

Catalogue 2022/2023

: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.

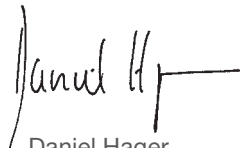
The latest studies indicate that many properties will first have to be adapted to accommodate the solar power systems, energy storage units and intelligent building controls that characterise smart homes. Many Irish homes could benefit from improvements to aid in energy-efficient living and working. Large-scale renovation and modernisation are needed if renewable energy is to help achieve a considerable reduction in carbon emissions by 2030.

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 

B. 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.

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 unmistakable, 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.



Erwin van Handenhoven
Hager Group Design Director

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

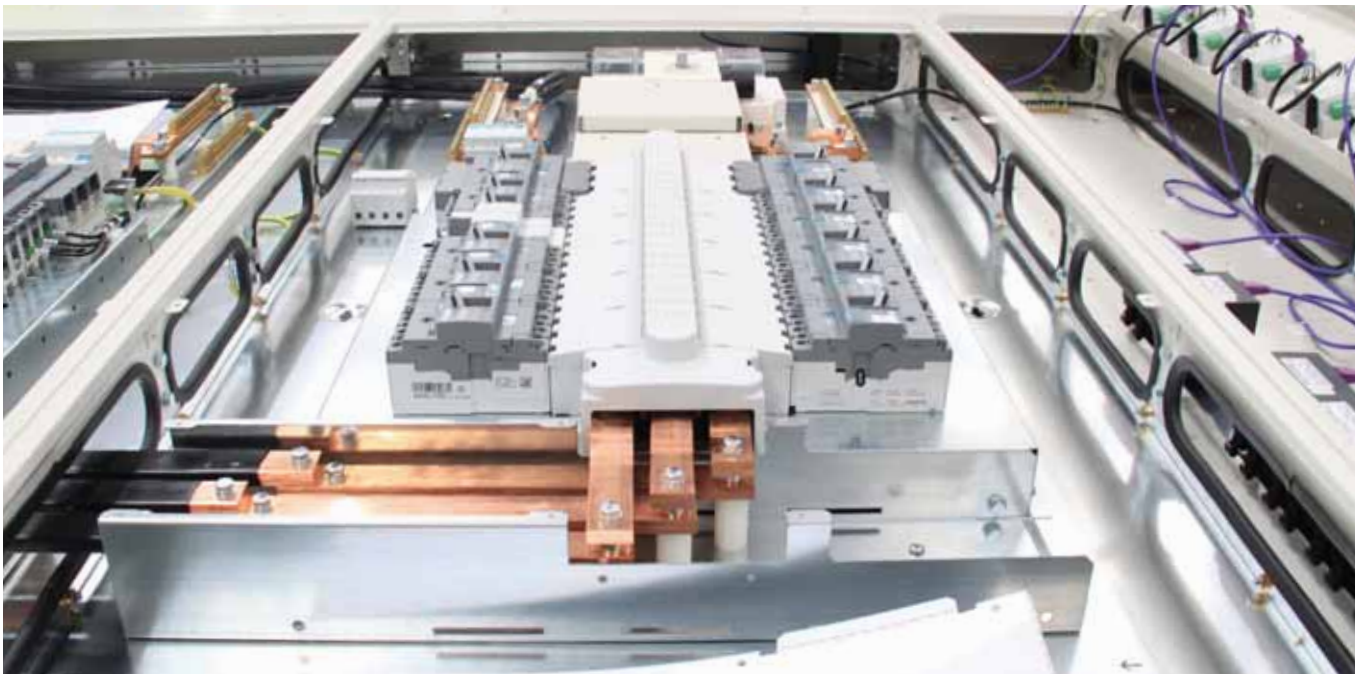
From pre-assembled standard distribution units to bespoke composite TP&N boards, and plug in distribution boards we can provide the solution. We will even deliver to site to an agreed deadline and to specification. We have the support of an experienced design engineering team and an ISO 9001:2008 manufacturing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

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.





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.

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.

Engineered Consumer Units

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.

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

Technical Service Centre

Call our Technical Team for all your national sales enquiries

Telephone our Technical Team +353 (0)1 8835844 or email Customer Services at customer.service@hager.ie

01 Commercial Distribution

Enclosures & Distribution Boards / Univers / Quadro / Orion Plus / Type A Distribution Boards / Type B Distribution Boards / Panelboards / Fuse Combination Switches / Switch Disconnectors / Enclosures for MCCBs



1.1

Devices / MCBs / RCBOs / RCCBs / Fuse Carriers / Surge Protection / Earth Fault Relays / MCCBs / ACBs / Load Break Switches / Switch Fuses / Earth Leakage Relays / Changeover Switches

Commercial
Distribution

02 Modular Devices & Connection

Modular Devices / Metering & Monitoring / Switching / Contactors / Relays / Push Buttons / Indication / Timers



2.1

Connection / Insulated Busbars / Distribution Blocks / Junction Blocks / Screw Terminals / Brass Terminals / Quick Connect & Cage Terminals

Modular Devices
& Connection

03 Lighting, Connection & Control

Klik / Klik 4 Pin / Klik 7 Pin



3.1

Controls / Selecton Guide / Motion Detectors / Presence Detectors

Lighting / Outdoor Lighting

Lighting, Connection
& Control

04 Residential Distribution

Consumer Units / Surface Mounted Consumer Units / Flush Mounted Consumer Units



4.1

Enclosures / Surface Mounted Enclosures / Flush Mounted Enclosures

Devices / RCCBs / MCBs / RCBOs / Locking Kit / Surge Protection

Switching / Switch Disconnectors

Residential
Distribution

05 Wiring Accessories

Sollysta / White Moulded / Decorative / Metalclad / IP66



5.1

Junction Boxes / Traditional Junction Boxes / Maintenance Free Junction Boxes / Downlighter Junction Boxes

Ceiling Accessories / Safety Lampholders / Safety Pendants

Wiring
Accessories

06 Building Automation

KNX / Quicklink / Easy / System / Inputs, Outputs, System Components / Remote Control & Visualisation / Berker Wiring Accessories

6.1

Building
Automation

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 Univers to Quadro boards, our commercial offering will create the perfect electrical ecosystem for a building.



Distribution Boards

Univers	1.3
Quadro	1.62
Orion Plus	1.98
Type A Distribution Boards	1.119
Type B Distribution Boards	1.121
Panelboards	1.129
Fuse Combination Switches	1.137
Switch Disconnectors	1.138
Enclosures for MCCBs	1.140

Devices

MCBs	1.141
RCBOs	1.149
RCCBs	1.152
Fuse Carriers	1.155
Surge Protection	1.157
Arc Fault Detection Devices	1.160
Earth Fault Relays	1.161
MCCBs	1.162
Air Circuit Breakers	1.181
Load Break Switches	1.182
Switch Fuses	1.185
Earth Leakage Relays	1.186
Changeover Switches	1.187
Technical Pages	1.191

Univers

A flexible system

The options offered by Univers distribution cabinets are versatile enough to meet the needs of any construction site. The wall-mounted, free-standing and modular cabinets meet the demands found in domestic, commercial and industrial buildings. The predominantly used material is sheet steel, the degree of protection ranges from IP44 to IP65.



- IP44
- Front-flush door
- For devices up to 400 A
- Wall, flush and partially recessed mounting
- Indoor installation
- Colour: RAL 9010

- FZ426 pass-through flanges installed at top and bottom
- Closure: Door plate with hinged handle and sash lock with three-point rod lock
- Surround frame with plaster compensation up to 54 mm
- 1 circuit diagram pocket
- EN 61439-1/-3
- Qty.: 1
- IK09 impact tested
- Optional doors, such as IK07 slotted doors
- Busbar bushing left and right, from H = 800 mm lateral two busbar bushings

Protection class				I ±		
Depth in mm					Surround frame	Mounting rails 1 set = 2 rails
Height		Width	Mod.	Cat. ref.	Cat. ref.	Cat. ref.
500		300	36	FP31TN2	FZ011B	UN03A
		550	72	FP32TN2	FZ012B	
		800	108	FP33TN2	FZ013B	
		1050	144	FP34TN2	FZ014B	
		1300	180	FP35TN2	FZ015B	
650		300	48	FP41TN2	FZ021B	UN04A
		550	96	FP42TN2	FZ022B	
		800	144	FP43TN2	FZ023B	
		1050	192	FP44TN2	FZ024B	
		1300	240	FP45TN2	FZ025B	
800		300	60	FP51TN2	FZ11B	UN05A
		550	120	FP52TN2	FZ12B	
		800	180	FP53TN2	FZ13B	
		1050	240	FP54TN2	FZ14B	
		1300	300	FP55TN2	FZ15B	
950		300	72	FP61TN2	FZ21B	UN06A
		550	144	FP62TN2	FZ22B	
		800	216	FP63TN2	FZ23B	
		1050	288	FP64TN2	FZ24B	
		1300	360	FP65TN2	FZ25B	
1100		300	84	FP71TN2	FZ31B	UN07A
		550	168	FP72TN2	FZ32B	
		800	252	FP73TN2	FZ33B	
		1050	336	FP74TN2	FZ34B	
		1300	420	FP75TN2	FZ35B	
1250		300	96	FP81TN2	FZ41B	UN08A
		550	192	FP82TN2	FZ42B	
		800	288	FP83TN2	FZ43B	
		1050	384	FP84TN2	FZ44B	
		1300	480	FP85TN2	FZ45B	
1400		300	108	FP91TN2	FZ51B	UN09A
		550	216	FP92TN2	FZ52B	
		800	324	FP93TN2	FZ53B	
		1050	432	FP94TN2	FZ54B	
		1300	540	FP95TN2	FZ55B	
1550		300	120	FP01TN2		UN10A
		550	240	FP02TN2		
		800	360	FP03TN2		
		1050	480	FP04TN2		
		1300	600	FP05TN2		
1700		300	132	FP11TN2		UN11A
		550	264	FP12TN2		
		800	396	FP13TN2		
		1050	528	FP14TN2		
		1300	660	FP15TN2		

Univers

IP55 Wall Cabinets, Depth 275/400 mm

- Protection class I
- Depth 275/400 mm for devices up to 800 A
- Indoor installation
- Version with three-point rod lock
- Colour: RAL 7035 (Light grey)

- Standards: DIN VDE 0660 part 600-1, -2, -3; EN 61439-1, -2, -3
- Qty.: 1

Commercial Distribution

Cabinet type				Wall cabinet	
Degree of protection				IP55	
Protection class				I ⚡	
Depth in mm				275mm	
Colour in RAL				7035	
With cable entries				Top FZ402 bottom 1 x FZ408M, rest FZ406M	Mounting rails 1 set = 2 rails
Height		Width	Mod.	Cat. ref.	Cat. ref.
500		300	36	FR31E	UN03A
		550	72	FR32E	
		800	108	FR33E	
		1050	144	FR34E	
		1300	180	FR35E	
650		300	48	FR41E	UN04A
		550	96	FR42E	
		800	144	FR43E	
		1050	192	FR44E	
		1300	240	FR45E	
800		300	60	FR51E	UN05A
		550	120	FR52E	
		800	180	FR53E	
		1050	240	FR54E	
		1300	300	FR55E	
950		300	72	FR61E	UN06A
		550	144	FR62E	
		800	216	FR63E	
		1050	288	FR64E	
		1300	360	FR65E	
1100		300	84	FR71E	UN07A
		550	168	FR72E	
		800	252	FR73E	
		1050	336	FR74E	
		1300	420	FR75E	
1250		300	96	FR81E	UN08A
		550	192	FR82E	
		800	288	FR83E	
		1050	384	FR84E	
		1300	480	FR85E	
1400		300	108	FR91E	UN09A
		550	216	FR92E	
		800	324	FR93E	
		1050	432	FR94E	
		1300	540	FR95E	
1550		300	120	FR01E	UN10A
		550	240	FR02E	
		800	360	FR03E	
		1050	480	FR04E	
		1300	600	FR05E	
Depth in mm				400mm	
1400		550	216	FR92G	UN09A
		800	324	FR93G	
		1050	432	FR94G	

Protection class				I ↓ II □	
Cabinet depth in mm				275 mm	
Degree of protection				IP54	
Cabinet width in mm		Cabinet height in mm	Cabinet	Standard door	
				Cat. ref.	Door dimensions H x W (mm)
300		500	FR31...	FZ031R	493 x 793
		650	FR41...	FZ041R	643 x 793
		900	FR51...	FZ051R	793 x 793
		1050	FR61...	FZ061R	943 x 793
		1100	FR71...	FZ071R	1093 x 793
		1250	FR81...	FZ081R	1243 x 793
		1400	FR91...	FZ091R	1393 x 793
		1550	FR11...	FZ011R	1543 x 793
550		500	FR32...	FZ032R	493 x 793
		650	FR42...	FZ042R	643 x 793
		900	FR52...	FZ052R	793 x 793
		1050	FR62...	FZ062R	943 x 793
		1100	FR72...	FZ072R	1093 x 793
		1250	FR82...	FZ082R	1243 x 793
		1400	FR92...	FZ092R	1393 x 793
		1550	FR12...	FZ012R	1543 x 793
800		500	FR33...	FZ033R	493 x 793
		650	FR43...	FZ043R	643 x 793
		800	FR53...	FZ053R	793 x 793
		950	FR63...	FZ063R	943 x 793
		1100	FR73...	FZ073R	1093 x 793
		1250	FR83...	FZ083R	1243 x 793
		1400	FR93...	FZ093R	1393 x 793
		1550	FR13...	FZ013R	1543 x 793
1050		500	FR34...	FZ034R	493 x 793
		650	FR44...	FZ044R	643 x 793
		800	FR54...	FZ054R	793 x 793
		950	FR64...	FZ064R	943 x 793
		1100	FR74...	FZ074R	1093 x 793
		1250	FR84...	FZ084R	1243 x 793
		1400	FR94...	FZ094R	1393 x 793
		1550	FR14...	FZ014R	1543 x 793
1300		500	FR35...	FZ035R	493 x 793
		650	FR45...	FZ045R	643 x 793
		800	FR55...	FZ055R	793 x 793
		950	FR65...	FZ065R	943 x 793
		1100	FR75...	FZ075R	1093 x 793
		1250	FR85...	FZ085R	1243 x 793
		1400	FR95...	FZ095R	1393 x 793
		1550	FR15...	FZ015R	1543 x 793

Univers

IP65 Wall Cabinets, Depth 300 mm

- For outdoor applications
- Protection class II
- For devices up to 630 A
- 3 mm double-bit lock
- Polyester


















- Colour: RAL 7035 (Light grey)
- When installed outdoors, additional requirements must be met.
- Important information can be found in the guidelines for project development and construction of switchgear in accordance with DIN EN 61439

Commercial Distribution

Cabinet type			Wall-mounted	
Degree of protection			IP65	
Protection class			II □	
UV resistance			Yes	
Depth in mm			300	
Colour in RAL			7035	
Height		Width	Mod.	Cat. ref.
550	□	600	72	FL32S
	□□	850	108	FL33S
	□□□	1100	144	FL34S
850	□	600	120	FL52S
	□□	850	180	FL53S
	□□□	1100	240	FL54S
1150	□	600	168	FL72S
	□□	850	252	FL73S
	□□□	1100	336	FL74S

- Protection class I
- For devices up to 800 A
- Indoor installation
- Depth 275/400 mm
- Colour: RAL 7035 (Light grey)
- FZ402 cable entries at top, bottom open

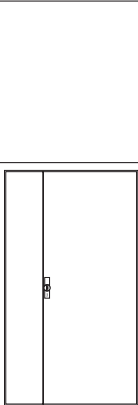
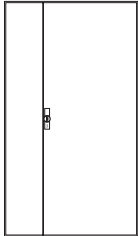
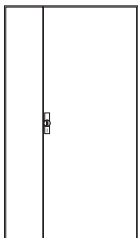
- With base, 100 mm or 200 mm
- Sheet steel or transparent door
- To ensure compliance with the IP54 degree of protection, entry flanges must be inserted
- Standards: DIN VDE 0660 part 600-1, -2, -3; EN 61439-1, -2, -3

Cabinet type			Free-standing cabinet			
Degree of protection			IP55		IP55	
Depth in mm			275		275	
Colour in RAL			7035		7035	
With cable entries			Top		Top	
Height / depth	Width	Mod.	PC I Base 100 mm	PC I Transparent door with base 100 mm	PC I Base 200 mm	PC I Transparent door with base 200 mm
1700	 300	132	FR11E1		FR11E2	
	 550	264	FR12E1		FR12E2	
	 800	396	FR13E1		FR13E2	
	 1050	528	FR14E1		FR14E2	
	 1300	660	FR15E1		FR15E2	
1850	 300	144	FR21E1	FR21K1	FR21E2	FR21K2
	 550	288	FR22E1	FR22K1	FR22E2	FR22K2
	 800	432	FR23E1	FR23K1	FR23E2	FR23K2
	 1050	576	FR24E1	FR24K1	FR24E2	FR24K2
	 1300	720	FR25E1	FR25K1	FR25E2	FR25K2
	 1500	864	FR26E1	FR26K1	FR26E2	FR26K2
Depth in mm			400		400	
1850	 300	144	FR21G1	FR21V1	FR21G2	FR21V2
	 550	288	FR22G1	FR22V1	FR22G2	FR22V2
	 800	432	FR23G1	FR23V1	FR23G2	FR23V2
	 1050	576	FR24G1	FR24V1	FR24G2	FR24V2
	 1300	720	FR25G1	FR25V1	FR25G2	FR25V2
	 1550	864	FR26G1	FR26V1	FR26G2	FR26V2

Univers, Overview of Doors

IP55 Free-standing Cabinets, Depth 275/400 mm

Commercial Distribution

Protection class				I ⊥ II □	
Cabinet depth in mm				275 – 400 mm	
Degree of protection				IP55	
Cabinet width in mm		Cabinet height in mm	Cabinet	Standard door (without lock)	Cat. ref. Door dimensions H x W (mm)
1700		300	FR11...	FR011R	1843 x 293
		550	FR12...	FR012R	1843 x 543
		800	FR13...	FR013R	1843 x 793
		1050	FR14...	FR014R	1843 x 520
		1300	FR15...	FR015R	1843 x 770
1850		300	FR21...	FR021R	1843 x 293
		550	FR22...	FR022R	1843 x 543
		800	FR23...	FR023R	1843 x 793
		1050	FR24...	FR024R	1843 x 520
		1300	FR25...	FR025R	1843 x 770

Protection class I, cabinet height 500 mm

Height	Width	Depth	Number of sections	Qty.	Cat. ref..
500 mm	300 mm	205 mm	1	1	FP31TN2
500 mm	550 mm	205 mm	2	1	FP32TN2
500 mm	800 mm	205 mm	3	1	FP33TN2
500 mm	1050 mm	205 mm	4	1	FP34TN2
500 mm	1300 mm	205 mm	5	1	FP35TN2



FP31TN2

Protection class I, cabinet height 650 mm

Height	Width	Depth	Number of sections	Qty.	Cat. ref..
650 mm	300 mm	205 mm	1	1	FP41TN2
650 mm	550 mm	205 mm	2	1	FP42TN2
650 mm	800 mm	205 mm	3	1	FP43TN2
650 mm	1050 mm	205 mm	4	1	FP44TN2
650 mm	1300 mm	205 mm	5	1	FP45TN2



FP41TN2

Protection class I, cabinet height 800 mm

Height	Width	Depth	Number of sections	Qty.	Cat. ref..
800 mm	300 mm	205 mm	1	1	FP51TN2
800 mm	550 mm	205 mm	2	1	FP52TN2
800 mm	800 mm	205 mm	3	1	FP53TN2
800 mm	1050 mm	205 mm	4	1	FP54TN2
800 mm	1300 mm	205 mm	5	1	FP55TN2



FP51TN2

Protection class I, cabinet height 950 mm

Height	Width	Depth	Number of sections	Qty.	Cat. ref..
950 mm	300 mm	205 mm	1	1	FP61TN2
950 mm	550 mm	205 mm	2	1	FP62TN2
950 mm	800 mm	205 mm	3	1	FP63TN2
950 mm	1050 mm	205 mm	4	1	FP64TN2
950 mm	1300 mm	205 mm	5	1	FP65TN2



FP61TN2



Protection class I, cabinet height 1100 mm

Height	Width	Depth	Number of sections	Qty.	Cat. ref..
1100 mm	300 mm	205 mm	1	1	FP71TN2
1100 mm	550 mm	205 mm	2	1	FP72TN2
1100 mm	800 mm	205 mm	3	1	FP73TN2
1100 mm	1050 mm	205 mm	4	1	FP74TN2
1100 mm	1300 mm	205 mm	5	1	FP75TN2

FP71TN2



Protection class I, cabinet height 1250 mm

Height	Width	Depth	Number of sections	Qty.	Cat. ref..
1250 mm	300 mm	205 mm	1	1	FP81TN2
1250 mm	550 mm	205 mm	2	1	FP82TN2
1250 mm	800 mm	205 mm	3	1	FP83TN2
1250 mm	1050 mm	205 mm	4	1	FP84TN2
1250 mm	1300 mm	205 mm	5	1	FP85TN2

FP81TN2



Protection class I, cabinet height 1400 mm

Height	Width	Depth	Number of sections	Qty.	Cat. ref..
1400 mm	300 mm	205 mm	1	1	FP91TN2
1400 mm	550 mm	205 mm	2	1	FP92TN2
1400 mm	800 mm	205 mm	3	1	FP93TN2
1400 mm	1050 mm	205 mm	4	1	FP94TN2
1400 mm	1300 mm	205 mm	5	1	FP95TN2

FP91TN2



Protection class I, cabinet height 1550 mm

Height	Width	Depth	Number of sections	Qty.	Cat. ref..
1550 mm	300 mm	205 mm	1	1	FP01TN2
1550 mm	550 mm	205 mm	2	1	FP02TN2
1550 mm	800 mm	205 mm	3	1	FP03TN2
1550 mm	1050 mm	205 mm	4	1	FP04TN2
1550 mm	1300 mm	205 mm	5	1	FP05TN2

FP01TN2



Protection class I, cabinet height 1700 mm

Height	Width	Depth	Number of sections	Qty.	Cat. ref..
1700 mm	300 mm	205 mm	1	1	FP11TN2
1700 mm	550 mm	205 mm	2	1	FP12TN2
1700 mm	800 mm	205 mm	3	1	FP13TN2
1700 mm	1050 mm	205 mm	4	1	FP14TN2
1700 mm	1300 mm	205 mm	5	1	FP15TN2

FP11TN2

Surround frame for IP44 wall cabinets

Features:

- Plaster compensation without spacer max. 10 mm
- Plaster compensation with spacer max. 10 – 58 mm
- IP30



FZ012B

Commercial Distribution

Description	Qty.	Cat. ref..
Surround frame, Univers Z, 1 panel, 500 x 300	1	FZ011B
Surround frame, Univers Z, 2 panels, 500 x 550	1	FZ012B
Surround frame, Univers Z, 3 panels, 500 x 800	1	FZ013B
Surround frame, Univers Z, 4 panels, 500 x 1050	1	FZ014B
Surround frame, Univers Z, 5 panels, 500 x 1300	1	FZ015B
Surround frame, Univers Z, 1 panel, 600 x 300	1	FZ021B
Surround frame, Univers Z, 2 panels, 650 x 550	1	FZ022B
Surround frame, Univers Z, 3 panels, 650 x 800	1	FZ023B
Surround frame, Univers Z, 4 panels, 650 x 1050	1	FZ024B
Surround frame, Univers Z, 5 panels, 650 x 1300	1	FZ025B
Surround frame, Univers Z, 1 panel, 800 x 300	1	FZ11B
Surround frame, Univers Z, 2 panels, 800 x 550	1	FZ12B
Surround frame, Univers Z, 3 panels, 800 x 800	1	FZ13B
Surround frame, Univers Z, 4 panels, 800 x 1050	1	FZ14B
Surround frame, Univers Z, 5 panels, 800 x 1300	1	FZ15B
Surround frame, Univers Z, 1 panel, 950 x 300	1	FZ21B
Surround frame, Univers Z, 2 panels, 950 x 550	1	FZ22B
Surround frame, Univers Z, 3 panels, 950 x 800	1	FZ23B
Surround frame, Univers Z, 4 panels, 950 x 1050	1	FZ24B
Surround frame, Univers Z, 5 panels, 950 x 1300	1	FZ25B
Surround frame, Univers Z, 1 panel, 1100 x 300	1	FZ31B
Surround frame, Univers Z, 2 panels, 1100 x 550	1	FZ32B
Surround frame, Univers Z, 3 panels, 1100 x 800	1	FZ33B
Surround frame, Univers Z, 4 panels, 1100 x 1050	1	FZ34B
Surround frame, Univers Z, 5 panels, 1100 x 1300	1	FZ35B
Surround frame, Univers Z, 1 panel, 1250 x 300	1	FZ41B
Surround frame, Univers Z, 2 panels, 1250 x 550	1	FZ42B
Surround frame, Univers Z, 3 panels, 1250 x 800	1	FZ43B
Surround frame, Univers Z, 4 panels, 1250 x 1050	1	FZ44B
Surround frame, Univers Z, 5 panels, 1250 x 1300	1	FZ45B
Surround frame, Univers Z, 1 panel, 1400 x 300	1	FZ51B
Surround frame, Univers Z, 2 panels, 1400 x 550	1	FZ52B
Surround frame, Univers Z, 3 panels, 1400 x 800	1	FZ53B
Surround frame, Univers Z, 4 panels, 1400 x 1050	1	FZ54B
Surround frame, Univers Z, 5 panels, 1400 x 1300	1	FZ55B



FZ353

Clip-on cable duct

Features:

- For IP44 cabinets of depths 205 mm
- FZ44xN plaster compensation possible using snap-in mechanism

Description	Qty.	Cat. ref..
Cable duct, 1 panel, RAL 7035	1	FZ351
Cable duct, 2 panels, RAL 7035	1	FZ352
Cable duct, 3 panels, RAL 7035	1	FZ353
Cable duct, 4 panels, RAL 7035	1	FZ354
Cable duct, 5 panels, RAL 7035	1	FZ355
Cable duct, 1 panel, wall-mounted	1	FZ441
Cable duct, 1 panel, clip-on	1	FZ441N
Cable duct, 2 panels, wall-mounted	1	FZ442
Cable duct, 2 panels, clip-on	1	FZ442N
Cable duct, 3 panels, wall-mounted	1	FZ443
Cable duct, 3 panels, clip-on	1	FZ443N
Cable duct, 4 panels, wall-mounted	1	FZ444
Cable duct, 4 panels, clip-on	1	FZ444N
Cable duct, 5 panels, wall-mounted	1	FZ445
Cable duct, 5 panels, clip-on	1	FZ445N



FZ44N

End panels for cable duct, plug-on, for FZ44xN

Features:

- FZ44H profile holder top section for FZ44xN

Description	Qty.	Cat. ref..
End panel set, r/l, for cable duct	1	FZ44N



FZ598N

Door plate (spare part)

Description	Qty.	Cat. ref..
Door plate with hinged handle, f. IP44 cabinet	1	FZ598N



FZ597N

Door lock

Features:

- With two keys for retrofitting

Description	Qty.	Cat. ref..
Closure, Univers cylinder lock, no. 1242E	1	FZ597N
Closure, Univers, double-bit, 3 mm	1	FZ449N
Closure, Univers, triangular lock, 7 mm	1	FZ450N
Closure, Univers, square lock, 7 mm	1	FZ451N
Closure, Univers, cylinder lock, no. 405	1	FZ452N
Closure, Univers, cylinder lock, no. 455	1	FZ453N
Spare key, Univers, f. FZ452N closure	1	FZ454
Closure, Univers, cylinder lock, no. E012	1	FZ455N
Spare key, Univers, f. FZ453N closure	1	FZ456
Spare key, Univers, f. FZ455N closure	1	FZ457
Spare key, Univers, f. FZ597N closure	1	FZ596

Sealing cover with closure

Description	Qty.	Cat. ref..
Closure, Univers, square, w/ sealing cover, 8 mm	1	FZ821N
Closure, Univers, square, w/ sealing cover, 7 mm	1	FZ822N
Closure, Univers, slit, w/ sealing cover	1	FZ823N
Closure, cylinder, w/ sealing cover, no. 1242E	1	FZ824N



FZ821N

Sealing cover, retrofitted

Description	Qty.	Cat. ref..
Sealing flap, Univers, for IP44 doors	1	FZ226



FZ226

T-handles

Features:

- FZ531N lockable, locking number 1333

Description	Qty.	Cat. ref..
Closure, Univers, T-handle	1	FZ530N
Closure, univ, T-handle, lockable	1	FZ531N
Spare key, Univers, f. FZ531 + FZ533	1	FZ539



FZ531N

L-handles

Features:

- FZ533N lockable, locking number 1333

Description	Qty.	Cat. ref..
Closure, Univers, L-handle	1	FZ532N
Closure, univ, L-handle, lockable	1	FZ533N
Spare key, Univers, f. FZ531 + FZ533	1	FZ539



FZ533N

Pivoted handle

Features:

- FZ53...N: For 40 mm profile half cylinder
- FZ518.N: With 40 mm profile half cylinder, locking number 455
- IP54

Description	Qty.	Cat. ref..
Pivoted handle, Univers, with cylinder	1	FZ518N
Pivoted handle, univ, f. IP44/54 cabinet	1	FZ534N
Pivoted handle, IP44/54 cabinet, sealing	1	FZ535N



FZ535N

Connecting rods

Features:

- For installing closures with pivoted handles

Description	Qty.	Cat. ref..
Connecting rods, Univers, f. IP44/54 closure, 500	1	FZ833N
Connecting rods, Univers, f. IP44/54 closure, 650	1	FZ834N
Connecting rods, Univers, f. IP44/54 closure, 800	1	FZ835N
Connecting rods, Univers, f. IP44/54 closure, 950	1	FZ836N
Connecting rods, Univers, f. IP44/54 closure, 1100	1	FZ837N
Connecting rods, Univers, f. IP44/54 closure, 1250	1	FZ838N
Connecting rods, Univers, f. IP44/54 closure, 1400	1	FZ839N



FZ833N

Closures, spare parts, miscellaneous

Description	Qty.	Cat. ref..
Berlin senat tumbler, Univers,	1	FZ548N



FZ503N

Spare pin

Features:

- As replacement for T-handle
- FZ504N: Locking number 1333

Description	Qty.	Cat. ref..
Closure, Univers, double-bit, 3 mm	1	FZ501N
Closure, Univers, triangular lock, 7 mm	1	FZ502N
Closure, Univers, square lock, 7 mm	1	FZ503N
Closure, Univers, cylinder w/ two keys	1	FZ504N



FZ737B

Connection kits for two adjacent cabinets

Features:

- For all ZB, FP cabinet widths
- For cabinet-cabinet connection
- Kit

Description	Qty.	Cat. ref..
Connection kit, Univers, horizontal, IP44	1	FZ737B



FZ441B

Connection kits for two cabinets above one another

Features:

- For IP44 cabinets above one another
- For cabinet on IP44 connecting base

Description	Qty.	Cat. ref..
Connection kit, Univers, vertical, 1 panel	1	FZ441B
Connection kit, Univers, vertical, 1 panel, QS	1	FZ441S
Connection kit, Univers, vertical, 2 panels	1	FZ442B
Connection kit, Univers, vertical, 2 panels, QS	1	FZ442S
Connection kit, Univers, vertical, 3 panels	1	FZ443B
Connection kit, Univers, vertical, 3 panels, QS	1	FZ443S
Connection kit, Univers, vertical, 4 panels	1	FZ444B
Connection kit, Univers, vertical, 4 panels, QS	1	FZ444S
Connection kit, Univers, vertical, 5 panels	1	FZ445B



FZ738

Connection kits for cabinets on bases

Features:

- For all IP44 cabinet widths on 100/200 mm bases (integrated in base)
- For cabinet on connecting base cabinet

Description	Qty.	Cat. ref..
Connection kit, uni., f. IP44 cabinet	1	FZ738



FZ714

Connection kits for two bases above one another

Features:

- For all widths
- Two 100/200 mm bases arranged vertically

Description	Qty.	Cat. ref..
Connection kit, Univers, f. bases	1	FZ714

Spare doors, left

Description	Qty.	Cat. ref..
Door, left, f. cabinet H: 950 x W: 800 mm	1	FZ015N
Door, left, f. cabinet H: 1100 x W: 800 mm	1	FZ023N
Door, left, f. cabinet H: 1250 x W: 800 mm	1	FZ028N
Door, left, f. cabinet H: 1400 x W: 800 mm	1	FZ033N



FZ015N

Spare doors, right, with rod lock

Description	Qty.	Cat. ref..
Door, right, f. cabinet H: 950 x W: 300 mm	1	FZ013N
Door, right, f. cabinet H: 1100 x W: 300 mm	1	FZ021N
Door, right, f. cabinet H: 1250 x W: 300 mm	1	FZ026N
Door, right, f. cabinet H: 1400 x W: 300 mm	1	FZ031N



FZ013N

Special doors, right, with rod lock, for narrow areas, IP44

Description	Qty.	Cat. ref..
Door, right, f. cabinet H: 950 x W: 300 mm	1	FZ191N
Door, right, f. cabinet H: 1100 x W: 300 mm	1	FZ192N
Door, right, f. cabinet H: 1250 x W: 300 mm	1	FZ193N
Door, right, f. cabinet H: 1400 x W: 300 mm	1	FZ194N



FZ191N

Transparent doors, width 550 mm

Features:

- For replacement
- FZ164N: Two doors (right + left)
- Max. IP40, IK07

Description	Number of panels	Qty.	Cat. ref..
Door, right, f. cabinet H: 1100 x W: 550 mm	2	1	FZ102N
Door, right, f. cabinet H: 650 x W: 550 mm	2	1	FZ104N
Door, right, f. cabinet H: 800 x W: 550 mm	2	1	FZ106N
Door, right, f. cabinet H: 950 x W: 550 mm	2	1	FZ110N
Doors, ri., le., f. cabinet H: 1100 x W: 1050 mm	4	1	FZ164N



FZ106N



UN03A

Mounting rails

Features:

- 1 panel
- 1 set = 2 rails

Description	Qty.	Cat. ref..
2 mounting rails, UniversN, length 300 mm	1	UN02A
2 mounting rails, UniversN, length 450 mm	1	UN03A
2 mounting rails, UniversN, length 600 mm	1	UN04A
2 mounting rails, UniversN, length 750 mm	1	UN05A
2 mounting rails, UniversN, length 900 mm	1	UN06A
2 mounting rails, UniversN, length 1050 mm	1	UN07A
2 mounting rails, UniversN, length 1200 mm	1	UN08A
2 mounting rails, UniversN, length 1350 mm	1	UN09A
2 mounting rails, UniversN, length 1500 mm	1	UN10A
2 mounting rails, UniversN, length 1650 mm	1	UN11A



UT12L

Connectors

Features:

- For connecting two mounting rails

Description	Qty.	Cat. ref..
Mounting rail connector, UniversN (x 2)	1	UT12L



UT90G

Mounting rail bracket

Features:

- UT90G: For attaching mounting rails at different levels (order two per mounting rail)
- UT90J: For attaching two mounting rails at the same level

Description	Qty.	Cat. ref..
Mounting rail attachment, UniversN, single	20	UT90G
Mounting rail attachment, UniversN, double	10	UT90J



UT12PN

Crossbar

Features:

- To intersect the vertical mounting rails inside the cabinet

Description	Width	Qty.	Cat. ref..
Crossbar, UniversN, 2 panels	500 mm	1	UT12PN
Crossbar, UniversN, 3 panels	750 mm	1	UT12QN



UT90F

Coupling plates

UT90F features:

- For supporting two vertical, cut-to-length mounting rails
- Mounted on the retaining rails or U-rails

UT90L/R features:

- For using modules with support plates

Description	Qty.	Cat. ref..
Coupling plate, UniversN	1	UT90F
Coupling plate, half, left	1	UT90L
Coupling plate, half, right	1	UT90R

Protective conductor connection

Features:

- 20 x 5 mm copper bar, screws for PE fastening between mounting rails using cable lugs
- UZ010 connection points: 3 x M6, 2 x M8
- UZ020 connection points: 10 x M6, 3 x M8

Note:

Observe protective conductor cross-sections (VDE 0660 T500)



UZ010

Description	Qty.	Cat. ref..
Earthing bar, UniversN, Cu 20 x 5, 1 panel	1	UZ010
Earthing bar, UniversN, Cu 20 x 5, 2 panels	1	UZ020

Protective conductor connection with M8 and M6 cable lugs

Description	Qty.	Cat. ref..
Earthing conductor, Univers, 25 mm ² , 300 mm long	1	UZ009



UZ009

Earthing conductor with M8 cable lug and ferrule

Description	Qty.	Cat. ref..
Earthing conductor, UniversN, 25 mm ² , L = 550 mm	1	UZ012



UZ012

Cable clamping rail

Features:

- C-profile 25 x 10 mm
- Slot dimension: 11 mm
- For installation in the Univers Z-cabinet head/base section

Description	Qty.	Cat. ref..
Cable clamping rail, 1 panel, C-prof., 30 x 15	1	FZ850S



FZ850S

A4 diagram pocket fixed with adhesive

Material: Plastic

Description	Qty.	Cat. ref..
Diagram pocket, Univers, transparent, A4	10	FZ794



FZ794

A4 diagram pocket, to screw in

Features:

- Only for doors from 550 mm width

Description	Qty.	Cat. ref..
Diagram pocket, sheet steel, Univers, A4	1	FZ707



FZ707

Paint pen/can

Features:

- For touching up paint damage
- Safety data sheets on request (EU regulations 1272)

Description	Qty.	Cat. ref..
Paint pen, 9 ml, colour RAL 9010	1	FZ791N
Paint spray can, 150 ml, colour RAL 9010	1	FZ792N



FZ791N



VZ404

Cleaning agent

Features:

- For plastic surfaces in Qty.mp spray bottles

Description	Qty.	Cat. ref..
Cleaning agent f. plastic surfaces	1	VZ404



FZ890N

Single mounting rail for IP44 cabinets

Length: 2000 mm

Features:

- For simMod wall-mounting of cabinet
- With four hanging clips
- Easy linking, ideal for assembled distribution boards

Description	Qty.	Cat. ref..
Mounting rail, for IP44 cabinet	1	FZ890N



FZ799N

Hanging clip

Features:

- 1 set = 4 clips

Description	Qty.	Cat. ref..
Hanging clip f. FZ890N mounting rail	1	FZ799N



FZ803B

Suspension clip

Features:

- As wall and flush-mounting installation aid
- 1 set = 4 clips

Description	Qty.	Cat. ref..
Mounting clips for IP44 cabinet	1	FZ803B



FZ401

Sealing plugs

Features:

- For sealing open cable entries (top)
- 1 set, sorted according to size

Description	Qty.	Cat. ref..
Sealing plug, Univers, repair set	1	FZ401



FZ428

Flange plate

Features:

- For rear cable entry

Description	Qty.	Cat. ref..
Cable entry for IP44/IP54 cabinet	1	FZ428

Spare doors left for IP44 cabinets

Description	Qty.	Cat. ref..
Door, left, f.cabinet H: 500 x W: 800 mm	1	FZ003N
Door, left, f.cabinet H: 500 x W: 1050 mm	1	FZ004N
Door, left, f.cabinet H: 650 x W: 800 mm	1	FZ007N
Door, left, f.cabinet H: 650 x W: 1050 mm	1	FZ008N
Door, left, f.cabinet H: 800 x W: 800 mm	1	FZ011N
Door, left, f.cabinet H: 800 x W: 1050 mm	1	FZ012N
Door, left, f.cabinet H: 950 x W: 800 mm	1	FZ015N
Door, left, f.cabinet H: 950 x W: 1050 mm	1	FZ016N
Door, left, f.cabinet H: 500 x W: 1300 mm	1	FZ017N
Door, left, f.cabinet H: 650 x W: 1300 mm	1	FZ018N
Door, left, f.cabinet H: 800 x W: 1300 mm	1	FZ019N
Door, left, f.cabinet H: 950 x W: 1300 mm	1	FZ020N
Door, left, f.cabinet H: 1100 x W: 800 mm	1	FZ023N
Door, left, f.cabinet H: 1100 x W: 1050 mm	1	FZ024N
Door, left, f.cabinet H: 1100 x W: 1300 mm	1	FZ025N
Door, left, f.cabinet H: 1250 x W: 800 mm	1	FZ028N
Door, left, f.cabinet H: 1250 x W: 1050 mm	1	FZ029N
Door, left, f.cabinet H: 1250 x W: 1300 mm	1	FZ030N
Door, left, f.cabinet H: 1400 x W: 800 mm	1	FZ033N
Door, left, f.cabinet H: 1400 x W: 1050 mm	1	FZ034N
Door, left, f.cabinet H: 1400 x W: 1300 mm	1	FZ035N
Door, left, f.cabinet H: 1550 x W: 800 mm	1	FZ201N
Door, left, f.cabinet H: 1550 x W: 1050 mm	1	FZ202N
Door, left, f.cabinet H: 1700 x W: 800 mm	1	FZ205N
Door, left, f.cabinet H: 1700 x W: 1050 mm	1	FZ206N
Door, left, f.cabinet H: 1550 x W: 800 mm	1	FZ226N
Door, left, f.cabinet H: 1700 x W: 800 mm	1	FZ227N



FZ003N

Commercial
Distribution

Spare doors right with rod lock, hinged handle, for IP44 cabinets

Description	Qty.	Cat. ref..
Door, right, f. cabinet H: 500 x W: 300 mm	1	FZ001N
Door, right, f. cabinet H: 500 x W: 550 mm	1	FZ002N
Door, right, f. cabinet H: 650 x W: 300 mm	1	FZ005N
Door, right, f. cabinet H: 650 x W: 550 mm	1	FZ006N
Door, right, f. cabinet H: 800 x W: 300 mm	1	FZ009N
Door, right, f. cabinet H: 800 x W: 550 mm	1	FZ010N
Door, right, f. cabinet H: 950 x W: 300 mm	1	FZ013N
Door, right, f. cabinet H: 950 x W: 550 mm	1	FZ014N
Door, right, f. cabinet H: 1100 x W: 300 mm	1	FZ021N
Door, right, f. cabinet H: 1100 x W: 550 mm	1	FZ022N
Door, right, f. cabinet H: 1250 x W: 300 mm	1	FZ026N
Door, right, f. cabinet H: 1250 x W: 550 mm	1	FZ027N
Door, right, f. cabinet H: 1400 x W: 300 mm	1	FZ031N
Door, right, f. cabinet H: 1400 x W: 550 mm	1	FZ032N
Door, right, f. cabinet H: 1550 x W: 300 mm	1	FZ199N
Door, right, f. cabinet H: 1550 x W: 550 mm	1	FZ200N
Door, right, f. cabinet H: 1700 x W: 300 mm	1	FZ203N
Door, right, f. cabinet H: 1700 x W: 550 mm	1	FZ204N



FZ001N



Entry flange to cut out, for sealed area

Features:

- Cable entry flange for top and bottom

FZ425	Description	Qty.	Cat. ref..
	Cable entry flange, sealed area	1	FZ425



Pass-through flange

Features:

- Cable entry flange for top and bottom

FZ426	Description	Qty.	Cat. ref..
	Cable entry flange, not sealed	1	FZ426



Side closing plate

Features:

- With 3 x M50, pre-stamped

FZ427L	Description	Qty.	Cat. ref..
	Closing plate, left, side, IP44	1	FZ427L
	Closing plate, right, side, IP44	1	FZ427R



Entry flange to cut out

Features:

- FZ460N: With 4 x M16, 2 x M20, 2 x M16/25, 1 x M25/40/50 pre-stamped
- FZ466N: With 12 x M16, 4 x M20 pre-stamped
- FZ468N: Closed

FZ460N	Description	Qty.	Cat. ref..
	IP4 cable entry flanges, Univers	1	FZ460N
	IP44 cable entry flanges, Univers	1	FZ466N
	IP4 cable entry flanges, Univers	1	FZ468N



Threaded joint

Features:

- For M50 cable entry
- For lateral cable entries in FZ427L, FZ427R closing plates

FZ850M	Description	Qty.	Cat. ref..
	Threaded cable joint, M50, with lock nut	10	FZ850M

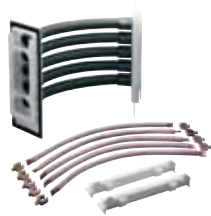


Cable entry for top and bottom, metal

Features:

- For earthed cabinets

FZ424N	Description	Qty.	Cat. ref..
	Cable entry, Univers, f. IP44	1	FZ424N



Corner connector

Features:

- For connecting busbars between two cabinets when installing on a corner
- Only for PC II

ZM75S	Description	Qty.	Cat. ref..
	S-bar corner connector, Univers, 5 poles, 35 mm ²	1	ZM75S
	S-bar corner connector, Univers, 5 poles, 70 mm ²	1	ZM85S

Cable clamp

Features:

- Up to max. 50 mm cable diameter



Description	Qty.	Cat. ref..	FZ360
Cable clamp for cable term. box	1	FZ360	

Flanges

Features:

- For IP44 cabinet



Description	Qty.	Cat. ref..	FZ361
Flange plate, Univers, for cable term. box	1	FZ361	
Flange plate, Univers, for cable term. box	1	FZ362	
Collar flange, Univers	1	FZ363N	
Connecting flange, Univers, f. cable connect.	1	FZ364	
Cable entry, Univers, f. U84LU	1	FZ420	

Tunnel slide

Features:

- FZ365N: For IP44 cabinets and connecting base
- For insulated routing of cables and busbars



Description	Qty.	Cat. ref..	FZ365N
Tunnel slide, uni., horizontal, IP44	1	FZ365N	

Grommets

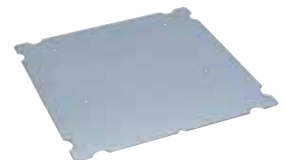
Description	Qty.	Cat. ref..	FZ366
Cable entry grommet, Univers, M20	1	FZ366	
Cable entry grommet, Univers, M25	1	FZ367	
Cable entry grommet, Univers, M32	1	FZ368	
Cable entry grommet, Univers, M40	1	FZ369	
Cable entry grommet, Univers, M50	1	FZ370	
Cable entry grommet, Univers, M60	1	FZ371	
Cable entry grommet, Univers, M80	1	FZ372	



Support plates

Features:

- For installation in U84LS, U84LU and U84LE connection boxes (FZ374: Up to 4 x KR24P (240 mm²), 5 poles up to KR95P (95 mm²))
- FZ374: With DIN rail for feed terminals



Description	Qty.	Cat. ref..	FZ373
Support plate, Univers, f. cable term. box	1	FZ373	
Support plate, Univers, f. cable term. box	1	FZ374	



UZ01B4

DIN rail

Features:

- For fastening on the UN...A steel mounting rail

Description	Qty.	Cat. ref..
DIN rail, UniversN, 1 panel	1	UZ01B4
DIN rail, H x W x D 35 x 248 x 7.5 mm, metal,	1	U842B



FZ375

Transparent plate with electric flash

Features:

- For mounting in connection box as inner contact protection

Description	Qty.	Cat. ref..
Transparent panel, Univers, f. cable term. box	1	FZ375



FZ380

Adapter flange with edge protector

Features:

- For connecting cabinets with old (small) busbar bushings to new cabinets with large busbar bushings in IP43 cabinets

Description	Qty.	Cat. ref..
Adapter flange, cabinet 205 + 218 mm old/new	1	FZ380



H245ES

Connection kits

Description	Qty.	Cat. ref..
Connection kit, Univers Z, 5 poles, for U84LU	1	H245ES
Connection kit, Univers Z, 5 poles, for U84LU	1	H245EW
Connection kit, Univers Z, 5 poles, for U84LU	1	H255ES
Connection kit, Univers Z, 5 poles, for U84LU	1	H255EW



KR15P

Terminals

Features:

- Single pole
- Loose
- 30 Nm tightening torque

Description	Qty.	Cat. ref..
Series terminal 35 – 150 mm ²	1	KR15P
Series terminal 25 – 95 mm ²	1	KR95P

Busbar connector

Features:

- Tightening torque: 5 Nm



Description	Qty.	Cat. ref..
Busbar conn., 40 mm, UniN, 12 x 5 mm, 5 poles	1	UM05A
Busbar conn., 40 mm, UniN, 12 x 10 mm, 5 poles	1	UM05B
Busbar conn., 60 mm, UniN, 20 x 5/10 mm, 4 poles	1	UM05C
Busbar conn., 60 mm, UniN, 20 x 5/10 mm, 1 pole	1	UM05D
Busbar conn., 60 mm, UniN, 12 x 5 mm, 4 poles	1	UM05G
Busbar conn., 60 mm, UniN, 12 x 10 mm, 4 poles	1	UM05H
Busbar conn., 60 mm, UniN, 12 x 5 mm, 1 pole	1	UM05K
Busbar conn., 60 mm, UniN, 12 x 10 mm, 1 pole	1	UM05L

UM05A

Commercial
Distribution

Busbars, 12 x 5 mm, notched, horizontal

Features:

- 12 x 5 mm, notched for horizontal use
- Surface tarnish-resistant
- 250 A: 1 x 12 x 5 mm²
- 355 A: 2 x 12 x 5 mm²
- For 40 mm and 60 mm busbar supports as well as PE/N supports



ZM11C

Description	Length	Rated current	Qty.	Cat. ref..
Busbar, Univers Z, CU 12 x 5 mm, 1 panel	250 mm	250 A	20	ZM11C
Busbar, Univers Z, CU 12 x 5 mm, 2 panels	500 mm	250 A	20	ZM12C
Busbar, Univers Z, CU 12 x 5 mm, 3 panels	750 mm	250 A	20	ZM13C
Busbar, Univers Z, CU 12 x 5 mm, 4 panels	1000 mm	250 A	20	ZM14C
Busbar, Univers Z, CU 12 x 5 mm, 5 panels	1250 mm	250 A	20	ZM15C

Busbars, 20 x 5 mm, horizontal

Description	Length	Rated current	Qty.	Cat. ref..
CU bar, Univers, 20 x 5 mm, 1 panel	246.5 mm	315 A	10	UM21A
CU bar, Univers, 20 x 5 mm, 2 panels	496.5 mm	315 A	10	UM22A
CU bar, Univers, 20 x 5 mm, 3 panels	746.5 mm	315 A	10	UM23A
CU bar, Univers, 20 x 5 mm, 4 panels	996.5 mm	315 A	10	UM24A
CU bar, Univers, 20 x 5 mm, 5 panels	1246.5 mm	315 A	10	UM25A
CU bar, Univers, 20 x 5 mm, 6 panels	1496.5 mm	315 A	10	UM26A



UM21A

Busbars, 20 x 10 mm, horizontal

Description	Length	Rated current	Qty.	Cat. ref..
CU bar, Univers, 20 x 10 x 246 mm, 1 panel	246.5 mm	500 A	10	UM21B
CU bar, Univers, 20 x 10 mm, 2 panels	496.5 mm	500 A	10	UM22B
CU bar, Univers, 20 x 10 mm, 3 panels	746.5 mm	500 A	10	UM23B
CU bar, Univers, 20 x 10 mm, 4 panels	996.5 mm	500 A	10	UM24B
CU bar, Univers, 20 x 10 x 1246 mm, 5 panels	1246.5 mm	500 A	5	UM25B
CU bar, Univers, 20 x 10 mm, 6 panels	1496.5 mm	500 A	5	UM26B



UM21B

Busbars, blue laminated strip

Description	Qty.	Cat. ref..
CU bar, blue, laminated, L x W 180 x 9 mm	1	N75B



N75B



FR32E

Protection class I, cabinet height 500 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
500 mm	300 mm	275 mm	IP55	1	FR31E
500 mm	550 mm	275 mm	IP55	1	FR32E
500 mm	800 mm	275 mm	IP55	1	FR33E
500 mm	1050 mm	275 mm	IP55	1	FR34E
500 mm	1300 mm	275 mm	IP55	1	FR35E



FR42E

Protection class I, cabinet height 650 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
650 mm	300 mm	275 mm	IP55	1	FR41E
650 mm	550 mm	275 mm	IP55	1	FR42E
650 mm	800 mm	275 mm	IP55	1	FR43E
650 mm	1050 mm	275 mm	IP55	1	FR44E
650 mm	1300 mm	275 mm	IP55	1	FR45E



FR52E

Protection class I, cabinet height 800 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
800 mm	300 mm	275 mm	IP55	1	FR51E
800 mm	550 mm	275 mm	IP55	1	FR52E
800 mm	800 mm	275 mm	IP55	1	FR53E
800 mm	1050 mm	275 mm	IP55	1	FR54E
800 mm	1300 mm	275 mm	IP55	1	FR55E



FR62E

Protection class I, cabinet height 950 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
950 mm	300 mm	275 mm	IP55	1	FR61E
950 mm	550 mm	275 mm	IP55	1	FR62E
950 mm	800 mm	275 mm	IP55	1	FR63E
950 mm	1050 mm	275 mm	IP55	1	FR64E
950 mm	1300 mm	275 mm	IP55	1	FR65E

Protection class I, cabinet height 1100 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
1100 mm	300 mm	275 mm	IP55	1	FR71E
1100 mm	550 mm	275 mm	IP55	1	FR72E
1100 mm	800 mm	275 mm	IP55	1	FR73E
1100 mm	1050 mm	275 mm	IP55	1	FR74E
1100 mm	1300 mm	275 mm	IP55	1	FR75E



FR72E

Protection class I, cabinet height 1250 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
1250 mm	300 mm	275 mm	IP55	1	FR81E
1250 mm	550 mm	275 mm	IP55	1	FR82E
1250 mm	800 mm	275 mm	IP55	1	FR83E
1250 mm	1050 mm	275 mm	IP55	1	FR84E
1250 mm	1300 mm	275 mm	IP55	1	FR85E



FR82E

Protection class I, cabinet height 1400 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
1400 mm	300 mm	275 mm	IP55	1	FR91E
1400 mm	550 mm	275 mm	IP55	1	FR92E
1400 mm	800 mm	275 mm	IP55	1	FR93E
1400 mm	1050 mm	275 mm	IP55	1	FR94E
1400 mm	1300 mm	275 mm	IP55	1	FR95E



FR92E

Protection class I, cabinet height 1550 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
1550 mm	300 mm	275 mm	IP55	1	FR01E
1550 mm	550 mm	275 mm	IP55	1	FR02E
1550 mm	800 mm	275 mm	IP55	1	FR03E
1550 mm	1050 mm	275 mm	IP55	1	FR04E
1550 mm	1300 mm	275 mm	IP55	1	FR05E



FR02E

- Protection class I
- Depth 400 mm for devices up to 800 A
- Indoor installation
- Version with three-point rod lock
- Colour: RAL 7035 (Light grey)
- Standards: DIN VDE 0660 part 600-1, -2, -3; EN 61439-1, -2, -3

Commercial
Distribution



FR92G

Protection class I, cabinet height 1400 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
1400 mm	550 mm	400 mm	IP55	1	FR92G
1400 mm	800 mm	400 mm	IP55	1	FR93G
1400 mm	1050 mm	400 mm	IP55	1	FR94G

Cable duct for wall-mounting

RAL colour number: 7035

Features:

- Suitable for all cabinets with installation depths 275 and 400 mm
- Duct depth 150 mm or 180 mm by rotating 90°



Description	Qty.	Cat. ref..	
Cable duct, 1 panel, RAL 7035	1	FZ351	FZ353
Cable duct, 2 panels, RAL 7035	1	FZ352	
Cable duct, 3 panels, RAL 7035	1	FZ353	
Cable duct, 4 panels, RAL 7035	1	FZ354	
Cable duct, 5 panels, RAL 7035	1	FZ355	

T-handles

Features:

- FZ531 lockable, locking number 1333



Description	Qty.	Cat. ref..	
Closure, Univers, T-handle	1	FZ530	
Closure, Univers, T-handle	1	FZ531	
Spare key, Univers, f. FZ531 + FZ533	1	FZ539	FZ530

L-handles

Features:

- FZ531 lockable, locking number 1333



Description	Qty.	Cat. ref..	
Closure, Univers, L-handle	1	FZ532	
Closure, Univers, L-handle	1	FZ533	
Spare key, Univers, f. FZ531 + FZ533	1	FZ539	FZ532

Pivoted handle

Features:

- 40 mm profile half cylinder installable
- Including patent fastener



Description	Qty.	Cat. ref..	
Pivoted lever for FRV/FG cabinets	1	FZ537	FZ537

Profile half cylinder for FZ537

Description	Qty.	Cat. ref..	
1242E profile cylinder	1	FZ506	
405 profile cylinder	1	FZ519	
455 profile cylinder	1	FZ520	
Profile cylinder 8mm 	1	MES-PHZ4K8	
Profile cylinder 7mm 	1	MES-PHZ3K7	
Profile cylinder double-bit 3mm 	1	MES-PHZDB3	



FZ506

Connection kit for two adjacent cabinets, depth 275 and 400 mm

Description	Qty.	Cat. ref..	
Connector side, 275 mm cabinets	1	FZ721A	
Connector side, 400 mm cabinets	1	FZ721B	



FZ721



FZ775

Connection kits for two cabinets above one another or cabinet on connecting base, depth 275 and 400 mm

Description	Qty.	Cat. ref..
Connector, vertical, 1 panel	1	FZ771A
Connector, vertical, 2 panels	1	FZ772A
Connector, vertical, 3 panels	1	FZ773A
Connector, vertical, 4 panels	1	FZ774A
Connector, vertical, 5 panels	1	FZ775A
Connector, vertical, 6 panels	1	FZ776A



FZ714

Connection kits for two bases above one another

Features:

- For all widths
- Two 100/200 mm bases arranged vertically

Description	Qty.	Cat. ref..
Connection kit, Univers, f. bases	1	FZ714



UN03A

Mounting rails

Features:

- 1 panel
- 1 set = 2 rails

Description	Qty.	Cat. ref..
2 mounting rails, UniversN, length 300 mm	1	UN02A
2 mounting rails, UniversN, length 450 mm	1	UN03A
2 mounting rails, UniversN, length 600 mm	1	UN04A
2 mounting rails, UniversN, length 750 mm	1	UN05A
2 mounting rails, UniversN, length 900 mm	1	UN06A
2 mounting rails, UniversN, length 1050 mm	1	UN07A
2 mounting rails, UniversN, length 1200 mm	1	UN08A
2 mounting rails, UniversN, length 1350 mm	1	UN09A
2 mounting rails, UniversN, length 1500 mm	1	UN10A



UT12L

Connectors

Features:

- For connecting two mounting rails

Description	Qty.	Cat. ref..
Mounting rail connector, UniversN (x 2)	1	UT12L



UT90G

Mounting rail bracket

Features:

- UT90G: For attaching mounting rails at different levels (order two per mounting rail)
- UT90J: For attaching two mounting rails at the same level

Description	Qty.	Cat. ref..
Mounting rail attachment, UniversN, single	20	UT90G
Mounting rail attachment, UniversN, double	10	UT90J



UT12PN

Crossbar

Features:

- To intersect the vertical mounting rails inside the cabinet

Description	Width	Qty.	Cat. ref..
Crossbar, UniversN, 2 panels	500 mm	1	UT12PN
Crossbar, UniversN, 3 panels	750 mm	1	UT12QN

Lowering kit

Features:

- For lowering the crossbar, retaining rail or U-rail, always order when using in combination with meter support plates or support plates



UZ25A

Description	Qty.	Cat. ref..
Lowering angle bracket, UniversN, 25 mm (x 2)	1	UZ25A
Low. angle bracket, uni N, 25 mm, f. coupl. pl. (x 2)	1	UZ25AK
Lowering angle bracket 50 mm (x 2)	1	UZ50A
Lowering angle bracket 50 mm,for coupling plate (x 2)	1	UZ50AK

Coupling plates

UT90F features:

- For supporting two vertical, cut-to-length mounting rails
- Mounted on the retaining rails or U-rails

UT90L/R features:

- For using modules with support plates



UT90F

Description	Qty.	Cat. ref..
Coupling plate, UniversN	1	UT90F
Coupling plate, half, left	1	UT90L
Coupling plate, half, right	1	UT90R

Protective conductor connection

Features:

- 20 x 5 mm copper bar with screws for PE fastening between mounting rails
- UZ010 connection points: 3 x M6, 2 x M8
- UZ020 connection points: 10 x M6, 3 x M8

Note:

Observe protective conductor cross-sections (VDE 0660 T500)



UZ010

Description	Qty.	Cat. ref..
Earthing bar, UniversN, Cu 20 x 5, 1 panel	1	UZ010
Earthing bar, UniversN, Cu 20 x 5, 2 panels	1	UZ020

Earthing conductor with M8 and M6 cable lugs

Features:

- For earthing housings and mounting rails
- Uninsulated, 25 mm² with cable lug
- M8 (earthing stud of the distribution board) and M6 (connection e.g. to UZ010)
- Length 300 mm

Note:

Observe protective conductor cross-sections (VDE 0660 T500)



UZ009

Description	Qty.	Cat. ref..
Earthing conductor, Univers, 25 mm ² , 300 mm long	1	UZ009

Earthing conductor with M8 cable lug and ferrule

Features:

- For earthing housings and mounting rails
- Uninsulated, 25 mm² with cable lug
- M8 (earthing stud of the cabinet) and ferrule
- Length 560 mm (connection e.g. to UZ010/UZ020 or busbars)

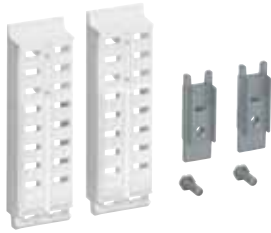
Note:

Observe protective conductor cross-sections (VDE 0660 T500)



UZ012

Description	Qty.	Cat. ref..
Earthing conductor, UniversN, 25 mm ² , L = 550 mm	1	UZ012



FZ800A

Bracket for retaining rail

Features:

- For mounting the horizontal retaining rail

Description	Qty.	Cat. ref..
Retaining rail bracket, 275, PC I, FR	1	FZ800A
Retaining rail bracket, 275, PC II, FR	1	FZ800B
Retaining rail bracket, 400, PC I, FR	1	FZ800C
Retaining rail bracket, 400, PC II, FR	1	FZ800D
Retaining rail bracket, 275, FS	1	FZ800E
Retaining rail bracket, 400, FS	1	FZ800F



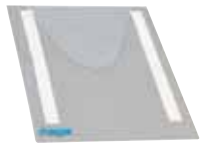
UT21A

Retaining rail, horizontal

Features:

- Order suitable FZ800A – FZ800E bracket as well

Description	Qty.	Cat. ref..
Retaining rail 250 mm	1	UT21A
Retaining rail 500 mm	1	UT21B
Retaining rail 750 mm	1	UT21C
Retaining rail 1000 mm	1	UT21D
Retaining rail 1250 mm	1	UT21E
Retaining rail 1500 mm	1	UT21F



FZ794

A4 diagram pocket fixed with adhesive

Material: Plastic

Features:

- FZ818, for bolting and bonding

Description	Qty.	Cat. ref..
Diagram pocket, Univers, transparent, A4	10	FZ794
Diagram pocket, Univers, plastic, A4	1	FZ818
Diagram pocket, magnetic, A4	30	FZ757M
Diagram pocket, self-adhesive, A4, reinforced	20	FZ757A4
Diagram pocket, self-adhesive, A5, reinforced	30	FZ757A5



MES-LST17035

Paint pen, RAL 7035

Features:

- For touching up paint damage
- Safety data sheets on request (EU regulations 1272)

Description	Qty.	Cat. ref..
Paint pen, treated, 12 ml, 7035	1	MES-LST17035



VZ404

Cleaning agent

Features:

- For plastic surfaces in Qty.mp spray bottles
- Safety data sheets on request (EU regulations 1272)

Description	Qty.	Cat. ref..
Cleaning agent f. plastic surfaces	1	VZ404

Closing plate for side pre-stamping

Description	Qty.	Cat. ref..
Closing plate, side, Univers, sheet metal	1	FZ448



FZ448

Cable entries made of sheet steel for top and bottom, without pre-stamping, protection class I, with IP54 seal

RAL colour number: 7035

Description	Qty.	Cat. ref..
Cable entry, Univers, IP54	1	FZ422



FZ422

Pass-through flange

Features:

- Cable entry options:
- 24 x 9 to 11.5 mm cable diameter
- 12 x 11 to 16 mm cable diameter
- 4 x 12.5 to 20 mm cable diameter
- 2 x 13 to 27.5 mm cable diameter
- 2 x 16 to 32 mm cable diameter
- 1 x 25 to 50 mm cable diameter

Description	Qty.	Cat. ref..
Cable entry, Univers, Universal	5	FZ402



FZ402

Entry flange without pre-stamping

Description	Qty.	Cat. ref..
Cable entry, Univers, IP54	5	FZ404



FZ404

Cable entries made of plastic for top and bottom, with pre-stamping, with IP54 seal

Features:

- For 15/13 x M20 or 2 x M25 grommets and threaded joints

Description	Qty.	Cat. ref..
Cable entry, Univers, metric	5	FZ406M
Cable entry, Univers, metric	5	FZ407M
Cable entry, Univers, metric	5	FZ408M



FZ406M

Grommet for FZ408M entry flange

Description	Qty.	Cat. ref..
Stepped grommet, Univers, 1 cable, d = 23 – 55 mm	1	FZ413M



FZ413M

Cable entry flange with two entry grommets, PC I

Features:

- Incl. two entry grommets
- For two cables with diameter 23 – 55 mm
- IP54 degree of protection with attached cable tie
- Flange is secured with six screws
- For the modular standing distribution cabinets, the six holes must be drilled

Description	Qty.	Cat. ref..
Cable entry, 2 cables D = 23 – 55 mm, PC I	1	FZ415E
Cable entry, 2 cables D = 23 – 55 mm, PC II	1	FZ415S



FZ415E



Vent cap

Features:

- For installation in FZ408M flange plate
- Reduces degree of protection to IP2X
- Two caps in bag

FZ417

Description	Qty.	Cat. ref..
Vent cap, Univers, for FT/FA/FG	1	FZ417



Cable entry grommets

Features:

- Can be used in IP54 cable entries with pre-stamping for grommets

FZ409M

Description	Qty.	Cat. ref..
25 x cable entry grommet, Univers, M20	25	FZ409M
25 x cable entry grommet, Univers, M25	25	FZ410M
25 x cable entry grommet, Univers, M32	25	FZ411M
25 x cable entry grommet, Univers, M40	25	FZ412M



Plastic flange

Features:

- Closing parts for cabinets depth 275 mm + 400 mm
- For closing the bottom cable entries during installation, distribution boards on bases (for compliance with PC II)

FZ435A

Description	Width	Qty.	Cat. ref..
Closing plate cable entry	250 mm	1	FZ435A



Locking element

Features:

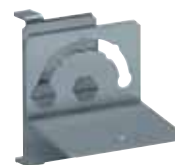
- For locking the bottom plastic cable entries
- 1 set = 4 elements

FZ421A

Description	Qty.	Cat. ref..
Locking elements cable entry	1	FZ421A

Bracket for cable clamping rail in the base

Description	Qty.	Cat. ref..
Base rail bracket, 100 mm high	1	FZ801A
Base rail bracket, 200 mm high	1	FZ801B



FZ801A

Cable clamping rail for bases

Height of installed product: 30 mm

Description	Qty.	Cat. ref..
Cable clamping rail, Univers, 1 panel	1	FZ7801
Cable clamping rail, Univers, 2 panels	1	FZ7811
Cable clamping rail, Univers, 3 panels	1	FZ7821
Cable clamping rail, Univers, 4 panels	1	FZ8441
Cable clamping rail, Univers, 5 panels	1	FZ8451
Cable clamping rail, Univers, 6 panels	1	FZ8461



FZ7801

Hinge pin

Features:

- Hinge pin as spare part for Univers FR distribution cabinets

Description	Qty.	Cat. ref..
10 x spare hinge pins	10	FZ797A



FZ797A

Contact protection cover

RAL colour number: 9010

Features:

- For extending the lateral circumferential contact protection

Description	Qty.	Cat. ref..
Extension of contact protection/Univers	1	FZ851



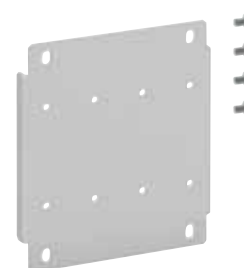
FZ851

Door wiring profiles

Features:

- For attaching wiring ducts

Description	Qty.	Cat. ref..
Door wiring profile, 250 mm door	1	FZ739A
Door wiring profile, 500 mm door	1	FZ739B
Door wiring profile, 750 mm door	1	FZ739C



FZ739A



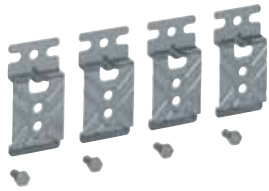
FZ831

M8 ring bolt

Features:

- For lifting cabinets
- Set = 4 bolts

Description	Qty.	Cat. ref..
Lifting eyebolts for FR/FS cabinets	1	FZ831



FZ829

Wall-mounting brackets, spare parts

Features:

- Set = 4 brackets

Description	Qty.	Cat. ref..
Wall-mounting brackets	1	FZ829

Head and base section, spare parts

Description	Qty.	Cat. ref..
Head/base section 275 mm, FR cabinets	1	FZ230A
Head/base section 400 mm, FR cabinets	1	FZ230B



FZ230A

Doors, spare parts

Description	Qty.	Cat. ref..
Door, Univers, for FR31* cabinets, IP55, 500 x 300 mm	1	FZ031R
Door, Univers, for FR32* cabinets, IP55, 500 x 550 mm	1	FZ032R
Door, Univers, for FR33* cabinets, IP55, 500 x 800 mm	1	FZ033R
Door, Univers, for FR34* cabinets, IP55, 500 x 1050 mm	1	FZ034R
Door, Univers, for FR35* cabinets, IP55, 500 x 1300 mm	1	FZ035R
Door, Univers, for FR41* cabinets, IP55, 650 x 300 mm	1	FZ041R
Door, Univers, for FR42* cabinets, IP55, 650 x 550 mm	1	FZ042R
Door, Univers, for FR43* cabinets, IP55, 650 x 800 mm	1	FZ043R
Door, Univers, for FR44* cabinets, IP55, 650 x 1050 mm	1	FZ044R
Door, Univers, for FR45* cabinets, IP55, 650 x 1300 mm	1	FZ045R
Door, Univers, for FR51* cabinets, IP55, 800 x 300 mm	1	FZ051R
Door, Univers, for FR52* cabinets, IP55, 800 x 550 mm	1	FZ052R
Door, Univers, for FR53* cabinets, IP55, 800 x 800 mm	1	FZ053R
Door, Univers, for FR54* cabinets, IP55, 800 x 1050 mm	1	FZ054R
Door, Univers, for FR55* cabinets, IP55, 800 x 1300 mm	1	FZ055R
Door, Univers, for FR61* cabinets, IP55, 950 x 300 mm	1	FZ061R
Door, Univers, for FR62* cabinets, IP55, 950 x 550 mm	1	FZ062R
Door, Univers, for FR63* cabinets, IP55, 950 x 800 mm	1	FZ063R
Door, Univers, for FR64* cabinets, IP55, 950 x 1050 mm	1	FZ064R
Door, Univers, for FR65* cabinets, IP55, 950 x 1300 mm	1	FZ065R
Door, Univers, for FR71* cabinets, IP55, 1100 x 300 mm	1	FZ071R
Door, Univers, for FR72* cabinets, IP55, 1100 x 550 mm	1	FZ072R
Door, Univers, for FR73* cabinets, IP55, 1100 x 800 mm	1	FZ073R
Door, Univers, for FR74* cabinets, IP55, 1100 x 1050 mm	1	FZ074R
Door, Univers, for FR75* cabinets, IP55, 1100 x 1300 mm	1	FZ075R
Door, Univers, for FR81* cabinets, IP55, 1250 x 300 mm	1	FZ081R
Door, Univers, for FR82* cabinets, IP55, 1250 x 550 mm	1	FZ082R
Door, Univers, for FR83* cabinets, IP55, 1250 x 800 mm	1	FZ083R
Door, Univers, for FR84* cabinets, IP55, 1250 x 1050 mm	1	FZ084R
Door, Univers, for FR85* cabinets, IP55, 1250 x 1300 mm	1	FZ085R
Door, Univers, for FR91* cabinets, IP55, 1400 x 300 mm	1	FZ091R
Door, Univers, for FR92* cabinets, IP55, 1400 x 550 mm	1	FZ092R
Door, Univers, for FR93* cabinets, IP55, 1400 x 800 mm	1	FZ093R
Door, Univers, for FR94* cabinets, IP55, 1400 x 1050 mm	1	FZ094R



FZ031R

Commercial
Distribution

Features:

- For outdoor applications
- For devices up to 630 A
- 3 mm double-bit lock
- Material: Polyester

Commercial Distribution



Wall cabinets, IP65, protection class II, resistant to UV light, depth 300 mm, cabinet height 550 mm

Height	Width	Depth	Number of panels	Qty.	Cat. ref..
550 mm	600 mm	300 mm	2	1	FL32S
550 mm	850 mm	300 mm	3	1	FL33S
550 mm	1100 mm	300 mm	4	1	FL34S

FL32S



Wall cabinets, IP65, protection class II, resistant to UV light, depth 300 mm, cabinet height 850 mm

Height	Width	Depth	Number of panels	Qty.	Cat. ref..
850 mm	600 mm	300 mm	2	1	FL52S
850 mm	850 mm	300 mm	3	1	FL53S
850 mm	1100 mm	300 mm	4	1	FL54S

FL52S



Wall cabinets, IP65, protection class II, resistant to UV light, depth 300 mm, cabinet height 1150 mm

Height	Width	Depth	Number of panels	Qty.	Cat. ref..
1150 mm	600 mm	300 mm	2	1	FL72S
1150 mm	850 mm	300 mm	3	1	FL73S
1150 mm	1100 mm	300 mm	4	1	FL74S

FL72S

T-handles

Features:

- FZ531 lockable, locking number 1333

Description	Qty.	Cat. ref..
Closure, Univers, T-handle	1	FZ530
Closure, Univers, T-handle	1	FZ531



FZ530

L-handles

Features:

- FZ531 lockable, locking number 1333

Description	Qty.	Cat. ref..
Closure, Univers, L-handle	1	FZ532
Closure, Univers, L-handle	1	FZ533



FZ532

Pivoted handle

Features:

- FZ534: For 40 mm profile half cylinder

- FZ535: For 40 mm profile half cylinder, sealable (only possible with profile half cylinder)

Description	Qty.	Cat. ref..
Closure, Univers, pivoted handle	1	FZ534
Closure, Univers, pivoted handle	1	FZ535



FZ534

Spare key

Features:

- Locking number 1333

Description	Qty.	Cat. ref..
Spare key, Univers, f. FZ531 + FZ533	1	FZ539



FZ539

Spare pin as replacement for standard T-handle

Description	Qty.	Cat. ref..
Closure, Univers, triangular lock, 7 mm	1	FZ502
Closure, Univers, square lock, 7 mm	1	FZ503



FZ503

Threaded cable joint

Description	Qty.	Cat. ref..
Threaded cable joint, IP65, M16	20	VZ016M
Threaded cable joint, IP65, M20	20	VZ020M
Threaded cable joint, IP65, M25	20	VZ025M
Threaded cable joint, IP65, M32	20	VZ032M
Threaded cable joint, IP65, M40	10	VZ040M
Threaded cable joint, IP65, M50	10	VZ050M
Threaded cable joint, IP65, M63	10	VZ063M



VZ016M

Threaded pressure equalisation joint

Description	Qty.	Cat. ref..
Threaded pressure equalisation joint, IP66, M20	1	VZ020D
Threaded pressure equalisation joint, IP66, M25	1	VZ025D
Threaded pressure equalisation joint, IP66, M32	1	VZ032D



VZ020D



VZ013V

Sealing plug for threaded pressure equalisation joint, suitable for M20/25

Description	Qty.	Cat. ref..
Sealing plug suitable for M20/25	1	VZ013V
Sealing plug suitable for M32	1	VZ021V



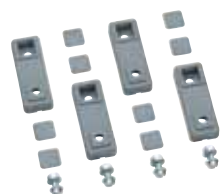
UN03A

Mounting rails

Features:

- 1 panel
- 1 set = 2 rails

Description	Qty.	Cat. ref..
2 mounting rails, UniversN, length 450 mm	1	UN03A
2 mounting rails, UniversN, length 750 mm	1	UN05A
2 mounting rails, UniversN, length 1050 mm	1	UN07A



FL863Z

Wall-mounting brackets

Features:

- Material: Plastic
- Supplied with fixing screws
- As replacement

Description	Qty.	Cat. ref..
Wall-mounting brackets, RAL 7046	10	FL863Z



FZ801

Drive-in threaded bushing

Features:

- To create fixing points in the interior
- To drive in
- For fixing mounting support plates etc.

Description	Qty.	Cat. ref..
Nut set = 100 bushings	1	FZ801



FZ818

A4 diagram pocket, to screw in

Description	Qty.	Cat. ref..
Diagram pocket, Univers, plastic, A4	1	FZ818



UZ00VL

Earth connecting bracket

Features:

- For conductive connection between two UN...A mounting rails
- To increase mechanical strength of mounting rails
- Incl. fixing material

Description	Qty.	Cat. ref..
Connecting bracket, Univers N (x 10)	1	UZ00VL

- For devices up to 800 A
- Indoor installation
- Depth 275 mm
- Colour: RAL 7035 (Light grey)
- With base
- Sheet steel or transparent door
- Standards : DIN VDE 0660 part 600-1, -2, -3; EN 61439-1, -2, -3

Note:

- FZ402 cable entries at top, bottom open
- To ensure compliance with the IP55 degree of protection and protection class II, entry flanges must be inserted at the bottom

Protection class I, cabinet height 1700 mm plus base 100 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
1800 mm	300 mm	275 mm	IP55	1	FR11E1
1800 mm	550 mm	275 mm	IP55	1	FR12E1
1800 mm	800 mm	275 mm	IP55	1	FR13E1
1800 mm	1050 mm	275 mm	IP55	1	FR14E1
1800 mm	1300 mm	275 mm	IP55	1	FR15E1



FR13E1

Protection class I, cabinet height 1700 mm plus base 200 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
1900 mm	300 mm	275 mm	IP55	1	FR11E2
1900 mm	550 mm	275 mm	IP55	1	FR12E2
1900 mm	800 mm	275 mm	IP55	1	FR13E2
1900 mm	1050 mm	275 mm	IP55	1	FR14E2
1900 mm	1300 mm	275 mm	IP55	1	FR15E2



FR13E2



FR22E1

Protection class I, cabinet height 1850 mm plus base 100 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
1950 mm	300 mm	275 mm	IP55	1	FR21E1
1950 mm	550 mm	275 mm	IP55	1	FR22E1
1950 mm	800 mm	275 mm	IP55	1	FR23E1
1950 mm	1050 mm	275 mm	IP55	1	FR24E1
1950 mm	1300 mm	275 mm	IP55	1	FR25E1
1950 mm	1550 mm	275 mm	IP55	1	FR26E1



FR22E2

Protection class I, cabinet height 1850 mm plus base 200 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
2050 mm	300 mm	275 mm	IP55	1	FR21E2
2050 mm	550 mm	275 mm	IP55	1	FR22E2
2050 mm	800 mm	275 mm	IP55	1	FR23E2
2050 mm	1050 mm	275 mm	IP55	1	FR24E2
2050 mm	1300 mm	275 mm	IP55	1	FR25E2
2050 mm	1550 mm	275 mm	IP55	1	FR26E2



FR22K1

Protection class I, with transparent door, cabinet height 1850 mm plus base 100 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
1950 mm	550 mm	275 mm	IP55	1	FR22K1
1950 mm	800 mm	275 mm	IP55	1	FR23K1
1950 mm	1050 mm	275 mm	IP55	1	FR24K1
1950 mm	1300 mm	275 mm	IP55	1	FR25K1
1950 mm	1550 mm	275 mm	IP55	1	FR26K1



FR22K2

Protection class I, with transparent door, cabinet height 1850 mm plus base 200 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
2050 mm	550 mm	275 mm	IP55	1	FR22K2
2050 mm	800 mm	275 mm	IP55	1	FR23K2
2050 mm	1050 mm	275 mm	IP55	1	FR24K2
2050 mm	1300 mm	275 mm	IP55	1	FR25K2
2050 mm	1550 mm	275 mm	IP55	1	FR26K2

Protection class I, cabinet height 1850 mm plus base 100 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
1950 mm	300 mm	400 mm	IP55	1	FR21G1
1950 mm	550 mm	400 mm	IP55	1	FR22G1
1950 mm	800 mm	400 mm	IP55	1	FR23G1
1950 mm	1050 mm	400 mm	IP55	1	FR24G1
1950 mm	1300 mm	400 mm	IP55	1	FR25G1
1950 mm	1550 mm	400 mm	IP55	1	FR26G1



FR26G1

Protection class I, cabinet height 1850 mm plus base 200 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
2050 mm	300 mm	400 mm	IP55	1	FR21G2
2050 mm	550 mm	400 mm	IP55	1	FR22G2
2050 mm	800 mm	400 mm	IP55	1	FR23G2
2050 mm	1050 mm	400 mm	IP55	1	FR24G2
2050 mm	1300 mm	400 mm	IP55	1	FR25G2
2050 mm	1550 mm	400 mm	IP55	1	FR26G2



FR21G2

Protection class I, with transparent door, cabinet height 1850 mm plus base 100 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
1950 mm	550 mm	400 mm	IP55	1	FR22V1
1950 mm	800 mm	400 mm	IP55	1	FR23V1
1950 mm	1050 mm	400 mm	IP55	1	FR24V1
1950 mm	1300 mm	400 mm	IP55	1	FR25V1
1950 mm	1550 mm	400 mm	IP55	1	FR26V1



FR22V1

Protection class I, with transparent door, cabinet height 1850 mm plus base 200 mm

Height	Width	Depth	Degree of protection	Qty.	Cat. ref..
2050 mm	550 mm	400 mm	IP55	1	FR22V2
2050 mm	800 mm	400 mm	IP55	1	FR23V2
2050 mm	1050 mm	400 mm	IP55	1	FR24V2
2050 mm	1300 mm	400 mm	IP55	1	FR25V2
2050 mm	1550 mm	400 mm	IP55	1	FR26V2



FR22V2



UZ21MP

Support plate

Features:

- Sheet steel, galvanised
- Can be used without mounting rails
- Incl. fixing material

Description	Qty.	Cat. ref..
Support plate, Univers, 1800 x 250 mm (H x W)	1	UZ21MP
Support plate, Univers, 1800 x 500 mm (H x W)	1	UZ22MP
Support plate, Univers, 1800 x 750 mm (H x W)	1	UZ23MP
Support plate, Univers, 1800 x 1000 mm (H x W)	1	UZ24MP
Support plate, Univers, 1800 x 1250 mm (H x W)	1	UZ25MP



FZ353

Cable duct for wall-mounting

Features:

- Suitable for all cabinets with installation depths 160, 205, 275 and 400 mm
- Duct depth 150 mm or 180 mm by rotating 90°
- RAL colour number: 7035

Description	Qty.	Cat. ref..
Cable duct, 1 panel, RAL 7035	1	FZ351
Cable duct, 2 panels, RAL 7035	1	FZ352
Cable duct, 3 panels, RAL 7035	1	FZ353
Cable duct, 4 panels, RAL 7035	1	FZ354
Cable duct, 5 panels, RAL 7035	1	FZ355



FZ530

T-handles

Description	Qty.	Cat. ref..
Closure, Univers, T-handle	1	FZ530
Closure, Univers, T-handle, FZ531 lockable, locking number 1333	1	FZ531
Spare key, Univers, f. FZ531 + FZ533	1	FZ539



FZ532

L-handles

Description	Qty.	Cat. ref..
Closure, Univers, L-handle	1	FZ532
Closure, Univers, L-handle	1	FZ533
Spare key, Univers, f. FZ531 + FZ533	1	FZ539



FZ537

Pivoted handle

Features:

- 40 mm profile half cylinder installable, including patent fastener

Description	Qty.	Cat. ref..
Pivoted lever for FR/FG cabinets	1	FZ537



FZ506

Profile half cylinder for FZ537

Description	Qty.	Cat. ref..
1242E profile cylinder	1	FZ506
405 profile cylinder	1	FZ519
455 profile cylinder	1	FZ520
Profile cylinder 8mm 	1	MES-PHZ4K8
Profile cylinder 7mm 	1	MES-PHZ3K7
Profile cylinder double-bit 3mm 	1	MES-PHZDB3

Connection kit for two adjacent cabinets, depth 275/400 mm

Description	Qty.	Cat. ref..
Connector side, 275 mm cabinets	1	FZ721A
Connector side, 400 mm cabinets	1	FZ721B



FZ721A

Connection kits for two bases above one another

Features:

- For all widths
- Two 200 mm bases arranged vertically

Description	Qty.	Cat. ref..
Connection kit, Univers, f. bases	1	FZ714



FZ714

Mounting rails

Features:

- 1 panel
- 1 set = 2 rails

Description	Qty.	Cat. ref..
2 mounting rails, UniversN, length 300 mm	1	UN02A
2 mounting rails, UniversN, length 450 mm	1	UN03A
2 mounting rails, UniversN, length 600 mm	1	UN04A
2 mounting rails, UniversN, length 750 mm	1	UN05A
2 mounting rails, UniversN, length 900 mm	1	UN06A
2 mounting rails, UniversN, length 1050 mm	1	UN07A
2 mounting rails, UniversN, length 1200 mm	1	UN08A
2 mounting rails, UniversN, length 1350 mm	1	UN09A
2 mounting rails, UniversN, length 1500 mm	1	UN10A
2 mounting rails, UniversN, length 1650 mm	1	UN11A
2 mounting rails, UniversN, length 1800 mm	1	UN12A



UN03A

Earth connecting bracket

Features:

- For conductive connection between two UN...A mounting rails
- To increase mechanical strength of mounting rails
- Incl. fixing material

Description	Qty.	Cat. ref..
Connecting bracket, Univers N (x 10)	1	UZ00VL



UZ00VL

Mounting rail connection kit

Description	Qty.	Cat. ref..
Connector kit (x 10) U-plates	1	UT12HSV



UT12HSV

Connectors

Features:

- For connecting two mounting rails

Description	Qty.	Cat. ref..
Mounting rail connector, UniversN (x 2)	1	UT12L



UT12L



UT90G

Mounting rail bracket

Features:

- UT90G: For attaching mounting rails at different levels (order two per mounting rail)
- UT90J: For attaching two mounting rails at the same level

Description	Qty.	Cat. ref..
Mounting rail attachment, UniversN, single	20	UT90G
Mounting rail attachment, UniversN, double	10	UT90J



UT12PN

Crossbar

Features:

- To intersect the vertical mounting rails inside the cabinet

Description	Width	Qty.	Cat. ref..
Crossbar, UniversN, 2 panels	500 mm	1	UT12PN
Crossbar, UniversN, 3 panels	750 mm	1	UT12QN



UT90F

Coupling plates

UT90F features:

- For supporting two vertical, cut-to-length mounting rails
- Mounted on the retaining rails or U-rails

UT90L/R features:

- For using modules with support plates

Description	Qty.	Cat. ref..
Coupling plate, UniversN	1	UT90F
Coupling plate, half, left	1	UT90L
Coupling plate, half, right	1	UT90R



UZ009

Earthing conductor with M8 and M6 cable lugs

Features:

- For earthing housings and mounting rails
- Uninsulated, 25 mm² with cable lug
- M8 (earthing stud of the distribution board) and M6 (connection e.g. to UZ010)
- Length 300 mm

Note:

Observe protective conductor cross-sections (VDE 0660 T500)

Description	Qty.	Cat. ref..
Earthing conductor, Univers, 25 mm ² , 300 mm long	1	UZ009



UZ012

Earthing conductor with M8 cable lug and ferrule

Features:

- For earthing housings and mounting rails
- Uninsulated, 25 mm² with cable lug
- M8 (earthing stud of the cabinet) and ferrule
- Length 560 mm (connection e.g. to UZ010/UZ020 or busbars)

Note:

Observe protective conductor cross-sections (VDE 0660 T500)

Description	Qty.	Cat. ref..
Earthing conductor, UniversN, 25 mm ² , L = 550 mm	1	UZ012

Protective conductor connection

Features:

- 20 x 5 mm copper bar with screws for PE fastening between mounting rails
- UZ010 connection points: 3 x M6, 2 x M8
- UZ020 connection points: 10 x M6, 3 x M8



UZ010

Note:

Observe protective conductor cross-sections (VDE 0660 T500)

Description	Qty.	Cat. ref..
Earthing bar, UniversN, Cu 20 x 5, 1 panel	1	UZ010
Earthing bar, UniversN, Cu 20 x 5, 2 panels	1	UZ020

Bracket for retaining rail

Features:

- For mounting the horizontal retaining rail



FZ800A

Description	Qty.	Cat. ref..
Retaining rail bracket, 275, PC I, FR	1	FZ800A
Retaining rail bracket, 275, PC II, FR	1	FZ800B
Retaining rail bracket, 400, PC I, FR	1	FZ800C
Retaining rail bracket, 400, PC II, FR	1	FZ800D
Retaining rail bracket, 275, FS	1	FZ800E

Retaining rail, horizontal

Features:

- Order suitable FZ800A – FZ800E bracket as well

Description	Qty.	Cat. ref..
Retaining rail 250 mm	1	UT21A
Retaining rail 500 mm	1	UT21B
Retaining rail 750 mm	1	UT21C
Retaining rail 1000 mm	1	UT21D
Retaining rail 1250 mm	1	UT21E
Retaining rail 1500 mm	1	UT21F

UT21A

Contact protection covers

RAL colour number: 9010

Features:

- For extending the lateral circumferential contact protection



FZ851

Description	Qty.	Cat. ref..
Extension of contact protection/Univers	1	FZ851

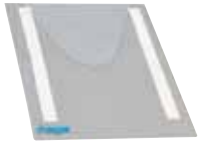
Head and base section, spare parts

Material: PC

Description	Qty.	Cat. ref..
Head/base section 275 mm, FR cabinets	1	FZ230A
Head/base section 400 mm, FR cabinets	1	FZ230B



FZ230A



FZ794

A4 diagram pocket fixed with adhesive

Material: Plastic

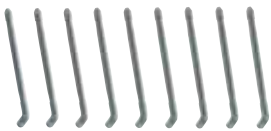
Description	Qty.	Cat. ref..
Diagram pocket, Univers, transparent, A4	10	FZ794
Diagram pocket, Univers, plastic, A4	1	FZ818
Diagram pocket, magnetic, A4	30	FZ757M
Diagram pocket, self-adhesive, A4, reinforced	20	FZ757A4
Diagram pocket, self-adhesive, A5, reinforced	30	FZ757A5

Paint pen, RAL 7035

Features:

- For touching up paint damage

Description	Qty.	Cat. ref..
Paint pen, treated, 12 ml, 7035	1	MES-LSTI7035



FZ797A

Hinge pin, spare parts

Description	Qty.	Cat. ref..
10 x spare hinge pins	10	FZ797A



VZ404

Cleaning agent

Features:

- For plastic surfaces in Qty.mp spray bottles

Description	Qty.	Cat. ref..
Cleaning agent f. plastic surfaces	1	VZ404

Closing plate for side pre-stamping

Description	Qty.	Cat. ref..
Closing plate, side, Univers, sheet metal	1	FZ448



FZ422

Cable entries made of sheet steel for top and bottom, without pre-stamping, protection class I, with IP55 seal

RAL colour number: 7035

Description	Qty.	Cat. ref..
Cable entry, Univers, IP54	1	FZ422



FZ402

Pass-through flange

Features:

- Cable entry options:
- 24 x 9 to 11.5 mm cable diameter
- 12 x 11 to 16 mm cable diameter
- 4 x 12.5 to 20 mm cable diameter
- 2 x 13 to 27.5 mm cable diameter
- 2 x 16 to 32 mm cable diameter
- 1 x 25 to 50 mm cable diameter

Description	Qty.	Cat. ref..
Cable entry, Univers, Universal	5	FZ402

Entry flange without pre-stamping

Description	Qty.	Cat. ref..
Cable entry, Univers, IP54	5	FZ404



FZ404

Entry flange with 15/13 x M20 or 2 x M25 pre-stamped

Features:

- For 15/13 x M20 or 2 x M25 grommets and threaded joints

Description	Qty.	Cat. ref..
Cable entry, Univers, metric	5	FZ406M



FZ406M

Entry flange with 8/6 x M25 or 2 x M32 pre-stamped

Features:

- For 8/6 x M25 or 2 x M32 grommets and threaded joints

Description	Qty.	Cat. ref..
Cable entry, Univers, metric	5	FZ407M



FZ407M

Entry flange with 2 x M25/32, 1 x M50/63 or FZ413, FZ414, FZ415 cable entries pre-stamped

Features:

- For 2 x M25/32 grommets and threaded joint, 1 x M50/63 pre-stamped for FZ413, FZ414, FZ415 cable entries

Description	Qty.	Cat. ref..
Cable entry, Univers, metric	5	FZ408M



FZ408M

Grommet for FZ408M entry flange

Description	Qty.	Cat. ref..
Stepped grommet, Univers, 1 cable, d = 23 – 55 mm	1	FZ413M



FZ413M

Cable entry flange with two entry grommets, PC I

Features:

- Incl. two entry grommets
- For two cables with diameter 23 – 55 mm
- IP54 degree of protection with attached cable tie
- Flange is secured with six screws
- For the modular standing distribution cabinets, the six holes must be drilled

Description	Qty.	Cat. ref..
Cable entry, 2 cables D = 23 – 55 mm, PC I	1	FZ415E
Cable entry, 2 cables D = 23 – 55 mm, PC II	1	FZ415S



FZ415E

Cable entry flange with two entry grommets

Features:

- Incl. two entry grommets
- For two cables with diameter 30 – 72 mm
- IP54 degree of protection with attached cable tie
- Flange is secured with six screws
- For the modular standing distribution cabinets, the six holes must be drilled

Description	Qty.	Cat. ref..
Cable entry, Univers, 2 cables D= 30 – 72 mm	1	FZ415N



FZ415N



FZ417

Vent cap

Features:

- For installation in FZ408M flange plate
- Reduces degree of protection to IP2X

Description	Qty.	Cat. ref..
Vent cap, Univers, for FT/FA/FG	1	FZ417



FZ409M

Cable entry grommets

Features:

- Can be used in IP55 cable entries with pre-stamping for grommets

Description	Qty.	Cat. ref..
25 x cable entry grommet, Univers, M20	25	FZ409M
25 x cable entry grommet, Univers, M25	25	FZ410M
25 x cable entry grommet, Univers, M32	25	FZ411M
25 x cable entry grommet, Univers, M40	25	FZ412M



FZ435A

Plastic flange

Features:

- Closing parts for cabinets depth 275 mm + 400 mm
- For closing the bottom cable entries during installation, distribution boards on bases (for compliance with PC II)

Description	Width	Qty.	Cat. ref..
Closing plate cable entry	250 mm	1	FZ435A



FZ421A

Locking element

Features:

- For locking the bottom plastic cable entries (IP55)
- 1 set = 2 elements

Description	Qty.	Cat. ref..
Locking elements cable entry	1	FZ421A

Bases, depth 275 mm, height 100 mm, RAL 9005

Description	Qty.	Cat. ref..
Base, Univers, 100 x 300 x 275	1	FZ631A
Base, Univers, 100 x 550 x 275	1	FZ632A
Base, Univers, 100 x 800 x 275	1	FZ633A
Base, Univers, 100 x 1050 x 275	1	FZ634A
Base, Univers, 100 x 1300 x 275	1	FZ635A
Base, Univers, 100 x 1550 x 275	1	FZ636A



FZ631A

Bases, depth 275 mm, height 200 mm, RAL 9005

Description	Qty.	Cat. ref..
Base, Univers, 200 x 300 x 275	1	FZ641A
Base, Univers, 200 x 550 x 275	1	FZ642A
Base, Univers, 200 x 800 x 275	1	FZ643A
Base, Univers, 200 x 1050 x 275	1	FZ644A
Base, Univers, 200 x 1300 x 275	1	FZ645A
Base, Univers, 200 x 1550 x 275	1	FZ646A



FZ641A

Bases, depth 400 mm, height 100 mm, RAL 9005

Features:
- For 400 mm cabinets

Description	Qty.	Cat. ref..
Base, Univers, 100 x 300 x 400	1	FZ651A
Base, Univers, 100 x 550 x 400	1	FZ652A
Base, Univers, 100 x 800 x 400	1	FZ653A
Base, Univers, 100 x 1050 x 400	1	FZ654A
Base, Univers, 100 x 1300 x 400	1	FZ655A
Base, Univers, 100 x 1550 x 400	1	FZ656A



FZ651A

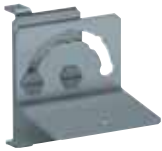
Bases, depth 400 mm, height 200 mm, RAL 9005

Features:
- For 400 mm cabinets

Description	Qty.	Cat. ref..
Base, Univers, 200 x 300 x 400	1	FZ661A
Base, Univers, 200 x 550 x 400	1	FZ662A
Base, Univers, 200 x 800 x 400	1	FZ663A
Base, Univers, 200 x 1050 x 400	1	FZ664A
Base, Univers, 200 x 1300 x 400	1	FZ665A
Base, Univers, 200 x 1550 x 400	1	FZ666A



FZ661A



FZ801A

Bracket for cable clamping rail in the base

Description	Qty.	Cat. ref..
Base rail bracket, 100 mm high	1	FZ801A
Base rail bracket, 200 mm high	1	FZ801B

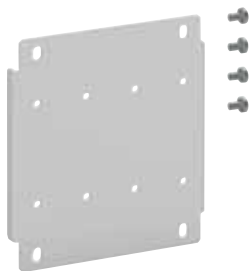


FZ7801

Cable clamping rail for bases

Features:
- Order suitable FZ801 or FZ801B bracket as well

Description	Qty.	Cat. ref..
Cable clamping rail, Univers, 1 panel	1	FZ7801
Cable clamping rail, Univers, 2 panels	1	FZ7811
Cable clamping rail, Univers, 3 panels	1	FZ7821
Cable clamping rail, Univers, 4 panels	1	FZ8441
Cable clamping rail, Univers, 5 panels	1	FZ8451
Cable clamping rail, Univers, 6 panels	1	FZ8461



FZ739A

Door wiring profiles

Features:
- For attaching wiring ducts

Description	Qty.	Cat. ref..
Door wiring profile, 250 mm door	1	FZ739A
Door wiring profile, 500 mm door	1	FZ739B
Door wiring profile, 750 mm door	1	FZ739C



FZ831

M8 ring bolt

Features:
- For lifting cabinets
- Set = 4 bolts

Description	Qty.	Cat. ref..
Lifting eyebolts for FR/FS cabinets	1	FZ831



FZ829

Wall-mounting brackets, spare parts

Features:
- Set = 4 brackets

Description	Qty.	Cat. ref..
Wall-mounting brackets	1	FZ829

Spare doors, contains both the left and right door for double doors


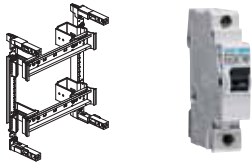

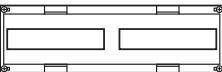
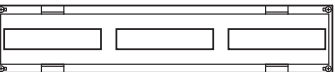

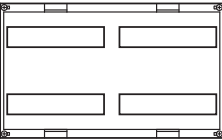
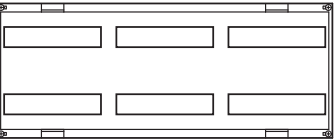
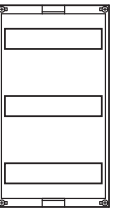
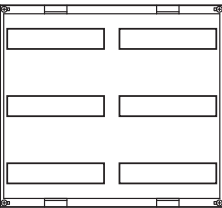
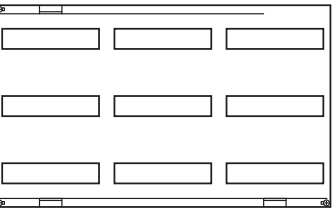
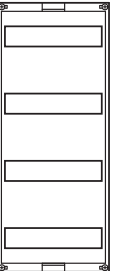
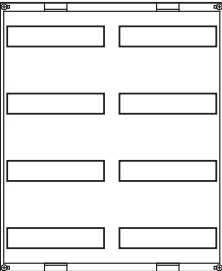
Height	Width	Qty.	Cat. ref..
1500 mm	250 mm	1	FZ001R
1500 mm	500 mm	1	FZ002R
1500 mm	750 mm	1	FZ003R
1500 mm	1000 mm	1	FZ004R
1500 mm	1250 mm	1	FZ005R
1650 mm	250 mm	1	FZ011R
1650 mm	500 mm	1	FZ012R
1650 mm	750 mm	1	FZ013R
1650 mm	1000 mm	1	FZ014R
1650 mm	1250 mm	1	FZ015R
1800 mm	250 mm	1	FZ021R
1800 mm	500 mm	1	FZ022R
1800 mm	750 mm	1	FZ023R
1800 mm	1000 mm	1	FZ024R
1800 mm	1250 mm	1	FZ025R



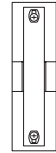



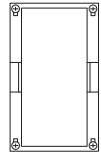
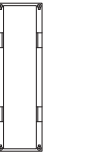

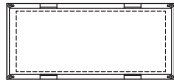
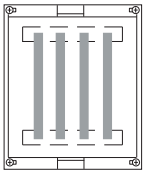
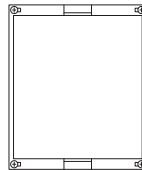
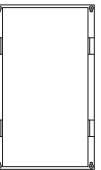
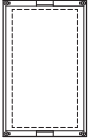
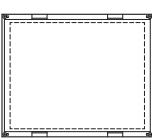
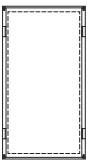
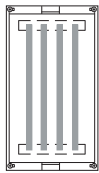
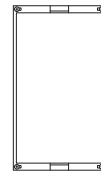
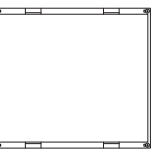

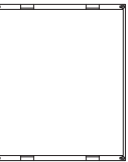
FZ025R

Commercial
Distribution

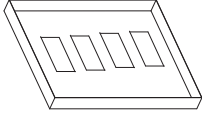



Asmbly.	Blank cover with horizontal DIN-Rail, spacing 150 mm			with vertical DIN-rail	
Applic.	for terminals horizontal insulated parts enclosed for insulated protection			for terminals vertical insulated parts enclosed for insulated protection	
Height x Width	250	500	750	250	500
150					
	UD11A1	UD12A1	UD13A1		
300					
	UD21A1	UD22A1	UD23A1	UD21A2	UD22A2
450					
	UD31A1	UD32A1	UD33A1	UD31A2	
600					
	UD41A1	UD42A1		UD41A2	

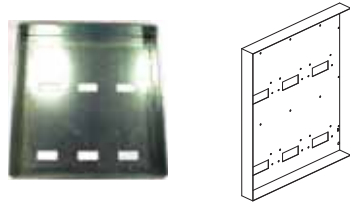
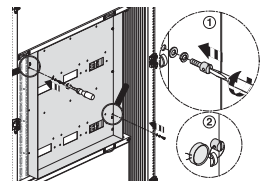
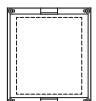
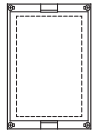
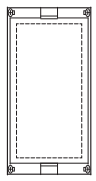
<p>Assembly</p>	<p>Slotted cover with horizontal DIN-Rail, spacing 150 mm</p> 		
<p>Application</p>	<p>for modular devices with vertical wiring</p>		
			
<p>Height x Width</p>	250	500	750
<p>150</p>	<p>1x12 module spacing</p>  <p>UD11B1</p>	<p>2x12 module spacing</p>  <p>UD12B1</p>	<p>3x12 module spacing</p>  <p>UD13B1</p>
<p>300</p>	<p>2x12 module spacing</p>  <p>UD21B1</p>	<p>4x12 module spacing</p>  <p>UD22B1</p>	<p>6x12 module spacing</p>  <p>UD23B1</p>
<p>450</p>	<p>3x12 module spacing</p>  <p>UD31B1</p>	<p>6x12 module spacing</p>  <p>UD32B1</p>	<p>9x12 module spacing</p>  <p>UD33B1</p>
<p>600</p>	<p>4x12 module spacing</p>  <p>UD41B1</p>	<p>8x12 module spacing</p>  <p>UD42B1</p>	






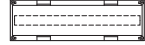
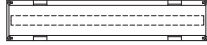


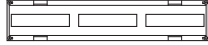


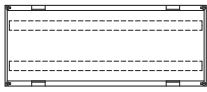

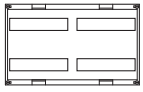
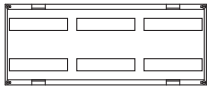
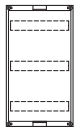
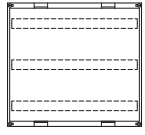
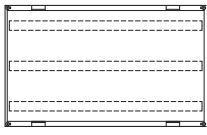
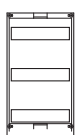
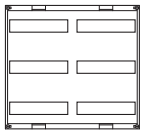
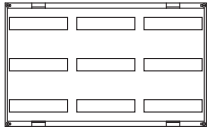
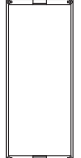
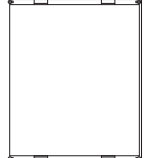
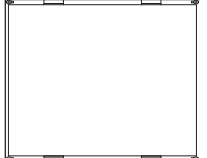

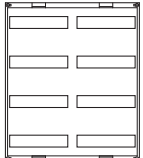
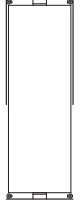

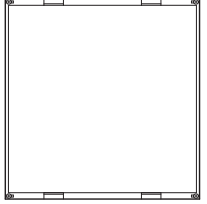
Assembly	Cover for circuit breaker or switch disconnectors on Din-Rail or mounting plate										
Application	for MCCBs						for Isolators		for Switchfuses		
Height x Width	250	250	250	250	500	500	250	500	250	500	
300	x160	x250	x250		x160		1x160A UK21R1		x160		
	 UK21A3	 UK21B2 UK21B2M* *with motor mechanism	 UK21BL2 UK21BL2M* *with motor mechanism		 UK22A2		 250A/400A UK21S1		 UK21L1A		
450	x250	x250	h250	h400-630	h400-630	h800-1000		1x630A		1x400A	
	 UK31B3 UK31B4* *with RCD	 UK31B4M* *with motor mechanism	 UK31BL3	 UK31C2 UK31C2M* *with motor mechanism	 UK32C2 UK32C2M* *with motor mechanism	 UK32D2		 UK32T1		 UK32N1A	
600	h400-630				h400-630			1x630A			
	 UK41C4 UK41C3* *with RCD				 UK42C5			 UK42T1			
750					h400-630						
					 UK52X2						

Assembly	Kits with mounting plate Blank cover with adjustable mounting plates			Busbar kits Blank cover with pre-fitted busbars		Kits for various applications Blank cover empty																												
Application	with mounting plates max depth 158mm					for spare																												
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Kit dimensions H x W (mm)</th> <th style="text-align: center;">Size</th> <th style="text-align: left;">Dimensions H x W (mm)</th> </tr> </thead> <tbody> <tr><td>150 x 250</td><td style="text-align: center;">11</td><td>100 x 194</td></tr> <tr><td>300 x 250</td><td style="text-align: center;">21</td><td>240 x 194</td></tr> <tr><td>450 x 250</td><td style="text-align: center;">31</td><td>390 x 194</td></tr> <tr><td>150 x 500</td><td style="text-align: center;">12</td><td>100 x 444</td></tr> <tr><td>300 x 500</td><td style="text-align: center;">22</td><td>240 x 444</td></tr> <tr><td>450 x 500</td><td style="text-align: center;">32</td><td>390 x 444</td></tr> <tr><td>600 x 500</td><td style="text-align: center;">42</td><td>540 x 444</td></tr> <tr><td>450 x 750</td><td style="text-align: center;">33</td><td>390 x 694</td></tr> </tbody> </table>			Kit dimensions H x W (mm)	Size	Dimensions H x W (mm)	150 x 250	11	100 x 194	300 x 250	21	240 x 194	450 x 250	31	390 x 194	150 x 500	12	100 x 444	300 x 500	22	240 x 444	450 x 500	32	390 x 444	600 x 500	42	540 x 444	450 x 750	33	390 x 694				
Kit dimensions H x W (mm)	Size	Dimensions H x W (mm)																																
150 x 250	11	100 x 194																																
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600 x 500	42	540 x 444																																
450 x 750	33	390 x 694																																
Height x Width	250	500	750	300	400	250	500																											
75						 UD01F1 ①	 UD02F1 ①																											
150	 UD11C1	 UD12C1			 UD11F1	 UD12F1																												
300	 UD21C1	 UD22C1	 UE21D1 (160A) UE21D2 (250A) UE21D3(400A)		 UD21F1	 UD22F1																												
450	UD31C2 ③  UD31C1	UD32C2 ③  UD32C1	UD33C2 ③  UD33C1	 UE31D6 (630A)		 UD31F1	 UD32F1																											
600						 UD41F1	 UD42F1																											

① Set = 2 units

Assembly	Fuse carriers for 22 x 58
	
Application	for multi metering
Height x Width	250
300	4 fuse unit spaces UD21B2 
450	8 fuse unit spaces UD31B2 
600	12 fuse unit spaces UD41B2 

Assembly	Kits with mounting plate		
			
Application	for multi metering		
			
Height x Width	250	500	750
600		 UG42Z6	
750		 UG52Z9	
1050		 UG72Z12	

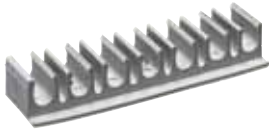
Asmby.	Insulated cover			Horizontal slotted cover 150mm gap		
						
Applic.	for terminal rows, mounting plates, busbars, etc.			for device rows		
Height x Width	250	500	750	250	500	750
75	 US01A1	 US02A1				
150	 US11A1 US11A5	 US12A1 US12A3	 US13A1	 US11A2	 US12A2	 US13A2
300	 US21A1 US21C2	 US22A1 US22A8	 US23A1	 US21A2 US21C3	 US22A2 US22A9	 US23A2
450	 US31A1 US31B1	 US32A1 US32A8	 US33A1	 US31A2 US31B5	 US32A2 US32A9	 US33A2
600	 US41A1	 US42A1	 US43A4	 US41A2	 US42A2	
750	 US51A1	 US52A4	 US53A4			



UZ014

Lowering kit

Description	Qty.	Cat. ref..
Lowering kit lowers cross support rails/U rails, in connection with application, order meter base plate		
2 fields	1	UZ014
3 fields	1	UZ015



U841Y

Cable clip

Description	Qty.	Cat. ref..
Cable clip for clipping in the meter cable when no meter is mounted	50	U841Y

Horizontal divider

UZ90T2 allows for increasing depth, for deep cabinets

Description	Qty.	Cat. ref..
Horizontal divider for dividing 2 kits with high frames, for cabinets 205mm in depth, 1 field	1	UZ01T1
Horizontal divider for dividing 2 kits with high frames, for cabinets 205mm in depth, 2 fields	1	UZ02T1
Horizontal divider for dividing 2 kits with high frames, for cabinets 205mm in depth, 3 fields	1	UZ03T1



UZ30T1

Vertical divider

Description	Qty.	Cat. ref..
Vertical divider for dividing 2 kits with high frames, for cabinets 205mm in depth	1	UZ30T1
UZ90T2 allows for increasing depth, for deep cabinets 450mm in depth		
Vertical divider includes 6 clip-in brackets to create partitions in kits with high frame 1350mm high, for cabinets 275mm depth. UZ90T2 allows for extension for deeper cabinets. Cut to the correct length.	1	UZ90T1

Partition extension (vertical/horizontal)

Description	Qty.	Cat. ref..
Brings the lower frame kits (UD...B3) to the normal frame level	1	UZ31T1

Holding support for vertical divider

Description	Qty.	Cat. ref..
for UZ90T1 to be mounted on carrier rails	1	UZ07Z1



UZ90T2

Extension

Description	Qty.	Cat. ref..
1350 mm high, to extend UZ01T1 UZ02T1, UZ03T1, UZ30T1, UZ90T1 to the base in the 350mm deep cabinets. Can be cut to desired length.	1	UZ90T2



UZ06Z1

Screws

Description	Qty.	Cat. ref..
Screws +/- 4.2 x 9.5 mm 1 Set = 1000.	1000	UZ06Z1
Screws +/- 4.2 x 9.5 mm 1 Set = 100.	100	UZ100
Screws +/- 4.2 x 13 mm 1 Set = 100.	100	UZ06Z4



UZ06A1

Locking bolts

Description	Qty.	Cat. ref..
Locking bolts for insulated cover sealable, as spare part	1	UZ06A1

Support pillar bases

Description	Qty.	Cat. ref.
Double base screws on to the vertical kit rails or carrier rails to fasten the top pillar high & low	100 = 1 set	UZ00A1
Left part of base screws on to the vertical kit rails or carrier rails to fasten the top pillar high & low	100 = 1 set	UZ00A2
Right part of base to screw on to the vertical kit rails or carrier rails to fasten the top pillar high & low	100 = 1 set	UZ00A3
Double base as spare part with fastening screws to screw on to the vertical kit rails or carrier rails to fasten the top pillar high & low	1	UZ00A4
Left and right base part as spare part with fastening screws to screw on to the vertical kit rails or carrier rails to fasten the top pillar high & low	2 = 1 set	UZ00A5



UZ00A1

Support pillar top parts

Description	Qty.	Cat. ref.
Top part low to insert into the base of the support	100 = 1 set	UZ01A1
Top part low as spare part to insert into the base of the support	1	UZ01A2
Top part, high, left to insert into the base of the support	100 = 1 set	UZ02A1
Top part, high, right to insert into the base of the support	100 = 1 set	UZ02A2
Top part high, left & right, as spare part to insert into the base of the support	2 = 1 set	UZ02A3
Adaptor for top part of pillar to tighten the PE/N rail / Modxiglass pane under the cover	2 = 1 set	UZ06A2
Extensions to extend the cover by 15mm	4 = 1 set	UZ05A1



UZ01A1



UZ06A2

Mounting kits

Description	Qty.	Cat. ref.
Raising kit for DIN Rail	50 = 1 set	UZ02Z2
Raising kit for DIN Rail with fastening screws as accessory	2 = 1 set	UZ02Z1
Lowering kit for small drop, adjustable bracket mounted	50 = 1 set	UZ03Z1
Lowering kit for small drop, as accessory, adjustable bracket mounted, with fastening screws	2 = 1 set	UZ03Z2
Lowering kit for large drop, adjustable bracket mounted	50 = 1 set	UZ04Z1
Lowering kit for large drop as accessory, adjustable bracket mounted, with fastening screws	2 = 1 set	UZ04Z2



UZ02Z2



UZ03Z1



UZ31M1

Mounting plates

Description	For cabinet height	Qty.	Cat. ref.
Mounting plates 1-field with fixing screws	500 mm	1	UZ31M1
Mounting plates 1-field with fixing screws	650 mm	1	UZ41M1
Mounting plates 1-field with fixing screws	800 mm	1	UZ51M1
Mounting plates 1-field with fixing screws	950 mm	1	UZ61M1
Mounting plates 2-field with fixing screws	500 mm	1	UZ32M1
Mounting plates 2-field with fixing screws	650 mm	1	UZ42M1
Mounting plates 2-field with fixing screws	800 mm	1	UZ52M1
Mounting plates 2-field with fixing screws	950 mm	1	UZ62M1



UZ00Z1



UZ01Z1

Insulation accessories

Description	Qty.	Cat. ref.
For DIN Rail style, horizontal, with raising kit	50 = 1 set	UZ00Z1
For DIN Rail style, horizontal, with raising kit as accessory, with fastening screws	2 = 1 set	UZ00Z2
For continuous DIN Rail, horizontal and vertical, without screws	20 = 1 set	UZ01Z1
For continuous DIN Rail, horizontal and vertical, without screws as accessory, with fixing screws	1	UZ01Z2
Fixing screws	100 = 1 set	UZ06Z4
For adjustable bracket	50 = 1 set	UZ00Z3
For adjustable bracket as accessory, with fixing screws	2 = 1 set	UZ00Z4

Quadro 4

Multiple easy combinations

The Quadro4 boards and floor standing enclosures are designed for an easy assembling using 3 basic elements: back plate, sides and top and base panels or top panel and plinth.

