspection unless such short delivery or damage is notified to the Seller and the carriers in writing within 3 days of Delivery specifying (in such detail as the Supplier shall reasonably require) the shortage in or damage to the Goods.
   - 19.4 The Seller shall have no liability to the Buyer in relation to non-delivery of the Goods unless such non-delivery is notified to the Seller in writing within 10 days of the Delivery Date.
   - 19.5 Where any valid claim in respect of short delivery or non-delivery of or damage to the Goods is notified to the Seller in accordance with these Terms, the Seller shall be entitled to supply goods to remedy any short delivery or non-delivery or damage free of charge or, at the Seller's discretion refund to the Buyer the price of the relevant Goods but the Seller shall have no further liability to the Buyer except in the case of death or personal injury caused by the negligence of the Seller.
   - 19.6 Where the Seller does not manufacture the Goods or any part thereof the Seller shall have no liability in relation to any defect in or failing of the Goods other than to use its reasonable endeavours to pass to the Buyer the benefit of any guarantee given in respect of the Goods or part thereof by their manufacturer.
   - 19.7.1 The company undertakes to replace or repair at its discretion products should they become inoperable within the time periods as outlined in the following table:

Brand	Product Lifetime	10 Years	2 Years
Hager Wiring Accessories	✓		
Metalclad ranges		✓	
Dimmer Switches, Shaver Units, Portable Lamps			✓
Klik	✓		
Occupancy Sensors			✓
Hager			✓

19.7.2 In all cases defects shall be taken as arising solely from faulty materials and or workmanship and the defective goods must always be returned to Hager Ltd and Hager Ltd must be notified of the defect or suspected defect immediately the same became known to the Buyer.The Guarantee will be invalidated if the product has not been installed or maintained in accordance with the Company's instructions, has not been used appropriately or if any attempt has been made to rectify, dismantle or alter the product in any way.

19.8 The Seller shall not be liable to repair or replace defective Goods or part thereof if the Goods or part thereof have been subject to any misuse, unauthorised repair replacement modification or alteration.

19.9 The Seller shall not be liable for any Loss suffered by the Buyer due to the Seller's failure to meet its obligations under the Contract due to Force Majeure.

19.10 Except in respect of death or personal injury caused by the Seller's negligence, the Seller shall have no liability to the Buyer for any loss of profit, business, contracts, revenues or anticipated savings or for any special indirect or consequential damage or loss of any nature whatsoever and whether caused by the negligence of the Seller or its employees, or agents) which arises out of or in connection with the supply of the Goods and/or their use or resale by the Buyer, except as may otherwise be expressly provided for in these Terms.

19.11 For the avoidance of doubt nothing herein contained shall be deemed to exclude or restrict the Seller's liability for death or personal injury arising due to the Seller's negligence.

20. The risk in the Goods shall pass to the Buyer immediately upon Delivery.

21. The Buyer shall indemnify the Seller against all Loss (including without limitation the Price in respect of Goods completed, costs incurred by the Seller in respect of partially completed Goods, reasonable cancellation charges incurred by the Seller due to any subcontracts entered into to perform the Contract and estimated profits on the Goods under the Contract on which work by the Seller has not been started) suffered by the Seller which arises as a result of the cancellation of the Contract by the Buyer, the breach by the Buyer of any provision of the Contract or the negligence of the Buyer or any of its representatives.

22. Until payment by the Buyer in full of the Price of the Goods and any other monies due to the Seller in respect of all other products supplied or agreed to be sold by the Seller to the Buyer (including but without limitation any costs of delivery):

22.1 The property in the Goods shall remain in the Seller and the Buyer shall hold the same as the fiduciary agent of and bailee for the Seller;

22.2 The Buyer shall store the Goods separately from other products in a manner which makes them readily identifiable as being the property of the Seller and shall keep them protected and insured but shall be entitled to resell or use the Goods in the ordinary course of its business.

23. Until such time as property in the Goods has passed to the Buyer (and provided that the Goods are still in existence and have not been resold) the Seller shall be entitled at any time to require the Buyer to deliver up the Goods to the Seller and if the Buyer fails to do so forthwith the Seller or its agents may enter the premises of the Buyer and take possession of any Goods in which property remains in the Seller and remove and dispose of them as the Seller thinks fit. The Seller shall apply the proceeds of disposal (after deduction of all expenses) in discharge of the amount unpaid by the Buyer.

24.

24.1 Save as may be otherwise agreed in writing between the Seller and the Buyer where Goods are supplied for export from the United Kingdom they shall be charged for and delivered FOB the air or sea port of shipment and the Seller shall not be obliged to give the Buyer the notice specified in Section 32(3) of the Sale of Goods Act 1979.

24.2 The Buyer shall be responsible for complying with any legislation or regulations governing the importation of the Goods into the country of destination and for the payment of any duties thereon. In particular, if any licence or consent of any government or other authority shall be required for the acquisition, carriage or use of the Goods by the Buyer the Buyer shall obtain the same at its own expense and if necessary produce evidence of the same to the Seller on demand. Failure to do so shall not entitle the Buyer to withhold or delay payment of the Price. Any additional expenses or charges incurred by the Seller resulting from such failure shall be for the Buyer's account.

24.3 The seller supplies the goods to the buyer on the sole basis that goods are on-sold by the buyer to suitably qualified, professional installers only.

25. If the Buyer:

25.1 Shall default in or commit any breach of any of its obligations to the Seller under these Terms; or

25.2 Shall be involved in any legal proceedings in which its solvency is in question; or

25.3 Being a company shall present a petition or have a petition presented for its winding up or convene a meeting to pass a resolution for voluntary winding up or have a receiver appointed over all or any part of its assets or call a meeting of or enter into any composition or arrangement with its creditors or being an individual shall be presented with a bankruptcy petition; or

25.4 Shall cease or threaten to cease to trade or if in the opinion of the Seller serious doubts arise as to the Buyer's solvency then in any such case the Seller shall immediately become entitled (without prejudice to its other claims and rights under the Contract) to suspend further performance of the Contract for such time as it shall in its absolute discretion think fit or (whether or not notice of such a suspension shall have been given) to treat the Contract as wrongfully repudiated by the Buyer and forthwith terminate the Contract (either with or without notice to the Buyer) and if the Goods have been delivered but not paid for the Price shall become immediately due and payable notwithstanding any previous agreement to the contrary.

26. All Contracts shall be governed by English Law and the English Courts shall have nonexclusive jurisdiction for the hearing of any dispute between the parties.

27. These Terms supersede all previous Conditions of Sale of the Seller.

28. The Seller shall be entitled to assign or sub-contract all or any of its rights and obligations hereunder. The Buyer shall not be entitled to assign transfer sub-contract or otherwise delegate any of its rights or obligations hereunder.

29. It is a condition of any sale under these terms and conditions that both parties shall abide by the principles of The Electrical Installation Industry Charter adopted by the major electrical industry trade bodies and consequently shall avoid the distribution of counterfeit and/or non-compliant electrical products.

Conditions of Use

The products listed in this publication should be installed by suitably qualified professional personnel in accordance with the company's instructions, requirements of relevant legislation, regulations (including IEE Wiring Regulations) and the accepted practice in the industry

End of life treatment of electrical/electronic equipment and batteries in the European Union Countries.

The crossed-out 'wheeled bin symbol' marked on the equipment or its packaging, indicates that the product is not to be disposed of with unsorted municipal / household waste. Please check with your local authority or retailer for recycling and collection advice. This will enable you to contribute to the disposal, treatment and recycling in an environmentally sound way and help prevent potential negative effects on the environment and human health.

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