The vertical and horizontal combination of elements makes it possible to build “tailor made” enclosures for most requirements up to 630A. Thanks to slim packaging, storage and transport are optimised.



260 mm depth		Back plate		Top and bottom panels		Top panel and plinth		Sides (set of 2)
				 IP40 and IP43		 IP40 and IP43		
enclosures height with top and plinth	inside height capacity	ref. for enclosure width: 370 mm 620 mm		ref. for enclosure width: 370 mm 620 mm		ref. for enclosure width: 370 mm 620 mm		ref.
-	150 mm	-	-	-	-	-	-	-
500 mm	450 mm	FC110	FC210	FC415 FC416	FC425 FC426	FC445 FC446	FC455 FC456	FC010
650 mm	600 mm	FC111	FC211	FC415 FC416	FC425 FC426	FC445 FC446	FC455 FC456	FC011
800 mm	750 mm	FC112	FC212	FC415 FC416	FC425 FC426	FC445 FC446	FC455 FC456	FC012
950 mm	900 mm	FC113	FC213	FC415 FC416	FC425 FC426	FC445 FC446	FC455 FC456	FC013
1100 mm	1050 mm	FC114	FC214	FC415 FC416	FC425 FC426	FC445 FC446	FC455 FC456	FC014
1250 mm	1200 mm	FC115	FC215	FC415 FC416	FC425 FC426	FC445 FC446	FC455 FC456	FC015
1400 mm	1350 mm	FC116	FC216	FC415 FC416	FC425 FC426	FC445 FC446	FC455 FC456	FC016
1550 mm	1500 mm	-	-	-	-	-	-	-
1700 mm	1650 mm	FC118	FC218	FC415 FC416	FC425 FC426	FC445 FC446	FC455 FC456	FC012 + FC013
1850 mm	1800 mm	FC119	FC219	FC415 FC416	FC425 FC426	FC445 FC446	FC455 FC456	2 x FC013

ref. in bold = IP43

		Plain door		Transparent door	DIN rail equipment unit with door	Assembling kits	
		delivered with keylock		delivered with keylock		horizontal	vertical
Doors height		ref. for enclosure width: 370 mm 620 mm	ref. for enclosure width: 620 mm	ref. width: 620 mm	ref.	ref.	
150 mm		- -	-	FC350	-	-	
450 mm		FC310 FC330	FC340	-	FC120	FC230	
600 mm		FC311 FC331	FC341	-	FC121	FC230	
750 mm		FC312 FC332	FC342	-	FC122	FC230	
900 mm		FC313 FC333	FC343	-	FC123	FC230	
1050 mm		FC314 FC334	FC344	-	FC124	FC230	
1200 mm		FC315 FC335	FC345	-	FC125	FC230	
1350 mm		FC316 FC336	FC346	-	FC126	FC230	
1500 mm		FC317 FC337	FC347	-	-	-	
1650 mm		FC318 FC338	FC348	-	FC122 + FC123	FC230	
1800 mm		FC319 FC339	FC349	-	2 x FC123	FC230	

Examples of equipment for Quadro4, IP 40 enclosures :

References of equipment units, to use and references of enclosures

	width 620 mm		width 990 mm		width 1240 mm
height 450 mm	<p>FC210 FC010 FC425 + mod. kits centre distance 150 mm with 48 ■</p>	<p>FC210 FC010 FC425 + mod. kits centre distance 200 mm with 48 ■</p>	<p>FC110 FC210 FC010 FC120 FC415 FC425 + mod. kits centre distance 150 mm with 68 ■</p>	<p>2x FC210 FC010 2x FC425 FC120 + mod. kits centre distance 150 mm with 96 ■</p>	
height 600 mm	<p>FC211 FC011 FC425 + mod. kits centre distance 150 mm with 72 ■</p>	<p>FC211 FC011 FC425 + mod. kits centre distance 200 mm with 72 ■</p>	<p>FC111 FC211 FC121 FC011 FC415 FC425 + mod. kits centre distance 150 mm with 102 ■</p>	<p>2x FC211 FC011 2x FC425 FC121 + mod. kits centre distance 150 mm with 144 ■</p>	
height 750 mm	<p>FC212 FC012 FC425 + mod. kits centre distance 150 mm with 96 ■</p>	<p>FC212 FC012 FC425 + mod. door 24 ■ + mod. kits centre distance 200 mm with 72 ■</p>	<p>FC112 FC212 FC012 FC122 FC415 FC425 + kit x160 + mod. kits centre distance 150 mm with 116 ■</p>		
height 900 mm	<p>FC213 FC013 FC425 + mod. kits centre distance 150 mm with 120 ■</p>	<p>FC213 FC013 FC425 + kit x 160 + mod. kits centre distance 200 mm with 72 ■</p>	<p>FC113 FC213 FC013 FC123 FC415 FC425 + kit x160 + mod. kits centre distance 150 mm with 150 ■</p>		
height 1050 mm	<p>FC214 FC014 FC425 + mod. kits centre distance 150 mm with 144 ■</p>	<p>FC214 FC014 FC425 + kit HA 160A + mod. kits centre distance 150 mm with 96 ■</p>	<p>FC114 FC214 FC014 FC124 FC415 FC425 + kit HA 160A + mod. kits centre distance 150 mm with 140 ■ + set of tilted bars + terminal blocks 22 ■</p>	<p>2x FC214 FC014 2x FC425 FC124 + kit x160 + mod. kits centre distance 150 mm with 192 ■ + 2 terminal blocks 44 ■</p>	



Structure of Enclosures

Characteristics

- For enclosed distribution up to 630A.
- Depth: 267 mm
- Quadro4 are composed of :
 - Back plate
 - Kit of 2 sides
 - Top and bottom panel kit
 - Top panel and plinth kit, height 150mm
 - Plain or transparent door
 - IP30, IK07 without door
 - IP40, IK08 with door
 - IP43, IK08 with door
 - Colour of sides and doors: RAL 9010
 - Colour of plinth: RAL 7042
- All these kits allow multiple combinations of enclosures.
- Complies to EN 50 298.

Sides and Back Plate

Description	Height	Cat. ref. 2 sides kits	bottoms 370mm	620mm
Sides and back plate	450 mm	FC010	FC110	FC210
	600 mm	FC011	FC111	FC211
	750 mm	FC012	FC112	FC212
	900 mm	FC013	FC113	FC213
	1050 mm	FC014	FC114	FC214
	1200 mm	FC015	FC115	FC215
	1350 mm	FC016	FC116	FC216
	1650 mm*	-	FC118	FC218
	1800 mm*	-	FC119	FC219

*back plates delivered with 2 intermediate panels



FC415

Top and Bottom Panels

Characteristics

- Top and bottom panels delivered with the pre-mountingscrews (unloosable), cable entry

Description	370mm	620mm
Delivered with cable entry plate in insulating material and with contractor name plate holder to ensure IP40	FC415	FC425
Delivered with cable entry plates in insulating material to ensure IP43 and with contractor name plate holder	FC416	FC426



FC456

Top Panel and Plinth

Characteristics

- Top panel and plinth delivered with the pre-mounting screws (unloosable), cable entry and 150mm height plinth

Description	370mm	620mm
Delivered with cable entry to ensure IP40	FC445	FC455
Delivered with cable entry to ensure IP43	FC446	FC456

Transparent and Plain Doors

Characteristics

- Transparent and plain doors delivered with adjustable hinges and key lock

Description	Height	Cat. ref. transp. 620mm	plain 370mm	plain 620mm
Transparent and plain doors	450 mm	FC340	FC310	FC330
	600 mm	FC341	FC311	FC331
	750 mm	FC342	FC312	FC332
	900 mm	FC343	FC313	FC333
	1050 mm	FC344	FC314	FC334
	1200 mm	FC345	FC315	FC335
	1350 mm	FC346	FC316	FC336
	1500 mm	FC347	FC317	FC337
	1650 mm	FC348	FC318	FC338
	1800 mm	FC349	FC319	FC339



FC113

Commercial
Distribution

Equipment Unit with Door

Characteristics

- Equipment unit with door for modular devices and DIN rail
- Equipment 1 row, 24 I for enclosure width 620 mm
- Reversible kit
- Delivered complete with lock
- Adjustable in dept



FC350

Description	Cat. ref. 620mm
Equipment unit with door for modular devices and DIN rail	FC350

Locks

Description	Cat. ref.
Key lock n° 1242E delivered with 2 keys	FZ597
key lock n° 405 delivered with 2 keys	FZ452
key lock n° 455 delivered with 2 keys	FZ453
lock with male square of 7 mm chrome plated with 1 key	FZ451
lock with male triangle of 7 mm chrome plated with 1 key	FZ450
lock with double chrome plated bar of 3mm with 1 key	FZ449



FZ597



FZ451

Schematics Holder

Description	Cat. ref.
Flexible self-adhesive schematics holder, to stick inside the doors, A4 format	FZ794
Rigid self-adhesive schematics holder, to stick inside the doors, A4 format	FZ795

Wall Mounting Lugs

Description	Cat. ref.
Wall mounting lugs fixed at the back delivered with fastening screws, 1 set = 2 lugs	FM640



FM640



FC230

Connection Kits Between Enclosures

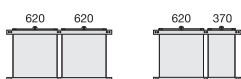
Characteristics

- For vertical association, width 370 and 620 mm, the continuity of equipments is guaranteed, 1 set is composed of 2 bolts with screws for connection of the bottoms and 2 pillars for connection on the sides
- For horizontal association the kit is common for the bottoms of width 370 and 620mm, 1 set is composed of 2 bolts with screws, 2 spacers for connection of the bottoms and to maintain the tops and bases as well as central support of front plates
- For bottom of 1650mm take : 1 FC122 + 1 FC123
- For bottom of 1800mm take : 2 FC123



FC123

Description	For height mm	Cat. ref. 620mm
For vertical association		FC230
For horizontal association	450	FC120
For horizontal association	600	FC121
For horizontal association	750	FC122
For horizontal association	900	FC123
For horizontal association	1050	FC124
For horizontal association	1200	FC125
For horizontal association	1350	FC126



FC192

Horizontal Link Bars

Characteristics

- Horizontal link bars to link several enclosures to facilitate transport or fixing on the wall
- Precuts allow to adapt the bars to the desired length
- It is strongly recommended to use the link bars during the association of several bottoms
- Set of 2 bars delivered with fastening screw on enclosures



FC193

Description	Cat. ref.
Set of 2 bars to connect 2 enclosures 2 x 620 mm or 1 x 620 + 1 x 370 mm	FC192
Set of 2 bars to connect 3 enclosures 2 x 370 + 1 x 620 mm or 2 x 620 + 1 x 370 mm	FC193



FC671

Painting Kit

Characteristics

- for the final touch-up of the enclosures Quadro and their base plates
- 1 set includes : 1 can RAL 9010 for enclosures, 1 can RAL 7042 for base plates

Description	Cat. ref.
Painting kit for Quadro enclosures and base plates	FC671



FZ402

FZ404

Cable Entry Plate

Description	Cat. ref.
Cable entry plate for replacement, top and bottom IP54	FZ402
Cable entry plate for replacement, top and bottom IP43	FZ403
Cable entry plate plain	FZ404

Partition

Description	Cat. ref.
in sheet metal for Quadro 4 and Quadro 5, width 620mm	FC664



FC419

Replacement Plate

Description	Cat. ref.
Replacement plate in IP40, RAL 9010, width 370mm	FC419
Replacement plate in IP40, RAL 9010, width 620mm	FC429






Quadro 5 IP55 boards and enclosures

The Quadro 5 boards and enclosures in IP55 are ideal for commercial applications such as, kitchens, hospitals, hotels, bank... Monobloc, but with large access thanks to removable sides.



Commercial
Distribution

		Enclosures depth 260 mm delivered without plinth			Enclosures depth 260 mm and 400 mm delivered with plinth of 150 mm		Enclosures depth 260 mm and 400 mm delivered with plinth of 150 mm	
enclosures height with top and bottom or plinth	internal equipment height	enclosures width : (685mm usable) pair of 700 mm total sides			enclosures width : (435 mm usable) 450 mm total d. 260 mm d.400 mm		(685 mm usable) 700 mm total d. 260 mm d. 400 mm	
				plinth 150 mm				
510 mm	450 mm	FM200	FM400	FM450	-	-	-	-
660 mm	600 mm	FM201	FM401	FM450	-	-	-	-
810 mm	750 mm	FM202	FM402	FM450	-	-	-	-
960 mm	900 mm	FM203	FM403	FM450	-	-	-	-
1110 mm	1050 mm	FM204	FM404	FM450	-	-	-	-
1260 mm	1200 mm	FM205	FM405	FM450	-	-	-	-
1410 mm	1350 mm	FM206	FM406	FM450	-	-	-	-
1710 mm	1500 mm	-	-	-	FM107	FM117	FM207	FM217
1860 mm	1650 mm	-	-	-	FM108	FM118	FM208	FM218
2010 mm	1800 mm	-	-	-	FM109	FM119	FM209	FM219
vertical association kit		FM630	-	-	-	-	FM630 possible	-
horizontal association kit		FM635	-	-	FM635	FM635	FM635	-

Enclosures depth 260 mm and 400 mm delivered with plinth of 150 mm		Side panels		Busbar compartment and cable sleeve		Doors				
										
(885 mm usable) 900 mm total d. 260 mm d. 400 mm		pair of sides d. 260 mm d. 400 mm		for enclosure: width 900 mm total d. 260 mm d. 400 mm		plain doors :			transparent doors:	
						width 435 mm	width 685 mm	width 885 mm	width 685 mm	width 885 mm
-	-	-	-	-	-	-	FM530	-	FM540	-
-	-	-	-	-	-	-	FM531	-	FM541	-
-	-	-	-	-	-	-	FM532	-	FM542	-
-	-	-	-	-	-	-	FM533	-	FM543	-
-	-	-	-	-	-	-	FM534	-	FM544	-
-	-	-	-	-	-	-	FM535	-	FM545	-
-	-	-	-	-	-	-	FM536	-	FM546	-
FM307	FM317	FM407	FM417	FM427	FM437	FM517	FM537	FM557	FM547	FM567
FM308	FM318	FM408	FM418	FM428	FM438	FM518	FM538	FM558	FM548	FM568
FM309	FM319	FM409	FM419	FM429	FM439	FM519	FM539	FM559	FM549	FM569
-	-	-	-	-	-	-	-	-	-	-
FM635	-	-	-	-	-	-	-	-	-	-



FM208



FM204

Enclosures and Boards

Characteristics

- The Quadro 5 enclosures are designed for enclosed distribution up to 630A.
- Delivered without sides, they can be joined horizontally and vertically to create multiple assemblies.
- The enclosures are delivered with a pre-mounted plinth.
- A cable sleeve or busbar compartment of 200mm width can be carried out in the enclosures of width 900mm.
- The Quadro 5 enclosures can be equipped with full or transparent doors. The whole of the equipment units, accessories of wiring, power distribution, can be assembled on the bottom.
- IP30 / IK08 without door. IP55 / IK10 with door
- Colour: RAL9010. Plinth colour: RAL7042
- Complies to EN 50 298, EN 60 439-1.

Enclosures with Plinth

- Depth : 260 mm and 400 mm
- Plinth height : 150 mm
- Delivered with 2 mounting lugs cover plate

Description	Total height mm	Equipment height mm	Depth mm	Cat. ref.
Inside width : 435mm total width : 450mm (with sides)	1710	1500	260	FM107
	1710	1500	400	FM117
	1860	1650	260	FM108
	1860	1650	400	FM118
	2010	1800	260	FM109
	2010	1800	400	FM119
Inside width : 685 mm total width : 700 mm (with sides)	1710	1500	260	FM207
	1710	1500	400	FM217
	1860	1650	260	FM208
	1860	1650	400	FM218
	2010	1800	260	FM209
	2010	1800	400	FM219

To use with a kit for cable sleeve or busbar compartment cable sleeve or busbar compartment: 200 mm

Inside width: 885 mm total width : 900 mm (with sides)	1710	1500	260	FM307
	1710	1500	400	FM317
	1860	1650	260	FM308
	1860	1650	400	FM318
	2010	1800	260	FM309
	2010	1800	400	FM319

Boards

- Boards depth : 260 mm
- Delivered with 4 mounting lugs, cover plate
- Useful width : 685 mm, total width : 700 mm (with sides)
- RAL 9010

Description	Total height mm	Equipment height mm	Depth mm	Cat. ref.
Boards with 4 mounting lugs, cover plate	510	450	260	FM200
	660	600	260	FM201
	810	750	260	FM202
	960	900	260	FM203
	1110	1050	260	FM204
	1260	1200	260	FM205
	1410	1350	260	FM206

Plinth

Characteristics

- Plinth depth 260 mm, height : 150 mm, useful width : 685 mm, total width : 700 mm
- RAL 9042
- For enclosures of width 700 mm
- Delivered with 4 screws + 4 nuts + cover plates



FM450

Description	Cat. ref.
Plinth depth 260 mm for enclosures of width 700 mm	FM450

Set of 2 sides

Description	Total height mm	Depth mm	Cat. ref.
Set of 2 sides for boards and enclosures depth 260mm	510	260	FM400
	660	260	FM401
	810	260	FM402
	960	260	FM403
	1110	260	FM404
	1260	260	FM405
	1410	260	FM406
Set of 2 sides for enclosures	1710	260	FM407
	1710	400	FM417
	1860	260	FM408
	1860	400	FM418
	2010	260	FM409
	2010	400	FM419



FM403

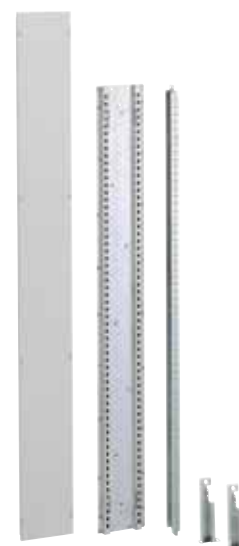
Commercial Distribution

Kits for Cable Compartment

Characteristics

- Kits for cable compartment allow to create a cable sheath with cable of 200mm in an enclosure of width 885mm
- Delivered with 2 fixing lugs, 1 pillar kit, 1 support of front plates and a full front plate

Description	For enclosure	Depth mm	Cat. ref.
Kits for cable compartment	FM307	260	FM427
	FM317	400	FM437
	FM308	260	FM428
	FM318	400	FM438
	FM309	260	FM429
	FM319	400	FM439



FM428

Association Kits

Characteristics

- Kit of vertical association for boards this kit includes: 4 screws + M12 nuts, 4 washers, 1 self-adhesive seal
- Kit of horizontal association for boards and enclosures this kit includes : 6 screws + M6 nuts, 1 self-adhesive seal

Description	Cat. ref.
Kit of vertical association for boards	FM630
Kit of horizontal association for boards and enclosures	FM635



FM630

Back Plates

Description	Cat. ref.
Back plates h. 300 x w.500 mm	FM484
Back plates h. 600 x w.500 mm	FM486



FM532



FM568

Doors

Characteristics

Full Doors

- Delivered with hinges and equipped by triangle lock
- Reversible doors
- Distance between door and front plate : 58mm

Transparent Doors

- Transparent doors in sheet steel with a tempered smoked grey glass plate, thickness 3mm
- Delivered with hinges and equipped by triangle lock
- Reversible doors
- Distance between door and front plate : 54mm

Description	Height mm	Cat. ref 435 mm	Cat. ref 685 mm	Cat. ref. 885 mm
Full doors	510	-	FM530	-
	660	-	FM531	-
	810	-	FM532	-
	960	-	FM533	-
	1110	-	FM534	-
	1260	-	FM535	-
	1410	-	FM536	-
	1710	FM517	FM537	FM557
	1860	FM518	FM538	FM558
	2010	FM519	FM539	FM559
Transparent doors	510	-	FM540	-
	660	-	FM541	-
	810	-	FM542	-
	960	-	FM543	-
	1110	-	FM544	-
	1260	-	FM545	-
	1410	-	FM546	-
	1710	-	FM547	FM567
	1860	-	FM548	FM568
	2010	-	FM549	FM569

Locks

Characteristics

- Replace the original lock for the following door heights: 510mm, 660mm, 810mm, 960mm, 1110mm, 1260mm, 1410mm



FZ597



FZ449



FZ451



FZ450

Description	Cat. ref.
key lock n° 1242E, delivered with 2 keys	FZ597
key lock n° 405, delivered with 2 keys	FZ452
key lock n° 455, delivered with 2 keys	FZ453
lock with male square of 7 mm, chrome plated with 1 key	FZ451
lock with male triangle of 7 mm, chrome plated with 1 key	FZ450
lock with double bar of 3 mm, chrome plated with 1 key	FZ449

Inserts for Locks

Characteristics

- Replace the lock of origin on the doors height: 1710mm, 1860mm, 2010mm



FZ517



FZ850



FZ515

Description	Cat. ref.
triangle insert 8 mm	FZ515
square insert 6 x 6 mm	FZ516
square insert 8 x 8 mm	FZ517
rotary handle lock with key 1242E lock cylinder	FZ508
triangle key + square + double bar	FZ850

Flexible Schematics Holder

Characteristics

- Flexible schematics holder with self-adhesive to stick inside the doors

Description

Flexible schematics holder size A4

Cat. ref.

FZ794



FZ794

Rigid Schematics Holder

Characteristics

- Rigid schematics holder in sheet metal with adhesive for sticking inside the doors

Description

Rigid schematics holder size A4

Cat. ref.

FC620

2 Wall Mounting Lugs

Characteristics

- 2 wall mounting lugs for Quadro4 and Quadro5
- To fix the enclosures on the wall, the lugs can be positioned vertically and horizontally

Description

2 Wall Mounting Lugs

Cat. ref.

FM640



FM640

2 Lifting Rings

Characteristics

- 2 lifting rings allow the transport (lifting) of a unit
- Maximum weight 250 kg

Description

2 Lifting Rings, includes 2 rings, 2 nuts M12 screws

Cat. ref.

FM653



FM653







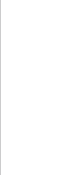



<p>Dimensions</p>				<p>top and bottom frame</p>	<p>4 uprights</p>	<p>vertical dividing upright</p>	<p>horizontal dividing upright</p>	<p>plain plate for top and bottom frames</p>	<p>sliding plate for top and bottom frames</p>	<p>plain door</p>
width W+w (mm)	width W (mm)	height H (mm)	depth D (mm)							
-	450	1900	400	FN018E	FN046E	-	-	FN078E	FN098E	FN546E
-	450	2100	400	FN018E	FN047E	-	-	FN078E	FN098E	FN547E
-	450	1900	600	FN020E	FN046E	-	-	FN080E	FN100E	FN546E
-	450	2100	600	FN020E	FN047E	-	-	FN080E	FN100E	FN547E
-	450	1900	800	FN022E	FN046E	-	-	FN082E	FN102E	FN546E
-	450	2100	800	FN022E	FN047E	-	-	FN082E	FN102E	FN547E
-	700	1900	400	FN021E	FN046E	-	-	FN081E	FN101E	FN506E
-	700	2100	400	FN021E	FN047E	-	-	FN081E	FN101E	FN507E
-	700	1900	600	FN029E	FN046E	-	-	FN089E	FN109E	FN506E
-	700	2100	600	FN029E	FN047E	-	-	FN089E	FN109E	FN507E
-	700	1900	800	FN013E	FN046E	-	-	FN073E	FN093E	FN506E
-	700	2100	800	FN013E	FN047E	-	-	FN073E	FN093E	FN507E
-	900	1900	400	FN023E	FN046E	-	-	FN083E	FN103E	FN526E
-	900	2100	400	FN023E	FN047E	-	-	FN083E	FN103E	FN527E
-	900	1900	600	FN031E	FN046E	-	-	FN091E	FN111E	FN526E
-	900	2100	600	FN031E	FN047E	-	-	FN091E	FN111E	FN527E
-	900	1900	800	FN017E	FN046E	-	-	FN077E	FN097E	FN526E
-	900	2100	800	FN017E	FN047E	-	-	FN077E	FN097E	FN527E
700+200	-	1900	400	FN023E	FN046E	FN286E	FN289E	FN083E	FN103E	FN506E ⁽¹⁾
700+200	-	2100	400	FN023E	FN047E	FN287E	FN289E	FN083E	FN103E	FN507E ⁽²⁾
700+200	-	1900	600	FN031E	FN046E	FN286E	FN291E	FN091E	FN111E	FN506E ⁽¹⁾
700+200	-	2100	600	FN031E	FN047E	FN287E	FN291E	FN091E	FN111E	FN507E ⁽²⁾
700+200	-	1900	800	FN017E	FN046E	FN286E	FN292E	FN077E	FN097E	FN506E ⁽¹⁾
700+200	-	2100	800	FN017E	FN047E	FN287E	FN292E	FN077E	FN097E	FN507E ⁽²⁾
700+300	-	1900	400	FN024E	FN046E	FN286E	FN289E	FN084E	FN104E	FN506E ⁽³⁾
700+300	-	2100	400	FN024E	FN047E	FN287E	FN289E	FN084E	FN104E	FN507E ⁽⁴⁾
700+300	-	1900	600	FN032E	FN046E	FN286E	FN291E	FN092E	FN112E	FN506E ⁽³⁾
700+300	-	2100	600	FN032E	FN047E	FN287E	FN291E	FN092E	FN112E	FN507E ⁽⁴⁾
700+300	-	1900	800	FN037E	FN046E	FN286E	FN292E	FN121E	FN117E	FN506E ⁽³⁾
700+300	-	2100	800	FN037E	FN047E	FN287E	FN292E	FN121E	FN117E	FN507E ⁽⁴⁾

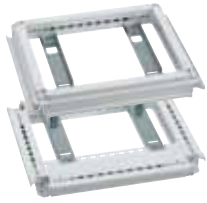
⁽¹⁾ Door + busbar compartment panel FN266

⁽²⁾ Door + busbar compartment panel FN267

⁽³⁾ Door + busbar compartment panel FN206

⁽⁴⁾ Door + busbar compartment panel FN207

									
transparent doors	back panel	finishing frame (without door)	busbar compartment or cable sleeve (front/rear)	plain panel (sides)	plinth H = 100mm	Internal steel door	galvanized steel plate	functional uprights whole height 1900 mm	functional uprights partial height 1600 mm
-	FN216E	-	-	FN356E	FN438E	-	FN726E	FN696E	FN896E + 2 x FN690E
-	FN217E	-	-	FN357E	FN438E	-	FN727E	FN697E	FN897E + 2 x FN690E
-	FN216E	-	-	FN366E	FN440E	-	FN726E	FN696E	FN896E + 2 x FN691E
-	FN217E	-	-	FN367E	FN440E	-	FN727E	FN697E	FN897E + 2 x FN691E
-	FN216E	-	-	FN376E	FN442E	-	FN726E	FN696E	FN896E + 2 x FN692E
-	FN217E	-	-	FN377E	FN442E	-	FN727E	FN697E	FN897E + 2 x FN692E
FN516E	FN276E	FN406E	-	FN356E	FN441E	FN700E	FN736E	FN696E	FN896E + 2 x FN690E
FN517E	FN277E	FN407E	-	FN357E	FN441E	FN701E	FN737E	FN697E	FN897E + 2 x FN690E
FN516E	FN276E	FN406E	-	FN366E	FN451E	FN700E	FN736E	FN696E	FN896E + 2 x FN691E
FN517E	FN277E	FN407E	-	FN367E	FN451E	FN701E	FN737E	FN697E	FN897E + 2 x FN691E
FN516E	FN276E	FN406E	-	FN376E	FN433E	FN700E	FN736E	FN696E	FN896E + 2 x FN692E
FN517E	FN277E	FN407E	-	FN377E	FN433E	FN701E	FN737E	FN697E	FN897E + 2 x FN692E
FN536E	FN296E	FN426E	-	FN356E	FN443E	FN706E	FN746E	FN696E	FN896E + 2 x FN690E
FN537E	FN297E	FN427E	-	FN357E	FN443E	FN711E	FN747E	FN697E	FN897E + 2 x FN690E
FN536E	FN296E	FN426E	-	FN366E	FN453E	FN706E	FN746E	FN696E	FN896E + 2 x FN691E
FN537E	FN297E	FN427E	-	FN367E	FN453E	FN711E	FN747E	FN697E	FN897E + 2 x FN691E
FN536E	FN296E	FN426E	-	FN376E	FN437E	FN706E	FN746E	FN696E	FN896E + 2 x FN692E
FN537E	FN297E	FN427E	-	FN377E	FN437E	FN711E	FN747E	FN697E	FN897E + 2 x FN692E
FN516E ⁽¹⁾	FN296E	FN426E	FN266E	FN356E	FN443E	FN706E	FN746E	FN696E	FN896E + 2 x FN690E
FN517E ⁽²⁾	FN297E	FN427E	FN267E	FN357E	FN443E	FN711E	FN747E	FN697E	FN897E + 2 x FN690E
FN516E ⁽¹⁾	FN296E	FN426E	FN266E	FN366E	FN453E	FN706E	FN746E	FN696E	FN896E + 2 x FN691E
FN517E ⁽²⁾	FN297E	FN427E	FN267E	FN367E	FN453E	FN711E	FN747E	FN697E	FN897E + 2 x FN691E
FN516E ⁽¹⁾	FN296E	FN426E	FN266E	FN376E	FN437E	FN706E	FN746E	FN696E	FN896E + 2 x FN692E
FN517E ⁽²⁾	FN297E	FN427E	FN267E	FN377E	FN437E	FN711E	FN747E	FN697E	FN897E + 2 x FN692E
FN516E ⁽³⁾	FN246E	FN406E	FN206E	FN356E	FN444E	FN700E	FN736E	FN696E	FN896E + 2 x FN690E
FN517E ⁽⁴⁾	FN247E	FN407E	FN207E	FN357E	FN444E	FN701E	FN737E	FN697E	FN897E + 2 x FN690E
FN516E ⁽³⁾	FN246E	FN406E	FN206E	FN366E	FN454E	FN700E	FN736E	FN696E	FN896E + 2 x FN691E
FN517E ⁽⁴⁾	FN247E	FN407E	FN207E	FN367E	FN454E	FN701E	FN737E	FN697E	FN897E + 2 x FN691E
FN516E ⁽³⁾	FN246E	FN406E	FN206E	FN376E	FN459E	FN700E	FN736E	FN696E	FN896E + 2 x FN692E
FN517E ⁽⁴⁾	FN247E	FN407E	FN207E	FN377E	FN459E	FN701E	FN737E	FN697E	FN897E + 2 x FN692E



FN018E



FN438E

Structure

Characteristics

- For enclosed distribution up to 1600A.
- Height: 1900, 2100 mm
- Depth: 400, 600, 800 mm
- Quadro+ consists of parts to assemble : top and bottom frames, 4 uprights, cable gland plates, plinth (height 100 mm)
- IP30 / IK08 without door, IP55 / IK10 with door
- RAL 9010 (structure), RAL 7042 (plinth)
- Quadro+ join horizontally with no limit to form a complete structure. To finish the unit Quadro+ can be equipped with : side panel, back panel, panel for busbar compartment, plain or transparent doors

Top and Bottom Frames, Plinths

Description	Width mm	Depth mm	Frame Cat. ref.	Plinth Cat. ref.
Top and Bottom Frames, Plinths	450	400	FN018E	FN438E
	700	400	FN021E	FN441E
	900	400	FN023E	FN443E
	1000	400	FN024E	FN444E
	450	600	FN020E	FN440E
	700	600	FN029E	FN451E
	900	600	FN031E	FN453E
	1000	600	FN032E	FN454E
	450	800	FN022E	FN442E
	700	800	FN013E	FN433E
	900	800	FN017E	FN437E
	1000	800	FN037E	FN459E



FN046E

FN286E

Uprights

Characteristics

Uprights

- Height: 1900, 2100 mm
- Depth: 400, 600, 800 mm

Vertical Dividing Uprights

- For sheath in cells of width: 900 mm (700 + 200) or 1000 mm (700 + 300)
- Delivered with 1 upright and fixing accessories

Functional Uprights Kits

- Do not fit in 300 mm busbar compartment or cable sleeve

Functional Uprights Partial Height

- To be equipped with (ordered separately):
4xFN690E for 400mm depth
4xFN691E for 600mm depth
4xFN692E for 800mm depth



FN696E

Description	Height mm	Cat. ref.
Uprights, set of 4	1900	FN046E
Uprights, set of 4	2100	FN047E
Vertical dividing uprights, 1 upright and fixing accessories	1900	FN286E
Vertical dividing uprights, 1 upright and fixing accessories	2100	FN287E
Functional upright kits, delivered with 4 squares, 2 uprights, fixing kit, 2 supports for front plate	1800	FN696E
Functional upright kits, delivered with 4 squares, 2 uprights, fixing kit, 2 supports for front plate	2000	FN697E
Functional upright kits, for mounting without busbar on horizontal edge	1600	FN896E
Functional upright kits, for mounting without busbar on horizontal edge	1800	FN897E
Functional Uprights Partial Height	150	FN891E
Functional Uprights Partial Height	200	FN892E
Functional Uprights Partial Height	300	FN893E
Functional Uprights Partial Height	400	FN894E
Functional Uprights Partial Height	600	FN895E

Profiles for Front Cover Fixing

Description	Cat. ref.
For h1900 enclosures, whole	FN696EP
For h1900 enclosures, partial	FN896EP
For h2100 enclosures, whole	FN697EP
For h2100 enclosures, partial	FN897EP

Cable Gland Plates

Characteristics

- Equipped with IP55 gasket
- Open cable gland plates: adjustable thanks to a sliding plate.

Doors for Quadro+ cells

- Reversible
- Height: 1860 mm
- IP55 / IK10 protection class
- Transparent doors: with tempered glass, 3mm thick, distance between front plate and door: 70 mm
- Plain doors: distance between front plate and door: 75 mm



FN081E



FN101E

Description	Width mm	Depth mm	Full Cat. ref.	Open Cat. ref.
Cable gland plates can be mounted on top and bottom	450	400	FN078E	FN098E
	700	400	FN081E	FN101E
	900	400	FN083E	FN103E
	1000	400	FN084E	FN104E
	450	600	FN080E	FN100E
	700	600	FN089E	FN109E
	900	600	FN091E	FN111E
	1000	600	FN092E	FN112E
	450	800	FN082E	FN102E
	700	800	FN073E	FN093E
	900	800	FN077E	FN097E
	1000	800	FN121E	FN117E

Plain and Transparent Doors

Characteristics

- Plain and transparent doors delivered complete with hinges and with triangular key lock

Description	Width mm	Depth mm	Plain Cat. ref.	Transparent Cat. ref.
Plain & transpar. doors delivered with hinges and triangular key lock	450	1900	FN546E	FN510E
	450	2100	FN547E	FN511E
	700	1900	FN506E	FN516E
	700	2100	FN507E	FN517E
	900	1900	FN526E	FN536E
	900	2100	FN527E	FN537E
	1000	1000	FN506E + FN206E	FN516E + FN206E



FN510E



FN276E

Screwed Cable Compartment Panels

Description	Width mm	Height mm	Cat. ref.
Panels to close sheath of 200 or 300mm. Mounted on front or back of enclosure	900 (sheath 200)	1900	FN266E
	900 (sheath 200)	2100	FN267E
	1000 (shth. 300)	1900	FN206E
	1000 (shth. 300)	2100	FN207E
Panels to be mounted on the back of the enclosure	450	1900	FN216E
	450	2100	FN217E
	700	1900	FN276E
	700	2100	FN277E
	900	1900	FN296E
	900	2100	FN297E
	1000	1900	FN246E
	1000	2100	FN247E

Screwed Side Panels

Description	Depth mm	Height mm	Cat. ref.
Screwed side panels fixing by screws on the sides	450	1900	FN356E
	450	2100	FN357E
	600	1900	FN366E
	600	2100	FN367E
	800	1900	FN376E
	800	2100	FN377E

Cover Plates

Description	Cat. ref.
Cover plates to close space between two associated enclosures, to be used for each association	FN942E



FN950

Side Juxtaposition Kits

Description	Cat. ref.
Side juxtaposition kits for all the enclosures, kit with 4 galvanized steel parts 40/10e	FN950

Cells Connection Kits

Description	Cat. ref.
Cells Connection Kits, seal 10 x 6 mm length 10 m	FN951



FN430E

Plinth Overlapping Kits

Description	Cat. ref.
Plinth overlapping kits to superpose 2 plinths, seal 10 x 6 mm length 10 m	FN430E



FN767

Lifting Brackets

Description	Cat. ref.
Lifting brackets set of 2, delivered with M12 bolt - single	FZ767
Lifting brackets set of 2, delivered with M12 bolt - double	FZ760E



FN952

Door Blocking at Opening

Description	Cat. ref.
Door blocking at opening for door width: 450 and 700 mm	FN952

Door Handle

Description	Cat. ref.
Door handle, rotary handle lock cylinder, with key 1242E	FZ508

Inserts for Locks

Description	Cat. ref.
Inserts for locks, replaces the lock of the original door handle FZ508 - triangle insert 8 mm	FZ515
Inserts for locks, replaces the lock of the original door handle FZ508 - square insert 6 x 6 mm	FZ516
Inserts for locks, replaces the lock of the original door handle FZ508 - square insert 8 x 8 mm	FZ517
Inserts for locks, replaces the lock of the original door handle FZ508 - triangle key + square + double bar	FZ850



Rigid Diagram Holder

Description	Cat. ref.
Rigid diagram holder delivered with adhesive for fixing inside doors, in sheet steel, A4 format	FZ795



FZ795

Ventilators

Description	Cat. ref.
Ventilator RAL 7035, 220 V - 20 W	FL212Z
Ventilator RAL 7035, 220 V - 32 W	FL214Z

Ventilation Grids

Description	Cat. ref.
Ventilation grids IP 54, 150 x 150 mm	FL220Z
Ventilation grids IP 54, 250 x 250 mm	FL224Z

Painting Kit

Description	Cat. ref.
Painting kit in aerosol can for the final touch-up of Quadro enclosures and base plates. 1 set includes : 1 can colour RAL 9010 for enclosures, 1 can colour RAL 7042 for base plates	FC671

Perforated Crossbars with Clamps

Description	Cat. ref.
Crossbars to mount horizontally on enclosures sides, H=50mm step of 25mm for enclosure depth 400mm	FN690E
Crossbars to mount horizontally on enclosures sides, H=50mm step of 25mm for enclosure depth 600mm	FN691E
Crossbars to mount horizontally on enclosures sides, H=50mm step of 25mm for enclosure depth 800mm	FN692E



FN690E

Perforated Mounting Rails

Description	Cat. ref.
To mount directly on the uprights on the back of enclosure, H=50mm step of 25mm for enclosure width 450mm	FN873E
To mount directly on the uprights on the back of enclosure, H=50mm step of 25mm for enclosure width 700mm	FN875E
To mount directly on the uprights on the back of enclosure, H=50mm step of 25mm for enclosure width 900mm	FN877E
To mount directly on the uprights on the back of enclosure, H=50mm step of 25mm for enclosure width 1000mm	FN879E



FN877E

Perforated Brackets

Description	Height 50mm	Height 25mm	
	Cat. ref.	Cat. ref.	
Assembly in depth on crossbars FN690E to FN692E, step of 25mm for enclosure width 450mm	FN863E	FN862E	 FN864E
Assembly in depth on crossbars FN690E to FN692E, step of 25mm for enclosure width 700mm	FN865E	FN864E	
Assembly in depth on crossbars FN690E to FN692E, step of 25mm for enclosure width 900mm	FN867E	FN866E	

Perforated Din Rails

Description	Height 50mm	Height 25mm	
	Cat. ref.	Cat. ref.	
To mount inside on brackets FN862E to FN867E, step of 25mm for enclosure depth 450mm	FN883E	FN882E	 FN883E
To mount inside on brackets FN862E to FN867E, step of 25mm for enclosure depth 600mm	FN885E	FN884E	
To mount inside on brackets FN862E to FN867E, step of 25mm for enclosure depth 800mm	FN887E	FN886E	

Finishing Frames

Description	Width mm	Height mm	Cat. ref.
Finishing frames	700 / 1000	1900	FN406E
	700 / 1000	2100	FN407E
	900	1900	FN426E
	900	2100	FN427E

Internal Doors

Description	Width mm	Height mm	Cat. ref.
Internal doors	700	1900	FN700E
	700	2100	FN701E
	900	1900	FN706E
	900	2100	FN711E

Mounting Plates



FN737E

Description	Width mm	Height mm	Cat. ref.
Mounting plates	450	1900	FN726E
	450	2100	FN727E
	700	1900	FN736E
	700	2100	FN737E
	900	1900	FN746E
	900	2100	FN747E

Horizontal Partitioning Uprights



FN289E

Description	Depth mm	Cat. ref.
Horizontal partitioning uprights	400	FN289E
	600	FN291E
	800	FN292E

Cover Plates

Description	Depth mm	Cat. ref.
Cover plates	400	FN942E
	600	FN943E
	800	FN944E

Brackets



UT88A







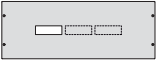
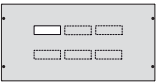

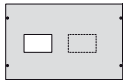
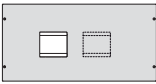
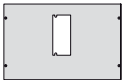
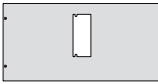

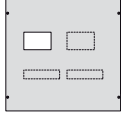
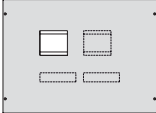
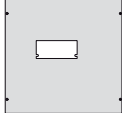

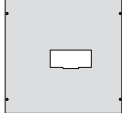

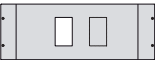
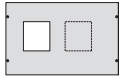
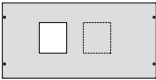
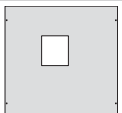
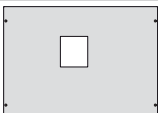
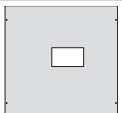
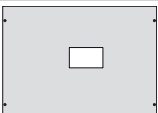
Description	Depth mm	Cat. ref.
Brackets for bars support	400	FN970E
	600	FN971E
	800	FN972E
Singe brackets for copper busbars for busbars 25 x 5 mm		UT88A
Singe brackets for copper busbars for busbars 50 x 5 mm		UT88B
Double brackets for copper busbars for busbars 25 x 5 mm		UT88C
Double brackets for copper busbars for busbars 50 x 5 mm		UT88D

Perforated Busbars Copper

Description	Cat. ref.
Perforated busbars copper 25 x 5 mm, length 1750 mm	UT87E

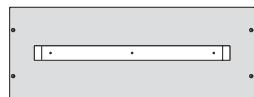
Equipment kits length (mm)	Load break switches with visible breaking 100 to 400A		HA switches, visual breaking 160 to 1600A		Modular devices: 10 I (w.350 mm) 24 I (w. 600 mm)		Full front plates + • grids for special devices • DIN rails for terminals width 600 mm UC951		
	350	600	350	600	350	600	350	600	600
50 mm									
75 mm									
100 mm									
150 mm									
200 mm									
300 mm	 UC310H + HY170	 UC311H + HY170	 UC008	 UC001 (160A)					 UC960
	 UC332		 UC009	 UC003 (250/400A)					
400 mm		 UC335							 UC692 (450 mm)
600 mm				 UC005 (160A)					 UC964
				 UC270 (1600A)					

Equipment kits width (mm)		MCCBs, trip-free switches 125 and 160A x160			MCCBs, trip-free switches 250A x250			MCCBs trip-free switches 250 A (electronic) h250	
		350	600	800	350	600	800	350	600
Equipment kits - height (mm)	for rotary handle	150							
		class I class II		UC013HX01 UC313H	UC014H UC314H				
	200								
	class I class II				UC127H UC427H	UC128H UC428H		UC127H UC427H	
	300								
	class I class II	UC010H UC310H	UC011H UC311H	UC012H UC312H	UC020H UC320H	UC021H UC321H	UC022H UC322H	UC020H UC320H	UC021H UC321H
	400								
	class I class II				UC030H UC330H	UC023H UC323H	UC024H UC324H	UC030H UC330H	UC023H UC323H
	600								
	class I class II								
for motor operator	300								
	class II				UC321HM	UC322HM		UC321HM	
	400								
class II									
600									
class II									

	<p>MCCBs, trip-free switches 400 and 630A h400-h630</p> 			<p>MCCBs, 800 and 1000A h1000</p> 			<p>MCCBs, 1250 and 1600A h1600</p> 		
	800	350	600	800	600	800	600	800	
									
	UC128H UC428H		UC147H UC447H	UC148H UC448H					
									
	UC022H UC322H								
									
	UC024H UC324H	UC140H UC440H	UC141H UC441H	UC142H UC442H	UC054H UC354H	UC055H UC355H			
									
		UC144H UC444H	UC145H UC445H	UC146H UC446H	UC050H UC350H	UC051H UC351H	UC060H UC360H	UC061H UC361H	
									
	UC322HM								
									
			UC441HM	UC442HM					
									
					UC350HM	UC351HM	UC360HM	UC361HM	



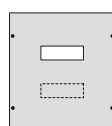
UC010H / UC310H



UC012H / UC312H



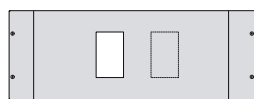
UC013HX01 / UC313H



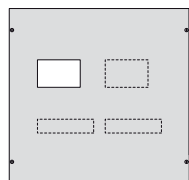
UC030H / UC330H



UC128H / UC428H



UC322HM



UC145H / UC445H



UC147H / UC447H



UC001

Equipment Kits for h3 MCCBs x160, x250, h250 LSI, h630 LSI

Characteristics

- Double Class II
- For direct or rotary handle

Composition

- 1 lowered symmetrical DIN rail fixed on mounting plate with 4 class II insulated legs, 1 sheet metal front plate, fixing accessories

Capacity

- Width 500 mm space for one more device

Equipment kits for switches with visible breaking 160 to 1600A

- For direct or rotary handle

Composition

- 1 insulated mounting plate for the main device, 1 sheet metal front plate, fixing accessories
- The mounting plate for versions 160 and 250/400A in width 500mm are fitted with a symmetrical DIN rail to receive a set of distribution blocks

Description	Height mm	Width mm	Class I Cat. ref.	Class II Cat. ref.
Equipment kits for MCCBs x160 for direct or rotary handle: vertical layout with or without add-on block	300	350	UC010H	UC310H
	300	600	UC011H	UC311H
	300	800	UC012H	UC312H
Equipment kits for MCCBs x160 for direct or rotary handle: horizontal layout without add-on block	150	600	UC013HX01	UC313H
	150	800	UC014H	UC314H
Equipment kits for MCCBs x250 for direct or rotary handle: vertical layout without add-on block	300	350	UC020H	UC320H
	300	600	UC021H	UC321H
	300	800	UC022H	UC322H
Equipment kits for MCCBs x250 for direct or rotary handle: vertical layout with add-on block	400	350	UC030H	UC330H
	400	600	UC023H	UC323H
	400	800	UC024H	UC324H
Equipment kits for MCCBs x250 for direct or rotary handle: horizontal layout with or without add-on block	200	600	UC127H	UC427H
	200	800	UC128H	UC428H
Equipment kits for MCCBs x250 for motor operator: vertical layout without add-on block	300	600	-	UC321HM
	300	800	-	UC322HM
Equip. kits for MCCBs h250 LSI for direct or rotary handle: vertical layout	300	350	UC020H	UC320H
	300	600	UC021H	UC321H
Equip. kits for MCCBs h250 LSI for direct or rotary handle: horizontal layout	200	600	-	UC427HL
	200	800	-	UC428HL
Equip. kits for MCCBs h250 LSI for motor operator: vertical layout without add-on block	300	600	-	UC321HM
	300	800	-	UC322HM
Equip. kits for MCCBs h630 LSI for direct or rotary handle: vertical layout without add-on block	400	350	UC140H	UC440H
	400	600	UC141H	UC441H
	400	800	UC142H	UC442H
Equip. kits for MCCBs h630 LSI for direct or rotary handle: vertical layout with add-on block	600	350	UC144H	UC444H
	600	600	UC145H	UC445H
	600	800	UC146H	UC446H
Equip. kits for MCCBs h630 LSI for direct or rotary handle: horizontal layout with or without add-on block	200	600	UC147H	UC447H
	200	800	UC148H	UC448H
Equip. kits for MCCBs h630 LSI for direct for motor operator: vertical layout without add-on block	400	600	-	UC441HM
	400	800	-	UC442HM
Equip. kits for switches with visible breaking 160 to 1600A kits for switches 160 A HA452	300	350	-	UC008
	300	600	-	UC001
...kits for switches 250/400A HA454, HA457	250	350	-	UC009
	250	600	-	UC003
...kits for switches 630 A HA458	600	600	-	UC005
...kits for switches 800 to 1600 A	600	600	-	UC270

Equipment kits for h3 MCCBs h1000 LSI and h1600 LSI

Class I version Composition

- 1 metal mounting plate
- 1 sheet metal front plate
- fixing accessories

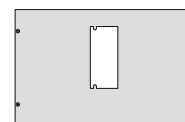
Class II double insulation version Composition

- 1 mounting plate with 4 class II insulated fixing legs
- 1 sheet metal front plate
- fixing accessories

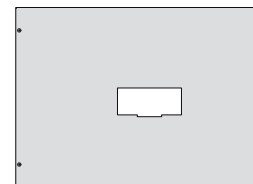
- Equipment kits for switches with visible breaking 100 to 400A, double isolation class II

- 1 mounting plate with 4 class II insulated fixing legs
- 1 sheet metal front plate
- Various accessories

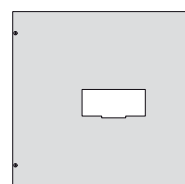
Description	Height mm	Width mm	Class I Cat. ref.	Class II Cat. ref.
Equip. kits for MCCBs h1000 LSI for direct for rotary handle: horizontal layout	400	600	UC054H	UC354H
	400	800	UC055H	UC355H
Equip. kits for MCCBs h1000 LSI for direct for rotary handle: vertical layout	600	600	UC050H	UC350H
	600	800	UC051H	UC351H
Equip. kits for MCCBs h1000 LSI for direct for motor operator: vertical layout	600	600	-	UC350HM
	600	800	-	UC351HM
Equipment kits for MCCBs h1600 LSI for direct for rotary handle: vertical layout	600	600	UC060H	UC360H
	600	800	UC061H	UC361H
Equipment kits for MCCBs h1600 LSI for direct for motor operator: vertical layout	600	600	-	UC360HM
	600	800	-	UC361HM
Equipment kits for switches with visible breaking 100 to 400A double isolation class II, kits for switches HA 100 to 200A	300	350	-	UC310H
	300	600	-	UC311H
Equip. kits for switches with visible breaking 100 to 400A double isolation class II, kits for switches 250A HA964N with direct control	300	350	-	UC332
Equip. kits for switches with visible breaking 100 to 400A double isolation class II, kits for switches 400A HA966N with direct control	400	600	-	UC335



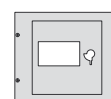
UC054H / UC354H



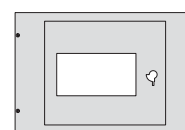
UC061H / UC361H



UC060HM



UC332




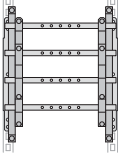
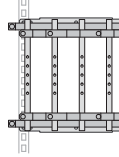
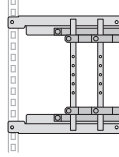
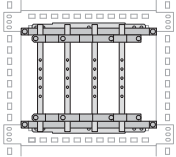

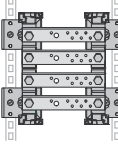
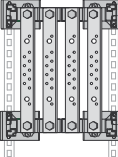
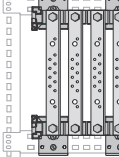

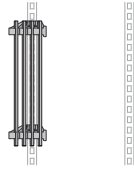

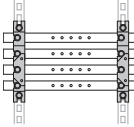
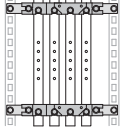
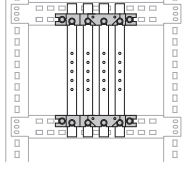

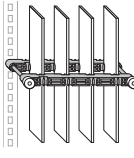
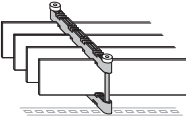
UC335

Busbar Support

Characteristics

- Several systems allow to ensure the electric distribution in the enclosures Quadro 4, Quadro 5 and Quadro+ Evo: flat busbars inclined busbars, side busbars, staged busbars, 4 poles supports
- Distribution systems complete the offer: single pole distribution blocks, multi-plug repartitors, 80 to 160A modular distribution blocks
- A range of connectors allow to ensure the electrical link among some incoming devices and the distribution systems.

Commercial Distribution

Busbar supports	In	Copper bars	Application and accessories (crossbars, brackets, protective screen)				
Flat busbars  UC820	160 A 250 A 400 A 630 A	12 x 5 mm KS72B, KS72C 20 x 5 mm UC832 30 x 5 mm UM30A1, UM30A2, UM30A5 30 x 10 mm UM30A4	horizontal in bottom 250 and 500 mm 	vertical in bottom 250 mm 	vertical in bottom 500 mm 	vertical on cross-bars (Quadro+ Evo) 	
Inclined busbars  UC826	250 A 400 A 630 A	20 x 5 mm UC832 32 x 5 mm UC842 30 x 10 mm UM30A4, UM30A5	horizontal in bottom 250 and 500 mm 	vertical in bottom 250 and 500 mm 	vertical on crossbars (Quadro+ Evo) 	UC828 UC828 UT89C, UT89B	
Side busbars  UC830	250 A	20 x 5 mm UC832	on pillars in bottom 				UC834
Staged busbars  UC815	250 A 400 A	20 x 5 mm UC832 32 x 5 mm UC842	horizontal in bottom 250 and 500 mm 	vertical in bottom 250 mm 	vertical on crossbars (Quadro5, Quadro+ Evo) 	UC816 UC816 - UC988 UC288 (sheath 200 mm), UT89A (sheath 300 mm), UT89B - UT89C	
4 poles support (Quadro+ Evo only)  UC824 UC823	500 A 630 A 800 A 1000 A 1250 A 1600 A	50 x 5 mm UC844 63 x 5 mm UC922 80 x 5 mm UC 966 100 x 5 mm UC967 2 x 80 x 5 mm 2 x UC967 2 x 100 x 5 mm 2 x UC967	horizontal 	vertical 	UT81H, UC821, FN690 or FN690E, FN896 or FN896E, mount with supports UC825 or UC822 UC821, UC825 UT89A or FN873E (sheath 300 mm), UT89B or FN875E		



UC820



UC824



UC821

Quadro Busbar Sets

Characteristics

Flat busbars to compose from 160 to 630A

- To mount on bottoms of Quadro 4, Quadro 5 enclosures and on Quadro+ Evo crossbars
- Rear vertical mounting especially adapted to carry out busbars behind the module devices
- Vertical mounting in bottom
- Horizontal mounting

Inclined busbars to compose from 250 A to 630A

- To mount behind the front plate
- Horizontal mounting possible on 250 and 500 mm bottom widths, vertical mounting possible on 250 mm bottom widths

Busbars supports to compose 500 to 1600A

- To mount vertical and horizontal distribution busbars in Quadro+ evo cells
- Up to 2 copper bars per pole
- For copper bars : 400 A, 50 x 5 mm
630 A, 63 x 10 mm
800 A, 80 x 5 mm
1000 A, 100 x 5 mm

Description	Cat. ref.
Flat busbars to compose from 160 to 630A includes: 1 support, 3 M6 screws, 2 pillars for protective screen copper bars 160A, 12 x 5 - 250A, 20 x 5 - 400A, 32 x 5 - 630A, 30 x 10	UC820
Rear vertical busbars delivered with 2 cage nut and 2 M6 screws, for bottom width 250mm	UC812
Vertical busbar in bottom delivered with 2 cage nut and 2 M6 screws, for mounting on 250mm width bottom, horizontal mounting on 250mm and 500mm width bottoms	UC811
Protective screen to cut to the right dimensions, width 294mm height 990mm	UC827
Inclined busbars to compose from 250A to 630A, behind the front plate.4P support: 2 supports delivered with 4 fixing parts, 8 cage nut, 16 M6 screws and 8 M8 screws, 4 pillars for protective screen. For copper bars: 250A, 20 x 5mm - 400A, 32 x 5mm - 630A, 30 x 10mm	UC826
Protective screen, to be adapted in length, length 212mm, height 990mm	UC828
Busbars supports to compose 500 to 1600A, 3 poles support	UC823
Busbars supports to compose 500 to 1600A, 4 poles support for copper bars, 1 support delivered with screws and fixing parts	UC824
Mounting brackets to mount on supports: UC824 and UC823	UC821
Busbars bearing for vertical mounted copper bars, includes: 1 support screw + fixing parts for the mounting on crossbars. For 3P distribution	UC822
Busbars bearing for vertical mounted copper bars, includes: 1 support screw + fixing parts for the mounting on crossbars. For 4P distribution	UC825



UC830



UC815

Quadro Busbar Sets

Characteristics

Sets of side bars Quadro 250A to be composed

- To mount in the sides of Quadro enclosures
- Icc peak: 36 kA
- Fixing centers of the supports: 225 mm


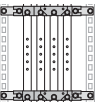
Sets of staged bars In 250 and 400 A - to be composed

- For vertical installation in the cable sheaths of the Quadro 4, Quadro 5 and Quadro+ Evo enclosures.
- Possibility to install directly on the bottoms of the Quadro 4, Quadro 5 and Quadro+ Evo enclosures, without using the crossbars.

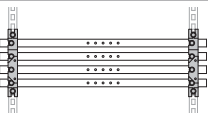
Description	Cat. ref.
Sets of side bars Quadro 250 A to be composed. 4 pole supports: 2 supports delivered. For copper bars 250A, 20 x 5mm	UC830
Protective screen, length: 1000 mm	UC834
Sets of staged bars In 250 and 400 A to be composed. 4 pole supports: 1 support delivered with 6 M6 screws and 2 cage nuts. For copper bars 250A, 20 x 5mm - 400A, 32 x 5mm	UC815
Universal crossbars. For Quadro 5, Quadro+ Evo cable sleeve. Sheath length 200mm	UC288
Universal crossbars. For Quadro 4, width 370. For Quadro 5 width 450. For Quadro+ Evo, width 400, 450. Sheath length 250mm	UC988
Protective screen kit delivered with screw, length: 620 mm	UC816

Bars Short-circuit Withstand Capacity

Vertical Mounting

busbars fixing	nominal current	bars section (mm)	bars supports max. distance depending on short-circuit current (mm)					
			10 kA	15 kA	20 kA	25 kA	30 kA	35 kA
 In ≤ 250 A Icc ≤ 25 kA UC830	250 A	20 x 5			300	200		
 In ≤ 400 A Icc ≤ 35 kA UC815	250 A	20 x 5	1000	1000	925	745	580	435
	400 A	32 x 5	1000	1000	895	655	510	385

Horizontal Mounting

busbars fixing	nominal current	bars section (mm)	short-circuit current depending on bottom width for Quadro 4, Quadro5 and Quadro+ Evo	
			250 mm	500 mm
 In ≤ 630 A Icc ≤ 35 kA UC815	250 A	20 x 5	35 kA	35 kA
	400 A	32 x 5	40 kA	34 kA

Copper Bars & Screws

Characteristics

- Copper bars and screws
- The copper bars are mounted on the supports, according to; the section to use (thus intensity) and length on demand
- The connection screws must be ordered separately for the bars from 250 to 1000A

Description	In	Length mm	Cat. ref.
Copper bars	160A: 12 x 5mm copper bar, M5 tapped, delivered with screw	245	KS72B
	160A: 12 x 5mm copper bar, M5 tapped, delivered with screw	1000	KS72C
	250A: 20 x 5mm copper bar, M6 tapped	1000	UC832
	250A: 25 x 5mm copper bar, M6 tapped	1750	UT87E
	400A: 32 x 5mm copper bar, M6 tapped	1000	UC842
	400A: 30 x 5mm copper bar, M6 tapped	280	UM30A3
	400A: 30 x 5mm copper bar, M6 tapped	430	UM30A1
	400A: 30 x 5mm copper bar, M6 tapped	880	UM30A2
	400A: 50 x 5 mm copper bar, M10 tapped	1750	UC844
	630A: 30 x 10 mm copper bar, M6 tapped	430	UM30A4
	630A: 30 x 10 mm copper bar, M6 tapped	880	UM30A5
	630A: 63 x 5 mm copper bar, M10 tapped	1750	UC922
	800A: 80 x 5 mm copper bar, M10 tapped	1750	UC966
	1000A: 100 x 5 mm copper bar, M10 tapped	1750	UC967
	Screws	self thread forming screws M6 x 10	
connection screws M6 x 12 with washers			UC851
connection screws M8 x 30 with washers			UC853
connection screws M10 x 30 with washers			UC855



KJ02A

Single Pole Distribution Blocks, Multi-Plug 4P Repartitors

Characteristics

Single pole distribution blocks

- Monoblocs, insulated, grey colour
- Clip fixing on mounting plate DIN rail of the main devices kit, Icc peak : 36 kA

Multi-plug 4P repartitors 250 A

- Bridging of all types of equipments 2, 3 and 4 poles placed on the same DIN rail
- Facilitate phases balancing
- Incoming connection by 4 screw ranges
- Outgoing connection by insulated flexible connectors with automatic lock

- Delivered with:

- 6 blue insulated wire connectors H07 V-K, 6 x 6mm² (blue) and 12 x 6mm² (black)
- 12 black insulated wire connectors H07 V-K : 6 x 6mm² (blue) and 12 x 6mm² (black)
- 2 Quadro mounting legs
- 2 Univers fixing brackets.

Single Pole Distribution Blocks, Multi-Plug 4P Repartitors

Description	In	Length mm	Cat. ref.
Single pole distribution blocks for copper conductors	125A: incoming: 1x70mm ² outgoing: 6x16mm ²	27	KJ02D
	160A: incoming: 1x70mm ² outgoing: 6x16mm ²	35	KJ02C
	250A: incoming: 1x95mm ² outgoing: 2x25mm ² , 5x16mm ² , 4x10mm ²	45	KJ02A
	400A: incoming: 1x150 mm ² , outgoing: 2x25mm ² , 5x16mm ² , 4x10mm ²	46	KJ02B



KJ03A

Multi-Plug 4P Repartitors

Characteristics

- Multi-plug 4P repartitors. Implementation in 620 or 700mm width Quadro enclosures.
- 60 connection points per pole sections: 6mm² and 10mm².
- Acceptable In under 40°C: per pole: 250A, 40A with connector 6mm², 63A with connector 10mm²
- Icc peak : 60kA, Un: 500 V M - 50 Hz.

Description	Cat. ref.
Multi-plug 4P repartitors without connectors	KJ03A
Multi-plug 4P repartitors with connectors	KJ03B



KZ007

Connectors (end)

Description	Cat. ref.
Connectors (end) to crimp for 6 mm ² flexible wire	KZ007

Connectors

Description	In	Section	Blue Cat. ref.	Black Cat. ref.
Connectors for multi-plug repartitors 250 A	40 A	6 mm ²	KZ001	KZ002
Flexible connectors insulated wire serial H07 V-K	40A	6 mm ²	KZ051	KZ052
Length : 120 mm	63A	10mm ²	KZ004	KZ005
	63A	10mm ²	KZ074	KZ075

Connectors

Characteristics

- Connectors
- To carry out connections
- between incoming devices and distribution system (set of busbars, distribution blocks).
- h3 MCCBs : x250, h250 LSI, h630 LSI



UC877

Description	Includes	Possible mounting	Cat. ref.
Connectors to connect x250 and h250 LSI MCCBs to the inclined bars set UC826 mounted in 250mm width	4 cable with lugs, 20x3 mm ²	Quadro 4, Quadro 5	UC877
Connectors to connect h630 LSI MCCBs to inclined bars set UC826 mounted in 250mm width	4 cables, 25x6mm ²	Quadro 4, Quadro 5	UC868
Connectors to connect the horizontal mounted x250 and h250 LSI MCCBs in 500mm width to bars set UC820 mounted behind modular devices in 500mm width	4 cables, 25x6mm ²	Quadro 4, Quadro 5	UC875



UC875

Incoming Kits

Description	Includes	Possible mounting	Cat. ref.
Incoming kits to supply the horizontal mounted x250 and h250 LSI MCCBs in 500mm width	1 support for cable incoming (maxi 70mm ²) 4 cables 70mm ² with lugs	Quadro 4, Quadro 5, Quadro+Evo	UC871
To connect the horizontal mounted x250 and h250 LSI MCCBs in 500mm width to inclined bars set UC826 horizontal mounted	4 cables 70mm ² with lugs	Quadro 4, Quadro 5, Quadro+Evo	UC869



UC871

Link Connection

Description	Includes	Possible mounting	Cat. ref.
Link connection to connect x250 and h250 LSI MCCBs to bars set UC826 mounted behind the modular devices in 500mm width	4 cables 70mm ² with lugs	Quadro 4, Quadro 5, Quadro+Evo	UC879



UC879

Link Connectors and Bars

Characteristics

- Link connectors and bars
- To carry out connections between incoming devices and distribution system (set of busbars, repartitor blocks).

Description	Includes	Length mm	Cat. ref.
Link connectors to connect the switches HA406N, HA407, HA408 to distribution blocks KJ02 fixed on the same line	4 cables H 07-V-K black 50mm ² length 450mm with lugs		UC870
Link connectors to connect the switches HA452 / HA454 to distribution blocks KJ02 fixed beside the switch	4 flexible connectors 20 x 3mm		UC874
Link connectors to connect the switches HA452/ HA454 to the side busbars	1 set = 4 flexible connectors 20 x 3mm		UC876
Flexible copper bars to connect the switches HA452/ HA454 to the side busbars	160A section 20 x 2mm	2m	UM92X
	250A section 20 x 3mm	2m	UM92Y
	400A section 32 x 4mm	2m	UM92Z
	630A section 32 x 6mm	2m	UM92W
	800A section 40 x 6mm	2m	UM92V



UC870



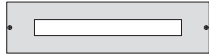
UC876



UM92Y



UC200



UC201

Equipment Kits for Modular Devices

Characteristics

Equipment kits for modular devices

- Available in height 150 mm and 200 mm, their positioning is facilitated by gauges delivered with each kit.
- The DIN rail supports allow a fast fixing by clipping on the bottom of the enclosure.
- Front plates are mounted with screws included in the kit.

Equipment kits for terminals

- Available in height 150 mm, DIN rail adjustable in depth, 20° inclinable.

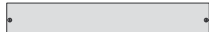
Description	Length mm	Height mm	Cat. ref.
Equipment kits for modular devices delivered with: modular DIN rail for shoulder devices 45mm sheet metal front plate	250mm equipment 1 row 10	150	UC200
	500mm equipment 1 row 24	150	UC201
	500mm equipment 1 row 24	200	UC205
Equipment kits for terminals delivered with DIN rail and front plate	500mm equipment 1 row 22	150	UC209



UC231



UC230



UC239

Full Front Plates

Description	Height mm	250mm Cat. ref.	50mm Cat. ref.
Full front plates	50	UC221	UC231
	75	UC220	UC230
	100	-	UC239
	150	UC222	UC232
	200	UC223	UC233
	300	UC224	UC234
	400	UC225	UC235
	600	UC226	UC236

Adjustable DIN Rails

Description	Cat. ref.
Adjustable DIN rails in depth for terminals, 20° inclinable for width 500mm, length 400mm, 22	UC951



UC962

Perforated Mounting Plates

Description	Cat. ref.
Perforated mounting plates for special devices length : 500mm, height: 300mm	UC960
Perforated mounting plates for special devices delivered with fixing supports 450mm	UC962
Perforated mounting plates for special devices delivered with fixing supports 600mm	UC964

Clips Nuts and M5 Screws

Description	Cat. ref.
Clips nuts and M5 screws for perforated mounting plates 1 set = 25 nuts	UC969



UC268

Hinges for Front Plates

Description	Cat. ref.
Hinges for front plates set of 2 hinges to mount on the left or the right side of the front plate	UC268

Cable Management Accessories

Characteristics

Cable management accessories

Several systems allow to manage the cable trunking, as well as the connections in Quadro enclosures:

- vertical slotted trunking
- horizontal slotted trunking
- cable guides

Universal crossbars

- Allow either to maintain the cables using a clamp or to mount a vertical DIN rail to create a terminal block

Cable spreader box

- Insulating material, RAL 9010
- Fixed on the top or the bottom part of the enclosures, these trunkings allow the enlargement and the arrangement of the incoming and outgoing cables and ensure the junction between the enclosures and the vertical trunking.

Description		Length	Cat. ref.
Vertical slotted trunking delivered with cover	width 60mm, height 80mm	2000mm	UC916
Horizontal slotted trunking delivered with cover	width 30 mm, height 80 mm	250mm	UC911
	width 30 mm, height 80 mm	500mm	UC912
Fixing supports, vertical and horizontal sheaths on the bottom of the Quadro enclosures			UC915
Cable straps (1 set = 20 pieces)	large volume		UZ25V1
	small volume		UZ25V2
Cable guides (1 set = 20 pieces) fixing centres 150 mm			UZ01V1
Universal crossbars for 200mm cable sheaths in 900mm width Quadro 5	width 185mm		UC288
	width 250mm		UC988
	width 500mm		UC289
Blanking strips		length 24	JP024
Marking strip for modular front plates includes adhesive transparent label holder marking strip		length 10	JE001
		length 24	JE003
Horizontal separations, metal partitions for Quadro 4 and Quadro 5		620mm	FC664
Cable spreader boxes, includes 2 fixing brackets, 1 bottom plate, 1 cover, 2 side cover plates	height 195mm, depth 155mm	300mm	FZ441
	height 195mm, depth 155mm	550mm	FZ442
	height 195mm, depth 155mm	800mm	FZ443
	height 195mm, depth 155mm	1050mm	FZ444



UC916

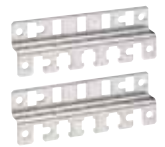


UC915



UZ25V2

UZ25V1



UC288



UC988



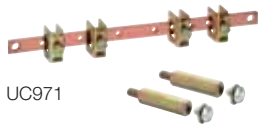
JP024



JE003



FZ442

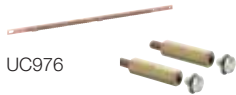


UC971



K070

K074



UC976



UC992



A099



A099E



A099C



A099D



A050



UC990



UC991

Connection Accessories

Characteristics

Incoming earth terminal blocks

- To mount on supplied 80mm spacers.

Outgoing connectors for PE conductors

- To mount on supplied 80mm spacers, possibility to add quickconnect terminals.

Caution: Connectors UC975S and UC976S have no equipotential connection with the structures of the enclosure.

Mounting rail

- For terminals blocks vertical or horizontal mounting

- Length: 2m

Description		Width mm	Cat. ref.
Incoming earth terminal blocks	can be completed with the staples below	250	UC971
	can be completed with the staples below	500	UC972
Staples for above terminal blocks	cable section	16mm ²	K070
		35mm ²	K071
		70mm ²	K073
		95mm ²	K074
Outgoing connector for PE conductors connection	includes support (1x35mm ² , 11x16 mm ² , 13x10mm ²), 2 nuts + 2 screws + spacers	250mm	UC975
		500mm	UC976
Outgoing connectors quickconnect for connection of earth conductors	includes DIN rail support KN00A, terminal block KN26E, 2 nuts + 2 screws delivered with 2 decked terminals for UC976S	250mm	UC975S
		500mm	UC976S
Metal spacers	height : 80mm, M6 screw		UC992

Description		Depth mm	Cat. ref.
Symmetrical DIN rails, DIN 46277/3, width: 35 mm		7.5mm	A088
		10mm	A098
		15mm	A099
Symmetrical DIN rails perforated, width 15mm DIN 46277/2		5mm	A099E
Symmetrical DIN rails perforated, width 35mm DIN 46277/3		5mm	A099B
DIN rail for structure, width 250mm		15mm	A099C
Special screws M6 for rail A099C			A099D
Asymmetrical DIN rails, DIN 46277/1			A050
Cage nuts M6			UC990
M6 x 12 screws			UC991

Orion Plus

IP65 enclosures

Sheet steel or glass reinforced polyester - the Orion Plus enclosures are suited for the harshest conditions and can be applied for wet and mechanical use. Even under chemical use, Orion Plus offers the ideal solution with glass reinforced polyester. The interior equipment can be realised flexibly via mounting plate or DIN rail (in 2 different versions) and so offers the suitable interior equipment system, both for the application in automation and for classical current distribution.



Orion Plus IP65 Metal Enclosures



Choice of Equipment:



Plain metal mounting plates for automation or non modular products



Perforated metal mounting plates for automation or non modular products



Insulated metal mounting plates for automation of non modular products



Equipment kits for modular products

The IP65 Orion Plus Enclosures

These enclosures are of monobloc construction available in metal, glass reinforced polyester (GRP) with plain or transparent doors.

They constitute a large range of enclosures with heights from 300 up to 2050mm and width up to 800mm (metal) and 1100mm (polyester).

These enclosures are flexible and can be used with different types of equipments; plain, perforated or insulated metal mounting plates.

These enclosures allow:

- Installation of automation products for the control of machines or small processes
- Installation of non modular products such as contactors, transformers, etc
- Cable termination and distribution

Metal Mounting Plates

- Available in various sizes, plain, perforated, insulated for the installation of non modular equipment
- Fixed directly on the back of the enclosure or on depth adjustable guides depending on the size of the equipment.

Chassis Kits

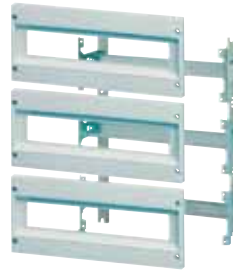
- For modular products
- Designed for easy mounting of modular equipment. The chassis can be removed and tilted.
- Supplied complete with front cover, DIN rails and uprights.

Orion Plus IP66 Polyester Enclosures



Orion Plus Metal Enclosures

Modular Kit on Chassis



With Plain Door

With Transparent Door

FL102A	FL152A	-
FL104A	FL154A	FL979A
FL105A	FL155A	FL979A
FL109A	FL159A	FL981A
FL110A	FL160A	FL981A
FL111A	FL161A	FL982A
FL112A	FL162A	FL982A
FL117A	FL167A	FL983A
FL118A	FL168A	FL983A
FL119A	FL169A	-
FL120A	FL170A	-
FL121A	FL171A	-
FL122A	FL172A	-
FL123A	FL173A	-
FL124A	FL174A	-
FL125A	FL175A	-
FL126A	FL176A	-
FL127A	FL177A	-
FL128A	FL178A	-
FL129A	FL179A	-
FL130A	FL180A	-

Orion Plus enclosures sheet steel



Mounting plates plain or perforated



Equipment kits for modular chassis



Commercial Distribution

Enclosures dimensions in mm			modular height	qty of modules per row	max. capacity (modules)	enclosures		plinth	mounting plates			internal doors	
height	width	depth				with plain door	with transp. door		h. 150	metal plain	metal perforated	insulated	metal
250*	200*	160*	-	-	-	FL101A*	FL151A*	-	FL401A	-	-	FL541A	-
300*	250*	160*	-	-	-	FL102A*	FL152A*	-	FL402A	FL472A	FL422A	FL542A	-
300*	300*	160*	-	-	-	FL103A*	FL153A*	-	FL403A	-	-	FL543A	-
350	300	160	300	10	20	FL104A	FL154A	-	FL404A	FL473A	FL423A	FL544A	FL643A
350	300	200	300	10	20	FL105A	FL155A	-	FL404A	FL473A	FL423A	FL544A	FL643A
400*	300*	160*	-	-	-	FL106A*	FL156A*	-	FL405A	-	-	FL545A	-
400*	300*	200*	-	-	-	FL107A*	FL157A*	-	FL405A	-	-	FL545A	-
400*	400*	200*	-	-	-	FL108A*	FL158A*	-	FL406A	-	-	FL546A	-
500	300	160	450	10	30	FL109A	FL159A	-	FL407A	FL474A	FL424A	FL547A	FL644A
500	300	200	450	10	30	FL110A	FL160A	-	FL407A	FL474A	FL424A	FL547A	FL644A
500	400	160	450	16	48	FL111A	FL161A	-	FL408A	FL475A	FL425A	FL548A	FL645A
500	400	200	450	16	48	FL112A	FL162A	-	FL408A	FL475A	FL425A	FL548A	FL645A
500*	500*	200*	-	-	-	FL113A*	FL163A*	-	FL409A	-	-	FL549A	-
600*	400*	200*	-	-	-	FL114A*	FL164A*	-	FL410A	-	-	FL550A	-
600*	400*	250*	-	-	-	FL115A*	FL165A*	-	FL410A	-	-	FL550A	-
600*	600*	250*	-	-	-	FL116A*	FL166A*	-	FL411A	-	-	FL553A	-
650	400	200	600	16	64	FL117A	FL167A	-	FL412A	FL476A	FL426A	FL551A	-
650	400	250	600	16	64	FL118A	FL168A	-	FL412A	FL476A	FL426A	FL551A	-
650	500	200	600	22	88	FL119A	FL169A	FL957A	FL413A	FL477A	FL427A	FL552A	-
650	500	250	600	22	88	FL120A	FL170A	FL958A	FL413A	FL477A	FL427A	FL552A	-
800	500	200	750	22	110	FL121A	FL171A	FL957A	FL414A	FL478A	FL428A	FL554A	-
800	500	250	750	22	110	FL122A	FL172A	FL958A	FL414A	FL478A	FL428A	FL554A	-
800	600	250	750	26	130	FL123A	FL173A	FL959A	FL415A	FL479A	FL429A	FL555A	FL649A
800	600	300	750	26	130	FL124A	FL174A	FL960A	FL415A	FL479A	FL429A	FL555A	FL649A
950	600	250	900	26	156	FL125A	FL175A	FL959A	FL416A	FL480A	FL430A	FL556A	-
950	600	300	900	26	156	FL126A	FL176A	FL960A	FL416A	FL480A	FL430A	FL556A	-
950	800	250	900	37	222	FL127A	FL177A	FL961A	FL417A	FL481A	FL431A	FL557A	-
950	800	300	900	37	222	FL128A	FL178A	FL962A	FL417A	FL481A	FL431A	FL557A	-
1250	600	250	1200	26	208	FL129A	FL179A	FL959A	FL418A	FL482A	FL432A	FL558A	-
1250	800	300	1200	37	296	FL130A	FL180A	FL962A	FL419A	FL483A	FL433A	FL559A	-

Plain front plates



Partial metal mounting plates fixed or adjustable



DIN rails for terminals



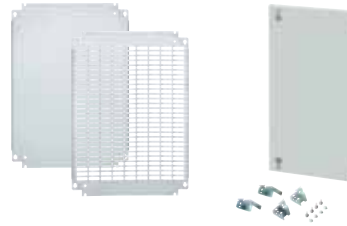
	modular equipment kits	plain front plates				partial metal plates fixed				partial metal plates adjustable				DIN rails for terminals
		h. 50	h. 150	h. 200	h. 300	h. 150	h. 200	h. 300	h. 400	h. 150	h. 200	h. 300	h. 400	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FL990A	-	FL711E	-	-	-	FL311A	-	-	-	-	-	-	-	-
FL990A	-	FL711E	-	-	-	FL311A	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FL991A	-	FL711E	-	-	-	FL311A	-	-	-	-	-	-	-	-
FL991A	-	FL711E	-	-	-	FL311A	-	-	-	-	-	-	-	-
FL992A	FL702E	FL712E	FL722E	-	-	FL312A	FL322A	-	-	-	-	-	-	FL500A
FL992A	FL702E	FL712E	FL722E	-	-	FL312A	FL322A	-	-	-	-	-	-	FL500A
-	-	-	-	-	-	-	-	-	-	-	-	-	-	FL500A
-	-	-	-	-	-	-	-	-	-	-	-	-	-	FL500A
-	-	-	-	-	-	-	-	-	-	-	-	-	-	FL500A
-	-	-	-	-	-	-	-	-	-	-	-	-	-	FL500A
FL993A	FL702E	FL712E	FL722E	-	-	FL312A	FL322A	-	-	-	-	-	-	FL500A
FL993A	FL702E	FL712E	FL722E	-	-	FL312A	FL322A	-	-	FL314A	FL324A	-	-	FL500A
FL994A	FL703E	FL713E	FL723E	FL733E	-	FL313A	FL323A	FL333A	FL343A	-	-	-	-	FL501A
FL994A	FL703E	FL713E	FL723E	FL733E	-	FL313A	FL323A	FL333A	FL343A	FL315A	FL325A	FL335A	FL345A	FL501A
FL995A	FL703E	FL713E	FL723E	FL733E	-	FL313A	FL323A	FL333A	FL343A	-	-	-	-	FL501A
FL995A	FL703E	FL713E	FL723E	FL733E	-	FL313A	FL323A	FL333A	FL343A	FL315A	FL325A	FL335A	FL345A	FL501A
FL996A	FL704E	FL714E	FL724E	FL734E	-	-	-	-	-	FL316A	FL326A	FL336A	FL346A	FL502A
FL996A	FL704E	FL714E	FL724E	FL734E	-	-	-	-	-	FL316A	FL326A	FL336A	FL346A	FL502A
FL997A	FL704E	FL714E	FL724E	FL734E	-	-	-	-	-	FL316A	FL326A	FL336A	FL346A	FL502A
FL997A	FL704E	FL714E	FL724E	FL734E	-	-	-	-	-	FL316A	FL326A	FL336A	FL346A	FL502A
FL998A	FL705E	FL715E	FL725E	FL735E	-	-	-	-	-	FL317A	FL327A	FL337A	FL347A	FL503A
FL998A	FL705E	FL715E	FL725E	FL735E	-	-	-	-	-	FL317A	FL327A	FL337A	FL347A	FL503A
FL999A	FL704E	FL714E	FL724E	FL734E	-	-	-	-	-	FL316A	FL326A	FL336A	FL346A	FL502A
FL000A	FL705E	FL715E	FL725E	FL735E	-	-	-	-	-	FL317A	FL327A	FL337A	FL347A	FL503A

Orion Plus polyester enclosures

Metal mounting plate Internal doors

Modular chassis functional uprights

Commercial Distribution



Enclosures dimensions in mm			modular height	qty of modules per row	max. capacity (modules)	enclosures		mounting plates			internal doors		modular equipment kits
height	width	depth				with plain door	with transp. door	metal plain	metal perforated	insulated	metal plain	insulated	
350	300	160	300	10	20	FL204B	FL254B	FL404A	FL473A	FL423A	FL544A	FL643A	-
500	300	200	450	10	30	FL209B	FL259B	FL407A	FL474A	FL424A	FL547A	FL644A	FL991A
500	400	200	450	16	48	FL213B	FL263B	FL408A	FL475A	FL425A	FL548A	FL645A	FL992A
650	400	200	600	16	64	FL216B	FL266B	FL412A	FL476A	FL426A	FL551A	FL646A	FL993A
650	500	250	600	22	88	FL221B	FL271B	FL413A	FL477A	FL427A	FL552A	FL647A	FL994A
800	600	300	750	26	130	FL229B	FL279B	FL415A	FL479A	FL429A	FL555A	FL649A	FL996A

Enclosure with plain door	Enclosure with transparent door	modular kit on chassis
FL204A	FL254B	FL980A
FL209B	FL259B	FL981A
FL213B	FL263B	FL982A
FL216B	FL266B	FL983A
FL221B	FL271B	-
FL229B	FL279B	-

Plain front plates

Partial metal mounting plates

DIN rail for terminal



Commercial
Distribution

	plain front plates				partial metal plates fixed				partial metal plates adjustable				DIN rails for terminals
	h. 50	h. 150	h. 200	h. 300	h. 150	h. 200	h. 300	h. 400	h. 150	h. 200	h. 300	h. 400	
	-	FL711E	-	-	FL311A	-	-	-	-	-	-	-	-
	-	FL711E	-	-	FL311A	-	-	-	-	-	-	-	-
	FL702E	FL712E	FL722E	-	FL312A	FL322A	-	-	-	-	-	-	FL500A
	FL702E	FL712E	FL722E	-	FL312A	FL322A	-	-	-	-	-	-	FL500A
	FL703E	FL713E	FL723E	FL733E	FL313A	FL323A	FL333A	FL343A	-	-	-	-	FL501A
	FL704E	FL714E	FL724E	FL734E	-	-	-	-	FL316A	FL326A	FL336A	FL346A	FL502A

Polyester enclosures depth 300 mm

Transparent doors

Metal mounting plates

Commercial Distribution

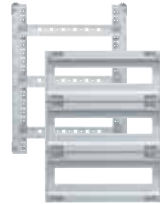


	Enclosures dimensions in mm					upper section		lower section		enclosures		transparent doors		metal mounting plates		insulated mounting plates
	height	width	modular width	modular height upper	modular height lower	qty of mod. p/row	max. capacity in mod.	qty of mod. p/row	max. capacity (mod.)	with plain door	with transparent door	upper part	lower part	plain upper section	lower section	upper section
single section	550	600	500	450	-	23	69	-	-	FL300B	FL500B	-	-	FL510E	-	FL550E
	850	600	500	750	-	23	115	-	-	FL301B	FL501B	-	-	FL511E	-	FL551E
	1150	600	500	1050	-	23	161	-	-	FL302B	FL502B	-	-	FL512E	-	FL552E
	550	850	750	450	-	37	111	-	-	FL305B	FL505B	-	-	FL520E	-	FL560E
	850	850	750	750	-	37	185	-	-	FL306B	FL506B	-	-	FL521E	-	FL561E
	1150	850	750	1050	-	37	259	-	-	FL307B	FL507B	-	-	FL522E	-	FL562E
	550*	1100	500+500	450	-	46	138	-	-	FL310B*	FL510B*	-	-	FL530E	-	FL570E
	850*	1100	500+500	750	-	46	230	-	-	FL311B*	FL511B*	-	-	FL531E	-	FL571E
	1150*	1100	500+500	1050	-	46	322	-	-	FL312B*	FL512B*	-	-	FL532E	-	FL572E
	600	600	500	450	-	23	69	-	-	FL320B	FL520B	-	-	FL510E	-	FL550E
	900	600	500	750	-	23	115	-	-	FL321B	FL521B	-	-	FL511E	-	FL551E
	1200	600	500	1050	-	23	161	-	-	FL322B	FL522B	-	-	FL512E	-	FL552E
	600	850	750	450	-	37	111	-	-	FL325B	FL525B	-	-	FL520E	-	FL560E
	900	850	750	750	-	37	185	-	-	FL326B	FL526B	-	-	FL521E	-	FL561E
	1200	850	750	1050	-	37	259	-	-	FL327B	FL527B	-	-	FL522E	-	FL562E
	600*	1100	500+500	450	-	46	138	-	-	FL330B*	FL530B*	-	-	FL530E	-	FL570E
900*	1100	500+500	750	-	46	230	-	-	FL331B*	FL531B*	-	-	FL531E	-	FL571E	
1200*	1100	500+500	1050	-	46	322	-	-	FL332B*	FL532B*	-	-	FL532E	-	FL572E	
enclosures with 2 sections	1150	600	500	450	450	23	69	23	69	FL340B	-	FL400B	FL400B	FL510E	FL510E	FL550E
	1450	600	500	450	750	23	69	23	115	FL342B	-	FL400B	FL401B	FL510E	FL511E	FL550E
	1750	600	500	450	1050	23	69	23	161	FL344B	-	FL400B	FL402B	FL510E	FL512E	FL550E
	1750	600	500	750	750	23	115	23	115	FL346B	-	FL401B	FL401B	FL511E	FL511E	FL551E
	2050	600	500	750	1050	23	115	23	161	FL348B	-	FL401B	FL402B	FL511E	FL512E	FL551E
	1150	850	750	450	450	37	111	37	111	FL350B	-	FL405B	FL405B	FL520E	FL520E	FL560E
	1450	850	750	450	750	37	111	37	185	FL352B	-	FL405B	FL406B	FL520E	FL521E	FL560E
	1750	850	750	450	1050	37	111	37	259	FL354B	-	FL405B	FL407B	FL520E	FL522E	FL560E
	1750	850	750	750	750	37	185	37	185	FL356B	-	FL406B	FL406B	FL521E	FL521E	FL561E
	2050	850	750	750	1050	37	185	37	259	FL358B	-	FL406B	FL407B	FL521E	FL522E	FL561E
	1150	1100	500+500	450	450	46	138	46	138	FL360B*	-	FL410B	FL410B	FL530E	FL530E	FL570E
	1450	1100	500+500	450	750	46	138	46	230	FL362B*	-	FL410B	FL411B	FL530E	FL531E	FL570E
	1750	1100	500+500	450	1050	46	138	46	322	FL364B*	-	FL410B	FL412B	FL530E	FL532E	FL570E
	1750	1100	500+500	750	750	46	230	46	230	FL366B*	-	FL411B	FL411B	FL531E	FL531E	FL571E
2050	1100	500+500	750	1050	46	230	46	322	FL368B*	-	FL411B	FL412B	FL531E	FL532E	FL571E	

Internal door metal



Modular chassis functional uprights



Plain front plates



Partial metal mounting plates



DIN rail



Commercial Distribution

		internal door			modular kits		plain front plates				partial metal plates adjustable				DIN rails for terminals
	lower section	metal upper section	lower section	upper section	lower section	h.50	h.150	h.200	h.300	h.150	h.200	h.300	h.400		
	-	FL590E	-	FL990B	-	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	-	FL591E	-	FL992B	-	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	-	FL592E	-	FL994B	-	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	-	FL600E	-	FL991B	-	FL705E	FL715E	FL725E	FL735E	FL317A	FL327A	FL337A	FL347A	FL503E	
	-	FL601E	-	FL993B	-	FL705E	FL715E	FL725E	FL735E	FL317A	FL327A	FL337A	FL347A	FL503E	
	-	FL602E	-	FL995B	-	FL705E	FL715E	FL725E	FL735E	FL317A	FL327A	FL337A	FL347A	FL503E	
	-	2xFL590E	-	2xFL990B	-	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	-	2xFL591E	-	2xFL992B	-	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	-	2xFL592E	-	2xFL994B	-	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	-	FL590E	-	FL990B	-	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	-	FL591E	-	FL992B	-	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	-	FL592E	-	FL994B	-	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	-	FL600E	-	FL991B	-	FL705E	FL715E	FL725E	FL735E	FL317A	FL327A	FL337A	FL347A	FL503E	
	-	FL601E	-	FL993B	-	FL705E	FL715E	FL725E	FL735E	FL317A	FL327A	FL337A	FL347A	FL503E	
	-	FL602E	-	FL995B	-	FL705E	FL715E	FL725E	FL735E	FL317A	FL327A	FL337A	FL347A	FL503E	
	-	2xFL590E	-	2xFL990B	-	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	-	2xFL591E	-	2xFL992B	-	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	-	2xFL592E	-	2xFL994B	-	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	FL550E	FL590E	FL590E	FL990B	FL990B	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	FL551E	FL590E	FL591E	FL990B	FL992B	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	FL552E	FL590E	FL592E	FL990B	FL994B	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	FL551E	FL591E	FL591E	FL992B	FL992B	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	FL552E	FL591E	FL592E	FL992B	FL994B	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	FL560E	FL600E	FL600E	FL991B	FL991B	FL705E	FL715E	FL725E	FL735E	FL317A	FL327A	FL337A	FL347A	FL503E	
	FL561E	FL600E	FL601E	FL991B	FL993B	FL705E	FL715E	FL725E	FL735E	FL317A	FL327A	FL337A	FL347A	FL503E	
	FL562E	FL600E	FL602E	FL991B	FL995B	FL705E	FL715E	FL725E	FL735E	FL317A	FL327A	FL337A	FL347A	FL503E	
	FL561E	FL601E	FL601E	FL993B	FL993B	FL705E	FL715E	FL725E	FL735E	FL317A	FL327A	FL337A	FL347A	FL503E	
	FL562E	FL601E	FL602E	FL993B	FL995B	FL705E	FL715E	FL725E	FL735E	FL317A	FL327A	FL337A	FL347A	FL503E	
	FL570E	2xFL590E	2xFL590E	2xFL990B	2xFL990B	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	FL571E	2xFL590E	2xFL591E	2xFL990B	2xFL992B	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	FL572E	2xFL590E	2xFL592E	2xFL990B	2xFL994B	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	FL571E	2xFL591E	2xFL591E	2xFL992B	2xFL992B	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	
	FL572E	2xFL591E	2xFL592E	2xFL992B	2xFL994B	-	FL710E	-	-	FL610E	FL620E	FL630A	FL640E	FL500E	



FL113A



FL113A

Orion Plus Metal Enclosures IP65

Characteristics

- Sheet metal enclosures with plain or transparent door
- Colour RAL 7035
- IP 65 / IK 10 with door closed
- IP 30 with door open
- Insulation class: I
- Compliance to IEC 529
- Enclosures delivered with 2 removable cable entry plates top/bottom, earthing studs on enclosure body and door, easy dismantlable hinges to everse the door
- Plain or transparent door with 1 or 2 locks with triangular centre 8mm located on the non weatherproof part,
- Mounting slides
- Gasket moulded on the door

Accessories

- Locks
- Wall fixing brackets
- Metallic or insulated internal doors
- Plain or perforated metallic mounting plates
- Kits for modular equipment

Description	Dimensions mm H x W x D	Qty.	Plain door Cat ref.	Transparent door Cat ref.
Orion Plus Metal Enclosure IP65	250 x 200 x 160	1	FL101A	FL151A
	300 x 250 x 160	1	FL102A	FL152A
	300 x 300 x 160	1	FL103A	FL153A
	350 x 300 x 160	1	FL104A	FL154A
	350 x 300 x 200	1	FL105A	FL155A
	400 x 300 x 160	1	FL106A	FL156A
	400 x 300 x 200	1	FL107A	FL157A
	400 x 400 x 200	1	FL108A	FL158A
	500 x 300 x 160	1	FL109A	FL159A
	500 x 300 x 200	1	FL110A	FL160A
	500 x 400 x 160	1	FL111A	FL161A
	500 x 400 x 200	1	FL112A	FL162A
	500 x 500 x 200	1	FL113A	FL163A
	600 x 400 x 200	1	FL114A	FL164A
	600 x 400 x 250	1	FL115A	FL165A
	600 x 600 x 250	1	FL116A	FL166A
	650 x 400 x 200	1	FL117A	FL167A
	650 x 400 x 250	1	FL118A	FL168A
	650 x 500 x 200	1	FL119A	FL169A
	650 x 500 x 250	1	FL120A	FL170A
	800 x 500 x 200	1	FL121A	FL171A
	800 x 500 x 250	1	FL122A	FL172A
	800 x 600 x 250	1	FL123A	FL173A
	800 x 600 x 300	1	FL124A	FL174A
	950 x 600 x 250	1	FL125A	FL175A
	950 x 600 x 300	1	FL126A	FL176A
	950 x 800 x 250	1	FL127A	FL177A
	950 x 800 x 300	1	FL128A	FL178A
	1250 x 600 x 250	1	FL129A	FL179A
	1250 x 800 x 300	1	FL130A	FL180A



FL958A

Plinths

Description	For enclosures	Qty.	Cat ref.
Plinth height 50 mm	FL113A, FL119A, FL121A, FL163A, FL169A, FL171A	1	FL957A
	FL120A, FL122A, FL170A, FL172A	1	FL958A
	FL116A, FL123A, FL125A, FL129A, FL166A, FL173A, FL175A, FL179A	1	FL959A
	FL124A, FL126A, FL174A, FL176A	1	FL960A
	FL127A, FL177A	1	FL961A
	FL128A, FL130A, FL178A, FL180A	1	FL962A

Accessories

Description	Qty.	Cat ref.
Lock with key to replace existing lock, supplied with 2 keys n°427	10	FL96Z
Locks, set of 2 locks square centre 8mm, 1 key	10	FL80Z
Locks, set of 2 locks square centre 6mm, 1 key	10	FL82Z
Locks, set of 2 locks triangular centre 8mm	10	FL93Z
Locks, set of 2 double bit 3m centre locks	10	FL95Z
Set of wall fixing brackets, metallic	1	FL85Z
Earthing kit for metal enclosures, section : 4 mm ²	10	FL874A
Vertical association kit (sealstrip + screws)	1	FL670A



FL113A



FL80Z



FL95Z



FL85Z



FL874A



FL670A

Commercial
Distribution



FL216B

Orion Plus Polyester Enclosures IP66

Characteristics

- Glass reinforced polyester enclosures
- Colour RAL 7035
- IP 66 / IK 10 with door closed
- IP30 with door open
- insulation class : II compliance to IEC 536
- Enclosures delivered with
 - Plain or transparent door with 1 or 2 locks with triangular centre 8mm located on the non weatherproof part
 - Mounting slides
 - Gasket moulded on the door
- Complies with IEC 60 695-2- 1/0 and 60 695-2-1/1

Accessories

- Locks
- Wall fixing brackets
- Metallic or insulated internal doors
- Plain or perforated metallic mounting plates
- Kits for modular equipment

Description	Dimensions H x W x D mm	Plain door Cat ref.	Transp door Cat ref.
Orion Plus polyester boxes moulded monobloc structure	350 x 300 x 160	FL204B	FL254B
	500 x 300 x 200	FL209B	FL259B
	500 x 400 x 200	FL213B	FL263B
	650 x 400 x 200	FL216B	FL266B
	650 x 500 x 250	FL221B	FL271B
	800 x 600 x 300	FL229B	FL279B



FL96Z



FL81Z



FL97Z

Accessories

Description	Qty.	Cat ref.
Lock with key - supplied with 2 keys n.° 427 for enclosures h ≤ 800	10	FL96Z
Plastic key - RAL7046	10	FL99Z
Locks - set of 2 locks square centre 8mm	10	FL81Z
Locks - set of 2 locks triangular centre 8mm	10	FL94Z
Locks - set of 2 locks double bit centre 3mm	10	FL97Z

Orion Plus Polyester Enclosures IP65

Description	Dimensions mm H x W x D	Qty.	Plain door Cat ref.	Transp door Cat ref.
Orion Plus Polyester Enclosure IP65				
	550 x 600 x 300	1	FL300B	FL500B
	550 x 850 x 300	1	FL305B	FL505B
	550 x 1100 x 300	1	FL310B	FL510B
	850 x 600 x 300	1	FL301B	FL501B
	850 x 850 x 300	1	FL306B	FL506B
	850 x 1100 x 300	1	FL311B	FL511B
	1150 x 600 x 300	1	FL302B	FL502B
	1150 x 850 x 300	1	FL307B	FL507B
	1150 x 1100 x 300	1	FL312B	FL512B



FL305B



FL320B

Commercial
Distribution

Orion Plus Polyester Enclosure IP65 delivered with a 70mm plinth

	600 x 600 x 300	1	FL320B	FL520B
	600 x 850 x 300	1	FL325B	FL525B
	600 x 1100 x 300	1	FL330B	FL530B
	900 x 600 x 300	1	FL321B	FL521B
	900 x 850 x 300	1	FL326B	FL526B
	900 x 1100 x 300	1	FL331B	FL531B
	1200 x 600 x 300	1	FL322B	FL522B
	1200 x 850 x 300	1	FL327B	FL527B
	1200 x 1100 x 300	1	FL332B	FL532B

Description	Dimensions mm H x W x D	Height Upper + Lwr Section	Plain door Cat ref.	Transp door Cat ref.
2 enclosures with plain doors on top of each other				
	1150 x 600 x 300	550+550	FL340B	-
	1150 x 850 x 300	550+550	FL350B	-
	1150 x 1100 x 300	550+550	FL360B	-
	1450 x 600 x 300	550+850	FL342B	-
	1450 x 850 x 300	550+850	FL352B	-
	1450 x 1100 x 300	550+850	FL362B	-
	1750 x 600 x 300	550+1150	FL344B	-
	1750 x 600 x 300	850+850	FL346B	-
	2050 x 600 x 300	850+1150	FL348B	-
	1750 x 850 x 300	550+1150	FL354B	-
	1750 x 850 x 300	850+850	FL356B	-
	2050 x 850 x 300	850+1150	FL358B	-
	1750 x 1100 x 300	550+1150	FL364B	-
	1750 x 1100 x 300	850+850	FL366B	-
	2050 x 1100 x 300	850+1150	FL368B	-

Description	Dimensions mm H x W x D	Qty.	Plain door Cat ref.	Transp door Cat ref.
Doors to replace standard plain doors				
	500 x 600	1	FL380B	FL400B
	550 x 850	1	FL385B	FL405B
	550 x 1100	1	FL390B	FL410B
	850 x 600	1	FL381B	FL401B
	850 x 850	1	FL386B	FL406B
	850 x 1100	1	FL391B	FL411B
	1150 x 600	1	FL382B	FL402B
	1150 x 850	1	FL387B	FL407B
	1150 x 1100	1	FL392B	FL412B



FL408A

Mounting Plates for Orion Plus Enclosures

Characteristics

- Plain mounting plates
- Sheet metal thickness 2mm
- Delivered with fixing screws

Mounting

- Directly on the back of the enclosures
- On the integrated slides with brackets FL450A to adjust depth

Description	Dimensions mm H x W x D	Qty.	Cat ref.
FL101A, FL151A	280 x 143	1	FL401A
FL102A, FL152A	280 x 193	1	FL402A
FL103A, FL153A	280 x 243	1	FL403A
FL104A, FL105A, FL154A, FL155A, FL204B, FL254B	330 x 243	1	FL404A
FL106A, FL107A, FL156A, FL157A	380 x 243	1	FL405A
FL108A, FL158A	380 x 343	1	FL406A
FL109A, FL110A, FL159A, FL160A, FL209B, FL259B	480 x 243	1	FL407A
FL111A, FL112A, FL161A, FL162A, FL213B, FL263B	480 x 343	1	FL408A
FL300B, FL500B, FL320B, FL520B	480 x 493	1	FL510E
FL305B, FL505B, FL325B, FL525B	480 x 743	1	FL520E
FL310B, FL510B, FL330B, FL530B	480 x 993	1	FL530E
FL113A, FL163A	480 x 443	1	FL409A
FL114A, FL115A, FL164A, FL165A	580 x 343	1	FL410A
FL116A, FL166A	580 x 543	1	FL411A
FL117A, FL118A, FL167A, FL168A, FL216B, FL266B	630 x 343	1	FL412A
FL119A, FL120A, FL169A, FL170A, FL221B, FL271B	630 x 443	1	FL413A
FL121A, FL122A, FL171A, FL172A	780 x 443	1	FL414A
FL123A, FL124A, FL173A, FL174A, FL229B, FL279B	780 x 543	1	FL415A
FL501E could be installed in all the enclosures	780 x 243	1	FL501E
FL502E could be installed in all the enclosures	1080 x 243	1	FL502E
FL300B, FL500B, FL320B, FL520B	480 x 493	1	FL510E
FL301B, FL501B, FL321B, FL521B	780 x 493	1	FL511E
FL306B, FL506B, FL326B, FL526B	780 x 743	1	FL521E
FL311B, FL511B, FL331B, FL531B	780 x 993	1	FL531E
FL302B, FL502B, FL322B, FL522B	780 x 493	1	FL512E
FL307B, FL507B, FL327B, FL527B	1080 x 793	1	FL522E
FL312B, FL512B, FL332B, FL532B	1080 x 993	1	FL532E
FL125A, FL126A, FL175A, FL176A	930 x 543	1	FL416A
FL127A, FL128A, FL177A, FL178A	930 x 743	1	FL417A
FL129A, FL179A	1230 x 543	1	FL418A
FL130A, FL180A	1230 x 743	1	FL419A



FL98Z



FL863Z

Miscellaneous Accessories

Description	Qty.	Cat ref.
Cylindrical barrel triangular male 8mm	5	FL74Z
Cylindrical barrel double bar 3mm	5	FL75Z
Cylindrical barrel square male 8 x 8mm	5	FL76Z
Cylindrical barrel square male 6 x 6 mm	5	FL77Z
Lock with key, supplied with 2 keys n.° 427	10	FL98Z
Set of M6 nuts to fix equipment directly on back	100	FZ801
Euro handle watertight		FZ680
Set of wall fixing brackets in insulated material, delivered with fixing screws M6x12		FL863Z

Perforated Mounting Plates for Orion Plus Enclosures

Characteristics

- Perforated mounting plates
- Sheet metal thickness 2mm
- Delivered with fixing screws

Mounting

- Directly on the back of the enclosures
- On the integrated slides with brackets FL450A to adjust depth
- Use clip with screw UC969 to fix equipment on the mounting plate.



FL475A

Description	Dimensions mm H x W x D	Qty.	Cat ref.
FL102A, FL152A	280 x 193	1	FL472A
FL104A, FL105A, FL154A, FL155A, FL204B, FL254B	330 x 243	1	FL473A
FL109A, FL110A, FL159A, FL160A, FL209B, FL259B	480 x 243	1	FL474A
FL111A, FL112A, FL161A, FL162A, FL213B, FL263B	480 x 343	1	FL475A
FL117A, FL118A, FL167A, FL168A, FL216B, FL266B	630 x 343	1	FL476A
FL119A, FL120A, FL169A, FL170A, FL221B, FL271B	630 x 443	1	FL477A
FL121A, FL122A, FL171A, FL172A	780 x 443	1	FL478A
FL123A, FL124A, FL173A, FL174A, FL229B, FL279B	780 x 543	1	FL479A
FL125A, FL126A, FL175A, FL176A	930 x 543	1	FL480A
FL127A, FL128A, FL177A, FL178A	930 x 743	1	FL481A
FL129A, FL179A	1230 x 543	1	FL482A
FL130A, FL180A	1230 x 743	1	FL483A

Commercial
Distribution

Insulated mounting plates for Orion Enclosures

Characteristics

- Insulated mounting plates
- Insulating material, delivered with fixing screws

Mounting

- Directly on the back on the enclosures
- On the integrated slides with brackets FL450A to adjust depth



FL427A

Description	Dimensions mm H x W x D	Qty.	Cat ref.
FL102A, FL152A	235 x 195	1	FL422A
FL104A, FL105A, FL154A, FL155A, FL204B, FL254B	285 x 245	1	FL423A
FL109A, FL110A, FL159A, FL160A, FL209B, FL259B	435 x 245	1	FL424A
FL111A, FL112A, FL161A, FL162A, FL213B, FL263B	435 x 345	1	FL425A
FL541E could be installed in all the enclosures	735 x 245	1	FL541E
FL542E could be installed in all the enclosures	1035 x 245	1	FL542E
FL300B, FL500B, FL320B, FL520B	435 x 495	1	FL550E
FL305B, FL505B, FL325B, FL525B	435 x 745	1	FL560E
FL310B, FL510B, FL330B, FL530B	435 x 995	1	FL570E
FL117A, FL118A, FL167A, FL168A, FL216B, FL266B	585 x 345	1	FL426A
FL119A, FL120A, FL169A, FL170A, FL221B, FL271B	585 x 345	1	FL427A
FL121A, FL122A, FL171A, FL172A	735 x 445	1	FL428A
FL123A, FL124A, FL173A, FL174A, FL229B, FL279B	735 x 545	1	FL429A
FL301B, FL501B, FL312B, FL512B	735 x 495	1	FL551E
FL306B, FL506B, FL326B, FL526B	735 x 745	1	FL561E
FL311B, FL511B, FL331B, FL531B	735 x 995	1	FL571E
FL302B, FL502B, FL322B, FL522B	1035 x 745	1	FL552E
FL307B, FL507B, FL327B, FL527B	1035 x 745	1	FL562E
FL312B, FL512B, FL332B, FL532B	1035 x 995	1	FL572E
FL125A, FL126A, FL175A, FL176A	885 x 545	1	FL430A
FL127A, FL128A, FL177A, FL178A	885 x 745	1	FL431A
FL129A, FL179A	1185 x 545	1	FL432A
FL130A, FL180A	1185 x 745	1	FL433A

Clip nut screw M5

Description	Qty.	Cat ref.
Clip nut screw M5 for perforated mounting plates	1 set = 25 pieces	UC969



UC969

Commercial
Distribution



FL552A



Internal Metal Doors for Orion Plus Enclosures

Characteristics

- Internal doors, sheet metal
- Reversible
- Delivered with fixing accessories mounting on slides with fixing frame

Description	Qty.	Cat ref.
FL101A, FL151A	1	FL541A
FL102A, FL152A	1	FL542A
FL103A, FL153A	1	FL543A
FL104A, FL105A, FL154A, FL155A, FL204B, FL254B	1	FL544A
FL106A, FL107A, FL156A, FL157A	1	FL545A
FL108A, FL158A	1	FL546A
FL109A, FL110A, FL159A, FL160A, FL209B, FL259B	1	FL547A
FL111A, FL112A, FL161A, FL162A, FL213B, FL263B	1	FL548A
FL300B, FL500B, FL310B, FL510B, FL320B, FL520B, FL330B, FL530B	1	FL590E
FL305B, FL505B, FL325B, FL525B	1	FL600E
FL113A, FL163A	1	FL549A
FL114A, FL115A, FL164A, FL165A	1	FL550A
FL117A, FL118A, FL167A, FL168A, FL216B, FL266B	1	FL551A
FL119A, FL120A, FL169A, FL170A, FL221B, FL271B	1	FL552A
FL116A, FL166A	1	FL553A
FL121A, FL122A, FL171A, FL172A	1	FL554A
FL123A, FL124A, FL173A, FL174A, FL229B, FL279B	1	FL555A
FL580E could be installed in all the enclosures	1	FL580E
FL581E could be installed in all the enclosures	1	FL581E
FL582E could be installed in all the enclosures	1	FL582E
FL301B, FL501B, FL311B, FL511B, FL321B, FL521B, FL331B, FL531B	1	FL591E
FL306B, FL506B, FL326B, FL526B	1	FL601E
FL302B, FL502B, FL312B, FL512B, FL322B, FL522B, FL332B, FL532B	1	FL592E
FL307B, FL507B, FL327B, FL527B	1	FL602E
FL125A, FL126A, FL175A, FL176A	1	FL556A
FL127A, FL128A, FL177A, FL178A	1	FL557A
FL129A, FL179A	1	FL558A
FL130A, FL180A	1	FL559A



FL646A



Internal Polyester Doors for Orion Plus Enclosures

Characteristics

- Internal doors, polyester
- Reversible
- Delivered with fixing accessories mounting on slides with delivered fixing frame

Description	Qty.	Cat ref.
FL104A, FL105A, FL154A, FL155A, FL204B, FL254B	1	FL643A
FL109A, FL110A, FL159A, FL160A, FL209B, FL259B	1	FL644A
FL111A, FL112A, FL161A, FL162A, FL213B, FL263B	1	FL645A
FL117A, FL118A, FL167A, FL168A, FL216B, FL266B	1	FL646A
FL119A, FL120A, FL169A	1	FL647A
FL123A, FL124A, FL173A, FL174A, FL229B, FL279B	1	FL649A

Functional Uprights

Characteristics

- Functional uprights for the assembly of: kit for modular equipment, kit for box section, solid panels, partial internal panels
- Fixed to the guide runners by means of brackets provided
- Prepared for vertical conduits: (1) section 25 x 60 (2) section 40 x 60

Description	Qty.	Cat ref.
For panel height x width: 350 x (1)300 mm - H mod. 300 mm	1	FL461A
For panel height x width: 500 x (1)300 mm - H mod. 450 mm	1	FL462A
For panel height x width: 500 x (1)400 mm - H mod. 450 mm	1	FL462A
For panel height x width: 650 x (1)400 mm - H mod. 600 mm	1	FL463A
For panel height x width: 650 x (1)500 mm - H mod. 600 mm	1	FL463A
For panel height x width: 800 x (1)500 mm - H mod. 750 mm	1	FL465A

Functional Uprights Continued...

Description	Qty.	Cat ref.
For panel height x width: 800 x (2)600 mm - H mod. 750 mm	1	FL466A
For panel height x width: 950 x (2)600 mm - H mod. 900 mm	1	FL467A
For panel height x width: 950 x (2)800 mm - H mod. 900 mm	1	FL467A
For panel height x width: 1250 x (2)600 mm - H mod. 1200 mm	1	FL468A
For panel height x width: 1250 x (2)800 mm - H mod. 1200 mm	1	FL468A

Functional Chassis for Modular Equipment

Characteristics

- Functional chassis for modular equipment
- Pre-assembled made up of:
 - 2 uprights
 - DIN guides
 - Modular panels in resin
 - 4 fixing brackets are fixed to the guide runners by means of the brackets provided.

Description	Qty.	Cat ref.
For panel height x width: 350 x 300 mm, 24 mod, 2 rows of 12 mod, for steel enclosures only	1	FL979A
For panel height x width: 350 x 300 mm, 24 mod, 2 rows of 12 mod, for polyester boxes only	1	FL980A
For panel height x width: 500 x 300 mm, 36 mod, 3 rows of 12 mod	1	FL981A
For panel height x width: 500 x 400 mm, 54 mod, 3 rows of 18 mod	1	FL982A
For panel height x width: 650 x 400 mm, 72 mod, 4 rows of 18 mod	1	FL983A

Sliding Guides

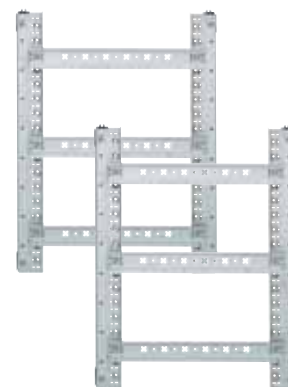
Description	Qty.	Cat ref.
Sliding guides for polyester enclosures	1	FL672E

Equipment Kits for Modular Products

Characteristics

- Equipment kits for modular products
- Mounting on functional uprights made of :
 - Fixing frame
 - 2 functional uprights for DIN rails
 - 2 uprights to fix DIN rails
 - DIN rails
 - Front plates with modular cut out h.150mm

Description	Qty.	Cat ref.
FL204B, FL254B	1	FL990C
FL104A, FL105A, FL154A, FL155A	2 rows (20 mod)	1 FL990A
FL109A, FL110A, FL159A, FL160A, FL209B, FL259B	3 rows (30 mod)	1 FL991A
FL111A, FL112A, FL161A, FL162A, FL213B, FL263B	3 rows (48 mod)	1 FL992A
FL300B, FL500B, FL320B, FL520B	3 rows (69 mod)	1 FL990B
FL305B, FL505B, FL325B, FL525B	3 rows (111 mod)	1 FL991B
FL117A, FL118A, FL167A, FL168A, FL216B, FL266B	4 rows (64 mod)	1 FL993A
FL119A, FL120A, FL169A, FL170A, FL221B, FL271B	4 rows (88 mod)	1 FL994A
FL121A, FL122A, FL171A, FL172A	5 rows (110 mod)	1 FL995A
FL123A, FL124A, FL173A, FL174A, FL229B, FL279B	5 rows (130 mod)	1 FL996A
FL301B, FL501B, FL321B, FL521B	5 rows (115 mod)	1 FL992B
FL306B, FL506B, FL326B, FL526B	5 rows (185 mod)	1 FL993B
FL125A, FL126A, FL175A, FL176A	6 rows (156 mod)	1 FL997A
FL127A, FL128A, FL177A, FL178A	6 rows (222 mod)	1 FL998A
FL302B, FL502B, FL322B, FL522B	7 rows (161 mod)	1 FL994B
FL307B, FL507B, FL327B, FL527B	7 rows (259 mod)	1 FL995B
FL129A, FL179A	8 rows (208 mod)	1 FL999A
FL130A, FL180A	8 rows (296 mod)	1 FL000A



FL992A

Kit for Modular Devices H150

Description	Width mm	Qty.	Cat ref.
For kits	300	1	FL361A
For kits	400	1	FL362A
For kits	500	1	FL363A
For kits	600	1	FL364A
For kits	800	1	FL365A

Kit for Modular Devices H200

Description	Width mm	Qty.	Cat ref.
For kits FL992A, FL993A	400	1	FL366A
For kits FL996A, FL997A, FL 999A	500	1	FL367A
For kits FL991A, FL993A, FL995A,	600	1	FL368A
For kits FL998A, FL000A	800	1	FL369A

Kit for Main Incomer 125/160A (Modular)

Description	W x H mm	Qty.	Cat ref.
Kit for main incomer 125/160A (modular)	400 x 300	1	FL371A
Kit for main incomer 125/160A (modular)	500 x 300	1	FL372A
Kit for main incomer 125/160A (modular)	600 x 300	1	FL373A
Kit for main incomer 125/160A (modular)	800 x 300	1	FL374A

Kit for Main Incomer 250A

Description	W x H mm	Qty.	Cat ref.
Kit for main incomer 250A	600 x 200	1	FL380AH
Kit for main incomer 250A	800 x 200	1	FL381AH
Kit for main incomer 250A	300 x 500	1	FL391AH
Kit for main incomer 250A	400 x 500	1	FL392AH
Kit for main incomer 250A	400 x 650	1	FL393AH

Kit for Main Incomer 400/630A

Description	W x H mm	Qty.	Cat ref.
Kit for main incomer 400/630A	400 x 650	1	FL399AH

Fixed Partial Mounting plates

Description	W x H mm	Qty.	Cat ref.
For kits FL990A, FL991A	300 x 150	1	FL311A
For kits FL992A, FL993A	400 x 150	1	FL312A
For kits FL992A, FL993A	400 x 200	1	FL322A
For kits FL994A, FL995A	500 x 150	1	FL313A
For kits FL994A, FL995A	500 x 200	1	FL323A
For kits FL994A, FL995A	500 x 300	1	FL333A
For kits FL994A, FL995A	500 x 400	1	FL343A



FL323A

Adjustable Partial Mounting Plates

Characteristics

- Adjustable partial mounting plates
- Mounting on functional uprights
- For enclosures with a depth of 250 and 300mm



FL325A

Description	W x H mm	Qty.	Cat ref.
For kits FL993A	400 x 150	1	FL314A
For kits FL993A	400 x 200	1	FL324A
For kits FL994A, FL995A	500 x 150	1	FL315A
For kits FL994A, FL995A	500 x 200	1	FL325A
For kits FL994A, FL995A	500 x 300	1	FL335A
For kits FL994A, FL995A	500 x 400	1	FL345A
For kits FL996A, FL997A, FL999A	600 x 150	1	FL316A
For kits FL996A, FL997A, FL999A	600 x 200	1	FL326A
For kits FL996A, FL997A, FL999A	600 x 300	1	FL336A
For kits FL996A, FL997A, FL999A	600 x 400	1	FL346A
For kits FL990B, FL992B, FL994B	600 x 150	1	FL610E
For kits FL990B, FL992B, FL994B	600 x 200	1	FL620E
For kits FL990B, FL992B, FL994B	600 x 300	1	FL630E
For kits FL990B, FL992B, FL994B	600 x 400	1	FL640E
For kits FL998A, FL000A, FL991B, FL993B, FL995B	800/850 x 150	1	FL317A
For kits FL998A, FL000A, FL991B, FL993B, FL995B	800/850 x 200	1	FL327A
For kits FL998A, FL000A, FL991B, FL993B, FL995B	800/850 x 300	1	FL337A
For kits FL998A, FL000A, FL991B, FL993B, FL995B	800/850 x 400	1	FL347A

Plain Front Plates

Characteristics

- Plain front plates
- Fixed by screws of 1/4 turn
- To replace modular covers



FL712E

Description	Height mm	Qty.	Cat ref.
For kits FL992A, FL993A,	50	1	FL702E
For kits FL994A, FL995A	50	1	FL703E
For kits FL996A, FL997A, FL999A	50	1	FL704E
For kits FL998A, FL000A, FL991B, FL993B, FL995B	50	1	FL705E
For kits FL990B, FL992B, FL994B	150	1	FL710E
For kits FL990A, FL991A, FL990C	150	1	FL711E
For kits FL992A, FL993A	150	1	FL712E
For kits FL994A, FL995A	150	1	FL713E
For kits FL996A, FL997A, FL999A	150	1	FL714E
For kits FL998A, FL000A, FL991B, FL 993B, FL995B	150	1	FL715E
For kits FL992A, FL993A	200	1	FL722E
For kits FL 994A, FL995A	200	1	FL723E
For kits FL996A, FL997A, FL999A	200	1	FL724E
For kits FL998A, FL000A, FL991B, FL993B, FL995A	200	1	FL725E
For kits FL994A, FL995A	300	1	FL733E
For kits FL996A, FL997A, FL999A	300	1	FL734E
For kits FL998A, FL000A, FL991B, FL993B, FL995B	300	1	FL735E

DIN Rail for Terminals

Characteristics

- DIN rail for terminals
- Adjustable inclination : 30°
- Mounting on functional uprights



FL500A

Description	Qty.	Cat ref.
For kits FL992A, FL993A	1	FL500A
For kits FL994A, FL995A	1	FL501A
For kits FL996A, FL997A, FL999A	1	FL502A
For kits FL998A, FL000A, FL991B, FL993B, FL995B	1	FL503A
For kits FL990B, FL992B, FL994B	1	FL500E

Support for Earth and Neutral Terminals

Description	Width mm	Qty.	Cat ref.
Support for earth and neutral terminals for enclosures	300	1	FL492A
	400	1	FL493A
	500	1	FL494A
	600	1	FL495A
	800	1	FL496A

Miscellaneous Accessories

Description	Qty.	Cat ref.
Mounting plate brackets; 4 brackets delivered with fixing screws	1 set	FL450A
Slotted cable duct horizontal and vertical; width x depth 25 x 60 mm, length 2m	2	FL70Z
Slotted cable duct horizontal and vertical; width x depth 40 x 60 mm, length 2m	2	FL71Z
Cable guide fixing with UZ01V, section 2200 mm ² (1 set = 20 pieces)	1 set	UZ25V1
Cable guide fixing with UZ01V, section 1600 mm ² (1 set = 20 pieces)	1 set	UZ25V2
Fixing bracket for cable guide, clips on rail (1 set = 20 pieces)	1 set	UZ01V1
1 Cable retainer plastic cover, length 2m	1	UT50C
Blanking clip, pre-cut to 1/2 mod RAL 7035, width. 4 mod	6	FL871Z
Label holder for front plates, label holder and label, width 24 mod	1	JE003
Spray paint, colour RAL 7035	1	FL672Z
Heater supply, 15W	1	FL252Z
Heater supply, 30W	1	FL253Z
Heater supply, 45W	1	FL254Z
Heater supply, 80W	1	FL255Z
Heater supply, 150W	1	FL256Z
Filter for FL220Z	2	FL230Z
Filter for for FL224Z	2	FL234Z
Filter for FL226Z	2	FL236Z



FL212Z

Ventilating Fan for Enclosures

Characteristics

- Ventilating fan for enclosures
- Reinforced polyamide
- Colour RAL 7035 / IP54
- supply 230V

Description	Dimensions mm	Qty.	Cat ref.
20W rotation/min. 2650/3000 airflow 57m ³ /h	w. 150 x h. 150 x d. 71	1	FL210Z
20W rotation/min. 2650/3000 airflow 115m ³ /h	w. 250 x h. 250 x d. 113	1	FL212Z
29W rotation/min. 2500 airflow 240m ³ /h	w. 250 x h. 250 x d. 121	1	FL214Z
67W rotation/min. 2480/2650 airflow 520m ³ /h	w. 325 x h. 325 x d. 161	1	FL216Z

Air Vent with Filter IP54

Description	Dimensions mm	Qty.	Cat ref.
Air Vent with Filter IP54, colour RAL7035	w. 150 x h. 150 x d. 28	1	FL220Z
	w. 250 x h. 250 x d. 31	1	FL224Z
	w. 325 x h.325 x d. 161	1	FL226Z



FL258Z

FL259Z

Thermostat to Control Temperature in Enclosure

Characteristics

- Thermostat to control temperature in the enclosure
- Changeover contact
- Fixing on DIN rail
- Settings -10° to 80° C
- w. 29 x h. 68 x d. 45mm

Description	Qty.	Cat ref.
Thermostat to control condensation contact NC	1	FL258Z
Thermostat to control fan-contact NO	1	FL259Z

Invicta

The complete service offering

Over the past few years we have focused on changing the nature of sub and final distribution. The results of this are the new invicta 3 Type B Distribution Board and Invicta 3 Panelboard ranges.

We also offer a range of SP&SN distribution board, fuse combination switches, switch disconnectors, switch fuses and enclosed MCCBs.



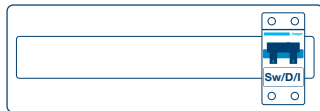


JK104

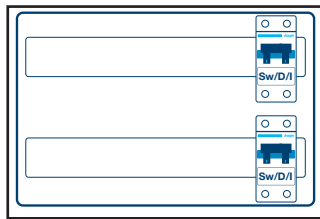
SP&N Distribution Boards

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 or 100A 30mA 2 pole RCCB, 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 1.215



100A Switch Disconnector Incomer



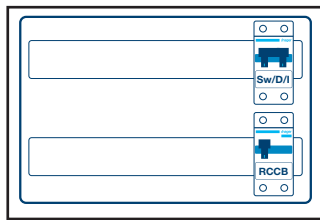
100A Switch Disconnector Incomer Dual Row



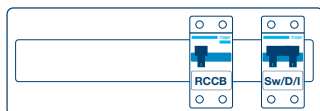
63A 30mA Switch Disconnector Incomer



100A 30mA RCCB Incomer



100A 30mA RCCB Incomer Dual Row



100A Switch Disconnector Incomer & 63A 30mA RCCB

Description

100A Switch Disconnector Incomer

- 4 Way 100A Switch Disconnector Incomer
- 6 Way 100A Switch Disconnector Incomer
- 10 Way 100A Switch Disconnector Incomer
- 14 Way 100A Switch Disconnector Incomer
- 20 Way 100A Switch Disconnector Incomer
- 28 Way 100A Switch Disconnector Incomer Dual Row

63A 30mA RCCB Incomer

- 4 Way 63A 30mA RCCB Incomer
- 6 Way 63A 30mA RCCB Incomer
- 10 Way 63A 30mA RCCB Incomer
- 14 Way 63A 30mA RCCB Incomer
- 20 Way 63A 30mA RCCB Incomer

100A 30mA RCCB Incomer

- 4 Way 100A 30mA RCCB Incomer
- 6 Way 100A 30mA RCCB Incomer
- 10 Way 100A 30mA RCCB Incomer
- 14 Way 100A 30mA RCCB Incomer
- 20 Way 100A 30mA RCCB Incomer
- 28 Way 100A 30mA RCCB Incomer Dual Row

100A Switch Disconnector and 63A 30mA RCCB

- 6 Way Split Load Configurable 100A Switch 63A 30mA RCCB
- 10 Way Split Load Configurable 100A Switch 63A 30mA RCCB
- 14 Way Split Load Configurable 100A Switch 63A 30mA RCCB

100A Switch Disconnector and 100A 30mA RCCB

- 28 Way Split Load 14+14 100A Switch 100A 30mA RCCB Dual Row

Size

Cat ref.

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		
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		
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		
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		
28 Way Split Load 14+14 100A Switch 100A 30mA RCCB Dual Row	5 (2)	JK527H

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

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 1.215.



JK008

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

Invicta 3 SP&N Distribution Boards

Characteristics:

- Boards are available with 14 & 29 outgoing ways. The range comes with a 100A 2 pole switch disconnecter 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 1.216.



JK114AG

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

Type B Distribution Boards

Invicta 3 125A, Metered Boards, IP65 Distribution Boards



JK106BG

¹ A **JK101SE** may be required to provide additional incoming cable space, see page 1.127 & 1.217.

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
- For dimensions see page 1.216

Description	Cat ref. Plain door	Cat ref. Glazed door	Cat ref. Amd 3 Compliant
4 Triple Pole Ways 125A TP&N Board	JK104B ¹	JK104BG ¹	JK104BA3 ²
6 Triple Pole Ways 125A TP&N Board	JK106B ¹	JK106BG ¹	JK106BA3 ²
8 Triple Pole Ways 125A TP&N Board	JK108B ¹	JK108BG ¹	JK108BA3 ²
12 Triple Pole Ways 125A TP&N Board	JK112B	JK112BG	JK112BA3 ²
16 Triple Pole Ways 125A TP&N Board	JK116B	JK116BG	JK116BA3 ²
18 Triple Pole Ways 125A TP&N Board	JK118B	JK118BG	JK118BA3 ²
24 Triple Pole Ways 125A TP&N Board	JK124B	JK124BG	JK124BA3 ²



JKD1416PM

125A Dual Metered Boards

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 meter and 125A TP switch disconnector pre-fitted. Each individual pan is fully rated at 125A.

Description	Max cable capacity solid	Lower pan ways	Upper pan ways	Cat ref.
4+6 Way Power & Lighting Board	50mm ²	4	6	JKD146PM
6+6 Way Power & Lighting Board	50mm ²	6	6	JKD166PM
6+4 Way Power & Lighting Board	50mm ²	6	4	JKD164PM
6+8 Way Power & Lighting Board	50mm ²	6	8	JKD168PM
8+8 Way Power & Lighting Board	50mm ²	8	8	JKD188PM
8+6 Way Power & Lighting Board	50mm ²	8	6	JKD186PM
4+16 Way Power & Lighting Board	50mm ²	4	16	JKD1416PM
16+4 Way Power & Lighting Board	50mm ²	16	4	JKD1164PM
8+12 Way Power & Lighting Board	50mm ²	8	12	JKD1812PM
12+8 Way Power & Lighting Board	50mm ²	12	8	JKD1128PM
12+12 Way Power & Lighting Board	50mm ²	12	12	JKD11212PM



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 ³	JK104BF
6 Way IP65 Metal 125A TPN Board 800 x 600 x 300	JK106BD ³	JK106BF
8 Way IP65 Metal 125A TPN Board 800 x 600 x 300	JK108BD ³	JK108BF
12 Way IP65 Metal 125A TPN Board 1250 x 850 x 300	JK112BD ³	JK112BF
16 Way IP65 Metal 125A TPN Board 1250 x 850 x 300	JK116BD ³	JK116BF

MCBs & RCBOs for Invicta 3 Type B Distribution Boards

		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)	Single Pole	-	-	-	-	-	ADA106U	ADA110U
RCBO (C)	Single Pole	-	-	-	-	-	ADA156U	ADA160U

Incomer Kits for 125A Boards

Description	Max Cable Capacity Solid	Cat ref.
3 Pole 100A Switch Disconnecter Incomer Kit (Fits within distribution board)	50mm ²	JK11003S
4 Pole 100A Switch Disconnecter Incomer Kit (Fits within distribution board)	50mm ²	JK11004S
3 Pole 125A Switch Disconnecter Incomer Kit (Fits within distribution board)	50mm ²	JK11253S
4 Pole 125A Switch Disconnecter Incomer Kit (Fits within distribution board)	50mm ²	JK11254S
4 Pole 63A Contactor Incomer Kit includes Switch Disconnecter (fits below distribution board, 300mm high)	50mm ²	JK10634C ³
4 Pole 100A Contactor Incomer Kit includes Switch Disconnecter (fits below distribution board, 450mm high)	M8 Lug	JK11004C ³
125A Direct Connection Kit (Fits within distribution board)	50mm ²	JK11254D
4 Pole 63A 30mA RCCB Incomer Kit (Fits within distribution board)	25mm ²	JK10634RH
4 Pole 100A 30mA RCCB Incomer Kit (Fits within distribution board)	50mm ²	JK11004RH
4 Pole 100A 300mA RCCB Incomer Kit (Fits within distribution board)	50mm ²	JK11004RL
4 Pole 100A 300mA Time Delayed RCCB Incomer Kit (Fits within distribution board)	50mm ²	JK11004RLD
4 Pole 100A 100mA RCCB Incomer Kit (Fits within distribution board)	50mm ²	JK11004RM
4 Pole 100A 100mA Time Delayed RCCB Incomer Kit (Fits within distribution board)	50mm ²	JK11004RMD
125A 4 pole Changeover Incomer Kit (Fits within distribution board)	50mm ²	JK11254CO ³



JK11003S

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

Commercial
Distribution

Meter Incomer Kits for 125A Boards

Characteristics:

- Each meter pack contains: 125A incoming switch with M8 lug cable connection, meter, CT blocks plus all necessary connections and 125A direct connection kits for each associated TP&N board.
- Conforms to BS EN 61439-3, I_{nA} = 125A, I_{nC} = 63A, I_{CC} = 25kA.
- **Note:** Distribution boards supplied separately to be assembled on site.

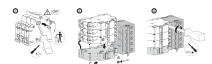
Description	Connection	Cat ref.
Dual kWh Meter Pack 125A Incomer Pulsed & Modbus	M8 Lug	JKD125PM
Triple kWh Meter Pack 125A Incomer Pulsed & Modbus	M8 Lug	JKD125TPM



JKD125PM

Triple Pole RCD Add-On Blocks for MCB Devices

Sensitivity I _{Δn}	I _n A	Width (35mm)	Cat ref.
30mA	63A	4 Mod	BD163T
100mA	63A	4 Mod	BE163T
300mA	63A	4 Mod	BF163T



BD163T

16A	20A	25A	32A	40A	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	-	-	-
ADA166U	ADA170U	ADA175U	ADA182U	-	-	-

Type B Distribution Boards

Invicta 3 250A TP&N Boards, Tri-Metered Board, Hybrid Boards



Commercial Distribution



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 1.216

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 disconnecter 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 1.217

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 1.217

Description	Cat ref. Plain Door	Cat ref. Glazed Door
Hybrid 250A Distribution Boards - Supplied with 250A 3P Switch Disconnecter 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 Distribution Boards

		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)	Single Pole	-	-	-	-	-	ADA106U	ADA110U
RCBO (C)	Single Pole	-	-	-	-	-	ADA156U	ADA160U

MCBs Suitable for Hybrid Distribution Boards Only

		80A	100A	125A
MCB C Curve	Single Pole	HMC180	HMC190	HMC199
	Triple Pole	HMC380	HMC390	HMC399
MCB D Curve	Single Pole	HMD180	HMD190	HMD199
	Triple Pole	HMD380	HMD390	HMD399

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 Disconnecter Incomer Kit (Fits within distribution board)	M8 Lug	JK22503S
4 Pole 250A Switch Disconnecter 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 Disconnecter (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

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 Pack 250A Pulsed & Modbus	JK240PM



JK240PM

Double & Triple Meter / Splitter Enclosures for Standard 250A Boards

Characteristics:

- These meter modules provide a solution to distribute power across two or three, type B distribution boards from a single cabled supply at 250A rating. This solution facilitates the requirement of separately metering (kWh) different load types in a commercial building application e.g Power and Lighting or Power, Lighting and mechanical services.
- Modules as supplied with all necessary meter, CT and power cable items to link to TP boards above.
- Conforms to BS EN 61439-3
- $I_{nA} = 250A$, $I_{nC} = 63A$, $I_{cC} = 25kA$
- For meter module incomer kit dimensions see page 1.217

Description	Connection	Cat ref.
Dual kWh Meter Module 250A Incomer Pulsed	M8 Lug	JKD250PM
Triple kWh Meter Module 250A Incomer Pulsed & Modbus	M8 Lug	JKD250TPM



JKD250PM (distribution boards are not included)

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	-	-	-	-
ADA166U	ADA170U	ADA175U	ADA182U	-	-	-	-

Type B Distribution Boards

125A & 250A DIN Extension Boxes, Cable Spreader Boxes



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 1.216.

Description	Cat ref. Plain door	Cat ref. Glazed door	Cat ref. Amd 3 Compliant
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

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.

Description	Cat ref. Plain door	Cat ref. Glazed door
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



JK101DK

Side DIN Boxes 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 Boxes supplied with two removable gland plates.
- For dimensions see page 1.216.

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



JK104BDFG



JK208BDFG

Commercial Distribution

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 1.216.

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 JK116B(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	JK125BSP	JK250BSP
Single Pole Busbar Blank	JK01B	JK01B
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

Invicta 3 125A & 250A Trunking Kits & Spares

Characteristics:

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



JK06TK

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

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



Engineered solutions.

From pre-assembled standard distribution units to bespoke composite TP&N boards and plug in distribution boards, we can provide the solution.

:hager



JK104BDFG

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 1.225.

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.

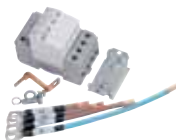
Description	Cat ref. Plain door	Cat ref. Glazed door
4 Triple Pole Ways 250A Panelboard	JN204B	JN204BG
6 Triple Pole Ways 250A Panelboard	JN206B	JN206BG
8 Triple Pole Ways 250A Panelboard	JN208B	JN208BG
12 Triple Pole Ways 250A Panelboard	JN212B	JN212BG
16 Triple Pole Ways 250A Panelboard	JN216B	JN216BG

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



JN201SPD



JN202SPD

250A JN Panelboard Surge Protection Device Kit

Characteristics

- SPD kit for direct integration with 250A panelboards. Failsafe 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 and connection set.

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



JN11004SM



JN3003TM

Side/Top/Bottom Meter Enclosures for JN Panelboards

Characteristics

- Blanking plates not included. For panelboard dimensions see page 1.225.

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

DIN Rail Extension Boxes

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 1.225.



JN201BE

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

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 1.225.



JN205BE

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

Accessories

Description	Cat ref.
Touch Up Paint 30ml	JF95A
Allen Key Set	JF296A
Gland Plate for Invicta 3 400A Range	JFPLATE
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
Terminal Cover x160 1 Pole Long	HYA029H
Terminal Cover x160 3 Pole Long	HYA021H
Neutral Barrier Kit	JN201NS



JN001BP



HXD039H

Outgoing Devices

MCCBs - Single Pole

Rating.	18kA Fixed Thermal	25kA Fixed Thermal
16A	HDA014Z	HHA014Z
20A	HDA018Z	HHA018Z
25A	HDA023Z	HHA023Z
32A	HDA030Z	HHA030Z
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.

- 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 Disconnecter (Non-Auto MCCB) Incomer Kit	M12 Lug	JF443BS
4 Pole 400A Switch Disconnecter (Non-Auto MCCB) Incomer Kit	M12 Lug	JF444BS
400A Direct Connection Kit	M10 Lug	JF444BD



JF801SPD

400A JF Panelboard Surge Protection Device Kit

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).

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 400A 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.



JF805E

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 8mm ²)	HXA039H
Terminal Cover x160 1 Pole Long	HYA029H
Terminal Cover x160 3 Pole Long	HYA021H



JN001BP



HXD039H

Outgoing Devices

MCCBs - Single Pole

Rating.	18kA Fixed Thermal	25kA Fixed Thermal
16A	HDA014Z	HHA014Z
20A	HDA018Z	HHA018Z
25A	HDA023Z	HHA023Z
32A	HDA030Z	HHA030Z
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 Disconnectors: 630A/800A, MCCB: 400A/630A, Direct connection: 800A.
- Incoming cable lugged via M12 hexagonal bolt.

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 ① + 4 x 125A ②)	JF60204B ¹	JF60204BG ¹
8 Triple Pole Ways Panelboard (2 x 250A ① + 6 x 125A ②)	JF80206B	JF80206BG
8 Triple Pole Ways Panelboard (4 x 250A ① + 4 x 125A ②)	JF80404B	JF80404BG
12 Triple Pole Ways Panelboard (2 x 250A ① + 10 x 125A ②)	JF80210B	JF80210BG
12 Triple Pole Ways Panelboard (4 x 250A ① + 8 x 125A ②)	JF80408B	JF80408BG
18 Triple Pole Ways Panelboard (4 x 250A ① + 14 x 125A ②)	JF80414B	JF80414BG
18 Triple Pole Ways Panelboard (6 x 250A ① + 12 x 125A ②)	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

DIN Rail Extension Boxes for 630A/800A 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. Optional door kits are available.
- Supplied with DIN rail and without gland plate (utilise removed gland plate from panelboard).



JF801E

Description	Cat ref.	Cat ref.
	Plain Door	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.

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.

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

Outgoing Devices Thermal Magnetic

1 MCCBs x250 40kA - Triple Pole

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

1 & 2 - Please see left hand page for corresponding numbers.

2 MCCBs - 125A 18kA Single Pole

Rating.	18kA Fixed Thermal	25kA Fixed Thermal
16A	HDA014Z	HHA014Z
20A	HDA018Z	HHA018Z
25A	HDA023Z	HHA023Z
32A	HDA030Z	HHA030Z
40A	HDA038Z	HHA038Z
50A	HDA048Z	HHA048Z
63A	HDA061Z	HHA061Z
80A	HDA078Z	HHA078Z
100A	HDA098Z	HHA098Z
125A	HDA123Z	HHA123Z

2 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.

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 ① + 6 x 125A ②)	JHF80206B	JHF80206BG
8 Triple Pole Ways 800A Panelboard (4 x 250A ① + 4 x 125A ②)	JHF80404B	JHF80404BG
12 Triple Pole Ways 800A Panelboard (2 x 250A ① + 10 x 125A ②)	JHF80210B	JHF80210BG
12 Triple Pole Ways 800A Panelboard (4 x 250A ① + 8 x 125A ②)	JHF80408B	JHF80408BG
18 Triple Pole Ways 800A Panelboard (4 x 250A ① + 14 x 125A ②)	JHF80414B	JHF80414BG
18 Triple Pole Ways 800A Panelboard (6 x 250A ① + 12 x 125A ②)	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 8mm ²)	HXA039H

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).

Description	Cat ref.	Cat ref.
	Plain Door	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.

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.

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

Outgoing Devices Thermal Magnetic

1 MCCBs x250 40kA - Triple Pole

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

2 MCCBs - 125A 18kA Single Pole

Rating.	18kA Fixed Thermal	25kA Fixed Thermal
16A	HDA014Z	HHA014Z
20A	HDA018Z	HHA018Z
25A	HDA023Z	HHA023Z
32A	HDA030Z	HHA030Z
40A	HDA038Z	HHA038Z
50A	HDA048Z	HHA048Z
63A	HDA061Z	HHA061Z
80A	HDA078Z	HHA078Z
100A	HDA098Z	HHA098Z
125A	HDA123Z	HHA123Z

2 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



JFD406U



JFG416U

Cable Capacity

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

Fuse Combination Switches 20 - 800A

Characteristics

- Provides individual protection and control of circuits.
- Enclosures up to 100A are designed to provide adequate cabling space without the need for further 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 disconnectors by fitting copper links.

Utilisation category

- AC22B - 630 - 800A
- AC23A - 20 - 630A

Product features

- Conforms to: Tested & complies to IEC 60 497-3, LBS Sequence 1 & 3, FCS Sequence 1 & 4, BS EN 60947-3 Rated IP31.
- Note:** Maximum rated fuse links are fitted in all fuse combination switches. Copper links for conversion to isolating switches.

Description	Cat ref.	Cable extension boxes if required
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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	-

Auxiliary Contact

1AC type NO	HZF301
1AC type NC	HZF302

Terminal Cover

	2 Pole	3 Pole	4 Pole
100A	HZF201	HZF202	HZF203
125A, 160A,	-	HZF202	HZF203
200A to 400A	-	HZF204	HZF205
630A to 800A	-	HZF206	HZF207

Switch Disconnectors 20-800A

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
- **Product features**
- Conforms to: BS EN 60947-3
- IP rating: IP31.
- For technical information see page 1.232.



JAB402B

Commercial Distribution

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

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

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



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

Enclosures for MCCBs

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

Specification

- Conforms to BS EN 61439-2.

Cable Capacity

- 63 - 125A: Flexible cable: min 6mm², max 70mm², Rigid cable: min 6mm², max 95mm².

Description	Cat ref.
Enclosure for MCCBs Single Pole & Neutral	
63 - 100 - 125A Single Pole MCCB	JG31BLS
Enclosure for MCCBs Triple Pole and Neutral (63-125A)	
63 - 100 - 125A MCCBs Triple Pole	JG32BLS
Enclosure for MCCBs Triple Pole and Neutral (160-250A)	
160 - 200 - 250A MCCBs Triple Pole	JG40BLS
Enclosure for MCCBs Four Pole (63-125A)	
63 - 100 125A MCCBs Four Pole	JG33BLS
Enclosure for MCCBs Four Pole (160-250A)	
160 - 200 - 250A MCCBs Four Pole	JG41BLS



JG41BLS



MBN116W

MCBs 6kA

Characteristics

- Protection and control of circuits against overloads and short circuits. Circuit isolation.
- Breaking capacity : 6kA (IEC 60 898-1). Curves : B curve: 3 to 5 In, C curve : 5 to 10 In. Poles : 1PP, 2PP, 3PP, 4PP (protected poles).
- Voltage rating: 240/400V AC. Current rating: 6 to 63A. Frequency: 50/60Hz. Climate sealed : T2.
- Connection capacity: rigid conductors : 25mm², flexible conductors : 16mm².
- Complies with IEC 60 898-1 and EN 60898-1. Will accept accessories.

Single Pole MCBs 6kA - Type C

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	1 Mod	12	MBN106W	MCN106A
10A	1 Mod	12	MBN110W	MCN110A
16A	1 Mod	12	MBN116W	MCN116A
20A	1 Mod	12	MBN120W	MCN120A
25A	1 Mod	12	MBN125W	MCN125A
32A	1 Mod	12	MBN132W	MCN132A
40A	1 Mod	12	MBN132W	MCN132A
50A	1 Mod	12	MBN150W	MCN150A
63A	1 Mod	12	MBN163W	MCN163A



MBN232W

Double Pole MCBs 6kA - Type B & C

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	2 Mod	6	MBN206W	MCN206A
10A	2 Mod	6	MBN210W	MCN210A
16A	2 Mod	6	MBN216W	MCN216A
20A	2 Mod	6	MBN220W	MCN220A
25A	2 Mod	6	MBN225W	MCN225A
32A	2 Mod	6	MBN232W	MCN232A
40A	2 Mod	6	MBN240W	MCN240A
50A	2 Mod	6	MBN250W	MCN250A
63A	2 Mod	6	MBN263W	MCN263A



MCN320A

Triple Pole MCBs 6kA - Type B & C

Description	Width (17.5mm)	Quantity	C Curve Cat ref.
6A	3 Mod	4	MCN306A
10A	3 Mod	4	MCN310A
16A	3 Mod	4	MCN316A
20A	3 Mod	4	MCN320A
25A	3 Mod	4	MCN325A
32A	3 Mod	4	MCN332A
40A	3 Mod	4	MCN340A
50A	3 Mod	4	MCN350A
63A	3 Mod	4	MCN363A



MBN440W

Four Pole MCBs 6kA - Type B & C

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	4 Mod	3	MBN406W	MCN406A
10A	4 Mod	3	MBN410W	MCN410A
16A	4 Mod	3	MBN416W	MCN416A
20A	4 Mod	3	MBN420W	MCN420A
25A	4 Mod	3	MBN425W	MCN425A
32A	4 Mod	3	MBN432W	MCN432A
40A	4 Mod	3	MBN440W	MCN440A
50A	4 Mod	3	MBN450W	MCN450A
63A	4 Mod	3	MBN463W	MCN463A

MCBs 6kA

Characteristics

- Protection and control of circuits against overloads and short circuits.Circuit isolation.
- Breaking capacity: 6kA (IEC 60 898-1), Curves: B curve: 3 to 5 In, C curve: 5 to 10 In.
- Poles: 1PP, 2PP, 3PP, 4PP (protected poles). Voltage rating: 240/400V AC. Current rating: 6 to 63A. Frequency: 50/60Hz
- Climate sealed: T2.
- Will not accept accessories.
- Connection capacity: rigid conductors : 25mm², flexible conductors : 16mm². Complies with IEC 60 898-1



MU110A

Single Pole MCBs 6kA - Type B & C

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	1 Mod	12	MT106A	MU106A
10A	1 Mod	12	MT110A	MU110A
16A	1 Mod	12	MT116A	MU116A
20A	1 Mod	12	MT120A	MU120A
25A	1 Mod	12	MT125A	MU125A
32A	1 Mod	12	MT132A	MU132A
40A	1 Mod	12	MT140A	MU140A
50A	1 Mod	12	MT150A	MU150A
63A	1 Mod	12	MT163A	MU163A

Double Pole MCBs 6kA - Type B & C

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	2 Mod	6	MT206A	MU206A
10A	2 Mod	6	MT210A	MU210A
16A	2 Mod	6	MT216A	MU216A
20A	2 Mod	6	MT220A	MU220A
25A	2 Mod	6	MT225A	MU225A
32A	2 Mod	6	MT232A	MU232A
40A	2 Mod	6	MT240A	MU240A
50A	2 Mod	6	MT250A	MU250A
63A	2 Mod	6	MT263A	MU263A



MT216A

Triple Pole MCBs 6kA - Type B & C

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	3 Mod	4	MT306A	MU306A
10A	3 Mod	4	MT310A	MU310A
16A	3 Mod	4	MT316A	MU316A
20A	3 Mod	4	MT320A	MU320A
25A	3 Mod	4	MT325A	MU325A
32A	3 Mod	4	MT332A	MU332A
40A	3 Mod	4	MT340A	MU340A
50A	3 Mod	4	MT350A	MU350A
63A	3 Mod	4	MT363A	MU363A



MU316A

Four Pole MCBs 6kA - Type B & C

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	4 Mod	3	-	MU406A
10A	4 Mod	3	-	MU410A
16A	4 Mod	3	-	MU416A
20A	4 Mod	3	-	MU420A
25A	4 Mod	3	-	MU425A
32A	4 Mod	3	-	MU432A
40A	4 Mod	3	-	MU440A
50A	4 Mod	3	-	MU450A
63A	4 Mod	3	-	MU463A



NCN116A

MCBs 10kA

Characteristics

- Protection and control of circuits against overloads and short circuits. Circuit isolation. Will accept accessories.
- Breaking capacity: 10kA (IEC 60 898-1), 15kA (IEC 60 947-2).
- Curves: B curve : 3 to 5 In, C curve: 5 to 10 In, D curve: 10 to 20 In. Poles: 1PP, 2PP, 3PP, 4PP (protected poles).
- Voltage rating: 240/400V AC. Current rating: 0,5 to 63A. Frequency: 50/60Hz . Climate sealed: T2.
- Connection capacity: rigid conductors : 35mm², flexible conductors : 25mm².
- Complies with IEC 60 898-1, IEC 60 947-2, EN 60898-1 and EN 60947-2.

Single Pole MCBs 10kA - Type B C & D

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	B Curve Cat ref.	C Curve Cat ref.	D Curve Cat ref.
0.5A	1 Mod	12	-	-	NCN100A	NDN100A
1A	1 Mod	12	-	-	NCN101A	NDN101A
2A	1 Mod	12	-	-	NCN102A	NDN102A
3A	1 Mod	12	-	-	NCN103A	NDN103A
4A	1 Mod	12	-	-	NCN104A	NDN104A
6A	1 Mod	12	NBN106A	-	NCN106A	NDN106A
10A	1 Mod	12	NBN110A	-	NCN110A	NDN110A
16A	1 Mod	12	NBN116A	-	NCN116A	NDN116A
20A	1 Mod	12	NBN120A	-	NCN120A	NDN120A
25A	1 Mod	12	NBN125A	-	NCN125A	NDN125A
32A	1 Mod	12	NBN132A	-	NCN132A	NDN132A
40A	1 Mod	12	NBN140A	-	NCN140A	NDN140A
50A	1 Mod	12	NBN150A	-	NCN150A	NDN150A
63A	1 Mod	12	NBN163A	NBN163R	NCN163A	NDN163A



NCN232A

Double Pole MCBs 10kA - Type B C & D

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	B Curve Cat ref.	C Curve Cat ref.	D Curve Cat ref.
0.5A	2 Mod	6	-	-	NCN200A	NDN200A
1A	2 Mod	6	-	-	NCN201A	NDN201A
2A	2 Mod	6	-	-	NCN202A	NDN202A
3A	2 Mod	6	-	-	NCN203A	NDN203A
4A	2 Mod	6	-	-	NCN204A	NDN204A
6A	2 Mod	6	NBN206A	-	NCN206A	NDN206A
10A	2 Mod	6	NBN210A	-	NCN210A	NDN210A
16A	2 Mod	6	NBN216A	-	NCN216A	NDN216A
20A	2 Mod	6	NBN220A	-	NCN220A	NDN220A
25A	2 Mod	6	NBN225A	-	NCN225A	NDN225A
32A	2 Mod	6	NBN232A	-	NCN232A	NDN232A
40A	2 Mod	6	NBN240A	-	NCN240A	NDN240A
50A	2 Mod	6	NBN250A	-	NCN250A	NDN250A
63A	2 Mod	6	NBN263A	NBN263R	NCN263A	NDN263A



NDN316A

Triple Pole MCBs 10kA - Type B C & D

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.	D Curve Cat ref.
0.5A	3 Mod	4	-	NCN300A	NDN300A
1A	3 Mod	4	-	NCN301A	NDN301A
2A	3 Mod	4	-	NCN302A	NDN302A
3A	3 Mod	4	-	NCN303A	NDN303A
4A	3 Mod	4	-	NCN304A	NDN304A
6A	3 Mod	4	NBN306A	NCN306A	NDN306A
10A	3 Mod	4	NBN310A	NCN310A	NDN310A
16A	3 Mod	4	NBN316A	NCN316A	NDN316A
20A	3 Mod	4	NBN320A	NCN320A	NDN320A
25A	3 Mod	4	NBN325A	NCN325A	NDN325A
32A	3 Mod	4	NBN332A	NCN332A	NDN332A
40A	3 Mod	4	NBN340A	NCN340A	NDN340A
50A	3 Mod	4	NBN350A	NCN350A	NDN350A
63A	3 Mod	4	NBN363A	NCN363A	NDN363A

MCBs 10kA

Characteristics

- Protection and control of circuits against overloads and short circuits. Circuit isolation.
- Breaking capacity: 10kA (IEC 60 898-1), 15kA (IEC 60 947-2).
- Curves: B curve : 3 to 5 In, C curve: 5 to 10 In, D curve : 10 to 20 In. Poles: 1PP, 2PP, 3PP, 4PP (protected poles).
- Voltage rating: 240/400V AC. Current rating: 0,5 to 63A. Frequency: 50/60Hz. Climate sealed: T2.
- Connection capacity: rigid conductors: 35mm², flexible conductors: 25mm².
- Complies with IEC 60 898-1, IEC 60 947-2, EN 60898-1 and EN 60947-2. Will accept accessories.

Four Pole MCBs 10kA - Type B C & D

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.	D Curve Cat ref.
0.5A	4 Mod	3	-	NCN400A	NDN400A
1A	4 Mod	3	-	NCN401A	NDN401A
2A	4 Mod	3	-	NCN402A	NDN402A
3A	4 Mod	3	-	NCN403A	NDN403A
4A	4 Mod	3	-	NCN404A	NDN404A
6A	4 Mod	3	NBN406A	NCN406A	NDN406A
10A	4 Mod	3	NBN410A	NCN410A	NDN410A
16A	4 Mod	3	NBN416A	NCN416A	NDN416A
20A	4 Mod	3	NBN420A	NCN420A	NDN420A
25A	4 Mod	3	NBN425A	NCN425A	NDN425A
32A	4 Mod	3	NBN432A	NCN432A	NDN432A
40A	4 Mod	3	NBN440A	NCN440A	NDN440A
50A	4 Mod	3	NBN450A	NCN450A	NDN450A
63A	4 Mod	3	NBN463A	NCN463A	NDN463A



NDN440A



BD226

RCCB Add On Blocks for MCB Devices

Characteristics

- When add-on block is associated with MCBs (types NBN, NCN, NDN), the complete unit provides an earth fault protection and protects against electrical shocks by direct or indirect contacts. They are designed to be fitted to the right hand side of 2, 3, and 4 poles MCBs.
- Sensitivity: High sensitivity: 10mA, 30mA instant tripping, Medium sensitivity: 100mA, 300mA, 500mA instant tripping / 300mA, 500mA, 1A selective (time delay). Current rating: 25 to 63A, Voltage rating: 240/400V AC. Poles: 2P, 3P, 4P. Types: AC and A types. Frequency: 50/60Hz.
- Mounting type: side mounted. Climate sealed: T2.
- Connection capacity 25A: rigid conductors: 10mm², flexible conductors: 6mm² 40A, 63A: rigid conductors: 25mm², flexible conductors: 16mm².
- AC type: Ensured for residual sinusoidal alternating currents, whether suddenly applied or slowly rising. It incorporate a filtering device preventing the risk of nuisance tripping due to the transient voltages (lightening, line disturbance on other -equipment...) and transient currents (from high capacitive circuits).
- A and HI type (reinforced immunity): In addition to the characteristics of AC type, it ensured for residual pulsating direct currents, whether suddenly applied or slowly rising. They are used whenever fault currents are not sinusoidal. It reduces the unexpected tripping when they protect equipment generating disturbances like DC fault current (washing machines, speed drives, microprocessing, electronic ballast...).
- Complies with EN 61008-1.

2 Pole Add On Blocks

Description	Width (17.5mm)	Quantity	Class AC Cat ref.	Class A & HI Cat ref.
Δn 10 mA, In/A 25A	2 mod	1	BC226	-
Δn 30 mA, In/A 25A	2 mod	1	BD226	BD225
Δn 30mA, In/A 40A	2 mod	1	BD241	BD240
Δn 30mA, In/A 63A	2 mod	1	BD264	BD263
Δn 100mA, In/A 63A	2 mod	1	BE264	-
Δn 100mA, In/A 63A S	2 mod	1	BN264	-
Δn 300mA, In/A 25A	2 mod	1	BF226	BF225
Δn 300mA, In/A 40A	2 mod	1	BF241	BF240
Δn 300mA, In/A 63A	2 mod	1	BF264	BF263
Δn 300mA, In/A 63A S	2 mod	1	BP264	-
Δn 500mA, In/A 63A	2 mod	1	BG264	-
Δn 500mA, In/A 63A S	2 mod	1	BR264	-
Δn 1A, In/A 63A S	2 mod	1	BS264	BS263



BD364

3 Pole Add On Blocks

Description	Width (17.5mm)	Quantity	Class AC Cat ref.	Class A & HI Cat ref.
Δn 30 mA, In/A 25A	2 mod	1	BD326	BD325
Δn 30 mA, In/A 40A	3 mod	1	BD341	BD340
Δn 30 mA, In/A 63A	3 mod	1	BD364	BD363
Δn 300mA, In/A 25A	2 mod	1	BF326	BF325
Δn 300mA, In/A 40A	3 mod	1	BF341	BF340
Δn 300mA, In/A 63A	3 mod	1	BF364	BF363
Δn 300mA, In/A 63A S	3 mod	1	BP364	-
Δn 500mA, In/A 63A	3 mod	1	BG364	-
Δn 1A, In/A 63A S	3 mod	1	BS364	BS363



BD463

4 Pole Add On Blocks

Description	Width (17.5mm)	Quantity	Class AC Cat ref.	Class A & HI Cat ref.
Δn 30 mA, In/A 25A	2 mod	1	BD426	BD425
Δn 30 mA, In/A 40A	3 mod	1	BD441	BD440
Δn 30 mA, In/A 63A	3 mod	1	BD464	BD463
Δn 100mA, In/A 63A	3 mod	1	BE464	-
Δn 100mA, In/A 63A S	3 mod	1	BN464	-
Δn 300mA, In/A 25A	2 mod	1	BF426	BF425
Δn 300mA, In/A 40A	3 mod	1	BF441	BF440
Δn 300mA, In/A 63A	3 mod	1	BF464	BF463
Δn 300mA, In/A 63A S	3 mod	1	BP464	-
Δn 500mA, In/A 63A	3 mod	1	BG464	-
Δn 1A, In/A 63A S	3 mod	1	BS464	-

RCCB Add On Blocks for MCB Devices

Characteristics

- When add-on block is associated with MCBs (NGN, NBN, NCN, NDN, NQN, NRN, NSN), the complete unit provides an earth fault protection and protects against electrical shocks by direct or indirect contacts. They are designed to be fitted to the right hand side of 2, 3, and 4 poles MCBs.
- Sensitivity: High sensitivity: 10mA, 30mA instant tripping, Medium sensitivity: 100mA, 300mA, 500mA instant tripping / 300mA, 500mA, 1A selective (time delay).
- Current rating: 25 to 63A, Voltage rating: 240/400V AC.
- Poles: 2P, 3P, 4P. Types: AC and A types. Frequency: 50/60Hz .
- Mounting type: side mounted. Climate sealed: T2.
- Connection capacity 25A: rigid conductors: 10mm², flexible conductors: 6mm² 40A, 63A: rigid conductors: 25mm², flexible conductors: 16mm².
- AC type: Ensured for residual sinusoidal alternating currents, whether suddenly applied or slowly rising. It incorporate a filtering device preventing the risk of nuisance tripping due to the transient voltages (lightening, line disturbance on other -equipment...) and transient currents (from high capacitive circuits).
- A and HI type (reinforced immunity): In addition to the characteristics of AC type, it ensured for residual pulsating direct currents, whether suddenly applied or slowly rising. They are used whenever fault currents are not sinusoidal. It reduces the unexpected tripping when they protect equipment generating disturbances like DC fault current (washing machines, speed drives, microprocessing, electronic ballast...).
- Complies with EN 61008-1.

4 Pole Add On Blocks Double Output

Description	Width (17.5mm)	Quantity	Class AC Cat ref.	Class A & HI Cat ref.
Δn 30 mA, In/A 25A	3 mod	1	BDC825	BDH825
Δn 30 mA, In/A 40A	3 mod	1	BDC840	BDH840
Δn 30 mA, In/A 63A	3 mod	1	BDC863	BDH863
Δn 300mA, In/A 25A	3 mod	1	BFC825	BFH825
Δn 300mA, In/A 40A	3 mod	1	BFC840	BFH840
Δn 300mA, In/A 63A	3 mod	1	BFC863	BFH863
Δn 300mA, In/A 63A S	3 mod	1	BPC863	-
Δn 1A, In/A 63A S	3 mod	1	BSC863	-



BFC840

One Module 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.

Sensitivity I _{Δn}	I _n A	Width (35mm)	Cat ref.
30mA	63A	4 Mod	BD163T
100mA	63A	4 Mod	BE163T
300mA	63A	4 Mod	BF163T



BD163T



HMC399

MCBs 15kA

Characteristics

- Protection and control of circuits against overloads and short circuits.
- Circuit isolation. They can be used for installation in commercial building and industrial premises.
- Breaking capacity : 15kA (IEC 60 898-1), 15kA (IEC 60 947-2).
- Curves : B curve : 3 to 5 In, C curve : 5 to 10 In, D curve : 10 to 20 In.
- Poles : 1PP, 2PP, 3PP, 4PP (protected poles). Voltage rating : 230/400V AC.
- Current rating : 80 to 125A. Frequency : 50/60Hz.
- Will accept accessories.
- Climate sealed : T2.
- Connection capacity: rigid conductors : 70mm², flexible conductors : 35mm².
- Complies with IEC 60 898-1 and IEC 60 947-2.

Single pole MCBs

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.	D Curve Cat ref.
80A	1.5 mod	1	HMB180	HMC180	HMD180
100A	1.5 mod	1	HMB190	HMC190	HMD190
125A	1.5 mod	1	HMB199	HMC199	HMD199

Double pole MCBs

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.	D Curve Cat ref.
80A	3 mod	1	HMB280	HMC280	HMD280
100A	3 mod	1	HMB290	HMC290	HMD290
125A	3 mod	1	HMB299	HMC299	HMD299

Three pole MCBs

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.	D Curve Cat ref.
80A	4.5 mod	1	HMB380	HMC380	HMD380
100A	4.5 mod	1	HMB390	HMC390	HMD390
125A	4.5 mod	1	HMB299	HMC399	HMD399



HMC499

Four pole MCBs

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.	D Curve Cat ref.
80A	6 mod	1	HMB480	HMC480	HMD480
100A	6 mod	1	HMB490	HMC490	HMD490
125A	6 mod	1	HMB499	HMC499	HMD499



MZN130

Terminal cover / screw cap

Characteristics:

- Sealable screw cap for MCBs HLE/HLF/HMB/HMC/HMD/HMK/HMJ/HMX

Description	Cat ref.
Terminal cover / screw cap	MZN130

Phase separator

Characteristics:

- 1 set of 3 pieces
- For MCBs HLE/HLF/HMB/HMC/HMD/HMK/HMJ/HMX

Description	Cat ref.
Phase separator	MZN131

RCCB Add On Blocks for MCBs Type AC

Characteristics

- When add-on block is associated with MCBs (HLE, HLF, HMB, HMC, HMD, HMJ, HMK, HMX), the complete unit provides an earth fault protection and protects against electrical shocks by direct or indirect contacts. They are designed to be fitted to the right hand side of 2, 3 and 4 poles MCBs.
- Sensitivity: High sensitivity : 30mA instant tripping (fixed). Medium sensitivity: 300mA instant tripping (fixed) / 300mA, 500mA, 1A adjustable (selective or time delay). Time delay : 0ms, 60ms or 150ms.
- Current rating : 125A. Voltage rating : 240/400V AC. Frequency : 50/60Hz . Mounting type : side mounted.
- Poles : 2P, 3P, 4P. Types : AC and A/Hi types.
- Climate sealed : T2.
- Connection capacity: rigid conductors : 70mm², flexible conductors : 35mm²
- AC type : Ensured for residual sinusoidal alternating currents, whether suddenly applied or slowly rising. It incorporates a filtering device preventing the risk of nuisance tripping due to the transient voltages (lightening, line disturbance on other equipment...) and transient currents (from high capacitive circuits).
- A and HI type (reinforced immunity) : In addition to the characteristics of AC type, it ensured for residual pulsating direct currents, whether suddenly applied or slowly rising. They are used whenever fault currents are not sinusoidal. It reduces the unexpected tripping when they protect equipment generating disturbances like DC fault current (washing machines, speed drives, microprocessing, electronic ballast...).
- Adjustable block : The setting is done by actuating the thumb wheel on the front face. The setting thumb wheels are protected by a transparent sealable cover.
- Tightening compensation terminals : The circuit breakers block are equipped with screw terminals with tightening compensation, reinforced arch and cable holding jaws. These contributes to an effective tightening over time.
- Complies with IEC 61 009-1.



BTH280E

Commercial
Distribution

Double Pole Add On Block

Description	In/A	Width (17.5mm)	Quantity	AC Type Cat ref.	A & HI Type Cat ref.
IΔn fixed 30mA	125	6 mod	1	BDC280E	BDH280E
Adjustable 0,3 - 0,5 - 1A inst. - - 150 ms	125	6 mod	1	BTC280E	BTH280E

Three Pole Add On Block

Description	In/A	Width (17.5mm)	Quantity	AC Type Cat ref.	A & HI Type Cat ref.
IΔn fixed 30mA	125	6 mod	1	BDC380E	BDH380E
Adjustable 0,3 - 0,5 - 1A inst. - - 150 ms	125	6 mod	1	BTC380E	BTH380E



BTH380E

Four Pole Add On Block

Description	In/A	Width (17.5mm)	Quantity	AC Type Cat ref.	A & HI Type Cat ref.
IΔn fixed 30mA	125	6 mod	1	BDC480E	BDH480E
IΔn fixed 300mA	125	6 mod	1	BFC480E	BFH480E
Adjustable 0,3 - 0,5 - 1A inst. - - 150 ms	125	6 mod	1	BTC480E	BTH480E



BDC480E

Single Pole & Switched Neutral MCB - 6kA C Curve

Characteristics

- 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**

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



MLN710A



ADA106U

RCBOs Single Pole

Characteristics

- Compact protection devices which combine the overcurrent functions of an MCB with the earth fault functions of an RCCB in a single unit. A range of sensitivity and current ratings are available for use in commercial and industrial applications.
- Insulated DIN clip.
- Complies with BS EN 61009-1, IEC61009-1
- Sensitivities (fixed) 10mA, 30mA & 100mA
- Breaking capacity: 10kA
- Flying neutral lead: 800mm
- Terminal Capacities 16mm² rigid, 10mm² flexible
- Application: 1 module devices provide a compact solution for installation in consumer units and Invicta 3 distribution boards.
- These devices are single pole & solid neutral.

Sensitivity 30mA (10kA), A Class

Description		Width 17.5mm	B Curve Cat ref	C Curve Cat ref	D Curve Cat ref
Sensitivity 30mA (10kA) Class A	6A	1 Mod	ADB406U	ADC406U	ADD406U
	10A	1 Mod	ADB410U	ADC410U	ADD410U
	16A	1 Mod	ADB416U	ADC416U	ADD416U
	20A	1 Mod	ADB420U	ADC420U	ADD420U
	25A	1 Mod	ADB425U	ADC425U	ADD425U
	32A	1 Mod	ADB425U	ADC432U	ADD432U
	40A	1 Mod	ADB440U	ADC440U	-
	45A	1 Mod	ADB445U	ADC445U	-



ADS967D

FI / LS switch for 127 V networks, 1P + N, 6 kA, Quick Connect

Current Characteristics Fi - Type	Modules	Cat ref.
RCBO 1P+N 6kA 127V B-16A 30mA A Class QC&QB	2	ADS917D
RCBO 1P+N 6kA 127V C-16A 30mA A Class QC&QB	2	ADS967D



MZN175

Locking Kit

Description	Cat ref.
This allows locking of the device toggle in the off position. Will accept two padlocks with hasps of 4.75mm diameter max. (supplied without padlock).	MZN175

RCBO Type B & C, 2 & 4 Pole

Characteristics

- Compact protection devices which provide MCB overload protection and RCD earth leakage protection (protect against electrical shocks by direct or indirect contact).
- Sensitivity: High sensitivity: 30mA instant tripping (fixed). Medium sensitivity: 300mA instant tripping (fixed).
- Current rating: 6 to 40A.
- Curves: B and C.
- Voltage rating: 230V AC.
- A type.
- Frequency: 50Hz.
- Connection capacity: rigid conductors: 25mm², flexible conductors: 16mm².
- A type: Detects residual sinusoidal alternating currents, whether suddenly applied or slowly rising. They are used whenever fault currents are not sinusoidal. It is able to detect DC fault current generated by loads like washing machines, speed drives, microprocessing, electronic ballast. Approved according to EN 61009-1.



AD916J

Commercial
Distribution

RCBOs Type B & C - 30mA 6kA, 2 Pole

Description	Breaking capacity (IEC 60 898-1)	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	6kA	2 mod	1	AD906J	AD956J
10A	6kA	2 mod	1	AD910J	AD960J
16A	6kA	2 mod	1	AD916J	AD966J
20A	6kA	2 mod	1	AD920J	AD970J
25A	6kA	2 mod	1	AD925J	AD975J
32A	6kA	2 mod	1	AD932J	AD982J
40A	6kA	2 mod	1	AD940J	AD990J

RCBOs Type B & C - 30mA 10kA, 2 Pole

Description	Breaking capacity (IEC 60 898-1)	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	10kA	2 mod	1	ADA506D	ADA556D
10A	10kA	2 mod	1	ADA510D	ADA560D
16A	10kA	2 mod	1	ADA516D	ADA566D
20A	10kA	2 mod	1	ADA520D	ADA570D
25A	10kA	2 mod	1	ADA525D	ADA575D
32A	10kA	2 mod	1	ADA532D	ADA582D



ADA506D

RCBOs Type B & C - 300mA 6kA, 2 Pole

Description	Breaking capacity (IEC 60 898-1)	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	6kA	2 mod	1	-	AF956J
10A	6kA	2 mod	1	-	AF960J
16A	6kA	2 mod	1	-	AF966J
20A	6kA	2 mod	1	-	AF970J
25A	6kA	2 mod	1	-	AF975J
32A	6kA	2 mod	1	-	AF982J
40A	6kA	2 mod	1	-	AF990J



ADM406C

RCBOs Type B & C - 30mA 6kA, 4 Pole

Description	Breaking capacity (IEC 60 898-1)	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	6kA	4 mod	1	ADM406C	ADM456C
10A	6kA	4 mod	1	ADM410C	ADM460C
13A	6kA	4 mod	1	ADM413C	ADM463C
16A	6kA	4 mod	1	ADM416C	ADM466C
20A	6kA	4 mod	1	ADM420C	ADM470C
25A	6kA	4 mod	1	ADM425C	ADM475C
32A	6kA	4 mod	1	ADM432C	ADM482C
40A	6kA	4 mod	1	ADM440C	ADM490C

RCBOs Type B & C - 300mA 6kA, 4 Pole

Description	Breaking capacity (IEC 60 898-1)	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	6kA	4 mod	1	AFM406C	AFM456C
10A	6kA	4 mod	1	AFM410C	AFM460C
13A	6kA	4 mod	1	AFM413C	AFM463C
16A	6kA	4 mod	1	AFM416C	AFM466C
20A	6kA	4 mod	1	AFM420C	AFM470C
25A	6kA	4 mod	1	AFM425C	AFM475C
32A	6kA	4 mod	1	AFM432C	AFM482C
40A	6kA	4 mod	1	AFM440C	AFM490C

2 & 4 Pole RCCBs

Characteristics

- Compact devices which provide RCD earth leakage protection (protect against electrical shocks by direct or indirect contacts). To open automatically in the event of an earth fault between phase and earth and/or neutral and earth.
- High sensitivity: 30mA instantaneous tripping (fixed)
- Medium sensitivity: 100mA, 300mA instantaneous or selective tripping (fixed)
- Current rating: 25 to 100A. Voltage rating: 230V AC (2P) and 400V (4P)
- Poles: 2P and 4P. Type: A, B and B+
- Frequency: 50Hz
- Connection capacity 25 to 63A: rigid conductors 25mm, flexible conductors 16mm²
- Connection capacity 80 and 100A: rigid conductors 50mm², flexible conductors 35mm²
- A type suitable for residual pulsating direct currents, whether suddenly applied or slowly rising. They are used whenever fault currents are not sinusoidal.
- B type Short-time delayed RCD to protect against smooth DC residual and AC residual currents in the frequency range up to 2 kHz.
- B+ type Short-time delayed RCD to protect against smooth DC residual and AC residual currents in the frequency range up to 100 kHz.
- Complies with EN61008-1.



CDA240U

Commercial Distribution

RCCBs A type 6kA 10mA

Description	In/A	Quantity	2 Pole Cat ref.	4 Pole Cat ref.
RCCBs A type 6kA 10mA	16A	1	CCA216U	-

RCCBs A type 6kA 30mA

Description	In/A	Quantity	2 Pole Cat ref.	4 Pole Cat ref.
RCCBs A type 6kA 30mA	25A	1	CDA225U	CDA425U
	40A	1	CDA240U	CDA440U
	63A	1	CDA263U	CDA463U
	80A	1	CD283U	-
	100A	1	CD285U	-



CDA516D

RCCBs A type 10kA 30mA

RCCBs A type 10kA 30mA	16A	1	CDA516D	-
	25A	1	CDA525D	-
	40A	1	CDA540D	-
	63A	1	CDA563D	-
	80A	1	CDA580W	CDA680D
	100A	1	CDA584W	CDA684D
	125A	1	-	CDA690

RCCBs A type 6kA 100mA

Description	In/A	Quantity	2 Pole Cat ref.	4 Pole Cat ref.
RCCBs A type 6kA 100mA	40A	1	CE240J	CE440J
	63A	1	CEA263N	CE463J



CEA263N

RCCBs A type 10kA 100mA

Description	In/A	Quantity	2 Pole Cat ref.	4 Pole Cat ref.
RCCBs A type 10kA 100mA	80A	1	CEA580W	CEA680W
	100A	1	CEA584W	CEA684W

RCCBs

2 & 4 Pole RCCBs (Residual Current Circuit Breakers)

RCCBs A type Selective 10kA 100mA

Description	In/A	Quantity	2 Pole Cat ref.	4 Pole Cat ref.
RCCBs A type Selective 10kA 100mA S	100A	1	CNA584W	CNA684D

RCCBs A type 6kA 300mA

Description	In/A	Quantity	2 Pole Cat ref.	4 Pole Cat ref.
RCCBs A type 6kA 300mA	25A	1	CF225J	CF425J
	40A	1	CF240J	CF440J
	63A	1	CF263J	CF463J

RCCBs A type 10kA 300mA

Description	In/A	Quantity	2 Pole Cat ref.	4 Pole Cat ref.
RCCBs A type 10kA 300mA	80A	1	CFA580W	CFA680U
RCCBs A type 10kA 300mA	100A	1	-	CFA684W

RCCBs A type Selective 10kA 300mA

Description	In/A	Quantity	2 Pole Cat ref.	4 Pole Cat ref.
RCCBs A type 10kA 300mA S	100A	1	-	CPA684D



CDB516E

RCCBs Type B/B+ 10kA 30mA

Description	In/A	Quantity	2 Pole Cat ref.	4 Pole Cat ref.
RCCBs B type 10kA 30mA	16A	1	CDB516E	-
RCCBs B type 10kA 30mA	25 A	1	CDB525E	-
RCCBs B+ type 10kA 30mA	16A	1	CDB516D	-
RCCBs B+ type 10kA 30mA	25 A	1	CDB525D	-
RCCBs B+ type 10kA 30mA	40A	1	-	CDB640D
RCCBs B+ type 10kA 30mA	63 A	1	-	CDB663D



CDB640D

RCCBs Type B+ 10kA 300mA

Description	In/A	Quantity	4 Pole Cat ref.
RCCBs B+ type 10kA 300mA	40A	1	CFB640D
RCCBs B+ type 10kA 300mA	63 A	1	CFB663D

RCBO Add On Blocks for MCBs Type AC (Cannot be used with MT/MU MCBs)

Characteristics

- All auxiliaries are common to both single and multi-pole circuit breakers. The auxiliaries are fitted to left hand side of devices.
- Shunt trips, and under-voltage releases fitted with a flag indicator that indicates the automatic/remote tripping of the device.
- Connection capacity; 6 mm² rigid cables, 4 mm² flexible cables
- Use of MZ203 - MZ209 on RCCBs requires use of interface auxiliary CZ001. Complies with EN62019 and IEC60947-5-1.



MZ212

Auxiliary Contacts

Description	Width 17.5mm	Cat ref.
1NO + 1NC auxiliary contact indication of main contact status	0.5 Mod	MZ201

Alarm Contacts

Description	Width 17.5mm	Cat ref.
SD contact indicates a fault overcurrent (e.g. MCB tripped)on overload or short-circuit.	0.5 Mod	MZ202

Shunt Trips

Description	Width 17.5mm	Cat ref.
Allows remote tripping of the device 230V - 415V AC, 12V - 130V DC	1 Mod	MZ203
Allows remote tripping of the device 24V - 48V AC, 12V - 48V DC	1 Mod	MZ204

Under Voltage Releases

Characteristics:

- Allows MCB to be closed only when voltage is above 70% of Un. MCB will automatically trip when voltage falls by 35% of Un.

Description	Width 17.5mm	Cat ref.
48V DC	1 Mod	MZ205
230V AC	1 Mod	MZ206

Over Voltage Releases

Characteristics:

- Monitors the voltage betweenphase and neutral in a network.
- It opens the current circuit in case of over voltage by tripping the connected protection device (e.g. MCB or RCCB).
- EN 50550

Description	Width 17.5mm	Cat ref.
230V AC	1 Mod	MZ212



MZ212

Locking Kit

Characteristics:

- Will accept two padlocks with hasps of 4,75 mm diameter max.

Description	Cat ref.
Allows locking of the device dolly in the on/off position.	MZN175



MZN175

Sealing Kit

Description	Cat ref.
Sealing kit	MZN176

Marking Strip

Description	Cat ref.
13 modules for modular devices	MZN177



LS703

HRC Fuse Carriers

Characteristics

- Protection and control of circuits against overloads and short circuits
- Technical data: sizes : L31, L38, L51, L58
- Poles: 1P, 2P, 3P, 4P
- Voltage rating: 500 V AC, 690V AC. Current rating: 25 to 125A
- Frequency: 50/60Hz
- Climate sealed: T2
- Will accept accessories
- Short circuit resistance with fuse link 8,5 x 31,5 mm: 80kA – 690V~
- Short circuit resistance with fuse link 10,3 x 38 mm: 80kA – 690V~ / 120kA – 500 V~
- Short circuit resistance with fuse link 14x51 mm: 100kA – 690V
- Short circuit resistance with fuse link 22x58 mm: 100kA – 690V
- Connection capacity:
 - L31 (8,5x31,5): rigid conductors: 25mm², flexible conductors: 16mm²
 - L38 (10x38): rigid conductors : 25mm², flexible conductors: 16mm²
 - L51 (14x51): rigid conductors : 35mm², flexible conductors: 25mm²
 - L58 (22x58): rigid conductors : 50mm², flexible conductors : 35mm²
- Complies with IEC 60 269-2, EC 60 269-2-1 and IEC 60 947-3.

L58 fuse carriers 690V - 125A

Characteristics:

- Compatible with accessories

Description	Width 17.5mm	Quantity	Cat ref.
Single pole	2 Mod	1	LS701
Two pole	4 Mod	1	LS702
Three pole	6 Mod	1	LS703
3 phases + neutral link	8 Mod	1	LS704
1 phase + neutral link	4 Mod	1	LS712

Characteristics:

- Accessory free

Description	Width 17.5mm	Quantity	Cat ref.
single pole	2 Mod	6	LR701
two pole	4 Mod	3	LR702
three pole	6 Mod	2	LR703
3 phases + neutral link	8 Mod	1	LR704
1 phase + neutral link	4 Mod	3	LR712



LS670

Microswitches

Characteristics:

- For L51 fuse carriers

Description	Quantity	Cat ref.
single pole	1	LS670
three pole	1	LS671

Characteristics:

- For L58 fuse carriers

Description	Quantity	Cat ref.
Single pole	1	LS770
Three pole	1	LS771



LS672

Signal lights 230V

Characteristics:

- For L51 and L58 fuse carriers

Description	Quantity	Cat ref.
Signal lights 230V	1	LS672

Photovoltaic Fuse Carriers, SPD & Switch Disconnectors

Characteristics

Photovoltaic fuse carriers and fuses

- DC protection of photovoltaic strings against overload and short-circuits.
- Sizes : L38 (10x38)
- Class of operation : gPV (PV fuse)
- Poles : 1P, 2P
- Voltage rating : 1000V DC for fuse carriers and 900V DC for fuses
- Fuse carriers current rating : 32A
- Fuses current rating : 2 to 20A
- Breaking capacity : 30kA
- Minimum Interrupting : 2 x In (2-3-4A), 1.9 x In (6-8-10-12A), 1.6 x In (16-20A)
- Connection capacity: rigid conductors 16mm², flexible conductors 10mm²
- Complies with IEC 60269-2, IEC 60269-2-1 and IEC 60947-3.

Switch disconnectors

- Designed for photovoltaic applications but fully compatible to any DC purposes.
- Contact making and break independent to operator speed.
- Poles : 4P
- Voltage rating : 1000V DC 21B
- Current rating : 32A
- Connection capacity: rigid conductors 16mm², flexible conductors 10mm²
- Complies with IEC 60 947-3.



L501PV

Commercial
Distribution

L38 photovoltaic fuse carriers 1000V DC

Description	In/A	Quantity	Cat ref.
Single pole	32	6	L501PV
Double pole	32	12	L502PV

Photovoltaic Cartridge Fuses 900V DC

Description	In/A	Quantity	Cat ref.
Photovoltaic Cartridge Fuses 900V DC	2	10	LF302PV
	3	10	LF303PV
	4	10	LF304PV
	6	10	LF306PV
	8	10	LF308PV
	10	10	LF310PV
	12	10	LF312PV
	16	10	LF316PV
	20	10	LF320PV



LF302PV

DC Switch Disconnectors

Description	In/A	Quantity	Cat ref.
4 poles, 1000 V DC	32	1	SB432PV



SB43PV

Double Pole Polarized Surge Protection Devices

Description	Cat ref.
Photovoltaic Ucpv ≤ 1000V DC, 25kA, 4kV, class 2 with end of life indicator	SPN325



SPA800



SPA081

Surge Protection Type 1 + 2

Technical Data

Conforms to IEC61643-1: T1 + T2
 Rated operational voltage: 230/400V
 Frequency: 50/60Hz
 Protection level up: 1.5kV
 Operating temperature: -40 to 80°C
 Rated voltage Uc according to IEC61643-1: 350V

Characteristics

- For mounting on top hat rails
- Integrated remote signalling contact
- Contact type: 1 changeover contact

Backup fuse	Earthing network	Modules	Nominal discharge capacity	Total discharge capacity	VPE	Cat ref.
315A	TN-C	6	25kA	75	1	SPA800
315A	TT/TN-S	8	25kA	100	1	SPA801

Replacement plug-in module for SPA80x

Description	Backup fuse	PU	Cat ref.
Plug-in module LN/PEN 350V 25kA	315A	1	SPA081



SPB140R

Surge Protection Type 2

These are used to limit the voltage to the specified values and can be connected downstream of combination protection and type 1 protection.

Surge Protection Type 2, 1 pole

Technical Data

Conforms to IEC61643-11: T2
 Rated operational voltage: 230V
 Frequency: 50/60Hz
 Discharge capacity: 20kA
 Protection level up: 1.35kV
 Number of modules: 1
 Operating temperature: -40 to 80°C
 Rated voltage Uc according to IEC61643-1: 275V

Characteristics

- Integrated remote signalling contact
- Contact type: 1 changeover contact

Description	Cat ref.	With remote contact Cat ref.
Surge protection T2, 1 pole, 40kA, TNC	SPB140D	SPB140R



SPB208D

Surge Protection Type 2, 2 pole

Technical Data

Conforms to IEC61643-11: T2
 Rated operational voltage: 230V
 Frequency: 50/60Hz
 Discharge capacity: 20kA
 Protection level up: 1.35kV
 Number of modules: 2
 Operating temperature: -40 to 80°C
 Rated voltage Uc according to IEC61643-1: 275V

Characteristics

- Integrated remote signalling contact
- Contact type : 1 changeover contact

Description	Cat ref.	With remote contact Cat ref.
Surge protection T2, 2 pole, 8kA, TNS/TT	SPB208D	-
Surge protection T2, 2 pole, 15kA, TNS/TT	SPB215D	SPB215R
Surge protection T2, 2 pole, 40kA, TNS/TT	SPB240D	SPB240R
Surge protection T2, 2 pole, 65kA, TNS/TT	-	SPB265R

Surge Protection Type 2, 4 pole

Technical Data

Conforms to IEC61643-11: T2
 Rated operational voltage: 230/400V
 Frequency: 50/60Hz
 Discharge capacity: 20kA
 Protection level up: 1.35kV
 Number of modules: 4
 Operating temperature: -40 to 80°C
 Rated voltage U_c according to IEC61643-1: 275V

Characteristics

- Integrated remote signalling contact
- Contact type : 1 changeover contact



SPB415R

Description	Cat ref.	With remote contact Cat ref.
Surge protection T2, 4 pole, 8kA, TNS/TT	SPB408D	-
Surge protection T2, 4 pole, 15kA, TNS/TT	SPB415D	SPB415R
Surge protection T2, 4 pole, 40kA, TNS/TT	SPB440D	SPB440R
Surge protection T2, 4 pole, 65kA, TNS/TT	-	SPB465R



SPB008D

Replacement plug-in module Type 2

Description	Cat ref.
Cartridge L-N, I _n 2kA, I _{max} 8kA	SPB008D
Cartridge T2 L-N U _c 275V U _p 1.35kV	SPB015
Cartridge L-N, I _n 5kA, I _{max} 15kA	SPB015D
Cartridge T2 N-PE U _c 260V U _p 1.5kV	SPB015N
Cartridge L-N, I _n 20kA, I _{max} 40kA	SPB040D
Cartridge N-PE, I _n 20kA, I _{max} 40kA	SPB040N
Cartridge N-PE, I _n 20kA, I _{max} 65kA	SPB065N
Cartridge L-N, I _n 20kA, I _{max} 65kA	SPB065R

Surge Protection Type 2, 3 pole, PV

Technical Data

Conforms to IEC61643-1: T2
 Rated operational voltage: 1000V DC
 Protection level up: 3.7kV
 Operating temperature: -40 to 80°C

Characteristics

- Integrated remote signalling contact
- Contact type : 1 changeover contact



SPV340

Description	Cat ref.
Surge protection T2, 3 pole, 40kA, PV	SPV340

Plug-in module Type 2, PV

Nominal discharge capacity	Protection level	PU	Cat ref.
40kA	1.9kV	1	SPV040



SPC203N

Surge Protection Type 3

These are used to limit the voltage to $\leq 1.5kV$. Surge protection type 3 should be located as close as possible to the end of the device, so that the voltage level can be reduced to a tolerable value and recouplings can be neutralised.

Surge Protection Type 3

Technical Data

Conforms to IEC61643-11: T3
 Rated operational voltage: 230V
 Frequency: 50/60Hz
 Protection level up: 1.4kV
 Operating temperature: -40 to 80°C

Characteristics

- Integrated remote signalling contact
- Contact type: 1 changeover contact

Description	Modules	PU.	Cat ref.
Surge protection T3, 1 pole + N, 5kA	1	1	SPC203N
Surge protection T3, 3 pole + N, 3kA	2	1	SPC403N



SPC023N

Accessories for Surge Protection Type 3

Technical Data

Conforms to IEC61643-11: T3
 Rated operational voltage: 230V
 Frequency: 50/60Hz
 Protection level up: 1.4kV
 Operating temperature: -40 to 80°C

Description	PU.	Cat ref.
Plug-in module T3 1 pole Uc 264V In 5kA	1	SPC023N
Surge protection T3, N-PE Uc 264V In 3kA	1	SPC043N



SPK603

Surge Protection for IP Broadband Connections

Description	Protection level	PU.	Cat ref.
Surge protection for VDSL	250V	1	SPK603
Surge protection for (A) DSL and ISDN	300V	1	SPK602

Arc Fault Detection Devices with MCB

Characteristics

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

Description	Cat ref.
B Curve Arc Fault Detection Devices with MCB 10kA	
AFDD with MCB 1P+N 10kA B-6A 2 mod.	ARC506U
AFDD with MCB 1P+N 10kA B-10A 2 mod.	ARC510U
AFDD with MCB 1P+N 10kA B-13A 2 mod.	ARC513U
AFDD with MCB 1P+N 10kA B-16A 2 mod.	ARC516U
AFDD with MCB 1P+N 10kA B-20A 2 mod.	ARC520U
AFDD with MCB 1P+N 10kA B-25A 2 mod.	ARC525U
AFDD with MCB 1P+N 10kA B-32A 2 mod.	ARC532U
AFDD with MCB 1P+N 10kA B-40A 2 mod.	ARC540U
C Curve Arc Fault Detection Devices with MCB 10kA	
AFDD with MCB 1P+N 10kA C-6A 2 mod.	ARC556U
AFDD with MCB 1P+N 10kA C-10A 2 mod.	ARC560U
AFDD with MCB 1P+N 10kA C-13A 2 mod.	ARC563U
AFDD with MCB 1P+N 10kA C-16A 2 mod.	ARC566U
AFDD with MCB 1P+N 10kA C-20A 2 mod.	ARC570U
AFDD with MCB 1P+N 10kA C-25A 2 mod.	ARC575U
AFDD with MCB 1P+N 10kA C-32A 2 mod.	ARC582U
AFDD with MCB 1P+N 10kA C-40A 2 mod.	ARC590U



ARC506U



ARC540U

Commercial
Distribution

Arc Fault Detection Devices with RCBO

Characteristics

- Protection device which combines an RCBO with Arc Fault Detection
- Conforms to EN 62606, Current rating 6A - 25A 10kA, available in B & C curve

Description	Cat ref.
B Curve Arc Fault Detection Devices with RCBO 10kA	
AFDD with RCBO 1P+N 10kA B-6A 30mA A 3 mod.	ARF506D
AFDD with RCBO 1P+N 10kA B-10A 30mA A 3 mod.	ARF510D
AFDD with RCBO 1P+N 10kA B-16A 30mA A 3 mod.	ARF516D
AFDD with RCBO 1P+N 10kA B-20A 30mA A 3 mod.	ARF520D
AFDD with RCBO 1P+N 10kA B-25A 30mA A 3 mod.	ARF525D
B Curve Arc Fault Detection Devices with RCBO 6kA	
AFDD with RCBO 1P+N 6kA B-6A 30mA A 3 mod.	ARF906D
AFDD with RCBO 1P+N 6kA B-10A 30mA A 3 mod.	ARF910D
AFDD with RCBO 1P+N 6kA B-16A 30mA A 3 mod.	ARF916D
AFDD with RCBO 1P+N 6kA B-20A 30mA A 3 mod.	ARF920D
AFDD with RCBO 1P+N 6kA B-25A 30mA A 3 mod.	ARF925D
C Curve Arc Fault Detection Devices with RCBO 10kA	
AFDD with RCBO 1P+N 10kA C-6A 30mA A 3 mod.	ARF556D
AFDD with RCBO 1P+N 10kA C-10A 30mA A 3 mod.	ARF560D
AFDD with RCBO 1P+N 10kA C-16A 30mA A 3 mod.	ARF566D
AFDD with RCBO 1P+N 10kA C-20A 30mA A 3 mod.	ARF570D
AFDD with RCBO 1P+N 10kA C-25A 30mA A 3 mod.	ARF575D
C Curve Arc Fault Detection Devices with RCBO 6kA	
AFDD with RCBO 1P+N 6kA C-6A 30mA A 3 mod.	ARF956D
AFDD with RCBO 1P+N 6kA C-10A 30mA A 3 mod.	ARF960D
AFDD with RCBO 1P+N 6kA C-16A 30mA A 3 mod.	ARF966D
AFDD with RCBO 1P+N 6kA C-20A 30mA A 3 mod.	ARF970D
AFDD with RCBO 1P+N 6kA C-25A 30mA A 3 mod.	ARF975D



ARF506D



ARF906D

Busbar 2P for ARFxxxD 12 module 63 A 2 P	KDN263AZ
Busbar 10mod 2P with auxiliary	KDN263AZS



HR500

Earth Fault Relays

Characteristics

- SPDs with low let through voltage levels to protect very sensitive electronic equipment.
- Voltage range : 230V +/- 20%
- Network voltage: 50 to 700 V
- Frequency: 50 / 60 Hz
- Working temperature: 10 to +55°C
- Storage temperature: -25 to +70°C
- Max. cable lenght to torroids: 25m non-twisted cable 0,5 to 1,5mm² , 50m twisted cable
- Standards: IEC 60755, IEC 947-2 annex B, IEC 61543 IEC 61008-1
- Torroids:
- Frequency: 50 / 60 Hz
- Working temperature: 10 to +55°C
- Storage temperature: 25 to +70°C
- IP rating: IP 41

Earth Leakage Relays Non Adjustable

Description	Power Absorbed	Cat ref.
Fixed I Δ n: 0,03A, instantaneous tripping	3VA	HR500
Fixed I Δ n: 0,3A, instantaneous tripping	3VA	HR502



HR525

Earth Leakage Relays Adjustable

Description	Power Absorbed	Positive Safety Contact	Cat ref.
Adjst. I Δ n: 0,03-0,1-0,3-0,5-1-3-10A - adjst. delay: 0-0,1-0,3-0,4-0,5-1-3 s	5VA	1 C/O	HR510
Adjst. I Δ n: 0,03-0,1-0,3-0,5-1-3-10A - adjst. delay: 0-0,1-0,3-0,4-0,5-1-3-5 s	5VA	1 C/O	HR520
Adjst. I Δ n: 0,03-0,1-0,3-0,5-1-3-10A - adjst. delay: 0-0,1-0,2-0,25-0,3-0,4-0,5 s	5VA	1 C/O	HR522
Adjst. I Δ n: 0,5-1-3-5-10-20-30A - adjst. delay: 0-0,1-0,2-0,25-0,3-0,4-0,5 s	5VA	1 C/O	HR523
Adjst. I Δ n: 0,03-0,1-0,3-0,5-1-3-10A - adjst. delay: 0-0,1-0,3-0,4-0,5-1-3 s	6VA	1 C/O	HR525
Adjst. I Δ n: 0,03-0,1-0,3-0,5-1-3-10-30A - instant/sel/adj. delay: 0-0,1-0,3-0,4-0,5-1-3 s	6VA	1 C/O	HR534



HR700

Circular Torroids

Description	Cat ref.
Internal Ø 30 mm	HR700
Internal Ø35 mm	HR741
Internal Ø70 mm	HR742
Internal Ø105 mm	HR743
Internal Ø140 mm	HR744
Internal Ø210 mm	HR745



HR822

Open Rectangular Torroids

Description	Cat ref.
80 x 80 mm	HR822
80 x 120 mm	HR823
80 x 160 mm	HR824



HR831

Rectangular Torroids

Description	Cat ref.
75 x 175 mm	HR830
115 x 305 mm	HR831
150 x 350 mm	HR832

Moulded Case Circuit Breakers x160
Characteristics

Thermal magnetic trip unit, 2 versions:

- Z and L versions: fixed thermal and fixed magnetic
- H version: adjustable thermal and fixed magnetic
- 1P, 3P and 4P
- Mechanical test button, lockable settings, integrated padlocking handle Ø 4mm, 3 & 4 pole devices complete with DIN clip.
- Connection capacity 95 mm² rigid cables, 70 mm² flexible cables, collar terminals. Complies with IEC 60 947-2.
- Trip-free switches. Allows tripping at distance using a voltmetrical trip unit (optional) AC 22/23A. Complies with IEC 60 947-3.



HDA125L

Commercial Distribution

MCBs x160 18kA

Description	In	1 Pole Cat ref.	3 Pole Cat ref.	4 Pole Cat ref.
Breaking capacity Ics : 18 kA (400/415 V AC) fixed thermal 1 x In, fixed magnetic >10 x In	16A	HDA014Z	HDA016L	HDA017L
	20A	HDA018Z	HDA020L	HDA021L
	25A	HDA023Z	HDA025L	HDA026L
	32A	HDA030Z	HDA032L	HDA033L
	40A	HDA038Z	HDA040L	HDA041L
	50A	HDA048Z	HDA050L	HDA051L
	63A	HDA061Z	HDA063L	HDA064L
	80A	HDA078Z	HDA080L	HDA081L
	100A	HDA098Z	HDA100L	HDA101L
	125A	HDA123Z	HDA125L	HDA126L
	160A		HDA160L	HDA161L

MCBs x160 25kA

Description	In	1 Pole Cat ref.	3 Pole Cat ref.	4 Pole Cat ref.
Breaking capacity Ics : 25 kA (400/415 V AC) fixed thermal 1x In, fixed magnetic > 10 x In	16A	HHA014Z	-	
	20A	HHA018Z		
	25A	HHA023Z		
	32A	HHA030Z		
	40A	HHA038Z		
	50A	HHA048Z		
	63A	HHA061Z		
	80A	HHA078Z		
	100A	HHA098Z		
	125A	HHA123Z		
Adjustable thermal 0,63 - 0,8 - 1 x In, fixed magnetic > 10 x In	25A		HHA025H	HHA026H
	40A		HHA040H	HHA041H
	63A		HHA063H	HHA064H
	80A		HHA080H	HHA081H
	100A		HHA100H	HHA101H
	125A		HHA125H	HHA126H
	160A		HHA160H	HHA161H



HNA125H

Moulded Case Circuit Breakers x160

Characteristics

- Add-on blocks for x160 devices. These devices are intended to be fixed on the right-hand side of the devices.
- Type A and HI. For fault component pulsating current.
- HI (High Immunity): the products with "reinforced immunity" reduce the unexpected tripping when they protect equipment generating disturbances (micro-processing, electronic ballast...)
- Fixed version: 300 mA sensitivity and instantaneous tripping.
- Adjustable version: adjustable sensitivity and tripping.
- Test button for differential functioning check.
- Mechanical test button.
- LED or at distance signal for tripping or advance warning (25-50% I_{Δn}).
- Assembly and disassembly facilitated by the drawer assembly system. The terminal cover is dependent of the add-on block.
- Connection capacity: 95 mm² rigid cables, 70 mm² flexible cables.
- Complies with IEC 60 947-2 annexe B.

MCBs x160 40kA

Description	In	3 Pole Cat ref.	4 Pole Cat ref.
Breaking capacity Ics : 20 kA (400/415 V AC) adjustable thermal 0,63 - 0,8 - 1 x I _n , fixed magnetic > 10 x I _n	25A	HNA025H	HNA026H
	40A	HNA040H	HNA041H
	63A	HNA063H	HNA064H
	80A	HNA080H	HNA081H
	100A	HNA100H	HNA101H
	125A	HNA125H	HNA126H
	160A	HNA160H	HNA161H

Trip-free Switches x 160

Description	In	3 Pole Cat ref.	4 Pole Cat ref.
Trip-free switches x160 suitable for AC22A / AC 23A U _e : 415 V AC, I _{cw} (1s): 2 kA	125A	HCA125H	HCA126H
	160A	HCA160H	HCA161H

Add On Blocks

Characteristics

- I_{Δn} 300 mA fixed sensitivity, instantaneous tripping
- sensitivity I_{Δn}, adjustable: 0,03 - 0,1 - 0,3 - 1 - 3 - 6A
- adjustable tripping: instantaneous, time delay 0,06 - 0,15 - 0,3, timer delay 0,5 - 1s



HBA161H

Description	In	3 Pole Cat ref.	4 Pole Cat ref.
Add On Block	125A	HBA127H	HBA128H
Add On Block	125A	HBA125H	HBA126H
Add On Block	160A	HBA160H	HBA161H

Accessories for x160 Devices

Indication contacts

- 1 changeover switch (ON/OFF): indicates the position of the MCCB as "open" or "closed".
- 1 changeover alarm contact: indicates MCCB tripping.

Coil connection

- Connection capacity: 0,75 mm² flexible or rigid cables
- Optional connection cables.
- The cable capacity of the terminals is 0,5 to 1,25 mm².

Shunt trip

- Remote tripping of MCCBs or trip-free switches.
- Operating voltage: 0,7 to 1,1 x U_n

Under voltage release

- Allows tripping of MCCBs or trip-free switches when voltage level drops between 35 & 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 any additional screw.
- Extended rotary handle, IP 55, supplied complete with shaft and handle.



HXA021H

HXA024H

Commercial
Distribution

Auxiliary Contacts AX AL

Description	Cat ref.
1 changeover contact (ON/OFF), 250 V AC / 3A, 125 V DC / 0,4A, 1 NO + 1 NC	HXA021H
1 changeover alarm contact, 250 V AC / 3A, 125 V DC / 0,4A, 1 NO + 1 NC	HXA024H
Low level contact (ON/OFF), 125 V AC, 1 NO + 1 NC	HXA025H
Low level alarm contact, 125 V AC, 1 NO + 1 NC	HXA026H

Shunt Trips SH

Description	Cat ref.
24 V DC	HXA001H
48 V DC	HXA002H
100 - 120 V AC	HXA003H
200 - 240 V AC	HXA004H
380 - 450 V AC	HXA005H

Undervoltage Releases UV

Description	Cat ref.
24 V DC	HXA011H
100 - 120 V AC	HXA013H
200 - 240 V AC	HXA014H
380 - 450 V AC	HXA015H



HXA014H

Delayed Undervoltage Releases DUVR

Description	Cat ref.
24 V DC	HXA051H
110 - 120 V AC	HXA053H
220 - 240 V AC	HXA054H
380 - 415 V AC	HXA055H

Rotary Handles

Description	Cat ref.
Locking Device to Mount on MCCB for Handle Locking for 3 Padlock Max ø 8mm	HXA030H
Extended Rotary Handle, Padlockable Handle max Ø 8 mm	HXA031H



HXA030H

Padlock

Description	3P Cat ref.	4P Cat ref.
Padlock to Mount on MCCB for Handle Locking for 3 Padlock max Ø 8 mm	HXA039H	HXA039H



HYA015H

Collar Terminals, Connections & Barriers

Description	3P Cat ref.	4P Cat ref.
Collar Terminals for Aluminium/Copper Conductor up to 70 / 95 mm ²	HYA005H	HYA006H
Extended Connections, Set of 4 Straight Connections	HYA013H	HYA013H
Extended Connections, Set of 3 or 4 Spreader Connections	HYA014H	HYA015H
Interphase Barriers, set of 3, Height: 50 mm	HYA019H	HYA019H
Interphase Barriers, set of 3, Height: 97 mm	HYB019H	HYB019H



HYA021H

Terminal Covers

Description	3P Cat ref.	4P Cat ref.
Terminal Covers for Extended Straight Connections	HYA021H	HYA022H
Terminal Covers for Extended Spreader Connections	HYA023H	HYA024H
Terminal Covers for Collar Terminal	HYA027H	HYA028H



HYA033H

Din Rail Adaptor

Description	3P Cat ref.	4P Cat ref.
Din Rail Adaptor	HYA033H	HYA033H

Connecting Kit

Description	3P Cat ref.	4P Cat ref.
Connecting Kit, 0,75 mm ² , Set of 3 x 2 Wires, Length: 1,30m	HYA035H	HYA035H

Din Rail Raiser

Description	3P Cat ref.	4P Cat ref.
Din Rail Raiser	HYA036H	HYA036H

Ring Lugs

Description	Cat ref.
Compact Lugs 16mm ² Ø8,5	HYA086H
Compact Lugs 25mm ² Ø8,5	HYA087H
Compact Lugs 35mm ² Ø8,5	HYA088H
Compact Lugs 50mm ² Ø8,5	HYA089H
Compact Lugs 70mm ² Ø8,5	HYA090H
Compact Lugs 95mm ² Ø8,5	HYA091H

Moulded Case Circuit Breakers x250, 3P & 4P

Characteristics

- H version: adjustable thermal and magnetic.
- Mechanical test button, lockable settings, integrated padlocking handle Ø 4mm.
- Complies with IEC 60 947-2.

Connection

- Directly on copper cable terminal, with end lug max. width: 25 mm
- Connection capacity: 185 mm² rigid cables.
- Complies with IEC 60 947-2.
- Collar terminals

Trip-free switches

- Allows tripping at distance using a voltmeterical trip unit (optional)
- Complies with IEC 60 947-3, AC 22/23A

Add-on blocks for x250 devices

- These devices are intended to be fixed at the bottom of the devices.
- Type A and HI for fault component dc pulsating current and the products with "reinforced immunity".
- Adjustable sensitivity and tripping.
- Test button for differential functioning check.
- Mechanical test button LED or at distance signal for tripping or advance warning (25 - 50% I_{Δn}).
- Complies with IEC 60 947-2 annexe B



HNB100H

Commercial Distribution

MCCBs x250 40kA

Description	In	3 Pole Cat ref.	4 Pole Cat ref.
Breaking capacity I _{cu} : 40 kA (400/415 V AC) I _{cs} : 20 kA adjustable thermal 0,63 - 0,8 - 1x I _n , adjustable magnetic 6 - 8 - 10 - 13 x I _n (100 - 200A) 5 - 7 - 9 - 11 x I _n (250A)	100A	HNB100H	HNB101H
	125A	HNB125H	HNB126H
	160A	HNB160H	HNB161H
	200A	HNB200H	HNB201H
	250A	HNB250H	HNB251H

Trip-free Switches x250

Description	In	3P Cat ref.	4P Cat ref.
Capacity suitable for AC 22/23A, I _{cw} (1s): 3 kA	250A	HCB250H	HCB251H

Add-on Blocks

Description	In	4P Cat ref.
Adjustable sensitivity I _{Δn} : 0,03 - 0,1 - 0,3 - 1 - 3 - 6A	160A	HBB161H
adjustable tripping: instantaneous, time delay: 0,06 - 0,15 - 0,3 - 0,5 - 1 sec	250A	HBB251H



HBB251H



HXA021H HXA024H

Accessories for MCCBs & Trip-free Switches x250

Indication Contacts

- 1 changeover switch (ON/OFF): indicates the position of the MCCB as "open" or "closed".
- 1 changeover alarm contact: indicates MCCB tripping.

Coil Connection

- Connection capacity: 0,75 mm² flexible or rigid cables
- Optional connection cables.
- The cable capacity of the terminals is 0,5 to 1,25 mm².

Shunt Trip

- Remote tripping of MCCBs or trip-free switches.
- Operating voltage: 0,7 to 1,1 x Un

Under Voltage Release

- Allows the tripping of MCCBs or trip-free switches when voltage level drop between 35 and 70% of Un.
- Pick up voltage 0,85 x Un.
- Direct rotary handle: padlockable, equipped with front cover and handle, fixing without any additional screw.
- Extended rotary handle: IP 55, supplied complete with shaft and handle.

Auxiliary Contacts AX, AL

Description	Cat ref.
1 changeover contact 250 V AC / 3A, 125 V DC / 0.4A, 1 NO + 1 NC,	HXA021H
1 changeover alarm contact 250 V AC / 3A, 125 V DC / 0.4A, 1 NO + 1 NC	HXA024H
Low level contact (ON/OFF) 125 V AC, 1 NO + 1 NC	HXA025H
Low level alarm contact 125 V AC, 1 NO + 1 NC	HXA026H

Shunt Trips SH

Description	Cat ref.
24 V DC	HXA001H
48 V DC	HXA002H
100 - 120 V AC	HXA003H
200 - 240 V AC	HXA004H
380 - 450 V AC	HXA005H



HXA014H

Undervoltage Releases UV

Description	Cat ref.
24 V DC	HXA011H
100 - 120 V AC	HXA013H
200 - 240 V AC	HXA014H
380 - 450 V AC	HXA015H

Delayed Undervoltage Releases DUVR

Description	Cat ref.
24 V DC	HXA051H
110 - 120 V AC	HXA053H
220 - 240 V AC	HXA054H
380 - 415 V AC	HXA055H

Rotary Handles

Description	Cat ref.
Direct Rotary Handles Padlockable Handle max Ø 6 mm	HXA030H
Extended Rotary Handle, Padlockable Handle max Ø 8 mm	HXA031H

Padlock

Description	Cat ref.
Padlock to Mount on MCCB for Handle Locking for 3 Padlock max Ø 8 mm	HXA039H

Motor Operators

Description	Cat ref.
24 V DC	HXB040H
230 - 240V AC	HXB042H



HXB042H

Commercial Distribution

Electrical Interlock

Description	Cat ref.
For motor type A (between 2 x 250A)	HXB068H
For motor type B (between 250A and other sizes)	HXB069H

Interlocking Kit, Unit, Cable

Description	Cat ref.
Wire type set of 2 pieces and cable	HXB065H
Interlocking unit, wire type	HXB066H
Interlocking mechanical cable 1 m	HXB070H
Interlocking mechanical cable 1.5 m	HXB071H

Collar Terminals, Connections & Barriers

Description	3P Cat ref.	4P Cat ref.
Collar terminals for aluminium / copper conductors 150 mm ² rigid cables, 120 mm ² flexible cables	HYB001H	HYB002H
Collar terminals 240 mm ² , aluminium / copper conductors	HYB005H	HYB006H
Extended connections, set of 4 pieces for straight connections	HYB010H	HYB010H
Extended connections, spreader connections	HYB011H	HYB012H
Rear connections, set of 3 or 4 pieces	HYB031H	HYB032H
Connecting kit, 0,75 mm ² , set of 3 x 2 wires length: 1.30m	HYA035H	HYA035H
Interphase barriers, set of 3, height: 97mm	HYB019H	HYB019H



HYB002H

Terminal Covers

Description	3P Cat ref.	4P Cat ref.
Terminal Covers for Extended Straight Connections	HYB021H	HYB022H
Terminal Covers for Extended Spreader Connections	HYB023H	HYB024H
Terminal Covers for rear connections	HYB025H	HYB026H
Terminal Covers for Collar Terminal	HYB027H	HYB028H



HYB024H

Ring Lugs

Description	Cat ref.
Compact Lugs 35mm ² Ø8.5	HYA088H
Compact Lugs 50mm ² Ø8.5	HYA089H
Compact Lugs 70mm ² Ø8.5	HYA090H
Compact Lugs 95mm ² Ø8.5	HYA091H
Compact Lugs 120mm ² Ø8.5	HYB092H
Compact Lugs 150mm ² Ø8.5	HYB094H

Moulded Case Circuit Breakers h250

Electronic Trip Unit LSI:

- Long delay (thermal equivalent) adjustable: $I_r = 0.4$ to $1 \times I_n$
- Short delay (magnetic equivalent) adjustable: 2.5 to $10 \times I_r$
- Time delay: $0,1 - 0,2$ s
- 3P & 4P
- Mechanical test button, sealable settings.

Connection:

- Directly on copper cable terminal, with end lug max. width: 25 mm
- Complies with IEC 60 947-2.

MCCBs h250 50kA LSI

Description	I_n	3P Cat ref.	4P Cat ref.
Breaking capacity I_{cu} : 50 kA (400/415 V AC) I_{cs} : 25 kA adjustable thermal $I_r = 0,4$ to $1 \times I_n$, adjustable magnetic 2.5 to $10 \times I_r$ 3P, 3 trip units & 4P, 3 trip units	40A	HNC040H	HNC041H
	125A	HNC125H	HNC126H
	250A	HNC250H	HNC251H

MCCBs h250 70kA LSI

Description	I_n	3P Cat ref.	4P Cat ref.
breaking capacity I_{cu} : 70 kA (400/415 V AC) I_{cs} : 70 kA adjustable thermal $I_r = 0,4$ to $1 \times I_n$, adjustable magnetic 2.5 to $10 \times I_r$ 3P, 3 trip units & 4P, 3 trip units	40A	HEC040H	HEC041H
	125A	HEC125H	HEC126H
	250A	HEC250H	HEC251H



HEC250H

Accessories for MCCBs h250

Indication Contacts

- 1 changeover switch (ON/OFF): indicates the position of the MCCB as "open" or "closed".
- 1 changeover alarm contact: indicates MCCB tripping.

Coil Connection

- Connection capacity: 0,75 mm² flexible or rigid cables
- Optional connection cables.
- The cable capacity of the terminals is 0,5 to 1,25 mm².

Shunt Trip

- Remote tripping of MCCBs or trip-free switches.
- Operating voltage: 0,7 to 1,1 x Un

Under Voltage Release

- Allows the tripping of MCCBs or trip-free switches when voltage level drop between 35 and 70% of Un.
- Pick up voltage 0,85 x Un

Direct Rotary Handle

- Padlockable
- Equipped with front cover and handle
- Fixing without any additional screw.

Extended Rotary Handle

- IP 55
- Supplied complete with shaft and handle.



HXC021H HXC024H

Commercial Distribution

Auxiliary Contacts AX AL

Description	Cat. ref.
1 changeover contact 250 V AC / 3A, 125 V DC / 0.4A, 1 NO + 1 NC	HXC021H
1 changeover alarm contact 250 V AC / 3A, 125 V DC / 0.4A, 1 NO + 1 NC	HXC024H
Low level contact (ON/OFF) 125 V AC, 1 NO + 1 NC	HXA025H
Low level alarm contact 125 V AC, 1 NO + 1 NC	HXA026H

Shunt Trips SH

Description	Cat. ref.
24 V DC	HXC001H
48 V DC	HXC002H
110 V DC	HXC008H
100 - 120 V AC	HXC003H
200 - 240 V AC	HXC004H
380 - 450 V AC	HXC005H



HXC004H

Undervoltage Releases UV

Description	Cat. ref.
24 V DC	HXC011H
100 - 120 V DC	HXC018H
200 - 240 V DC	HXC019H
100 - 120 V AC	HXC013H
200 - 240 V AC	HXC014H
380 - 450 V AC	HXC015H



HXC014H

Delayed Undervoltage Releases DUVR

Description	Cat. ref.
24 V DC	HXC051H
110 - 120 V AC	HXC053H
200 - 240 V AC	HXC054H
380 - 415 V AC	HXC055H

Rotary Handles

Description	Cat. ref.
Direct rotary handles, padlockable handle Ø 5 - 8 mm ² max	HXC030H
Extended rotary handles, padlockable handle Ø 5 - 8 mm ² max	HXC053H



HXC039H

Padlock

Description	Cat ref.
Padlock to mount on MCCBs for handle locking for 3 padlocks max Ø 5 mm	HXC039H

Motor Operators

Description	Cat ref.
24 V DC	HXC040H
230-240 V AC	HXC042H

Interlocking Kit, Unit, Cable

Description	Cat ref.
Interlocking kit wire type set of 2 pieces and cable	HXC065H
Interlocking unit wire type	HXC066H
Interlocking mechanical cable 1 m	HXB070H
Interlocking mechanical cable 1.5 m	HXB071H

Electrical Interlocks

Description	Cat ref.
for motor type A (between 2 250A)	HXB068H
for motor type B (between 250A and other size)	HXB069H



HYC011H

Collar Terminals, Connections & Barriers

Description	3P Cat ref.	4P Cat ref.
Collar terminals set of 3 or 4 pieces for copper conductors 120 mm ²	HYC003H	HYC004H
Extended connections, spreader connections	HYC011H	HYB012H
Extended connections, straight connections	HYC010H	HYC010H
Interphase barriers for LSI and TM+	HYC019H	HYC019H
Interphase barriers for TM only	HYB019H	HYB019H
Rear connections for LSI only	HYC031H	HYC032H
Connecting kit 0,75 mm ² set of 3 x 2 wires, length: 1.30m	HYA035H	HYA035H



HYC022H

Terminal Covers

Description	3P Cat ref.	4P Cat ref.
Terminal Covers for extended straight connections (LSI and TM+)	HYC021H	HYC022H
Terminal Covers for extended straight connections (TM only)	HYG021H	HYG022H
Terminal Covers for rear connections (LSI only)	HYC025H	HYC026H
Terminal Covers for collar terminals	HYC027H	HYC028H

OCR Sealing Covers

Description	3P Cat ref.	4P Cat ref.
OCR Sealing Covers for LSI only	HYC041H	HYC041H
OCR Sealing Covers for TM only	HYG041H	HYG041H

Moulded Case Circuit Breakers h400, h630

Electronic trip unit LSI:

- long delay (thermal equivalent)
- adjustable: $I_r = 0.4$ to $1 \times I_n$
- short delay (magnetic equivalent) adjustable: 2.5 to $10 \times I_r$ (400A), 2.5 to $8 \times I_r$ (630A)
- time delay: $0,1 - 0,2$ s, 3P & 4P (adjustable neutral $0 - 50\% - 100\%$).
- Mechanical test button, lockable settings

Connection:

- Directly on copper cable terminal, with end lug max. width: 30 mm
- Complies with IEC 60 947-2.

Trip-free switches

- Allows remote tripping using a voltmeterical trip unit (optional)
- Complies with IEC 60 947-3. AC 23A / DC 22A.

Add-on blocks

- For h630 (LSI) devices
- These devices are intended to be fixed at the bottom of the devices.
- Fixed version: 300mA sensitivity and instantaneous tripping
- Adjustable version: sensitivity from 30mA to 6A, tripping from instantaneous to 1s delay.
- Test button for differential functioning check.
- Mechanical test button.
- LED or remote signal for tripping or advance warning (25-50% $I_{\Delta n}$).
- Type A (for fault component DC pulsating current) and HI (reinforced immunity against unexpected tripping).
- Complies with IEC 60 947-2.



HND630H

Commercial Distribution

MCCBs h630 50kA LSI

Description	In	3P Cat ref.	4P Cat ref.
Breaking capacity I_{cu} : 50 kA (400/415 V AC) I_{cs} : 50 kA adjustable thermal: $I_r = 0.4$ to $1 \times I_n$, adjustable magnetic: 2.5 to $10 \times I_r$ (250-400A) 2.5 to $8 \times I_r$ (630A), time delay: $0,1 - 0,2$ s	250A	HND250H	HND251H
	400A	HND400H	HND401H
	630A	HND630H	HND631H

MCCBs h630 70kA LSI

Description	In	3P Cat ref.	4P Cat ref.
Breaking capacity I_{cu} : 70 kA (400/415 V AC), I_{cs} : 50 kA adjustable thermal: $I_r = 0.4$ to $1 \times I_n$, adjustable magnetic: 2.5 to $10 \times I_r$ (250-400A) 2.5 to $8 \times I_r$ (630A), time delay: $0,1 - 0,2$ s	250A	HED250H	HED251H
	400A	HED400H	HED401H
	630A	HED630H	HED631H

Trip-free Switches

Description	In	3P Cat ref.	4P Cat ref.
suitable for AC 22A / AC 23A, U_e : 415 V AC, I_{cw} (0,3s) = 5kA	400A	HCD400H	HCD401H
	630A	HCD630H	HCD631H

Add-on Blocks (only for h630)

Description	In	4P Cat ref.
adjustable sensitivity $I_{\Delta n}$: $0,03 - 0,1 - 0,3 - 1 - 3 - 6$ A adjustable tripping, instantaneous time delay: $0,06s - 0,15s - 0,3s - 0,5 - 1$ s	400A	HBD401H
	500A	HBD631H



HBD401H



HXC021H

HXC024H

Accessories for MCCBs & Trip-free Switches h400-h630

Indication Contacts

- 1 changeover switch (ON/OFF): indicates the position of the MCCB as "open" or "closed".
- 1 changeover alarm contact: indicates MCCB tripping.

Coil Connection

- Connection capacity: 0,75 mm² flexible or rigid cables
- Optional connection cables.
- The cable capacity of the terminals is 0,5 to 1,25 mm².

Shunt Trip

- Remote tripping of MCCBs or trip-free switches.
- Operating voltage: 0,7 to 1,1 x Un

Under Voltage Release

- Allows the tripping of MCCBs or trip-free switches when voltage level drop between 35 and 70% of Un.
- Pick up voltage 0,85 x Un.

Direct Rotary Handle

- Padlockable
- Equipped with front cover and handle
- Fixing without any additional screw.

Extended Rotary Handle

- IP 55
- Supplied complete with shaft and handle.

Auxiliary Contacts AX AL

Description	Cat ref.
1 changeover contact 250 V AC / 3A, 125 V DC / 0.4A, 1 NO + 1 NC	HXC021H
1 changeover alarm contact 250 V AC / 3A, 125 V DC / 0.4A, 1 NO + 1 NC	HXC024H
Low level contact (ON/OFF) 125 V AC, 1 NO + 1 NC	HXC025H
Low level alarm contact 125 V AC, 1 NO + 1 NC	HXC026H



HXC004H

Shunt Trips SH

Description	Cat ref.
24 V DC	HXC001H
48 V DC	HXC002H
110 V DC	HXC008H
100 - 120 V AC	HXC003H
200 - 240 V AC	HXC004H
380 - 450 V AC	HXC005H



HXC014H

Undervoltage Releases UV

Description	Cat ref.
24 V DC	HXC011H
100 - 120 V DC	HXC018H
200 - 240 V DC	HXC019H
100 - 120 V AC	HXC013H
200 - 240 V AC	HXC014H
380 - 450 V AC	HXC015H

Delayed Undervoltage Releases DUVR

Description	Cat ref.
24 V DC	HXD051H
100 - 120 V AC	HXD053H
200 - 240 V AC	HXD054H
380 - 450 V AC	HXD055H



HXD030H

Rotary Handles

Description	Cat ref.
Direct rotary handle padlockable handle max Ø 6 mm	HXD030H
Extended rotary handles, padlockable handle max Ø 8 mm	HXD031H

Padlock

Description	Cat ref.
Padlock to mount on MCCBs for handle locking for 3 padlock Ø 5 - 8 mm ² max	HXD039H



HXD039H

Motor Operators

Description	3P Cat ref.	4P Cat ref.
24-48 V DC	HXD040H	HXD040H
100-240 V AC	HXD042H	HXD042H

Interlocking Kit, Unit, Cable

Description	3P Cat ref.	4P Cat ref.
Interlocking kit wire type set of 2 pieces and cable	HXD065H	HXD065H
Interlocking unit wire type	HXD066H	HXD066H
Interlocking mechanical cable 1 m	HXB070H	HXB070H
Interlocking mechanical cable 1.5 m	HXB071H	HXB071H

Electrical Interlocks

Description	3P Cat ref.	4P Cat ref.
For motor type A (between 2 630/1000A)	HXD068H	HXD068H
For motor type B (between 630 and 250A)	HXB069H	HXB069H

Collar Terminals, Connections & Barriers

Description	In	3P Cat ref.	4P Cat ref.
Collar terminals set of 3 or 4 pieces for copper conductors 1x35 - 240mm ²	250 - 400A	HYD003H	HYD004H
Set of 3 or 4 terminals for aluminium/copper conductors 1x35 - 240mm ²	250 - 400-630A	HYD005H	HYD006H
Set of 3 or 4 terminals for multiple aluminium/copper conductors 2x 35 - 240mm ²	250 - 400-630A	HYD007H	HYD008H
Extended connections set of 4 pieces for straight connections	250 - 400A	HYD010H	HYD010H
Extended connections set of 4 pieces for straight connections	630A	HYD013H	HYD013H
Extended connections spreader connections	250 - 400A	HYD011H	HYD012H
Extended connections spreader connections	630A	HYD014H	HYD015H
Interphase barrier set of 4 pieces		HYD019H	HYD019H
Rear connections	250 - 400A	HYD031H	HYD032H
Rear connections	630A	HYD033H	HYD034H
Connecting kit 0,75 mm ² , set of 3 x 2 wires length: 1.30m		HYA035H	HYA035H



HYD003H

Terminal Covers

Description	3P Cat ref.	4P Cat ref.
Terminal Covers for extended straight connections	HYD021H	HYD022H
Terminal Covers for extended straight connections	HYD023H	HYD024H
Terminal Covers for rear connections	HYD025H	HYD026H
Terminal Covers for collar terminals	HYD027H	HYD028H



HYD022H

Ring Lugs

Description	Cat ref.
Compact Lugs 120 mm ² Ø10	HYD093H
Compact Lugs 150 mm ² Ø10.5	HYD095H
Compact Lugs 185 mm ² Ø10.5	HYD096H
Compact Lugs 185 mm ² Ø12.8, suitable with spreader	HYD097H
Compact Lugs 240 mm ² Ø12.8 suitable with spreader	HYD098H



HNE970H

Moulded Case Circuit Breakers h1000

Electronic Trip Unit LSI

- Long delay (thermal equivalent)
- adjustable: $I_r = 0,4$ to $1 \times I_n$
- short delay (magnetic equivalent) adjustable: $2,5$ to $10 \times I_r$ (630-800A) and $2,5$ to $8 \times I_r$ (1000A)
- time delay: 0,1-0,2 s

Connection

- Directly on copper cable terminal, with end lug max. width: 30 mm
- Complies with IEC 60 947-2.
- 3P & 4P (adjustable neutral 0 - 50% - 100%).
- Mechanical test button, lockable settings.

Connection

- Directly on copper cable terminal, with end lug max. width: 50 mm
- Complies with IEC 60 947-2.

Trip-free Switches

- Allows tripping at distance using a voltmeterical trip unit (optional)
- Complies with IEC 60 947-3. AC 23A / DC 22A

MCCBs h1000 50kA LSI

Description	In	3P Cat ref.	4P Cat ref.
Breaking capacity I_{cu} : 50 kA (400/415 V AC), I_{cs} : 50 kA adjustable thermal $I_r = 0,4$ to $1 \times I_n$ adjustable magnetic $2,5$ to $10 \times I_r$ (630 - 800A), $2,5$ to $8 \times I_r$ (1000A) time delay: 0,1-0,2 s, neutral setting from 0-50 to 100%	800A	HNE800H	HNE801H
	1000A	HNE970H	HNE971H

MCCBs h1000 70kA LSI

Description	In	3P Cat ref.	4P Cat ref.
Breaking capacity I_{cu} : 70 kA (400/415 V AC) I_{cs} : 50 kA adjustable thermal $I_r = 0,4$ to $1 \times I_n$ adjustable magnetic $2,5$ to $10 \times I_r$ (800A), $2,5$ to $8 \times I_r$ (1000A) time delay: 0,1-0,2 s, neutral setting from 0-50 to 100%	800A	HEE800H	HEE801H
	1000A	HEE970H	HEE971H

Trip-free Switches

Description	In	3P Cat ref.	4P Cat ref.
Suitable for AC 22A / AC 23A, U_e : 415 V AC, I_{cw} (0,3 s) = 10 kA	800A	HCE800H	HCE801H
	1000A	HCE970H	HCE971H

Accessories for MCCBs & Trip-free Switches h1000

Indication Contacts

- 1 changeover switch (ON/OFF): indicates the position of the MCCB as "open" or "closed".
- 1 changeover alarm contact: indicates MCCB tripping.

Coil connection

- Connection capacity: 0,75 mm² flexible or rigid cables
- Optional connection cables.
- The cable capacity of the terminals is 0,5 to 1,25 mm².

Shunt trip

- Remote tripping of MCCBs or trip-free switches.
- Operating voltage: 0.7 to 1.1 x Un

Under voltage release

- Allows the tripping of MCCBs or trip-free switches when voltage level drop between 35 and 70% of Un.
- Pick up voltage 0.85 x Un.



HXC021H HXC024H

Commercial Distribution

Auxiliary Contacts AX AL

Description	Cat ref.
1 changeover contact 250 V AC / 3A, 125 V DC / 0.4A, 1 NO + 1 NC	HXC021H
1 changeover alarm contact 250 V AC / 3A, 125 V DC / 0.4A, 1 NO + 1 NC	HXC024H
Low level contact (ON/OFF) 125 V AC, 1 NO + 1 NC	HXC025H
Low level alarm contact 125 V AC, 1 NO + 1 NC	HXC026H

Shunt Trips SH

Description	Cat ref.
24 V DC	HXC001H
48 V DC	HXC002H
110 V DC	HXC008H
100 - 120 V AC	HXC003H
200 - 240 V AC	HXC004H
380 - 450 V AC	HXC005H



HXC004H

Undervoltage Releases UV

Description	Cat ref.
24 V DC	HXE011H
100 - 120 V DC	HXE018H
200 - 240 V DC	HXE019H
110 - 120 V AC	HXE013H
220 - 240 V AC	HXE014H
380 - 415 V AC	HXE015H



HXE014H

Delayed Undervoltage Releases DUVR

Description	Cat ref.
24 V DC	HXE051H
110 - 120 V AC	HXE053H
220 - 240 V AC	HXE054H
380 - 415 V AC	HXE055H

Rotary Handles

Description	Cat ref.
Direct rotary handle padlockable handle	HXE030H
Extended rotary handles, padlockable handle	HXE031H



HXE030H



HXD039H

Padlock

Description	Cat ref.
Padlock to mount on MCCBs for handle locking for 3 padlock max Ø 8mm	HXD039H

Motor Operators

Description	Cat ref.
24-48 V DC	HXE040H
100-240 V AC	HXE042H

Interlocking Kit, Unit, Cable

Description	Cat ref.
Interlocking kit wire type set of 2 pieces and cable	HXE065H
Interlocking unit wire type	HXE066H
Interlocking mechanical cable 1 m	HXB070H
Interlocking mechanical cable 1.5 m	HXB071H

Electrical Interlocks

Description	3P Cat ref.	4P Cat ref.
For motor type A (between 2 630/1000A)	HXD068H	HXD068H
For motor type B (between 630 and 250A)	HXB069H	HXB069H



HYE031H

Collar Terminals, Connections & Barriers

Description	In	3P Cat ref.	4P Cat ref.
Collar terminals for aluminium / copper conductors 4x35 - 240mm ²	630 - 800A	HYE007H	HYE008H
Interphase barrier set of 4 pieces		HYD019H	HYD019H
Rear connections	630 - 480A	HYE031H	HYE032H
Rear connections	1000A	HYE033H	HYE034H
Connecting kit 0,75 mm ² , set of 3 x 2 wires length: 1.30m		HYA035H	HYA035H

Moulded Case Circuit Breakers h1600

Selection and Protection

- Electronic trip unit LSI
- Long delay (thermal equivalent) adjustable: $I_r = 0,4$ to $1 \times I_n$
- Short delay (magnetic equivalent) adjustable: $2,5$ to $10 \times I_r$
- Time delay: $0,1-0,2$ s, 3 pole, 3 trip units, 4 pole, 4 trip units, adjustable neutral $0 - 50\% - 100\%$
- Mechanical test button, lockable settings.

Connection

- Directly on copper cable terminal, with end lug max. width: 60 mm
- Complies with IEC 60 947-2.

Trip-free Switches

- Allows tripping at distance using a voltmeterical trip unit (optional)
- Complies with IEC 60 947-3. AC 23A / DC 22A.



HNF990H

Commercial Distribution

MCCBs h1600 50kA LSI

Description	In	3P Cat ref.	4P Cat ref.
Breaking capacity I_{cu} : 50 kA (400/415 V AC), I_{cs} : 50 kA adjustable thermal $I_r = 0.4$ to $1 \times I_n$, adjustable magnetic 2.5 to $10 \times I_r$ time delay: $0.1-0.2$ s, neutral setting $0, 50, 100\%$	1250A	HNF980H	HNF981H
	1600A	HNF990H	HNF991H

MCCBs h1600 70kA LSI

Description	In	3P Cat ref.	4P Cat ref.
Breaking capacity I_{cu} : 70 kA (400/415 V AC), I_{cs} : 50 kA adjustable thermal $I_r = 0.4$ to $1 \times I_n$, adjustable magnetic 2.5 to $10 \times I_r$ time delay: $0.1-0.2$ s, neutral setting from $0, 50, 100\%$	1250A	HEF980H	HEF981H
	1600A	HEF990H	HEF991H

Trip-free Switches

Description	In	3P Cat ref.	4P Cat ref.
Suitable for AC 22A / AC 23A, U_e : 415 V AC, I_{cw} ($0,3$ s) = 20 kA	1250A	HCF980H	HCF981H
	1600A	HCF990H	HCF991H



HXC021H HXC024H

Accessories for MCCBs & Trip-free Switches h1600

Indication Contacts

- 1 changeover switch (ON/OFF): indicates the position of the MCCB as "open" or "closed".
- 1 changeover alarm contact: indicates MCCB tripping.

Coil connection

- Connection capacity: 0,75 mm² flexible or rigid cables
- Optional connection cables.
- The cable capacity of the terminals is 0,5 to 1,25 mm².

Shunt trip

- Remote tripping of MCCBs or trip-free switches.
- Operating voltage: 0,7 to 1,1 x Un

Under voltage release

- Allows the tripping of MCCBs or trip-free switches when voltage level drop between 35 and 70% of Un.
- Pick up voltage 0,85 x Un

Direct rotary handle

- Padlockable
- Equipped with front cover and handle
- Fixing without any additional screw.

Extended rotary handle

- IP 55
- Supplied complete with shaft and handle.

Rear connection: included

Auxiliary Contacts AX AL

Description	Cat ref.
1 changeover contact 250 V AC / 3A, 125 V DC / 0.4A, 1 NO + 1 NC	HXC021H
1 changeover alarm contact 250 V AC / 3A, 125 V DC / 0.4A, 1 NO + 1 NC	HXC024H
Low level contact (ON/OFF) 125 V AC, 1 NO + 1 NC	HXC025H
Low level alarm contact 125 V AC, 1 NO + 1 NC	HXC026H



HXF004H

Shunt Trips SH

Description	Cat ref.
24 V DC	HXF001H
48 V DC	HXF002H
110 V DC	HXF008H
100 - 120 V AC	HXF003H
200 - 240 V AC	HXF004H
380 - 450 V AC	HXF005H



HXE014H

Undervoltage Releases UV

Description	Cat ref.
24 V DC	HXE011H
100 - 120 V DC	HXE018H
200 - 240 V DC	HXE019H
110 - 120 V AC	HXE013H
220 - 240 V AC	HXE014H
380 - 415 V AC	HXE015H

Delayed Undervoltage Releases DUVR

Description	Cat ref.
24 V DC	HXF051H
110 - 120 V AC	HXF053H
220 - 240 V AC	HXF054H
380 - 415 V AC	HXF055H

Rotary Handles

Description	Cat ref.
Direct rotary handle padlockable handle max Ø 8 mm	HXF030H
Extended rotary handles, padlockable handle max Ø 8 mm	HXF031H

Padlock

Description	Cat ref.
Padlock to mount on MCCBs for handle locking for 3 padlock max Ø 8mm	HXF039H

Motor Operators

Description	Cat ref.
24 V DC	HXF040H
200 - 230 V AC	HXF042H

Interphase Barriers

Description	Cat ref.
Interphase barriers, set of 4 pieces	HYD019H

Connection Kit

Description	Cat ref.
Connection kit 0,75 mm ² set of 3 x 2 wires, length: 1.30m	HYA035H



Air Circuit Breakers HWT up to 6300A

- The ACB is delivered factory assembled. Various data can be displayed on LCD:
- Phase current (A) of I1, I2, I3 and their max. peak current
- Line voltage (V) of V12, V23, V31 and their max. peak voltage (or Phase voltage (V) of V1N, V2N, V3N and their peak voltage)
- Demand active power max. (kW)
- Power factor (cos ϕ)
- Electric energy (kWh)
- Frequency (Hz)
- Trip history

The complete data can be displayed via the communication module as well.

The range

- 3 sizes up to 6300A
- 2 width up to 4000A
- 3P and 4P with neutral on the left
- Standard breaking capacity (S) 65, 85 and 120kA and high level capacity (H) 80 and 100kA according to the size
- One single mounting depth for fixed type
- Same cut-out on front panel for all the sizes.

For further information on Air Circuit Breakers please contact customer.service@hager.ie.

		HWT2		HWT3		HWT6	
Series		S	H	S	H	SB	S
In		800/1250/	1250/1600/	2500/3200	1600/2000/	4000	5000/6300
Rated current (A)	1600/2000	2000		2500/3200			
In		800/1250/	1250/1600/	2500/3200	1600/2000/	4000	5000/6300
Neutral pole amperes frame (A)		1600/2000	2000		2500/3200		
Reference		HWT208S/ HWT212S/ HWT216S/ HWT220S	HWT212H/ HWT216H/ HWT220H	HWT325S/ HWT332S	HWT316H/ HWT320H/ HWT325H/ HWT332H	HWT440SB	HWT650S/ HWT663S
Ics = Icu	breaking capacity in case of short-circuit						
(kA, symmetrical peak current value)	690V	50	55	65	85	85	85
	440V	65	80	85	100	100	120
	400/415V	65	80	85	100	100	120
Icm	rated short-circuit breaking current						
(kA, asymmetrical peak current value)	690V	105	121	143	187	187	187
	440V	143	176	187	220	220	264
	400/415V	143	176	187	220	220	264
Icw	rated short time withstand current						
(kA r.m.s)	1 second	65	80	85	100	100	120
	3 seconds	50	55	65	75	85	85
No of operating cycles							
Mechanical life (with maintenance)		30000	30000	20000	20000	15000	10000
Mechanical life (without maintenance)		15000	15000	10000	10000	8000	5000
Electrical life (with maintenance AC 460V)		12000	12000	7000	7000	3000	1000
Electrical life (without maintenance AC 690V)		10000	10000	5000	5000	2500	500
Time							
Max. opening time (sec.)		0,03	0,03	0,03	0,03	0,03	0,03
Max. spring charging time (sec.)	10	10	10	10	10	10	
Max. closing time (sec.)		0,08	0,08	0,08	0,08	0,08	0,08
Dimensions							
Fixed type (mm) width 3P	width 3P	360	466	466	-	-	
	width 4P	445	445	586	586	-	-
	height	460	460	460	460	-	-
	depth	290	290	290	290	-	-
Draw-out type (mm)	width 3P	354	354	460	460	460	799
	width 4P	439	439	580	580	580	1034
	height	460	460	460	460	460	460
	depth	345	345	345	345	345	380

The following values are the same for all the sizes :
 Rated operational voltage Ue (50/60Hz) - 690V
 AC rated insulation voltage Ui (50/60Hz) - 1000V
 Rated impulse withstand voltage Uimp - 12 kV
 Standards : CEI 60947-2, EN 60947-2

Load Break Switches with Visual Breaking 20 to 125A

Characteristics

- Load break switches with visual breaking, 20 to 125A
- Modular design,
- To mount directly on DIN rail,
- Lockable in OFF position.
- Complies with NF EN 60 947-3.

Connection

- With collar terminals copper conductors compatible.

Connection Capacity

- HAB 20 to 63A: 16 mm² flexible or rigid cables
- HAC 60 to 100A: 35 mm² flexible or rigid cables
- HAD 100 and 125A: 70 mm² flexible or rigid cables



HAB406

Commercial
Distribution

Load Break Switches with Visual Breaking

Description	In	3P width in modules	4P width in modules	3P Cat ref.	4P Cat ref.
Disconnecter, modular design, IP20, In=lth, AC23	20A	2,6	3,5	HAB302	HAB402
	32A	2,6	3,5	HAB303	HAB403
	40A	2,6	3,5	HAB304	HAB404
	63A	2,6	3,5	HAB306	HAB406
	63A	3	4,5	HAC306	HAC406
	80A	3	4,5	HAC308	HAC408
	100A	3	4,5	HAC310	HAC410
	100A	4,5	6	HAD310	HAD410
	125A	4,5	6	HAD312	HAD412

External Handles

Description	3P Cat ref.	4P Cat ref.
External handles IP55 lockable with 3 padlocks, for LBS 20 to 100A	HZC010	HZC010
External handles IP55 lockable with 3 padlocks, for LBS 100 to 125A	HZC011	HZC011

Shaft Extensions

Description	3P Cat ref.	4P Cat ref.
Shaft extensions 20 to 125A, 150mm	HZC111	HZC111
Shaft extensions 20 to 125A, 200mm	HZC112	HZC112
Shaft extensions 20 to 125A, 320mm	HZC113	HZC113



HZC113

Terminal Shrouds

Description	3P Cat ref.	4P Cat ref.
Terminal shrouds top and bottom 20 to 63A	HZC211	HZC212
Terminal shrouds top and bottom 63 to 100A	HZC213	HZC214
Terminal shrouds top and bottom 100 to 125A	HZC215	HZC216



HZC212

Auxiliaries Contacts

Description	3P width in modules	4P width in modules	3P Cat ref.	4P Cat ref.
Auxiliaries contacts In = 10A, 1O + 1F	0,5	0,5	HZC311	HZC311
Auxiliaries contacts In = 10A, 2F	0,5	0,5	HZC312	HZC312



HZC311



HAE416

Load Break Switches with Visible Breaking, 100 to 400A

Characteristics

- Modular design, to mount directly on DIN rail for LBS up to 200A
- Lockable in OFF position.
- HA964N and HA966N are with double visible breaking (upstream and downstream). Mounting on plate.
- Complies with NF EN 60 947-3.

Connection

- HAE: with collar terminals copper conductors compatible
- HA308, HA408, HA964N and HA966N on terminal.

Connection capacity

- HAE 100 to 160A: 70 mm² flexible or rigid cables
- HA308, HA408: 95 mm² end lugs,
- HA964N: 150 mm² end lugs,
- HA966N: 240 mm² end lugs.

Load Break Switches with Visual Breaking

Description	In	3P width in modules	4P width in modules	3P Cat ref.	4P Cat ref.
Disconnecter, modular design, IP20	100A	6,5	8	HAE310	HAE410
	125A	6,5	8	HAE312	HAE412
	160A	6,5	8	HAE316	HAE416
	200A	8,5	8,5	HA308	HA408
	250A		11,5	-	HA964N
	400A		19,5	-	HA966N



HZC014

External Handles

Description	3P Cat ref.	4P Cat ref.
External handles IP55 lockable with 3 padlocks, for LBS 100 to 160A	HZC014	HZC014
External handles IP55 lockable with 3 padlocks, for HA308, HA408, HA964N and HA966N	HZC001	HZC001

Shaft Extensions

Description	3P Cat ref.	4P Cat ref.
Shaft extensions 200 mm, for HA308 and HA408	HZC103	HZC103
Shaft extensions 300 mm, for HA308 and HA408	HZC104	HZC104
Shaft extensions for HAE 100 to 160A, 150mm	HZC114	HZC114
Shaft extensions for HAE 100 to 160A, 200mm	HZC115	HZC115
Shaft extensions for HAE 100 to 160A, 320mm	HZC116	HZC116

Terminal Shrouds

Description	3P Cat ref.	4P Cat ref.
Terminal shrouds top and bottom 100 to 160A	HZC217	HZC218
Terminal shrouds top and bottom for HA408	-	HZ062
Terminal shrouds top and bottom for HA964N	HZ095	HZ095
Terminal shrouds top and bottom for HA966N	HZ096	HZ096

Collar Terminals

Description	3P Cat ref.	4P Cat ref.
Collar terminals for HA308 and HA408 copper, 95mm ²	HZ082	HZ082
Collar terminals for HA964, aluminium/copper, 185mm ²	HZ093	HZ093



HZ022

Auxiliaries Contacts

Description	3P width in modules	4P width in modules	3P Cat ref.	4P Cat ref.
Auxiliaries contacts 1NC + 1NO, for HA308 and HA408	0.5	0.5	HZ022	HZ022

Load Break Switches with Rotary Handle

Characteristics

- Ith (40°): 125 to 1600A, Un 400 / 690V AC
- Insulating voltage Ui: from 160 to 400A: 800V AC, 630A: 1000V AC
- Delivered with: 1 lockable handle, fixing screws and nuts, tightening programming segments
- For main and/or modular breaking, to use in commercial premises.
- 3P and 4P switches with visible breaking, with sudden double breaking, positive action opening, breaking or engagement visualisation, self cleaning silver plated copper contacts.
- Complies with EN 60 947-3.

Connection

- In 160A: 95 mm² max.
- In 250A: 150 mm² max.
- In 400A: 240 mm² max. or 2 x 150 mm² max.

Options

- Extended handle;
- Auxiliary contact.

Note

- Handle and shaft must be ordered separately.
- Fiberglass reinforced polyester case, self extinguishable, resists to creepage distance and arc, tropicalised.



HA358

Commercial
Distribution

Load Break Switches with Rotary Handle

Description	In	3P Cat ref.	4P Cat ref.
switches with visible breaking	125A	HA351	HA451
	160A	HA352	HA452
	200A	HA353	HA453
	250A	HA354	HA454
	400A	HA357	HA457
	630A	HA358	HA458
	800A	HA360	HA460
	1250A	HA362	HA462
	1600A	HA364	HA464

Accessories

Description	In	3P Cat ref.	4P Cat ref.
Auxiliary contacts suitable for HA load break switches	1NO + 1NC, AC1, 5A, 250V 125 -1600A	HZ023	HZ023
Rotary handles for extended shaft	125 - 630A	HZC002	HZC002
Rotary handles for extended shaft	800 - 1600A	HZC003	HZC003
Shaft extensions 200mm	63 - 630A	HZC101	HZC101
Shaft extensions 320mm	160 - 630A	HZC102	HZC102
Shaft extensions 200mm	800 - 1600A	HZC105	HZC105
Shaft extensions 320mm	800 - 1600A	HZC106	HZC106
Terminal shields top and bottom for switches:	HA351, HA352	HZ033	-
	HA451, HA452	-	HZ043
	HA354, HA357	HZ034	-
	HA454, HA457	-	HZ044
	HA358	HZ035	-
	HA458	-	HZ045
	HA360	HZ036	-
	HA460	-	HZ046
	HA362, HA364	HZ037	-
	HA462, HA464	-	HZ047
Terminal shrouds for switches:	HA351, HA352	HZC201	-
	HA451, HA452	-	HZC202
	HA354, HA357	HZC203	-
	HA454, HA457	-	HZC204
	HA358	HZC205	-
	HA458	-	HZC206



HZC101



HFD312

Switch Fuses 3 & 4 Pole

Characteristics

- The HFD Series of Hager isolators are manually operated multipolar fuse combination switches. They break or switch off on load and provide safety isolation with protection against over current for any low voltage electrical circuit.
- Double break by phase (top and bottom of fuse)
- Protection against overcurrent by fuse circuit-breakers with high breaking capacity (100 kA eff.)
- IP2 protection with terminal shrouds
- Compact
- TEST position for testing control circuits without power using U type auxiliary contacts.

Complies with standards

- IEC 6094-3
- IEC 60269-1
- IEC 60269-2
- EN 60947-3
- DIN 43620
- VDE 0636-10
- VDE 0660 Part 107

Note: Handle and shaft must be ordered separately.

Switch Fuses 3 & 4 Pole

Description	In	Fuse sizes	Length mm	Modules 17.5mm	4P Cat ref.
Switch fuses, 3 Pole	63	000	120	min. 24	HFD306
	125	00	120	min. 24	HFD312
	160	000	120	min. 24	HFD316
	250	1	120	min. 72	HFD325
	400	2	120	min. 72	HFD340
Switch fuses, 4 Pole	630	3	120	min. 96	HFD363
	63	000	120	min. 24	HFD406
	125	00	120	min. 24	HFD412
	160	00	120	min. 24	HFD416
	250	1	120	min. 72	HFD425
	400	2	120	min. 72	HFD440
	630	3	120	min. 96	HFD463



HHC101



HHC001



HZF502

Accessories

Description	In	4P Cat ref.
Shaft extension 200mm	63 to 400A	HHC101
Shaft extension 320mm	63 to 400A	HHC102
Shaft extension 200mm	630A	HZF102
Interlocked handle (colour black)	63A	HHC001
	100 to 400A	HHC002
	630A	HZF001
Auxiliary contacts suitable for switches 63 to 630A	NO	HZF301
	NC	HZF302
Set of IP20 terminal shrouds, top or bottom	3 poles In/A: 100 to 160A	HZF202
	4 poles In/A: 100 to 160A	HZF203
	3 poles In/A: 250 to 400A	HZF204
	4 poles In/A: 250 to 400A	HZF205
	3 poles In/A: 630A	HZF206
Neutral link	4 poles In/A: 630A	HZF207
	In/A: 63A	HZF501
	In/A: 125 / 160A	HZF502
	In/A: 250A	HZF503
	In/A: 400A	HZF504
	In/A: 630A	HZF505

Earth Leakage Relays & Torroidal Transformers

Characteristics

- Technical characteristics
- Voltage range : 230V +/- 20%
- Network voltage: 50 to 700 V
- Frequency: 50 / 60 Hz
- Working temperature: 10 to +55°C
- Storage temperature: -25 to +70°C
- Max. cable lenght to torroids: 25m non-twisted cable 0,5 to 1,5mm², 50m twisted cable
- Standards: IEC 60755, IEC 947-2 annex B, IEC 61543 IEC 61008-1

Torroids

- Frequency: 50 / 60 Hz
- Working temperature: 10 to +55°C
- Storage temperature: 25 to +70°C
- IP rating: IP 41



HR525

Commercial
Distribution

Earth Leakage Relays Non Adjustable & Adjustable

Description		Power absorbed	Positive safety contact	Cat ref.
Earth leakage relays non adjustable	fixed I Δ n: 0.03A, instantaneous tripping	3VA		HR500
		3VA		HR502
Earth leakage relays adjustable	adjustable I Δ n: 0,03-0,1-0,3-0,5-1-3-10A adjustable delay:0-0,1-0,3-0,4-0,5-1-3 s	5VA	1 C/O	HR510
		5VA	1 C/O	HR520
	adjustable I Δ n:0,03-0,1-0,3-0,5-1-3-10A adjustable delay: 0-0,1-0,3-0,4-0,5-1-3-5 s	5VA	1 C/O	HR522
		5VA	1 C/O	HR523
	adjustable I Δ n:0,03-0,1-0,3-0,5-1-3-10A adjustable delay: 0-0,1-0,3-0,4-0,5-1-3 s	6VA	1 C/O	HR525
		6VA	1 C/O	HR534

Torroids

Description		Cat ref.
Circular torroids	Internal Ø 30 mm	HR700
	Internal Ø35 mm	HR741
	Internal Ø70 mm	HR742
	Internal Ø105 mm	HR743
	Internal Ø140 mm	HR744
	Internal Ø210 mm	HR745
Open rectangular torroids	80 x 80 mm	HR822
	80 x 120 mm	HR823
	80 x 160 mm	HR824
Rectangular torroids	75 x 175 mm	HR830
	115 x 305 mm	HR831
	150 x 350 mm	HR832



HR700



HR822



HR831



HIM408

Manual & Modular Changeover Switches 20 to 125A

Characteristics

- Allows manual switch, changeover switch or on load power circuit permutation.
- For safety breaking.
- 3P/4P
- Modular design
- Mounting on DIN rail
- Lockable on position: I, O or II.
- Each switch can be equipped with 2 auxiliary contacts blocks max.
- One block is composed of 3 auxiliary contacts (positions I, O and II).
- Complies with EN 60 947-3.
- Connection for copper conductors with collar terminals.

Connection capacity

- HIM402/HIM404: 16 mm² flexible or rigid;
- HIM406/HIM408: 35 mm² flexible or rigid;
- HI405R/HI406R: 50 mm² flexible or rigid.

Changeover Switches

Description	In	3P mod width	4P mod width	3P Cat ref.	4P Cat ref.
Changeover switches with visual breaking, disconnecter modular design, 3 positions: 0-I-II, IP20	20A	5	7	HIM302	HIM402
	40A	5	7	HIM304	HIM404
	63A	6	8	HIM306	HIM406
	80A	6	8	HIM308	HIM408
Changeover switches with visible breaking	100A		12.5		HI405R
	125A		12.5		HI406R



HYZ016



HYZ212



HYZ311

Accessories

Description	4P Cat ref.	4P Cat ref.
External handles, 3 positions: 0-I-II, lockable with 3 padlocks, for HIM 20 to 80A	HYZ016	HYZ016
External handles, 3 positions: 0-I-II, lockable with 3 padlocks, for HI 100 to 125A	HZI004	HZI004
Shaft extensions for HIM 20 to 80A, 150mm	HYZ111	HYZ111
Shaft extensions for HIM 20 to 80A, 200mm	HYZ112	HYZ112
Shaft extensions for HIM 20 to 80A, 300mm	HYZ113	HYZ113
Shaft extensions for HI 100 to 125A, 200mm	HYZ103	HYZ103
Shaft extensions for HI 100 to 125A, 300mm	HYZ104	HYZ104
Terminal shrouds top and bottom (2 pieces), for HIM 20 to 40A	HYZ211	HYZ212
Terminal shrouds top and bottom (2 pieces), for HIM 63 to 80A	HYZ213	HYZ214
Terminal shrouds top and bottom (2 pieces), for HI 100 to 125A	-	HZ062
Auxiliaries contacts (mod. width 0.5) for HIM 20 to 80A, 1NO + 1NC	HYZ311	HYZ311
Auxiliaries contacts (mod. width 0.5) for HIM 20 to 80A, 2NC	HYZ312	HYZ312
Auxiliaries contacts (mod. width 0.5) for HI 100 to 125A, 1NO + 1NC	-	HZ160R
Insulated busbars for HIM 20 to 40A	HYZ706	-
Insulated busbars for HIM 63 to 80A	-	HYZ709
Insulated busbars for HI 100 to 125A	-	HZ156R
Connection terminals for HI 100 to 125A	-	HZ082
Terminal covers and connection terminals for HI 100 to 125A	-	HZ092

Manual & Non-Modular Changeover Switches 125 to 1600A

Characteristics

- Allows manual switch, changeover switch or on load power circuit permutation.
- For safety breaking.
- 4P.
- mounting on perforated plates or crossbars .
- lockable on position: I, O or II.
- HI452, HI454 and HI456 can be mounted in Quadro and Univers distribution boards.
- HI458 is only recommended for Quadro+. For mounting in Quadro or Univers, contact us.
- Complies with EN 60 947-3.
- Connection with terminals.



HI452

Commercial
Distribution

Manual & Non-Modular Changeover Switches 125 to 1600A

Description		In	Cat ref.
Changeover switches, 4P	non-modular design	125A	HI451
		160A	HI452
		250A	HI454
		400A	HI456
		630A	HI458
		800A	HI460
		1250A	HI462
		1600A	HI464

Accessories

Description		Cat ref.
External handle, 3 positions: 0-I-II, locked with 3 padlocks	for HI 125 to 630A	HZI002
	for HI 800 to 1600A	HZI003
Shaft extension	for HI 125 to 630A, 200mm	HZC101
	for HI 125 to 630A, 320mm	HZC102
	for HI 800 to 1600A, 200mm	HZC105
	for HI 800 to 1600A, 320mm	HZC106
Terminal shrouds top and bottom (2 pieces)	for HI 125 to 200A	HZC202
	for HI 200 to 400A	HZC204
	for HI 400 to 630A	HZC206
Auxiliaries contacts	for HI 125 to 1600A, 1NO + 1NC	HZ160
Insulated busbars	for HIM 20 to 40A	HZC707
	for HIM 63 to 80A	HZC709
	for HI 100 to 125A	HZ156R
Terminal shield top and bottom	for HI460	HZ163M
	for HI462 and HI464	HZ164M
	for HI451 and HI452	HZ156
Busbars	for HI454	HZ157
	for HI456	HZ158
	for HI458	HZ159
	for HI460	HZ160M
	for HI462	HZ161M
	for HI464	HZ162M



HZI002



HZC101



HZ160



HZC202



HZ159



HIC416A

Manual & Modular Changeover Switches 20 to 160A

Characteristics

- Allows automated switch, changeover switch or on load power circuit permutation.
- For safety breaking.
- 4P
- lockable on position: O.
- Controller and two built-in supplies.
- Mounting on perforated plate or directly on DIN rail.
- Each product can be equipped with 2 auxiliary contacts blocks max.
- One block is composed of 3 auxiliary contacts (positions I, O and II).
- Complies with EN 60 947-3.
- Connection on copper conductors with collar terminals.
- Connection capacity 70 mm² flexible or rigid.

Motorised Changeover Switches

Description	In	Cat ref.
Motorised Changeover Switches, 4P, modular design, 3 positions: 0-I-II	20A	HIC402A
	40A	HIC404A
	63A	HIC406A
	80A	HIC408A
	100A	HIC410A
	125A	HIC412A
	160A	HIC416A

Accessories

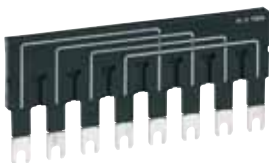


HZI300

Description	Cat ref.
Terminal shrouds top and bottom (2 pieces), for HI 100 to 160A, sealable	HZC218
Auxiliaries contacts for HIC 20 to 160A, 1NO + 1NC	HZI300
Single phase voltage sensing taps for switch control circuit supply, 2 conductors / pole	HZI230
Bridging bars, 2 x 4P, for 63 to 125A	HZI400
Bridging bars, 2 x 4P, for 160A	HZI401
Sealable cover	HZI210



HZI230



HZI401

Motorised & Non-Modular Changeover Switches 125 to 1600A

Characteristics

- Allows automated switch, changeover switch or on load power circuit permutation.
- For safety breaking.
- 4P.
- Lockable on position: O.
- Mounting on plain or perforated plate.
- HIB is only recommended for Quadro+. For mounting in Quadro or Univers, contact us.
- Double power supply HZI811 controls HIB switches.
- HZI812 should be used to supply HZI811 and motorized control of HIB to avoid control circuit breaking.
- Complies with NF EN 60 947-3.
- Connection with terminals.



HIB492

Motorised & Non-Modular Changeover Switches 125 to 1600A

Description	In	W/o autom. transf. relay Cat ref.	With autom. transf. relay Cat ref.	With energy mgmt. Cat ref.	
Motorised changeover switches, 4P	3 positions: 0-I-II	125A	HIB412M	HIC412G	HIC412E
		160A	HIB416M	HIC416G	HIC416E
		200A	HIB420M	HIC420G	HIC420E
		250A	HIB425M	HIC425G	HIC225E
		400A	HIB440M	HIC440G	HIC440E
		630A	HIB463M	HIC463G	HIC463E
		800A	HIB480M	HIC480G	HIC480E
		1000A	HIB490M	HIC490G	HIC490E
		1250A	HIB491M	HIC491G	HIC491E
		1600A	HIB492M	HIC492G	HIC492E
		2000A	HIB493M	HIC493G	HIC493E
		2500A	HIB494M	HIC494G	HIC494E
		3200A	HIB495M	HIC495G	HIC495E

Accessories

Description		W/o autom. transf. relay Cat ref.	With autom. transf. relay Cat ref.
Terminal shrouds top & bottom, 2 pieces	for switches 125 to 200A	HZC202	HZC202
	for switches 250 to 400A	HZC204	HZC204
	for switches 630A	HZC206	HZC206
Terminal covers	for switches 125 to 160A	HZI201	HZI201
	for switches 250 to 400A	HZI202	HZI202
	for switches 630A	HZI203	HZI203
	for switches 800 to 1250A	HZI204	HZI204
	for switches 1600A	HZI205	HZI205
	for switches 2000/2500/3200A	HZI206	HZI206
Busbars	for switches 125, 160, 200A	HZ156	HZ156
	for switches 250A	HZ157	HZ157
	for switches 400A	HZ158	HZ158
	for switches 630A	HZ159	HZ159
	for switches 800 to 1000A	HZ162	HZ162
	for switches 1250A	HZ163	HZ163
	for switches 1600A	HZ164	HZ164
	for switches 2000/2500/3200A	HZ166	HZ166
Automatic transfer relays	controller	HZI811	-
	double power supply	HZI812	-
Remotes	changeover status display	HZI910	HZI910
	changeover status and control display	HZI911	HZI911
	auto/manual selection key	HZI010	HZI010



HZC204



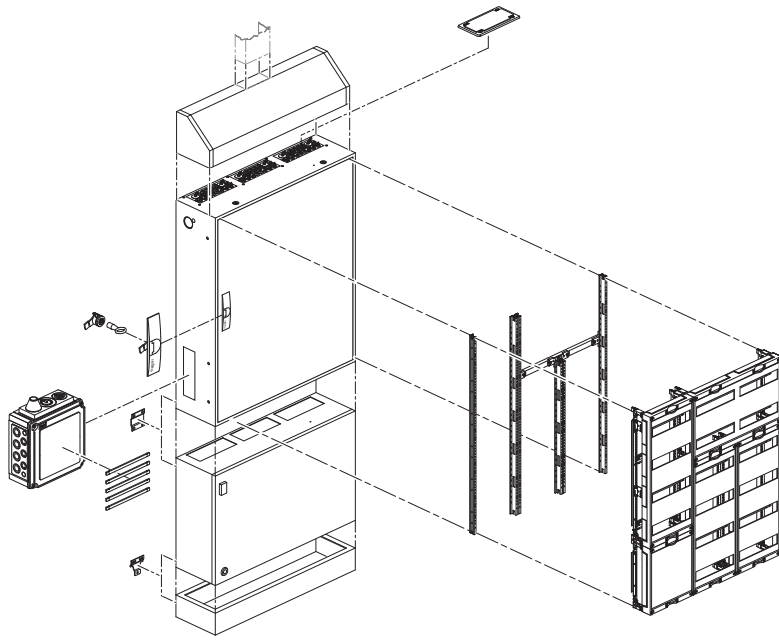
HZ159



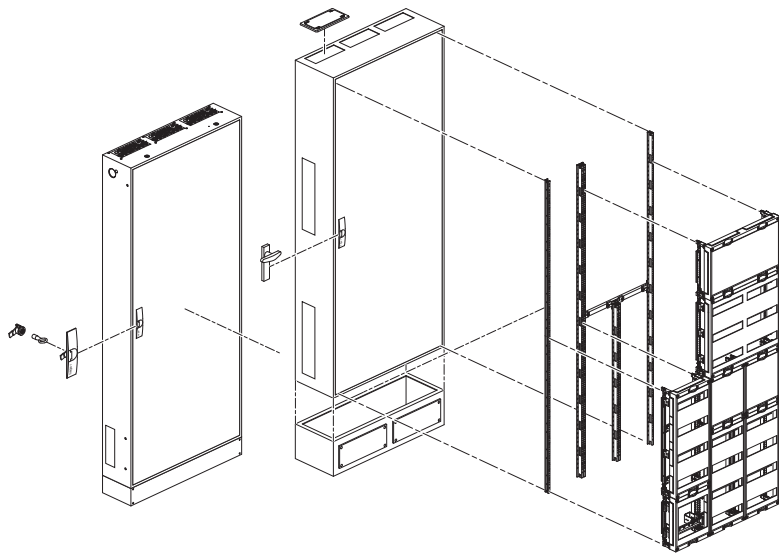
HZI811

Wall cabinets

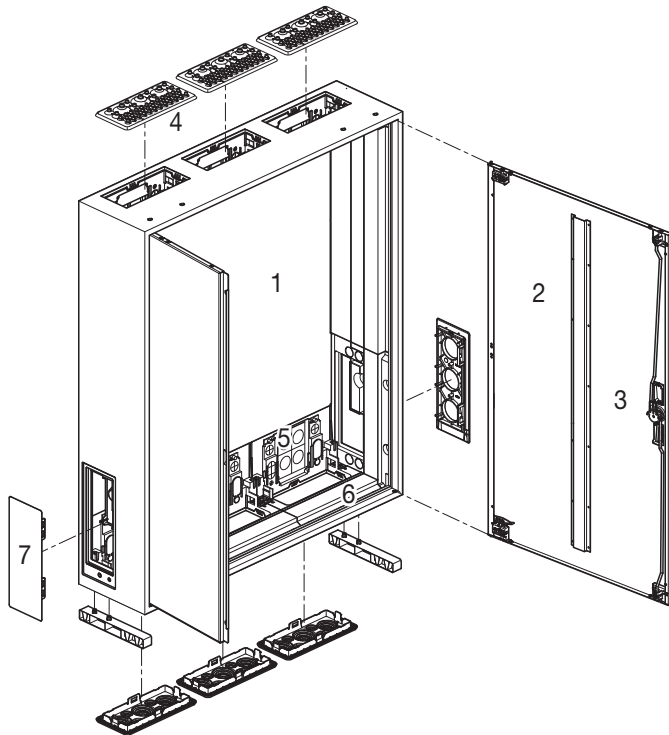
Commercial
Distribution



Free-standing cabinets



IP44/IP54 series



Wall cabinets

- Protection class II
- IP44 degree of protection
- Can be used for wall, flush and partially recessed mounting
- Height 800, 950, 1100, 1250 and 1400 mm
- Width 1 to 5 panels
- Depth 160 mm and 205 mm
- Colour: RAL 9010 (Pure white)
- For fixed indoor installation
- For mounting Univers Z and Univers N interior systems (Univers N not for cabinet depth 160 mm)

Comprising:

1 Body

- 1 mm sheet steel, powder-coated
- Two-sided opening for busbar bushing in the lower section 7
- Can be flange-mounted adjacent to or above each other



2 Door

- 1 mm sheet steel, powder-coated
- Front-flush, can be hinged on the right or left
- Can be dismantled without tools
- Interior, adjustable hinges
- Door opening angle 110°
- Two doors from cabinet width of 800 mm

3 Door lock

- Three-point rod lock
- Sealable as standard (IP44)
- Can be replaced with other closures

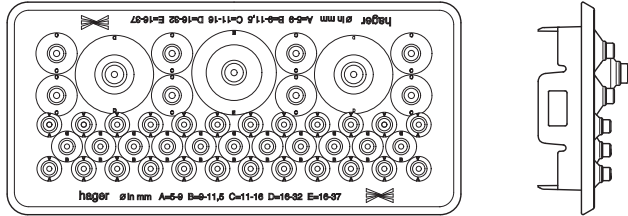
Standards and regulations

- Tested in accordance with DIN VDE 0603 part 1, with VDE symbol 
- Dimensions in accordance with DIN 43870
- IP44/IP54 degree of protection in accordance with VDE 0470 part 1 (DIN EN 60529)
- IP3X degree of protection with open door
- Clearance and creepage distance in accordance with VDE 0110, part 1 and 2
- Overvoltage category IV (eHZ)
- Degree of contamination 3
- Double insulated 
- 230/400 V AC, 50 Hz
- Maximum feed current 355 A

Cable entries

Cable entry flanges at the bottom and top are rotatable and can be exchanged.

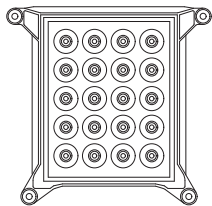
4 Cable entries per panel:
Top (distribution cabinet flange)



Two-component plastic entry for tool-free processing, 46 cable entries

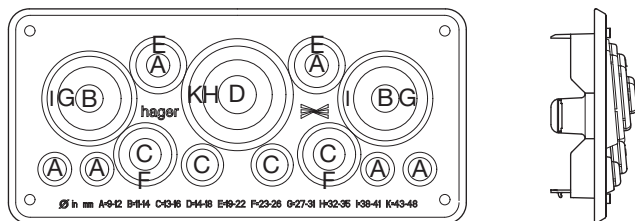
Quantity	Type	Diameter
24	A	5–9 mm
11	B	9–11.5 mm
8	C	11–16 mm
2	D	16–32 mm
1	E	16–37 mm

5 Rear cable entries



Cable entry at rear (accessories)
20 x 5 to 9 mm diameter

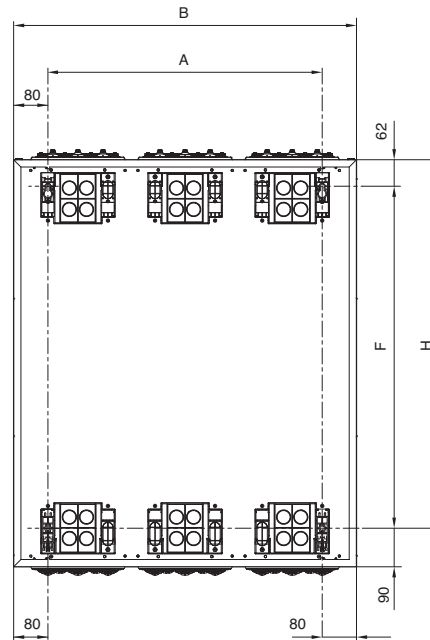
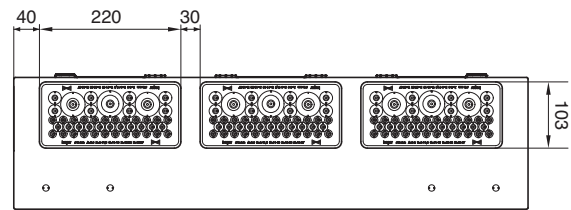
6 Cable entries per panel:
Bottom (meter flange)



Two-component plastic entry for feed, 23 cable entries

Quantity	Alternative	Type	Diameter
4	+2	A	8.5–12 mm
	+2	B	11–14 mm
2	+2	C	13–16 mm
	+1	D	14–18 mm
2		E	19–22 mm
2		F	23–26 mm
	+2	G	27–30.5 mm
	+1	H	32–34.5 mm
2		I	38–40.5 mm
1		K	43–47 mm

Cable entry dimensions



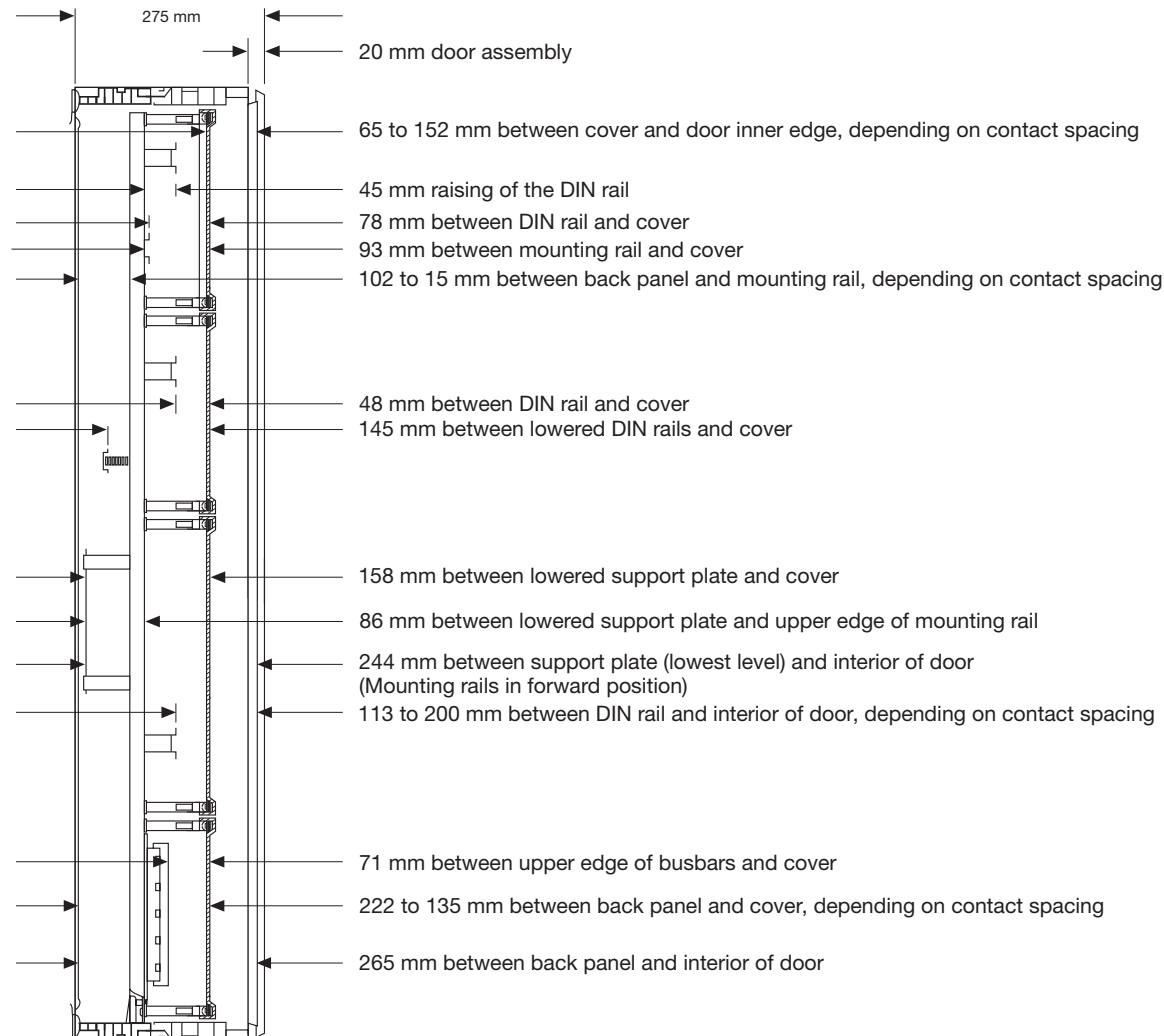
Fixing dimensions in mm

Cabinet height H		Cabinet width W				
		300	550	800	1050	1300
500	F	348	348	348	348	348
	A	140	390	640	890	1140
650	F	498	498	498	498	498
	A	140	390	640	890	1140
800	F	648	648	648	648	648
	A	140	390	640	890	1140
950	F	798	798	798	798	798
	A	140	390	640	890	1140
1100	F	948	948	948	948	948
	A	140	390	640	890	1140
1250	F	1098	1098	1098	1098	1098
	A	140	390	640	890	1140
1400	F	1248	1248	1248	1248	1248
	A	140	390	640	890	1140
1550	F	1398	1398	1398	1398	1398
	A	140	390	640	890	1140
1700	F	1548	1548	1548	1548	1548
	A	140	390	640	890	1140

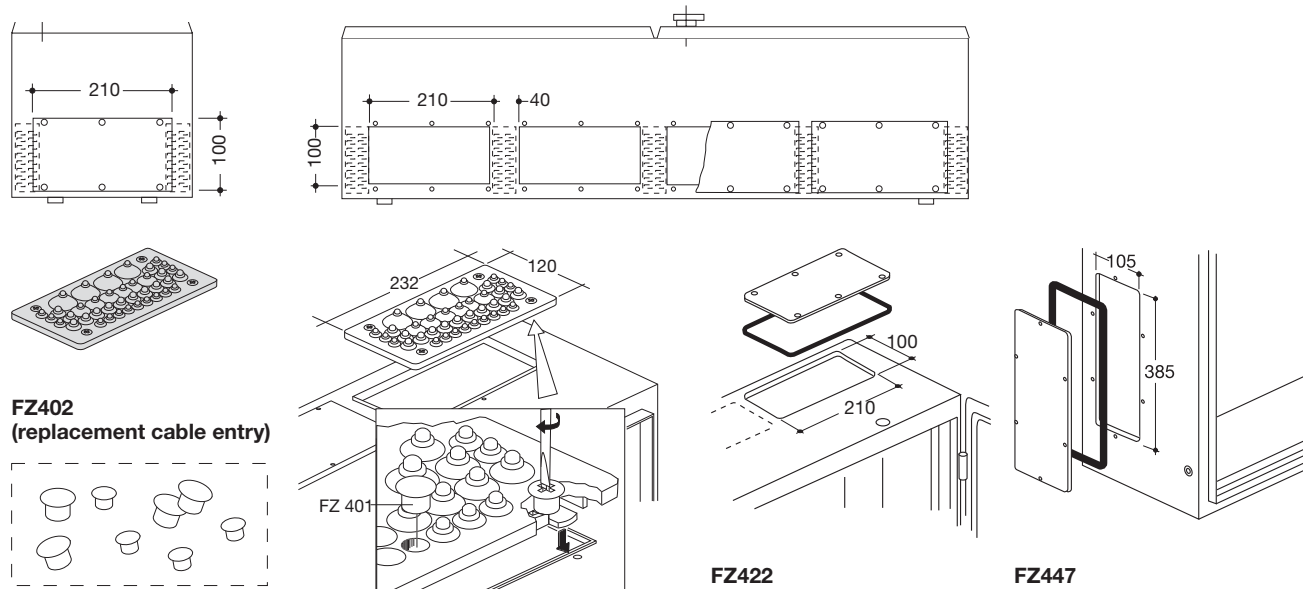
IP 54 wall cabinet, depth 275 mm – dimensions for Univers N interior system

- Measured with mounting rail in front and rear position

The mounting rails can be installed with a contact spacing of 12.5 mm in seven different depths.



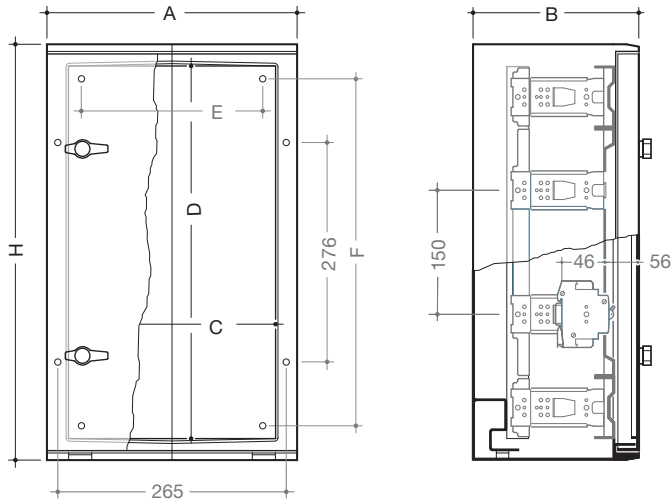
Cable entry



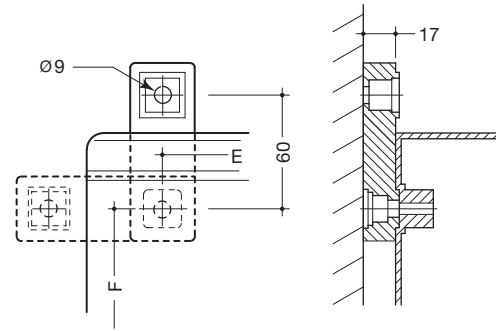
IP65 cabinets

Two-field model

Commercial
Distribution

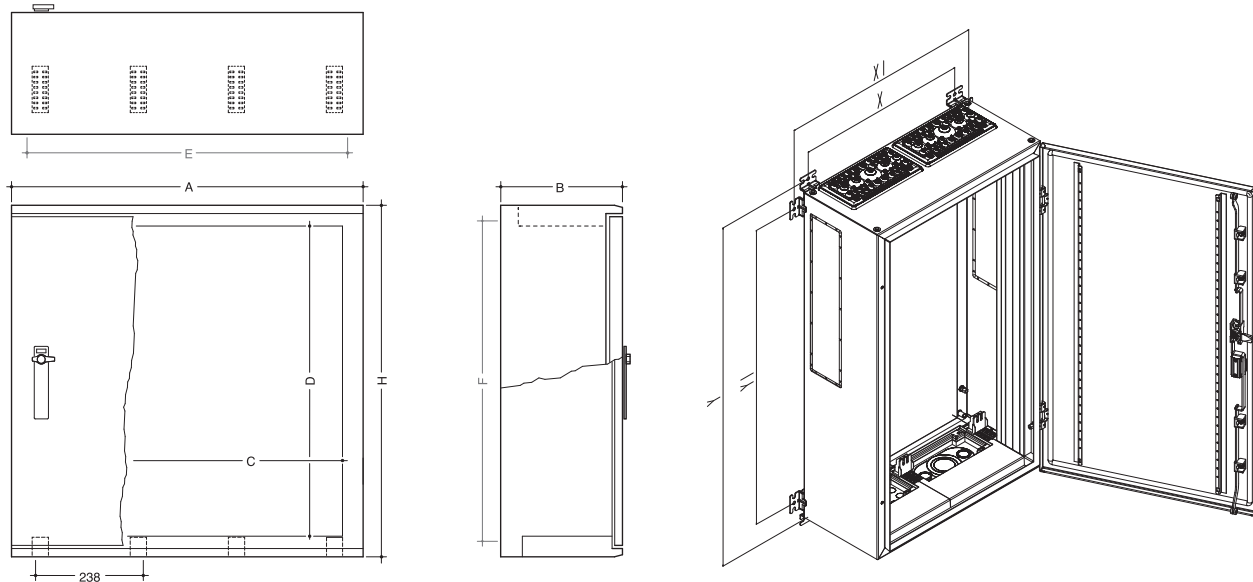


Wall-mounting support brackets



- FL32S to FL73S cabinets tested in accordance with DIN/EN/ISO 2409 (cross-cut test)
- Cross-cut rating fulfilled before and after the test
- Blistering test result passed: No blistering
- Observe installation and ambient conditions, see switchgear construction guidelines

Three-field model



Main dimensions

IP	Order no.	Cabinet dimensions					Installation dimensions		Number of panels	Number of rows Modular devices	Number of doors	Number of bolts
		A	H	B	C	D	E	F				
IP 65	FL32S	600	550	300	500	450	520	470	2	3	1	1+ Rod lock
	FL33S	850	550	300	500	450	520	470	2	3	1	
	FL34S	1100	550	300	500	450	520	470	2	3	1	
	FL52S	600	850	300	500	750	520	770	2	5	1	
	FL53S	850	850	300	750	750	770	770	3	5	1	
	FL54S	1100	850	300	500	750	520	770	2	5	1	
	FL72S	600	1150	300	500	1050	520	1070	2	7	1	
	FL73S	850	1150	300	750	1050	770	1070	3	7	1	
FL74S	1100	1150	300	750	1050	770	1070	3	7	1		

IP55 free-standing cabinets, depth 275 mm and 400 mm

- Protection class I earthed and II double insulated, IP55 degree of protection
- Height 1700/1850 mm, tower housing + base
- Width: Two to six panels
- Depth 275 mm and 350 mm
- 144 – 864 space units
- Colour: RAL 7035 (Light grey)
- For fixed indoor installation

Interior system installable for network types:

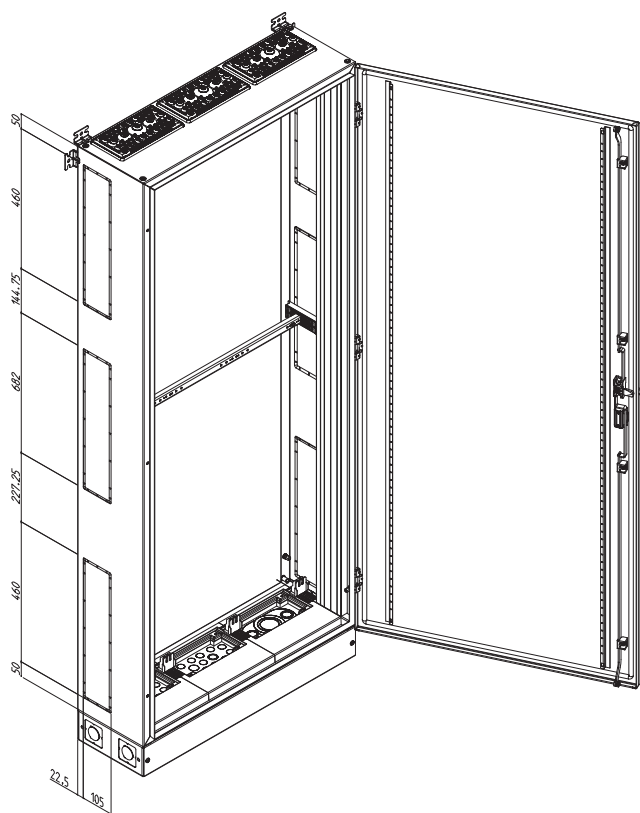
- 3 AC, 50 Hz, 230/400 V
- 3 AC, 50 Hz, 400/690 V

With a maximum feed current of 800 A

Caution

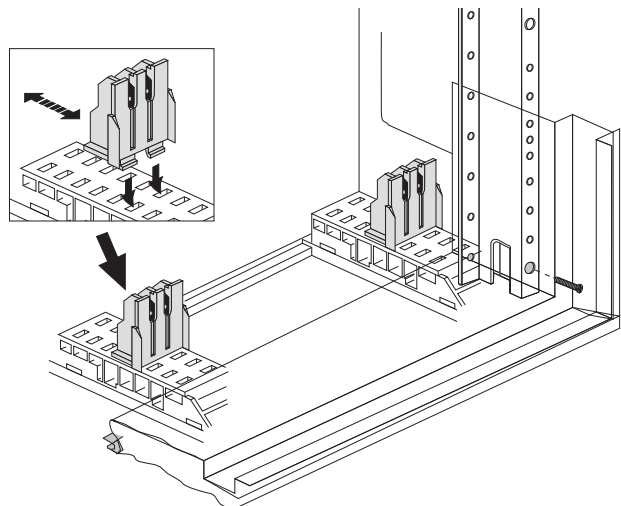
Depth 400 mm:

Mounting rail attachment normally installed in position 3 or 4. If the mounting rails are positioned lower, use accessory components – contact protection extension, **FZ851** on the side.



Fastening of the mounting rails

IP55 wall and free-standing cabinets, depth 275/400 mm



Comprising:

Body

- 1.5 mm galvanised sheet steel, powder-coated and enamelled
- Pre-stamping on both sides for busbar bushing in bottom, top and middle section
- Parallel flange-mounting possible
- Horizontal retaining rail installed once in cabinet, without coupling plates
- 100 mm and 200 mm base included and installed.

Door

- 1.5 mm sheet steel, powder-coated and enamelled
- Flush with interior hinges, can be hinged on right or left
- Circumferential temperature and oil-resistant foamed seal
- Door opening angle 162°
- Above width of 1050 mm, double door

Door lock

- Three-point rod lock fitted as standard with pivoted handle and key plate
- Prepared for DIN profile half cylinder, can be exchanged with other closures

Cable entries per field as standard:


- Upper Universal two-component cable entry, can be replaced with all entry flanges for IP54 cabinets
- Open at bottom, entry flanges not necessary when using a base; however, use them to ensure compliance with IP54 degree of protection

Universal cable entries for IP54 cabinets

Entry options

Number of cables	Cable diameter (mm)	Cable cross-sections from – to (mm²)		
		NYM	NYF	H07RN-F
24	9–11.5	3 x 1.5 – 5 x 1.5	1 x 4 – 1 x 16	–
12	11–16	3 x 2.5 – 5 x 4	1 x 16 – 3 x 6	–
4	12.5–20	3 x 4 – 5 x 10	3 x 2.5 – 5 x 6	–
2	13–27.5	3 x 4 – 4 x 25	3 x 2.5 – 4 x 25	–
2	16–32	3 x 6 – 4 x 35	3 x 6 – 4 x 50	–
1	25–50	4 x 25 – 5 x 25	3 x 25 – 3 x 240	1 x 120 – 4 x 70

Standards and regulations

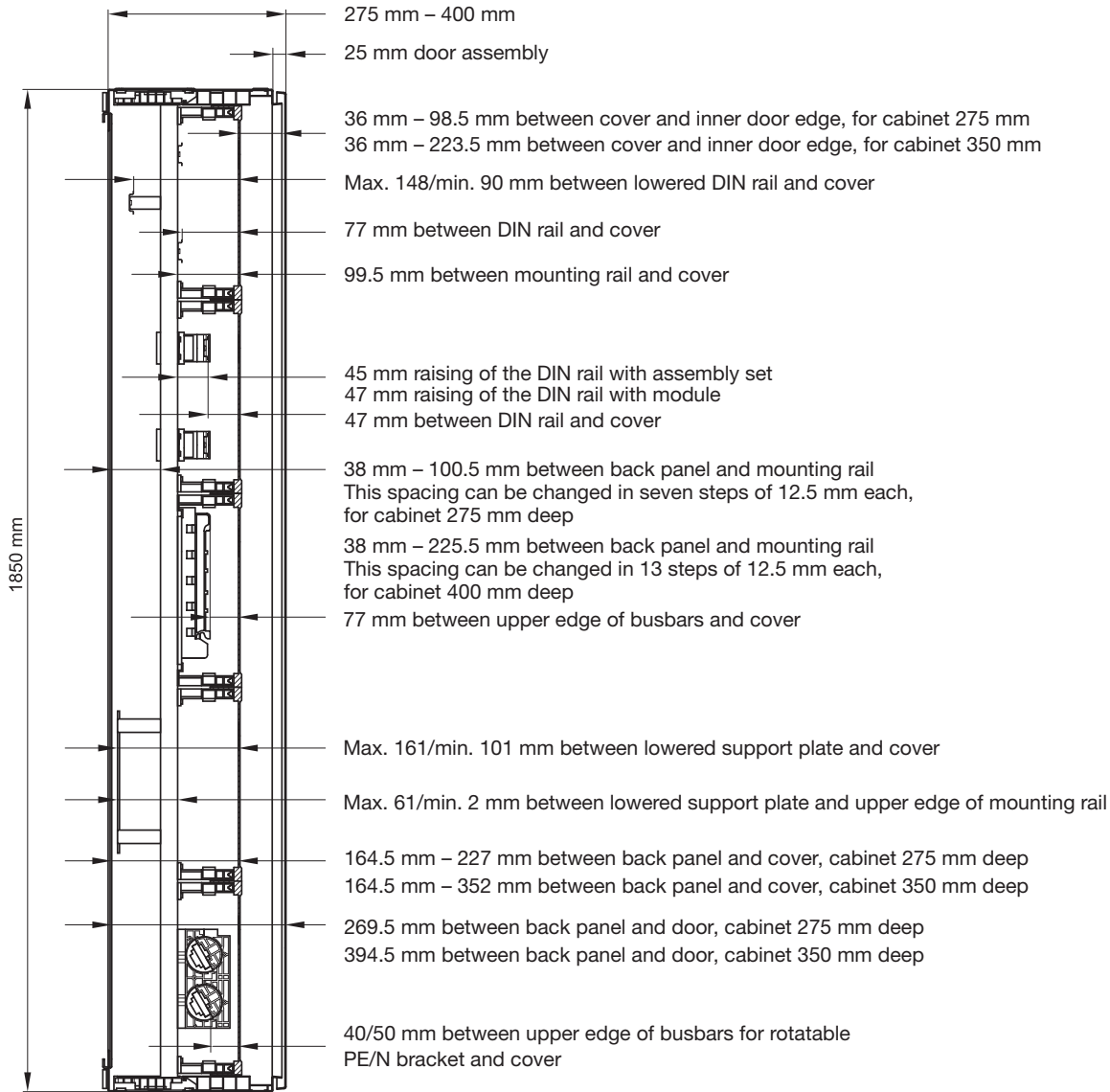
- Tested in accordance with VDE 0660, part 500
- Dimensions in accordance with DIN 43870
- IP54 degree of protection in accordance with VDE 0470, part 1 (DIN EN 60529)
- IP3X degree of protection with open door
- Clearance and creepage distance in accordance with VDE 0110, part 1 and 2/1.89 
- Rated insulation voltage 800 V AC
- Overvoltage category III/IV
- Degree of contamination 3
- Insulation class II

IP55 free-standing cabinets, depth 275 mm and 400 mm – dimensions for Univers N interior system

- Measured with mounting rail in front and rear position

The mounting rails can be installed with a contact spacing of 12.5 mm in 7/13 (350 mm deep) different depths.

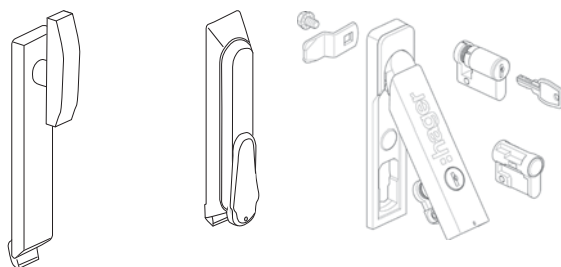
Commercial Distribution



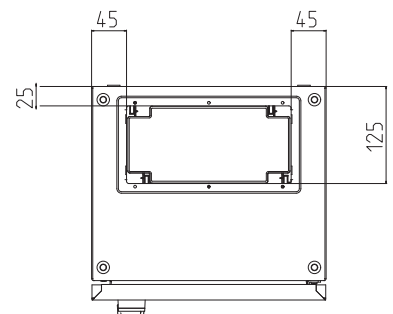
IP54 cabinets
IP54 cabinet closures

T-handle

Pivoted lever – L-handle ex-works and rotary toggle as accessory

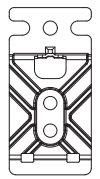
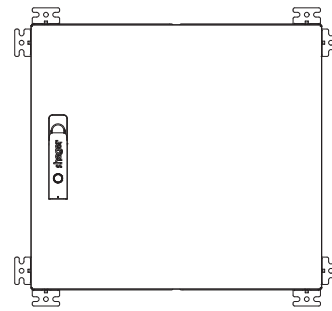


Base plate for one-panel cabinets



IP55 wall cabinets

Depth	Height	Width	Mod.	PC I	X	Y	X1	Y1
275	500	300	36	FR31E	245	540	340	410
	500	550	72	FR32E	495	540	590	410
	500	800	108	FR33E	745	540	840	410
	500	1050	144	FR34E	995	540	1090	410
	500	1300	180	FR35E	1245	540	1340	410
	650	300	48	FR41E	245	690	340	560
	650	550	96	FR42E	495	690	590	560
	650	800	144	FR43E	745	690	840	560
	650	1050	192	FR44E	995	690	1090	560
	650	1300	240	FR45E	1245	690	1340	560
	800	300	60	FR51E	245	840	340	710
	800	550	120	FR52E	495	840	590	710
	800	800	180	FR53E	745	840	840	710
	800	1050	240	FR54E	995	840	1090	710
	800	1300	300	FR55E	1245	840	1340	710
	950	300	72	FR61E	245	990	340	860
	950	550	144	FR62E	495	990	590	860
	950	800	216	FR63E	745	990	840	860
	950	1050	288	FR64E	995	990	1090	860
	950	1300	360	FR65E	1245	990	1340	860
	1100	300	84	FR71E	245	1140	340	1010
	1100	550	168	FR72E	495	1140	590	1010
	1100	800	252	FR73E	745	1140	840	1010
	1100	1050	336	FR74E	995	1140	1090	1010
	1100	1300	420	FR75E	1245	1140	1340	1010
	1250	300	96	FR81E	245	1290	340	1160
	1250	550	192	FR82E	495	1290	590	1160
	1250	800	288	FR83E	745	1290	840	1160
	1250	1050	384	FR84E	995	1290	1090	1160
	1250	1300	480	FR85E	1245	1290	1340	1160
	1400	300	108	FR91E	245	1440	340	1310
	1400	550	216	FR92E	495	1440	590	1310
	1400	800	324	FR93E	745	1440	840	1310
1400	1050	432	FR94E	995	1440	1090	1310	
1400	1300	540	FR95E	1245	1440	1340	1310	
1550	300	108	FR01E	245	1590	340	1460	
1550	550	216	FR02E	495	1590	590	1460	
1550	800	324	FR03E	745	1590	840	1460	
1550	1050	432	FR04E	995	1590	1090	1460	
1550	1300	540	FR05E	1245	1590	1340	1460	
400	1400	550	216	FR92G	495	1440	590	1310
	1400	800	324	FR93G	745	1440	840	1310
	1400	1050	432	FR94G	995	1440	1090	1310



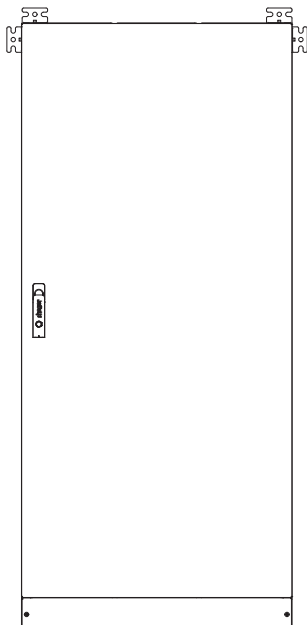
Commercial
Distribution

IP55 free-standing cabinets

Commercial
Distribution

Depth	Height	Width	Mod.	PC I with base H = 100 mm	PC I with transpa- rent door and base H = 100 mm	X	Y	X1	Y1	Z
275	1700	300	132	FR11E1		245	1721	340	1656	100
	1700	550	264	FR12E1		495	1721	590	1656	100
	1700	800	396	FR13E1		745	1721	840	1656	100
	1700	1050	528	FR14E1		995	1721	1090	1656	100
	1700	1300	660	FR15E1		1245	1721	1340	1656	100
275	1850	300	144	FR21E1		245	1871	340	1806	100
	1850	550	288	FR22E1	FR22K1	495	1871	590	1806	100
	1850	800	432	FR23E1	FR23K1	745	1871	840	1806	100
	1850	1050	576	FR24E1	FR24K1	995	1871	1090	1806	100
	1850	1300	720	FR25E1	FR25K1	1245	1871	1340	1806	100
	1850	1550	864	FR26E1	FR26K1	1495	1871	1590	1806	100
400	1850	300	144	FR21G1		245	1871	340	1806	100
	1850	550	288	FR22G1	FR22V1	495	1871	590	1806	100
	1850	800	432	FR23G1	FR23V1	745	1871	840	1806	100
	1850	1050	576	FR24G1	FR24V1	995	1871	1090	1806	100
	1850	1300	720	FR25G1	FR25V1	1245	1871	1340	1806	100
	1850	1550	864	FR26G1	FR26V1	1495	1871	1590	1806	100

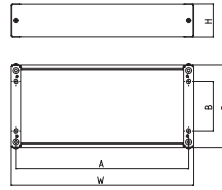
Depth	Height	Width	Mod.	PC I with base H = 200 mm	PC I with transpa- rent door and base H = 200 mm	X	Y	X1	Y1	Z
275	1700	300	132	FR11E2		245	1721	340	1656	100
	1700	550	264	FR12E2		495	1721	590	1656	100
	1700	800	396	FR13E2		745	1721	840	1656	100
	1700	1050	528	FR14E2		995	1721	1090	1656	100
	1700	1300	660	FR15E2		1245	1721	1340	1656	100
275	1850	300	144	FR21E2		245	1871	340	1806	100
	1850	550	288	FR22E2	FR22K2	495	1871	590	1806	100
	1850	800	432	FR23E2	FR23K2	745	1871	840	1806	100
	1850	1050	576	FR24E2	FR24K2	995	1871	1090	1806	100
	1850	1300	720	FR25E2	FR25K2	1245	1871	1340	1806	100
	1850	1550	864	FR26E2	FR26K2	1495	1871	1590	1806	100
400	1850	300	144	FR21G2		245	1871	340	1806	100
	1850	550	288	FR22G2	FR22V2	495	1871	590	1806	100
	1850	800	432	FR23G2	FR23V2	745	1871	840	1806	100
	1850	1050	576	FR24G2	FR24V2	995	1871	1090	1806	100
	1850	1300	720	FR25G2	FR25V2	1245	1871	1340	1806	100
	1850	1550	864	FR26G2	FR26V2	1495	1871	1590	1806	100



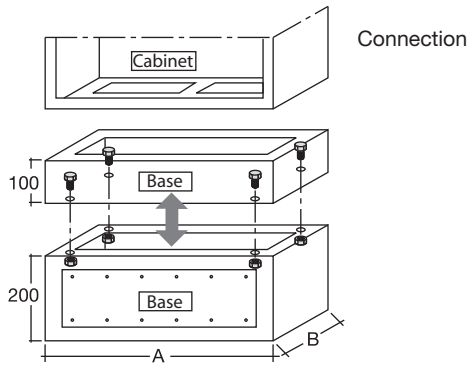
General description

- 100 mm or 200 mm high
- Installed underneath wall cabinets or free-standing cabinets
- Cable clamping rail can be installed
- Open at top and bottom
- Body of powder-coated, enamelled 1.5 mm sheet steel

Installation dimensions for IP55 wall cabinet bases and free-standing cabinets 275 mm and 400 mm



Base for IP54 cabinets, vertical connection of IP54 cabinets

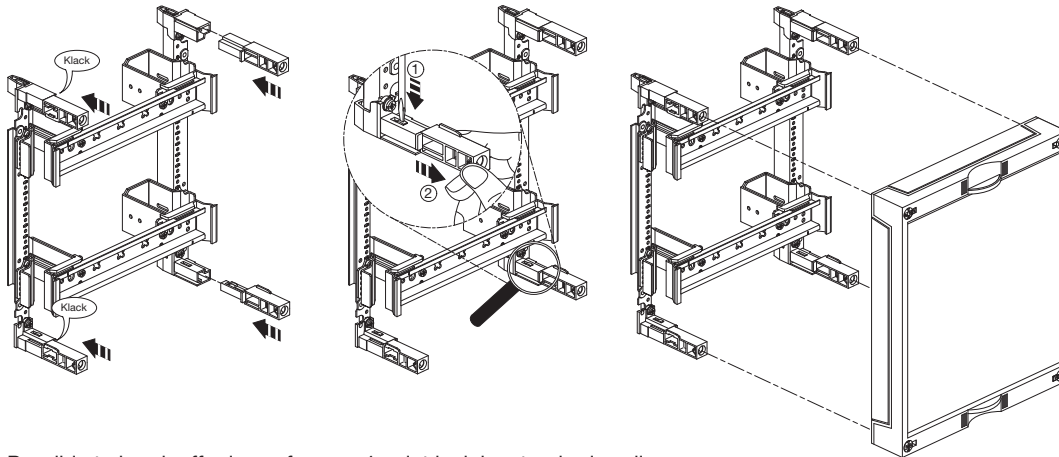


Width	Depth	Height	A	B	
302	275	100	200	272	150
552	275	100	200	522	150
802	275	100	200	772	150
1052	275	100	200	1022	150
1302	275	100	200	1272	150
1552	275	100	200	1522	150
302	400	100	200	272	150
552	400	100	200	522	150
802	400	100	200	772	150
1052	400	100	200	1022	150
1302	400	100	200	1272	150
1552	400	100	200	1522	150

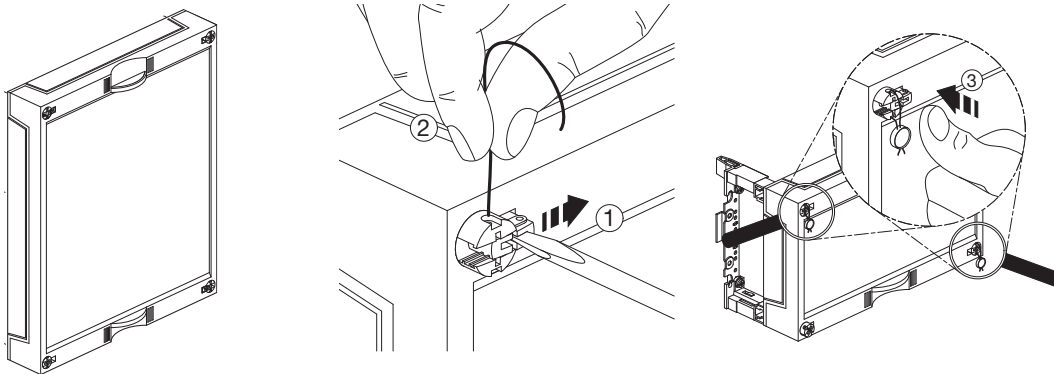
Kits for Universe N

Top part of pillar included in kit with fast fitting. Easy to fit and remove.

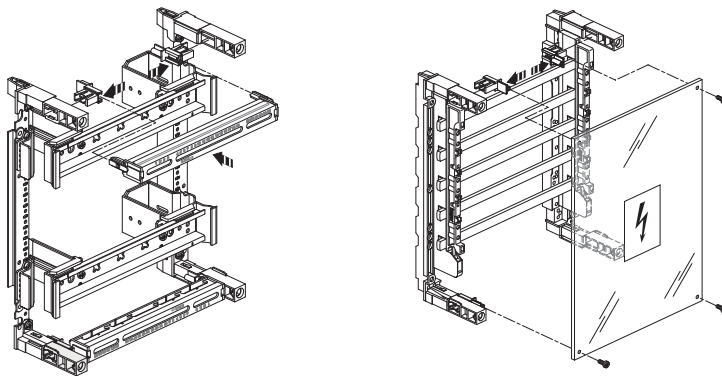
Commercial
Distribution



Possible to break off edges of cover. 4 point lock by standard sealing points. Open with Phillips screwdriver.



Adaptor for PE/N rails or transparent pane.

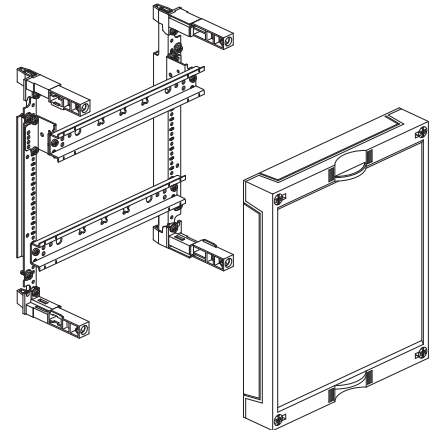


Blank cover with DIN rail horizontal for row terminals

height x width	250	500	750
150	UD11A1	UD12A1	UD13A1
300	UD21A1	UD22A1	UD23A1
450	UD31A1	UD32A1	UD33A1
600	UD41A1	UD42A1	-

Particulars

- gap between DIN rail and cover = 48/78mm
- with insulation protected equipment, the DIN rails, which accommodate PE row terminals, must be mounted insulated
- insulation parts included in delivery
- modification of DIN rail level possible at any time
- when using multi-field DIN rails, there are additional fitting possibilities on the carrier rails in modular spacing 250mm (horizontal).



UD21A1

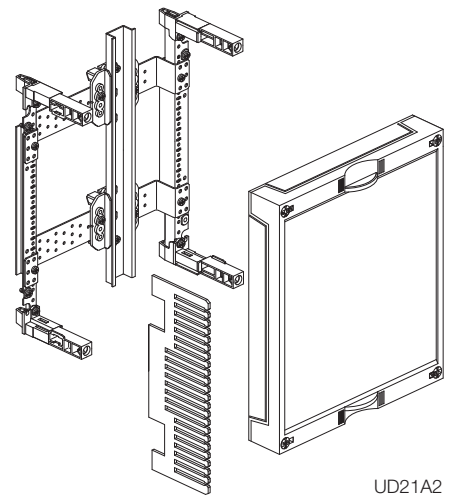
Commercial
Distribution

Blank cover with DIN rails vertical, lowered for row terminals

height x width	250	500
300	UD21A2	UD22A2
450	UD31A2	
600	UD41A2	

Particulars

- gap between cover and DIN rail (Max. lowering 99mm)
- DIN rail 35 x 15mm. Insulating parts included
- length of DIN rail for UD21A2, UD22A2 = 300mm
for UD31A2 = 450mm
for UD41A2 = 600mm



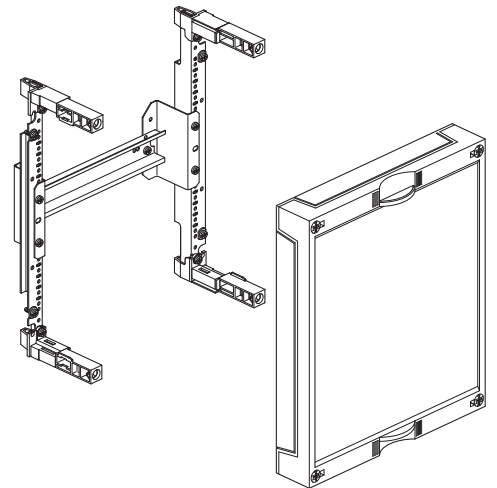
UD21A2

Blank cover with lowered DIN rails for terminals/cables

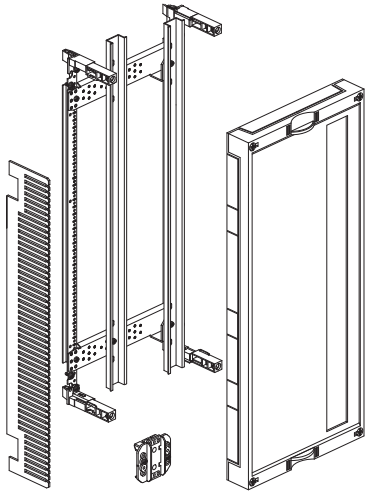
height x width	250
300	UD21A3
450	UD31A3

Particulars

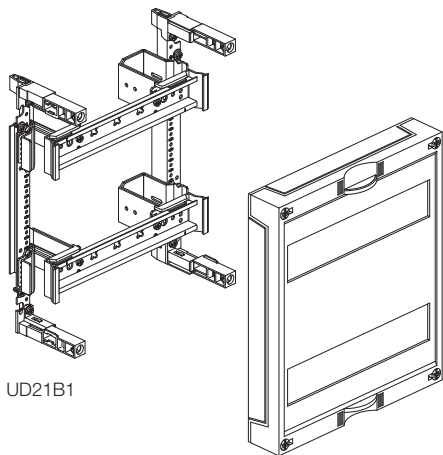
- lowering of the DIN rails with stable cross rails
- for terminals/cables of size 95-240mm²
- gap between cover and DIN rails - 120mm



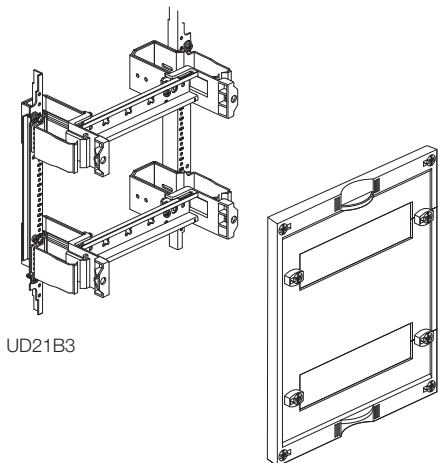
UD21A3



UD41G3



UD21B1



UD21B3

Blank cover with DIN rail vertical for terminals & add-on devices

height x width	250	500
300	UD21G2	
600	UD41G2	

Particulars

- gap between cover and DIN rails 48/78mm
- DIN rails 35 x 15mm, can be made insulation protected. Insulation parts included.
- length of DIN rail for UD21G2 = 300mm
- length of DIN rail for UD41G2 = 600mm

Slotted cover for modular devices with vertical wiring

height x width	250	500	750
150	UD11B1	UD12B1	UD13B1
300	UD21B1	UD22B1	UD23B1
450	UD31B1	UD32B1	UD33B1
600	UD41B1	UD42B1	

Particulars

- DIN rail raised, for adding modular devices or switchgear
- gap between cover and DIN rails = 48mm
- 2 and 3 field kits with stabilising rails, per 250mm spacing once vertical
- integrated vertical cable support
- possible to lead wiring from front
- top part of pillar for easy wiring included
- data rails to be used for applications with Tebis EIB devices
- device slots can be covered with blanking strips S35S or lockable blanking strips ZZ34S
- 12 module spaces per device slot

Slotted cover for modular devices with extended vertical wiring

height x width	250	500
150	UD11B3	*UD12B3
300	UD21B3	*UD22B3
450	UD31B3	*UD32B3

Particulars

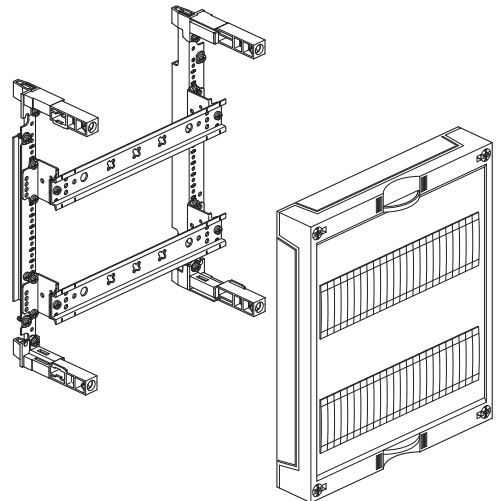
- DIN rail raised, for adding modular devices or switchgear
- gap from cover to DIN rail = 48mm
- 2 and 3 field kits with stabilising rails, per 250mm spacing once vertical
- device slots can be covered with blanking strips S35S or lockable blanking strips ZZ34S
- device slots 1 field 10 modular spaces per row
- device slots 2 field 24 modular spaces per row
- device slots and DIN rail 430mm

Blank cover with locable blanking strips for control cable terminals and main shunt cables

height x width	250
150	UD11A4
300	UD21A4

Particulars

- gap from DIN rail to cover = 47mm
 - DIN rail raised, for adding modular devices or switchgear
 - with shock protected equipment, the DIN rails, which accommodate PE row terminals, must be mounted insulated
 - DIN rails can be insulation protected with insulation part
 - DIN rail gap 125mm
 - lockable blanking strips included
- UD11A4 1 piece ZZ34S
UD21A4 2 piece ZZ34S



UD21A4

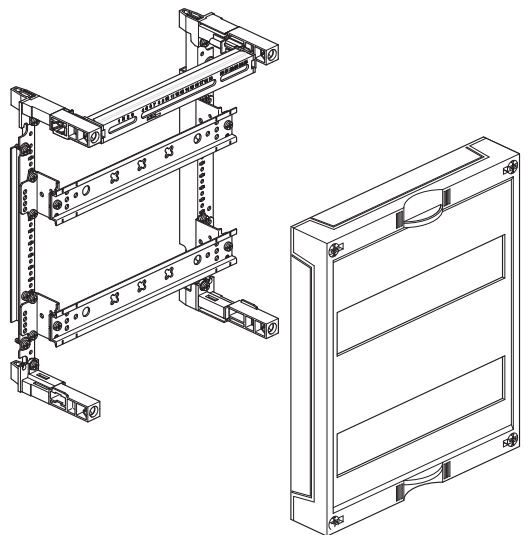
Commercial
Distribution

Slotted cover with PE/N rails for modular devices / switchgear

height x width	250
300	UD21B4
450	UD1B4

Particulars

- gap between DIN rail and cover
- with PE/N rails 2 x 13 terminal spaces
- DIN rails gap 125mm
- Spare open device slots must be covered with blanking strips S35S or lockable blanking strips ZZ34S.



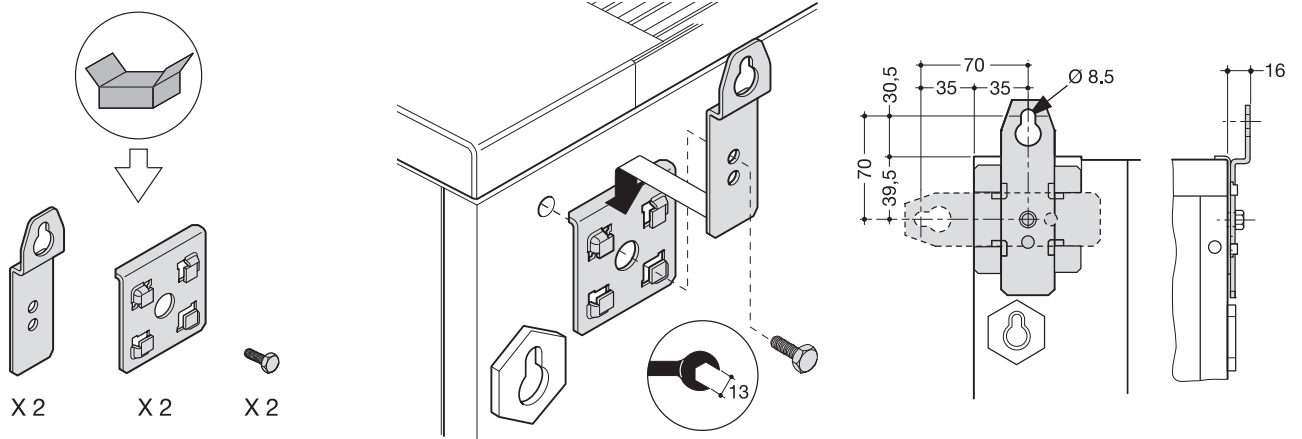
UD21B4

Back Plates (dimensions in mm)

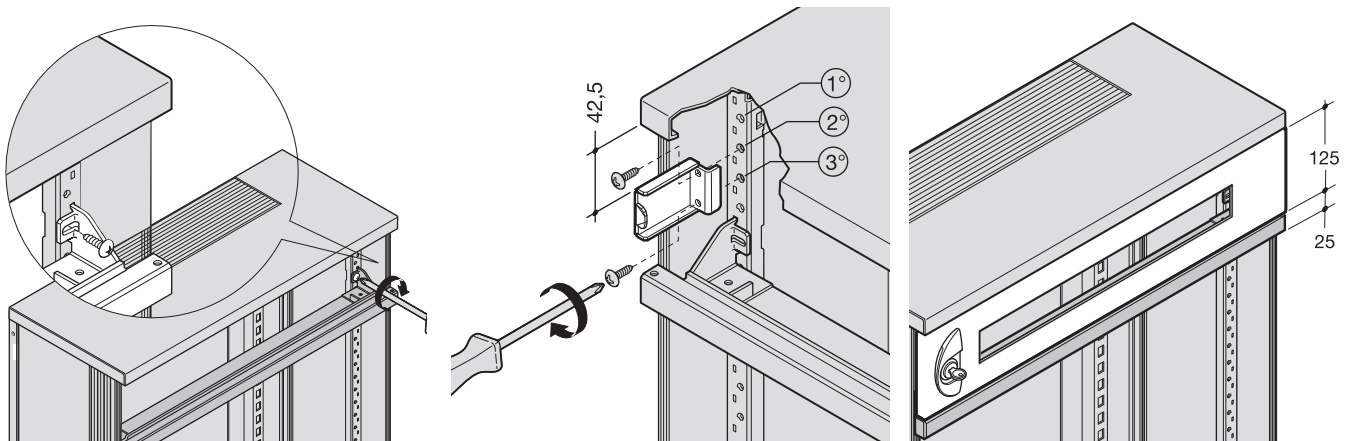
Commercial
Distribution



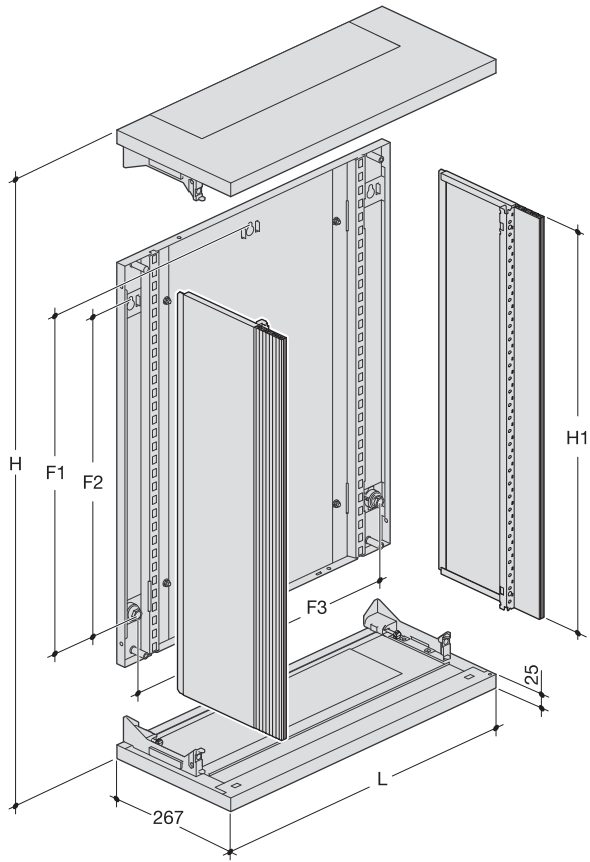
Wall Mounting Brackets FM640 (dimensions in mm)



Mounting of Hinged Front Plate Door of DIN Rail Equipment Unit (dimensions in mm)

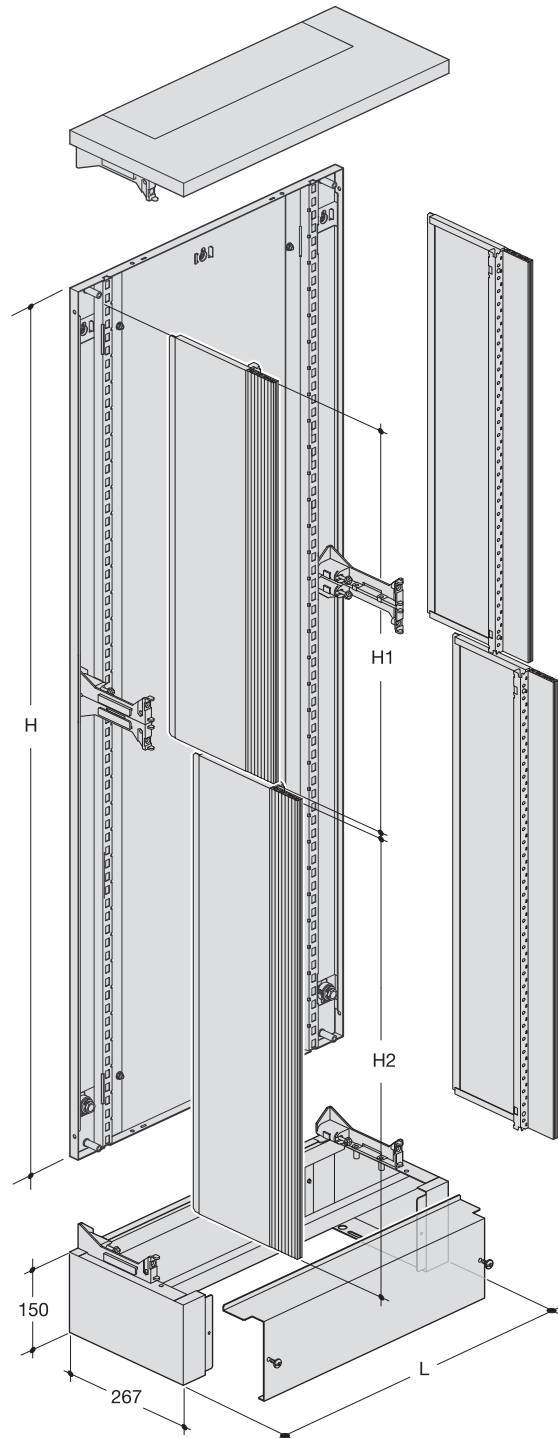


Quadro 4 Enclosures



Dimensions in mm

references bottoms	sides	H	H1	L	fixing holes position		
					F1	F2	F3
FC110	FC010	500	450	370	305	270	315
FC210	FC010	500	450	620	305	270	565
FC111	FC011	650	600	370	455	420	315
FC211	FC011	650	600	620	455	420	565
FC112	FC012	800	750	370	605	570	315
FC212	FC012	800	750	620	605	570	565
FC113	FC013	950	900	370	755	720	315
FC213	FC013	950	900	620	755	720	565
FC114	FC014	1100	1050	370	905	870	315
FC214	FC014	1100	1050	620	905	870	565
FC115	FC015	1250	1200	370	1055	1020	315
FC215	FC015	1250	1200	620	1055	1020	565
FC116	FC016	1400	1350	370	1205	1170	315
FC216	FC016	1400	1350	620	1205	1170	565

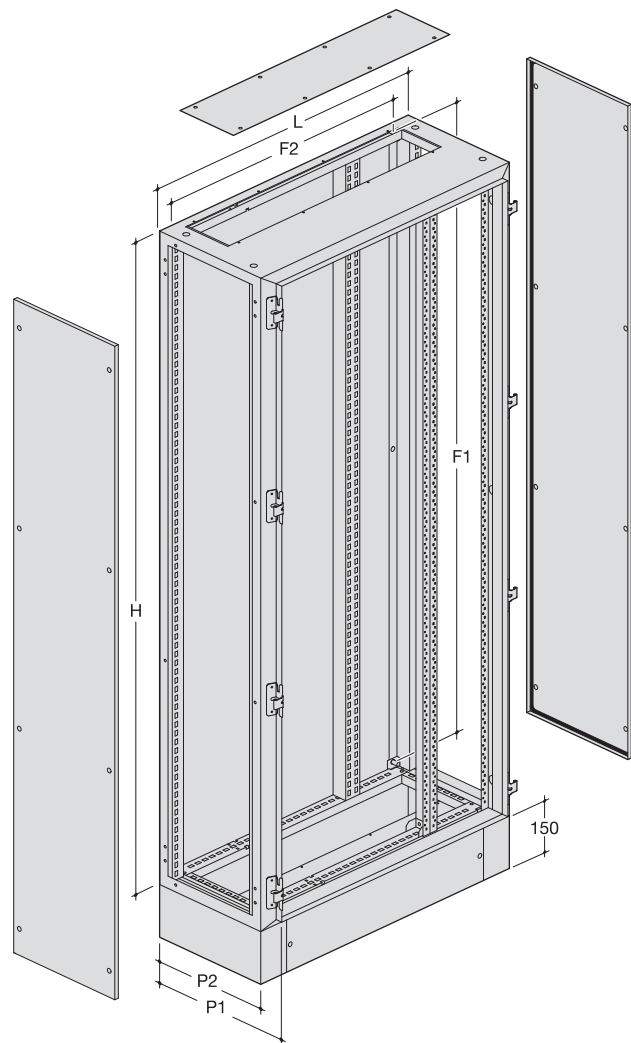
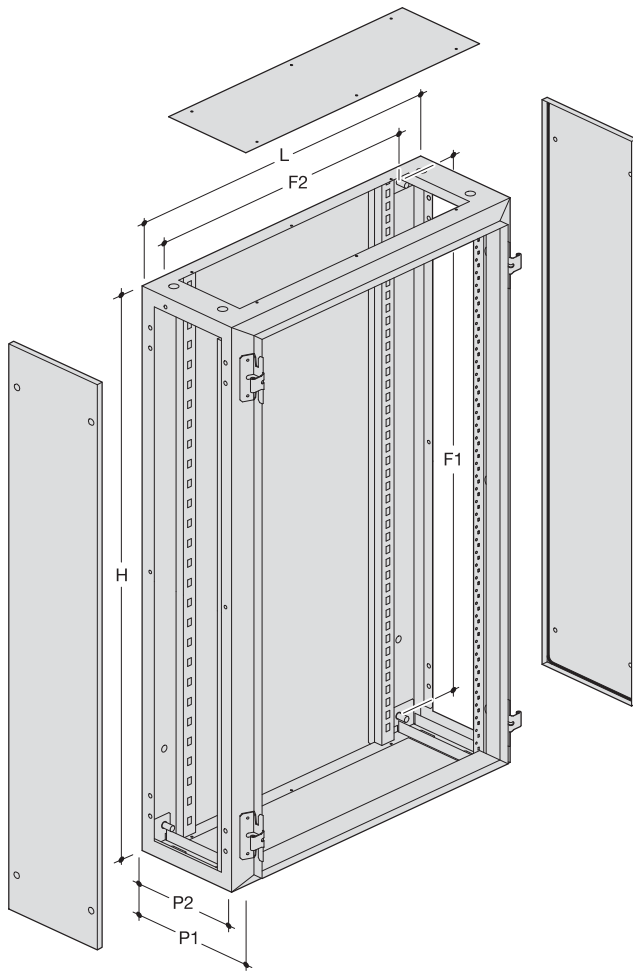


Dimensions in mm

bottoms > 1400	sides	H	L	H1	H2
FC118	FC012 + FC013	1650	370	750	900
FC218	FC012 + FC013	1650	620	750	900
FC119	2 X FC013	1800	370	900	900
FC219	2 X FC013	1800	620	900	900

Quadro 5 Enclosures and Boards

Commercial
Distribution



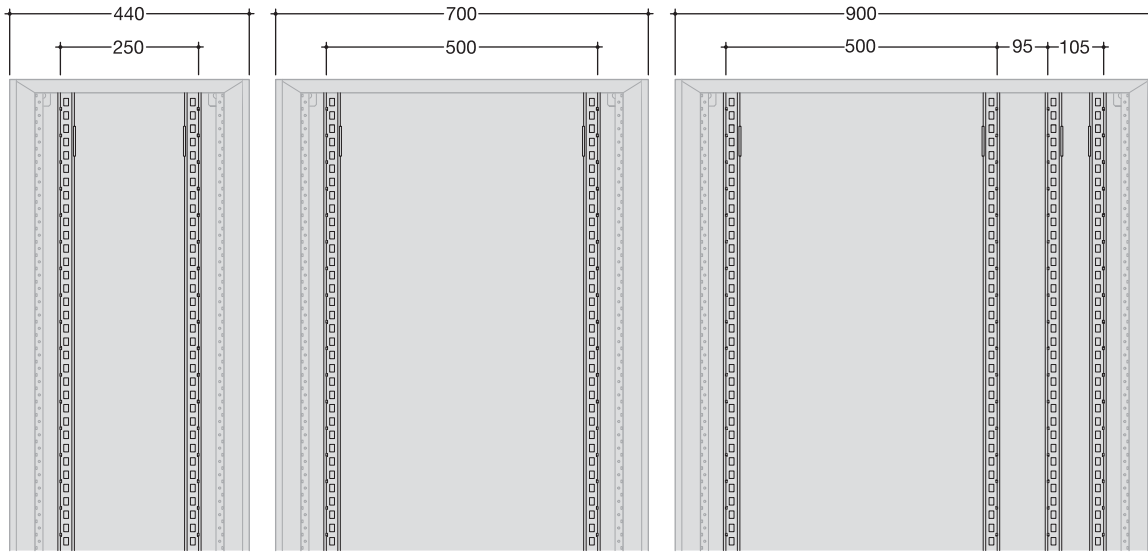
Dimensions in mm

references						fixing	
bodies	sides	H	L	P1	P2	F1	F2
FM200	FM400	510	700	260	220	430	570
FM201	FM401	660	700	260	220	580	570
FM202	FM402	810	700	260	220	730	570
FM203	FM403	960	700	260	220	880	570
FM204	FM404	1100	700	260	220	1030	570
FM205	FM405	1260	700	260	220	1180	570
FM206	FM406	1410	700	260	220	1330	570

Dimensions in mm

references						fixing	
bodies	sides	H	L	P1*	P2	F1	F2
FM107	FM407	1560	450	260	220	1480	320
FM108	FM408	1710	450	260	220	1630	320
FM109	FM409	1860	450	260	220	1780	320
FM207	FM407	1560	700	260	220	1480	570
FM208	FM408	1710	700	260	220	1630	570
FM209	FM409	1860	700	260	220	1780	570
FM307	FM407	1560	900	260	220	1480	770
FM308	FM408	1710	900	260	220	1630	770
FM309	FM409	1860	900	260	220	1780	770
FM117	FM407	1560	450	400	360	1480	320
FM118	FM408	1710	450	400	360	1630	320
FM119	FM409	1860	450	400	360	1780	320
FM217	FM407	1560	700	400	360	1480	570
FM218	FM408	1710	700	400	360	1630	570
FM219	FM409	1860	700	400	360	1780	570
FM317	FM407	1560	900	400	360	1480	770
FM318	FM408	1710	900	400	360	1630	770
FM319	FM409	1860	900	400	360	1780	770

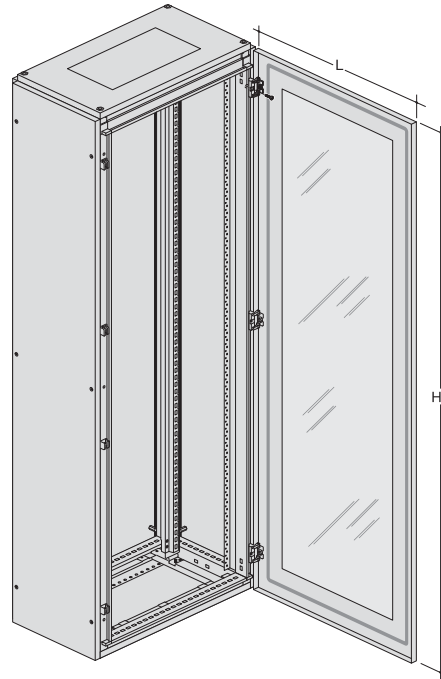
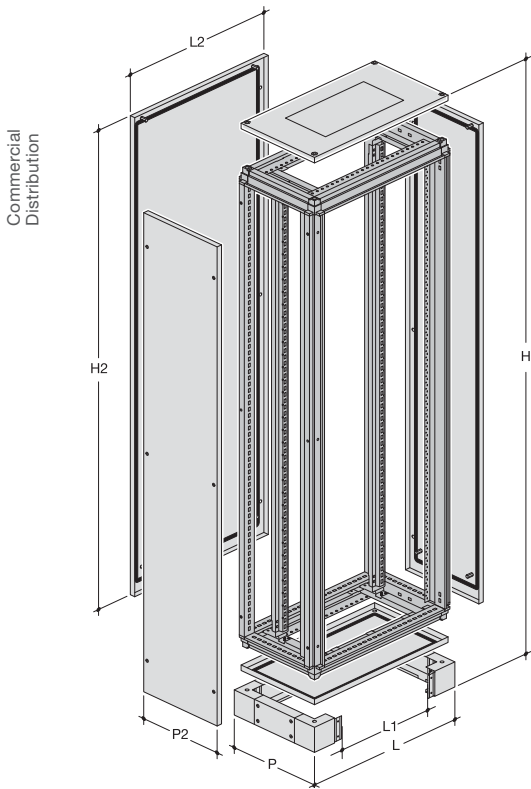
Back Plates Quadro 5



	width (mm)	distance between pillars (mm)	top panel width (mm)
Quadro 5	450	250	350
	700	500	600
	900	700	800
		500 + cable sleeve	600 + 200

	distance between pillars (mm)	top panel width (mm)
1 x 10 ■	250	350
1 x 24 ■	500	600
1 x 36 ■	700	800

Quadro+ Enclosures



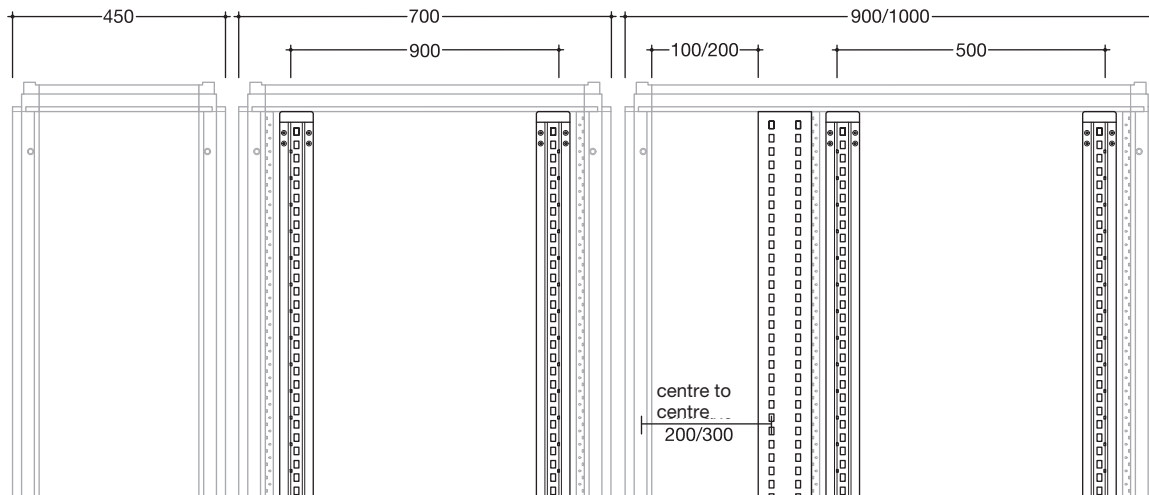
Doors height H1 : 1900 mm

Dimensions in mm

	frame	plinth	side	back	H*	P	L1	H2	L2	P2
L = 450	FN018E	FN438E	FN356E	FN216E	2000	400	288	1900	448	365
L = 700	FN021E	FN441E	FN356E	FN276E	2000	400	538	1900	698	365
L = 900	FN023E	FN443E	FN356E	FN296E	2000	400	738	1900	898	365
L = 1000	FN024E	FN444E	FN356E	FN246E	2000	400	838	1900	998	365
L = 450	FN020E	FN440E	FN366E	FN216E	2000	600	288	1900	448	565
L = 700	FN029E	FN451E	FN366E	FN276E	2000	600	538	1900	698	565
L = 900	FN031E	FN453E	FN366E	FN296E	2000	600	738	1900	898	565
L = 1000	FN032E	FN454E	FN366E	FN246E	2000	600	838	1900	998	565
L = 450	FN022E	FN442E	FN376E	FN216E	2000	800	288	1900	448	765
L = 700	FN013E	FN433E	FN376E	FN276E	2000	800	538	1900	698	765
L = 900	FN017E	FN437E	FN376E	FN296E	2000	800	738	1900	898	765
L = 1000	FN037E	FN459E	FN376E	FN246E	2000	800	838	1900	998	765


* structure 1900 mm, plinth 100 mm

Back Plates Quadro+ Evo

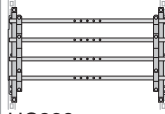


Busbars Short-circuits Withstand Capacity

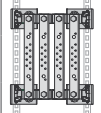
Vertical Mounting

Busbars fixing	nominal current	bars sections (mm)	bars supports max. distance depending on short-circuit current (mm)						
			10 kA	15 kA	20 kA	25 kA	30 kA	35 kA	
 UC820	$I_n \leq 630 \text{ A}$ $I_{cc} \leq 35 \text{ kA}$	160 A	12 x 5	1000	475	250	650	425	300
	250 A	20 x 5	1000	1000	950				
	400 A	30 x 5	1000	1000	1000	850	550	375	
	630 A	30 x 10	1000	1000	1000	1000	900	625	


Horizontal Mounting

Busbars fixing	nominal current	bars sections (mm)	short-circuit current depending on bottom width for Quadro 4, Quadro 5 and Quadro+ Evo		
			250 mm	500 mm	
 UC820	$I_n \leq 630 \text{ A}$ $I_{cc} \leq 35 \text{ kA}$	160 A	12 x 5	20 kA	15 kA
	250 A	20 x 5	35 kA	30 kA	
	400 A	30 x 5	45 kA	34 kA	
	630 A	30 x 10	55 kA	45 kA	

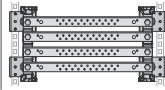
Inclined Busbars

Busbars fixing	nominal current	bars sections (mm)	short-circuit current depending on bottom width for Quadro 4, Quadro 5 and Quadro+ Evo					
			10 kA	15 kA	20 kA	25 kA	30 kA	35 kA
 $I_n \leq 630 \text{ A}$ $I_{cc} \leq 35 \text{ kA}$ UC826	250 A	20 x 5	1000	1000	1000	825	650	425
	400 A	32 x 5	1000	1000	1000	1000	925	625
	630 A	30 x 10	1000	1000	1000	1000	925	650

Busbars Supports (only for Quadro+ Evo)

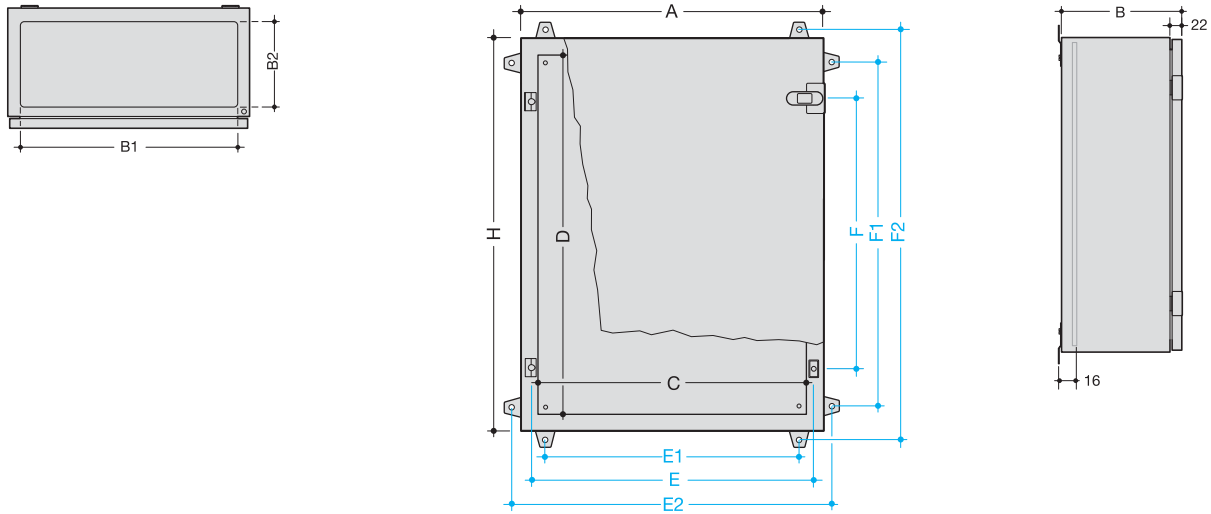
Busbars fixing	nominal current	bars sections (mm)	bars supports max. distance "d" depending on short-circuit current (mm)											
			12 kA		23 kA		30 kA		39 kA		52 kA		70 kA	
 $I_n \leq 1600 \text{ A}$ $I_{cc} \leq 70 \text{ kA}$ UC824 UC823			3P	4P	3P	4P	3P	4P	3P	4P	3P	4P	3P	4P
	500 A	50 x 5	1475	1350	800	725	625	575	450	425	350	325	250	225
	630 A	63 x 5	1600	1600	925	850	725	650	525	475	400	375	300	275
	800 A	80 x 5	1600	1600	1075	957	825	775	600	550	450	425	350	325
	1000 A	100 x 5	1600	1600	1225	1125	950	900	700	550	252	500	400	325
	1250 A	80 x 5 x 2	1600	1600	1050	1025	825	800	600	575	450	450	350	325
	1600 A	100 x 5 x 2	1600	1600	1250	1200	975	950	725	700	550	525	400	400

Inclined Horizontal Bars Mounting

Busbars fixing	nominal current	bars sections (mm)	short-circuit current depending on bottom width for Quadro 4, Quadro 5 and Quadro+ Evo	
			250 mm	500 mm
 $I_n \leq 630 \text{ A}$ $I_{cc} \leq 35 \text{ kA}$ UC826	250 A	20 x 5	35 kA	35 kA
	400 A	32 x 5	45 kA	35 kA
	630 A	30 x 10	45 kA	35 kA

Metal Enclosure Orion Plus

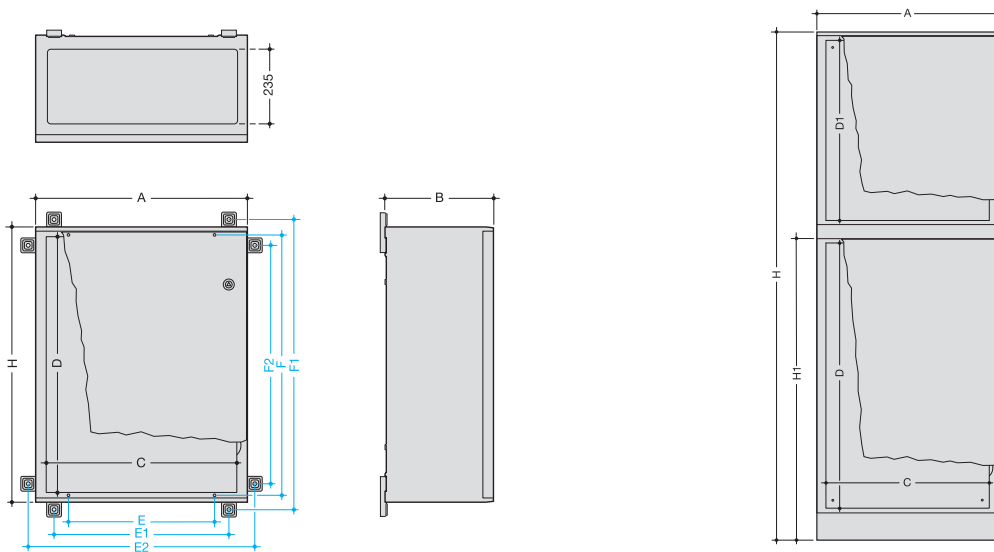
Commercial
Distribution



Dimensions

references		number of rows	enclosure								external fixing			
plain door	transp.door		L	A	B	B1	B2	C	D	E1	E2	F1	F2	
FL101A	FL151A	-	200	250	160	145	80	150	200	160	270	170	282	
FL102A	FL152A	-	250	300	160	195	80	200	250	210	320	220	332	
FL103A	FL153A	-	300	300	160	245	80	250	250	260	370	220	332	
FL104A	FL154A	2	300	350	160	245	80	250	300	260	370	270	382	
FL105A	FL155A	2	300	350	200	245	120	250	300	260	370	270	382	
FL106A	FL156A	-	300	400	160	245	80	250	350	260	370	320	432	
FL107A	FL157A	-	300	400	200	245	120	250	350	260	370	320	432	
FL108A	FL158A	-	400	400	200	345	120	350	350	360	470	320	432	
FL109A	FL159A	3	300	500	160	245	80	250	450	260	370	420	532	
FL110A	FL160A	3	300	500	200	245	120	250	450	260	370	420	532	
FL111A	FL161A	3	400	500	160	345	80	350	450	360	470	420	532	
FL112A	FL162A	3	400	500	200	345	120	350	450	360	470	420	532	
FL113A	FL163A	-	500	500	200	445	120	450	450	460	570	420	532	
FL114A	FL164A	-	400	600	200	345	120	350	550	360	470	520	632	
FL115A	FL165A	-	400	600	250	345	170	350	550	360	470	520	632	
FL116A	FL166A	-	600	600	250	545	170	550	550	560	670	520	632	
FL117A	FL167A	4	400	650	200	345	120	350	600	360	470	570	682	
FL118A	FL168A	4	400	650	250	345	170	350	600	360	470	570	682	
FL119A	FL169A	4	500	650	200	445	120	450	600	460	570	570	682	
FL120A	FL170A	4	500	650	250	445	170	450	600	460	570	570	682	
FL121A	FL171A	5	500	800	200	445	120	450	750	460	570	720	832	
FL122A	FL172A	5	500	800	250	445	170	450	750	460	570	720	832	
FL123A	FL173A	5	600	800	250	545	170	550	750	560	670	720	832	
FL124A	FL174A	5	600	800	300	545	220	550	750	560	670	720	832	
FL125A	FL175A	6	600	950	250	545	170	550	900	560	670	870	982	
FL126A	FL176A	6	600	950	300	545	220	550	900	560	670	870	982	
FL127A	FL177A	6	800	950	250	745	170	750	900	760	870	870	982	
FL128A	FL178A	6	800	950	300	745	220	750	900	760	870	870	982	
FL129A	FL179A	8	600	1250	250	545	170	550	1200	560	670	1170	1282	
FL130A	FL180A	8	800	1250	300	745	220	750	1200	760	870	1170	1282	

Orion Plus Polyester Enclosures



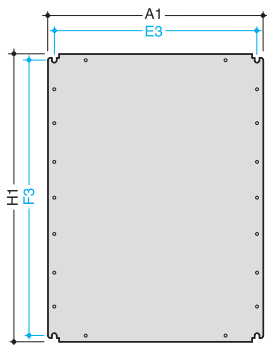
note: plan for "A + 25 mm"
for door opening

Commercial
Distribution

Dimensions

references		nr of rows	enclosures								in.fixing		external fixing			
plain door	transp. door		L	A	A1	A2	B	C	D	D1	E	F	E1	E2	F1	F2
FL204B	FL254B	2	300	500	-	-	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
FL300B	FL500B	3	600	550	-	-	300	500	450	-	-	-	-	-	-	-
FL301B	FL501B	5	600	850	-	-	300	500	750	-	-	-	-	-	-	-
FL302B	FL502B	7	600	1150	-	-	300	500	1050	-	-	-	-	-	-	-
FL305B	FL505B	3	850	550	-	-	300	750	450	-	-	-	-	-	-	-
FL306B	FL506B	5	850	850	-	-	300	750	750	-	-	-	-	-	-	-
FL307B	FL507B	7	850	1150	-	-	300	750	1050	-	-	-	-	-	-	-
FL310B	FL510B	3	1100	550	-	-	300	1000	450	-	-	-	-	-	-	-
FL311B	FL511B	5	1100	850	-	-	300	1000	750	-	-	-	-	-	-	-
FL312B	FL512B	7	1100	1150	-	-	300	1000	1050	-	-	-	-	-	-	-
FL320B	FL520B	3	600	600	-	-	300	500	450	-	-	-	-	-	-	-
FL321B	FL521B	5	600	900	-	-	300	500	750	-	-	-	-	-	-	-
FL322B	FL522B	7	600	1200	-	-	300	500	1050	-	-	-	-	-	-	-
FL325B	FL525B	3	850	600	-	-	300	750	450	-	-	-	-	-	-	-
FL326B	FL526B	5	850	900	-	-	300	750	750	-	-	-	-	-	-	-
FL327B	FL527B	7	850	1200	-	-	300	750	1050	-	-	-	-	-	-	-
FL330B	FL530B	3	1100	600	-	-	300		450	-	-	-	-	-	-	-
FL331B	FL531B	5	1100	900	-	-	300	1000	750	-	-	-	-	-	-	-
FL332B	FL532B	7	1100	1200	-	-	300	1000	1050	-	-	-	-	-	-	-
FL340B	-	3+3	600	1150	550	550	300	500	450	-	-	-	-	-	-	-
FL342B	-	5+3	600	1450	850	550	300	500	750	450	-	-	-	-	-	-
FL344B	-	7+3	600	1750	1150	550	300	500	1050	450	-	-	-	-	-	-
FL346B	-	5+5	600	1750	850	850	300	500	750	750	-	-	-	-	-	-
FL348B	-	7+5	600	2050	1150	850	300	500	1050	750	-	-	-	-	-	-
FL350B	-	3+3	850	1150	550	550	300	750	450	450	-	-	-	-	-	-
FL352B	-	5+3	850	1450	850	550	300	750	750	450	-	-	-	-	-	-
FL354B	-	7+3	850	1750	1150	550	300	750	1050	450	-	-	-	-	-	-
FL356B	-	5+5	850	1750	850	850	300	750	750	750	-	-	-	-	-	-
FL358B	-	7+5	850	2050	1150	850	300	750	1050	750	-	-	-	-	-	-
FL360B	-	3+3	1100	1500	550	550	300	1000	450	450	-	-	-	-	-	-
FL362B	-	5+3	1100	1450	850	550	300	1000	750	450	-	-	-	-	-	-
FL364B	-	7+3	1100	1750	1150	550	300	1000	1050	450	-	-	-	-	-	-
FL366B	-	5+5	1100	1750	850	850	300	1000	750	750	-	-	-	-	-	-
FL368B	-	7+5	1100	2050	1150	550	300	1000	1050	750	-	-	-	-	-	-

Mounting Plate



Commercial
Distribution

Dimensions

plain plate	perforated plate	size L1	A1	for enclosures	insulated	size L1	A1
FL401A	-	143	230	FL101A, FL151A	-	-	-
FL402A	FL472A	193	280	FL102A, FL152A	FL422A	195	235
FL403A	-	243	280	FL103A, FL153A	-	-	-
FL404A	FL473A	243	330	FL104A, FL105A, FL154A, FL155A, FL204B, FL254B	FL423A	245	285
FL405A	-	243	380	FL106A, FL107A, FL156A, FL157A	-	-	-
FL406A	-	343	380	FL108A, FL158A	-	-	-
FL407A	FL474A	243	480	FL109A, FL110A, FL159A, FL160A, FL209B, FL259B	FL424A	245	285
FL408A	FL475A	343	480	FL111A, FL112A, FL161A, FL162A, FL213B, FL263B	FL425A	245	435
FL510E	-	493	480	FL300B, FL500B, FL320B, FL520B	FL550E	495	435
FL520E	-	743	480	FL305B, FL505B, FL325B, FL525B	FL560E	745	435
FL530E	-	993	480	FL310B, FL510B, FL330B, FL530B	FL570E	995	435
FL409A	-	443	480	FL113A, FL163A	-	-	-
FL410A	-	343	580	FL114A, FL115A, FL164A, FL165A	-	-	-
FL411A	-	543	580	FL116A, FL166A	-	-	-
FL412A	FL476A	343	630	FL117A, FL118A, FL167A, FL168A, FL216B, FL266B	FL426A	345	585
FL413A	FL477A	443	630	FL119A, FL120A, FL169A, FL170A, FL221B, FL271B	FL427A	445	585
FL414A	FL478A	443	780	FL121A, FL122A, FL171A, FL172A	FL428A	445	735
FL415A	FL479A	543	780	FL123A, FL124A, FL173A, FL174A, FL229B, FL279B	FL429A	545	735
FL511E	-	493	780	FL301B, FL501B, FL321B, FL521B	FL551E	495	735
FL521E	-	743	780	FL306B, FL506B, FL326B, FL526B	FL561E	745	735
FL531E	-	993	780	FL311B, FL511B, FL331B, FL531B	FL571E	995	735
FL512E	-	493	1080	FL302B, FL502B, FL322B, FL522B	FL552E	495	1035
FL522E	-	693	1080	FL307B, FL507B, FL327B, FL527B	FL562E	745	1035
FL 532E	-	993	1080	FL312B, FL512B, FL332B, FL532B	FL572E	995	1035
FL416A	FL480A	543	930	FL125A, FL126A, FL175A, FL176A	FL430A	545	885
FL417A	FL481A	743	930	FL127A, FL128A, FL177A, FL178A	FL431A	745	885
FL418A	FL482A	543	1230	FL129A, FL179A	FL432A	545	1185
FL419A	FL483A	743	1230	FL130A, FL180A	FL433A	745	1185

Power Dissipated

IEC standard EN 60439-1 (IEC 17-13/1) standard in Table 7 shows the list of checks and tests to be carried out on BT panel types AS (series equipment subject to type testing) and ANS (series equipment partially subject to type testing).

One of the characteristics to be monitored is the overtemperature limit check to ensure that the temperatures specified in Table 3 of the standard are not exceeded for the various parts of the panel.

IEC standard EN 60439-1 requires that for ANS type panels the overtemperature limit check can be carried out by means of extrapolation of the series panels (AS) that have passed the type testing.

The extrapolation method laid down by the standard is set out in the IEC 890 publication corresponding to IEC standard 17-43 "Overtemperature determination method, by extrapolation, for non-standard (ANS) protection and control equipment assemblies for low tension (BT panels)".

To make the overtemperature limit check easier, Hager Lume have drawn up a series of tables where the maximum power values that can be dissipated P.Max (W) are shown for all the Lume panels.

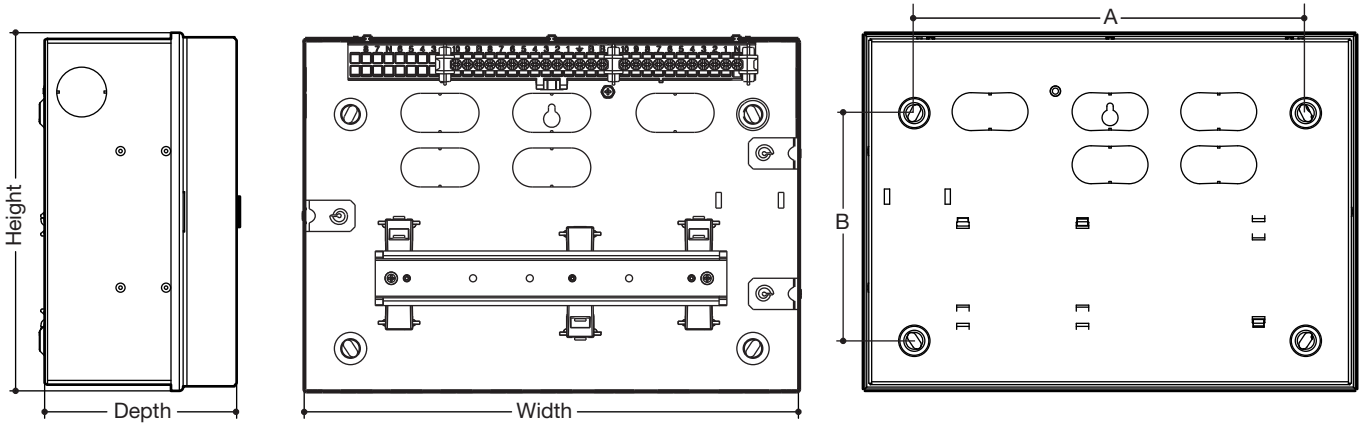
These values have been determined so as to obtain the overtemperature values specified in Table 3 of IEC standard EN 60439-1 for accessible external envelopes and coverings (30K for metal surfaces and 40K for insulating surfaces) for the upper part of the panel.

The maximum power values shown in the tables that can be dissipated by the metalwork are valid for the mounting conditions of the panel considered and for the overtemperature values halfway up Δt 0.5 and in the upper part Δt 1.0 indicated.

IP65 Standard Metal Panels

Article		Dimensional data (mm)	Laid	ΔT 0,5 (K)	ΔT 1,0 (K)	P. max (W)
FL102A	FL152A	300 x 250 x 160	Walls	25,0	30	28
FL104A	FL154A	350 x 300 x 160	Walls	25,0	30	35
FL105A	FL155A	350 x 300 x 200	Walls	24,9	30	39
FL109A	FL159A	500 x 300 x 160	Walls	24,3	30	44
FL110A	FL160A	500 x 300 x 200	Walls	24,3	30	49
FL111A	FL161A	500 x 400 x 160	Walls	24,7	30	54
FL112A	FL162A	500 x 400 x 200	Walls	24,9	30	60
FL117A	FL167A	650 x 400 x 200	Walls	24,3	30	71
FL118A	FL168A	650 x 400 x 250	Walls	24,5	30	80
FL119A	FL169A	650 x 500 x 200	Walls	24,8	30	84
FL120A	FL170A	650 x 500 x 250	Walls	24,9	30	93
FL121A	FL171A	800 x 500 x 200	Walls	24,4	30	97
FL122A	FL172A	800 x 500 x 250	Walls	24,5	30	107
FL123A	FL173A	800 x 600 x 250	Walls	22,0	30	100
FL124A	FL174A	800 x 600 x 300	Walls	22,7	30	114
FL125A	FL175A	950 x 600 x 250	Walls	21,4	30	113
FL126A	FL176A	950 x 600 x 300	Walls	21,8	30	127
FL127A	FL177A	950 x 800 x 250	Walls	22,1	30	148
FL128A	FL178A	950 x 800 x 300	Walls	22,8	30	170
FL129A	FL179A	1250 x 600 x 250	Walls	20,0	30	134,5
FL130A	FL180A	1250 x 800 x 300	Walls	21,3	30	211

Commercial
Distribution

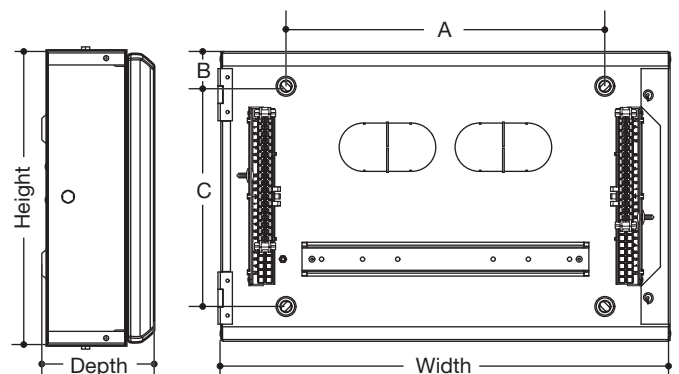


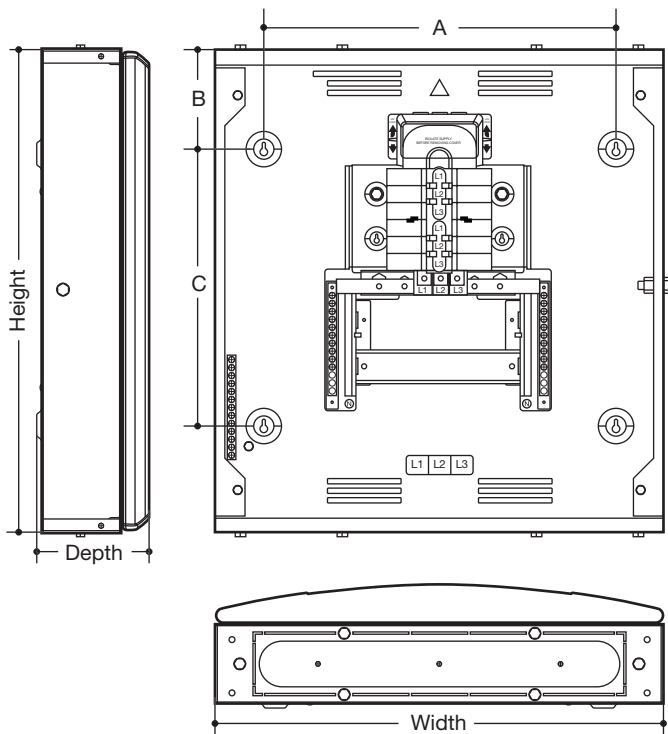
SP&N A Boards

Enclosure Size	Dimensions			Fixing Centres		Knockout Size	N° of Knockouts				
	Width	Height	Depth	A	B		Top	Bottom	Left	Right	Back
3	254	236	125	186	150	∅ 20	3	3	-	-	-
						∅ 32	1	1	1	1	-
						∅ 25	1	1	-	-	-
						25 x 50	-	-	-	-	3
4	326	236	125	258	150	∅ 20	6	6	-	-	-
						∅ 32	1	1	1	1	-
						∅ 25	1	1	-	-	-
						25 x 50	-	-	-	-	5
5	398	236	125	330	150	∅ 20	8	8	-	-	-
						∅ 32	1	1	1	1	-
						∅ 25	1	1	-	-	-
						25 x 50	-	-	-	-	7
7	505	236	125	437	150	∅ 20	11	11	-	-	-
						∅ 32	1	1	1	1	-
						∅ 25	1	1	-	-	-
						25 x 50	-	-	-	-	9
4 (2)	326	472	125	258	388	∅ 20	6	6	-	-	-
						∅ 32	1	1	2	2	-
						∅ 25	1	1	-	-	-
						25 x 50	-	-	-	-	6
5 (2)	398	472	125	330	388	∅ 20	8	8	-	-	-
						∅ 32	1	1	2	2	-
						∅ 25	1	1	-	-	-
						25 x 50	-	-	-	-	8
7 (2)	505	472	125	437	388	∅ 20	11	11	-	-	-
						∅ 32	1	1	2	2	-
						∅ 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





125A Primary Boards

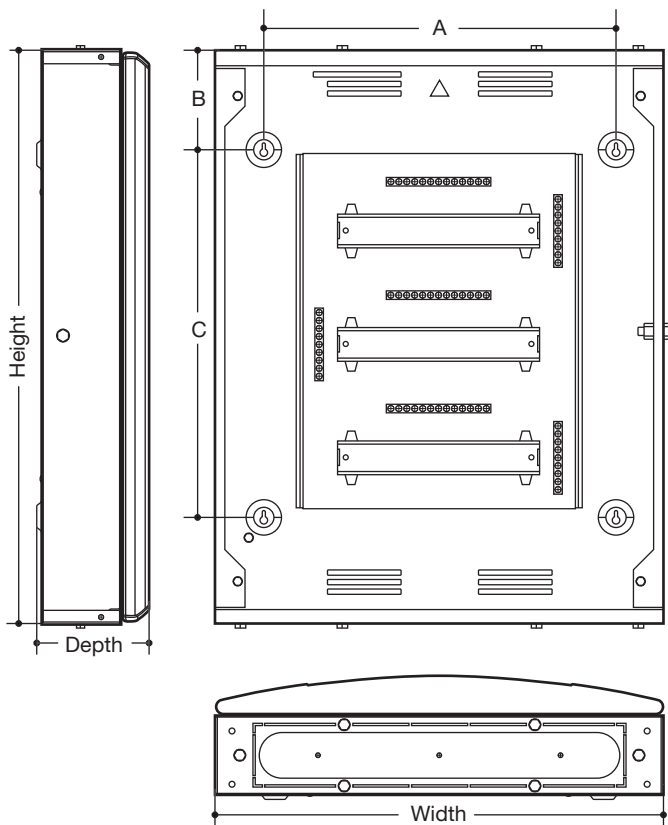
	Dimensions (mm)			Fixing Centres (mm)		
	Height	Width	Depth	A	B	C
JK104B/BG/A3	500	465	132.5	365	100	300
JK106B/BG/A3	550	465	132.5	365	100	350
JK108B/BG/A3	625	465	132.5	365	100	425
JK112B/BG/A3	850	465	132.5	365	100	650
JK116B/BG/A3	950	465	132.5	365	100	750
JK118B/BG/A3	1100	465	132.5	365	100	900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



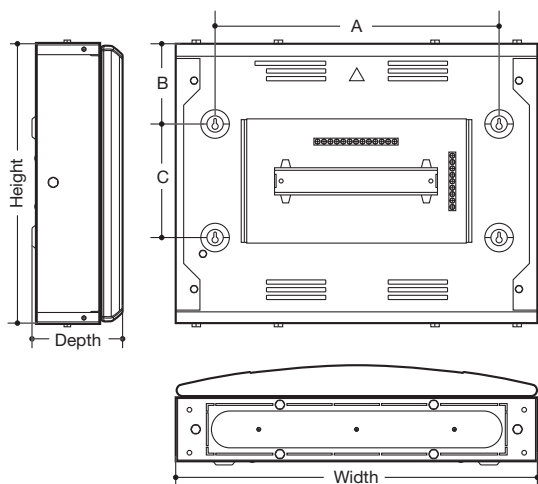
125A Side DIN Boxes

	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 Boxes

	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

Commercial Distribution

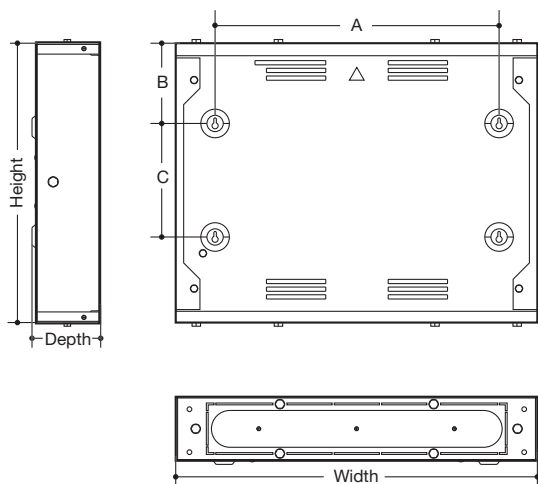


125A DIN Extension Boxes

	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

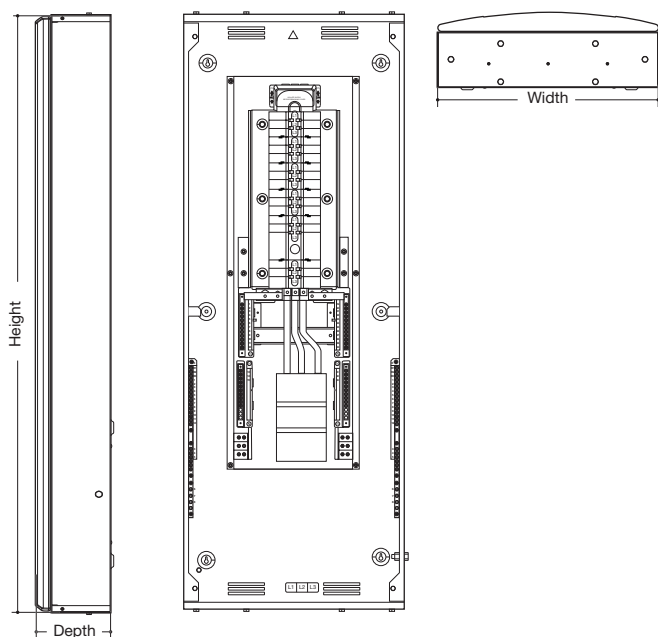


125A Cable Spreader Boxes

	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

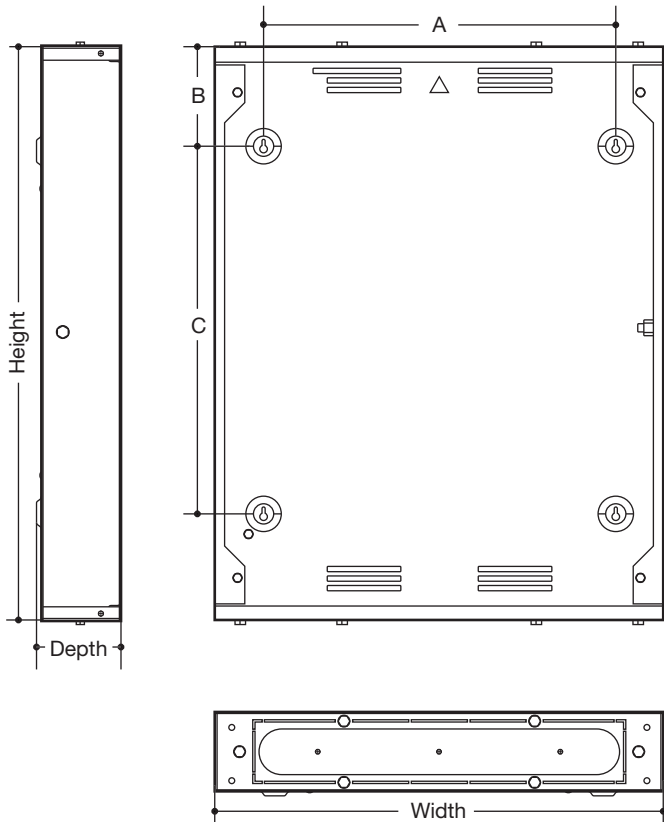
250A Cable Spreader Boxes

	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



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

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

Invicta 3 Metered Board, Dual Power & Lighting Board

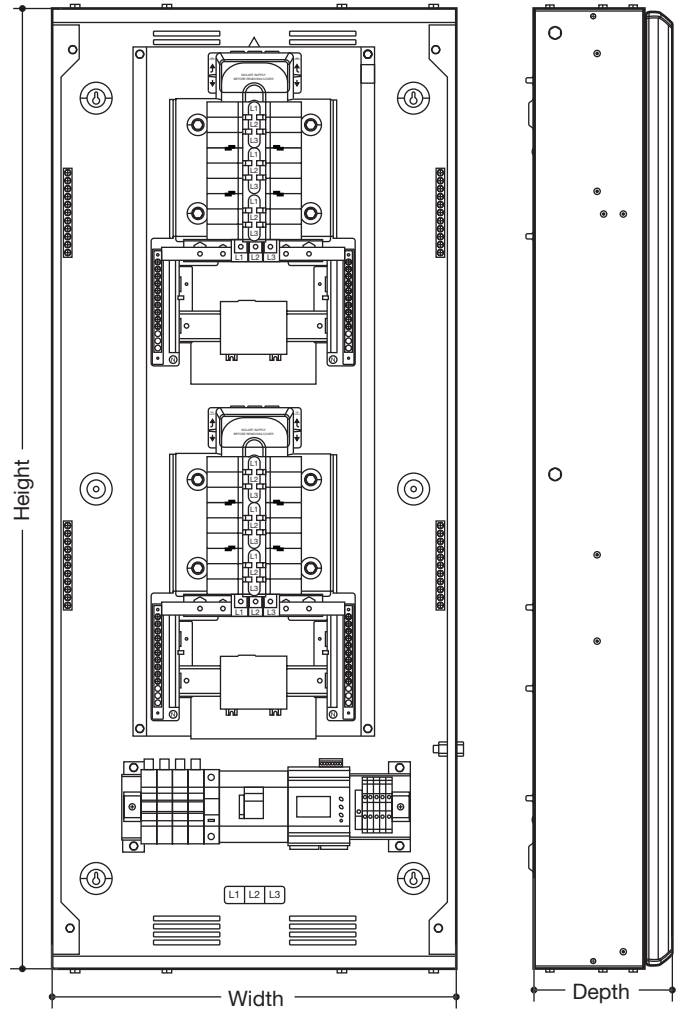
Technical Data & Dimensions

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%)
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Serial Communication

Interface Standard and Protocol	RS485 and MODBUS RTU
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Input (CT)

Pluggable RJ45	Input 1/ Input 2
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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

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	50mm ²	120mm ²
Incoming Earth Terminal	M8 stud	M8 stud
Incoming Neutral Terminal	50mm ² cage or M6 stud	M8 Stud
Outgoing Earth Terminals	16mm ²	16mm ²
Outgoing Neutral Terminals	16mm ²	16mm ²
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

	Pz No.	(mm)	Cables >1.5mm ² Tightening torque (N.m)		Cables ≤1.5mm ² Tightening torque (N.m)		Cable Stripping (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

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 disconnecter)	70mm ² (switch disconnecter)
Incoming Neutral Terminal	50mm ² Cage	50mm ² Cage
Enclosure Earth Stud	M8	M8
Standards	BS EN 61439-3	BS EN 61439-3

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%)
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Serial Communication

Interface Standard and Protocol	RS485 and MODBUS RTU
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Input (CT)

Pluggable RJ45	Input 1/ Input 2
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Output

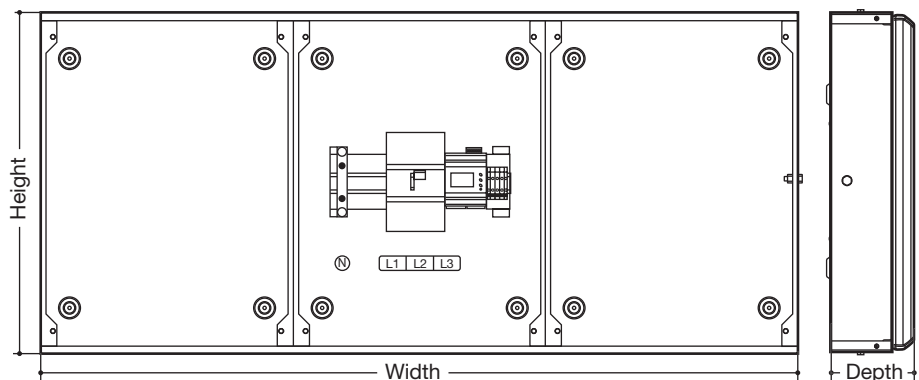
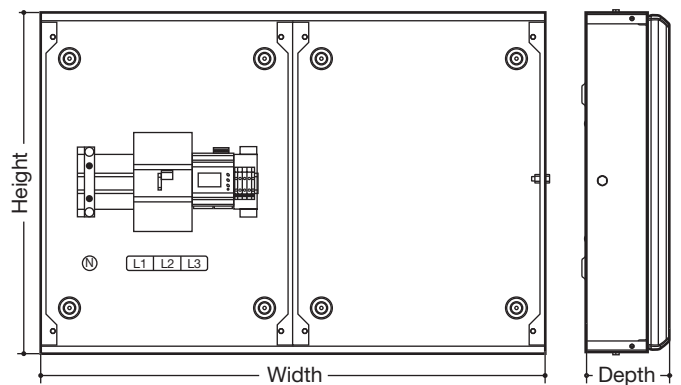
Pulse Output:	Voltage Range : 24V DC max
Current Capacity :	100mA max
Pulse Duration :	Selectable Between 0.1 to 2.0sec
Pulse Weight :	Selectable between 0.01 to 9.99kWh

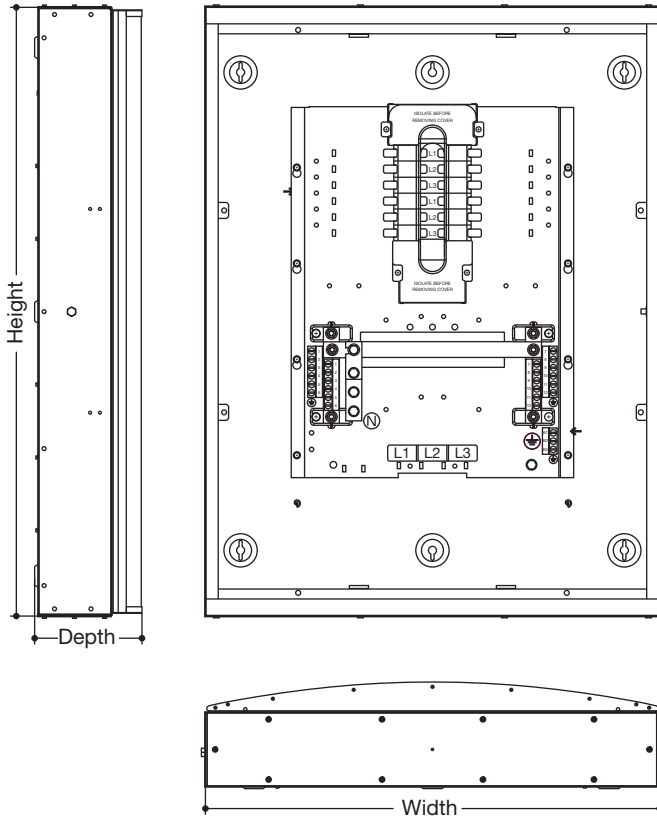
Accuracy of meter

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





Primary Boards

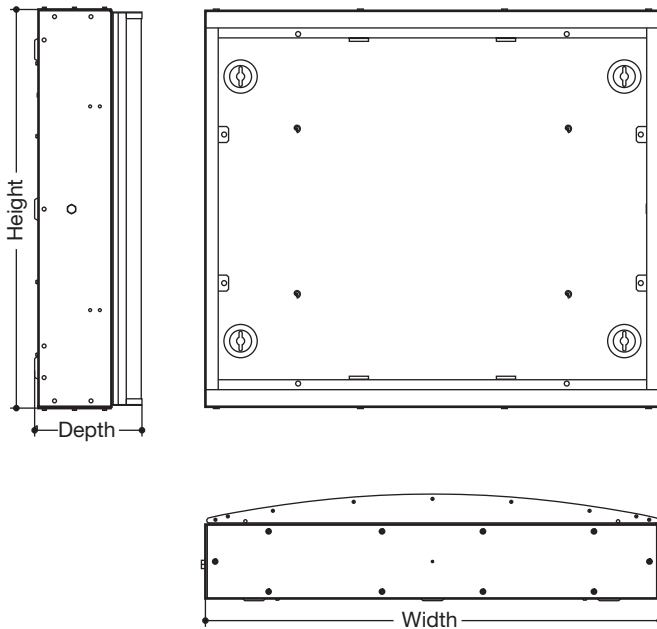
	Dimensions (mm)		
	Height	Width	Depth
JN204B/G	950	710	160
JN206B/G	1100	710	160
JN208B/G	1100	710	160
JN212B/G	1250	710	160
JN216B/G	1550	710	160

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

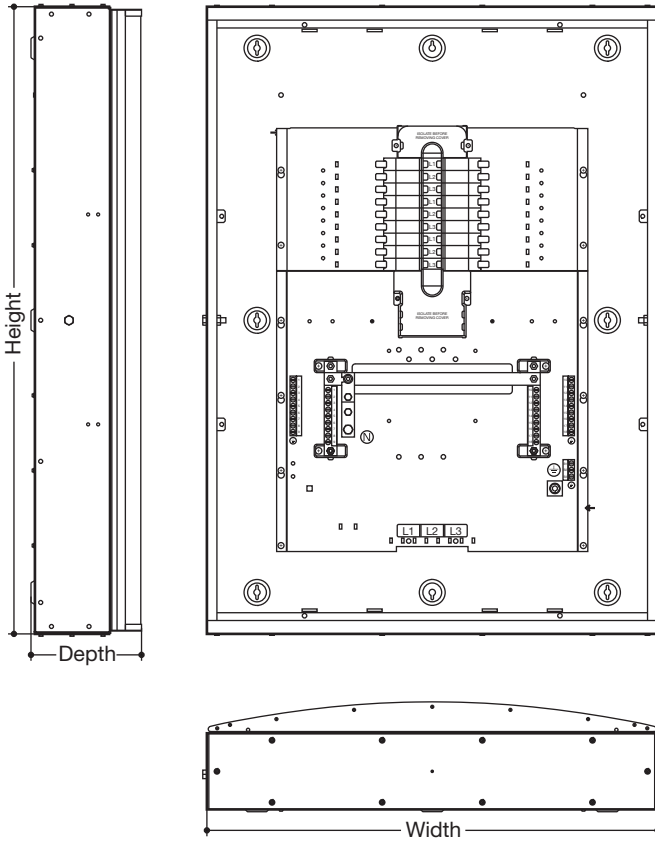
MCCB Connections M8
Earth M8
Neutral M8



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

Commercial
Distribution



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

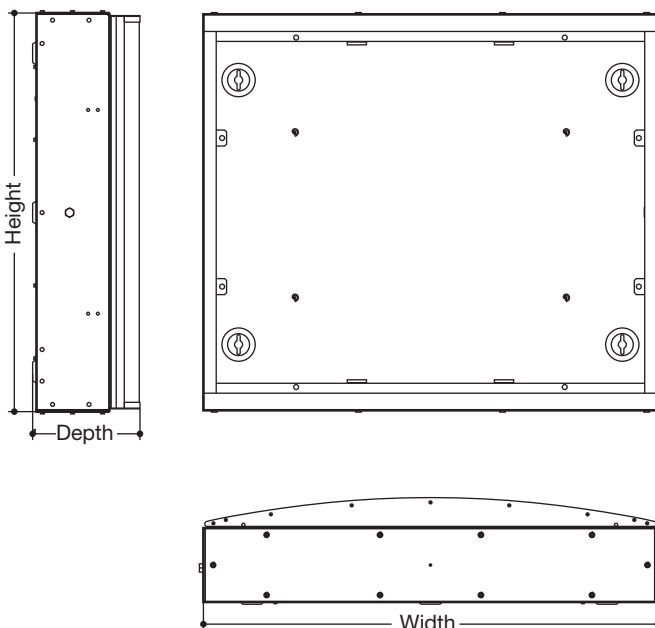
Cables outgoing ways:
25 - 50mm² CSA Flex
25 - 70mm² CSA Solid

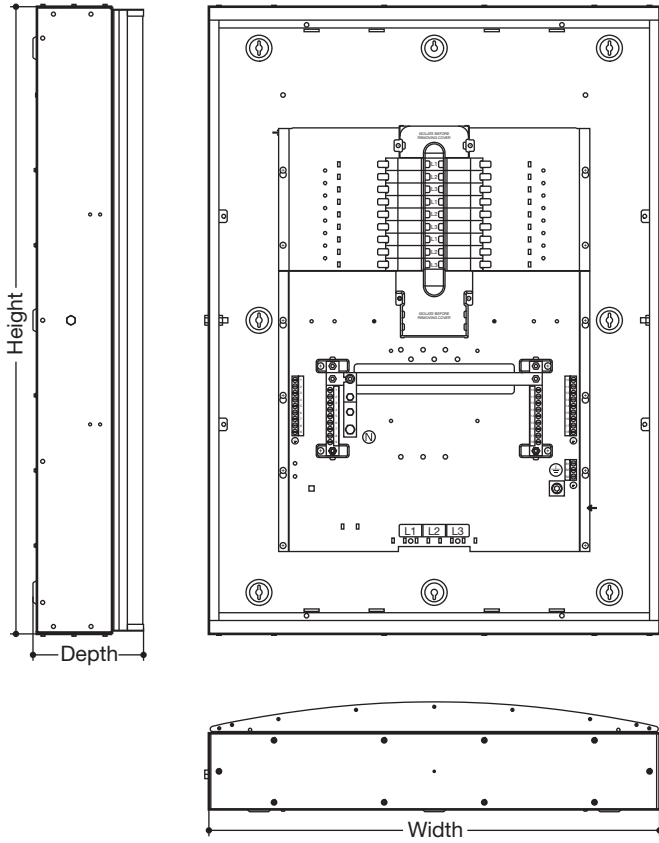
MCCB Connections:
400A M10
630A M12

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



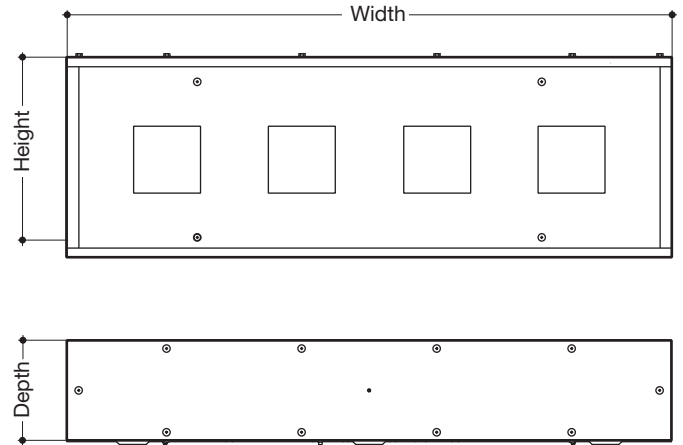
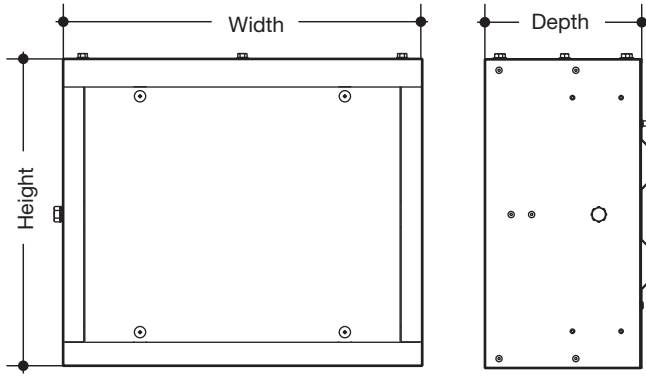


Primary Boards

	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

Commercial
Distribution

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 withstand 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 50mm ²	Up to 50mm ²	Up to 50mm ²	Up to 50mm ²
Outgoing neutral terminals	Up to 50mm ²	Up to 50mm ²	16A - 125A: Up to 50mm ² 100A - 250A: M8 Stud	16A - 125A: Up to 50mm ² 100A - 250A: M8 Stud
Enclosure earth stud	M8	M10	M10	M10
Installation				
Mounting	Surface (Wall)			



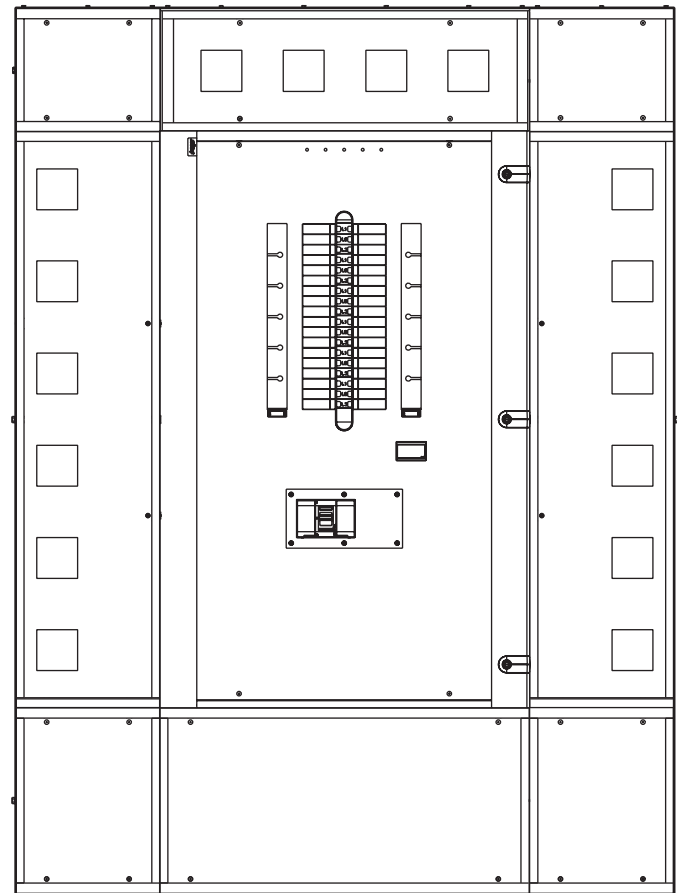
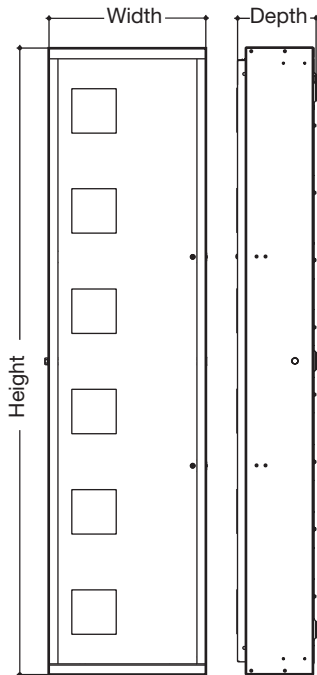
Commercial
Distribution

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

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	Description	Dimensions (mm)		
		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	Description	Dimensions (mm)		
		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	Description	Dimensions (mm)		
		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

	Rating	Dimensions (mm)		
		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	Description	Dimensions (mm)			
		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

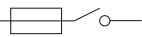
4 Pole	Description	Dimensions (mm)			
		Width	Height	Depth	Handle Depth
JAB402B	20A TPSN	175	232	65	78
JAB403B	32A TPSN	175	232	65	78
JAB406B	63A TPSN	175	232	65	81
JAB410B	100A TPSN	200	300	80	97
JAC412B	125A TPSN	200	300	80	97
JAC416	160A TPSN	250	300	150	195
JAE420	200A TPSN	375	400	200	245
JAE425	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

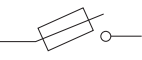
Thermal current I_{th} (40°C)	20A		32A		63A		100A		125A		160A		200A	
Fuse size: BS	A1		A1		A2-A3		A4		B1-B2		B1-B2		B1-B3	
Rated insulated voltage														
U_i (V)	800		800		800		800		800		800		800	
Impulse voltages U_{imp}	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	12000	12000	-
Operational current I_e (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	

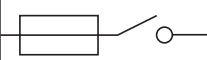
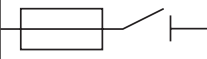




Fuse - Combination Units - BS EN 60947-3

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
Disconnecter Fuse		Isolating
Switch Disconnecter Fuse		Making, breaking and isolating
Fuse Switch		Making and breaking current
Fuse Disconnecter		Isolating
Fuse Switch Disconnecter		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.

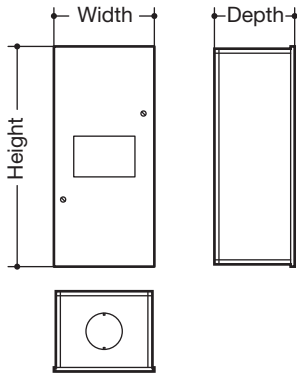
If the load was highly inductive, i.e. motor loads, then the minimum utilisation category would be AC-23A.

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.



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.

Description	Dimensions (mm)		
	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 I_e (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 I_k (kA)	50	50	50	50	50
Peak value (kA)	5.4	6.6	7.2	8.3	8.7
Rated short circuit making capacity (I_{cm}) (kA) 690V	2.5	2.5	2.5	3.3	3.3
Rated short time withstand current (I_{cw}) (kA) 690V (1s)	1	1.1	1.6	1.7	2.3
Rated breaking capacity I_{cn} (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												
l _{cw} 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 U_{imp} (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 I_n	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 I_e (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 I_{cc}	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



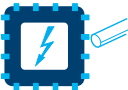
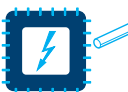
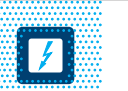

Cable Connection

Max Cu cable CSA mm ²	16	16	35	70	70
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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 first character numeral:
Protection against foreign objects







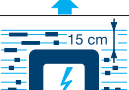

IP	Description	
0		Non-protected
1		Protected against solid objects \geq than 50mm
2		Protected against solid objects \geq than 12.5mm
3		Protected against solid objects \geq than 2.5mm
4		Protected against solid objects \geq than 1.0mm
5		Dust-protected
6		Dust-tight

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 - ϕ 2.5mm
D	Protected against access to hazardous parts with a tool - ϕ 1mm

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 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)
Specific information on the product

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

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 $\sqrt{2}$ 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	
	50Hz	dc	50Hz	dc	50Hz	dc
I _{rm1}	3In	4.5 In	5In	7.5 In	10 In	15 In
I _{rm2}	5In	7.5 In	10In	15 In	20 In	30 In

Table 14

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 30°C. 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)	-25°C	-20°C	-15°C	-10°C	-5°C	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
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

Commercial Distribution

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

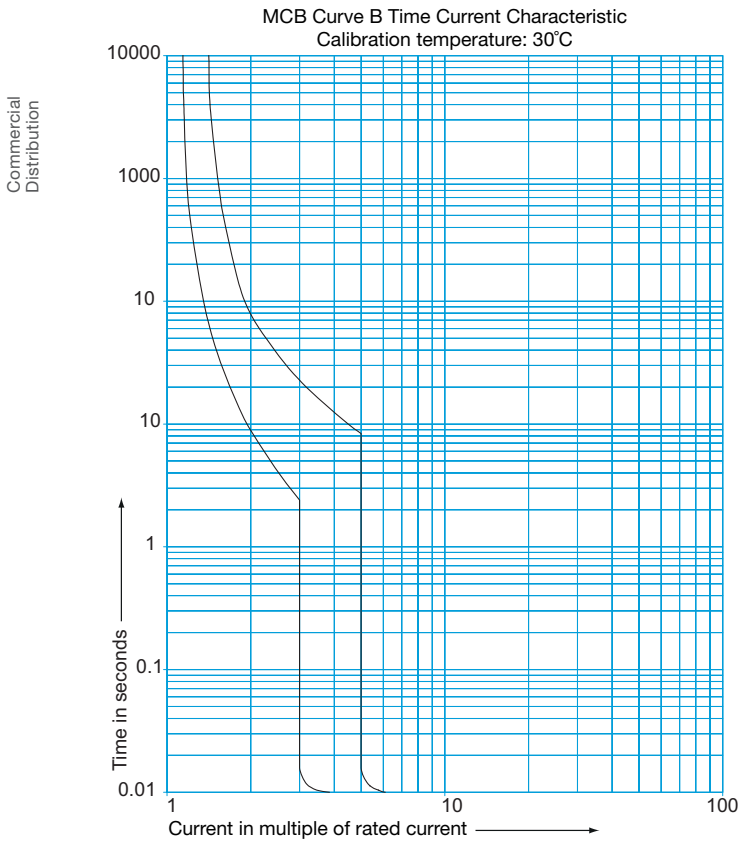
Magnetic – value multiplied by coefficient K

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).

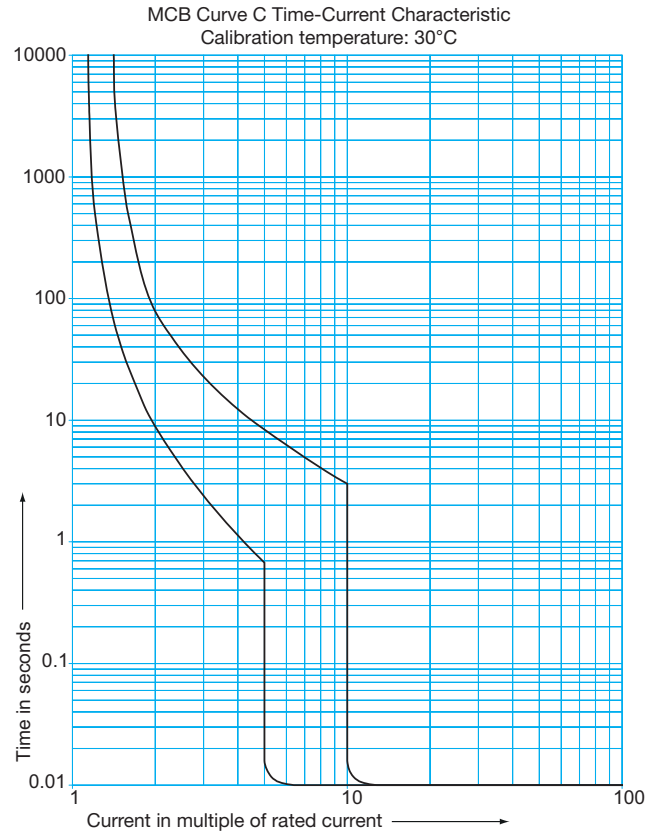
B Curve (BS EN 60898)

MCBs: MTN rated 6 - 63A
NBN rated 6 - 63A



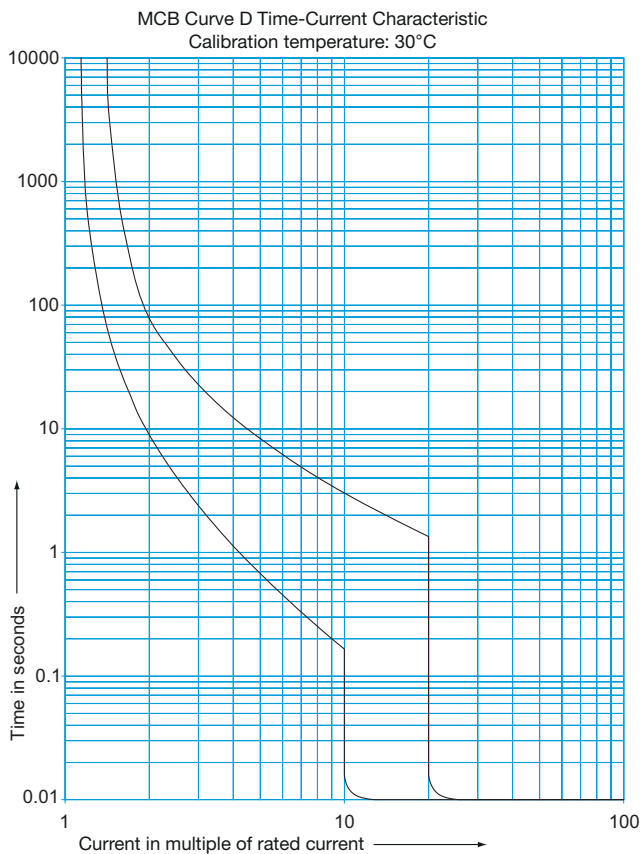
C Curve (BS EN 60898)

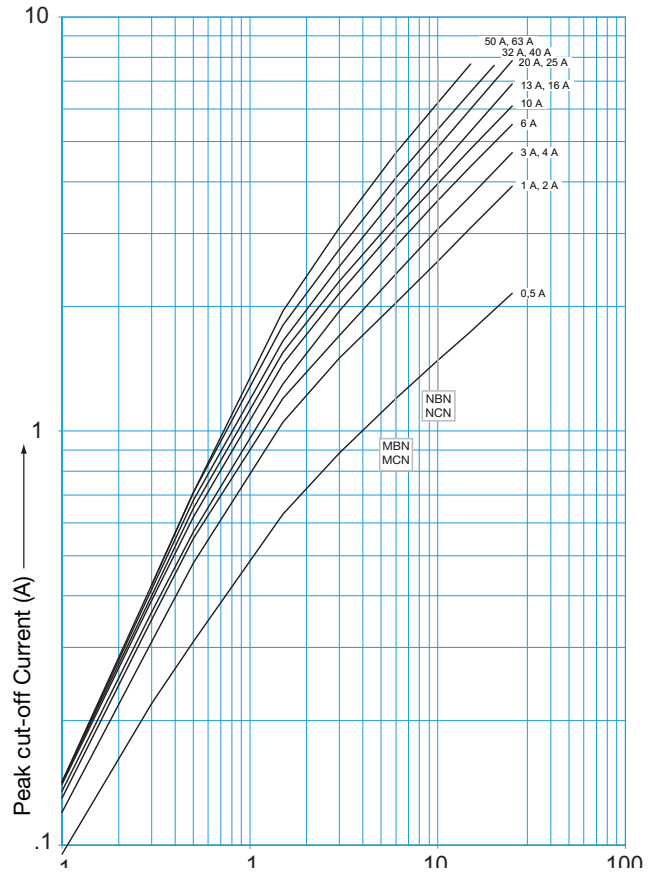
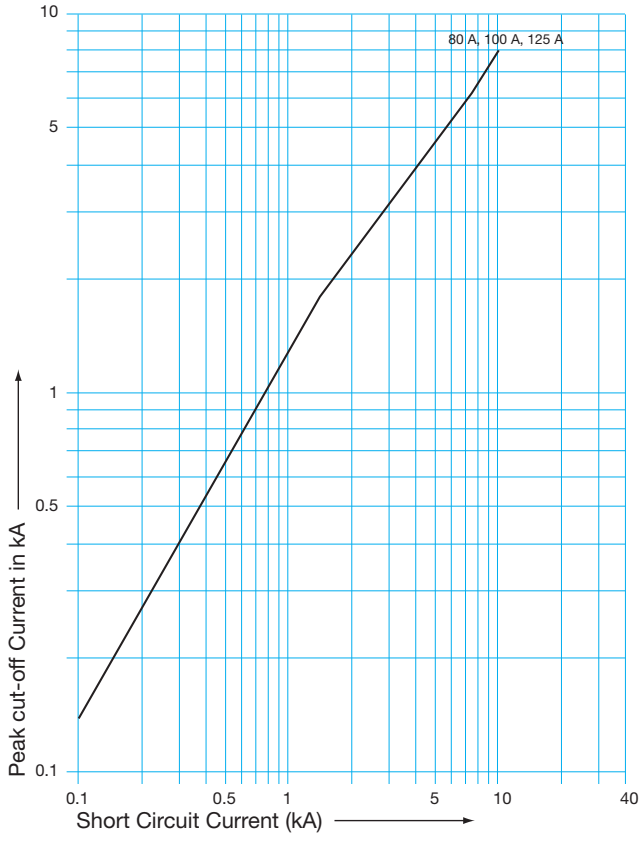
MCBs: NCN rated 0.5 - 63A
MLN rated 2 - 32A
HMF/HMC rated 80 - 125A



D Curve (BS EN 60898)

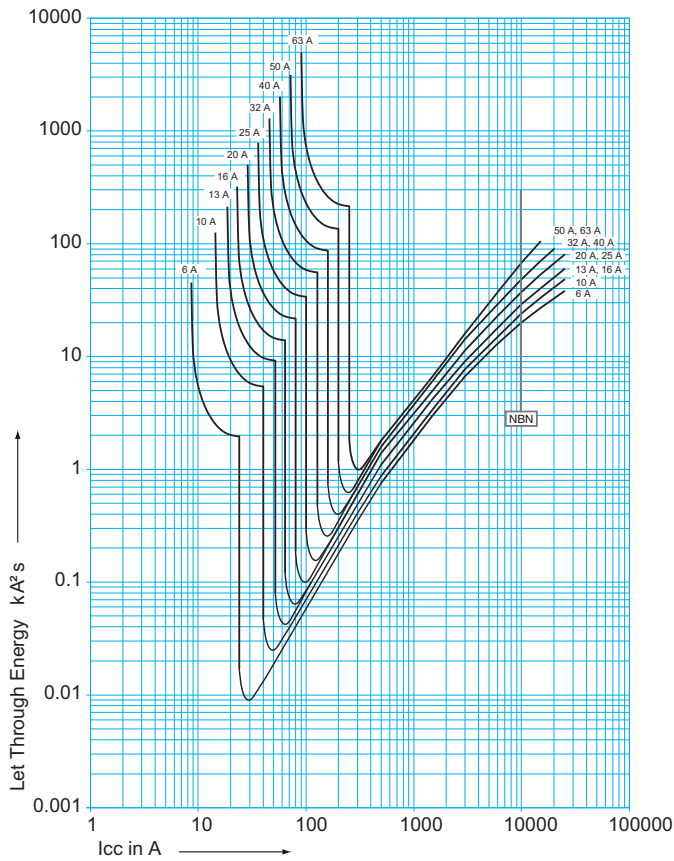
MCBs: NDN rated 6 - 63A
HMD rated 80 - 125A



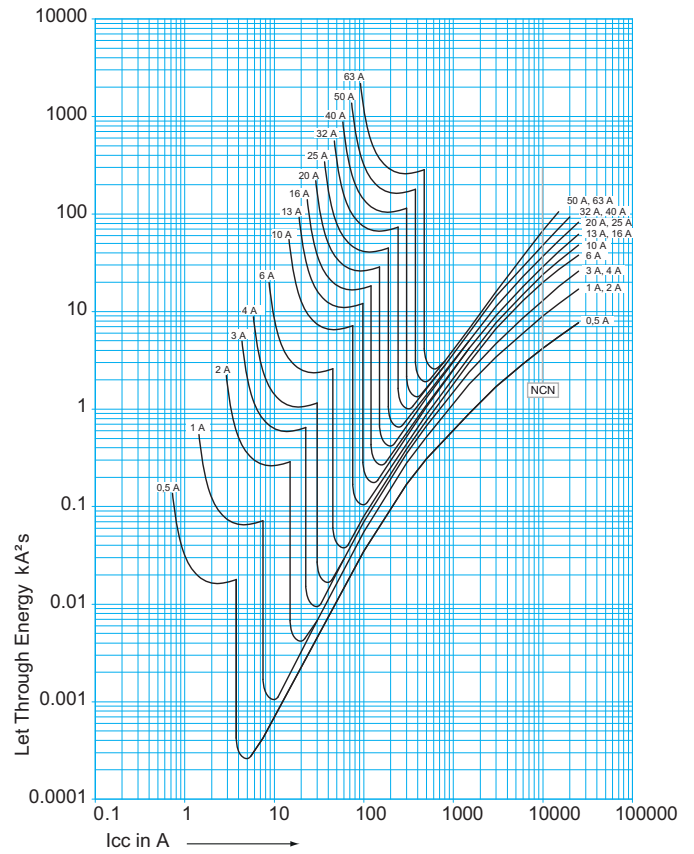


Commercial Distribution

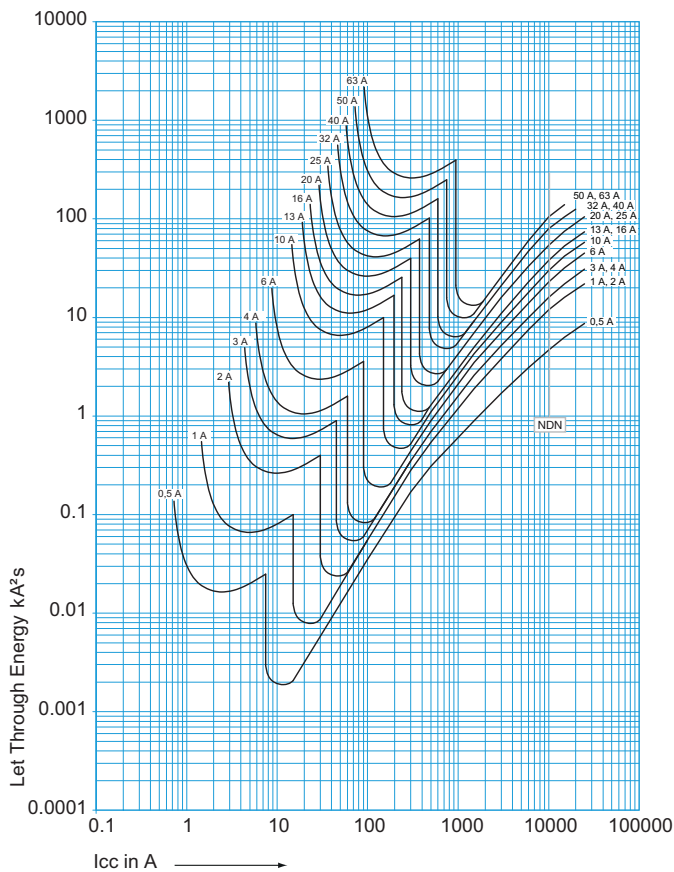
B Curve



C Curve



D Curve



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

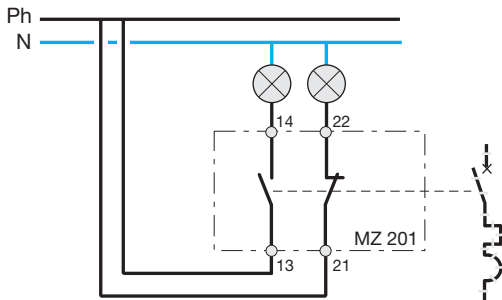


Fig. 9

Electrical Characteristics

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

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).

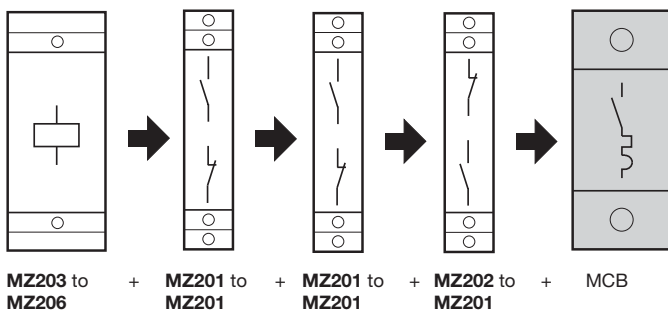


Fig. 11

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

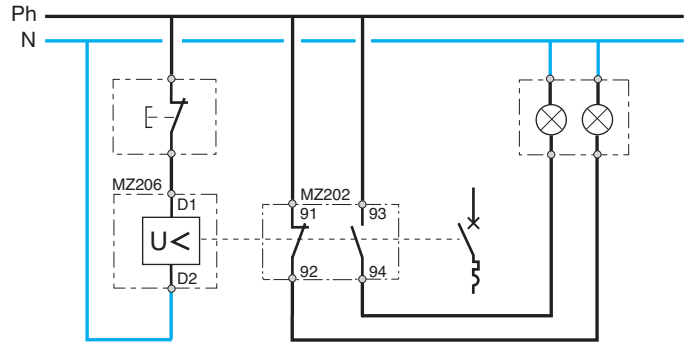


Fig. 10

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

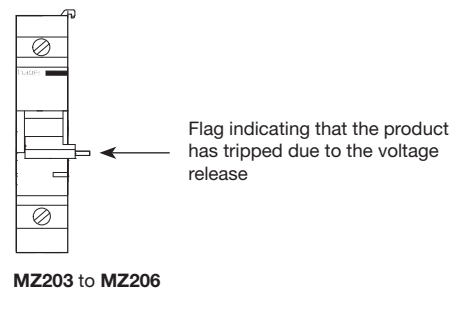


Fig. 12

Commercial Distribution

Max. Values (kA)		Upstream											
		B curve											
Downstream	I _n (A)	6	10	13	16	20	25	32	40	50	63		
		Commercial Distribution	B Curve	6	-	0.04	0.06	0.07	0.09	0.12	0.15	0.19	0.24
10	-			-	0.06	0.07	0.09	0.11	0.15	0.19	0.24	0.30	
13	-			-	-	0.07	0.09	0.11	0.15	0.18	0.23	0.30	
16	-			-	-	-	0.09	0.11	0.14	0.18	0.23	0.29	
20	-			-	-	-	-	0.11	0.14	0.18	0.22	0.28	
25	-			-	-	-	-	-	0.14	0.18	0.22	0.28	
32	-			-	-	-	-	-	-	0.17	0.21	0.27	
40	-			-	-	-	-	-	-	-	0.21	0.27	
50	-			-	-	-	-	-	-	-	-	0.26	
63	-		-	-	-	-	-	-	-	-	-		
C Curve	0.5		0.05	0.13	0.21	0.30	0.45	0.71	1.32	2.99	7.52	T	
	1		0.03	0.05	0.07	0.09	0.11	0.15	0.19	0.25	0.33	0.43	
	2		0.03	0.05	0.07	0.09	0.11	0.14	0.19	0.25	0.32	0.41	
	3		0.03	0.05	0.06	0.08	0.10	0.12	0.16	0.21	0.26	0.34	
	4		0.03	0.05	0.06	0.08	0.10	0.12	0.16	0.20	0.25	0.33	
	6		-	0.04	0.06	0.07	0.09	0.12	0.15	0.19	0.24	0.31	
	8		-	0.04	0.06	0.07	0.09	0.11	0.15	0.19	0.24	0.30	
	10		-	-	0.06	0.07	0.09	0.11	0.15	0.18	0.23	0.30	
	13		-	-	-	0.07	0.09	0.11	0.14	0.18	0.23	0.29	
	16		-	-	-	-	0.09	0.11	0.14	0.18	0.23	0.29	
	20		-	-	-	-	-	0.11	0.14	0.17	0.22	0.28	
	25		-	-	-	-	-	-	0.14	0.17	0.21	0.27	
	32		-	-	-	-	-	-	-	0.17	0.21	0.26	
	40		-	-	-	-	-	-	-	-	0.20	0.25	
	50		-	-	-	-	-	-	-	-	-	0.25	
	63		-	-	-	-	-	-	-	-	-	-	
	D Curve		0.5	0.04	0.09	0.13	0.18	0.25	0.35	0.51	1.27	T	T
			1	0.03	0.05	0.07	0.09	0.11	0.14	0.19	0.25	0.32	0.41
2			0.03	0.05	0.07	0.09	0.11	0.15	0.19	0.25	0.33	0.43	
3			0.03	0.05	0.06	0.08	0.10	0.12	0.16	0.20	0.26	0.33	
4			0.03	0.05	0.06	0.08	0.10	0.12	0.16	0.20	0.26	0.33	
6			-	0.04	0.06	0.07	0.09	0.11	0.15	0.19	0.24	0.30	
10			-	-	0.06	0.07	0.09	0.11	0.15	0.18	0.23	0.30	
13		-	-	-	0.07	0.09	0.11	0.14	0.18	0.22	0.28		
16		-	-	-	-	0.09	0.11	0.14	0.17	0.22	0.28		
20		-	-	-	-	-	0.11	0.14	0.17	0.21	0.27		
25		-	-	-	-	-	-	0.13	0.16	0.21	0.26		
32		-	-	-	-	-	-	-	0.16	0.20	0.25		
40		-	-	-	-	-	-	-	-	0.20	0.25		
50		-	-	-	-	-	-	-	-	-	0.25		
63		-	-	-	-	-	-	-	-	-	-		

Upstream

C curve

0.5	1	2	3	4	6	8	10	13	16	20	25	32	40	50	63
-	-	-	-	-	-	0.07	0.09	0.11	0.14	0.18	0.23	0.29	0.37	0.47	0.59
-	-	-	-	-	-	-	-	0.11	0.14	0.17	0.22	0.29	0.36	0.46	0.57
-	-	-	-	-	-	-	-	-	0.14	0.17	0.22	0.28	0.35	0.45	0.56
-	-	-	-	-	-	-	-	-	-	0.17	0.21	0.28	0.35	0.44	0.55
-	-	-	-	-	-	-	-	-	-	-	0.21	0.27	0.34	0.43	0.54
-	-	-	-	-	-	-	-	-	-	-	-	0.27	0.33	0.42	0.53
-	-	-	-	-	-	-	-	-	-	-	-	-	0.32	0.41	0.51
-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.40	0.51
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.48
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	0.01	0.02	0.05	0.08	0.16	0.27	0.40	0.67	1.11	2.32	5.59	T	T	T	T
-	-	0.02	0.03	0.04	0.06	0.08	0.10	0.14	0.18	0.23	0.30	0.40	0.53	0.74	1.22
-	-	-	0.03	0.04	0.06	0.08	0.10	0.14	0.18	0.23	0.30	0.39	0.51	0.72	1.13
-	-	-	-	0.03	0.05	0.07	0.09	0.12	0.15	0.19	0.25	0.32	0.41	0.52	0.67
-	-	-	-	-	0.05	0.07	0.09	0.12	0.15	0.19	0.24	0.31	0.39	0.50	0.66
-	-	-	-	-	-	0.07	0.09	0.11	0.14	0.18	0.22	0.29	0.37	0.46	0.58
-	-	-	-	-	-	-	0.08	0.11	0.14	0.17	0.22	0.29	0.36	0.46	0.57
-	-	-	-	-	-	-	-	0.11	0.14	0.17	0.22	0.28	0.35	0.45	0.56
-	-	-	-	-	-	-	-	-	0.13	0.17	0.21	0.28	0.35	0.44	0.55
-	-	-	-	-	-	-	-	-	-	0.17	0.21	0.27	0.34	0.43	0.54
-	-	-	-	-	-	-	-	-	-	-	0.20	0.26	0.33	0.41	0.52
-	-	-	-	-	-	-	-	-	-	-	-	0.26	0.32	0.41	0.51
-	-	-	-	-	-	-	-	-	-	-	-	-	0.31	0.39	0.49
-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.37	0.47
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.46
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	0.01	0.02	0.04	0.06	0.10	0.16	0.22	0.34	0.46	0.77	7.50	T	T	T	T
-	-	0.02	0.03	0.04	0.06	0.08	0.10	0.14	0.18	0.23	0.30	0.39	0.51	0.73	1.19
-	-	-	0.03	0.04	0.06	0.08	0.10	0.14	0.18	0.23	0.30	0.40	0.53	0.74	1.15
-	-	-	-	0.03	0.05	0.07	0.09	0.12	0.15	0.19	0.24	0.31	0.40	0.51	0.67
-	-	-	-	-	0.05	0.07	0.09	0.12	0.15	0.19	0.24	0.32	0.40	0.51	0.67
-	-	-	-	-	-	0.07	0.08	0.11	0.14	0.18	0.22	0.29	0.36	0.46	0.58
-	-	-	-	-	-	-	-	0.11	0.14	0.17	0.22	0.28	0.35	0.45	0.56
-	-	-	-	-	-	-	-	-	0.13	0.17	0.21	0.27	0.34	0.43	0.54
-	-	-	-	-	-	-	-	-	-	0.16	0.21	0.26	0.33	0.42	0.53
-	-	-	-	-	-	-	-	-	-	-	0.20	0.26	0.32	0.41	0.51
-	-	-	-	-	-	-	-	-	-	-	-	0.25	0.31	0.39	0.49
-	-	-	-	-	-	-	-	-	-	-	-	-	0.30	0.37	0.47
-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.37	0.47
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.47
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Commercial
Distribution

Commercial Distribution

Max. Values (kA)		Upstream															
		D curve															
I _n (A)		0.5	1	2	3	4	6	10	13	16	20	25	32	40	50	63	
Downstream	B Curve	6	-	-	-	-	-	-	0.14	0.19	0.23	0.29	0.37	0.48	0.60	0.74	1.04
		10	-	-	-	-	-	-	-	0.18	0.23	0.29	0.36	0.47	0.58	0.71	0.95
		13	-	-	-	-	-	-	-	-	0.22	0.28	0.35	0.46	0.57	0.69	0.90
		16	-	-	-	-	-	-	-	-	-	0.28	0.35	0.45	0.56	0.68	0.86
		20	-	-	-	-	-	-	-	-	-	-	0.34	0.44	0.54	0.67	0.84
		25	-	-	-	-	-	-	-	-	-	-	-	0.43	0.54	0.66	0.83
		32	-	-	-	-	-	-	-	-	-	-	-	-	0.52	0.65	0.81
		40	-	-	-	-	-	-	-	-	-	-	-	-	-	0.63	0.79
		50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.78
	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	C Curve	0.5	-	0.01	0.05	0.11	0.18	0.37	1.11	2.70	6.17	T	T	T	T	T	T
		1	-	-	0.03	0.05	0.06	0.10	0.18	0.24	0.31	0.40	0.53	0.76	1.26	2.91	8.59
		2	-	-	-	0.04	0.06	0.10	0.18	0.24	0.30	0.39	0.51	0.74	1.17	2.41	6.80
		3	-	-	-	-	0.06	0.09	0.15	0.20	0.25	0.32	0.41	0.54	0.69	0.95	1.53
		4	-	-	-	-	-	0.09	0.15	0.20	0.24	0.31	0.39	0.52	0.67	0.92	1.42
		6	-	-	-	-	-	-	0.14	0.18	0.23	0.29	0.37	0.48	0.59	0.73	1.00
		8	-	-	-	-	-	-	0.14	0.18	0.23	0.29	0.36	0.47	0.58	0.71	0.95
		10	-	-	-	-	-	-	-	0.18	0.22	0.28	0.35	0.46	0.57	0.71	0.94
		13	-	-	-	-	-	-	-	-	0.22	0.28	0.35	0.45	0.56	0.69	0.89
		16	-	-	-	-	-	-	-	-	-	0.27	0.34	0.44	0.55	0.68	0.87
		20	-	-	-	-	-	-	-	-	-	-	0.33	0.42	0.53	0.66	0.84
		25	-	-	-	-	-	-	-	-	-	-	-	0.42	0.52	0.64	0.80
		32	-	-	-	-	-	-	-	-	-	-	-	-	0.50	0.63	0.79
		40	-	-	-	-	-	-	-	-	-	-	-	-	-	0.61	0.78
		50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.77
	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	D Curve	0.5	-	0.01	0.04	0.07	0.11	0.21	0.46	0.99	9.81	T	T	T	T	T	T
		1	-	-	0.03	0.04	0.06	0.10	0.18	0.24	0.30	0.39	0.51	0.76	1.24	2.66	7.44
		2	-	-	-	0.05	0.06	0.10	0.18	0.24	0.31	0.40	0.53	0.76	1.19	2.46	7.61
		3	-	-	-	-	0.06	0.09	0.15	0.20	0.25	0.31	0.40	0.52	0.68	0.92	1.35
		4	-	-	-	-	-	0.09	0.15	0.20	0.25	0.32	0.40	0.53	0.69	0.91	1.26
		6	-	-	-	-	-	-	0.14	0.18	0.23	0.29	0.36	0.47	0.59	0.74	1.01
		10	-	-	-	-	-	-	-	0.18	0.22	0.28	0.35	0.46	0.57	0.71	0.94
13		-	-	-	-	-	-	-	-	0.21	0.27	0.34	0.44	0.55	0.68	0.89	
16		-	-	-	-	-	-	-	-	-	0.26	0.33	0.43	0.54	0.67	0.86	
20		-	-	-	-	-	-	-	-	-	-	0.32	0.42	0.52	0.64	0.81	
25		-	-	-	-	-	-	-	-	-	-	-	0.40	0.49	0.63	0.80	
32		-	-	-	-	-	-	-	-	-	-	-	-	0.48	0.61	0.78	
40		-	-	-	-	-	-	-	-	-	-	-	-	-	0.60	0.77	
50		-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.76	
63		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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

I_n	Max Let-Through Energy (kA ² s) at PSCC			Max Z_s (ohms)	
	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	-	-	-	1.27	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

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

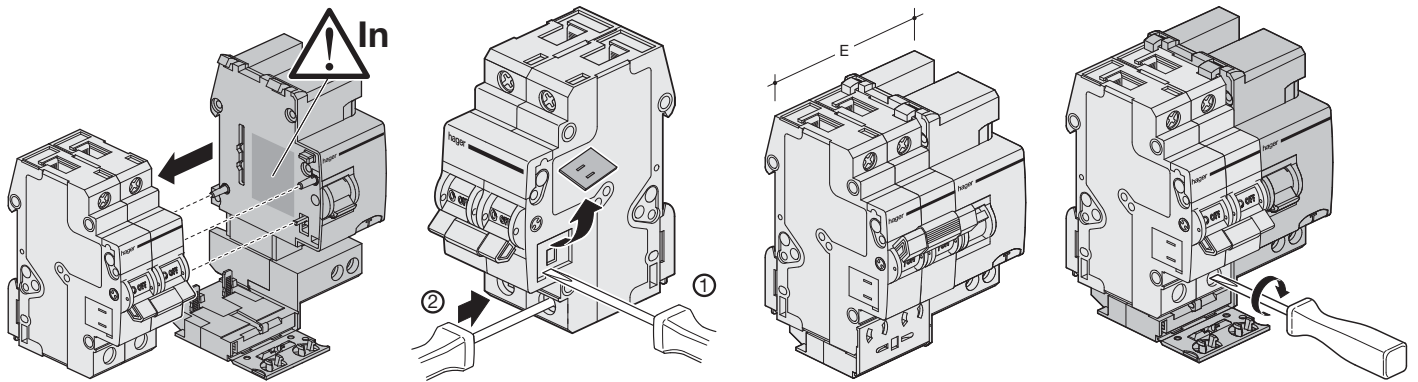
Short circuit capacity of the RCCB | With MCB's only

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

	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		

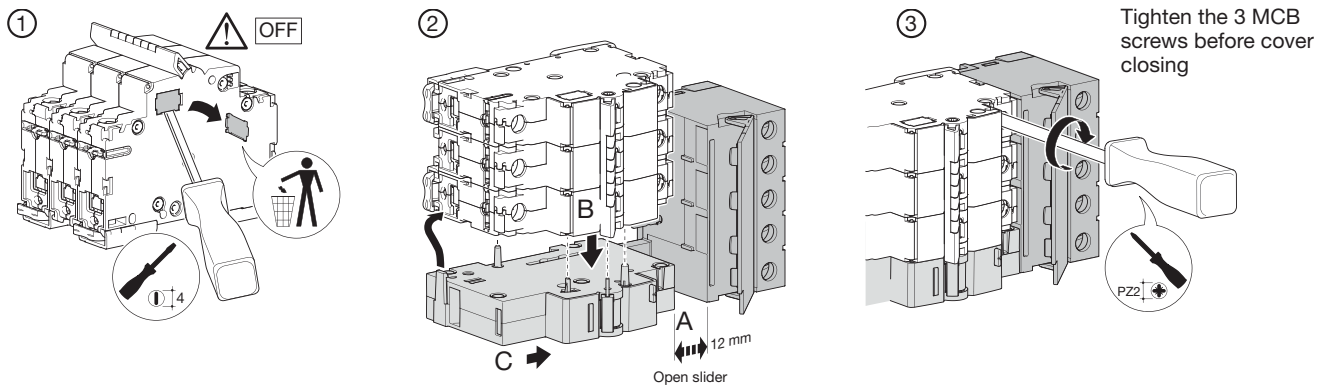
Mounting

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

Transformer Rating (VA)	Primary Current	Recommended MCB		
		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

Transformer Rating (VA)	Primary Current	Recommended MCB		
		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

kW	hp	FLC A	Recommended Circuit Breaker			
			(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

kW	hp	FLC A	Recommended Circuit Breaker		
			(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

3 Phase 400V DOL Starting

kW	hp	FLC A	Recommended Circuit Breaker			
			(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

		SPA801
Tested to		EN 61643-11, IEC 61643-11
SPD type / class		Type 1 + Type 2 Class 1 + Class 2
Nominal voltage	U_n	240/415V (6=50/60 Hz) Tolerance: 0V... U_c
Rated voltage	U_c	350V (50/60 Hz)
Voltage protection level	U_p	$\leq 1.5kV$
Residual current	I_{PE}	$\leq 0.01mA$
Impulse current (10/350) TNS	I_{imp}	25kA (L-N-PE) 100kA (L1,L2,L3,N -PE)
Impulse current (10/350) TNS	I_{imp}	25kA (L-N) 100kA (L1, L2,L3, N -PE)
Short Circuit Current Rating	$I_{sc cr}$	50kA _{rms}
Rated load current	I_{fi}	50kA _{rms}
TNS,TT (serial/parallel)		OK
IT, TNC		OK
F1 max (serial)		125 A gG
F1 max (Parallel)		315A gG
Humidity		5%...95%
9°C		-40/+80°C (+60°C by serial connection)
Ports		1
IP Code		20 (built in)
LxWxH		95 mm x 143 mm x 74mm

Connection

DIN VDE 0100-534 IEC 60364-5-53	A	b	$\leq 0,5 m$
	B	a + b	$\leq 0,5 m$

L1, L2, L3, N, PE, \

2,5 mm \rightarrow 35 mm

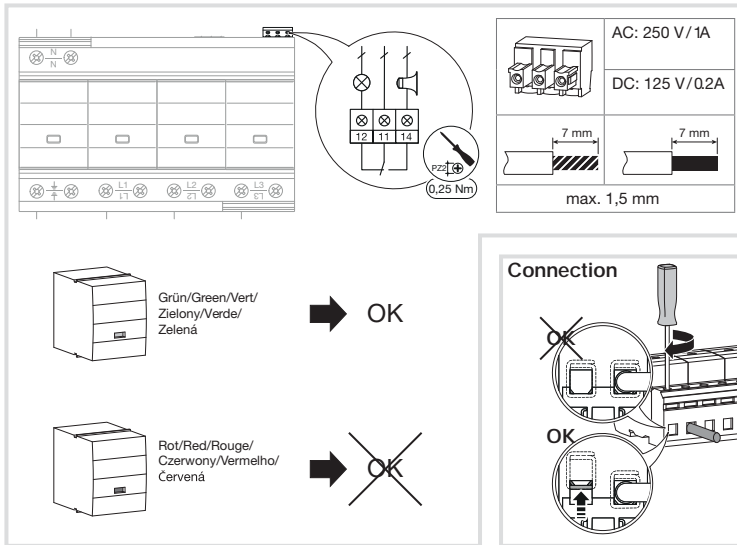
TT/TNS Serial Wiring

F1 gG	F1 A gG	$S_L = S_N$ mm ²	S_L mm ²	$S_{PE(N)}$ mm ²
F1 $\leq 125 A$	40	61	66	
OK	50	10	16	10
	63	10	16	10
F1 > 125 A	80	16	16	16
TNS parallel	100	25	16	16
	125	35	16	16

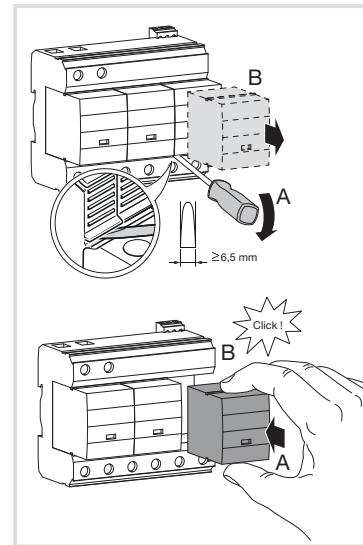
TT/TNS Parallel Wiring

F1 - F2 gG	F1 A gG	F2 A gG	$S_L = S_N$ mm ²	$S_{PE(N)}$ mm ²	S_L mm ²
F1 > 315A	40		6	6	16
	50		6	6	16
	63		6	6	16
F2 $\leq 315 A$	80		10	10	16
	100		10	10	16
F1 $\leq 315 A$	125		16	16	16
	160		16	16	16
	200		25	25	16
	250		35	35	16
	315		35	35	16
	400	≤ 250	35	35	16
	≥ 500	≤ 315	35	35	16

Fault Indication

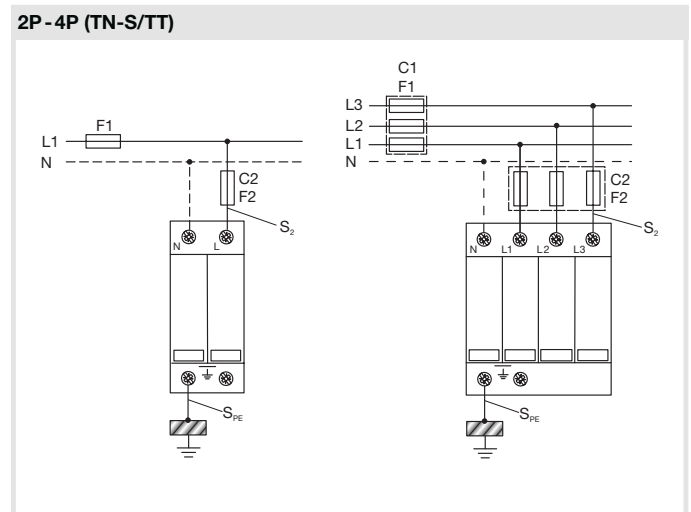
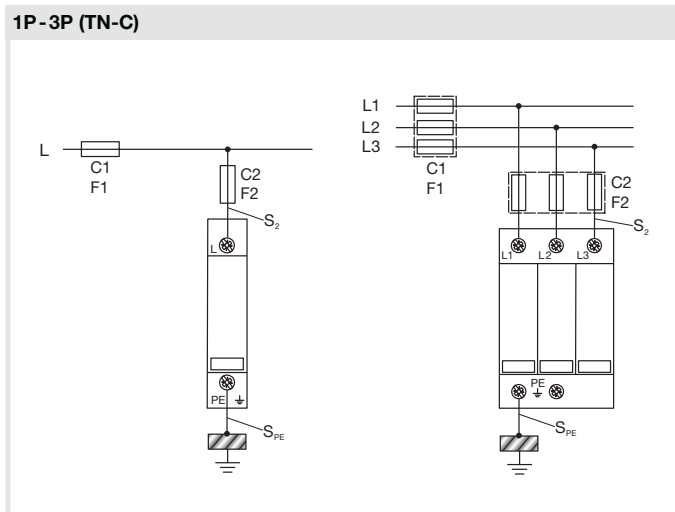


SPA081 SPA001N



		SPBX15D/R	SPBX40D/R	SPBX65R
Tested to			EN 61643-11, IEC 61643-11	
TT/TN/TNC-S			OK	
Nominal voltage	U_n	240/415V (50/60Hz)		
Residual current (N-PE)	I_{PE}	<5 μ A (SPB2xxx, SPB4XXX) <0.4mA (SPB1XXX, SPB3XXX)		
Rated loaded current	I_{fi}	100A _{rms}		
Humidity		5% ...95%		
9°C		-40/+80°C		
Ports		1		
IP Code		20 (built in)		
Rated voltage	U_c	275V (L-N); 260V (N-PE) 320V (L-N); 264V (N-PE)-SPBX65R		
Nominal discharge current (8/20 μ s)	I_n	5kA	20kA	20kA
Maximum discharge current (8/20 μ s)	I_{max}	15kA	40kA	65kA
Voltage protection level	U_p	$\leq 1kV$	$\leq 1.35kV$	$\leq 1.45kV$
C2 max. hager		32A "C"	32A "C"	63A "C"
F2 max		125A gG	125A gG	160A gG
Short circuit current rating	I_{sc}	25 kA _{rms}	25 kA _{rms}	25 kA _{rms}
Replacement cartridge L-N		SPB015D	SPB040D	SPB065R
Replacement Cartridge N-PE		SPB040N	SPB040N	SPB065N

	L x W x H (mm)	L x W x H (mm)
	$I_{max} = 15 \text{ kA}, 40 \text{ kA}$	$I_{max} = 65 \text{ kA}$
1P	65.7 x 17.5 x 98.7	77.5 x 17.5 x 98.7
2P	65.7 x 35.6 x 98.7	77.5 x 35.6 x 98.7
3P	65.7 x 53 x 98.7	77.5 x 53 x 98.7
4P	65.7 x 71 x 98.7	77.5 x 71 x 98.7



Backup fuse	SPBX15D/R SPBX40D/R	SPBX65R
F1	F1 >125 A gG ↓ F2 ≤ 125 A gG	F1 >160 A gG ↓ F2 ≤ 160 A gG
F2	F1 ≤ 125 A gG ↓ ⊗	F1 ≤ 160 A gG ↓ ⊗

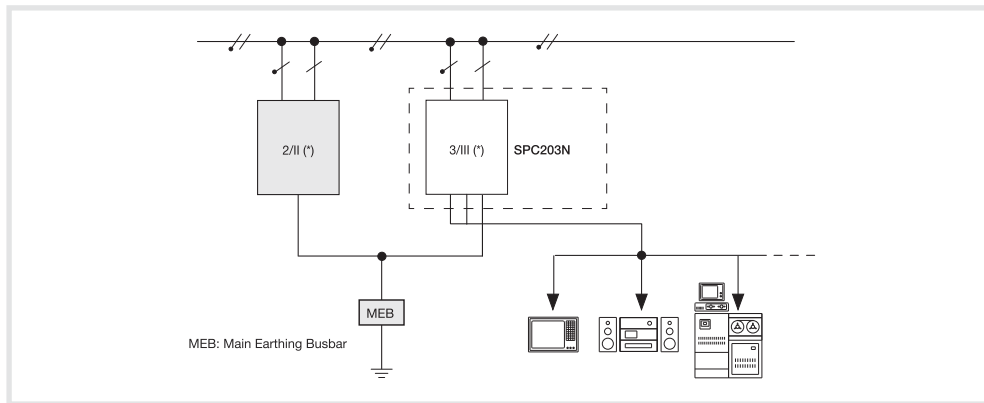
Backup MCB* (I _{sc} = 10 kA)	SPBX15D/R SPBX40D/R	SPBX65R
C1	C1 >32A "C" ↓ C2 ≤ 32A "C"	C1 >63A "C" ↓ C2 ≤ 63A "C"
C2	C1 ≤ 32A "C" ↓ ⊗	C1 ≤ 63A "C" ↓ ⊗

Type			SPBX15x SPBX40x	SPBX65R
F1 A/gG	S ₂ mm ²	S _{PE} mm ²	F2 A/gG	F2 A/gG
25	6	6	-	-
35	6	6	-	-
40	6	6	-	-
50	6	6	-	-
63	10	10	-	-
80	10	10	-	-
100	16	16	-	-
125	16	16	-	-
160	25	25	125	-
> 160	25	25	125	160

Characteristics

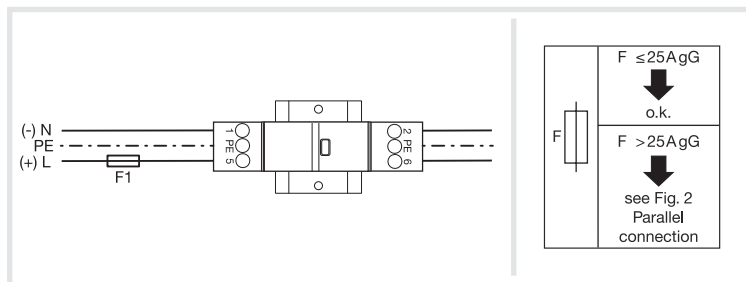
Tested to		EN 61643-11, IEC 61643-11
System		TNS-TT
F1 max		25A/32A (gG/B/C)
Nominal discharge current (8/20 μ s)	I_n	L(N)/PE, L/N = 5kA
Short circuit current rating	I_{sccr}	10kA _{rms}
Residual current (N-PE)	I_{PE}	<5 μ A
Nominal voltage	U_n	230 V (50/60 Hz)
Rated voltage	U_c	264 V (50/60 Hz)
	U_{oc}	L(N)/PE, L/N = 6kV
Voltage protection level	U_p	L/N \leq 1.4kV, L(N)/PE \leq 1.4kV
Humidity		5%...95%
9°C		-40/+80°C
Ports		1
IP code		IP20 (built in)
L x W x H		101mm x 17.7mm x 74.5mm
	I_L	26A (30°)

Indoor use only - there is no distance from the SPD to any earthed conductive surface required



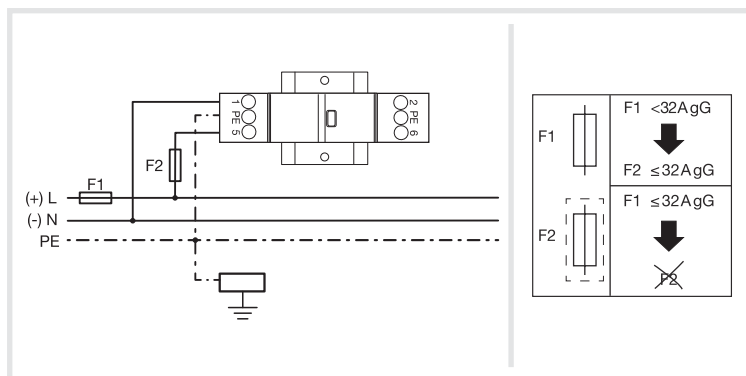
Serial Connection

Backup Fuse



Parallel Connection

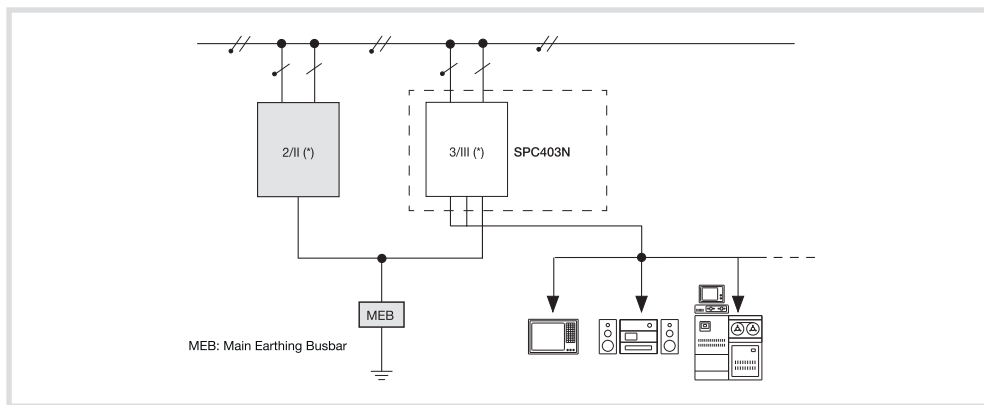
Backup Fuse



Characteristics

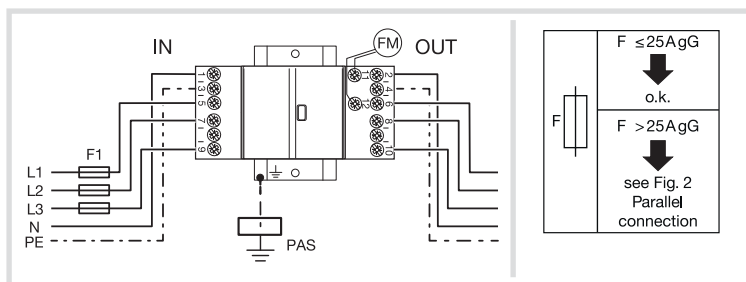
Tested to		EN 61643-11, IEC 61643-11
System		TT, TN
F1 max		25A (gG/B/C)
Nominal discharge current (8/20 μ s)	I_n	L1-L2-L3(N)/PE, L1-L2-L3/N = 3kA
Short circuit current rating	I_{sccr}	15kA _{rms}
Residual current (N-PE)	I_{PE}	<5 μ A
Nominal voltage	U_n	230 V/400 V (50/60 Hz)
Rated voltage	U_c	264 V (50/60 Hz)
	U_{oc}	L1-L2-L3(N)/PE, L1-L2-L3/N = 6kV
Voltage protection level	U_p	L1-L2-L3/N \leq 1.4kV, L1-L2-L3/N/PE \leq 1.5kV
Humidity		5%...95%
9°C		-40/+70°C
Ports		1
IP code		IP20 (built in)
L x W x H		90mm x 36mm x 73mm
	I_L	26A (30°)

Indoor use only - there is no distance from the SPD to any earthed conductive surface required



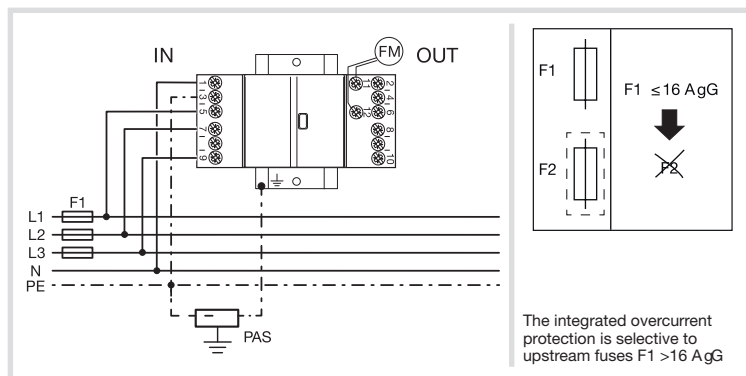
Serial Connection

Backup Fuse



Parallel Connection

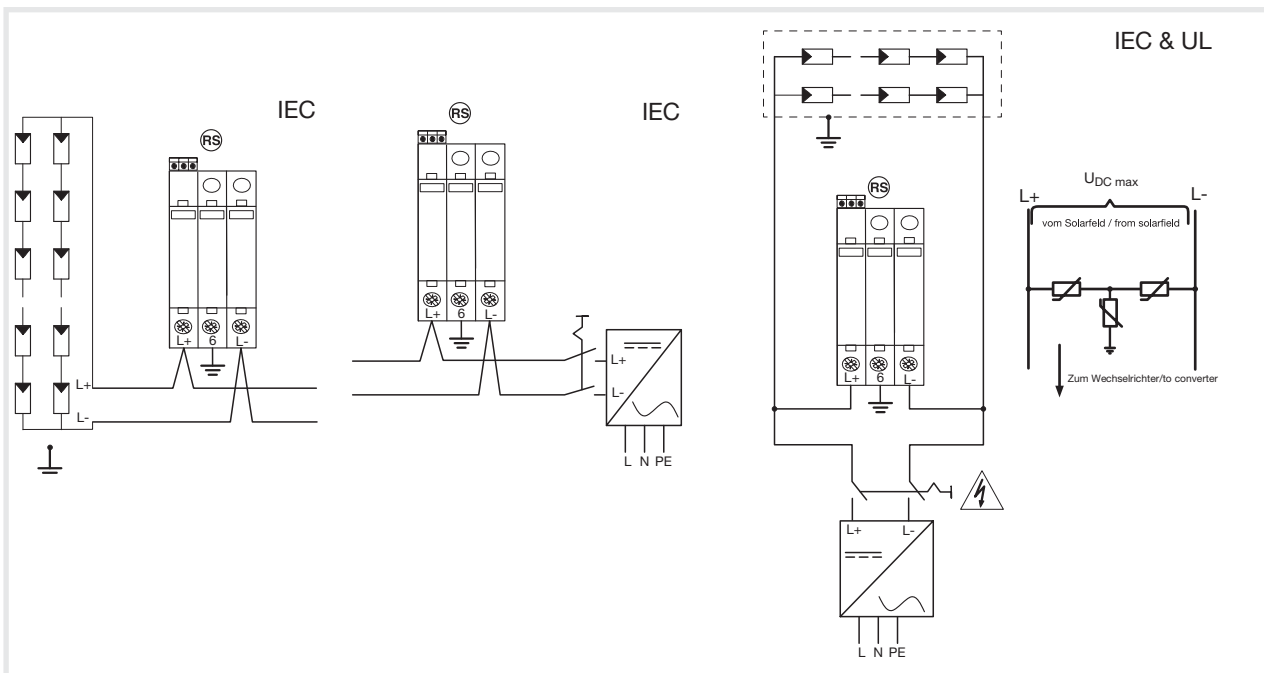
Backup Fuse



Characteristics

Tested to		EN 50539-11
Voltage protection level	U_p	$\leq 3.7kV$
Rated voltage	U_{cpv}	$\leq 1170 V DC$
Nominal Discharge Current (8/20 μs)	I_n	15kA
Short Circuit Current Rating	I_{scpv}	2000A
	I_L	80A
	I_{max}	40kA (8/20 μs)
Residual Current AC	$I_{pe,AC}$	$\leq 250\mu A$
Residual Current DC	$I_{pe,DC}$	$\leq 20\mu A$
Humidity		5%...95%
9°C		-40/+80°C
Ports		1
IP code		IP20 (built in)
L x W x H		98.7mm x 52.4mm x 65.7mm

Indoor use only



	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 $I_{\Delta n}$	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	1.5mm ² to 10mm ² 1mm ² to 6mm ²									
	<ul style="list-style-type: none"> • Rigid • Flexible 									
Torroid Cable Connection	1.5mm ² to 4mm ² 1mm ² to 2.5mm ²									
	<ul style="list-style-type: none"> • Rigid • Flexible 									
Relay	-10°C to +55°C • Working Temperature • Storage Temperature		-5°C to +55°C -25°C to +40°C							
Torroid	-10°C to +70°C • Working Temperature • Storage Temperature		-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

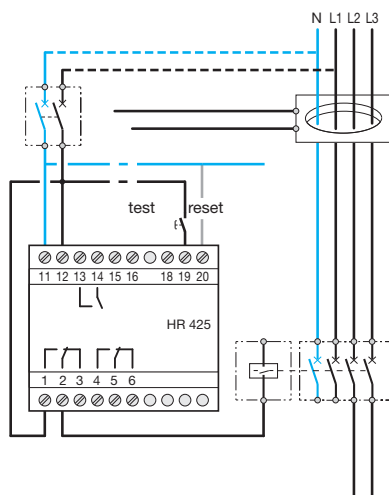
Pressing the test button allows a fault simulation which operates the relay and the output contacts. The fault level display is shown by an LED on the front of the product.

$I_{\Delta n}$ 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 $I_{\Delta n}$

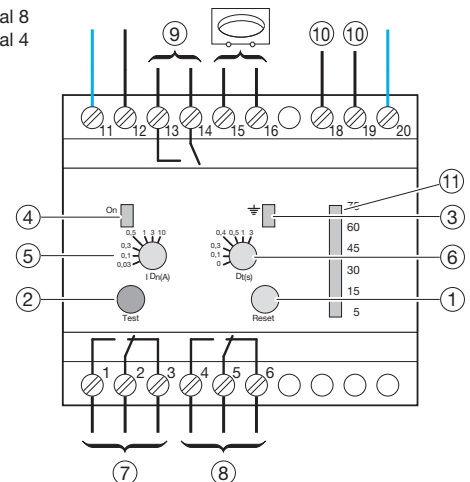
Optical scale display by (5 LEDs) of the fault in % of $I_{\Delta n}$

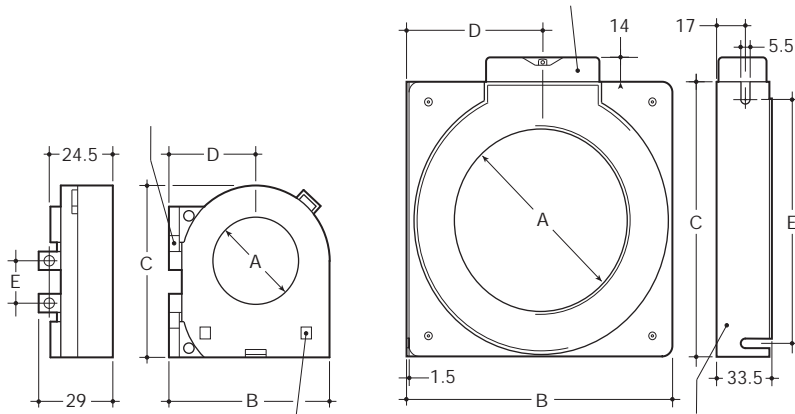
Common pin 6:

State 1 : output terminal 8

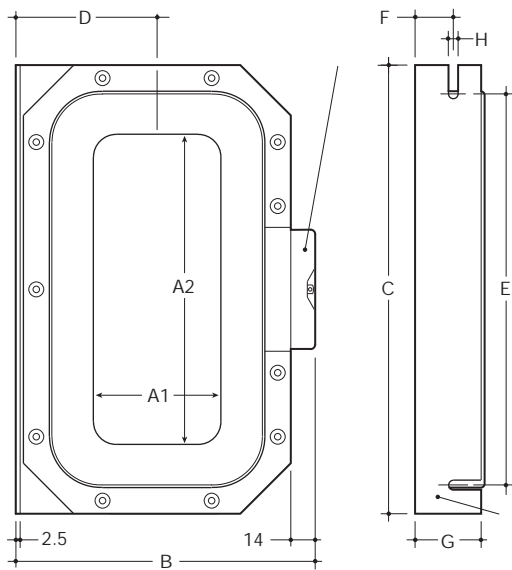
State 0 : output terminal 4

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

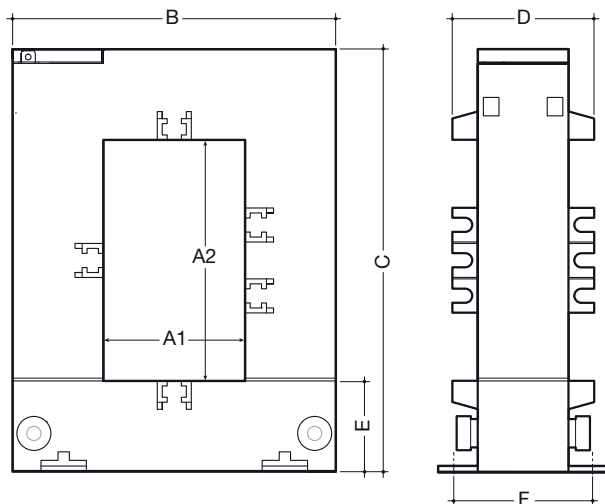




Cat ref.	Dimensions (mm)				
	A	B	C	D	E
HR700	30	70	70	30	-
HR701	35	92	86	43.5	74
HR702	70	115	118	60.5	97
HR703	105	158	162.5	84.5	140
HR704	140	218	200	103.5	183
HR705	210	290	295	150	265




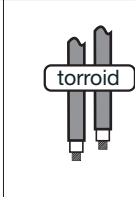
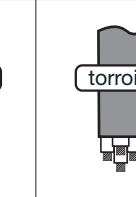
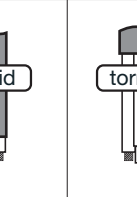
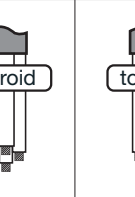
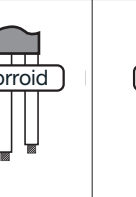
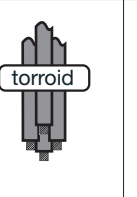
Cat ref.	Type	Dimensions (mm)								
		A1	A1	B	C	D	E	F	G	H
HR830	70x175	70	175	176	260	85	225	22	40	7.5
HR831	115x305	115	305	239	400	116	360	25	50	8.5
HR832	150x350	150	350	284	460	140	415	28	50	8.5



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

Mounting of Circular Torroids

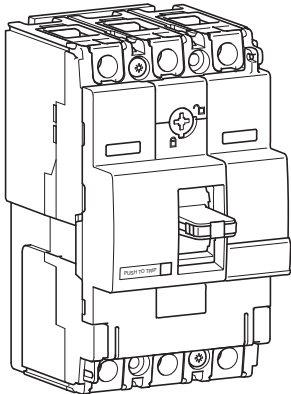
 Commercial
Distribution

		With Cables						
		U 1000 R2V Single 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 16mm ²	2 x 50mm ²	35mm ²	35mm ²	50mm ²	4 x 35mm ²	2 x 70mm ²
35	HR701	4 x 25mm ²	2 x 70mm ²	50mm ²	35mm ²	70mm ²	4 x 50mm ²	2 x 95mm ²
70	HR702	4 x 185mm ²	2 x 400mm ² or 4 x 150mm ²	240mm ²	35mm ²	300mm ²	4 x 240mm ²	2 x 400 or 4 x 185mm ²
105	HR703	4 x 500mm ²	2 x 630mm ² or 4 x 185mm ²	300mm ²	35mm ²	300mm ²	4 x 400mm ²	2 x 400 or 4 x 240mm ²
140	HR704	4 x 630mm ²	2 x 630mm ² or 4 x 240mm ²	300mm ²	35mm ²	300mm ²	4 x 400mm ²	2 x 400 or 4 x 240mm ²
210	HR705	4 x 630mm ²	2 x 630mm ² or 4 x 240mm ²	300mm ²	35mm ²	300mm ²	4 x 400mm ²	2 x 400 or 4 x 240mm ²
70 x 175	HR830	4 x 630mm ²	2 x 630mm ² or 4 x 240mm ²	300mm ²	35mm ²	300mm ²	4 x 400mm ²	2 x 400 or 4 x 240mm ²
115 x 305	HR831	4 x 630mm ²	2 x 630mm ² or 4 x 240mm ²	300mm ²	35mm ²	300mm ²	4 x 400mm ²	2 x 400 or 4 x 240mm ²
150 x 350	HR832	4 x 630mm ²	2 x 630mm ² or 4 x 240mm ²	300mm ²	35mm ²	300mm ²	4 x 400mm ²	2 x 400 or 4 x 240mm ²
20 x 30	HR820	4 x 16mm ²	2 x 70mm ²	10mm ²	35mm ²	16mm ²	4 x 10mm ²	2 x 35mm ²
50 x 80	HR821	4 x 240mm ²	2 x 630mm ² or 4 x 185mm ²	120mm ²	35mm ²	150mm ²	4 x 185mm ²	2 x 240mm ²
80 x 80	HR822	4 x 500mm ²	2 x 630mm ² or 4 x 185mm ²	300mm ²	35mm ²	300mm ²	4 x 400mm ²	2 x 400 or 4 x 240mm ²
80 x 120	HR823	4 x 630mm ²	2 x 630mm ² or 4 x 240mm ²	300mm ²	35mm ²	300mm ²	4 x 400mm ²	2 x 400 or 4 x 240mm ²
80 x 160	HR824	4 x 630mm ²	2 x 630mm ² or 4 x 240mm ²	300mm ²	35mm ²	300mm ²	4 x 400mm ²	2 x 400 or 4 x 240mm ²

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
(AC) 50-60 Hz 380/415 V	I_{cu} [kA]	-	18	25	40	-	25
(AC) 50-60 Hz 480/500/525 V	I_{cu} [kA]	-	6	7.5	12.5	-	-
(AC) 50-60 Hz 660/690 V	I_{cu} [kA]	-	-	-	6	-	-
(DC) 250 V - 2 poles in series	I_{cu} [kA]	-	12.5	20	25	-	25
Rated service short-circuit breaking capacity, (I_{cs})							
(AC) 50-60 Hz 220/230 V	I_{cs} [kA]	-	25	25	40	-	25
(AC) 50-60 Hz 380/415 V	I_{cs} [kA]	-	18	20	20	-	20
(AC) 50-60 Hz 480/500/525 V	I_{cs} [kA]	-	3	4	7.5	-	-
(AC) 50-60 Hz 660/690 V	I_{cs} [kA]	-	-	-	3	-	-
(DC) 250 V - 2 poles in series	I_{cs} [kA]	-	7	10	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 mm ²			185 mm ² (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	x160	x250
Number of poles	3, 4	3, 4	3, 4	4
Tripping Access	mechanical	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 $I_{\Delta n} = 30$ mA		-	✓	✓
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% I_{dn}		-	✓	✓
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 mm ²		4 - 95	4 - 95	35 - 185
Flexible cables connection capacity mm ²	(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

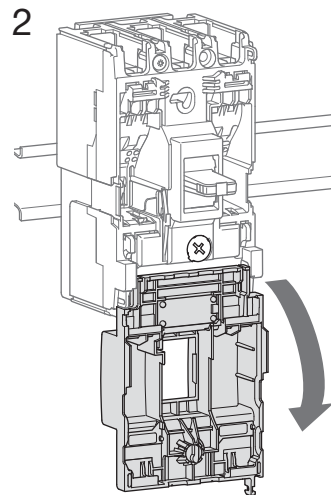
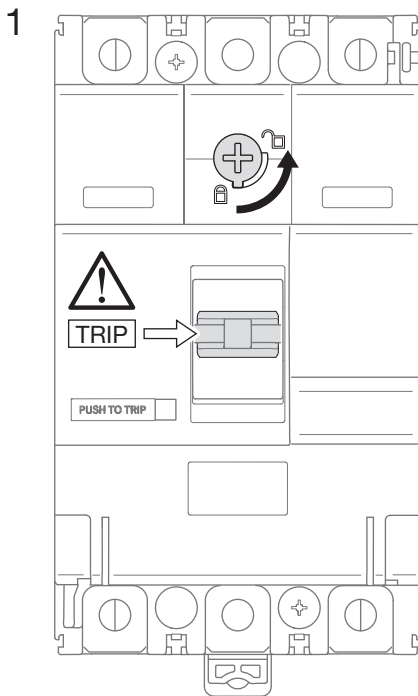
MCCBs



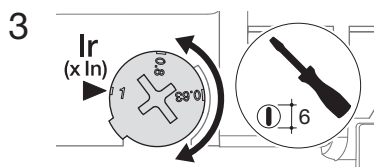
		220/240V AC IEC 60 947-2	380/415V AC IEC 60 947-2
HDA	I_{cu}	25 kA	18 kA
	I_{cs}	25 kA	18 kA
HHA	I_{cu}	35 kA	25 kA
	I_{cs}	25 kA	20 kA
HCA	I_{cm}	-	2.8 kA
	I_{cw}	-	2 kA - 1s

Commercial
Distribution

Thermal settings



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



Thermal adjustment from 0.63 to 1 x I_n

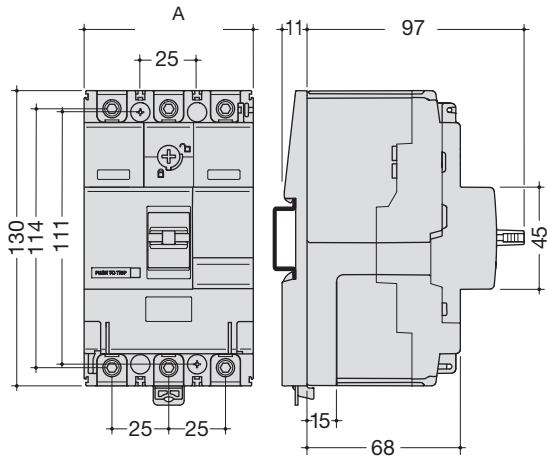
Magnetic adjustment fixed > 10 x I_n

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

Dimensions

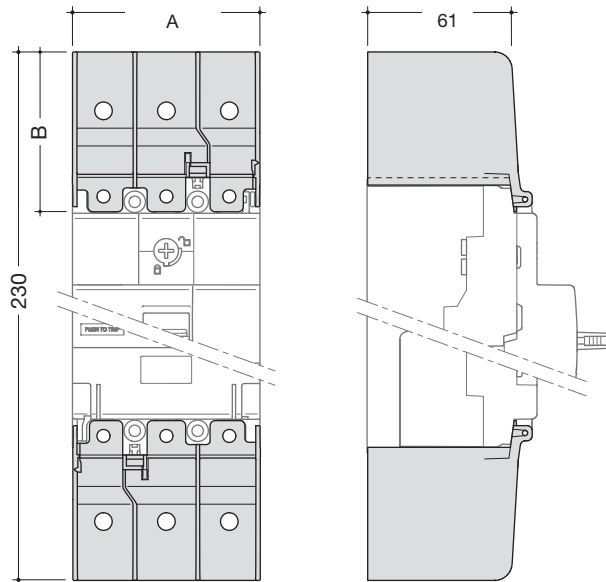
MCCB x160

Commercial
Distribution



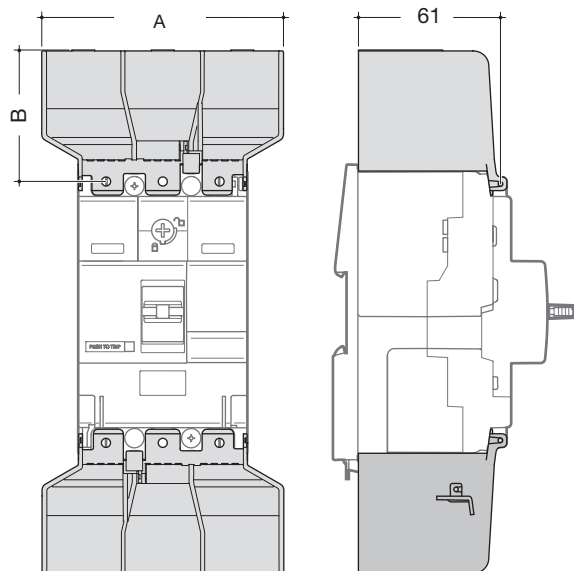
	A (mm)
1P	24.8
3P	74.5
4P	99.5

Terminal covers for extended straight connections



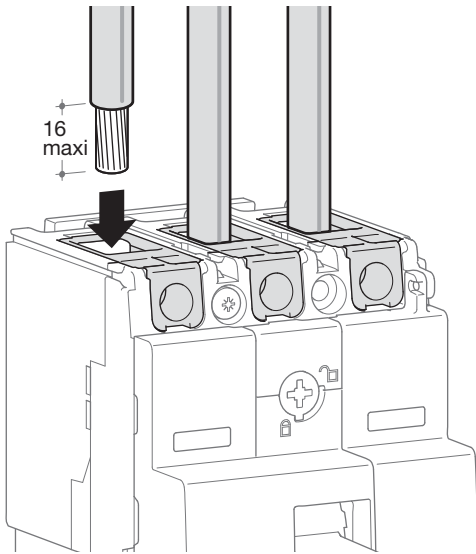
	A (mm)
1P	24.4
3P	74.5
4P	99.5

Terminal cover for extended spreader connections



	A (mm)
3P	106.5
4P	141.5

Connection with terminals



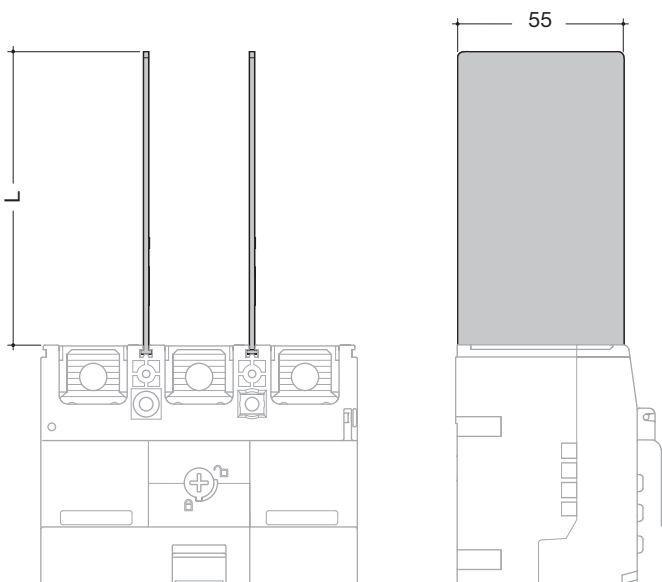
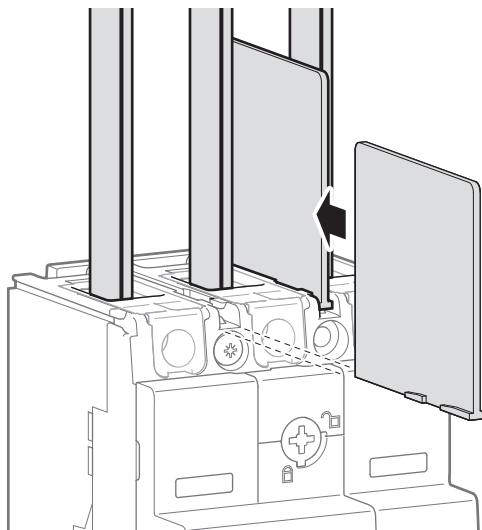
Terminals for copper conductors (standard)

	min. 6 mm ²	max. 70 mm ²
	min. 6 mm ²	max. 95 mm ²
	6 Nm	

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

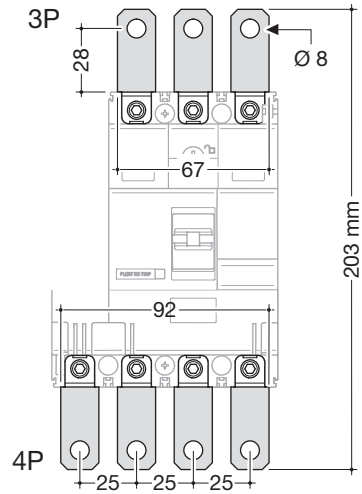
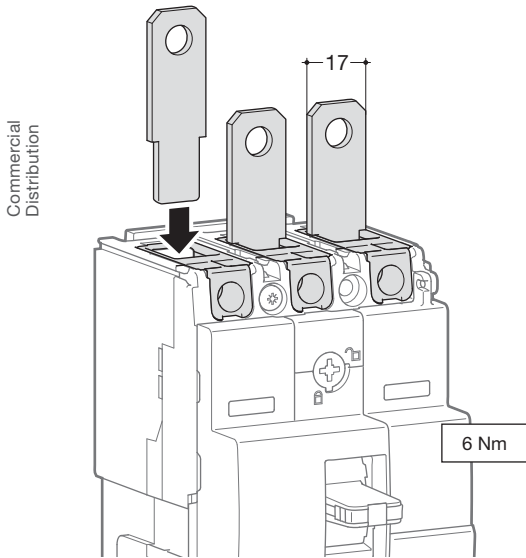
	min. 35 mm ²	max. 70 mm ²
	10 Nm	

Interphase barriers

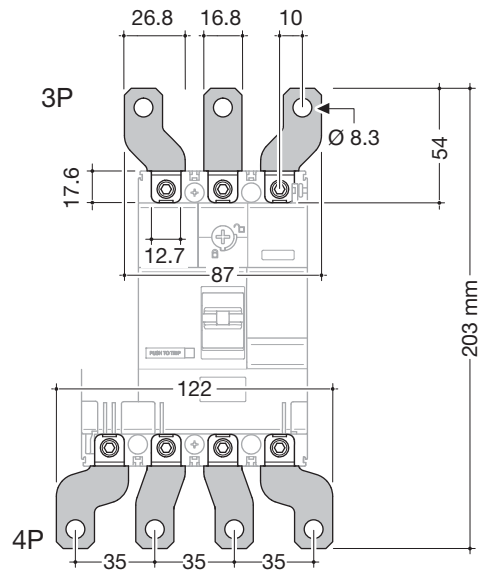
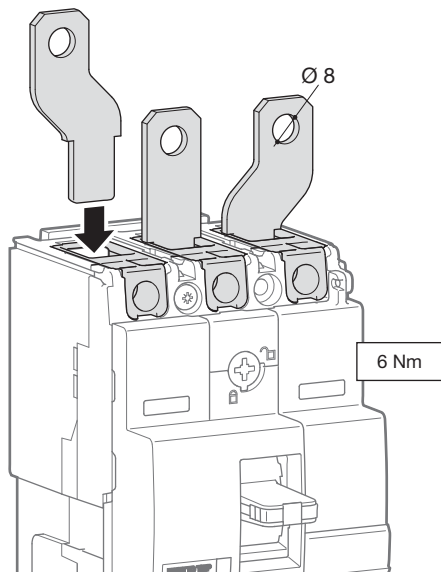


	L (mm)
HYA019H	50
HYB019H	97

Extended straight connections

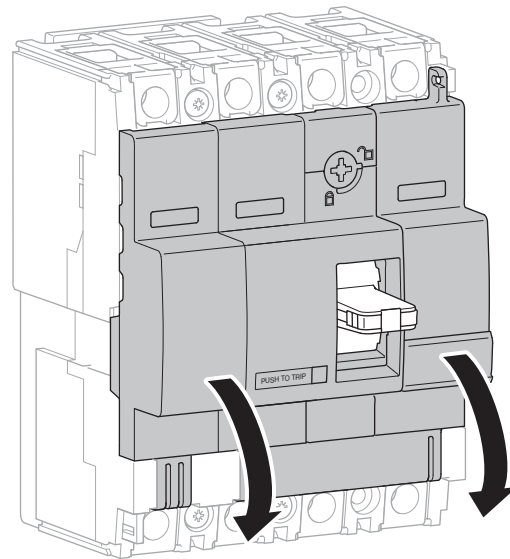
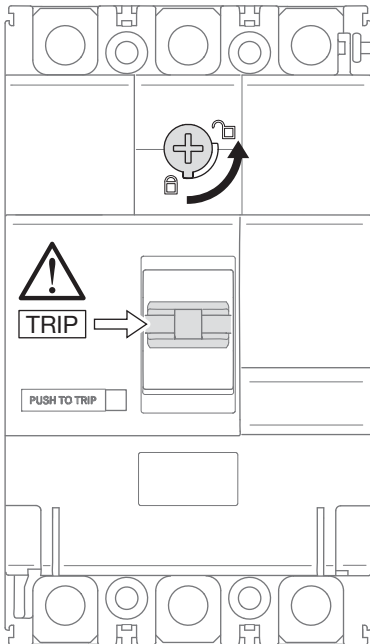


Extended spreader connections



Auxiliaries

Auxiliaries for MCCBs and moulded case switches

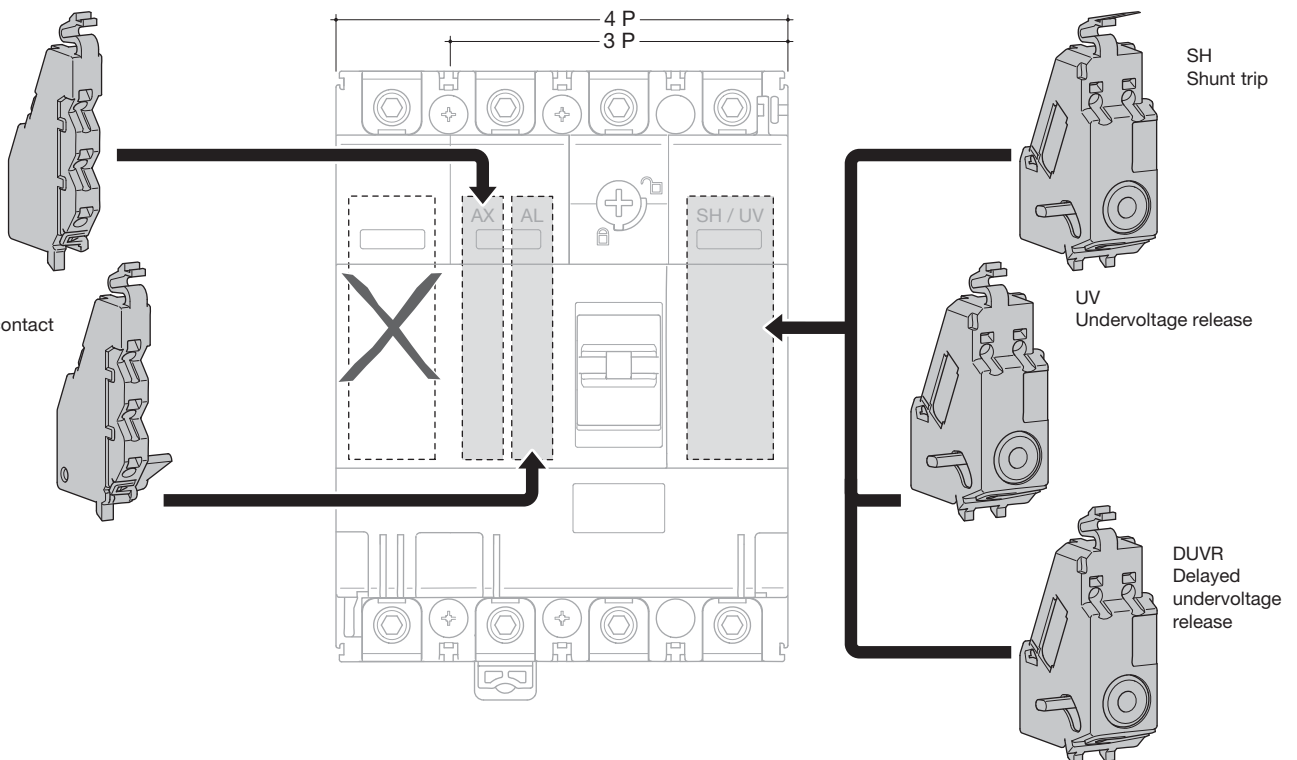


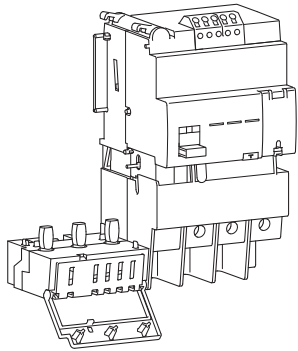
Commercial
Distribution

Mounting combination for auxiliaries and releases

AX
Auxiliary contact

AL
Alarm contact





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

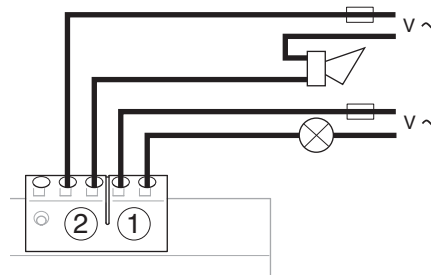
Reset button :
Signals add-on block tripping and must be reset before switching on the installation.

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

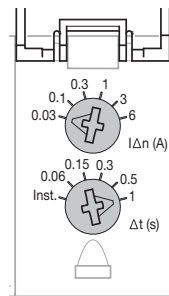
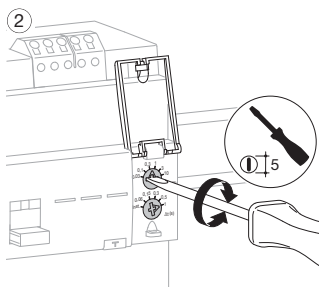
Mechanical test button :
Checks the mechanical operating of the MCCB / Add-on block association.

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

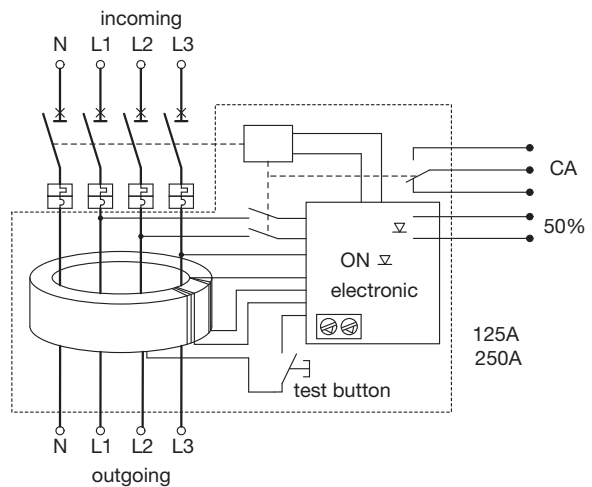
Remote tripping and advanced warning (50% $I_{\Delta n}$) signaling thanks to these contacts:



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

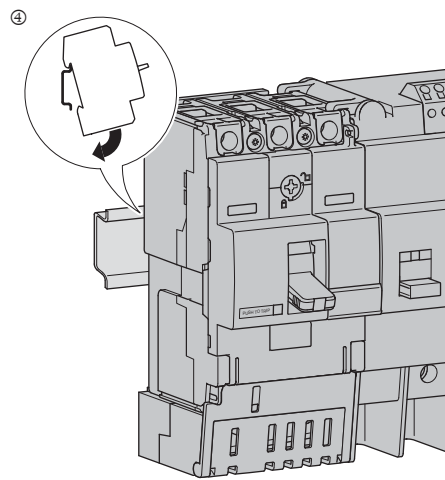
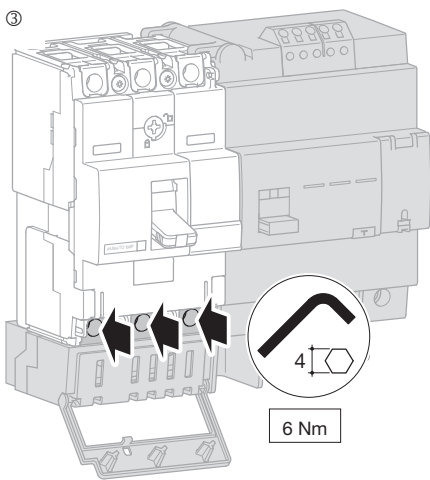
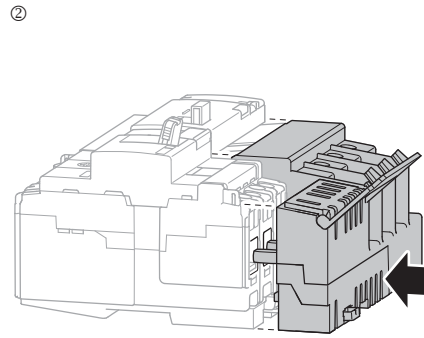
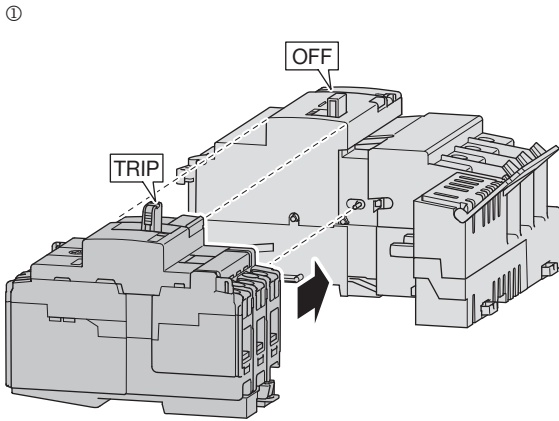


Add-on block operating



		A ($I_{\Delta n}$)					
		0.03	0.1	0.3	1	3	6
t(Δ) s	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

Add-on block mounting

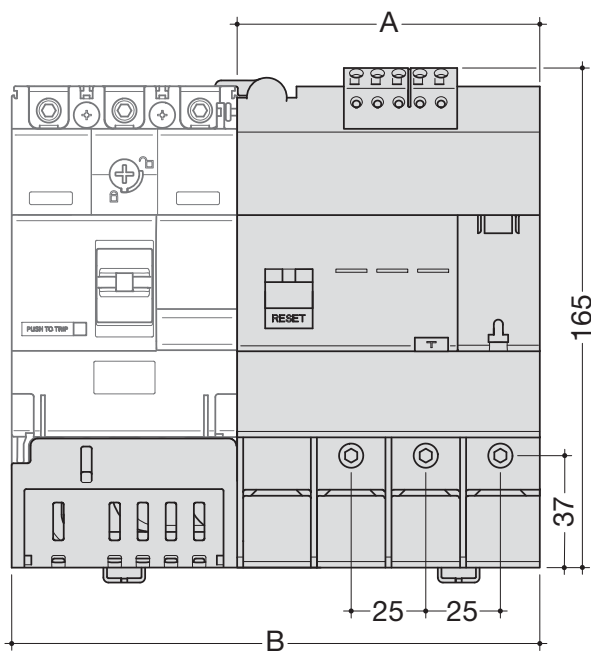


Exclusive drawer assembly system allows quick mounting and makes MCCB and add-on block association a complete monoblock unit.

Reinforced insulation connection (class II)

System avoids the omission of terminal tightening

Dimensions

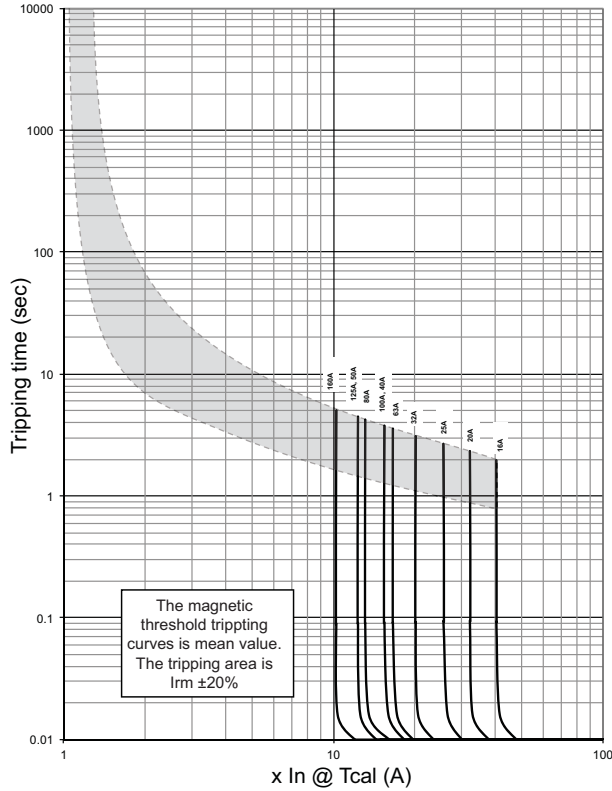


	3P	4P
A (mm)	100	100
B (mm)	174.5	199.5

Tripping curve

MCCB x160

Commercial Distribution

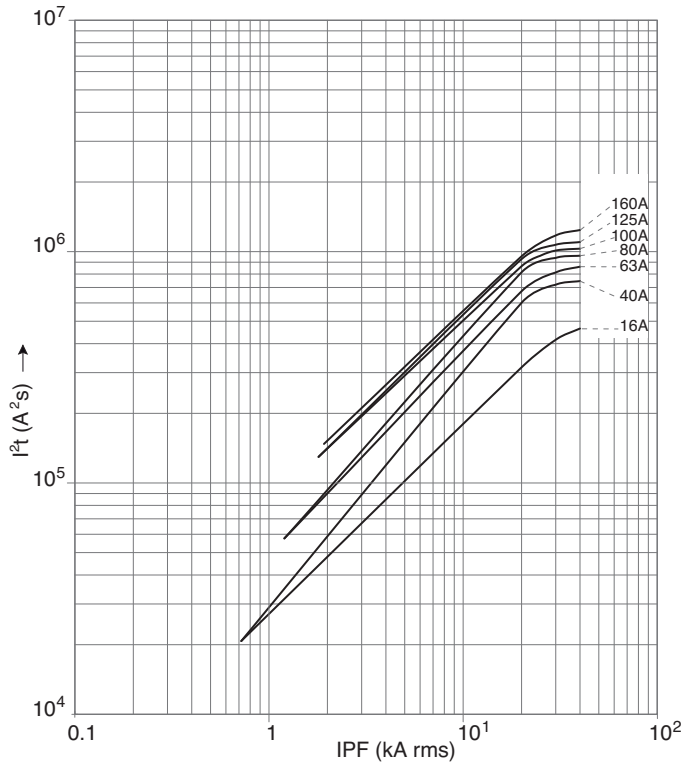


The earth fault loop impedance requirements for larger devices can be calculated by the formula given in BS7671:2008
 $Z_s \leq 230 \times C_{min}$

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

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

MCCB x160



MCCB Disconnection Data

Earth Fault Loop Impedance Data

Disconnection time 0.2s, 0.4s, 1s

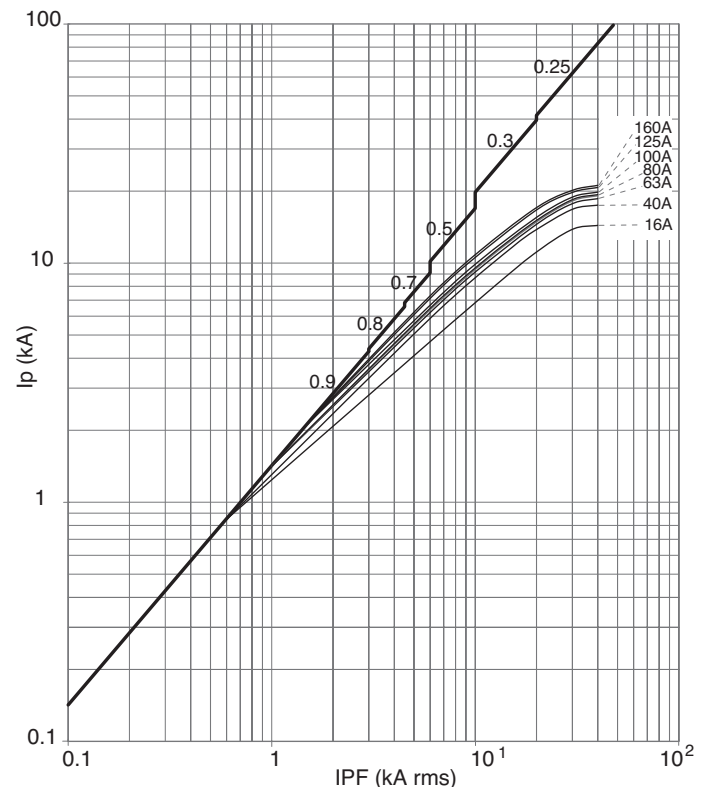
Device rating (A)	Instantaneous trip ($\times I_n$)	Instantaneous trip (A)	add 20% tolerance (I_a)	$Z_s = (230 \times 0.95) / I_a$
16	40.3	644.8	773.8	0.28
20	32.2	644.0	773	0.28
25	25.7	643	771	0.28
32	20.13	644.2	773.0	0.28
40	15.0	600.0	720.0	0.30
50	12.0	600.0	720.0	0.30
63	16.6	1045.8	1255.0	0.17
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

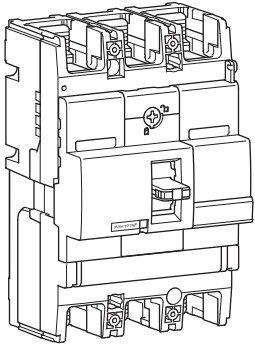
Device rating (A)	trip ($\times I_n$)	I_a (A)	$Z_s = (230 \times 0.95) / I_a$
16	10	160	1.37
20	10	200	1.09
25	10	250	0.87
32	10	320	0.68
40	10	400	0.55
50	10	500	0.44
63	10	630	0.35
80	10	800	0.27
100	10	1000	0.22
125	10	1250	0.17
160	10	1600	0.14

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

MCCB x160



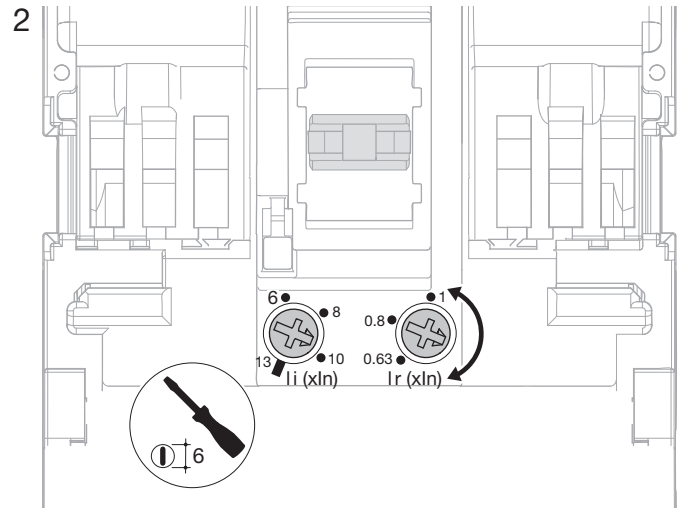
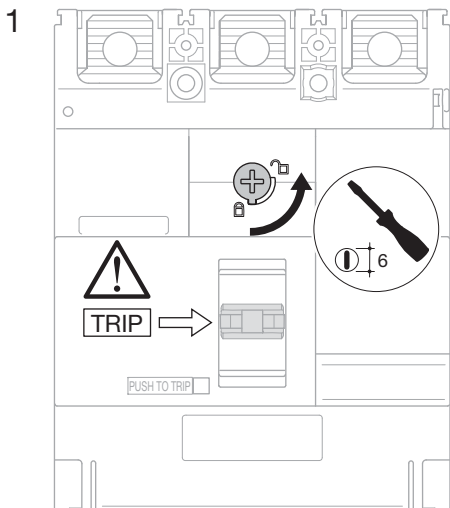
MCCBs



		220/240V AC IEC 60 947-2	380/415V AC IEC 60 947-2
HHB	l _{cu}	35 kA	25 kA
	l _{cs}	25 kA	20 kA
HNB	l _{cu}	85 kA	40 kA
	l _{cs}	40 kA	20 kA
HCB	l _{cm}	-	9 kA
	l _{cw}	-	3 kA - 1s

Commercial
Distribution

Magnetic and thermal settings

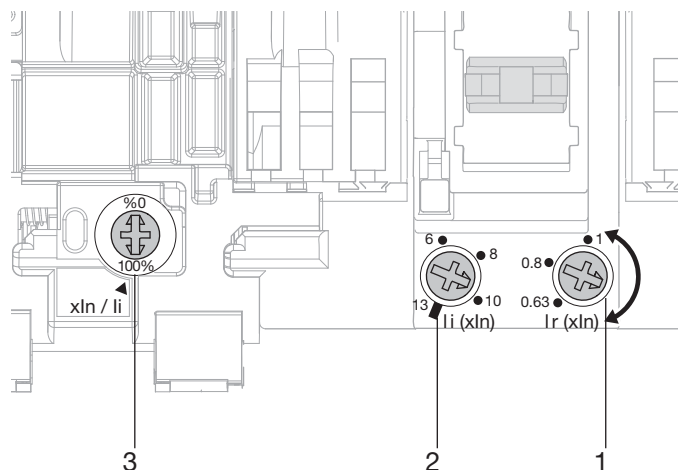


Thermal adjustment from 0.63, 0.8, 1 x I_n

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

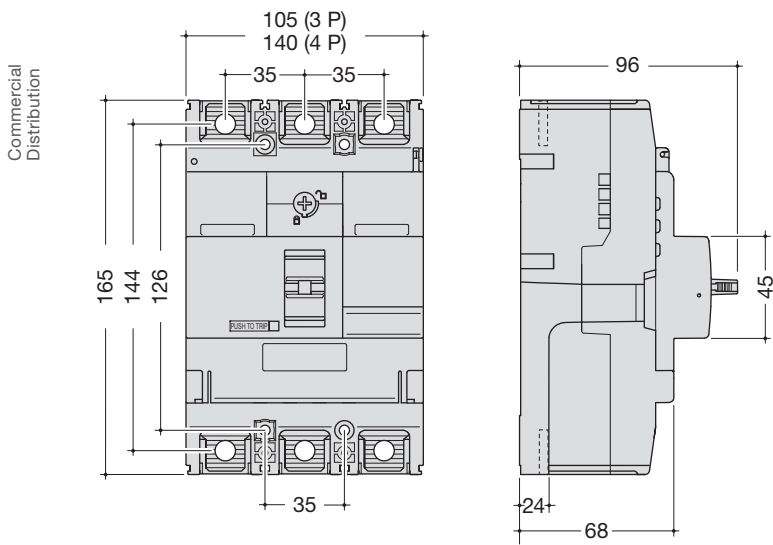
from 5 to 11 x I_n (250A)

	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%	

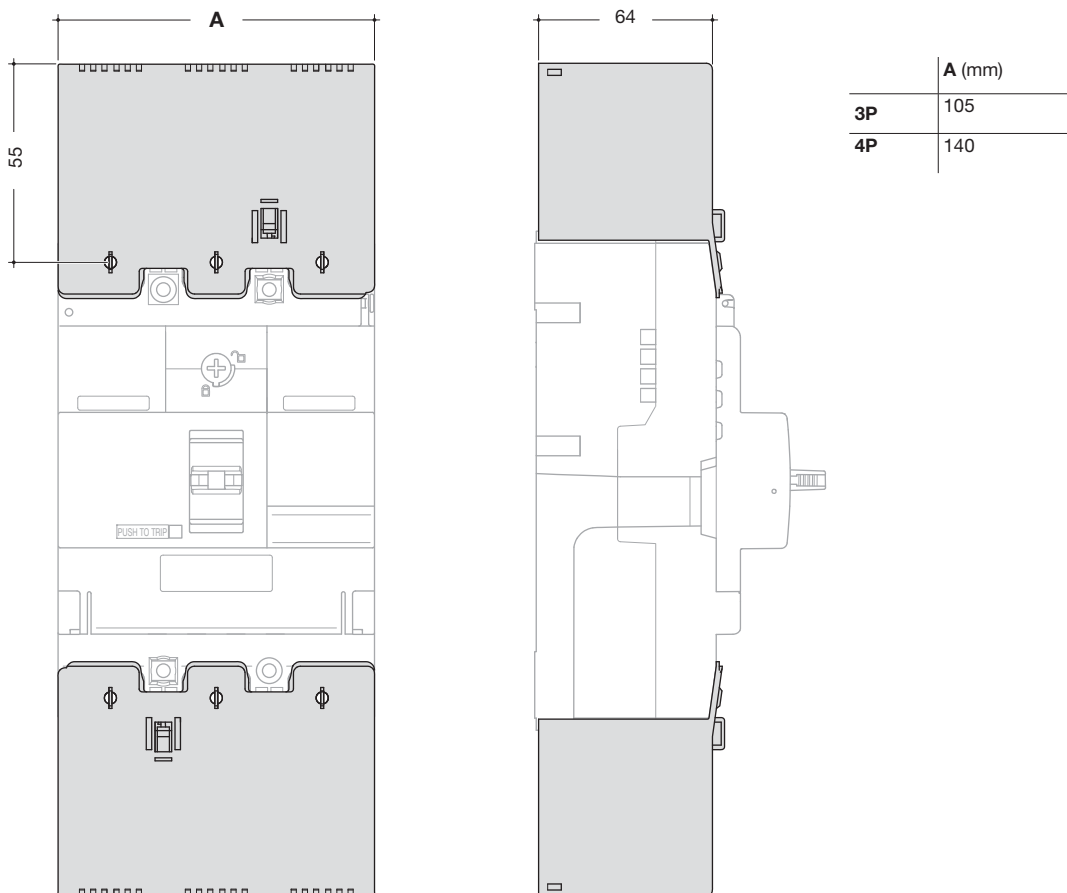


Dimensions

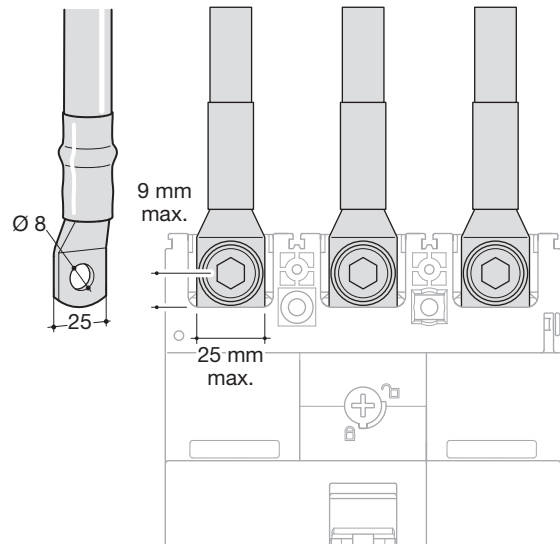
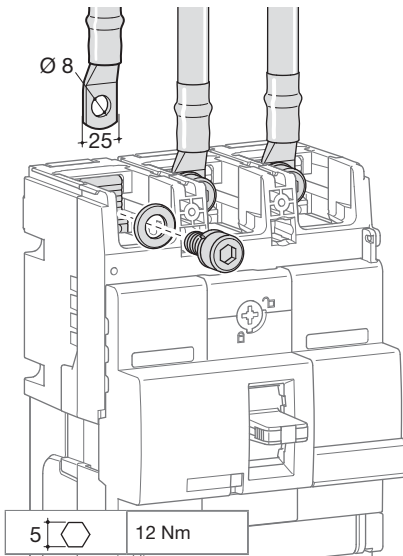
MCCB x250



Terminal covers for extended straight connections

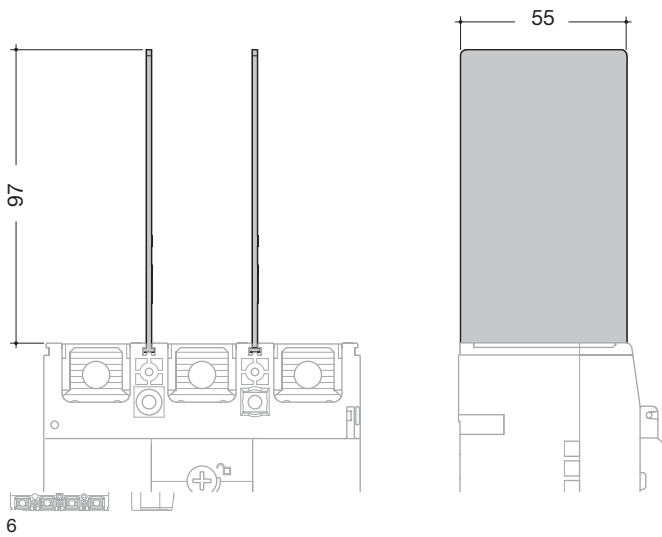


Connection with end lugs



Commercial
Distribution

Interphase barriers

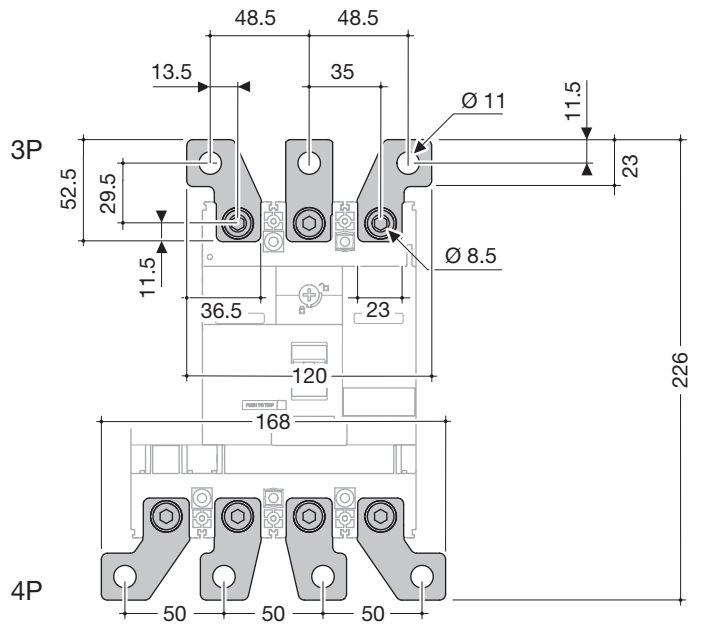
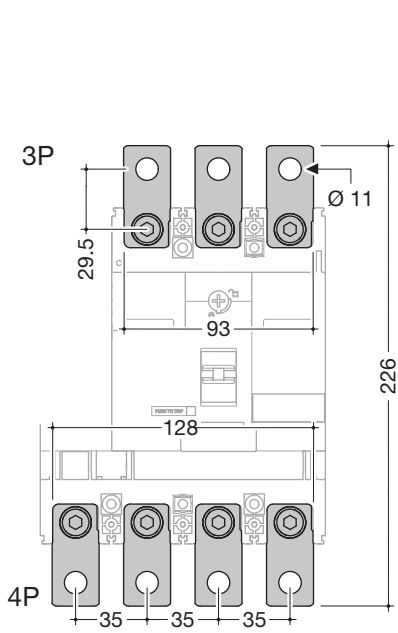
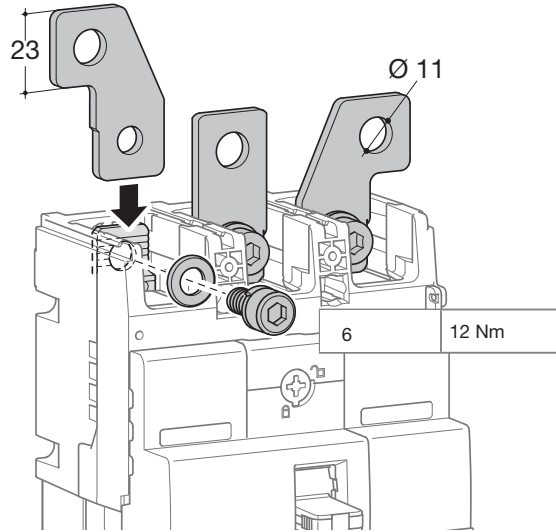
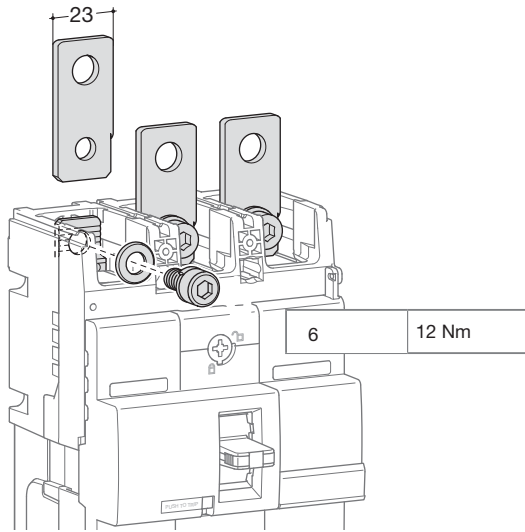


6

Connection

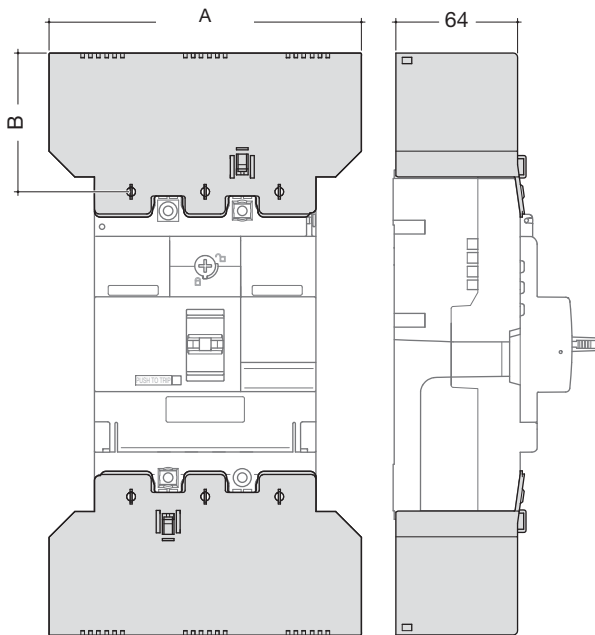
Extended straight and spreader connections

Commercial
 Distribution



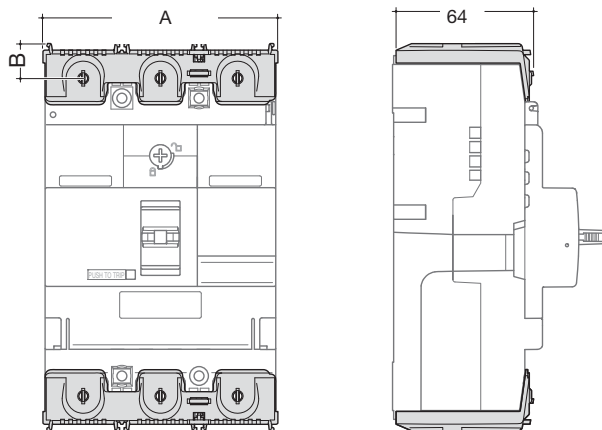
Accessories

Terminal cover for extended spreader connections



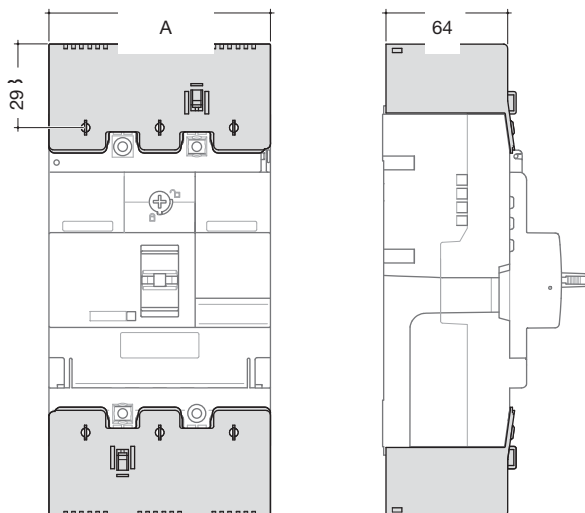
	A (mm)	B (mm)	C (mm)
3P	147.5	54.5	64
4P	196	54.5	64

Terminal cover for rear connections



	A (mm)
3P	105
4P	140

Terminal covers for collar terminals

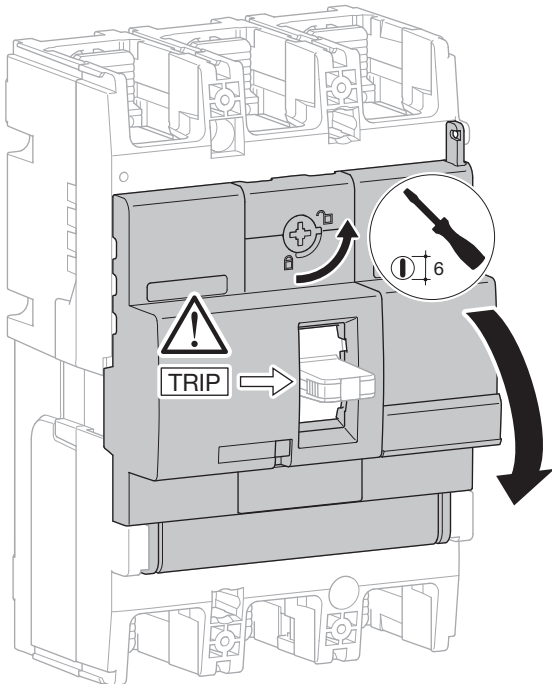


	A (mm)
3P	105
4P	140

Auxiliaries

Auxiliaries for MCCBs and moulded case switches

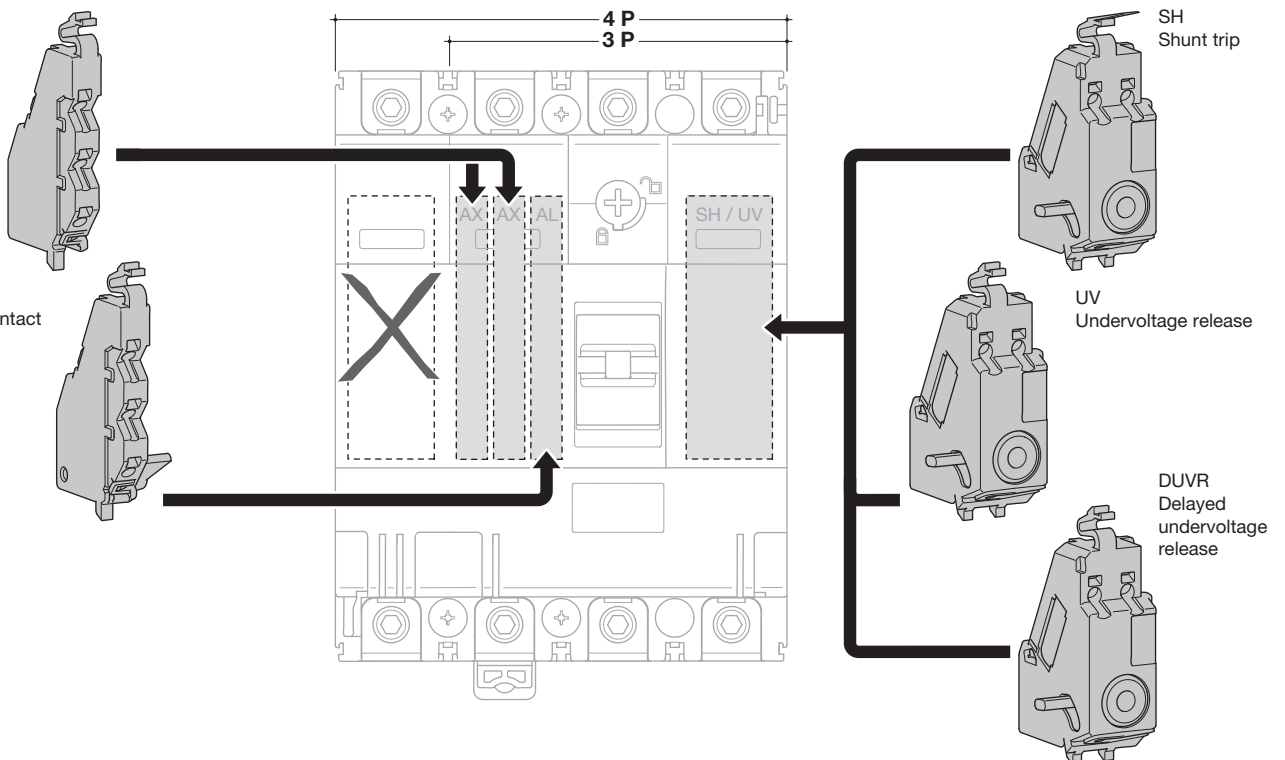
Commercial
Distribution



Mounting combination for auxiliaries and releases

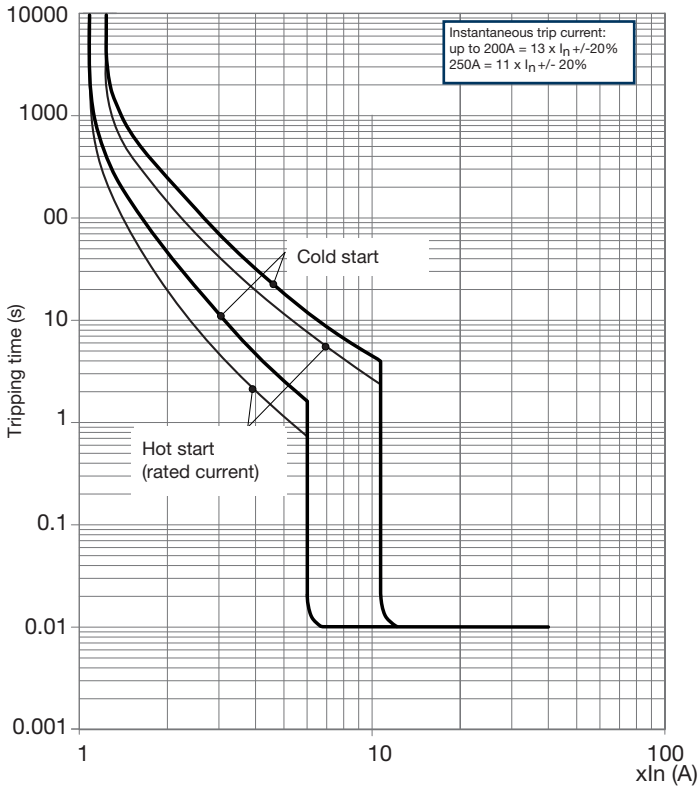
AX
Auxiliary contact

AL
Alarm contact



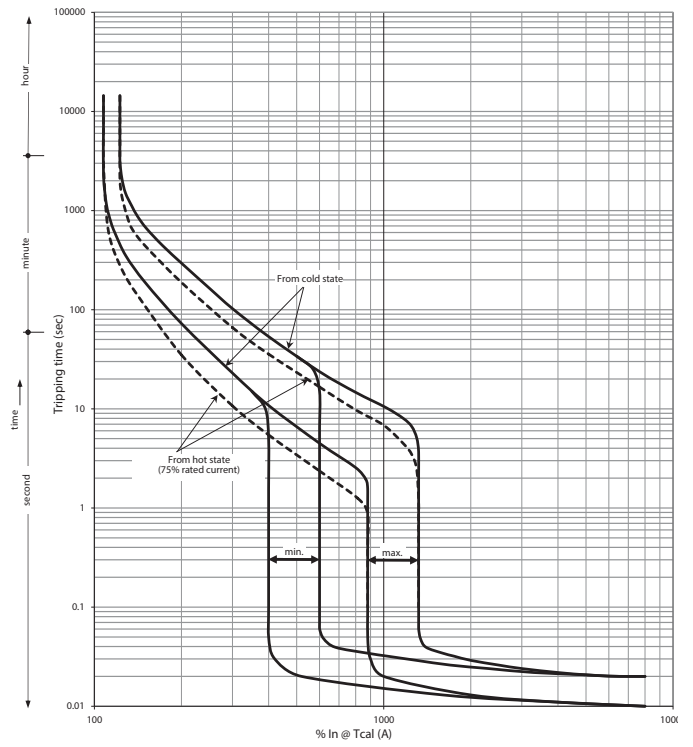
Tripping curve

MCCB x250



Tripping curve

MCCB h250 TM

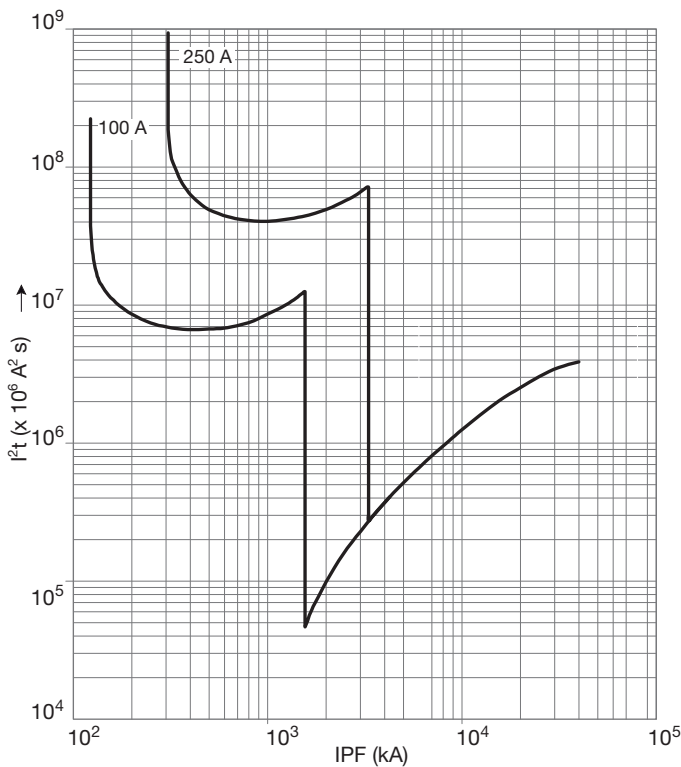


Earth fault loop impedance (Z_s) can be calculated from the formula
 $Z_s \leq \frac{230}{I_a} \times 0.95$

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

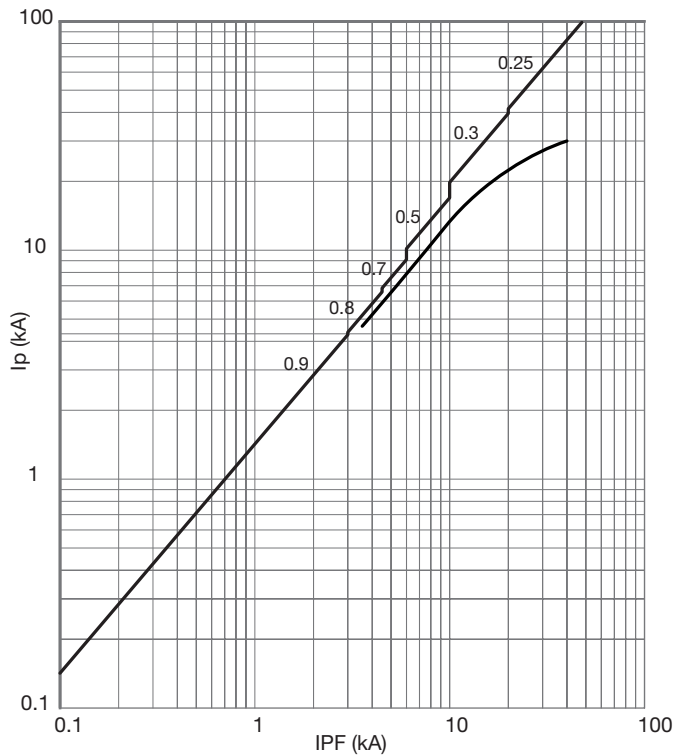
Thermal constraint curve at 400V (Let-through energy)

MCCB x250



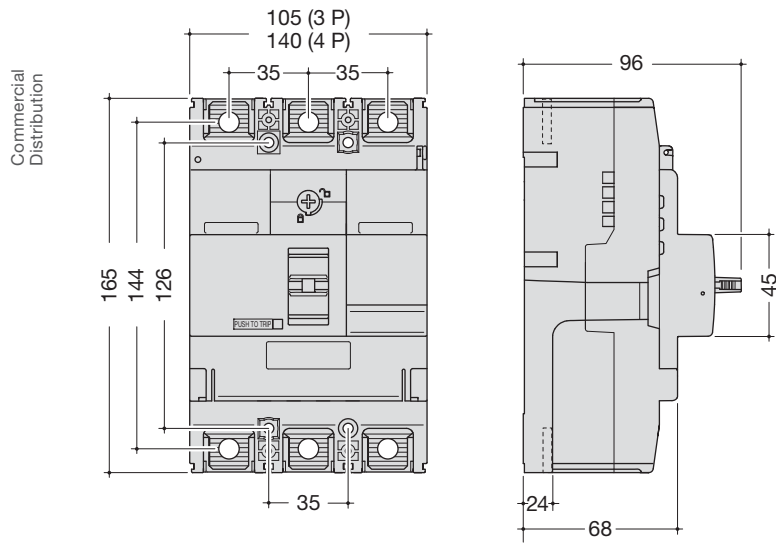
Current limiting curve at 400V (Let-through peak current)

MCCB x250

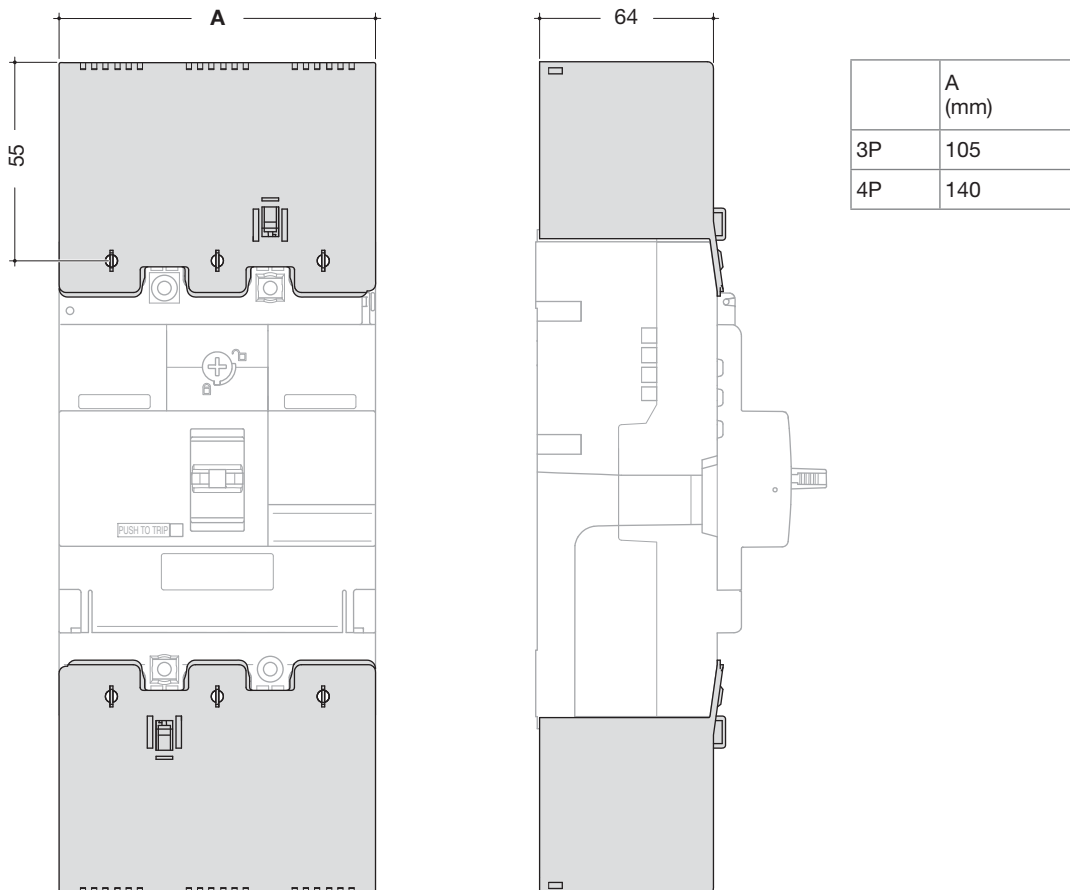


Dimensions

MCCB x250

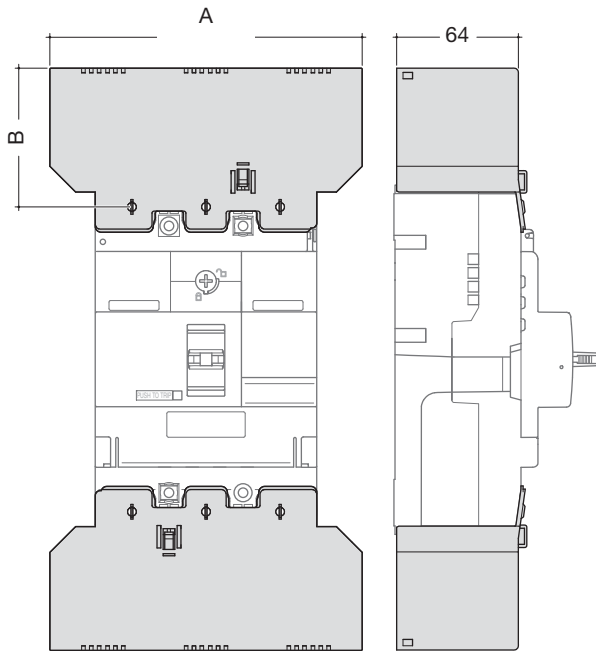


Terminal covers for extended straight connections



Accessories

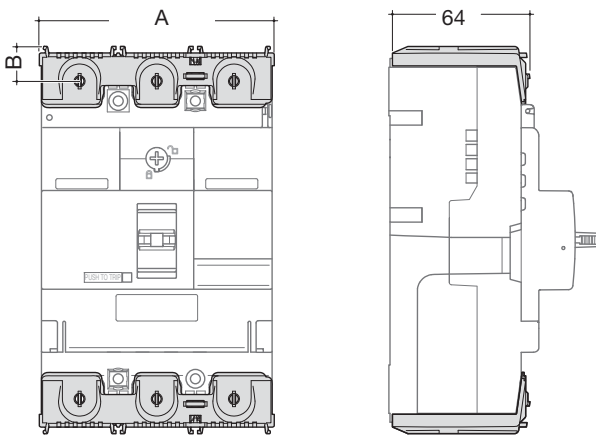
Terminal cover for extended spreader connections



	A (mm)	B (mm)	C (mm)
3P	147,5	54,5	64
4P	196	54,5	64

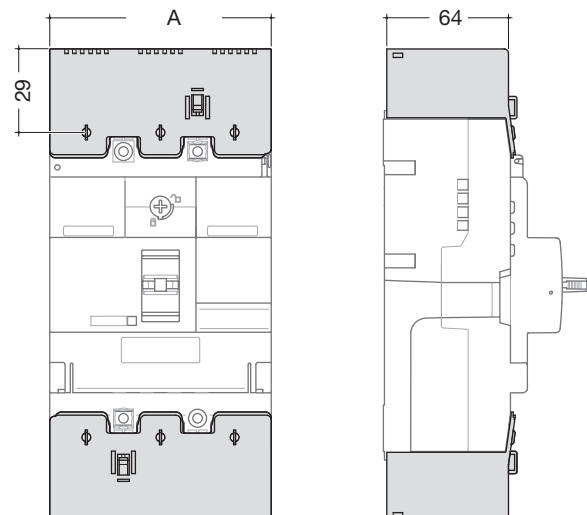
Commercial Distribution

Terminal cover for rear connections



	A (mm)
3P	105
4P	140

Terminal covers for collar terminals

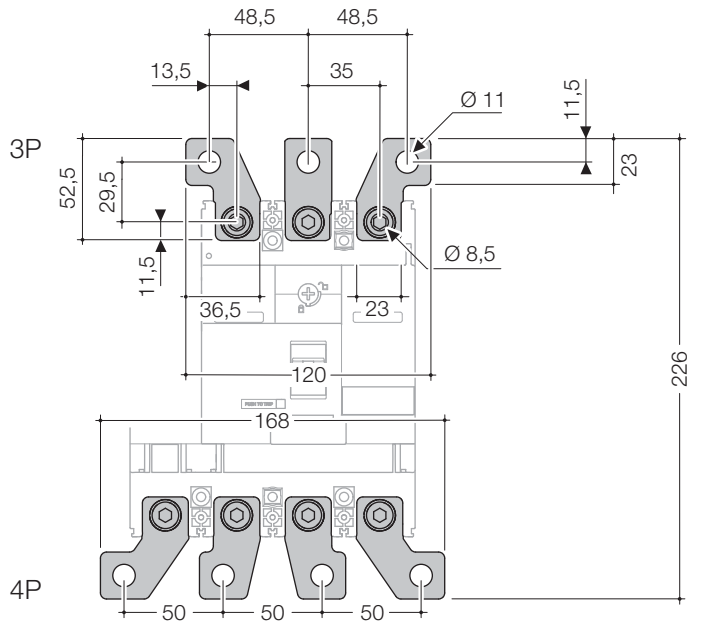
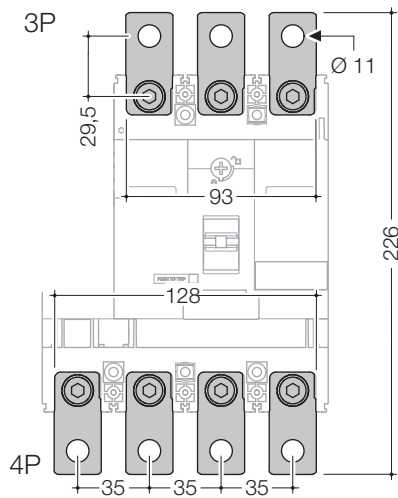
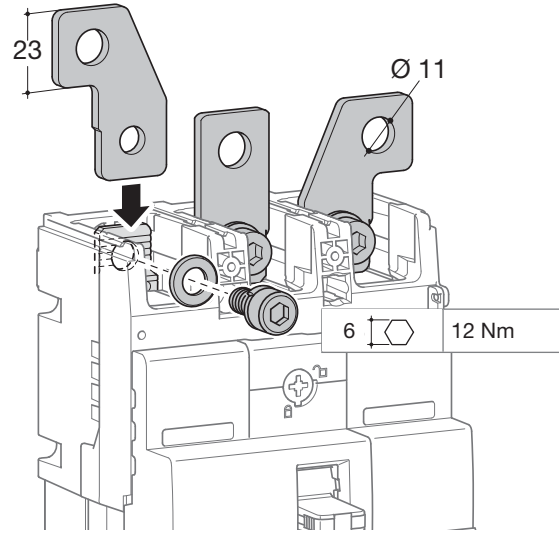
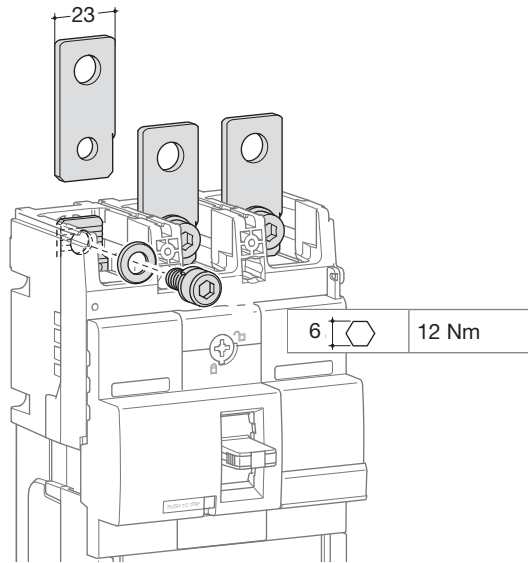


	A (mm)
3P	105
4P	140

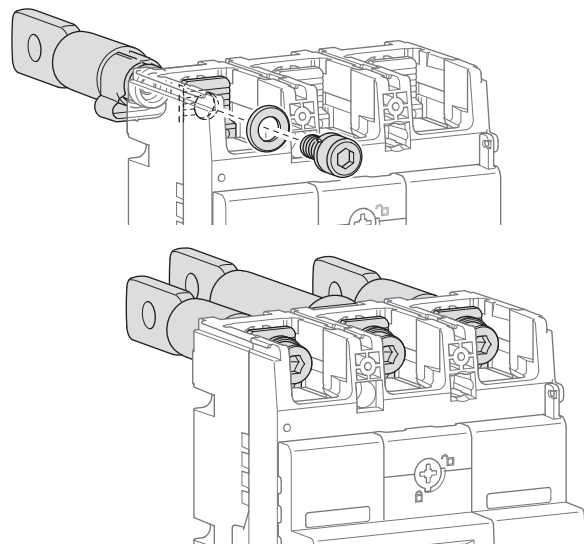
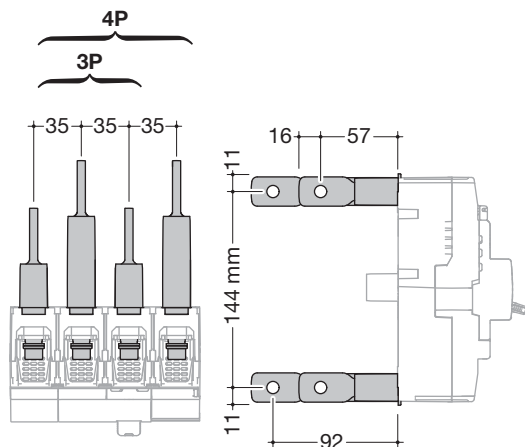
Connection

Extended straight and spreader connections

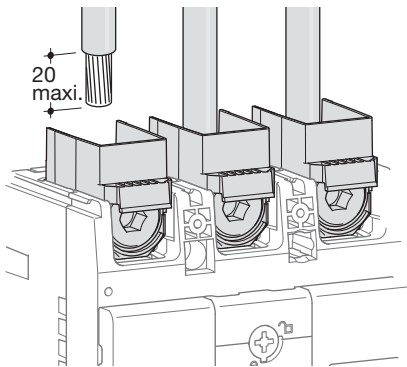
Commercial
Distribution



Rear connections

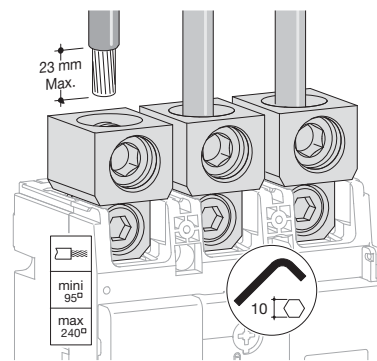


Connection by collar



Terminals for aluminium / copper conductors (accessory)
HYB001H, HYB002H

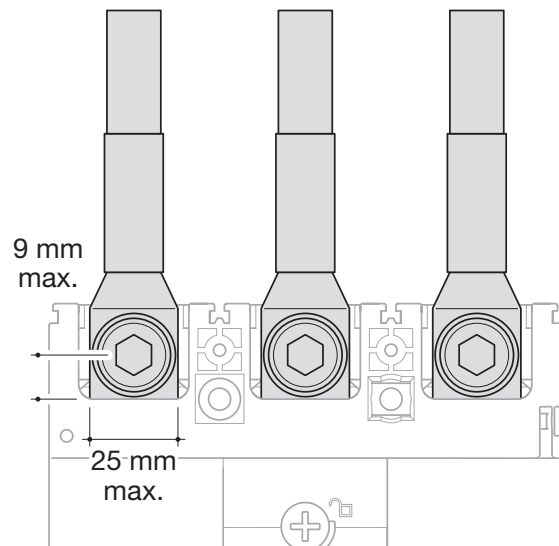
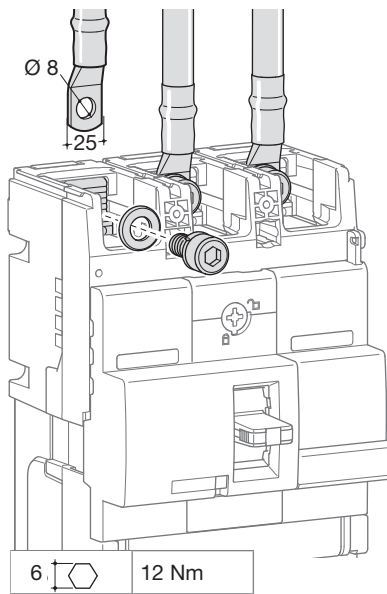
	min. 35 mm ²	max. 150 mm ²
	min. 35 mm ²	max. 185 mm ²
	35 mm ² to 50 mm ² = 25 Nm 60 mm ² to 185 mm ² = 25 Nm	



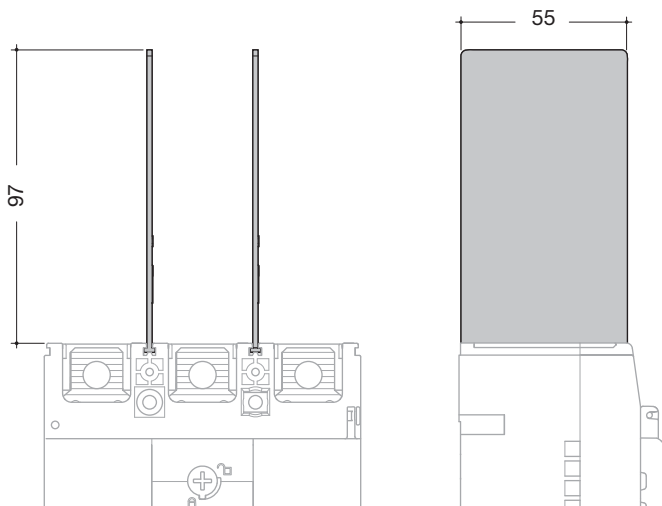
Terminals for aluminium / copper conductors (accessory)
HYB005H, HYB006H

	min. 95 mm ²	max. 240 mm ²
	95 mm ² to 240 mm ² = 25 Nm	

Connection with end lugs



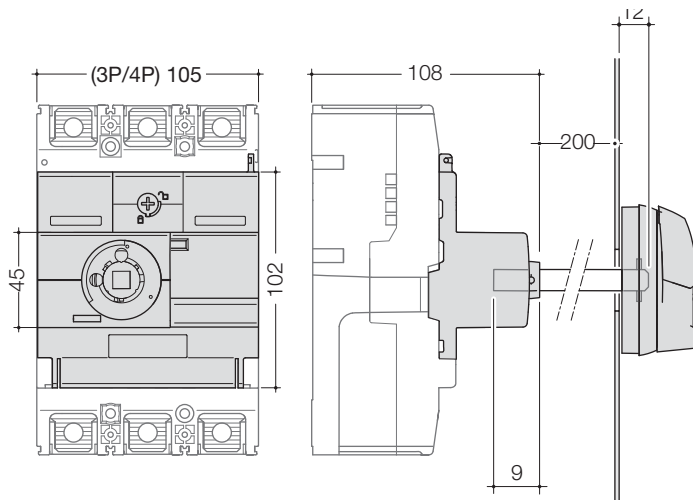
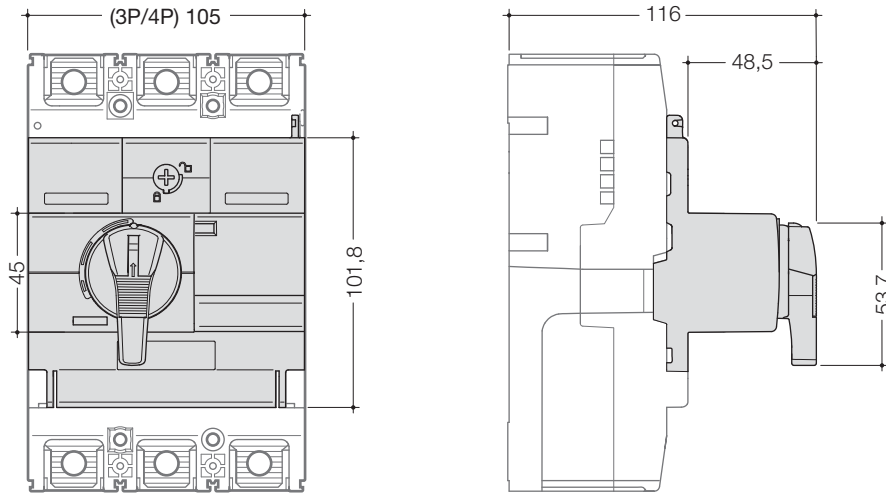
Interphase barriers



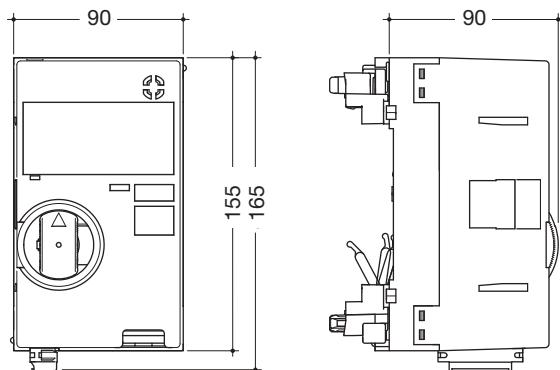
Accessories

Rotary handle

Commercial
Distribution

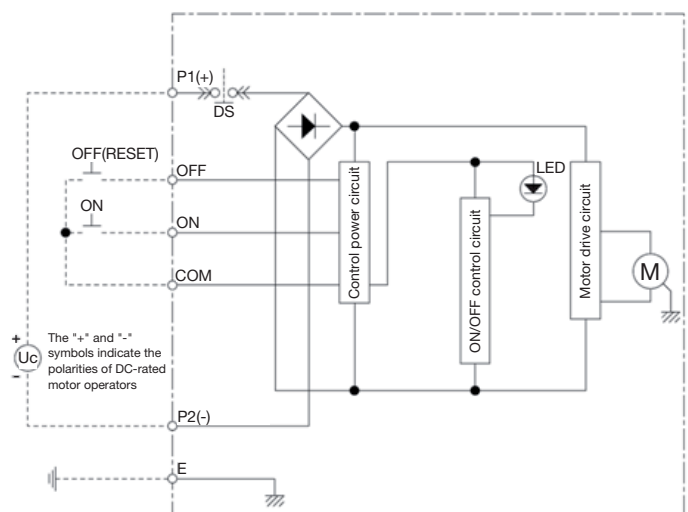


Motor operator



	HXB040H	HXB042H
Operating voltage	24V DC	230-240V AC
Operating current / starting current peak value (A)	24V DC	18/26
	230-240V AC	-
Operating time (s)	(ON)	0,1s
	(OFF)	0,1s
	(RESET)	0,1s
Power supply required	300VA min.	
Dielectric properties (1 min)	1000V AC	1500V AC

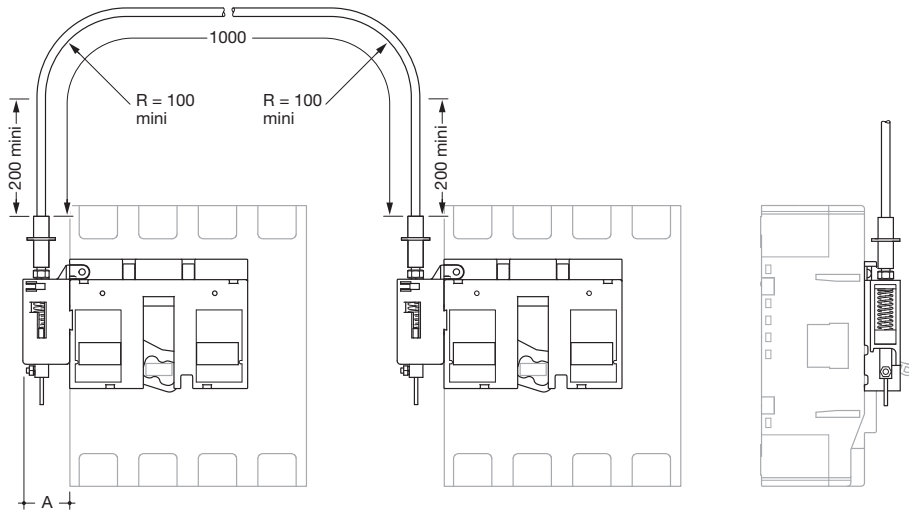
Wiring diagram



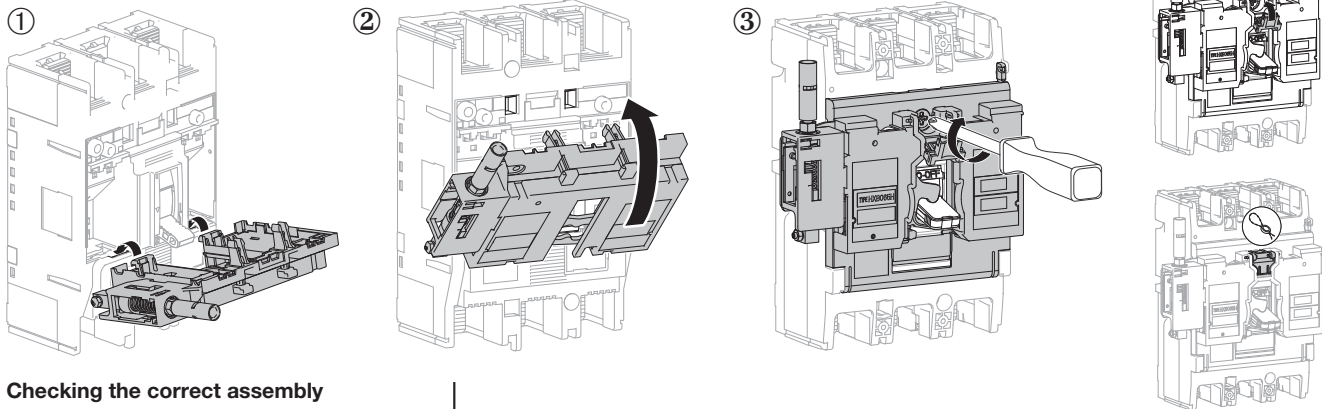
Interlocking system

Suitable with motor operator HXB04xH.
With electrical interlock for motor operator HXB068H (for 250A) or
HXB069H (for 630/1000A).

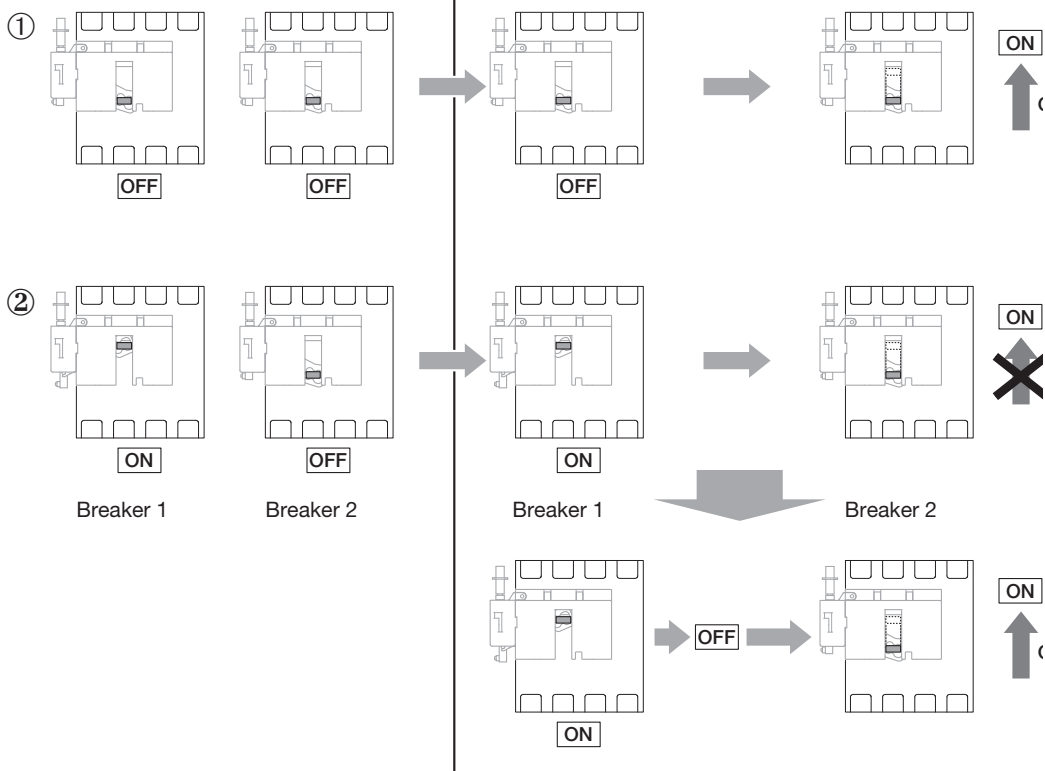
- Length HXB068H: 1500 mm
- Length HXB069H: 2100 mm



Mounting



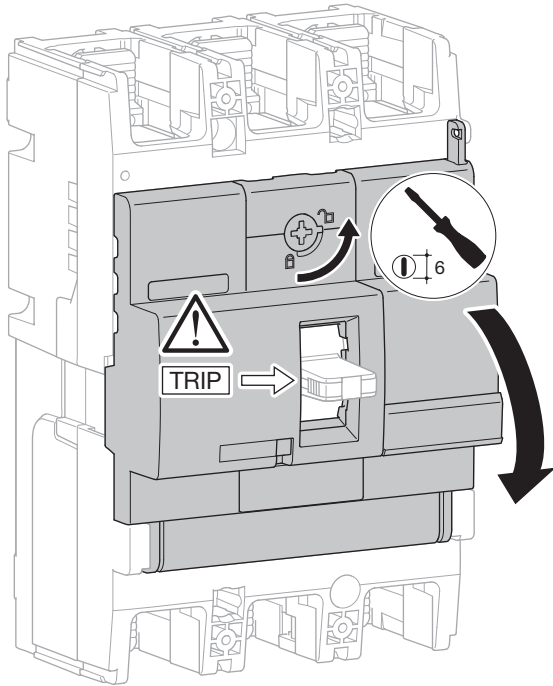
Checking the correct assembly



Auxiliaries

Auxiliaries for MCCBs and trip-free switches

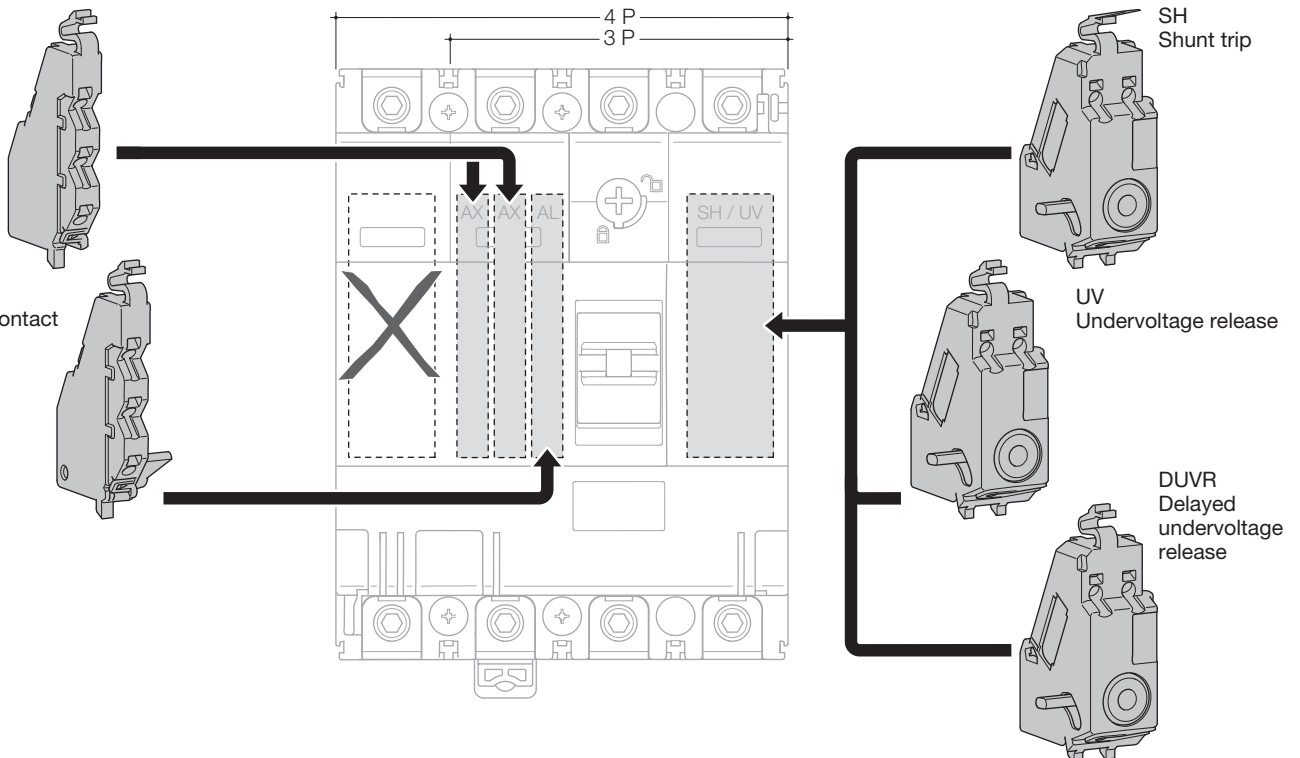
Commercial
Distribution

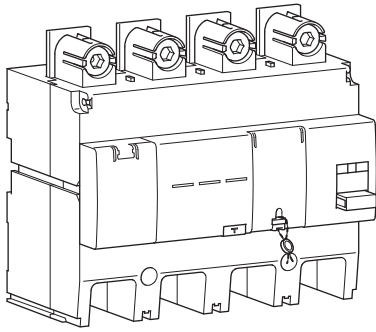


Mounting combination for auxiliaries and releases


AX
Auxiliary contact

AL
Alarm contact





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

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 mistripping (HI type - High Immunity).

Characteristics

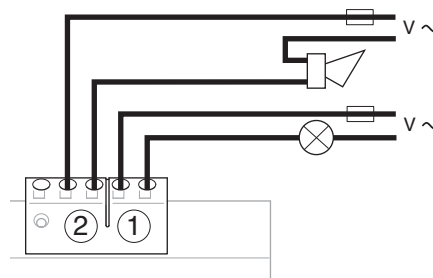
Reset button :
Signals add-on block tripping and must be acknowledged before switching on the installation.

Test button for differential operating :
Allows to check the electrical operating of the MCCB / Add-on block association.

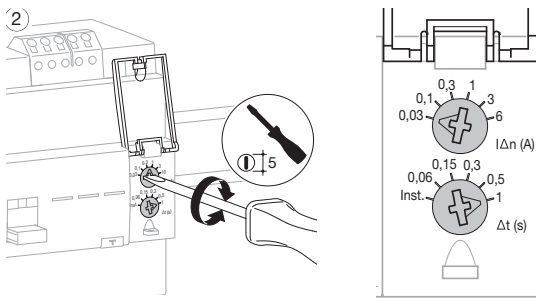
Mechanical test button :
Allows to check the mechanical operating of the MCCB / Add-on block association.

LED signaling default current level in the installation:
25% (orange) and 50% (red) IΔn; green light to signal correct operating.

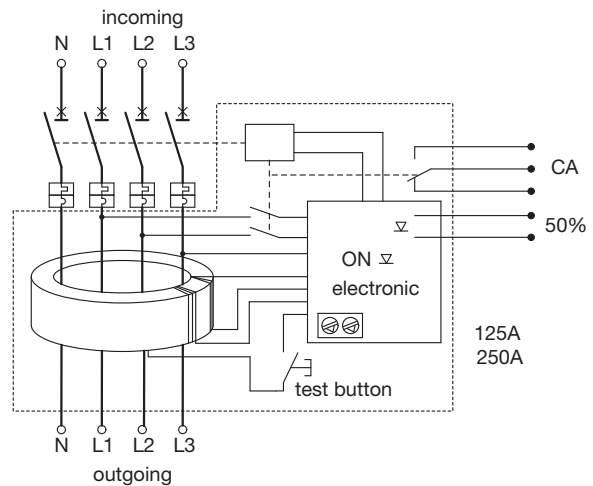
Remote tripping and advanced warning (50% IΔn) signaling thanks to these contacts:



Earth leakage current (IΔn) and delay (Δt) setting



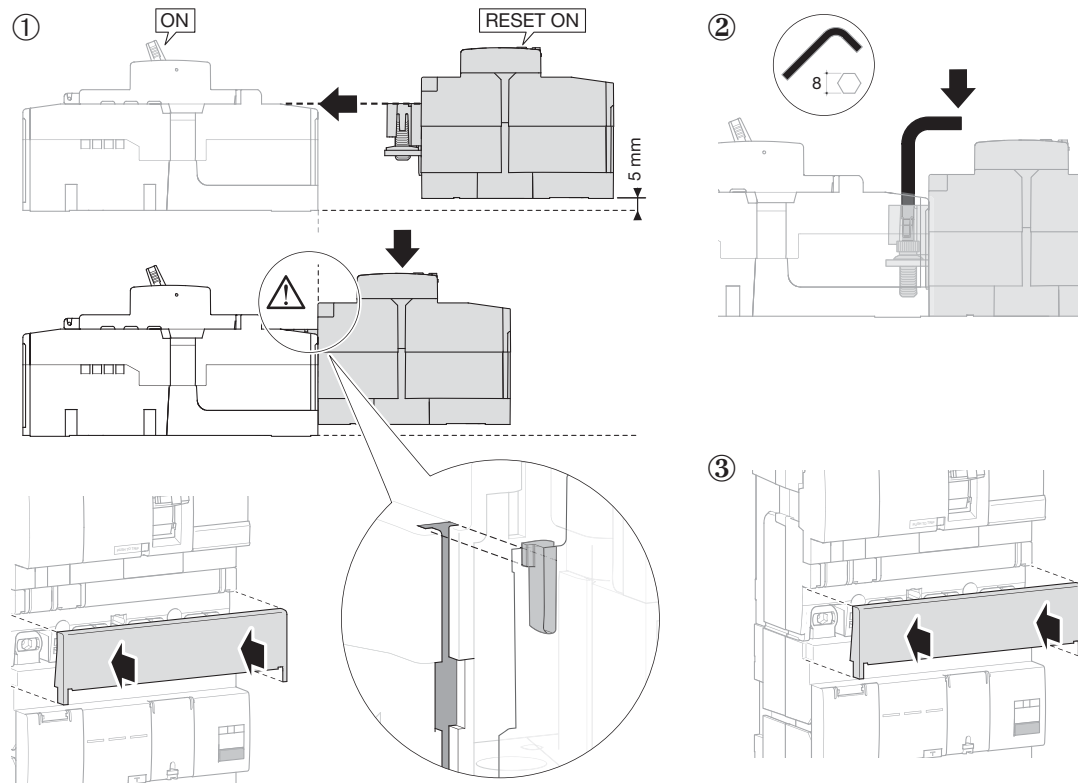
Add-on block operating



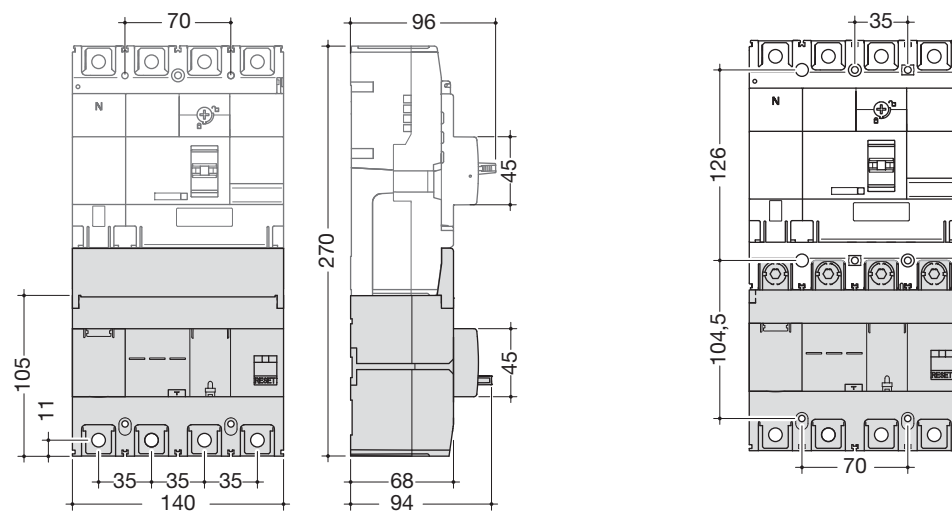
(17) S	A (IΔn)						
		0,03	0,1	0,3	1	3	6
	Inst.	OK	OK	OK	OK	OK	OK
	0,06	no	OK	OK	OK	OK	OK
	0,15	no	OK	OK	OK	OK	OK
	0,3	no	OK	OK	OK	OK	OK
	0,5	no	OK	OK	OK	OK	OK
	1	no	OK	OK	OK	OK	OK

Add-on block mounting

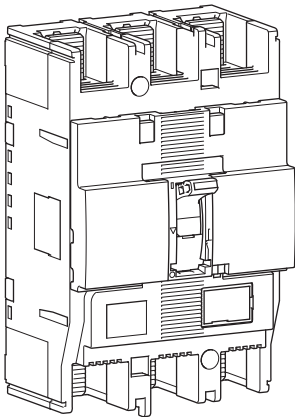
Commercial
Distribution



Dimensions



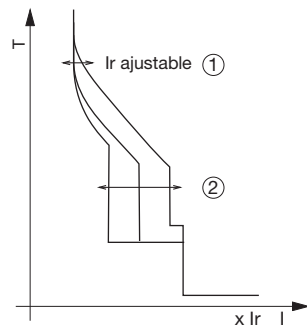
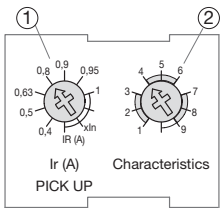
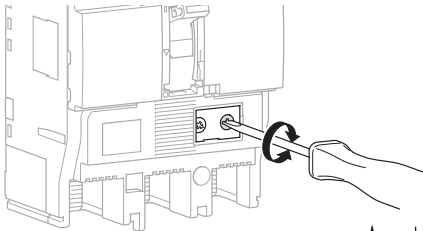
MCCBs



		220/240 V AC	380/415 V AC	660/690 V AC
LSI HNC	Icu (kA)	85	50	7,5
	Ics (kA)	85	25	7,5
LSI HEC	Icu (kA)	100	70	20
	Ics (kA)	100	70	15

Commercial Distribution

Electronic trip unit setting (LSI)



L - Long delay - protection against overloads: Ir and tr settings

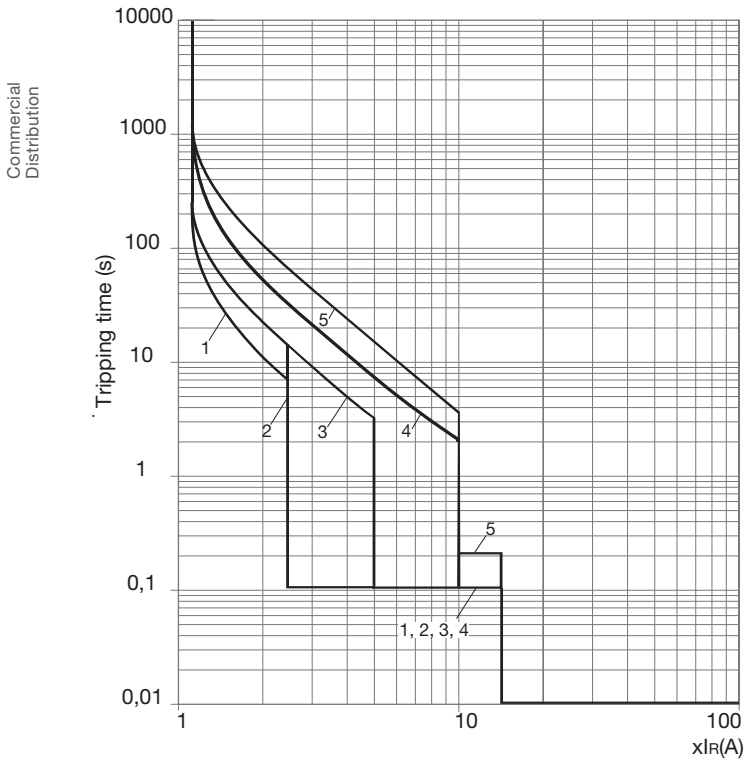
S - Short delay - protection against short circuits: Isd and tsd settings

I - Instantaneous - max. instantaneous threshold (< 10 ms) in case of short circuit: 2,5 to 10 x Ir.

Use	Characteristics (*)	
	3 P	4 P
Generator protection	pos. 1	pos. 1, 4 and 7
Standard protection	pos. 2 and 3	pos. 2, 5 and 8
Motor protection	pos. 4 and 5	pos. 3, 6 and 9

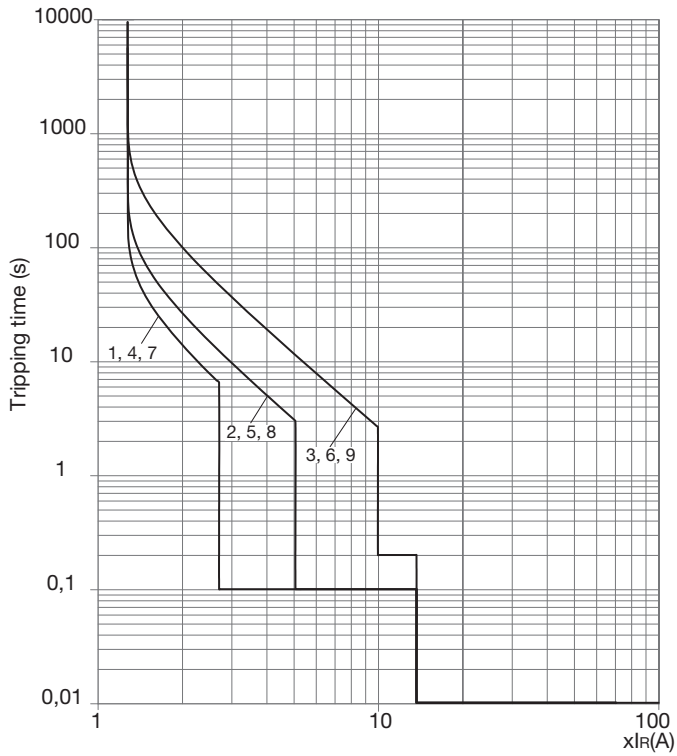
LSI		In A										
		3P					4P					
		Long Time Delay		Short Time Delay		Inst	Long Time Delay		Short Time Delay		Inst	Protection
Ir (x In)	tr (s)	isd (xIr)	tsd (s)	li (xIr)	Ir (x In)	tr (s)	isd (xIr)	tsd (s)	li (xIr)	Neutral		
Ir (x In)	0,4	OK				OK						
	0,5	OK				OK						
	0,63	OK				OK						
	0,8	OK				OK						
	0,9	OK				OK						
	0,95	OK				OK						
	1	OK				OK						
Characteristics	1		11s at 2 xlr	2,5	0,1	14 (max 13 x In)		11 s at 2 xlr	2,5	0,1	14	no
	2		21s at 2 xlr					21 s at 2 xlr	5			
	3			5				7,5 s at 6 xlr	10	0,2		
	4		5 s at 6 xlr	10				11 s at 2 xlr	2,5	0,1		50%
	5		7,5 s at 6 xlr				21 s at 2 xlr	5				
	6							7,5 s at 6 xlr	10	0,2		
	7							11 s at 6 xlr	2,5	0,1		100%
	8							21 s at 2 xlr	5			
	9							7,5 s at 6 xlr	10	0,2		

MCCB h250 3P LSI



LTD pick-up current		I_r	$x I_n$	0,4	0,5	0,63	0,8	0,9	0,95	1	
Characteristics			No.	1	2	3	4	5			
Standard	LTD	t_r	(s)	11	21	21	5	7,5			
				200 % $x I_r$			600 % $x I_r$				
	STD	I_{sd}	$x I_r$	2,5	2,5	5	10	10			
		t_{sd}	(s)	0,1	0,1	0,1	0,1	0,2			
INST	I_i	$x I_r$	14 (max 13 $x I_n$)								

MCCB h250 4P LSI

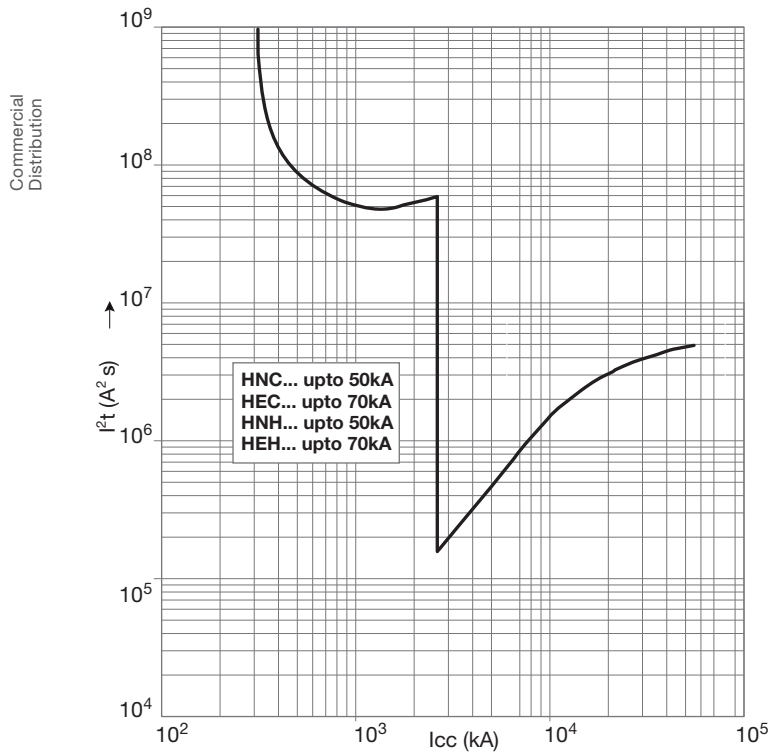


Commercial
Distribution

LTD pick-up current		IR	x In	0,4	0,5	0,63	0,8	0,9	0,95	1		
Characteristics			No.	1	2	3	4	5	6	7	8	9
Standard	LTD	tR	(s)	11 s	21 s	7,5 s	11 s	21 s	7,5 s	11 s	21 s	7,5 s
				200 % x IR		600% x IR	200 % x IR		600% x IR	200 % x IR		600% x IR
	STD	Isd	x IR	2,5	5	10	2,5	5	10	2,5	5	10
		tSD	(s)	0,1		0,2	0,1		0,2	0,1		0,2
	INST	li	x IR	14								
Neutral protection		x In	no			0,5			1			

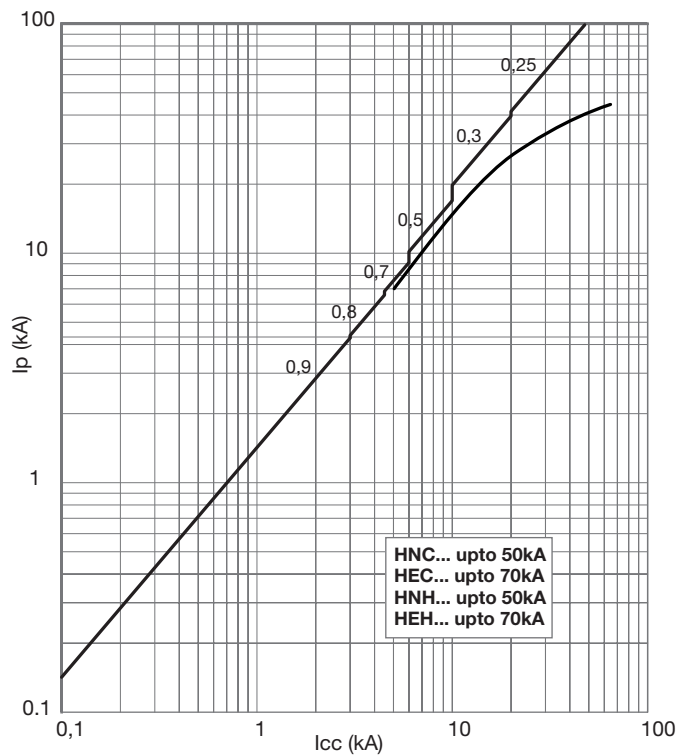
Thermal constraint curve at 400V (Let-through energy)

MCCB h250



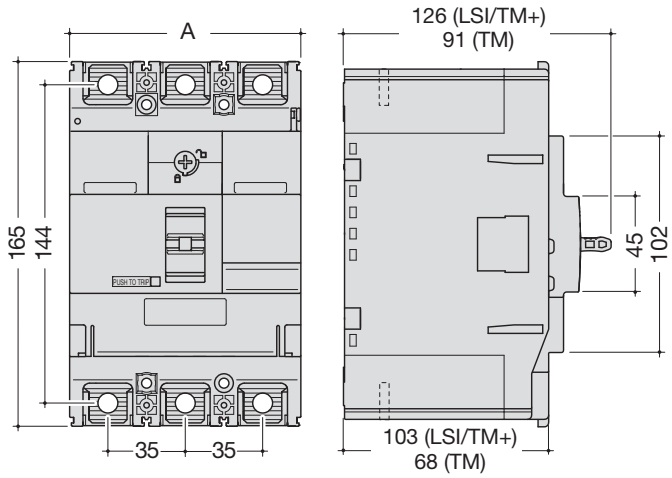
Current limiting curve at 400V (Let-through peak current)

MCCB h250



Dimensions

MCCBs

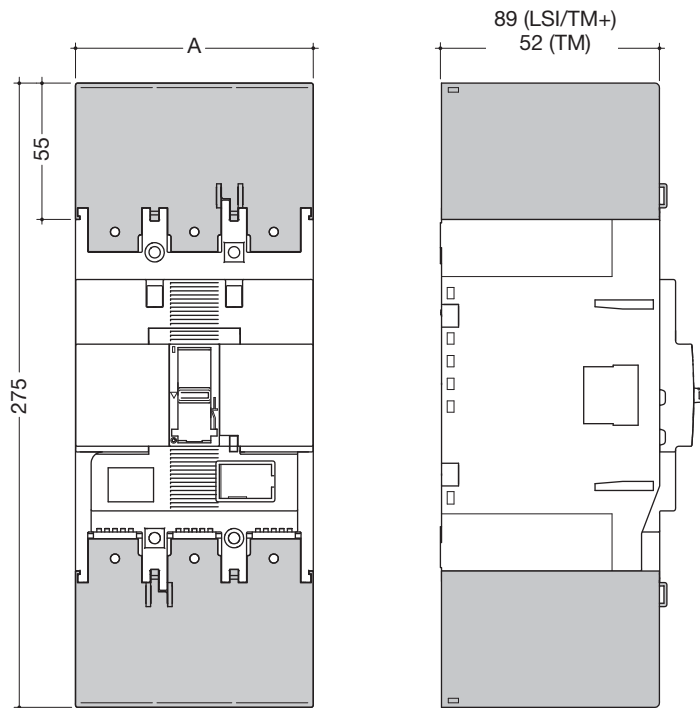


	A (mm)
3P	105
4P	140

Commercial Distribution

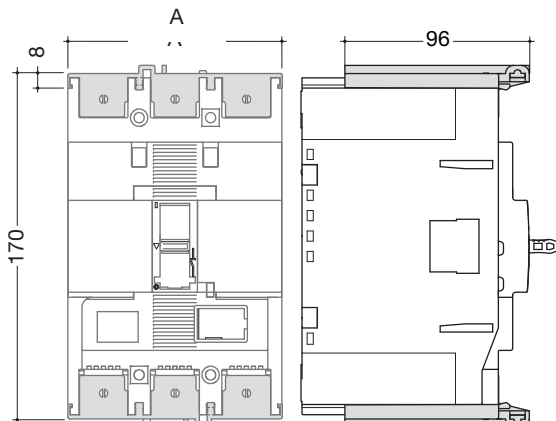
Accessories

Terminal covers for extended straight connections



	A (mm)
3P	105
4P	140

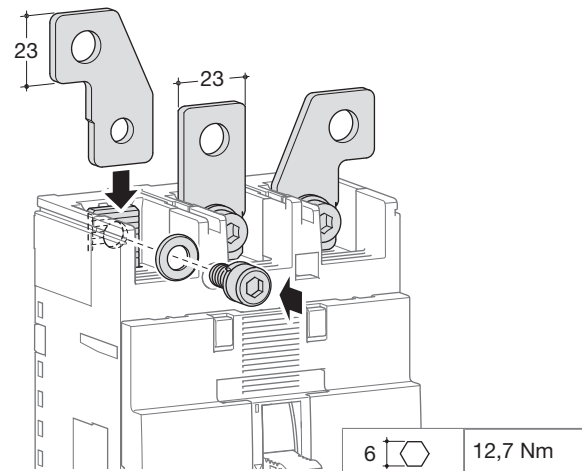
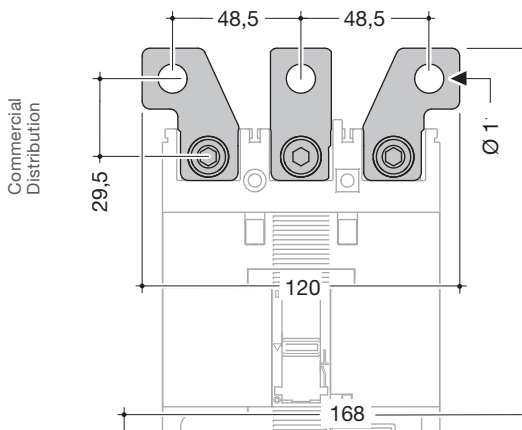
Terminal cover for rear connections (LSI/TM+ only)



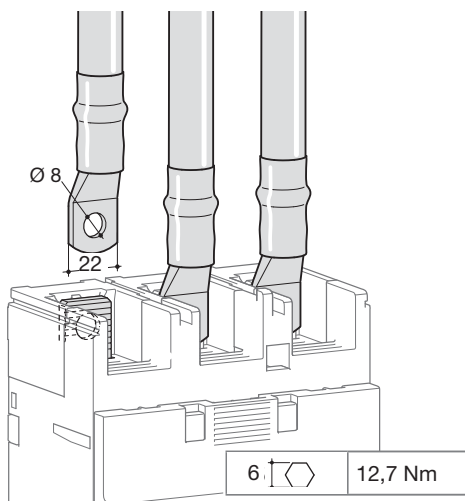
	A (mm)
3P	105
4P	140

Connection

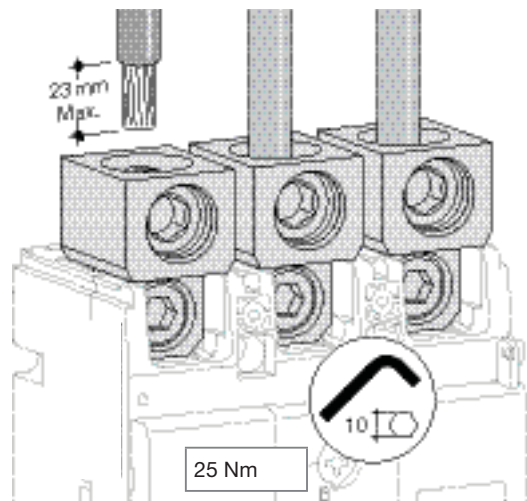
Extended straight and spreader connections



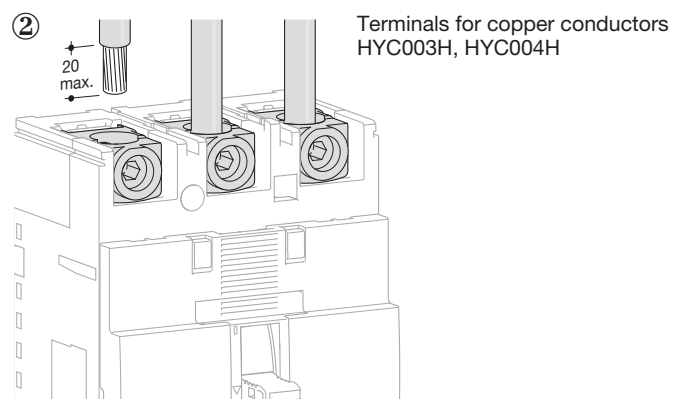
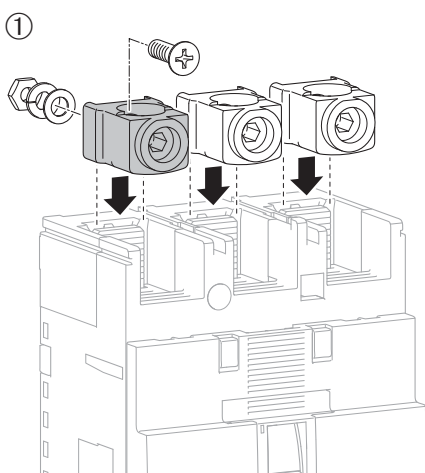
Connection with end lugs



Connection by collar 240mm2 - HYB005H and HYB006H

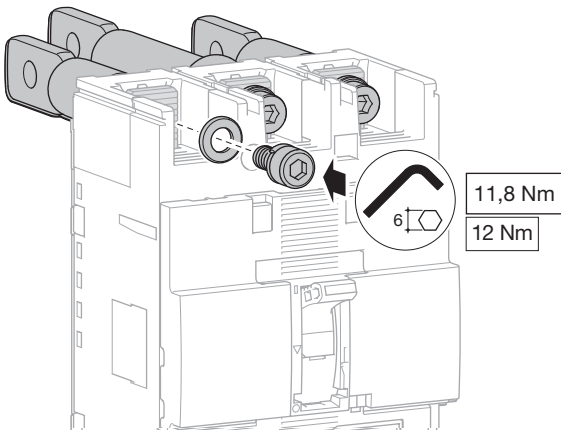
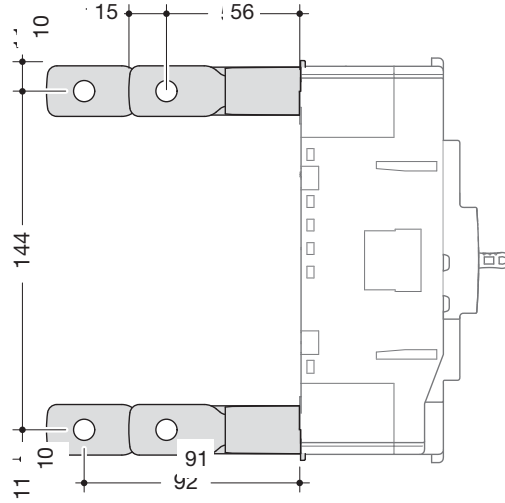
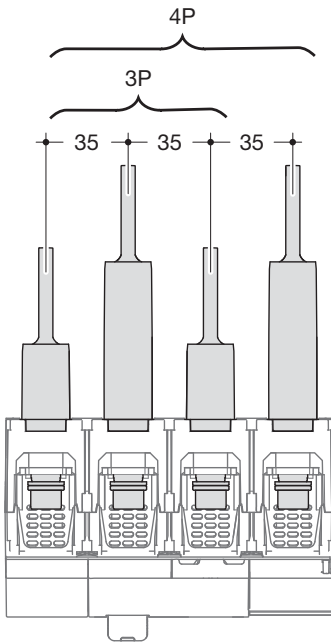


Connection by collar



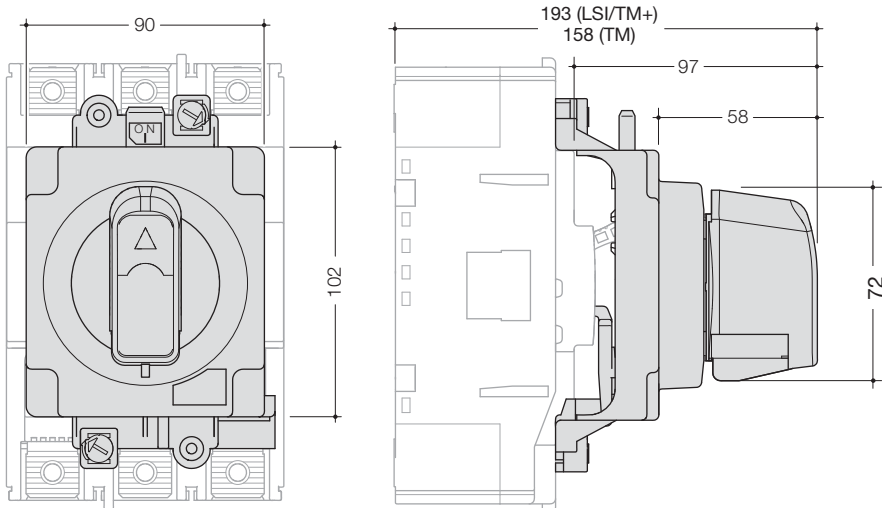
	min. 35 mm ²	max. 120 mm ²
	min. 35 mm ²	max. 120 mm ²
6:	19 Nm	

Rear connections (LSI/TM+ only)



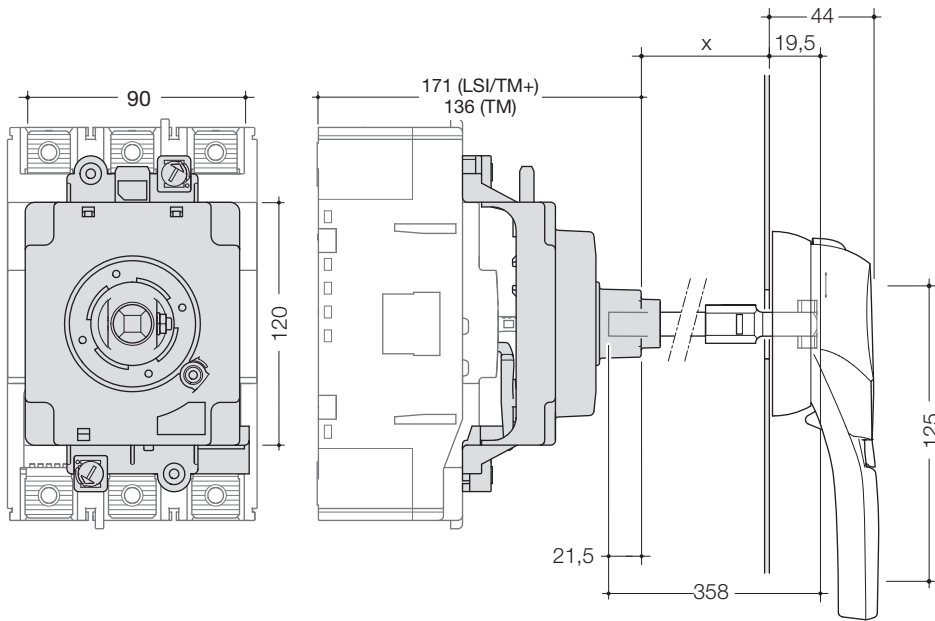
Accessories

Direct rotary handle

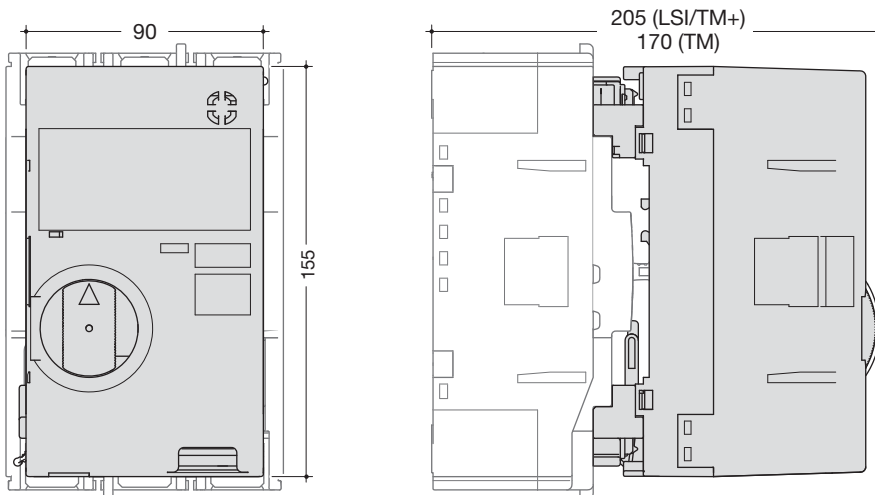


Extended rotary handle

Commercial
Distribution

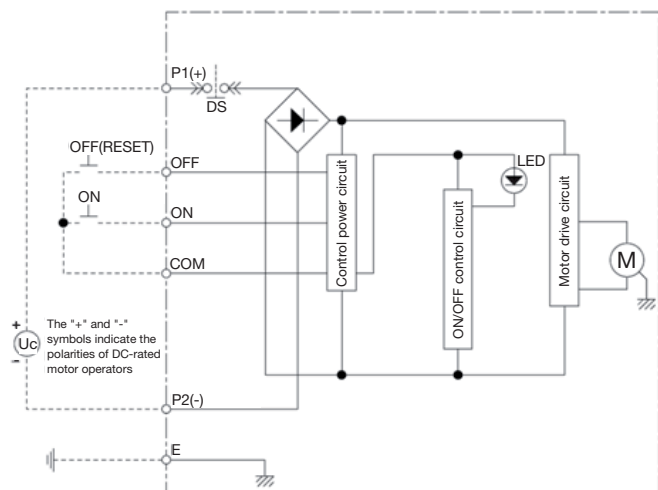


Motor operator



		HXC040H	HXC042H
Operating voltage		24V DC	230-240V AC
Operating current / starting current peak value (A)	24V DC	18/26	-
	230-240V AC	-	3,5/7
Operating time (s)	(ON)	0,1s	
	(OFF)	0,1s	
	(RESET)	0,1s	
Power supply required		300VA min.	
Dielectric properties (1 min)		1000V AC	1500V AC

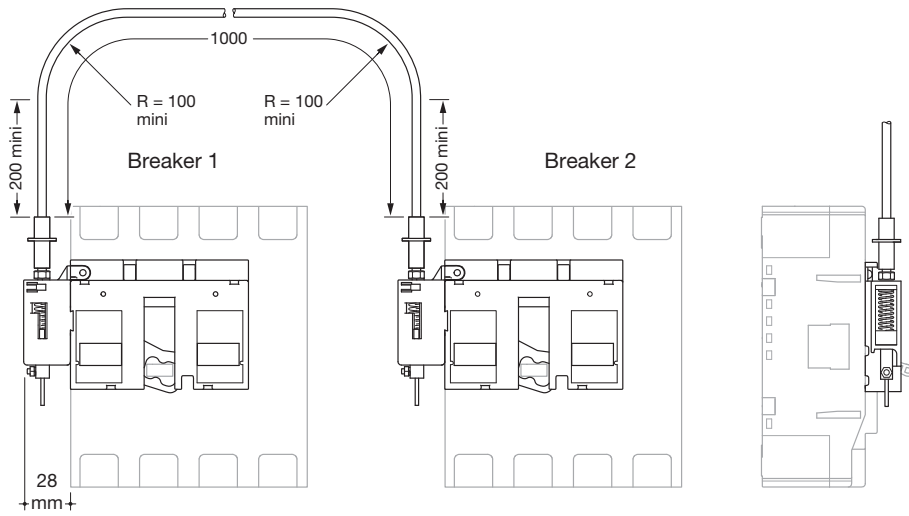
Wiring diagram



Interlocking system

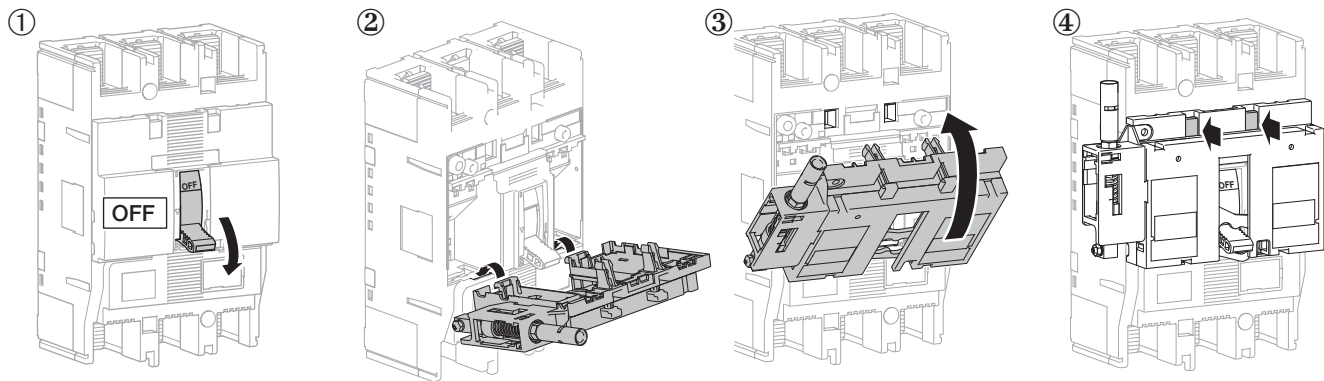
Suitable with motor operator HXC04xH.
With electrical interlock for motor operator HXB068H (for 250A) or HXB069H (for 630/1000A).

- Length HXB068H: 1500 mm
- Length HXB069H: 2100 mm

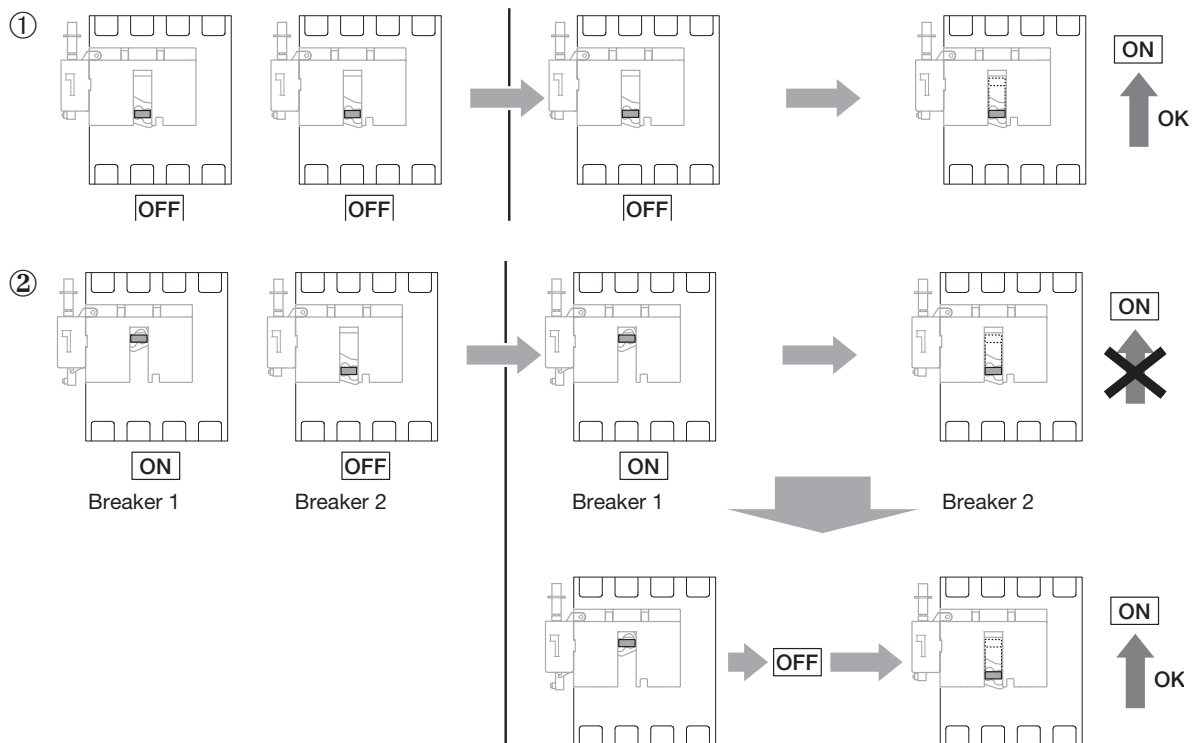


Commercial Distribution

Mounting



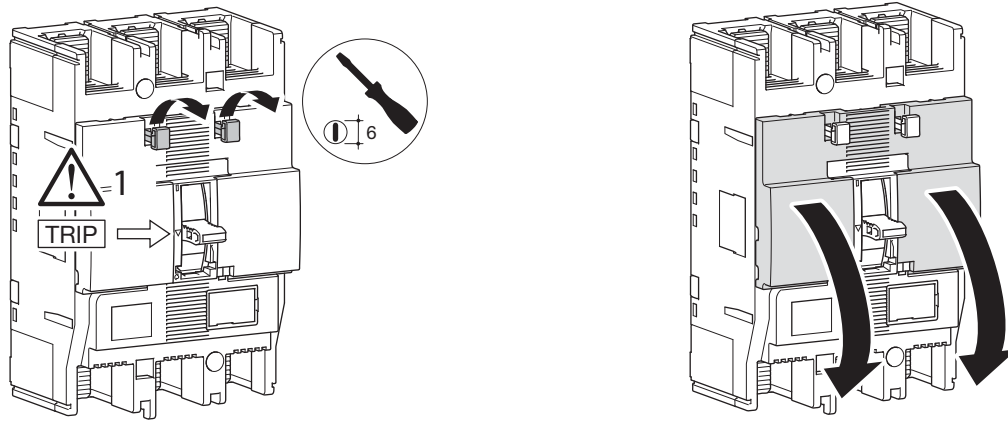
Checking the correct assembly



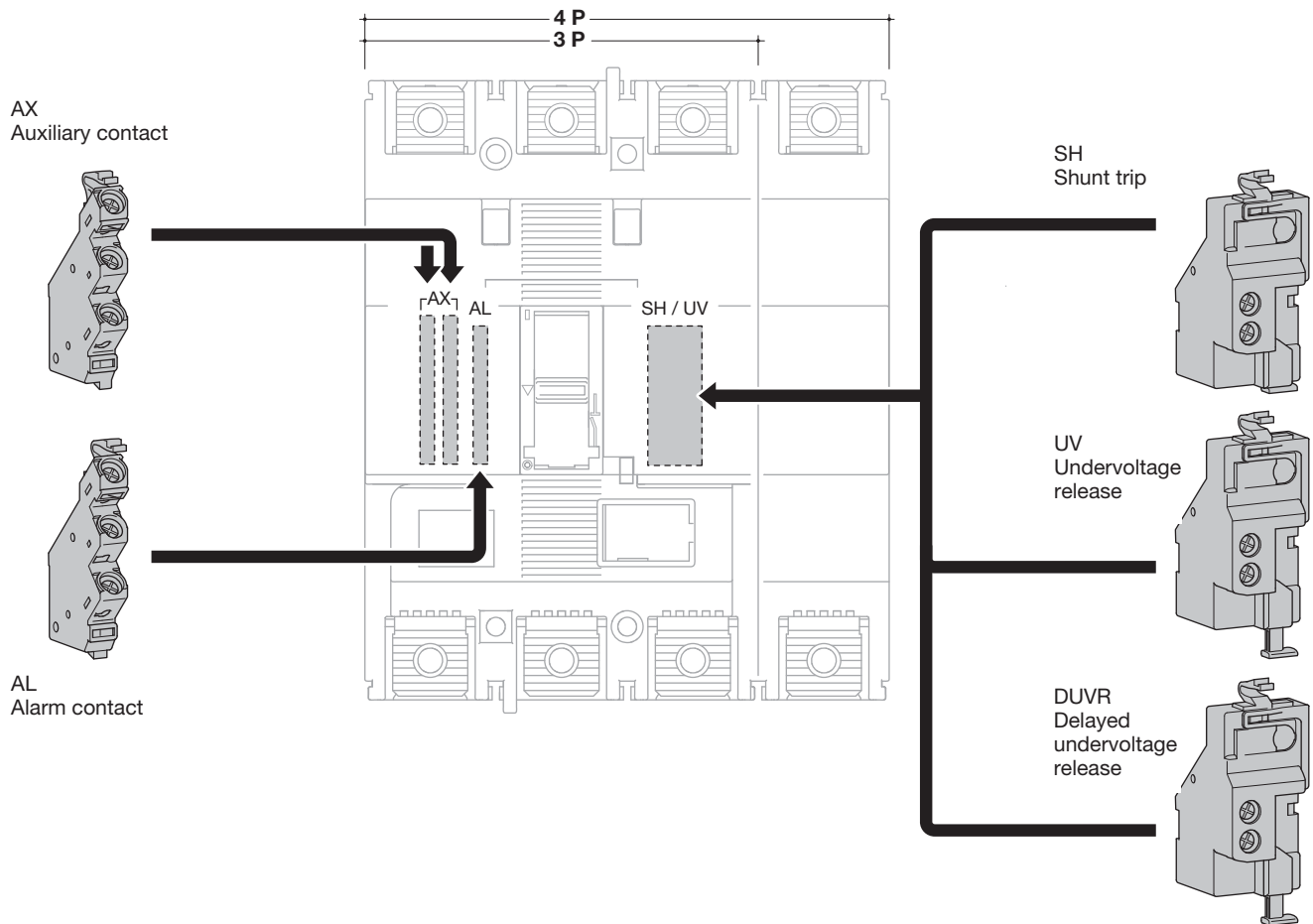
Auxiliaries

Auxiliaries for MCCBs and trip-free switches

Commercial
 Distribution



Mounting combination for auxiliaries and releases

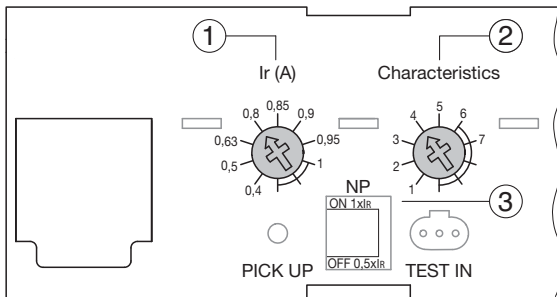


Electronic trip unit setting (LSI)

L - Long delay - protection against overloads: I_r and t_r settings

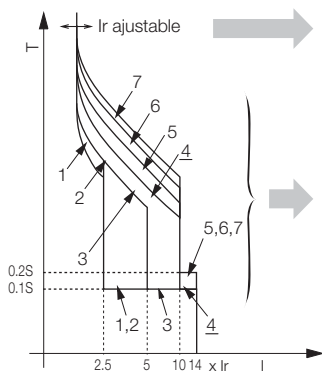
S - Short delay - protection against short circuits: I_{sd} and t_{sd} settings

I - Instantaneous - max. instantaneous threshold (< 10 ms) in case of short circuit: 2,5 to 10 x I_r (250 - 400A) and 2,5 to 8 x I_r (630A).



Neutral settings:

- ① Long delay current I_r setting
- ② Other curve characteristics setting (t_r , I_{sd} , t_{sd})
- ③ Neutral protection against overloads setting



LSI	In A									
	250 A / 400 A					630 A				
	Long Time Delay		Short Time Delay		Inst	Long Time Delay		Short Time Delay		Inst
	I_r (x I_n)	t_r (s)	I_{sd} (x I_r)	t_{sd} (s)	I_i (x I_r)	I_r (x I_n)	t_r (s)	I_{sd} (x I_r)	t_{sd} (s)	I_i (x I_r)
① I_r (x I_n)	0,4	OK				OK				
	0,5	OK				OK				
	0,63	OK				OK				
	0,8	OK				OK				
	0,85	-				OK				
	0,9	OK				OK				
	0,95	OK				OK				
	1	OK				OK				
② Characteristics	1	11s at 2 x I_r	2,5	0,1	14 (max 13 x I_n)	11s at 2 x I_r	2,5	0,1	14 (max 10 x I_n)	
	2	21s at 2 x I_r	5			21s at 2 x I_r	5			
	3	5 s at 6 x I_r	10			5 s at 6 x I_r	8			
	4	10 s at 6 x I_r	0,2	10 s at 6 x I_r		0,2				
	5	19 s at 6 x I_r		16 s at 6 x I_r						
	6	29 s at 6 x I_r	-	-		-				
	7	29 s at 6 x I_r	-	-		-				
③ Neutral protection	0%									
	50%									
	100%									

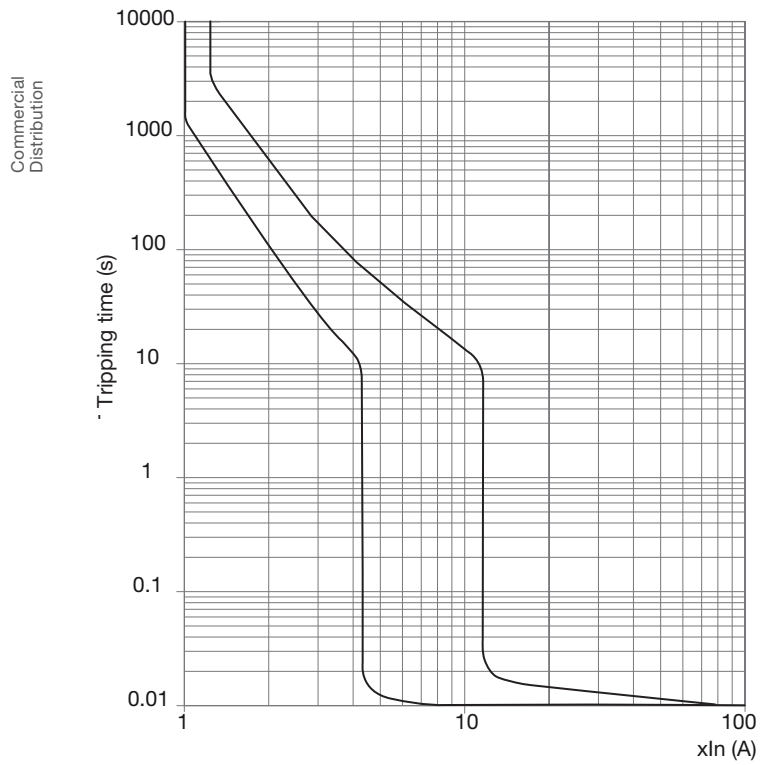
(*) Characteristic 1 : use for generators protection.

Characteristic 2 to 4 - standard protection : options allow coordination optimisation with other products.

Characteristic 5 to 7 - motor protection: use positions according to motor starting characteristics.

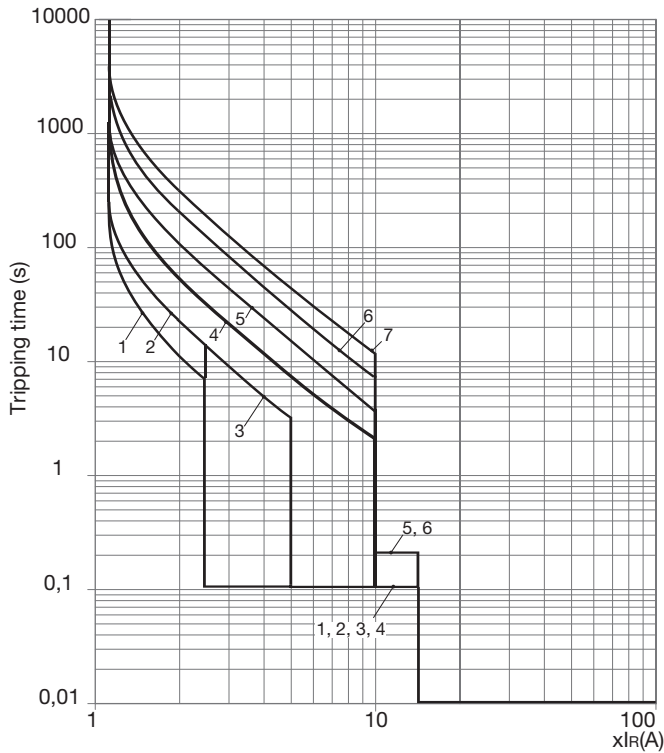
Tripping curve

MCCB h400 TM (250 and 400A)



Tripping curve

MCCB h630 LSI (250A and 400A)



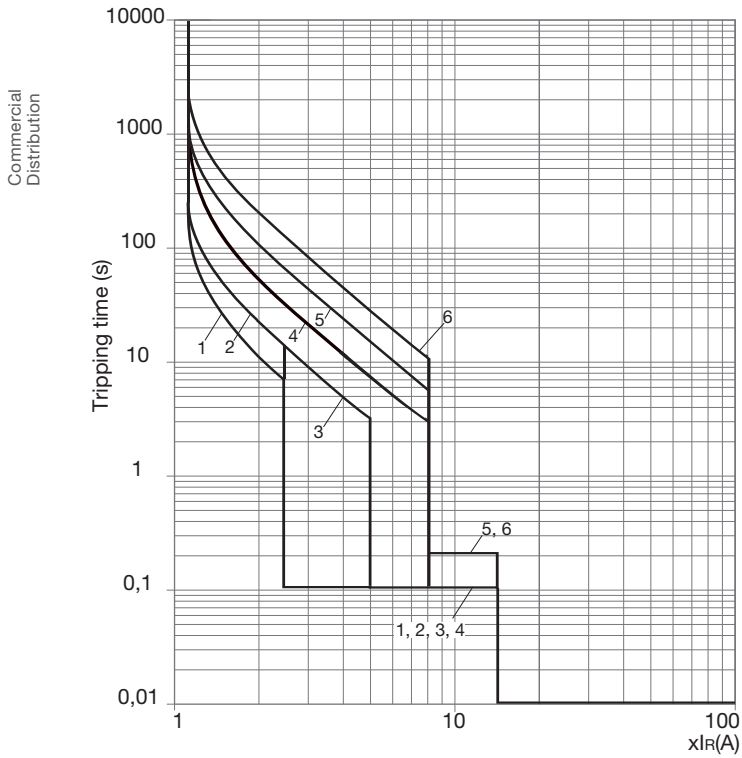
Electronic trip unit setting (LSI)

MCCB h630 LSI (250A and 400A)

		IR (A)								
LTD Pick-up current		IR	x In	0,4	0,5	0,63	0,8	0,9	0,95	1
Characteristics		No.		1	2	3	4	5	6	7
Standard	LTD	tR	(s)	11	21	21	5	10	19	29
				200% x IR			600% x IR			
	STD	Isd	x IR	2,5	5		10			
tsd		(s)	0,1					0,2		
	INST	li	x IR	14 (max : 13 x In)						
Optional	N	IN	x In	0 - 0,5 - 1						
		tN	(s)	tN = tR						

Tripping curve

MCCB h630 LSI (630A electronic)



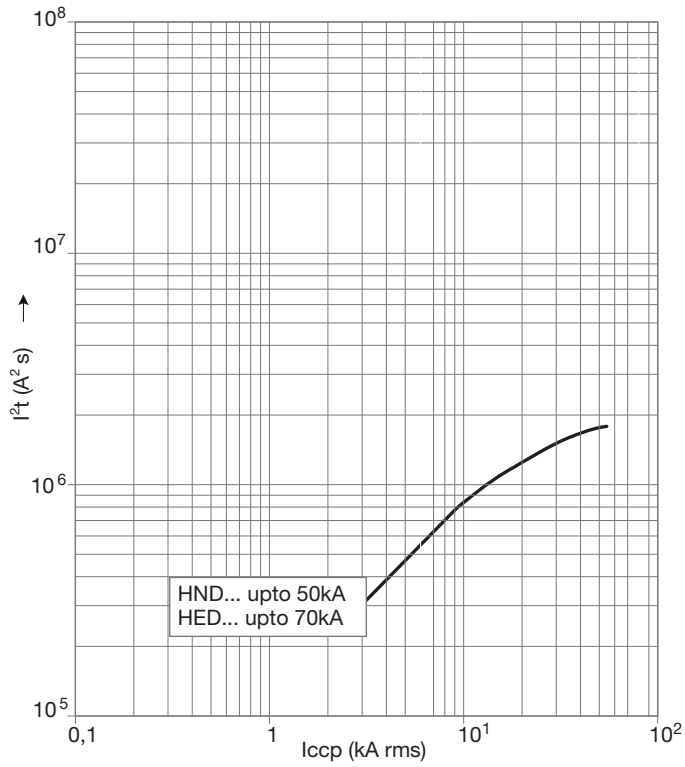
Electronic trip unit setting (LSI)

MCCB h630 LSI (630A electronic)

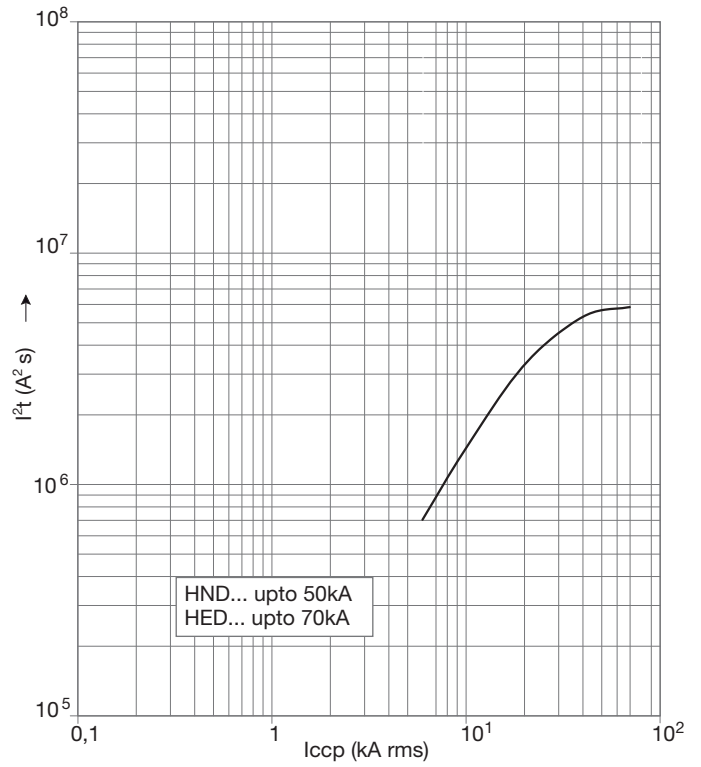
		IR (A)									
LTD Pick-up current		IR	x In	0,4	0,5	0,63	0,8	0,85	0,9	0,95	1
Characteristics		No.		1	2	3	4	5	6		
Standard	LTD	tR	(s)	11	21	21	5	10	16		
				200% x IR			600% x IR				
	STD	Isd	x IR	2,5		5	8				
		tsd	(s)	0,1				0,1			
	INST	li	x IR	14 (max : 10 x In)							
Optional	N	IN	x In	0 - 0,5 - 1							
		tN	(s)	tN= tR							

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

MCCB h630 LSI (250A)

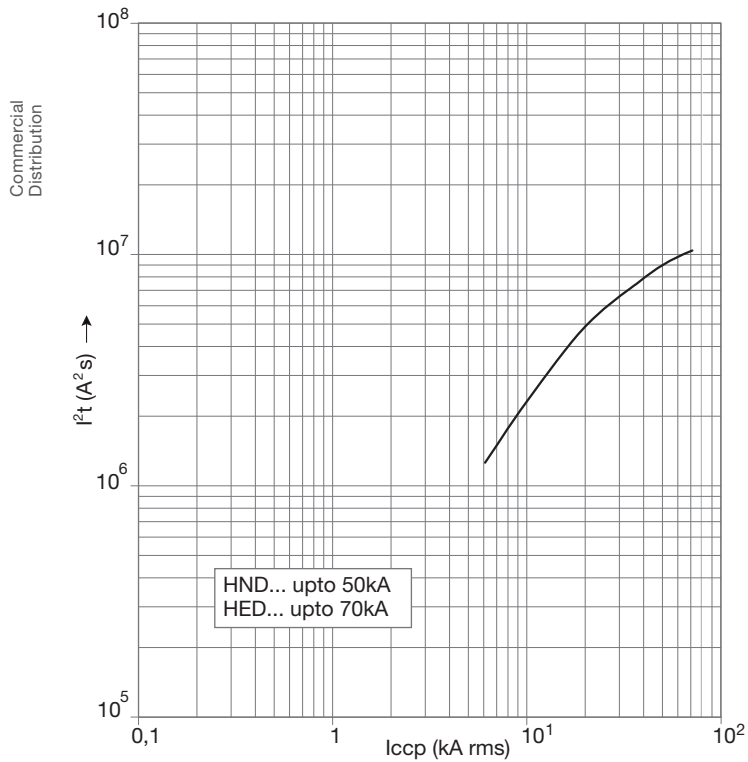


MCCB h630 LSI (400A)



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

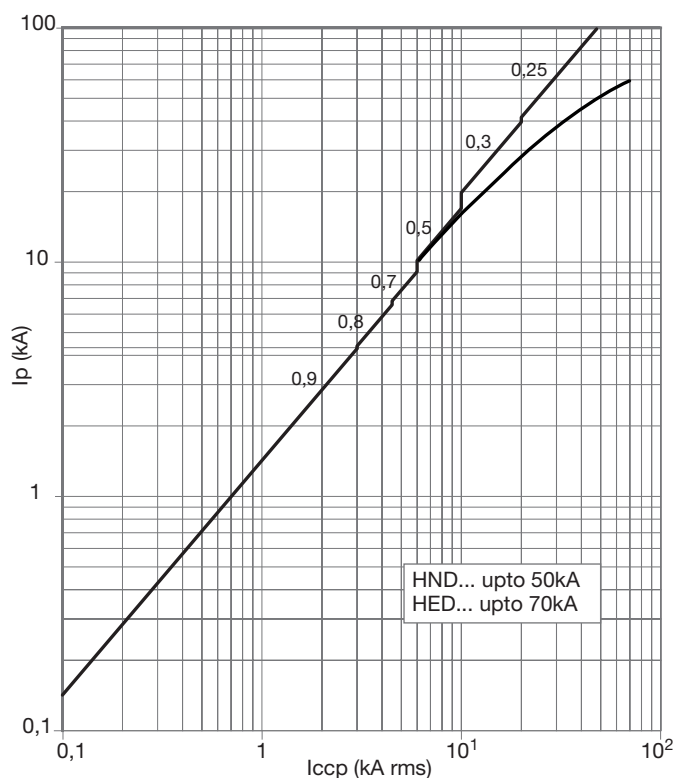
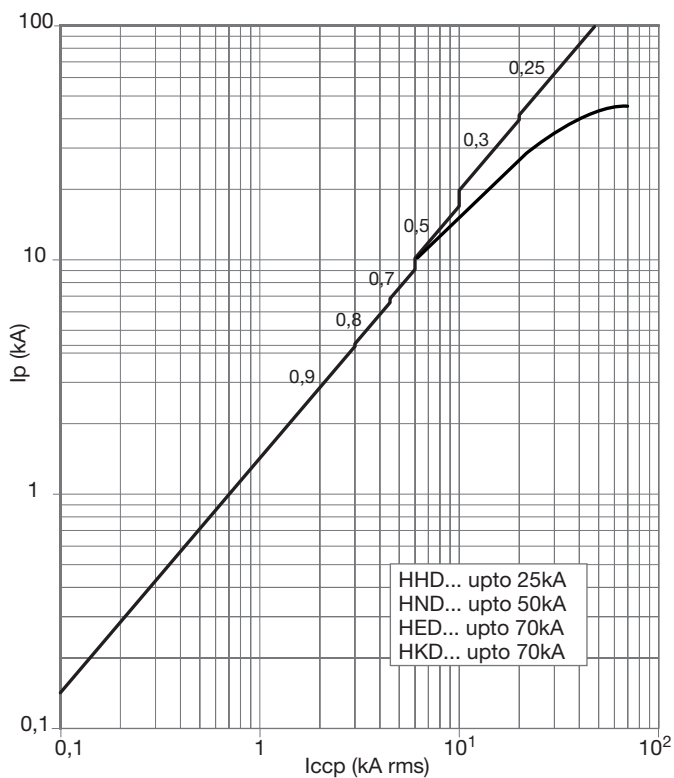
MCCB h630 LSI (630A)



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

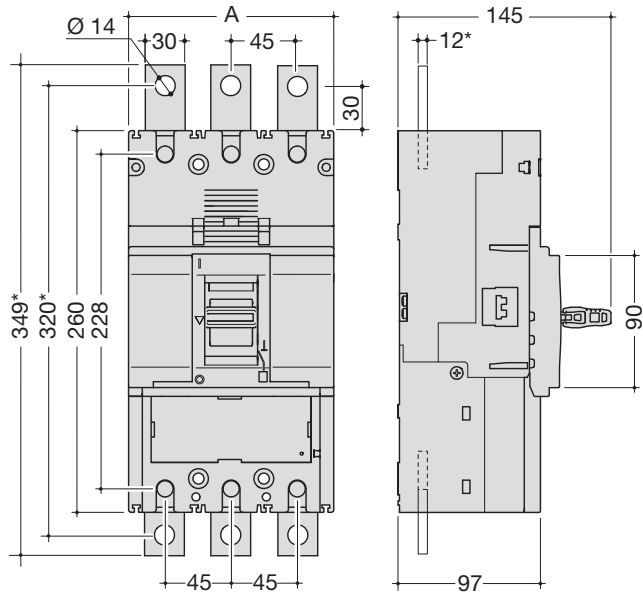
MCCB h630 LSI (250A and 400A)

MCCB h630 LSI (630A)



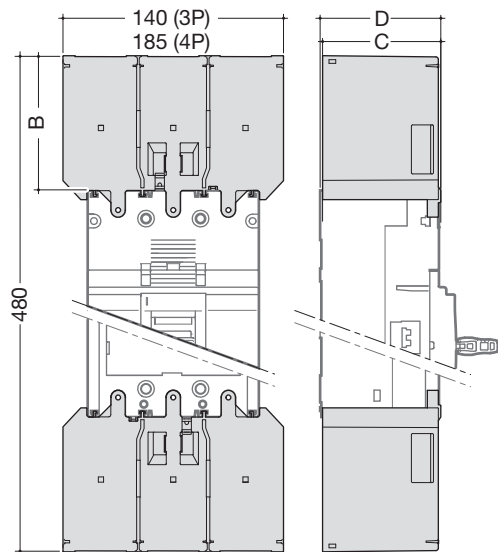
Dimensions

MCCBs

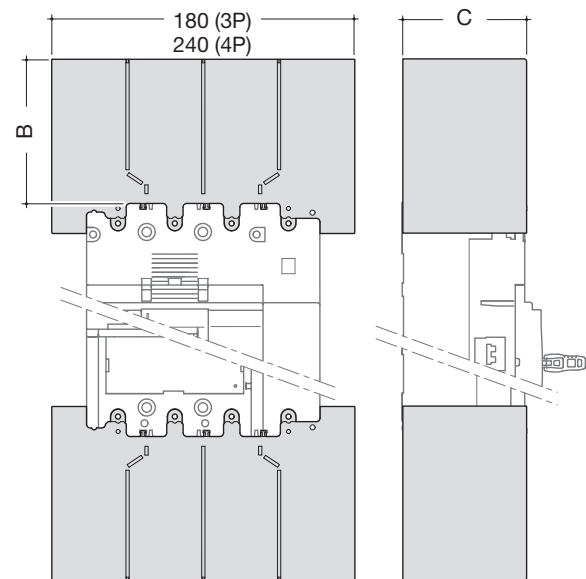


Commercial
Distribution

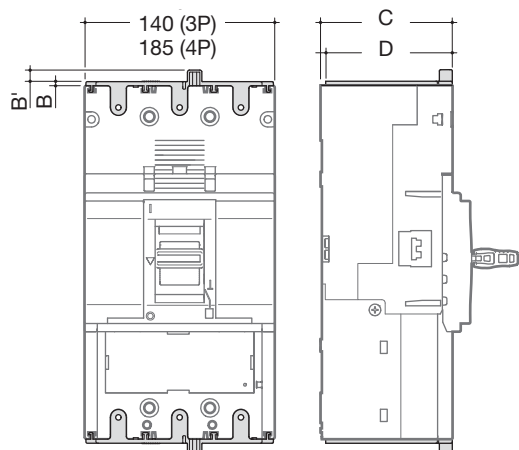
Terminal covers for extended straight connections



Terminal covers for extended spreader connections



Terminal covers for rear connections and collar terminal

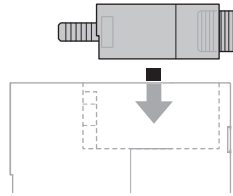
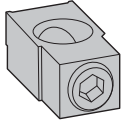


Connection

Connection for aluminium / copper conductors
(h630 LSI)

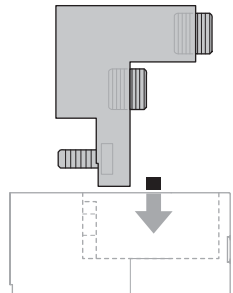
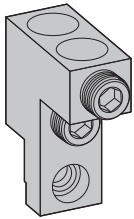
Commercial
Distribution

HYD005 (3P) - HYD006H (4P)



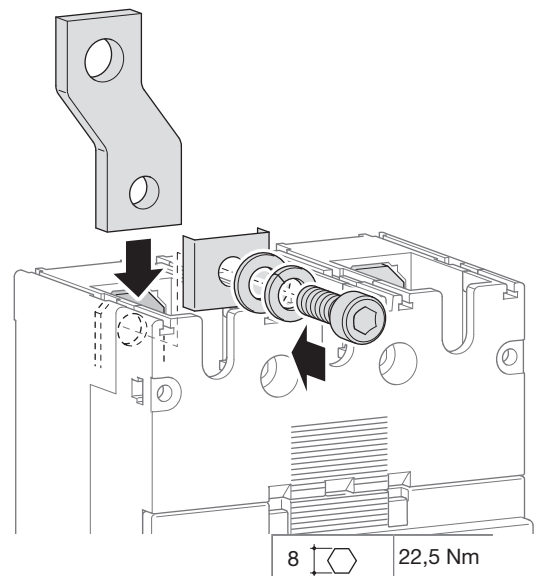
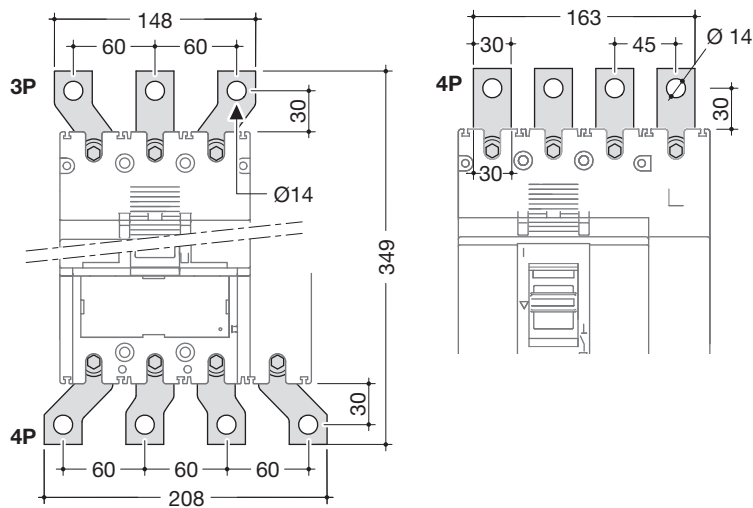
	max. 1x240 mm ²
10	25 Nm

HYD007 (3P) - HYD008H (4P)

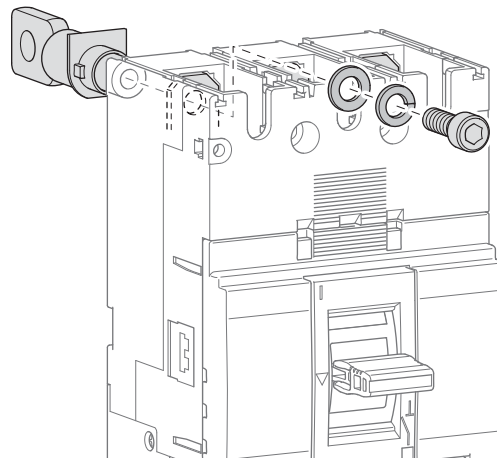
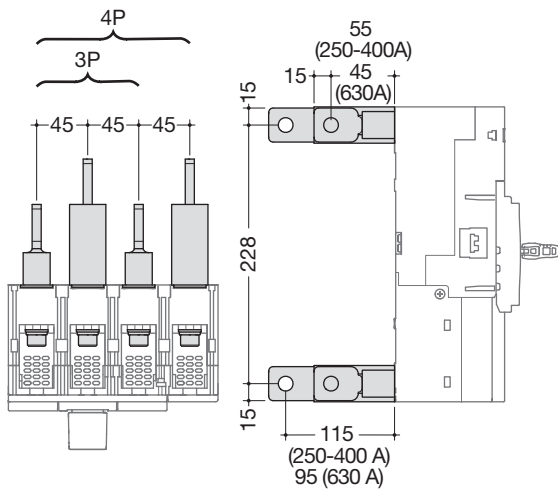


	max. 2x240 mm ²
10	25 Nm

Extended straight and spreader connections

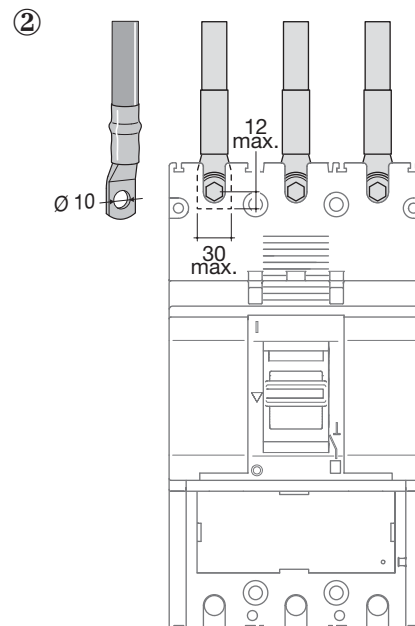
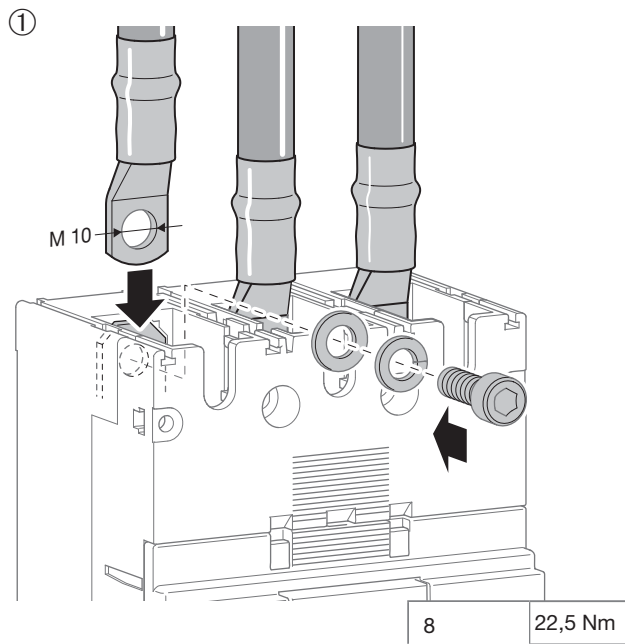


Rear connections



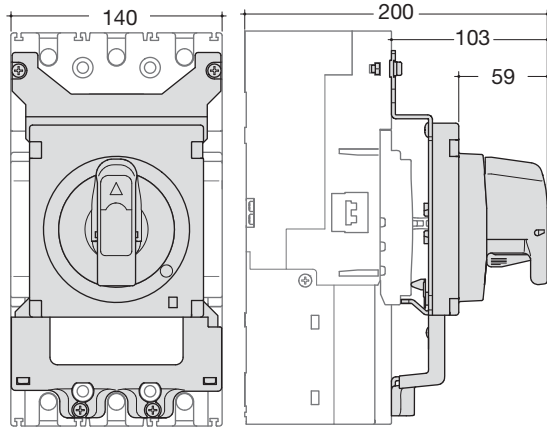
Commercial
Distribution

Connection with end lugs

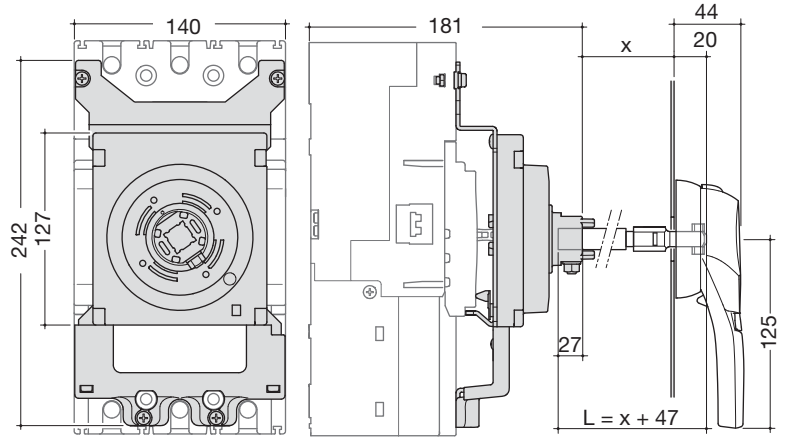


Accessories

Direct rotary handle

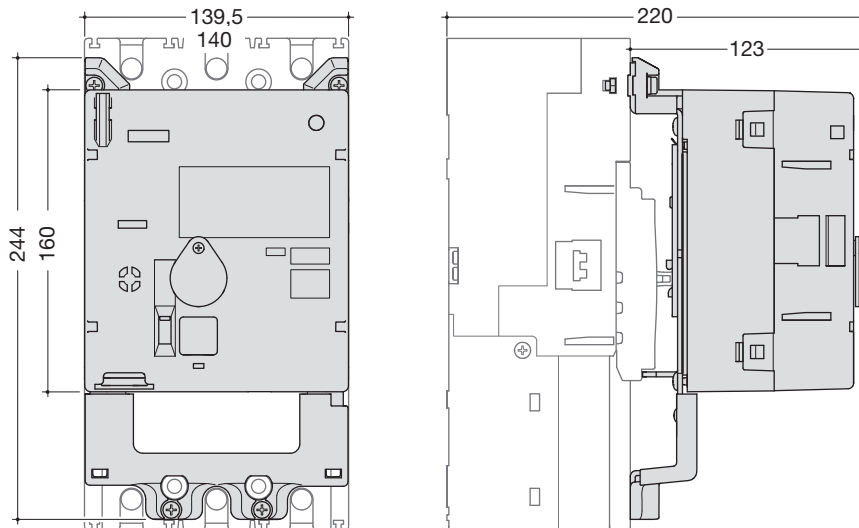


Extended rotary handle



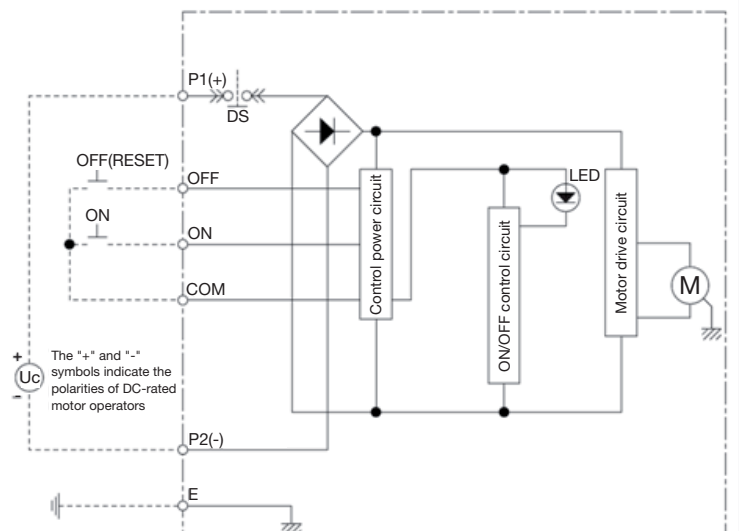
Commercial Distribution

Motor operator



		HXD040H	HXD042H
Operating voltage		24-48V DC	100-240V AC
Operating current/starting current peak value (A)	24V DC	-/9,2 (ON) 4,3/9,8 (OFF, RESET)	-
	48V DC	-/3,8 (ON) 2,0/5,2 (OFF, RESET)	-
	100-110V AC	-	-/1,9 (ON) 1,3/3,8 (OFF, RESET)
	200-240V AC	-	-/3,3 (ON) 0,9/3,8 (OFF, RESET)
Operating time (s)	(ON)	0,1s	
	(OFF)	1,5 s	
	(RESET)	1,5 s	
Power supply required		300VA min.	
Dielectric properties (1 min)		1000V AC	1500V AC

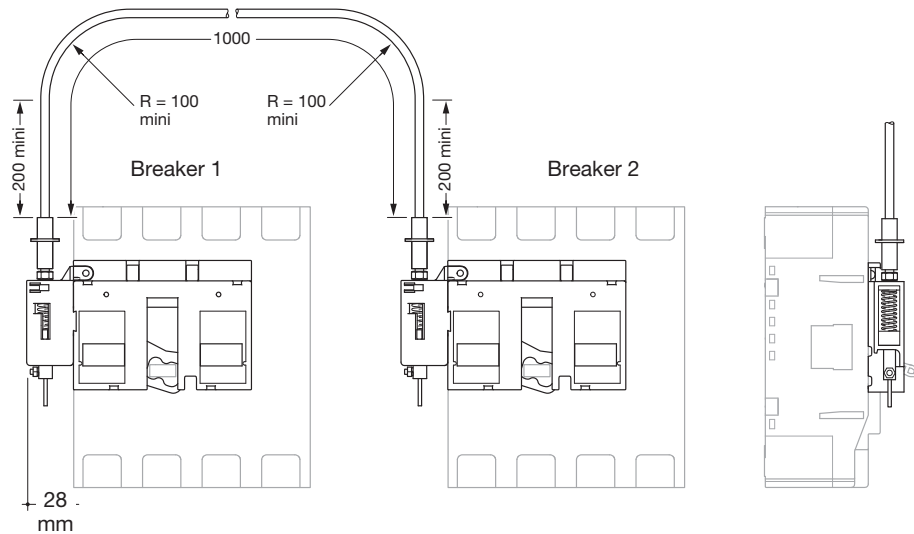
Wiring diagram



Interlocking system

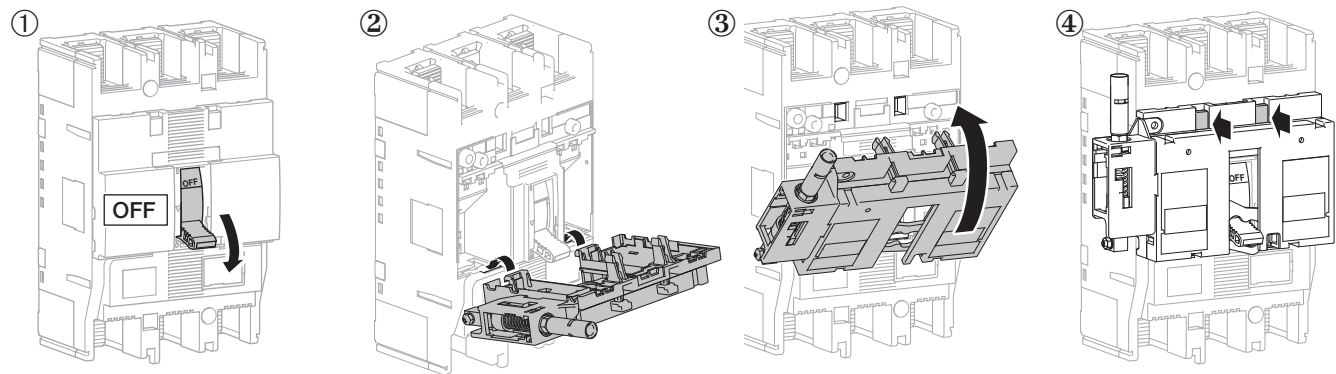
Suitable with motor operator HXD04xH.
With electrical interlock for motor operator HXD068H (for 630/1000A)
or HXB069H (for 250A).

- Length HXD068H: 2100 mm
- Length HXB069H: 2100 mm

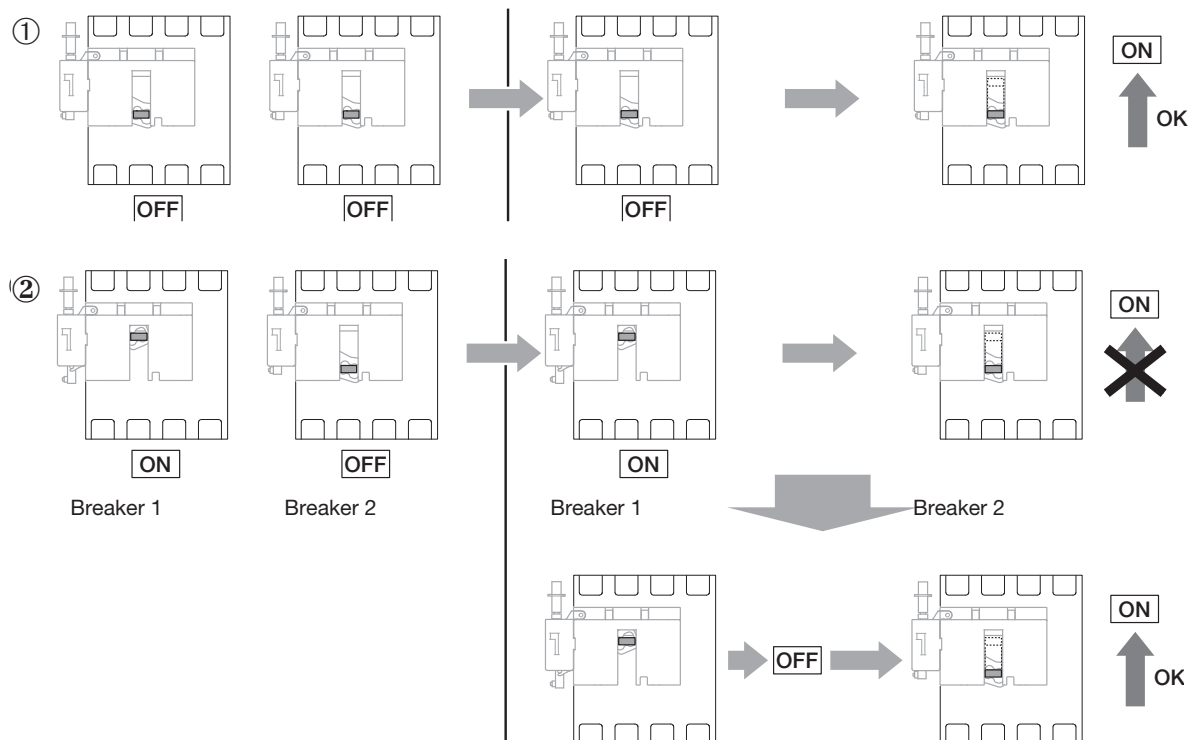


Commercial
Distribution

Mounting



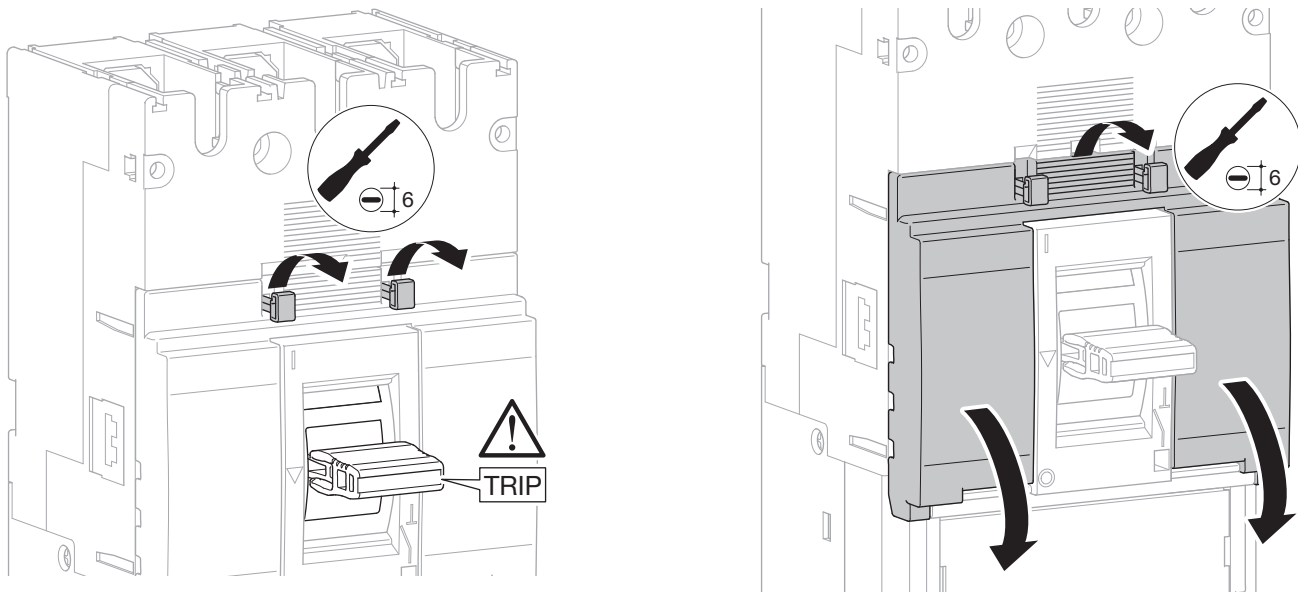
Checking the correct assembly



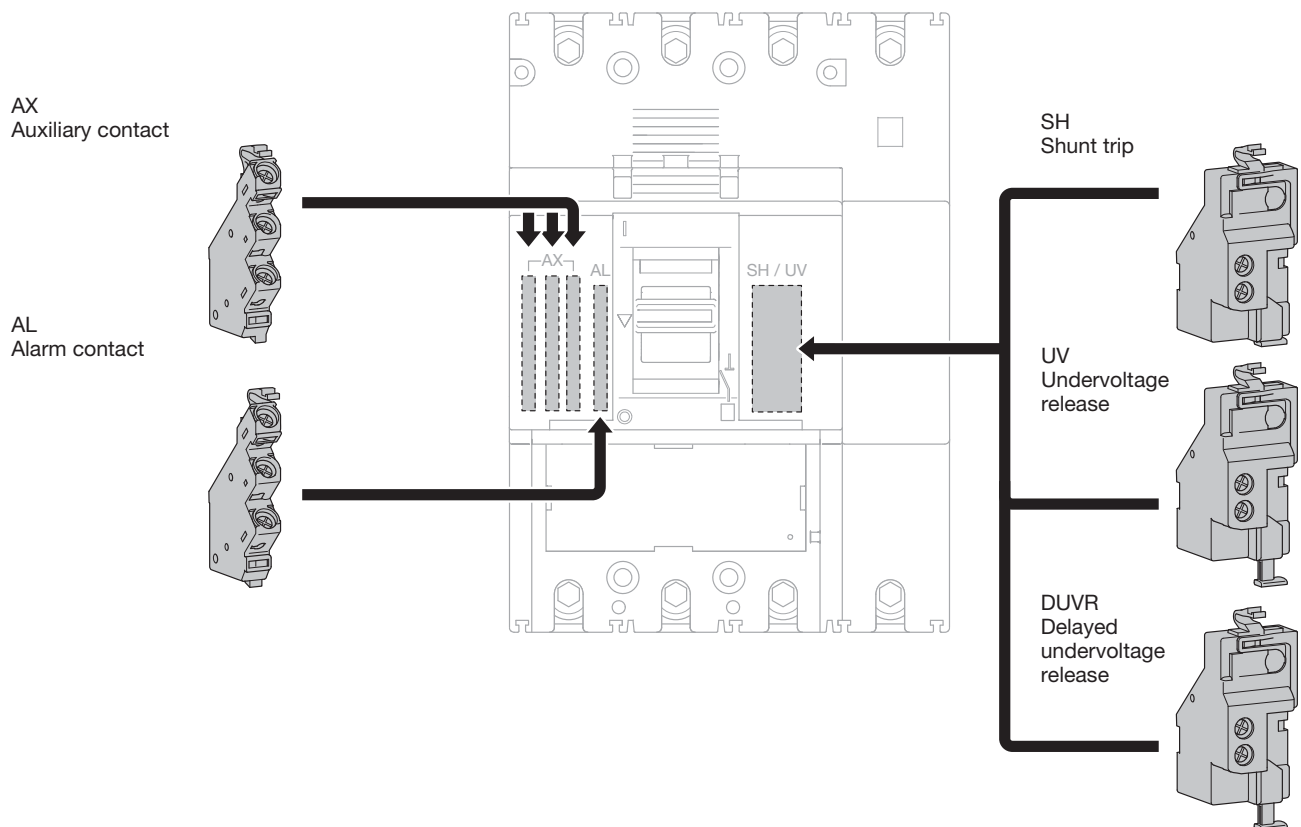
Auxiliaries

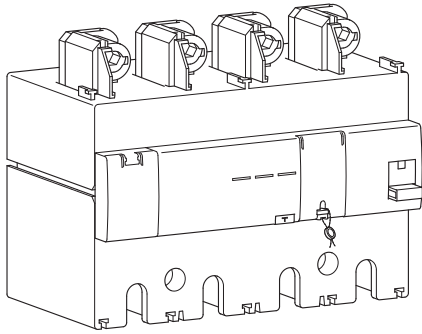
Auxiliaries for MCCBs and free tripping switches

Commercial
Distribution




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 contacts.

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 mistripping (HI type - High Immunity).

Characteristics

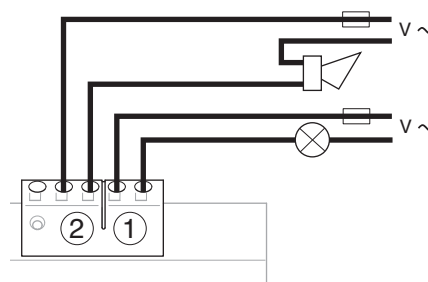
Reset button :
Signals add-on block tripping and must be acknowledged before switching on the installation.

Test button for differential functioning :
Allows to check the electrical operating of the MCCB / Add-on block association.

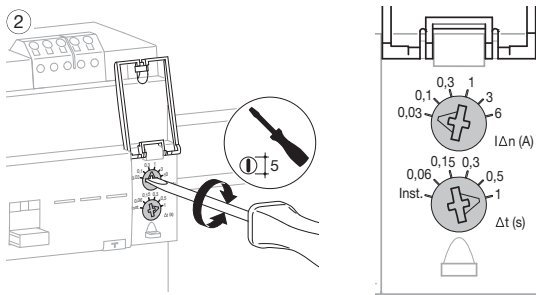
Mechanical test button :
Allows to check the mechanical operating of the MCCB / Add-on block association.

LED signaling default current level in the installation:
25% (orange) and 50% (red) IΔn; green light to signal correct operating.

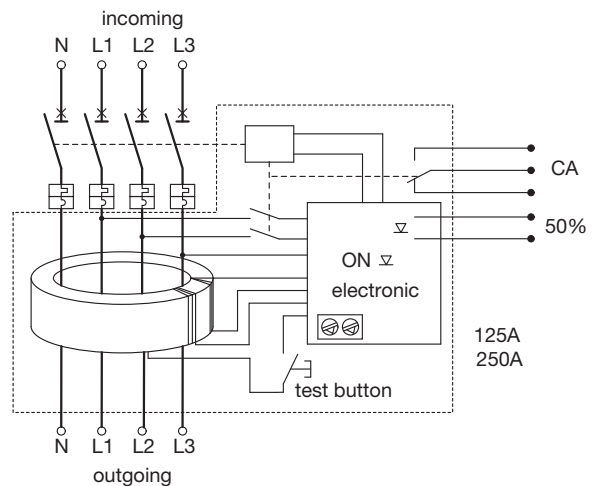
Remote tripping and advanced warning (50% IΔn) signaling thanks to these contacts:



Earth leakage current (IΔn) and delay (Δt) setting



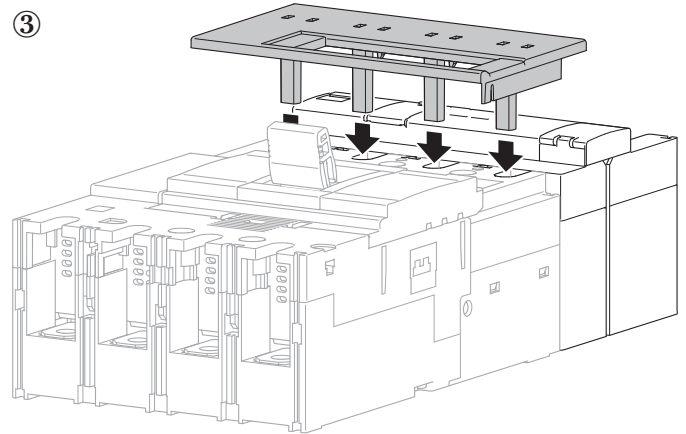
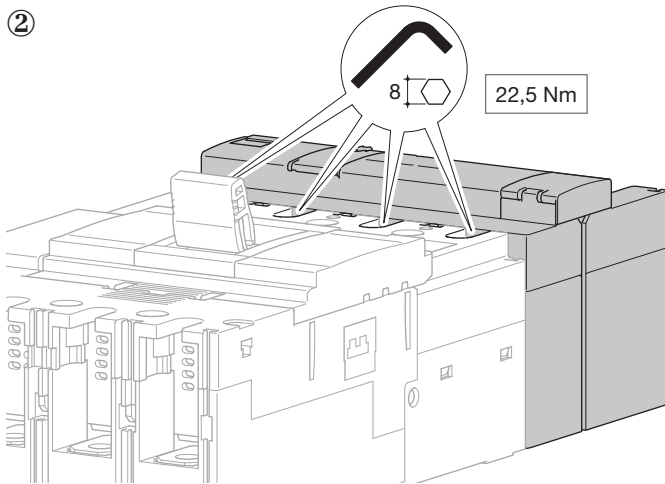
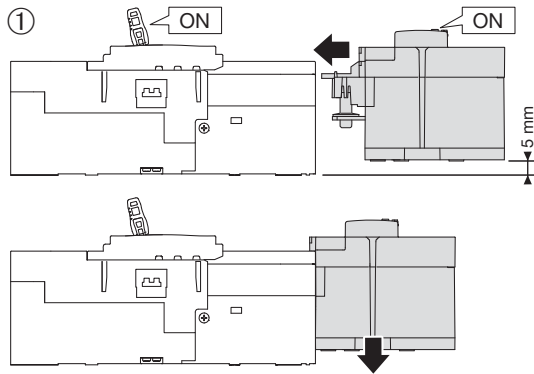
Add-on block operating



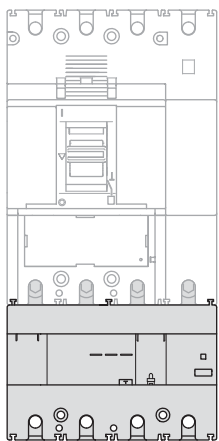
S (A)	A (IΔn)						
	0,03	0,1	0,3	1	3	6	
Inst.	OK	OK	OK	OK	OK	OK	
0,06	no	OK	OK	OK	OK	OK	
0,15	no	OK	OK	OK	OK	OK	
0,3	no	OK	OK	OK	OK	OK	
0,5	no	OK	OK	OK	OK	OK	
1	no	OK	OK	OK	OK	OK	

Add-on block mounting

Commercial
Distribution

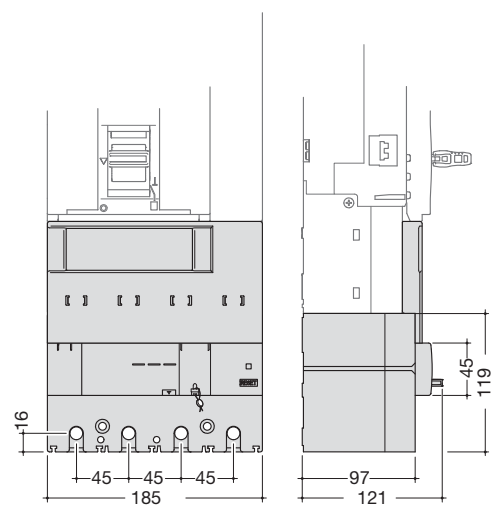


Association / Compatibility

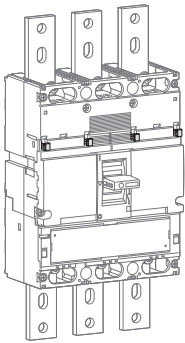


250 - 400A	630A x 0,8
HBD401H 400A	HBD631H 500A (le: 630A x 0,8)

Dimensions



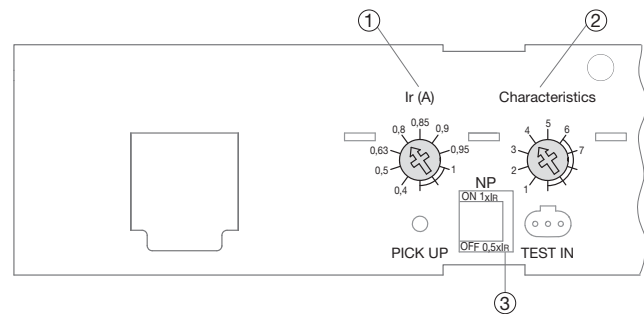
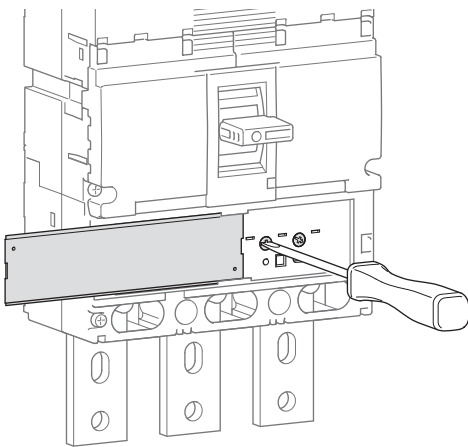
MCCBs



		220/240 V AC		380/415 V AC	660/690 V AC
		630 / 800A	1000A	630 / 800 / 1000A	630 / 800 / 1000A
LSI HNE	Icu (kA)	85	75	50	20
	Ics (kA)	85	75	50	20
LSI HEE	Icu (kA)	100	100	70	20
	Ics (kA)	100	75	50	20
HCE	Icm (kA)	-	-	17	-
	Icw (kA)	-	-	10kA - 0,3s	-

Commercial Distribution

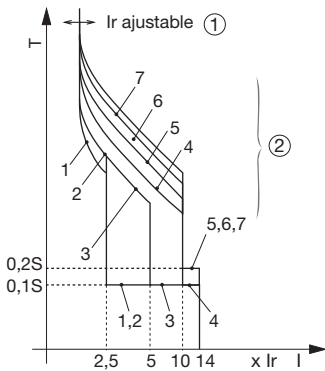
Electronic trip unit settings (LSI)



L - Long delay - protection against overloads: Ir and tr settings

S - Short delay - protection against short circuits: Isd and tsd settings

I - Instantaneous - max. instantaneous threshold (< 10 ms) in case of short circuit: 2,5 to 10 x Ir (630-800A) and 2,5 to 8 x Ir (1000A).



LSI	In A										
	630-800 A						1000 A				
	Long Time Delay		Short Time Delay		Inst	Long Time Delay		Short Time Delay		Inst	
Ir (x In)	tr (s)	isd (xlr)	tsd (s)	li (xlr)	Ir (x In)	tr (s)	isd (xlr)	tsd (s)	li (xlr)	Neutral protection	
① Ir (x In)	0,4	OK				OK					
	0,5	OK				OK					
	0,63	OK				OK					
	0,8	OK				OK					
	0,9	OK				OK					
	0,95	OK				OK					
	1	OK				OK					
② Characteristics*	1	11s at 2 xlr	2,5	0,1	14 (max 12 x In)	11s at 2 xlr	2,5	0,1	14 (max 10 x In)		
	2	21s at 2 xlr				21s at 2 xlr					
	3		5				5				
	4	5 s at 6 xlr	10			5 s at 6 xlr	8				
	5	10 s at 6 xlr		0,2		10 s at 6 xlr			0,2		
	6	19 s at 6 xlr				16 s at 6 xlr					
	7	29 s at 6 xlr				-					
③	Neutral protection										
	0% 50% 100%										

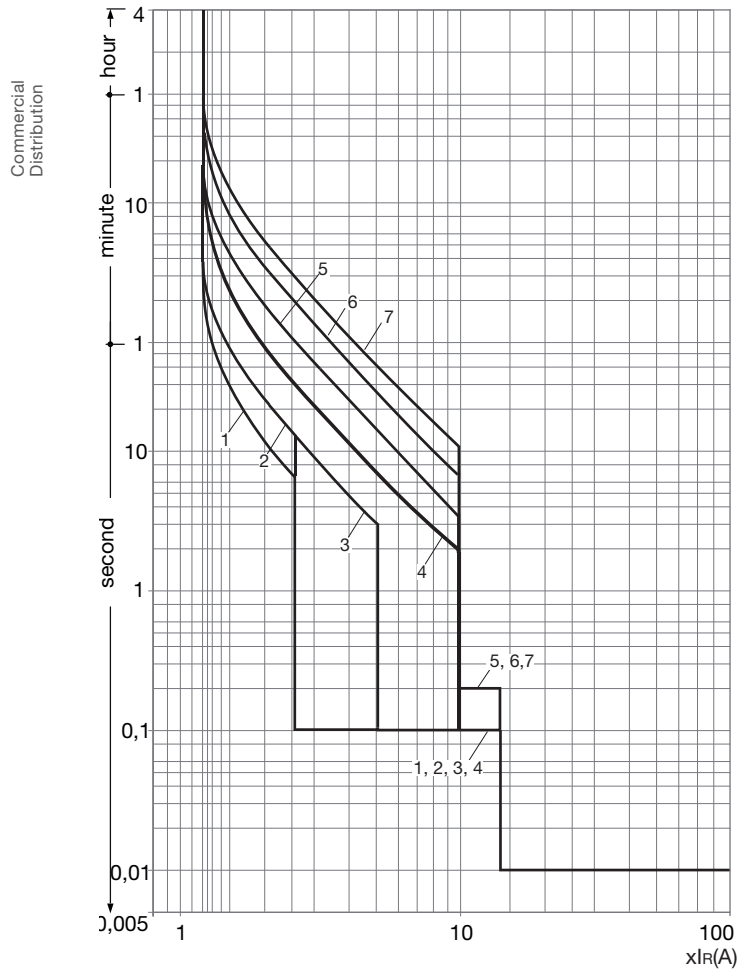
(*) Characteristic 1 : use for generators protection.

Characteristic 2 to 4 - standard protection : options allow coordination optimisation with other products.

Characteristic 5 to 7 - motor protection: use positions according to motor starting characteristics.

Tripping curve

MCCB h1000 LSI (800A)



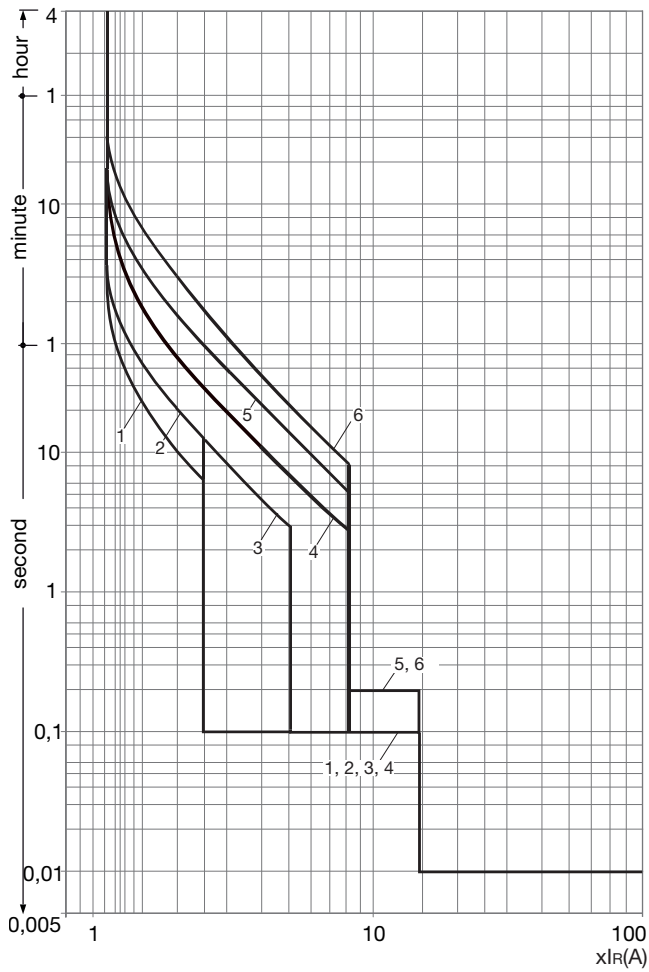
Electronic trip unit setting (LSI)

MCCBs 800A electronic

IR (A)									
LTD Pick-up current	IR	x In	0,4	0,5	0,63	0,8	0,9	0,95	1
Characteristics		No.	1	2	3	4	5	6	7
Standard	LTD	tR (s)	11	21	21	5	10	19	29
			200% x IR			600% x IR			
	STD	Isd x IR	2,5		5	10			
		tsd (s)	0,1					0,2	
	INST	li x IR	14 (max : 12 x In)						
Optional	NP	IN x In	0 - 0,5 - 1						
		tN (s)	IN=tR						

Tripping curve

MCCB h1000 LSI (1000A)



Electronic trip unit setting (LSI)

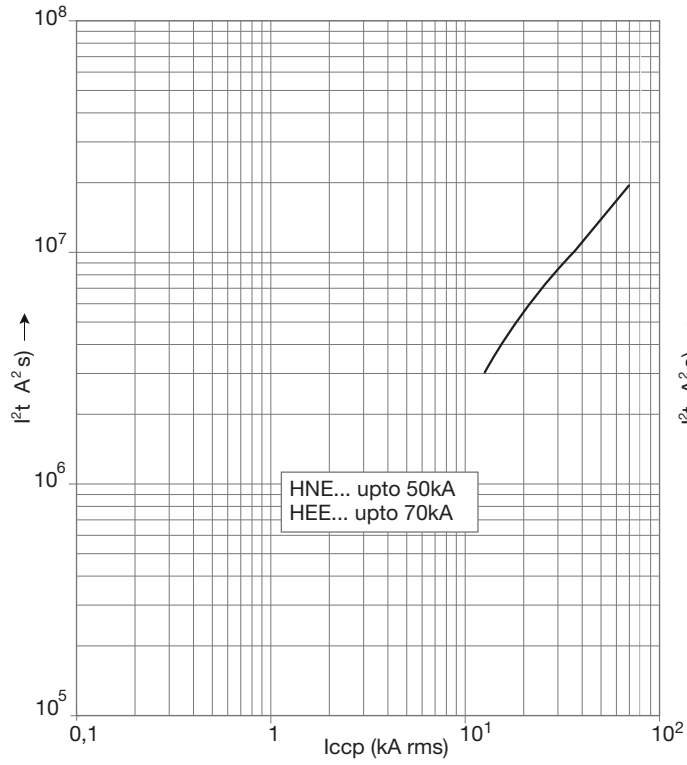
MCCBs 1000A electronic

			IR (A)								
LTD Pick-up current			IR	x In	0,4	0,5	0,63	0,8	0,9	0,95	1
Characteristics			No.	1	2	3	4	5	6		
Standard	LTD	tR (s)	11	21	21	5	10	16			
			200% x IR				600% x IR				
	STD	Isd x IR	2,5	5	8						
		tsd (s)	0,1							0,2	
	INST	li x IR	14 (max : 10 x In)								
Optional	NP	IN x In	0 - 0,5 - 1								
		tN (s)	IN=tR								

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

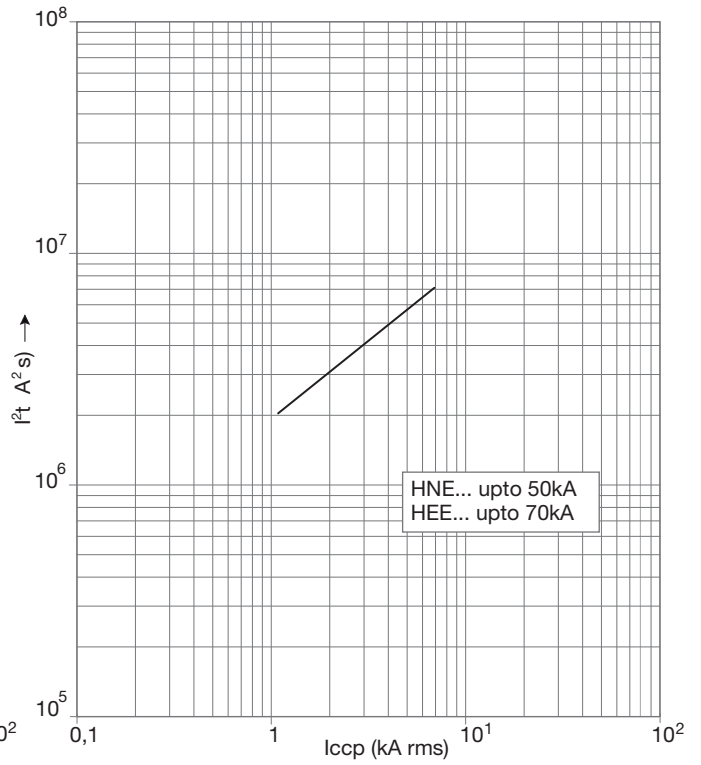
MCCB h1000

Commercial
Distribution



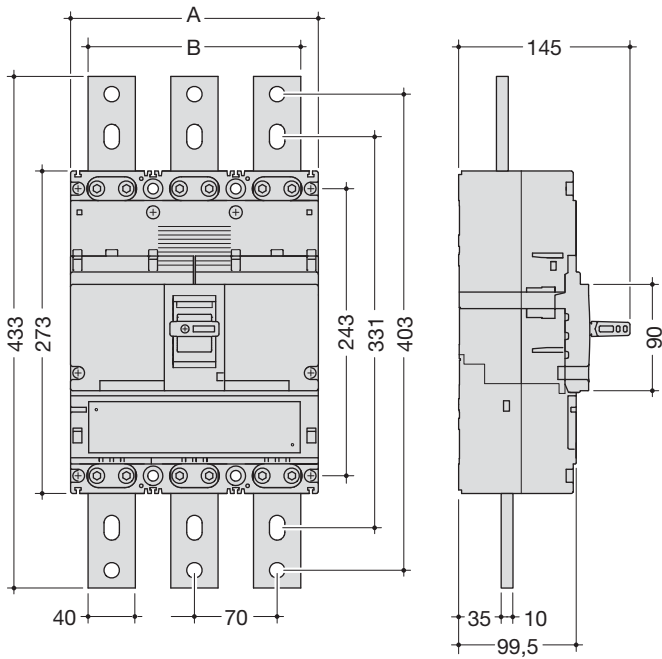
Current limiting curve at 400V (Let-through peak current)

MCCB h1000



Dimensions

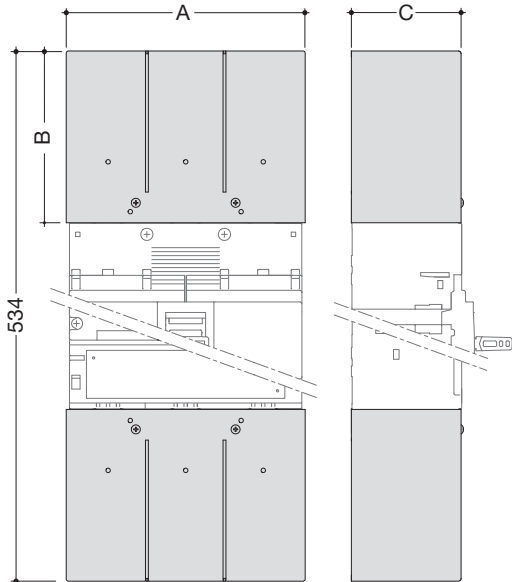
MCCBs



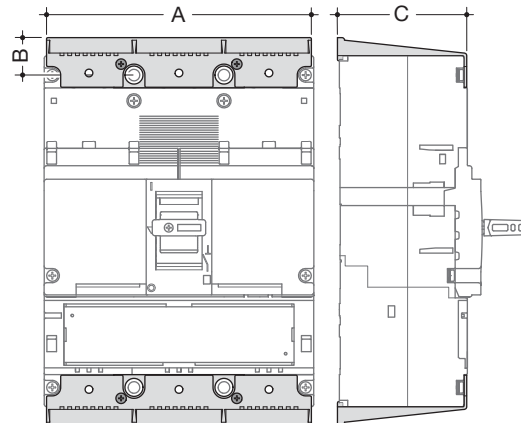
	A (mm)	B (mm)
3P	210	180
4P	280	250

Commercial Distribution

Terminal covers for extended straight connections

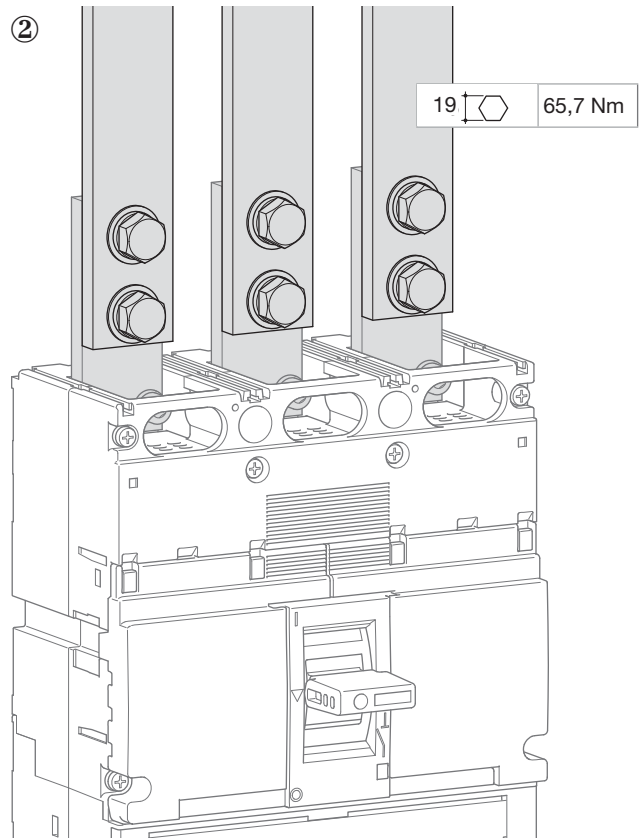
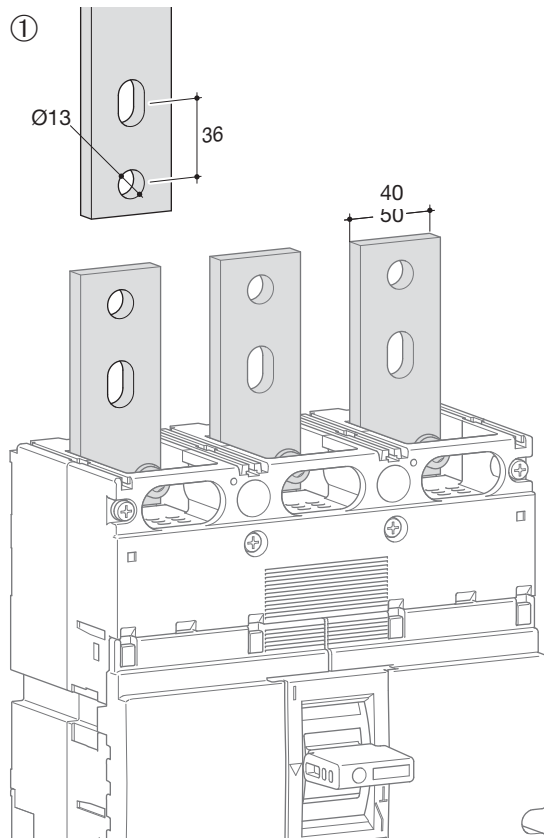


Terminal covers for rear connections



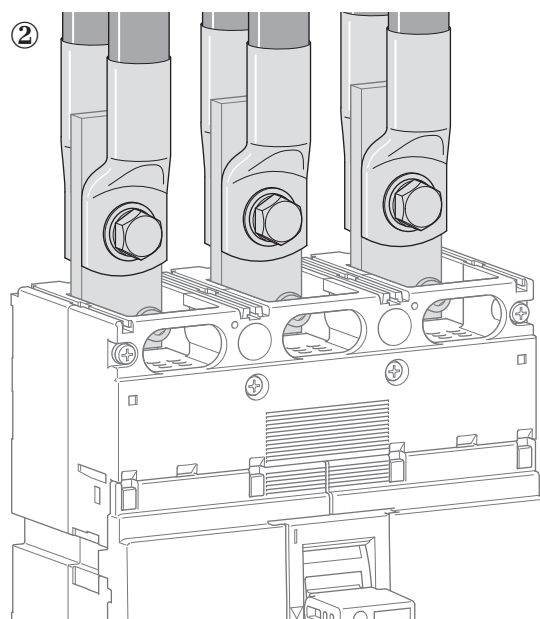
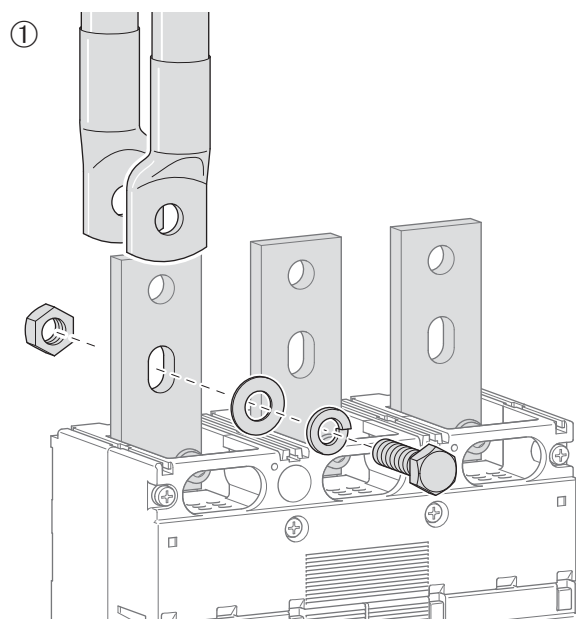
Connection

Extended straight connections

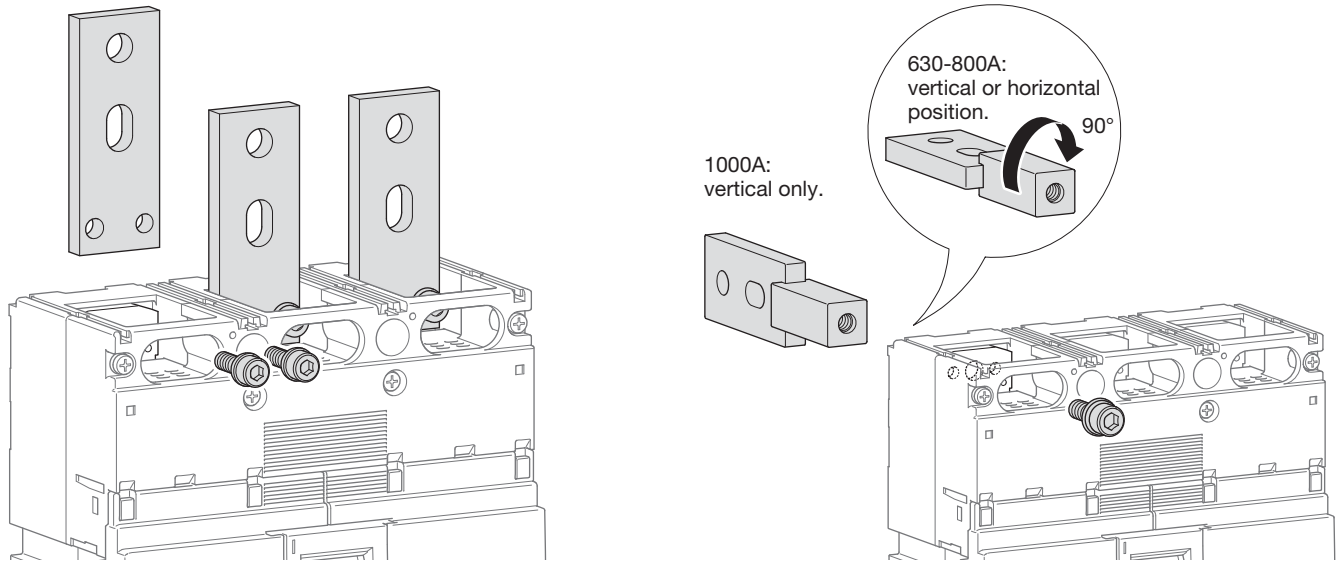


Direct cable connection on terminal
Copper with conductor max. width: 50 mm

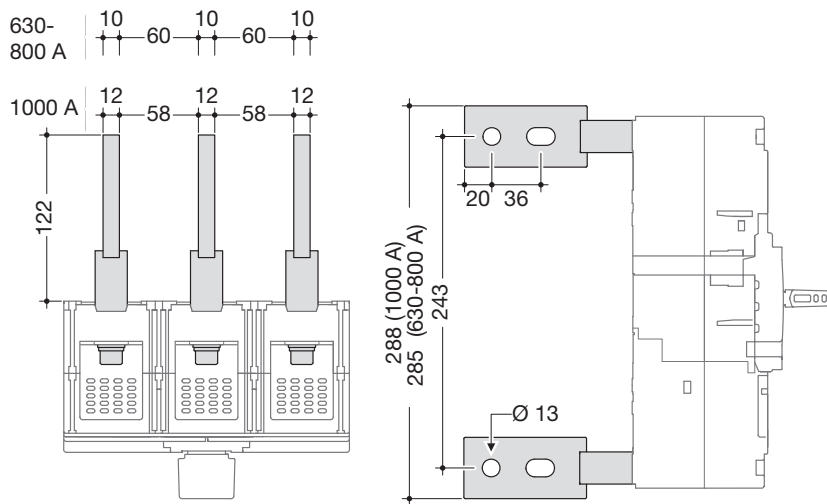
Connection with end lugs



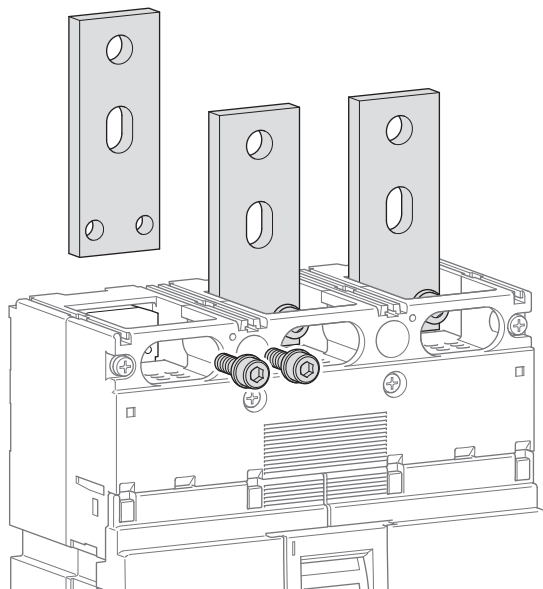
Rear connections



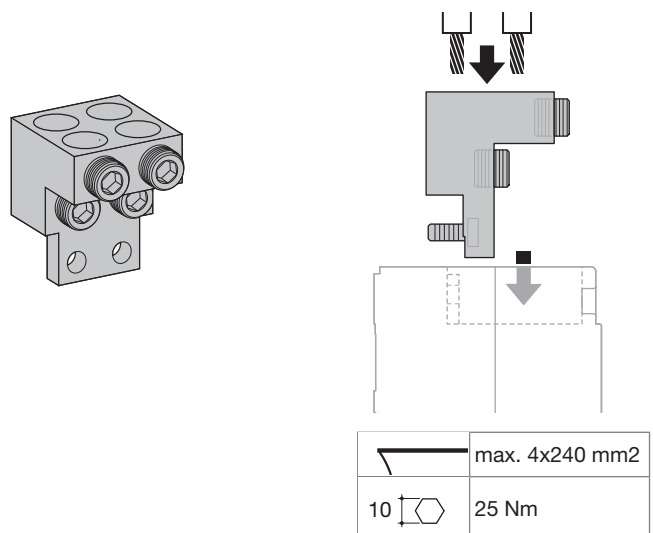
Commercial
Distribution



Connection for aluminium / copper conductors (h1000)



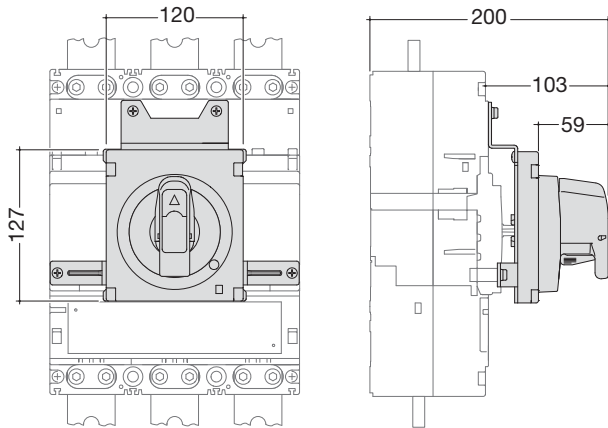
HYE007 (3P) - HYE008H (4P)



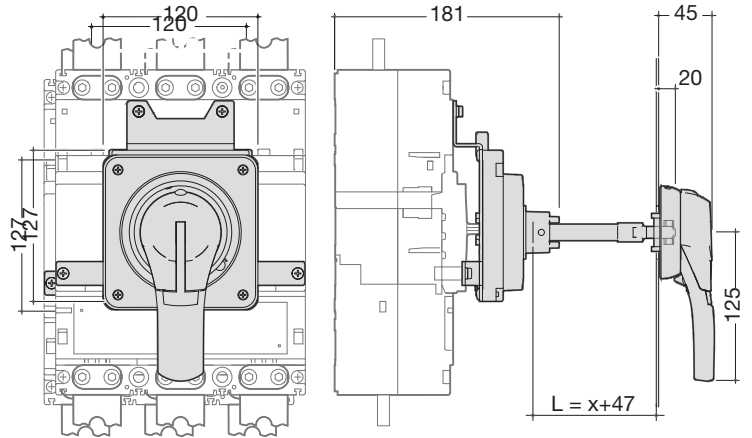
Accessories

Direct rotary handle

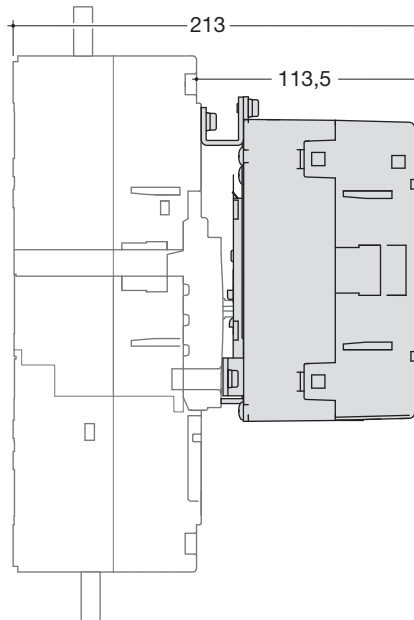
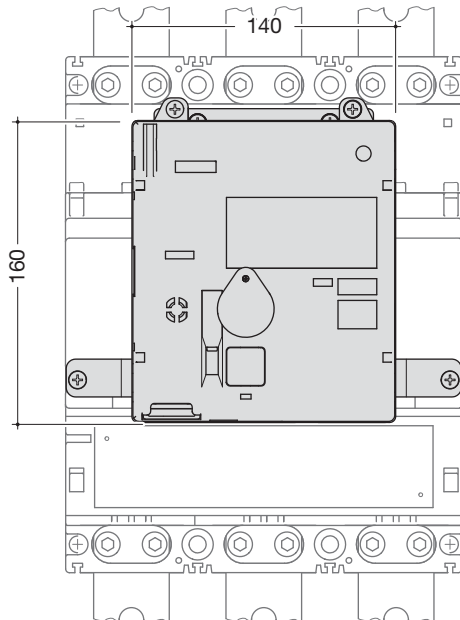
Commercial
Distribution



Extended rotary handle

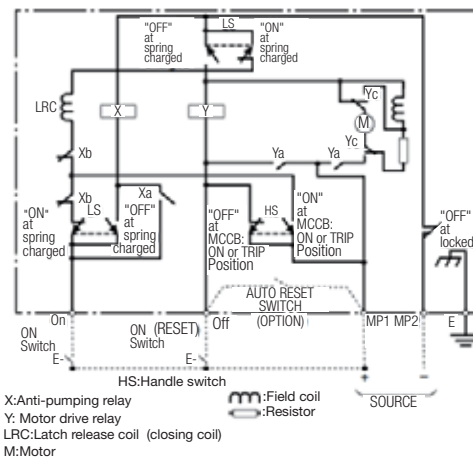


Motor operator



		HXE040H	HXE042H
Operating voltage		24-48V DC	100-240V AC
Operating current/starting current peak value (A)	24V DC	-/12 (ON) 6/11,5 (OFF, RESET)	-
	48V DC	-/7 (ON) 3,2/6,5 (OFF, RESET)	-
	100-110V AC	-	-/2,2 (ON) 1,7/3,5 (OFF, RESET)
	200-240V AC	-	-/2,2 (ON) 1,3/3,5 (OFF, RESET)
Operating time (s)	(ON)	0,1s	
	(OFF)	1,5 s	
	(RESET)	1,5 s	
Power supply required		300VA min.	
Dielectric properties (1 min)		1000V AC	1500V AC

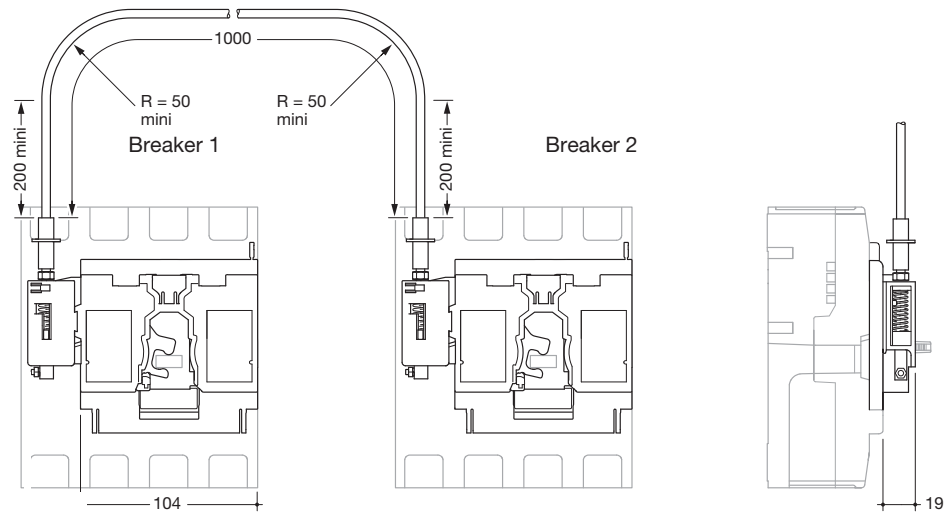
Wiring diagram



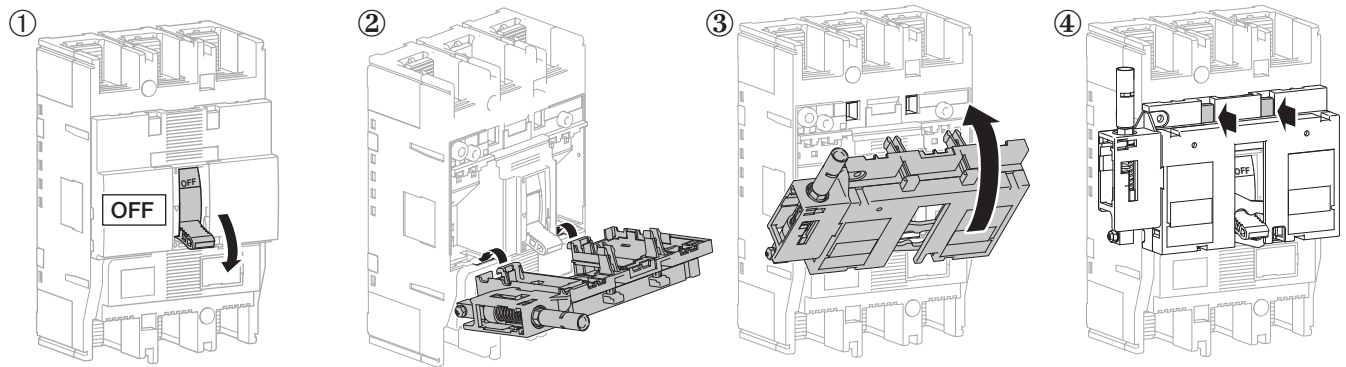
Interlocking system

Suitable with motor operator HXE04xH.
With electrical interlock for motor operator HXD068H (for 630/1000A)
or HXB069H (for 250A).

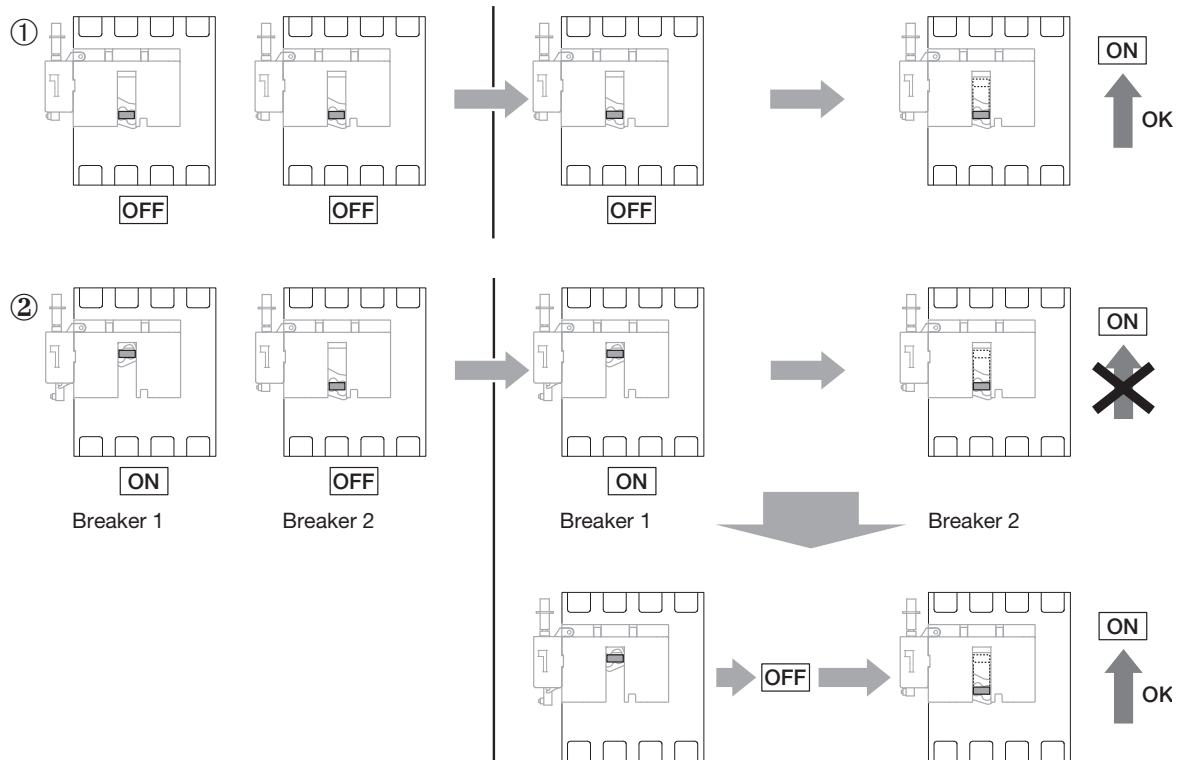
- Length HXD068H: 2100 mm
- Length HXB069H: 2100 mm



Mounting



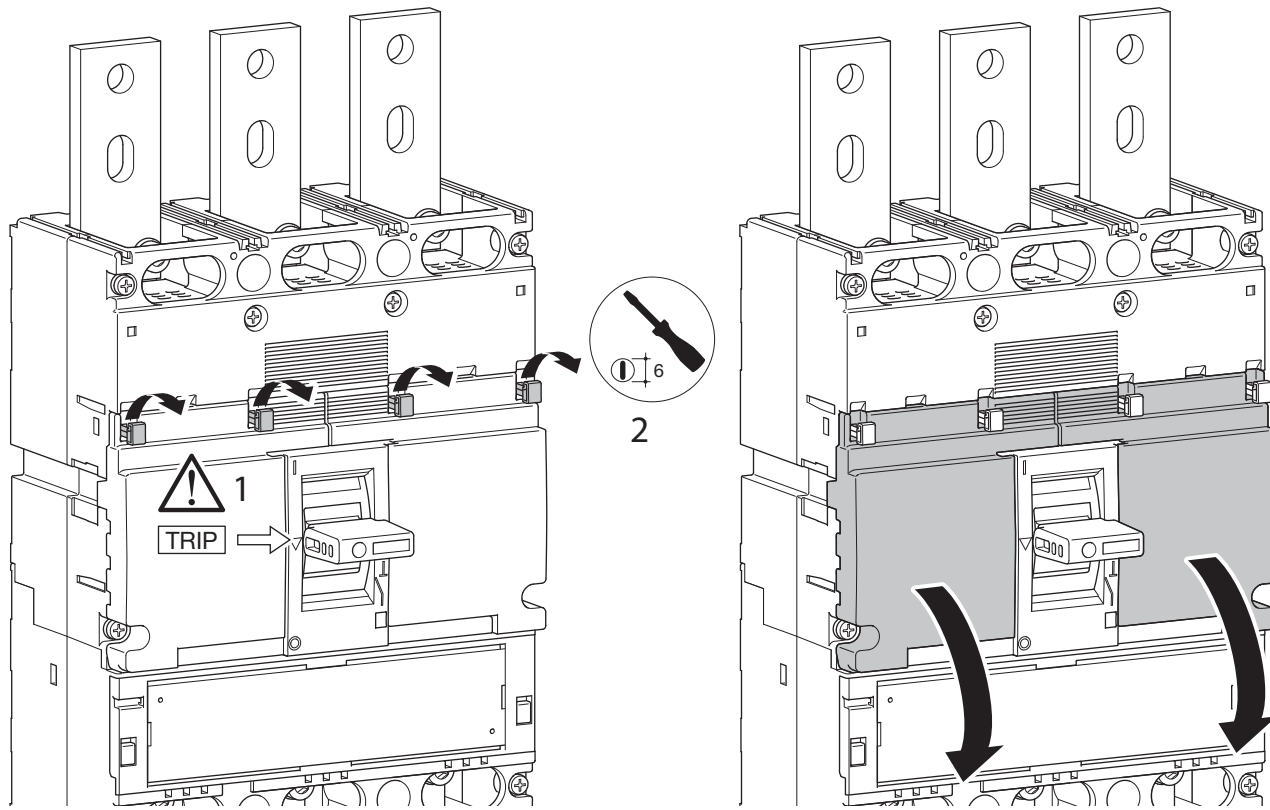
Checking the correct assembly



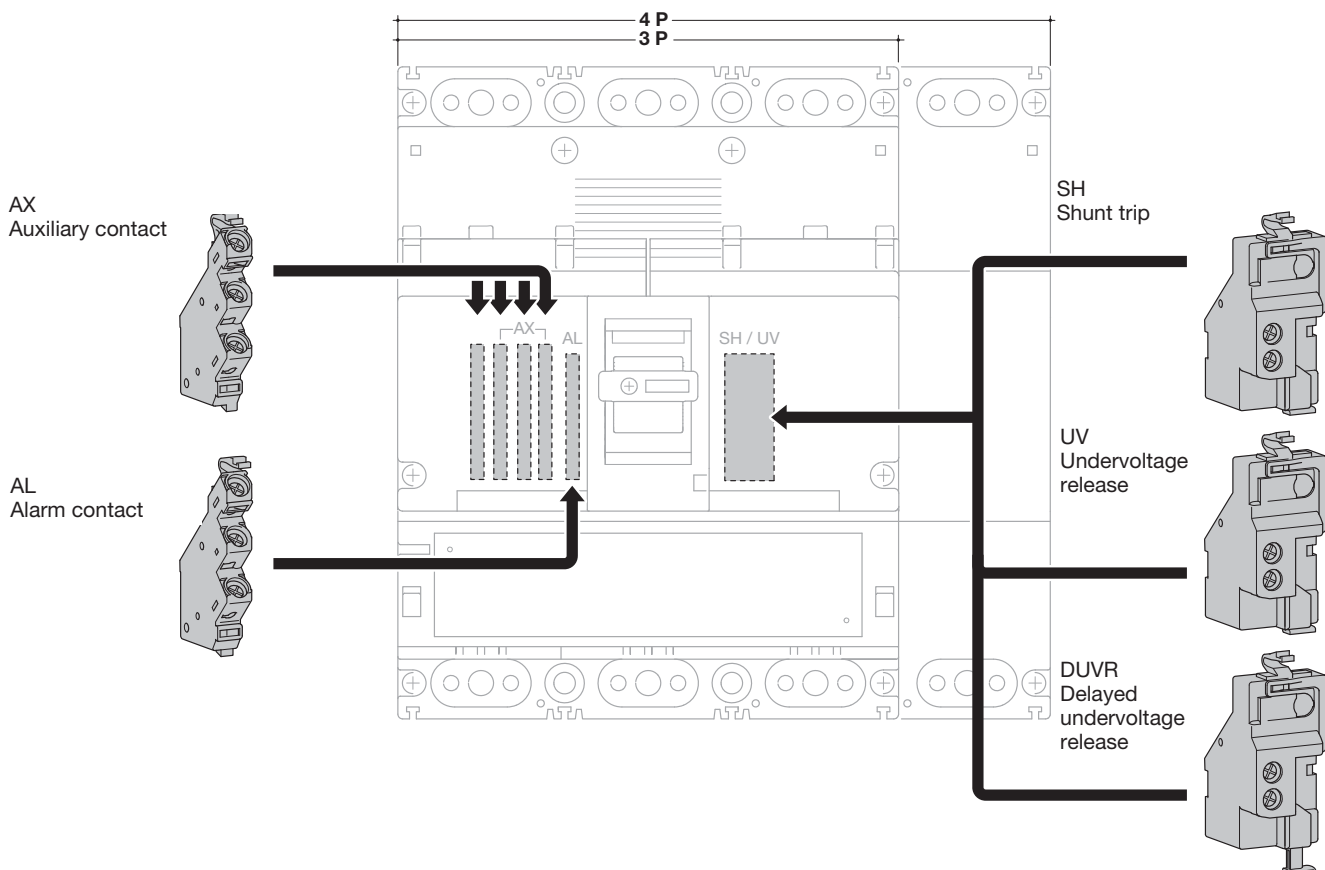
Auxiliaries

Auxiliaries for MCCBs and free tripping switches

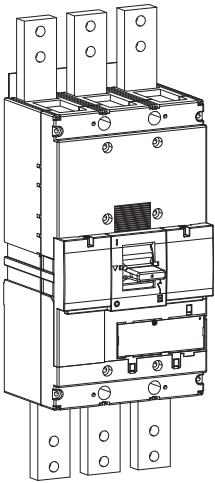
Commercial
Distribution



Mounting combination for auxiliaries and releases

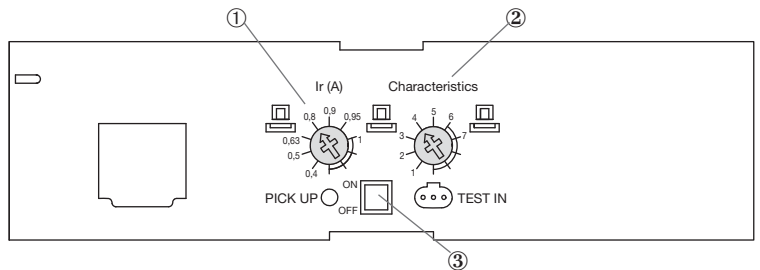
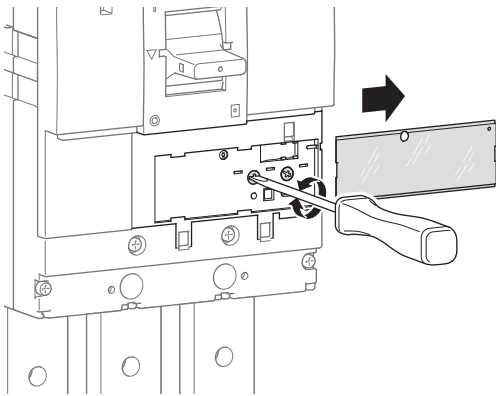


MCCBs



		220/240 V AC	380/415 V AC	660/690 V AC
HNF	Icu (kA)	100	50	25
	Ics (kA)	75	50	25
HEF	Icu (kA)	100	70	45
	Ics (kA)	75	50	34
HCF	Icm (kA)	-	45	-
	Icw (kA)	-	20 kA-0,3 s	-

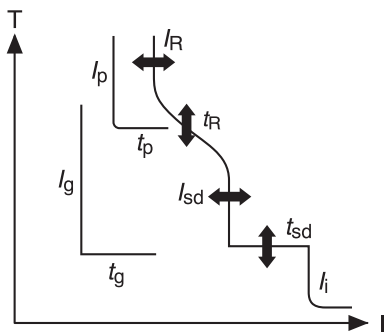
Electronic trip unit settings (LSI)



L - Long delay - protection against overloads: Ir and tr settings

S - Short delay - protection against short circuits: Isd and tsd settings

I - Instantaneous - max. instantaneous threshold (< 10 ms) in case of short circuit: 2,5 to 10 x Ir.



	① Ir(A)	② Im	③ N
LSI	0,4 - 1 In	2,5 - 10 Ir	0% 50% 100 %

LSI	In A				
	1250 - 1600 A				
	Long Time Delay		Short Time Delay		Inst
Ir (x In)	tr (s)	isd (xlr)	tsd (s)	li (xlr)	
① Ir (x In)	0,4	OK			
	0,5	OK			
	0,63	OK			
	0,8	OK			
	0,9	OK			
	0,95	OK			
	1	OK			
② Characteristics*	1	11s at 2 xlr	2,5	0,1	14 (max 12 x In)
	2	21s at 2 xlr			
	3	5 s at 6 xlr	5		
	4	10 s at 6 xlr			
	5	19 s at 6 xlr	10	0,2	
	6	29 s at 6 xlr			
	7				
③ Neutral protection	0% 50% 100%				

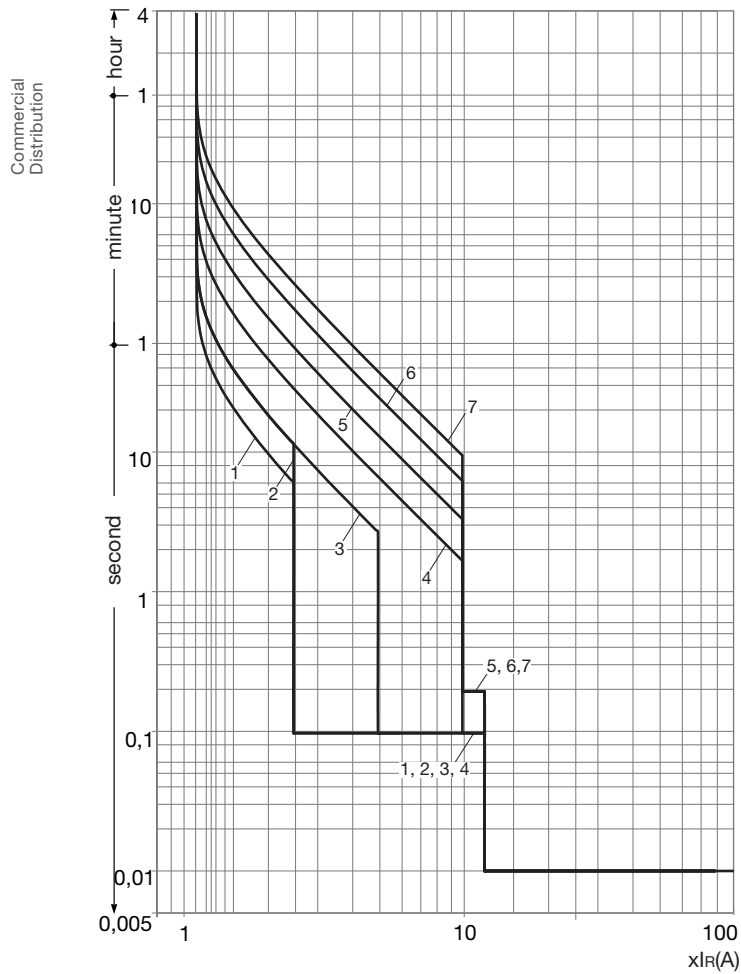
(*) Characteristic 1 : use for generators protection.

Characteristic 2 to 4 - standard protection : options allow coordination optimisation with other products.

Characteristic 5 to 7 - motor protection: use positions according to motor starting characteristics.

Tripping curve

MCCB h1600 LSI



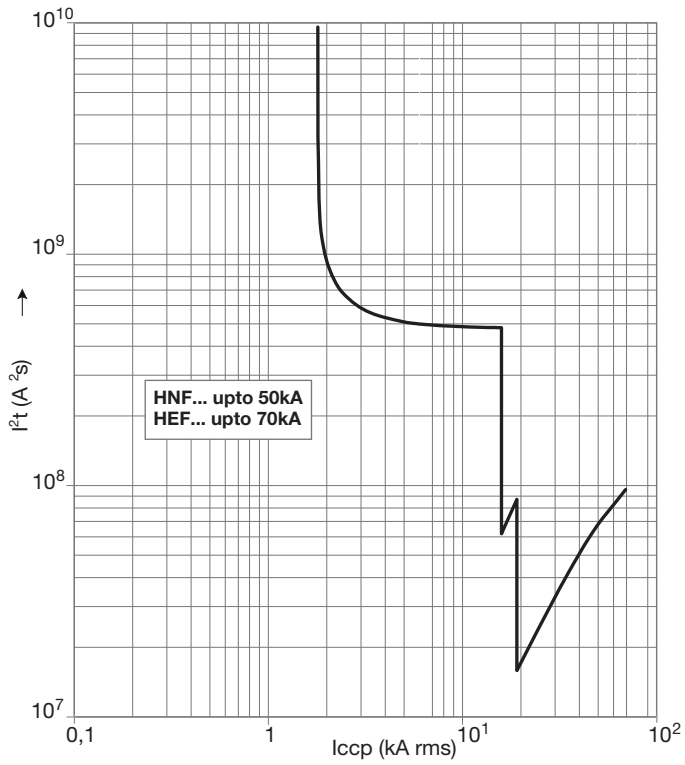
Electronic trip unit setting (LSI)

MCCBs 1250A and 1600A electronic

		IR (A)								
LTD Pick-up current		IR	x In	0,4	0,5	0,63	0,8	0,9	0,95	1
Characteristics			No.	1	2	3	4	5	6	7
Standard	LTD	tR	(s)	11	21	21	5	10	19	29
				200% x IR			600% x IR			
	STD	Isd	x IR	2,5		5	10			
		tsd	(s)	0,1					0,2	
	INST	li	x IR	14 (max : 12 x In)						
Optional	NP	IN	x In	0 - 0,5 - 1						
		tN	(s)	IN=tR						

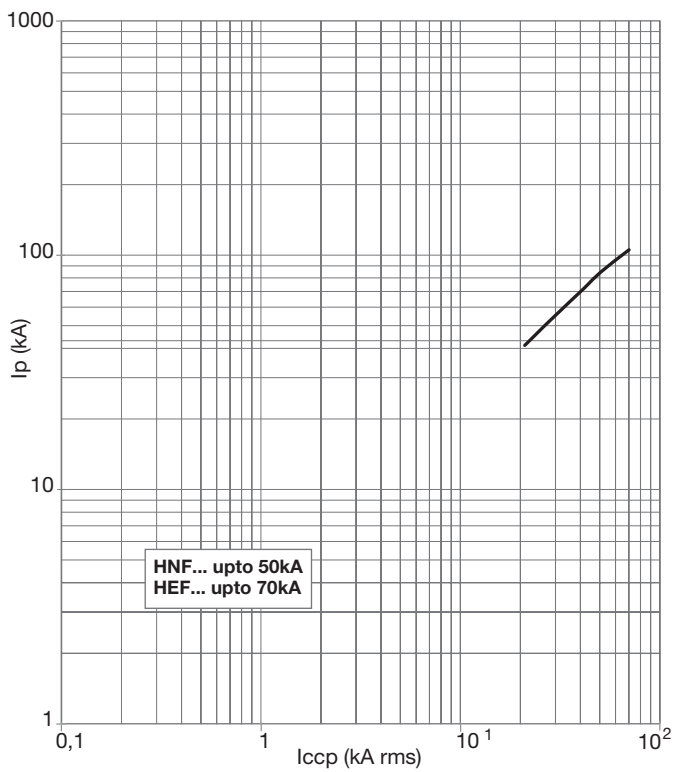
Thermal constraint curve at 400V (Let-through energy)

MCCB h1600



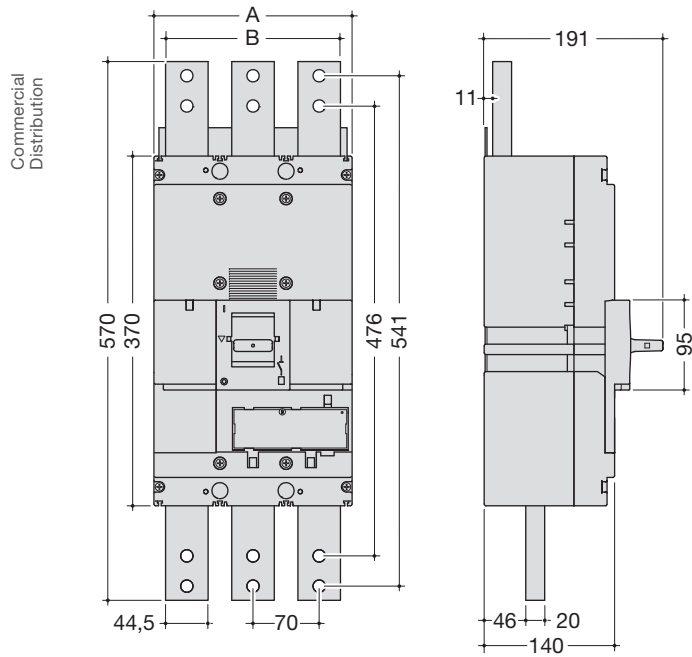
Current limiting curve at 400V (Let-through peak current)

MCCB h1600



Dimensions

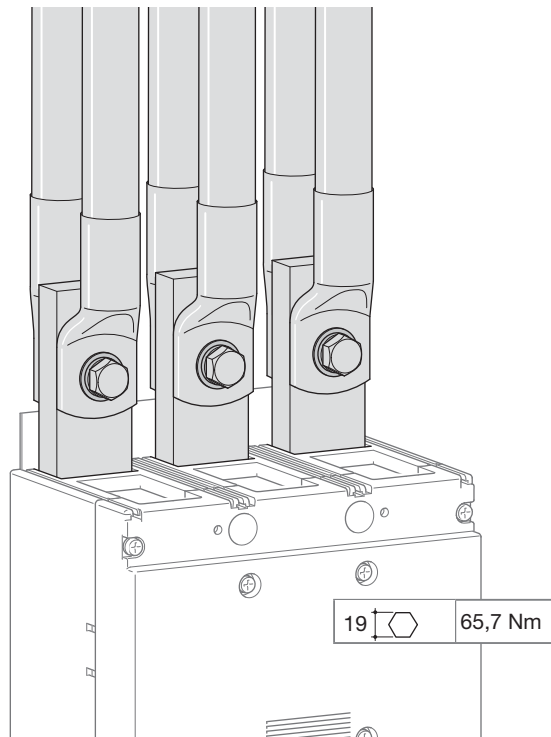
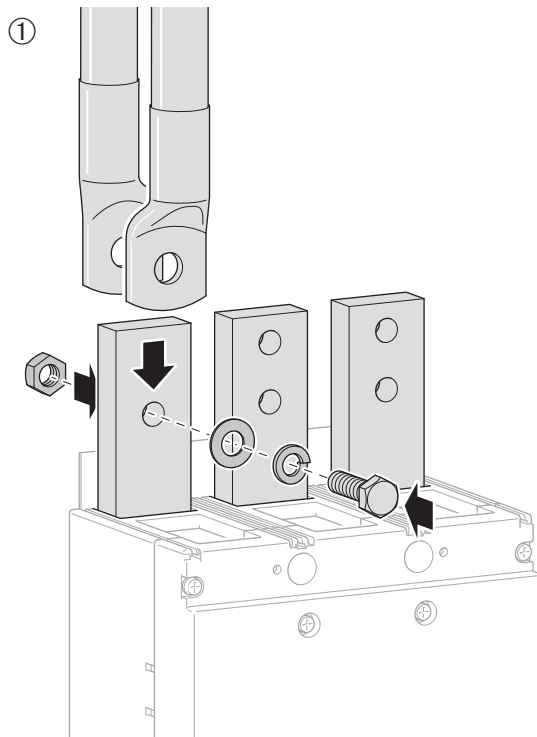
MCCBs



	A (mm)	B (mm)
3P	210	185
4P	280	255

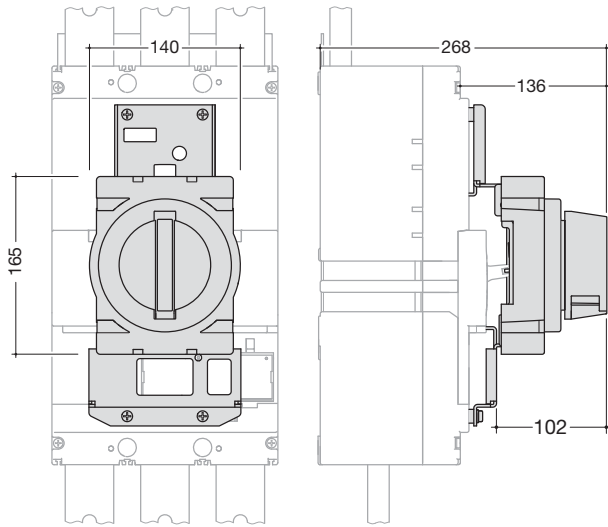
Connection

Connection with end lugs

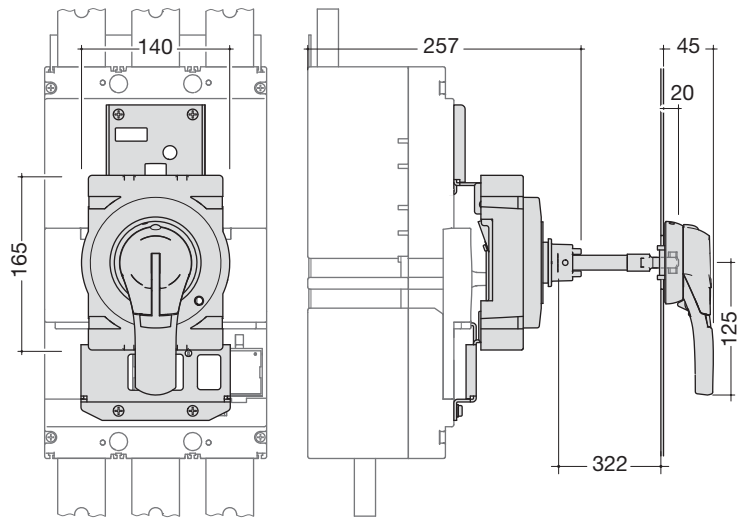


Accessories

Direct rotary handle

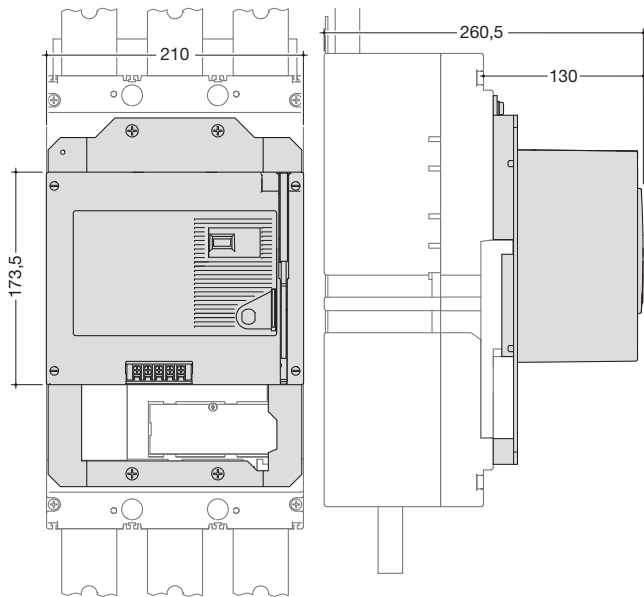


Extended rotary handle



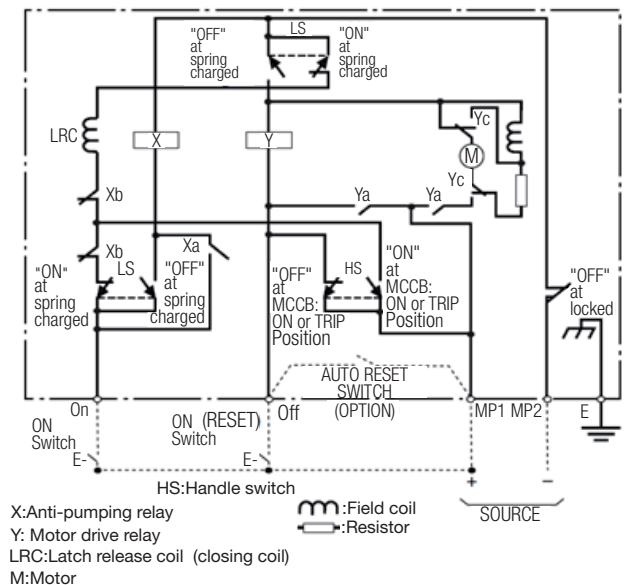
Commercial
Distribution

Motor operator



	HXF040H	HXF042H
Operating voltage	24V DC	200-230V AC
Operating current / starting current peak value (A)	24V DC	-/4,5 (ON) 4,0/12,0 (OFF, - RESET)
	200-230V AC	-
Operating time (s)	(ON)	0,06s
	(OFF)	3s
	(RESET)	3s
Power supply required	300VA min.	
Dielectric properties (1 min)	500V AC	1500V AC

Wiring diagram



Max. cascading value in kA rms according to IEC 947-2 Network: 3 phases + neutral 220/380 - 240/415 VAC

Commercial Distribution

			Upstream										
			x160 TM			x250 TM		h250 TM			h250 TM+		
			HDA	HHA	HNA	HHB	HNB	HHG	HNG	HEG	HNH	HEH	
IEC 60947-2			18 kA	25 kA	40 kA	25 kA	40 kA	25 kA	50 kA	65 kA	50 kA	70 kA	
Downstream	x160 TM	HDA	18 kA	18	25	40	25	40	25	40	40	50	70
		HHA	25 kA	-	25	40	25	40	25	50	65	50	70
		HNA	40 kA	-	-	40	25	40	25	50	65	50	70
	x250 TM	HHB	25 kA	-	-	-	25	40	25	50	65	50	70
		HNB	40 kA	-	-	-	-	40	-	50	65	50	70
	h250 TM	HHG	25 kA	-	-	-	25	40	25	50	65	50	70
		HNG	50 kA	-	-	-	-	-	-	50	65	50	70
		HEG	65 kA	-	-	-	25	40	25	50	65	50	70
	h250 TM+	HNH	50 kA	-	-	-	-	-	-	50	65	50	70
		HEH	70 kA	-	-	-	-	-	-	-	65	-	70
	h250 LSI	HNC	50 kA	-	-	-	-	-	-	50	65	50	70
		HEC	70 kA	-	-	-	-	-	-	-	-	-	70
	h400 TM	HHD	25 kA	-	-	-	-	-	-	-	-	-	-
		HND	50 kA	-	-	-	-	-	-	-	-	-	-
		HKD	70 kA	-	-	-	-	-	-	-	-	-	-
	h630 LSI	HND	50 kA	-	-	-	-	-	-	-	-	-	-
		HED	70 kA	-	-	-	-	-	-	-	-	-	-
	h800 TM	HNK	50 kA	-	-	-	-	-	-	-	-	-	-
HEK		70 kA	-	-	-	-	-	-	-	-	-	-	
h1000 LSI	HNE	50 kA	-	-	-	-	-	-	-	-	-	-	
	HEE	70 kA	-	-	-	-	-	-	-	-	-	-	
h1600 LSI	HNF	50 kA	-	-	-	-	-	-	-	-	-	-	
	HEF	70 kA	-	-	-	-	-	-	-	-	-	-	

Max. cascading value in kA rms according to IEC 947-2 Network: 3 phases + neutral 127/220 - 138/240 VAC or downstream devices in single-phase network: 3 phases + neutral 220/380 - 240/415 VAC

			Upstream										
			x160 TM			x250 TM		h250 TM			h250 TM+		
			HDA	HHA	HNA	HHB	HNB	HHG	HNG	HEG	HNH	HEH	
IEC 60947-2			25 kA	35 kA	85 kA	35 kA	85 kA	35 kA	85 kA	85 kA	85 kA	85 kA	100 kA
Downstream	x160 TM	HDA	25 kA	25	35	85	35	85	35	85	85	85	100
		HHA	35 kA	-	35	85	35	85	35	85	85	85	100
		HNA	85 kA	-	-	85	35	85	35	85	85	85	100
	x250 TM	HHB	35 kA	-	-	-	35	85	35	85	85	85	100
		HNB	85 kA	-	-	-	-	85	-	85	85	85	100
	h250 TM	HHG	35 kA	-	-	-	35	85	35	85	85	85	100
		HNG	85 kA	-	-	-	-	85	-	85	85	85	100
		HEG	85 kA	-	-	-	-	85	-	85	85	85	100
	h250 TM+	HNH	85 kA	-	-	-	-	-	-	85	85	85	100
		HEH	100 kA	-	-	-	-	-	-	-	85	85	100
	h250 LSI	HNC	85 kA	-	-	-	-	85	-	85	85	85	100
		HEC	100 kA	-	-	-	-	-	-	-	-	-	100
	h400 TM	HHD	35 kA	-	-	-	-	-	-	-	-	-	-
		HND	85 kA	-	-	-	-	-	-	-	-	-	-
		HKD	100 kA	-	-	-	-	-	-	-	-	-	-
	h630 LSI	HND	85 kA	-	-	-	-	-	-	-	-	-	-
		HED	100 kA	-	-	-	-	-	-	-	-	-	-
	h800 TM	HNK	85 kA	-	-	-	-	-	-	-	-	-	-
HEK		100 kA	-	-	-	-	-	-	-	-	-	-	
h1000 LSI	HNE	85 kA	-	-	-	-	-	-	-	-	-	-	
	HEE	100 kA	-	-	-	-	-	-	-	-	-	-	
h1600 LSI	HNF	100 kA	-	-	-	-	-	-	-	-	-	-	
	HEF	100 kA	-	-	-	-	-	-	-	-	-	-	

h250 LSI		h400 TM			h630 LSI		h800 TM		h1000 LSI		h1600 LSI	
HNC	HEC	HHD	HND	HKD	HND	HED	HNK	HEK	HNE	HEE	HNF	HEF
50 kA	70 kA	25 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA
50	70	25	34	24	24	24	25	25	25	25	18	18
50	70	25	50	55	50	55	45	45	45	45	28	28
50	70	25	50	70	50	70	50	70	50	70	50	50
50	70	25	50	55	50	55	45	45	45	45	28	28
50	70	25	50	70	50	70	50	70	50	70	50	50
50	70	25	50	55	50	55	45	45	45	45	28	28
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50	70	25	50	55	50	55	45	45	50	70	28	28
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-	-	25	50	55	50	55	45	45	45	45	28	28
-	-	-	50	70	50	70	50	70	50	70	50	70
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-	-	-	-	-	-	-	50	70	50	70	50	70
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-	-	-	-	-	-	-	-	-	-	70	50	70
-	-	-	-	-	-	-	-	-	-	-	50	70
-	-	-	-	-	-	-	-	-	-	-	-	70

h250 LSI		h400 TM			h630 LSI		h800 TM		h1000 LSI		h1600 LSI	
HNC	HEC	HHD	HND	HKD	HND	HED	HNK	HEK	HNE	HEE	HNF	HEF
85 kA	100 kA	35 kA	85 kA	100 kA	85 kA	100 kA	85 kA	100 kA	85 kA	100 kA	100 kA	100 kA
85	100	35	85	100	85	100	57	57	57	57	30	30
85	100	35	85	100	85	100	85	100	85	100	45	45
85	100	35	85	100	85	100	85	100	85	100	100	100
85	100	35	85	100	85	100	85	100	85	100	45	45
85	100	35	85	100	85	100	85	100	85	100	100	100
85	100	35	85	100	85	100	85	100	85	100	45	45
85	100	35	85	100	85	100	85	100	85	100	100	100
85	100	35	85	100	85	100	85	100	85	100	100	100
85	100	35	85	70	85	100	85	100	85	100	100	100
85	100	35	85	70	85	100	85	100	85	100	100	100
85	100	35	85	100	85	100	85	100	85	100	100	100
-	100	35	85	100	85	100	85	100	85	100	100	100
-	-	35	85	100	85	100	85	100	85	100	45	45
-	-	-	85	100	85	100	85	100	85	100	100	100
-	-	-	-	70	85	100	85	100	85	100	100	100
-	-	-	-	-	85	100	85	100	85	100	100	100
-	-	-	-	-	-	100	85	100	85	100	100	100
-	-	-	-	-	-	-	85	100	85	100	100	100
-	-	-	-	-	-	-	-	100	-	100	100	100
-	-	-	-	-	-	-	-	-	85	100	100	100
-	-	-	-	-	-	-	-	-	-	100	100	100
-	-	-	-	-	-	-	-	-	-	-	100	100
-	-	-	-	-	-	-	-	-	-	-	-	100

Cascading According to IEC 60947-2

MCCBs x160, x250, h250, h400, h630, h800, h1000, h1600



Max. cascading value in kA rms according to IEC 947-2 Network: 3 phases + neutral 220/380 - 240/415 VAC

Commercial Distribution

			Upstream									
			x160 TM			x250 TM		h250 TM			h250 TM+	
			HDA	HHA	HNA	HHB	HNB	HHG	HNG	HEG	HNH	HEH
IEC 60947-2			18 kA	25 kA	40 kA	25 kA	40 kA	25 kA	50 kA	65 kA	50 kA	70 kA
Downstream	x160	HCA	18	25	40	25	40	25	50	65	50	70
	x250	HCB	-	-	-	25	40	25	50	65	50	70
	h630	HCD	-	-	-	-	-	-	-	-	-	-
	h1000	HCE	-	-	-	-	-	-	-	-	-	-
	h1600	HCF	-	-	-	-	-	-	-	-	-	-

Max. cascading value in kA rms according to IEC 947-2 Network: 3 phases + neutral 127/220 - 138/240 VAC
or downstream devices in single-phase network: 3 phases + neutral 220/380 - 240/415 VAC

			Upstream									
			x160 TM			x250 TM		h250 TM			h250 TM+	
			HDA	HHA	HNA	HHB	HNB	HHG	HNG	HEG	HNH	HEH
IEC 60947-2			25 kA	35 kA	85 kA	35 kA	85 kA	35 kA	85 kA	85 kA	85 kA	100 kA
Downstream	x160	HCA	25	35	85	35	85	35	85	85	85	100
	x250	HCB	-	-	-	35	85	35	85	85	85	100
	h250	HCD	-	-	-	-	-	-	-	-	-	-
	h250	HCE	-	-	-	-	-	-	-	-	-	-
	h250	HCF	-	-	-	-	-	-	-	-	-	-

h250 LSI		h400 TM			h630 LSI		h800 TM		h1000 LSI		h1600 LSI	
HNC	HEC	HHD	HND	HKD	HND	HED	HNK	HEK	HNE	HEE	HNF	HEF
50 kA	70 kA	25 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA
25	70	25	50	70	50	70	50	70	50	70	50	70
25	70	25	50	70	50	70	50	70	50	70	50	70
-	-	-	-	70	50	70	50	70	50	70	50	70
-	-	-	-	-	-	-	50	70	50	70	50	70
-	-	-	-	-	-	-	-	-	-	-	50	70

h250 LSI		h400 TM			h630 LSI		h800 TM		h1000 LSI		h1600 LSI	
HNC	HEC	HHD	HND	HKD	HND	HED	HNK	HEK	HNE	HEE	HNF	HEF
85 kA	100 kA	35 kA	85 kA	100 kA	85 kA	100 kA	85 kA	100 kA	85 kA	100 kA	100 kA	100 kA
35	100	35	85	100	85	100	85	100	100	100	100	100
35	100	35	85	100	85	100	85	100	100	100	100	100
-	-	-	-	100	85	100	85	100	100	100	100	100
-	-	-	-	-	-	-	85	100	100	100	100	100
-	-	-	-	-	-	-	-	-	-	-	100	100

Max. cascading value in kA rms according to IEC 947-2 Network: 3 phases + neutral 220/380 - 240/415 VAC

						Upstream								
						x160 TM			x250 TM			h250 TM		
						HDA	HHA	HNA	HHB	HNB	HHG	HNG	HEG	
				IEC 69898 IEC 61008 IEC 61009	IEC 60947-2	18 kA	25 kA	40 kA	25 kA	40 kA	25 kA	50 kA	65 kA	
Commercial Distribution	Switches	SB1xx, SB3xx, SB4xx	32A	1P, 3P, 4P			2.2	2.2	2.2	-	-	-	-	-
		SB1xx, SB3xx, SB4xx	63A	1P, 3P, 4P			3.1	3.1	3.1	-	-	-	-	-
		SB1xx, SB3xx, SB4xx	100A	1P, 3P, 4P			4.8	4.8	4.8	4.6	4.6	-	-	-
	Switches	SB2xx	32A	2P			2.3	2.3	2.3	-	-	-	-	-
		SB2xx	63A	2P			3.4	3.4	3.4	-	-	-	-	-
		SB2xx	100A	2P			5.5	5.5	5.5	4.6	4.6	-	-	-
	IDL 2P/4P	SA2xx	80A	2P			6.7	6.7	6.7	5.1	5.1	5	5	5
		SA4xx	80A	4P			5.7	5.7	5.7	5.1	5.1	5	5	5
	RCD 2P/4P	CCxxx, CDxxx, CFxxx, CGxxx	63A	2P			4.25	4.25	4.25	3.7	3.7	-	-	-
			63A	4P			3.8	3.8	3.8	3.7	3.7	-	-	-
			100A	2P			5.5	5.5	5.5	4.6	4.6	-	-	-
			100A	4P			4.8	4.8	4.8	4.6	4.6	-	-	-
	MCB Ph+N under 240V	MFS, MFN	32A	C	3 kA	-	3.3	3.3	3.3	-	-	-	-	-
		MJN, MHN	40A	B, C	4.5 kA	6 kA	8	8	8	6.5	6.5	6	6	6
		MLN, MLU	40A	C	6 kA	7.5 kA	12.5	12.4	12.5	9.7	9.7	7.5	7.5	7.5
	MCB Spinx Ph+N under 240V	3PP: NFT3xx, NGT3xx 3PP+N: NFT8xx, NGT8xx	40A	C, D	6 kA	10 kA	18	20	20	14.1	20	10.1	10.1	10.1
		Ph+N: NFT7xx, NGT7xx	40A	C, D	6 kA	10 kA	18	18	18	14.1	14.1	10.1	10.1	10.1
		Ph+N: MHT7xx, MJT7xx	40A	B, C	4.5 kA	6 kA	8	8	8	6.5	6.5	6	6	6
	RCBO 2 mod 1PP+N under 240V	ADC, ADH	32A	C	3 kA	-	3.3	3.3	3.3	-	-	-	-	-
		Ax8xx	40A	C	4.5 kA	6 kA	8	8	8	6.5	6.5	6	6	6
		Ax9xx	40A	C	6 kA	10 kA	18	18	18	14	14	10	10	10
	RCBO 1 mod 1PP+N under 240V	AC1xx, AD1xx, AE1xx, AF1xx, ACx1xx, ADx1xx, AEx1xx	40A	B, C	10 kA	15 kA	18	25	40	25	40	25	25	25
			50A	B, C	6 kA	10 kA	18	20	20	14.1	14.1	10.1	10.1	10.1
	MCB Ocean 2 & v1 1 mod	MV, MW	63A	B, C	3 kA	4.5 kA	5.4	5.4	5.4	5.2	5.2	-	-	-
MX, MY		63A	B, C	4.5 kA	6 kA	8	8	8	6.5	6.5	6	6	6	
MU, MT		63A	B, C	6 kA	10 kA	18	20	20	14.1	14.1	10.1	10.1	10.1	
NB, NC, ND		63A	B, C, D	10 kA	15 kA	18	25	40	25	40	25	25	25	
MCB GDE 1 mod	MVN, MWN	63A	B, C	3 kA	-	3.3	3.3	3.3	-	-	-	-	-	
	MXN, MYN	63A	B, C	4.5 kA	-	5.4	5.4	5.4	5.2	5.2	-	-	-	
	MBN, MCN, MTN, MUN, MP	63A	B, C	6 kA	-	8	8	8	6.5	6.5	6	6	6	
MCB GTE 1 mod	MBA, MCA, NEN, NFN, NGN	63A	B, C, D	6 kA	10 kA	18	25	30	20	25	15	18	20	
	NBN, NCN, NDN, NKN	63A	B, C, D	10 kA	15 kA	18	25	40	25	40	25	25	25	
	NQN, NRN, NSN	20A	B, C, D	-	25 kA	18	25	40	25	40	25	50	65	
		40A	B, C, D	-	20 kA	18	25	40	25	40	25	50	55	
		63A	B, C, D	-	15 kA	18	25	40	25	40	25	50	25	
	MMN2xx, MMN3xx	12A	magn.	-	25 kA	18	25	40	25	40	25	50	65	
MMN2xx, MMN3xx	25A	magn.	-	20 kA	18	25	40	25	40	25	50	53.4		
MCB DEFI 125 1,5 mod	HLE, HLF, HLG, HME, HMF, HMG	125A	B, C	10 kA	15 kA	18	25	40	25	40	25	50	25	
	HMB, HMC, HMD	125A	B, C, D	15 kA	15 kA	18	25	40	25	40	25	50	25	
	HMJ, HMK	125A	C	-	30 kA	18	25	40	25	40	25	50	65	
	HMX	63A	C	-	50 kA	18	25	40	25	40	25	50	65	

h250 TM+		h250 LSI		h400 TM			h630 LSI		h800 TM		h1000 LSI		h1600 LSI	
HNH	HEH	HNC	HEC	HHD	HND	HKD	HND	HED	HNK	HEK	HNE	HEE	HNH	HEH
50 kA	70 kA	50 kA	70 kA	25 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA
3.5	3.5	3.5	3.5	-	-	-	-	-	-	-	-	-	-	-
3.9	3.9	3.9	3.9	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.5	3.5	3.5	3.5	-	-	-	-	-	-	-	-	-	-	-
3.9	3.10	3.11	3.12	-	-	-	-	-	-	-	-	-	-	-
4.7	4.7	4.7	4.7	-	-	-	-	-	-	-	-	-	-	-
5.3	5.3	5.3	5.3	-	-	-	-	-	-	-	-	-	-	-
5.3	5.3	5.3	5.3	-	-	-	-	-	-	-	-	-	-	-
5.3	5.3	5.3	5.3	-	-	-	-	-	-	-	-	-	-	-
4.7	4.7	4.7	4.7	-	-	-	-	-	-	-	-	-	-	-
4.7	4.7	4.7	4.7	-	-	-	-	-	-	-	-	-	-	-
4.1	4.1	4.1	4.1	-	-	-	-	-	-	-	-	-	-	-
6.5	6.5	6.5	6.5	-	-	-	-	-	-	-	-	-	-	-
9	9	9	9	9	9	7.7	7.7	7.7	-	-	-	-	-	-
20	20	20	20	13.6	13.6	20	20	20	10	10	10	10	10	10
14	14	14	14	13.6	13.6	10.1	10.1	10.1	10	10	10	10	10	10
6.5	6.5	6.5	6.5	6	6	6	6	6	6	6	6	6	6	6
4.1	4.1	4.1	4.1	-	-	-	-	-	-	-	-	-	-	-
6.5	6.5	6.5	6.5	-	-	-	-	-	-	-	-	-	-	-
14	14	14	14	14	14	10	10	10	-	-	-	-	-	-
46	46	46	46	23	23	18.6	18.6	18.6	18	18	18	18	-	-
14	14	14	14	13.6	13.6	10.1	10.1	10.1	-	-	-	-	-	-
5.1	5.1	5.1	5.1	-	-	-	-	-	-	-	-	-	-	-
6.5	6.5	6.5	6.5	-	-	-	-	-	-	-	-	-	-	-
14	14	14	14	13.6	13.6	10.1	10.1	10.1	-	-	-	-	-	-
47	47	47	47	23	23	18.6	18.6	18.6	18	18	18	18	-	-
4.1	4.1	4.1	4.1	-	-	-	-	-	-	-	-	-	-	-
5.1	5.1	5.1	5.1	-	-	-	-	-	-	-	-	-	-	-
6.5	6.5	6.5	6.5	-	-	-	-	-	-	-	-	-	-	-
25	35	25	35	15	20	20	20	20	18	18	18	18	-	-
47	47	47	47	23	23	20	20	20	18	18	18	18	-	-
50	70	50	70	25	50	58	50	58	44	44	44	44	28	28
50	70	50	70	25	44	29	29	29	30	30	30	30	20	20
47	47	47	47	25	33	19	19	19	18	18	18	18	-	-
50	70	50	70	25	50	58	50	58	44	44	44	44	28	28
50	70	50	70	25	44	29	29	29	30	30	30	30	20	20
47	47	47	47	23	23	18.6	18.6	18.6	18	18	18	18	-	-
47	47	47	47	23	23	19	19	19	18	18	18	18	-	-
50	70	50	70	25	50	70	50	70	50	65	50	65	34	34
50	70	50	70	25	50	70	50	70	50	70	50	70	50	70

Max. cascading value in kA rms according to IEC 947-2 Network: 3 phases + neutral 127/220 - 138/240 VAC
or downstream devices in single-phase network: 3 phases + neutral 220/380 - 240/415 VAC

						Upstream								
						x160 TM			x250 TM			h250 TM		
						HDA	HHA	HNA	HHB	HNB	HHG	HNG	HEG	
				IEC 69898 IEC 61008 IEC 61009	IEC 60947-2	25 kA	35 kA	85 kA	35 kA	85 kA	35 kA	85 kA	85 kA	
Commercial Distribution	Switches	SB1xx, SB3xx, SB4xx	32A	1P, 3P, 4P		2.5	2.5	2.5	-	-	-	-	-	
		SB1xx, SB3xx, SB4xx	63A	1P, 3P, 4P		4	4	4	-	-	-	-	-	
		SB1xx, SB3xx, SB4xx	100A	1P, 3P, 4P		7.7	7.7	7.7	4.6	4.6	-	-	-	
	Switches	SB2xx	32A	2P		2.7	2.7	2.7	-	-	-	-	-	
		SB2xx	63A	2P		4.4	4.4	4.4	-	-	-	-	-	
		SB2xx	100A	2P		9	9	9	4.6	4.6	-	-	-	
	IDL 2P/4P	SA2xx	80A	2P		11.5	11.5	11.5	5.1	5.1	-	-	-	
		SA4xx	80A	4P		9.9	9.9	9.9	5.1	5.1	-	-	-	
	RCD 2P/4P	CCxxx, CDxxx, CFxxx, CGxxx	63A	2P		6.2	6.2	6.2	3.7	3.7	-	-	-	
			63A	4P		5.5	5.5	5.5	3.7	3.7	-	-	-	
			100A	2P		9	9	9	4.6	4.6	-	-	-	
			100A	4P		7.7	7.7	7.7	4.6	4.6	-	-	-	
	MCB Ph+N under 240V	MFS, MFN	32A	C	3 kA	-	4.5	4.5	4.5	3.5	3.5	-	-	-
		MJN, MHN	40A	B, C	4.5 kA	6 kA	15	15	15	6.5	6.5	6	6	6
		MLN, MLU	40A	C	6 kA	7.5 kA	24	24	24	9	9	9	9	9
	MCB Spinx Ph+N under 240V	NFT7xx, NGT7xx	40A	C, D	6 kA	10 kA	25	35	45	15	20	18	18	18
		MHT7xx, MJT7xx	40A	B, C	4.5 kA	6 kA	15	15	15	6.5	6.5	6	6	6
	RCBO 2 mod 1PP+N under 240V	ADC, ADH	32A	C	3 kA	-	4.5	4.5	4.5	3.5	3.5	-	-	-
		Ax8xx	40A	C	4.5 kA	6 kA	15	15	15	6.5	6.5	6	6	6
		Ax9xx	40A	C	6 kA	10 kA	25	35	45	15	15	18	18	18
RCBO 1 mod 1PP+N under 240V	AC1xx, AD1xx, AE1xx, AF1xx, ACx1xx, ADx1xx, AEx1xx	40A	B, C	10 kA	15 kA	25	35	45	35	85	35	85	85	
		50A	B, C	6 kA	10 kA	25	35	45	15	15	18	18	18	
RCBO 2PP	ADA2xxN	32A	B, C	10 kA	10 kA	25	35	45	15	15	18	18	18	
MCB GDE 1 mod	MVN, MWN	63A	B, C	4.5 kA	-	-	-	-	-	-	-	-	-	
	MXN, MYN	63A	B, C	6 kA	-	15	15	15	6.5	6.5	6	6	6	
	MP 5xx under 240V	63A	ICP-M	6 kA	-	8	8	8	6.5	6.5	6	6	6	
	MUN 5xx under 240V	40A	C	6 kA	-	8	8	8	6.5	6.5	6	6	6	
	MBN, MCN, MTN, MUN, MP	63A	B, C	10 kA	-	25	35	45	15	15	18	18	18	
MCB GTE 1 mod	NFN 7xx under 240V	63A	C	6 kA	10 kA	18	18	18	14.1	15.1	10.1	10.1	10.1	
	MBA, MCA, NEN, NFN, NGN	63A	B, C, D	10 kA	20 kA	25	35	85	35	85	35	85	85	
	NBN, NCN, NDN, NKN	63A	B, C, D	10 kA	30 kA	25	35	85	35	85	35	85	85	
	NQN, NRN, NSN	20A	B, C, D	-	50 kA	25	35	85	35	85	35	85	85	
		40A	B, C, D	-	40 kA	25	35	85	35	85	35	85	85	
		63A	B, C, D	-	30 kA	25	35	85	35	85	35	85	85	
	MMN2xx, MMN3xx	12A	magn.	-	50 kA	25	35	85	35	85	35	85	85	
MMN2xx, MMN3xx	25A	magn.	-	40 kA	25	35	85	35	85	35	85	85		
MCB DEFI 125 1,5 mod	HLE, HLF, HLG, HME, HMF, HMG	125A	B, C	15 kA	30 kA	25	35	85	35	85	35	85	85	
	HMB, HMC, HMD	125A	B, C, D	15 kA	30 kA	25	35	85	35	85	35	85	85	
	HMJ, HMK	125A	C	-	60 kA	25	35	85	35	85	35	85	85	
	HMX	63A	C	-	100 kA	25	35	85	35	85	35	85	85	

h250 TM+		h250 LSI		h400 TM			h630 LSI		h800 TM		h1000 LSI		h1600 LSI	
HNH	HEH	HNC	HEC	HHD	HND	HKD	HND	HED	HNK	HEK	HNE	HEE	HNH	HEH
85 kA	100 kA	85 kA	100 kA	35 kA	85 kA	100 kA	85 kA	100 kA	85 kA	100 kA	85 kA	100 kA	100 kA	100 kA
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	6	6	-	-	-	-	-	-	-	-	-
-	-	-	-	6	6	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	7	6	7	8.2	8.2	7.2	7.2	7.2	-	-	-	-	-	-
9	12	9	12	13.5	13.5	10	10	10	-	-	-	-	-	-
20	40	20	40	19	19	15	15	15	10	10	10	10	10	10
6	7	6	7	8.2	8.2	7.2	7.2	7.2	6	6	6	6	6	6
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	7	6	7	8.2	8.2	7.2	7.2	7.2	-	-	-	-	-	-
18	40	18	40	19	19	15	15	15	14	14	14	14	-	-
85	100	85	100	35	42	37	37	37	27	27	27	27	16	16
18	40	18	40	19	19	15	15	15	14	14	14	14	-	-
18	40	18	40	19	19	15	15	15	14	14	14	14	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	7	6	7	8.2	8.2	7.2	7.2	7.2	-	-	-	-	-	-
6.5	6.5	6.5	6.5	-	-	-	-	-	-	-	-	-	-	-
6.5	6.5	6.5	6.5	-	-	-	-	-	-	-	-	-	-	-
18	40	18	40	19	19	15	15	15	14	14	14	14	-	-
14	14	14	14	13.6	13.6	10.1	10.1	10.1	-	-	-	-	-	-
85	100	85	100	35	64	63	63	63	40	40	40	40	27	27
85	100	85	100	35	85	100	85	100	85	85	85	85	37	37
85	100	85	100	35	85	100	85	100	85	100	85	100	85	85
85	100	85	100	35	85	100	85	100	85	100	85	100	55	55
85	100	85	100	35	85	100	85	100	85	100	85	100	37	37
85	100	85	100	35	85	100	85	100	85	100	85	100	85	85
85	100	85	100	35	85	100	85	100	85	100	85	100	55	55
85	100	85	100	35	85	100	85	100	85	100	85	100	37	37
85	100	85	100	35	85	100	85	100	85	100	85	100	37	37
85	100	85	100	35	85	100	85	100	85	100	85	100	100	100
85	100	85	100	35	85	100	85	100	85	100	85	100	100	100

Commercial
Distribution

Discrimination Chart According to IEC 60947-2

MCCBs x160, x250, h250, h400, h630, h800, h1000, h1600



Commercial Distribution

	Icc (kA)	Upstream	x160 TM 18/25/40 kA							x250 TM 25/40 kA							h250 TM 25/50/65 kA													
			Downstream							HDA, HHA, HNA							HHB, HNB							HHG, HNG, HEG						
			(A)	16 - 50	63	80	100	125	160	100	125	160	200	225	250	20	32	50	63	100	125	160	200	250						
HDA HHA HNA	x160 TM 18/25/40 kA	16	-	2	2	2.9	2.9	3	2.15	2.9	4.1	5.6	5.5	5.4	-	-	-	1.2	2.15	2.9	4.1	5.6	5.4							
		20	-	2	2	2.9	2.9	3	2.15	2.9	4.1	5.6	5.5	5.4	-	-	-	1.2	2.15	2.9	4.1	5.6	5.4							
		25	-	2	2	2.9	2.9	3	2.15	2.9	4.1	5.6	5.5	5.4	-	-	-	1.2	2.15	2.9	4.1	5.6	5.4							
		32	-	1.8	1.8	2.6	2.6	2.7	2	2.6	3.6	5	4.9	4.8	-	-	-	1.15	2	2.6	3.6	5	4.8							
		40	-	1.6	1.6	2.35	2.35	2.4	1.8	2.35	3.3	4.3	4.25	4.2	-	-	-	1.1	1.8	2.35	3.3	4.3	4.2							
		50	-	1.6	1.6	2.35	2.35	2.4	1.8	2.35	3.15	4.25	4.2	4.15	-	-	-	1.1	1.8	2.35	3.15	4.25	4.15							
		63	-	-	-	2.15	2.15	2.2	1.7	2.15	3	4.05	4	3.9	-	-	-	-	1.7	2.15	3	4.05	3.9							
		80	-	-	-	2.15	2.15	2.2	1.7	2.15	2.9	3.9	3.9	3.8	-	-	-	-	1.7	2.15	2.9	3.9	3.8							
		100	-	-	-	-	-	2.1	-	1.95	2.75	3.7	3.7	3.6	-	-	-	-	-	1.95	2.75	3.7	3.6							
		125	-	-	-	-	-	2.1	-	-	2.65	3.5	3.5	3.4	-	-	-	-	-	-	2.65	3.5	3.4							
160	-	-	-	-	-	-	-	-	-	3.45	3.4	3.35	-	-	-	-	-	-	-	3.45	3.35									
HHB HNB	x250 TM 25/40 kA	100	-	-	-	-	-	-	-	1.95	2.5	3.15	3.2	3.3	-	-	-	-	-	1.95	2.5	3.15	3							
		125	-	-	-	-	-	-	-	-	2.5	3.15	3.2	3.3	-	-	-	-	-	-	2.5	3.15	3							
		160	-	-	-	-	-	-	-	-	-	3.15	3.2	3.3	-	-	-	-	-	-	-	3.15	3							
		200	-	-	-	-	-	-	-	-	-	-	3.2	3.3	-	-	-	-	-	-	-	-	3							
		225	-	-	-	-	-	-	-	-	-	-	-	3.3	-	-	-	-	-	-	-	-	3							
		250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
HHG HNG HEG	h250 TM 25/50/65 kA	20	-	-	-	-	-	-	1.55	1.95	2.5	3.15	3.2	3.3	-	0.41	0.6	1	1.55	1.95	2.5	3.15	3							
		32	-	-	-	-	-	-	1.55	1.95	2.5	3.15	3.2	3.3	-	-	0.6	1	1.55	1.95	2.5	3.15	3							
		50	-	-	-	-	-	-	1.55	1.95	2.5	3.15	3.2	3.3	-	-	-	1	1.55	1.95	2.5	3.15	3							
		63	-	-	-	-	-	-	1.55	1.95	2.5	3.15	3.2	3.3	-	-	-	-	1.55	1.95	2.5	3.15	3							
		100	-	-	-	-	-	-	-	1.95	2.5	3.15	3.2	3.3	-	-	-	-	-	1.95	2.5	3.15	3							
		125	-	-	-	-	-	-	-	-	2.5	3.15	3.2	3.3	-	-	-	-	-	-	2.5	3.15	3							
		160	-	-	-	-	-	-	-	-	-	3.15	3.2	3.3	-	-	-	-	-	-	-	3.15	3							
		200	-	-	-	-	-	-	-	-	-	-	3.2	3.3	-	-	-	-	-	-	-	-	3							
		250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
HNN HEH	h250 TM+ 50/70 kA	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
		32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
		50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
		63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
		100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
		125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
		160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
		250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
HNC HEC	h250 LSI 50/70 kA	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
		125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
		250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
HND HND HKD	h400 TM 25/50/70 kA	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
		300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
		350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
		400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
HND HED	h630 LSI 50/70kA	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
		400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
		500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
		600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
		630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
HNK HEK	h800 TM 50/70 kA	630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
		800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
HNE HEE	h1000 LSI 50/70 kA	630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
		700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
		800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
		7000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
HNF HEF	h1600 LSI 50/70 kA	800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
		1250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
		1600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										

Breaking capacity according to IEC 947-2. Network : 3 phasis + neutral 220/380 ~ 240/415 V AC
 notes : "T" = total discrimination (up to the breaking capacity of the downstream device)
 "-" = no discrimination

h250 TM+ 50/70 kA								h250 LSI 50/70 kA			h400 TM 25/50/70 kA				h630 LSI 25/40 kA					h800 TM 25/40 kA		h1000 LSI 25/40 kA				h1600 LSI 25/40 kA		
HNN, HEH								HNC, HEC			HHD, HND, HKD				HND, HED					HNC, HEK		HNE, HEE				HNF, HEF		
20	32	50	63	100	125	160	250	40	125	250	250	300	350	400	250	400	500	600	630	630	800	630	700	800	1000	800	1250	1600
-	-	-	1.1	1.9	2.6	4.1	5.4	T	T	T	6.5	8.8	10.5	13	T	T	T	T	T	18.6	28	T	T	T	T	T	T	T
-	-	-	1.1	1.9	2.6	4.1	5.4	T	T	T	6.5	8.5	10.5	13	T	T	T	T	T	18.6	28	T	T	T	T	T	T	T
-	-	-	1.1	1.9	2.6	4.1	5.4	T	T	T	6.5	8.5	10.5	13	T	T	T	T	T	18.6	28	T	T	T	T	T	T	T
-	-	-	1	1.8	2.4	3.6	4.8	T	T	T	5.6	7.3	8.8	10.5	T	T	T	T	T	15.4	22.5	T	T	T	T	T	T	T
-	-	-	1	1.6	2.2	3.3	4.2	-	T	T	4.95	6.2	7.6	9.2	T	T	T	T	T	13.3	18.9	T	T	T	T	T	T	T
-	-	-	1	1.6	2.2	3.15	4.15	-	T	T	4.8	6	7.45	8.8	T	T	T	T	T	13	18.5	T	T	T	T	T	T	T
-	-	-	-	1.5	2	3	3.6	-	T	T	4.6	5.8	7.1	8.3	T	T	T	T	T	12.5	18.2	T	T	T	T	T	T	T
-	-	-	-	1.5	2	2.9	3.8	-	T	T	4.35	5.6	6.8	7.9	T	T	T	T	T	11.7	16.6	T	T	T	T	T	T	T
-	-	-	-	-	1.8	2.75	3.6	-	T	T	4.15	5.4	6.5	7.5	T	T	T	T	T	11.2	15.9	T	T	T	T	T	T	T
-	-	-	-	-	-	2.65	3.4	-	1.65	T	4	5	6	7	T	T	T	T	T	10	14.2	T	T	T	T	T	T	T
-	-	-	-	-	-	-	3.35	-	-	T	3.9	4.9	5.9	6.6	T	T	T	T	T	9.7	13.5	T	T	T	T	T	T	T
-	-	-	-	-	1.8	2.5	3	-	T	T	3.6	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	-	-	-	-	-	2.5	3	-	1.65	T	3.6	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	-	-	-	-	-	-	3	-	-	T	3.6	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	T	3.6	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	3.25	-	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	0.38	0.6	0.9	1.45	1.8	2.5	3	T	T	T	3.6	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	-	0.6	0.9	1.45	1.8	2.5	3	T	T	T	3.6	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	-	-	0.9	1.45	1.8	2.5	3	-	T	T	3.6	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	-	-	-	1.45	1.8	2.5	3	-	T	T	3.6	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	-	-	-	-	1.8	2.5	3	-	T	T	3.6	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	-	-	-	-	-	2.5	3	-	1.65	T	3.6	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	-	-	-	-	-	-	3	-	-	T	3.6	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	T	3.6	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	3.25	3.6	4.3	5	5.75	T	T	T	T	T	7.6	9.6	T	T	T	T	T	T	T
-	0.38	0.6	0.9	1.45	1.8	2.5	3	T	T	T	4.2	4.8	5.2	5.9	T	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	0.6	0.9	1.45	1.8	2.5	3	T	T	T	4.2	4.8	5.2	5.9	T	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	0.9	1.45	1.8	2.5	3	-	T	T	4.2	4.8	5.2	5.9	T	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	1.45	1.8	2.5	3	-	T	T	4.2	4.8	5.2	5.9	T	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	1.8	2.5	3	-	T	T	4.2	4.8	5.2	5.9	T	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	2.5	3	-	1.65	T	4.2	4.8	5.2	5.9	T	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	-	3	-	-	T	4.2	4.8	5.2	5.9	T	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	3.25	-	4.8	5.2	5.9	T	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	1.625	3.25	4.2	4.8	5.2	5.9	T	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	3.25	4.2	4.8	5.2	5.9	T	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	-	-	4.8	5.2	5.9	-	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	3.25	-	4.3	5	5.75	3.25	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	5	5.75	-	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.75	-	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.2	T	T	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.75	-	5.2	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.3	T	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.3	T	8.2	10	T	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.3	8.2	10	7.55	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.2	10	-	T	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.3	-	10	-	-	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	-	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	9.6	T	T	T	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	9.6	T	15	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	-	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Commercial
Distribution

Max. cascading value in kA rms according to IEC 947-2 and IEC 60439-1 Network: 3 phases + neutral 220/380 - 240/415 VAC

				Upstream					
				frame II, type HW208S	frame II, type HW212S	frame II, type HW212H	frame II, type HW216S	frame II, type HW216H	
				max rated current 800A 400-500-630A	max rated current 1250A 630-800-1000A	max rated current 800A 400-500-630A	max rated current 1600A 800-1000-1250A	max rated current 1600A 800-1000-1250A	
				IEC 60947-2	65 kA	65 kA	80 kA	65 kA	80 kA
				IEC 60439-1	65kA	65 kA	80 kA	65 kA	80 kA
Downstream	x160 TM	HDA	18 kA	40 kA	18/30	18/30	18/30	18/30	18/30
		HHA	25 kA	50 kA	25/40	25/40	25/40	25/40	25/40
		HNA	40 kA	100 kA	40/50	40/50	40/50	40/50	40/50
	x250 TM	HHB	25 kA	50 kA	25/40	25/40	25/40	25/40	25/40
		HNB	40 kA	100 kA	40/50	40/50	40/50	40/50	40/50
	h250 TM	HHG	25 kA	50 kA	25/40	25/40	25/40	25/40	25/40
		HNG	50 kA	100 kA	50/60	50/60	50/60	50/60	50/60
		HEG	65 kA	100 kA	65/65	65/65	67/70	65/65	65/70
	h250 TM+	HNH	50 kA	60 kA	50/60	50/60	50/60	50/60	50/60
		HEH	70 kA	80 kA	65/65	65/65	70/80	65/65	70/80
	h250 LSI	HNC	50 kA	100 kA	50/60	50/60	50/60	50/60	50/60
		HEC	70 kA	100 kA	65/65	65/65	70/80	65/65	70/80
	h400 TM	HHD	25 kA	50 kA	25/40	25/40	25/40	25/40	25/40
		HND	50 kA	100 kA	50/60	50/60	50/60	50/60	50/60
		HKD	70 kA	80 kA	65/65	65/65	70/80	65/65	70/80
	h630 LSI	HND	50 kA	100 kA	50/60	50/60	50/60	50/60	50/60
		HED	70 kA	100 kA	65/65	65/65	70/80	65/65	70/80
	h800 TM	HNK	50 kA	60 kA	50/60	50/60	50/60	50/60	50/60
		HEK	70 kA	80 kA	65/65	65/65	70/80	65/65	70/80
	h1000 LSI	HNE	50 kA	100 kA	-	50/60	50/60	50/60	50/60
HEE		70 kA	100 kA	-	65/65	70/80	65/65	70/80	
h1600 LSI	HNF	50 kA	100 kA	-	-	-	50/60	50/60	
	HEF	70 kA	100 kA	-	-	-	65/65	70/80	

Max. cascading value in kA rms according to IEC 947-2 and IEC 60439-1 Network: 3 phases + neutral 127/220 - 138/240 VAC

				Upstream					
				frame II, type HW208S	frame II, type HW212S	frame II, type HW212H	frame II, type HW216S	frame II, type HW216H	
				max rated current 800A 400-500-630A	max rated current 1250A 630-800-1000A	max rated current 800A 400-500-630A	max rated current 1600A 800-1000-1250A	max rated current 1600A 800-1000-1250A	
				IEC 60947-2	65 kA	65 kA	80 kA	65 kA	80 kA
				IEC 60439-1	65kA	65 kA	80 kA	65 kA	80 kA
Downstream	x160 TM	HDA	25 kA	40 kA	25/40	25/40	25/40	25/40	25/40
		HHA	35 kA	50 kA	35/50	35/50	35/50	35/50	35/50
		HNA	85 kA	100 kA	65/65	65/65	80/80	65/65	80/80
	x250 TM	HHB	35 kA	50 kA	35/50	35/50	35/50	35/50	35/50
		HNB	85 kA	100 kA	65/65	65/65	80/80	65/65	80/80
	h250 TM	HHG	35 kA	50 kA	35/50	35/50	35/50	35/50	35/50
		HNG	85 kA	100 kA	65/65	65/65	80/80	65/65	80/80
		HEG	85 kA	100 kA	65/65	65/65	80/80	65/65	80/80
	h250 TM+	HNH	85 kA	100 kA	65/65	65/65	80/80	65/65	80/80
		HEH	100 kA	100 kA	65/65	65/65	80/80	65/65	80/80
	h250 LSI	HNC	85 kA	100 kA	65/65	65/65	80/80	65/65	80/80
		HEC	100 kA	100 kA	65/65	65/65	80/80	65/65	80/80
	h400 TM	HHD	35 kA	50 kA	35/50	35/50	35/50	35/50	35/50
		HND	85 kA	100 kA	65/65	65/65	80/80	65/65	80/80
		HKD	100 kA	100 kA	65/65	65/65	80/80	65/65	80/80
	h630 LSI	HND	85 kA	100 kA	65/65	65/65	80/80	65/65	80/80
		HED	100 kA	100 kA	65/65	65/65	80/80	65/65	80/80
	h800 TM	HNK	85 kA	100 kA	65/65	65/65	80/80	65/65	80/80
		HEK	100 kA	100 kA	65/65	65/65	80/80	65/65	80/80
	h1000 LSI	HNE	85 kA	100 kA	-	65/65	80/80	65/65	80/80
HEE		100 kA	100 kA	-	65/65	80/80	65/65	80/80	
h1600 LSI	HNF	85 kA	100 kA	-	-	-	65/65	80/80	
	HEF	100 kA	100 kA	-	-	-	65/65	80/80	

Commercial Distribution

frame II, type HW220S	frame II, type HW220H	frame III, type HW316H	frame III, type HW320H	frame III, type HW325S	frame III, type HW325H	frame III, type HW332S	frame III, type HW332H	frame IV, type HW440SB
max rated current 2000A 1000-1250-1600A	max rated current 2000A 1000-1250-1600A	max rated current 1600A 800-1000-1250A	max rated current 2000A 1000-1250-1600A	max rated current 2500A 1250-1600-2000A	max rated current 2500A 1250-1600-2000A	max rated current 3200A 1600-2000-2500A	max rated current 3200A 1600-2000-2500A	max rated current 4000A 2000-2500-3200A
65 kA	80 kA	100 kA	100 kA	85 kA	100 kA	85 kA	100 kA	100 kA
65 kA	80 kA	100 kA	100 kA	85 kA	100 kA	85 kA	100 kA	100 kA
18/30	18/30	18/30	18/30	18/30	18/30	18/30	18/30	18/30
25/40	25/40	25/40	25/40	25/40	25/40	25/40	25/40	25/40
40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50
25/40	25/40	25/40	25/40	25/40	25/40	25/40	25/40	25/40
40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50
25/40	25/40	25/40	25/40	25/40	25/40	25/40	25/40	25/40
50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
65/65	65/70	65/70	65/70	65/70	65/70	65/70	65/70	65/70
50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
65/65	70/80	70/80	70/80	70/80	70/80	70/80	70/80	70/80
50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
65/65	70/80	70/80	70/80	70/80	70/80	70/80	70/80	70/80
25/40	25/40	25/40	25/40	25/40	25/40	25/40	25/40	25/40
50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
65/65	70/80	70/80	70/80	70/80	70/80	70/80	70/80	70/80
50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
65/65	70/80	70/80	70/80	70/80	70/80	70/80	70/80	70/80
50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
65/65	70/80	70/80	70/80	70/80	70/80	70/80	70/80	70/80
50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
65/65	70/80	70/80	70/80	70/80	70/80	70/80	70/80	70/80

frame II, type HW220S	frame II, type HW220H	frame III, type HW316H	frame III, type HW320H	frame III, type HW325S	frame III, type HW325H	frame III, type HW332S	frame III, type HW332H	frame IV, type HW440SB
max rated current 2000A 1000-1250-1600A	max rated current 2000A 1000-1250-1600A	max rated current 1600A 800-1000-1250A	max rated current 2000A 1000-1250-1600A	max rated current 2500A 1250-1600-2000A	max rated current 2500A 1250-1600-2000A	max rated current 3200A 1600-2000-2500A	max rated current 3200A 1600-2000-2500A	max rated current 4000A 2000-2500-3200A
65 kA	80 kA	100 kA	100 kA	85 kA	100 kA	85 kA	100 kA	100 kA
65 kA	80 kA	100 kA	100 kA	85 kA	100 kA	85 kA	100 kA	100 kA
25/40	25/40	25/40	25/40	25/40	25/40	25/40	25/40	25/40
35/50	35/50	35/50	35/50	35/50	35/50	35/50	35/50	35/50
65/65	80/80	85/100	85/100	85/85	85/100	85/85	85/100	85/100
35/50	35/50	35/50	35/50	35/50	35/50	35/50	35/50	35/50
65/65	80/80	85/100	85/100	85/85	85/100	85/85	85/100	85/100
35/50	35/50	35/50	35/50	35/85	35/50	35/85	35/50	35/50
65/65	80/80	85/100	85/100	85/85	85/100	85/85	85/100	85/100
65/65	80/80	85/100	85/100	85/85	85/100	85/85	85/100	85/100
65/65	80/80	85/100	85/100	85/85	85/100	85/85	85/100	85/100
65/65	80/80	100/100	100/100	85/85	100/100	85/85	100/100	100/100
65/65	80/80	85/100	85/100	85/85	85/100	85/85	85/100	85/100
65/65	80/80	100/100	100/100	85/85	100/100	85/85	100/100	100/100
65/65	80/80	85/100	85/100	85/85	85/100	85/85	85/100	85/100
65/65	80/80	85/100	85/100	85/85	85/100	85/85	85/100	85/100
65/65	80/80	85/100	85/100	85/85	85/100	85/85	85/100	85/100
65/65	80/80	100/100	100/100	85/85	100/100	85/85	100/100	100/100
65/65	80/80	85/100	85/100	85/85	85/100	85/85	85/100	85/100
65/65	80/80	100/100	100/100	85/85	100/100	85/85	100/100	100/100
65/65	80/80	85/100	85/100	85/85	85/100	85/85	85/100	85/100
65/65	80/80	100/100	100/100	85/85	100/100	85/85	100/100	100/100
65/65	80/80	85/100	85/100	85/85	85/100	85/85	85/100	85/100
65/65	80/80	100/100	100/100	85/85	100/100	85/85	100/100	100/100
65/65	80/80	85/100	85/100	85/85	85/100	85/85	85/100	85/100

Discrimination Chart According to IEC 60947-2

ACBs / MCCBs



Commercial Distribution

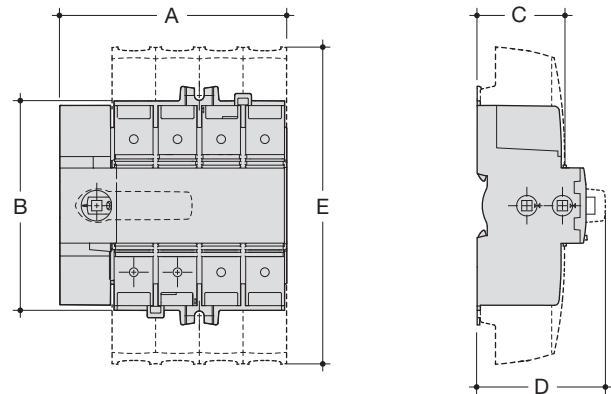
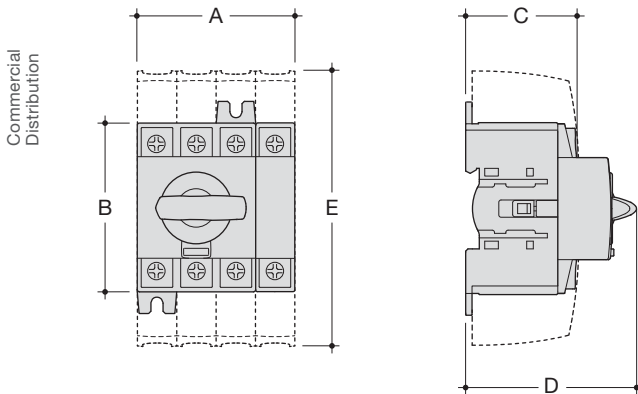
	Icc (kA)	Upstream	frame II, type HW208S				frame II, type HW212S frame II, type HW212H				frame II, type HW216S frame II, type HW216H				frame II, type HW220S frame II, type HW220H					
			max rated current 800A Icu = Ics = 65 kA @ 440V				max rated current 1250A Icu = Ics = 65 kA @ 440V Icu = Ics = 80 kA @ 440V				max rated current 1600A Icu = Ics = 65 kA @ 440V Icu = Ics = 80 kA @ 440V				max rated current 2000A Icu = Ics = 65 kA @ 440V Icu = Ics = 80 kA @ 440V					
			OCR: AGR-11Bx, AGR-21Bx, AGR-31Bx IR, tR of the MCCB / I _{sd} , t _{sd} of the ACB > I _{sd} , t _{sd} of the MCCB / I _i = 16 x I _n , NON, MCR ON																	
			(A)	400	500	630	800	630	800	1000	1250	800	1000	1250	1600	1000	1250	1600	2000	
HDA HHA HNA	x160 TM 18/25/40 kA	16	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		20	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		25	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		80	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
		125	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
HHB HNB	x250 TM 25/40 kA	100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		125	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		200	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		225	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
HHG HNG HEG	h250 TM 25/50/65 kA	20	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		125	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		200	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T			
HNN HEH	h250 TM+ 50/70 kA	20	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		32	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		50	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		63	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		125	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		160	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
HNC HEC	h250 LSI 50/70 kA	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		125	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
HND HND HKD	h400 TM 25/50/70 kA	250	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		300	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		350	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		400	-	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
HND HED	h630 LSI 50/70kA	250	-	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		400	-	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		500	-	-	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		600	-	-	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
		630	-	-	-	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
HNN HEK	h800 TM 50/70 kA	630	-	-	-	T	-	T	T	T	T	T	T	T	T	T	T	T		
		800	-	-	-	-	-	-	T	T	-	T	T	T	T	T	T	T		
HNE HEE	h1000 LSI 50/70 kA	630	-	-	-	T	-	T	T	T	T	T	T	T	T	T	T	T		
		700	-	-	-	T	-	T	T	T	T	T	T	T	T	T	T	T		
		800	-	-	-	-	-	-	T	T	-	T	T	T	T	T	T	T		
		7000	-	-	-	-	-	-	-	T	-	-	T	T	-	T	T	T		
HNF HEF	h1600 LSI 50/70 kA	800	-	-	-	-	-	-	T	T	-	T	T	T	T	T	T	T		
		1250	-	-	-	-	-	-	-	-	-	-	T	-	-	T	T			
		1600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T		

Breaking capacity according to IEC 947-2. Network : 3 phasis + neutral 220/380 ~ 240/415 V AC
 notes : "T" = total discrimination (up to the breaking capacity of the downstream device)
 "-" = no discrimination

HAB, HAC, HAE switches

HAB402, HAB403, HAB404, HAB406, HAC408

HAE410, HAE412, HAE416



Dimensions (in mm)

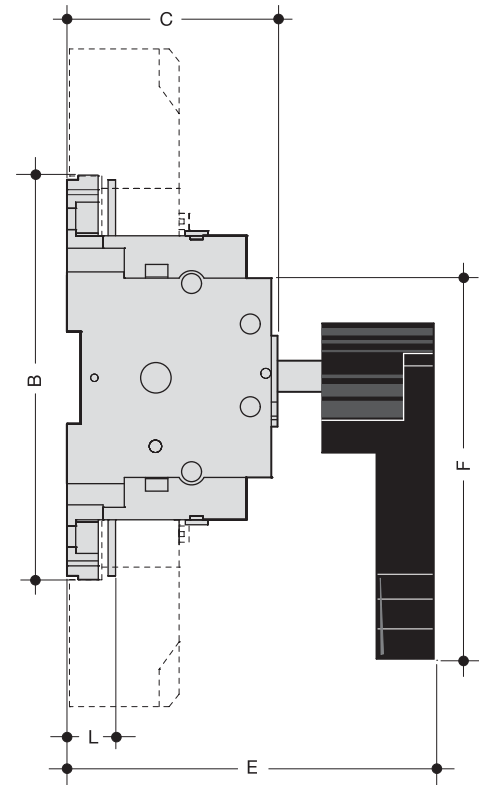
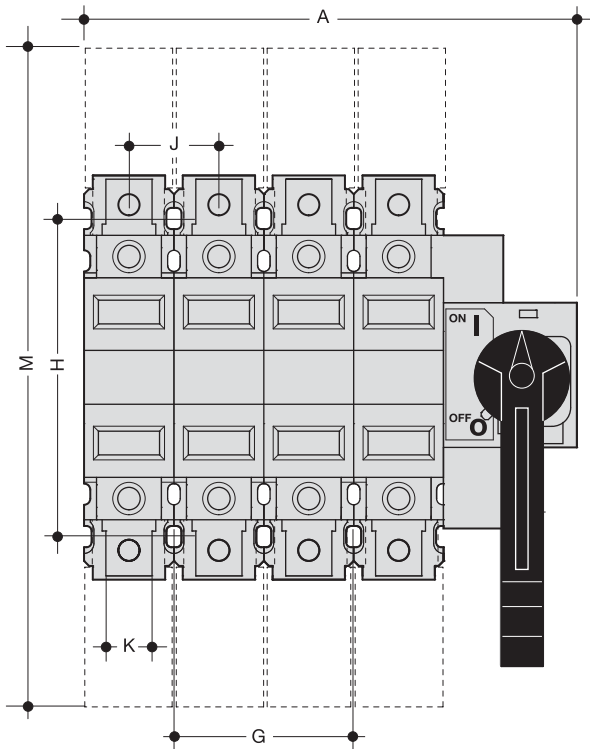
	with visual breaking				with visible breaking
	HAB302, HAB303, HAB304, HAB306	HAB402, HAB403, HAB404, HAB406	HAC306, HAC308, HAC310	HAC406, HAC408, HAC410	HAE410, HAE412, HAE416
A	45	60	54	71.5	135
B	68	68	76	76	124.5
C	48,5	48.5	48,5	48.5	50.5
D	75	75	75	75	76
E	110	110	110	110	189

Technical characteristics

	HAB302 HAB402	HAB303 HAB403	HAB304 HAB404	HAB306 HAB406	HAC306 HAC406	HAC308 HAC408	HAC310 HAC410	HAD310 HAD410	HAD312 HAD412	HAE310 HAE410	HAE312 HAE412	HAE316 HAE416
In	20 A	32 A	40 A	63 A	63 A	80 A	100 A	100 A	125A	100 A	125 A	160 A
rated insulation voltage Ui (V)	800	800	800	800	800	800	800	800	800	800	800	800
rated impulse withstand voltage Uimp (kV)	8	8	8	8	8	8	8	8	8	8	8	8
AC 22 at 400 V (A)	20	32	40	63	63	80	100	100	125	100	125	160
AC 23 at 400 V (A)	20	32	40	63	63	80	100	100	100	100	125	125
motor power AC 23A à 400 VM (kW)	9	15	18.5	30	30	37	45	45	55	45	55	75
rated short-circuit breaking capacity (kA) in association with gG DIN fuse	50	50	50	50	50	50	50	50	50	100	65	50
current rated range (A)	20	32	40	63	63	80	100	100	125	100	125	160
short-circuit making capacity Icc (A peak)	6 000	6 000	6 000	9 000	9 000	9 000	9 000	12 000	12 000	12 000	12 000	12 000
rated short-time withstand current (kA eff) for 1s Icw	2.5	2.5	2.5	2.5	3	3	3	5	5	7	7	7
mechanical endurance (nr of operations)	100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000	50 000	50 000	50 000
connection (mm ²)	16	16	16	16	35	35	35	70	70	70	70	70

HA switches

HA964N - HA966N



Commercial
Distribution

Technical characteristics

	HA964N	HA966N
electrical characteristics		
rated current	250 A	400 A
rated insulation voltage U_i (V)	800	800
rated impulse withstand voltage U_{imp} (kV)	8	8
AC 22A at 400 V (A)	250	400
AC 23A at 400 V (A)	250	400
rated short-circuit breaking capacity (A)		
dynamic effect (peak)	11 900	15 300
thermal effect (eff. 1 s)	7 000	9 000
rated short-circuit current (kA)	80	50
with gI - gG fuses	250 A	400 A
mechanical endurance (nr of operations)	10 000	10 000
electrical connection		
cage terminal (mm ²)	185	-
bolt terminal (Ø mm)	M 8	M 8
lugs (mm ²)	150	240

Dimensions (in mm)

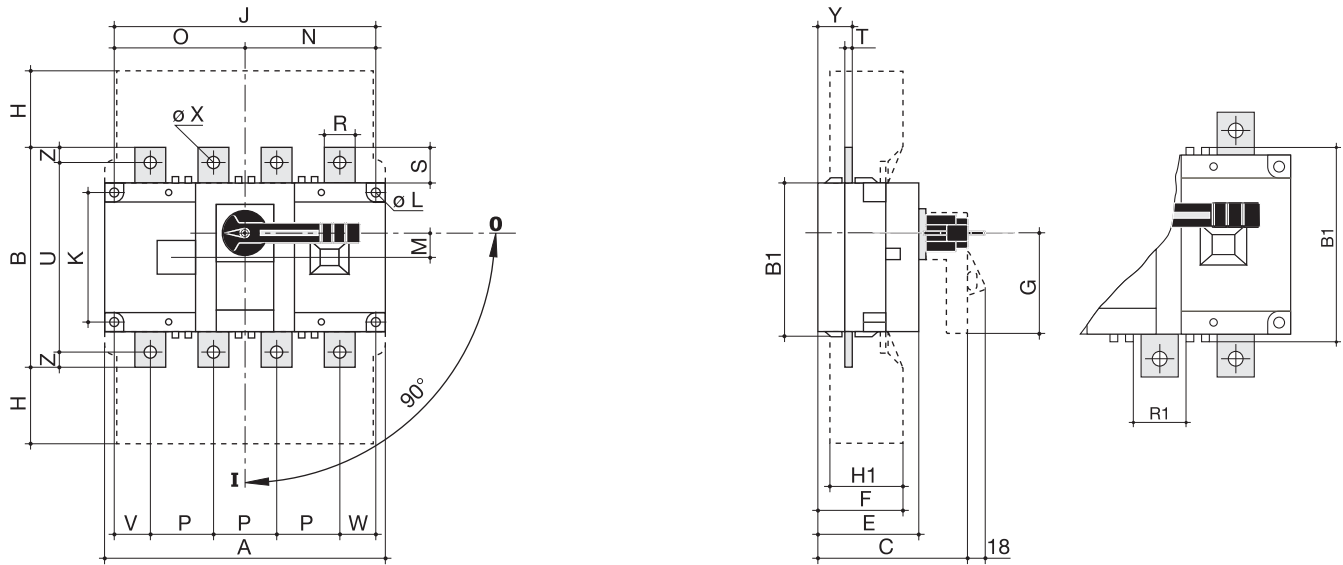
	HA964N	HA966N
A	201	344
B	162	214
C	85	80
E	140	135
F	145	145
G	72	132
H	130	172
J	36	66
K	18	45
L	20	20
M	268	360

Load break Switches with Rotary Handle

125 to 1600A

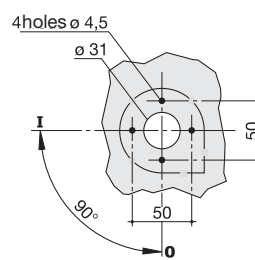
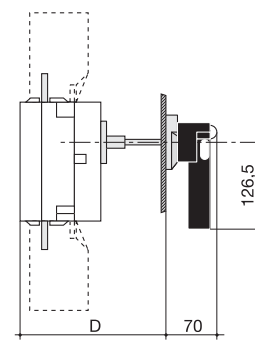
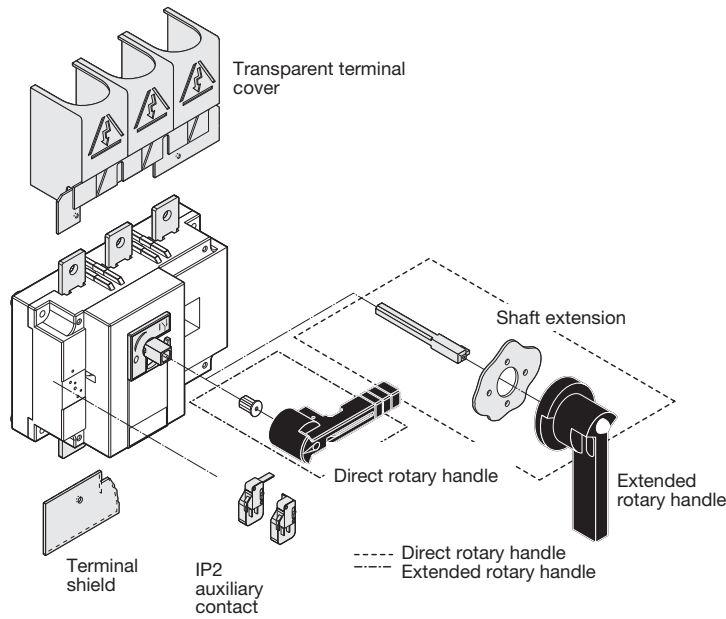
HA351, HA451, HA352, HA452, HA454, HA454, HA357, HA457, HA358, HA458 switches

Commercial Distribution



Mounting

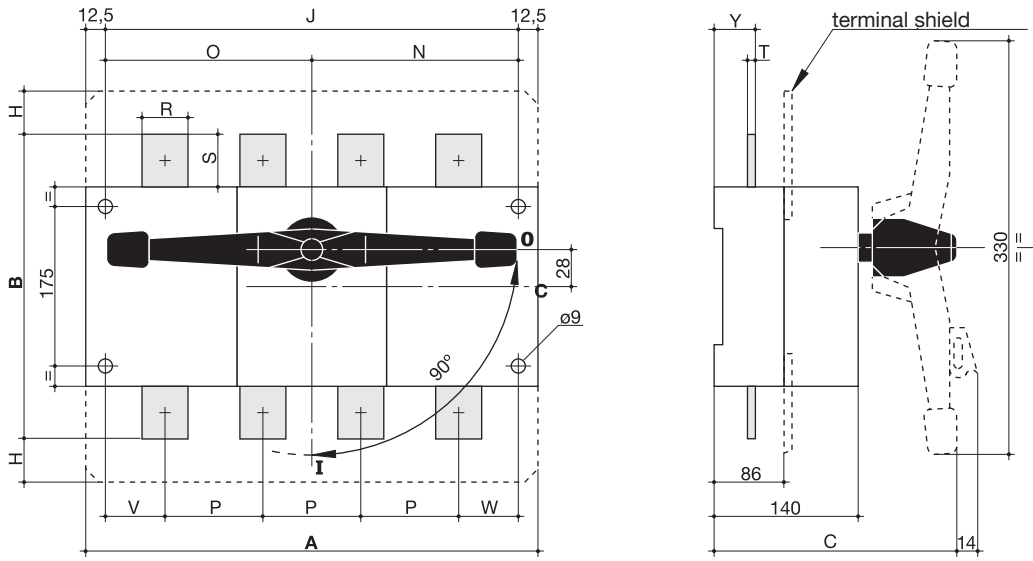
Extended rotary handle



Dimensions for switches from 125A to 630A (rotary handle)

Ref.	In(A)	A	B	B1	C	D	E	F	G	H	H1	J	K	ØL	M	N	O	P	R	Rr1	S	T	U	V	W	X	Y	Z
HA351	125A	140	135	93	120	124/354	65	50	80	50	40	120	65	5,5	15	75	75	36	20	20,5	25	3,5	115	22	20	9	20,5	10
HA451	125A	170	135	93	120	124/354	65	50	80	50	40	150	65	5,5	15	75	75	36	20	20,5	25	3,5	115	22	20	9	20,5	10
HA352	160A	140	135	93	120	124/354	65	50	80	50	40	120	65	5,5	15	75	75	36	20	20,5	25	3,5	115	22	20	9	20,5	10
HA452	160A	170	135	93	120	124/354	65	50	80	50	40	150	65	5,5	15	75	75	36	20	20,5	25	3,5	115	22	20	9	20,5	10
HA354	250A	190	160	108	130	135/365	75	60	115	60	50	160	80	5,5	20	105	105	50	25	25,5	30	3,5	130	33	27	11	22,5	15
HA454	250A	230	160	108	130	135/365	75	60	115	60	50	210	80	5,5	20	105	105	50	25	25,5	30	3,5	130	33	27	11	22,5	15
HA357	400A	190	170	108	130	135/365	75	60	115	60	50	160	80	5,5	20	105	105	50	25	25,5	30	3,5	130	33	27	11	22,5	15
HA457	400A	230	170	108	130	135/365	75	60	115	60	50	210	80	5,5	20	105	105	50	25	25,5	30	3,5	130	33	27	11	22,5	15
HA358	630A	230	260	170	165	167/397	110	89	115	70	75	210	140	7	30	135	135	65	45	45,5	50	5	220	37,5	37,5	13	36	20
HA458	630A	290	260	170	165	167/397	110	89	115	70	75	270	140	7	30	135	135	65	45	45,5	50	5	220	37,5	37,5	13	36	20

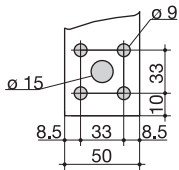
HA360, HA362, HA364, HA460, HA462, HA464 switches with rotary handle



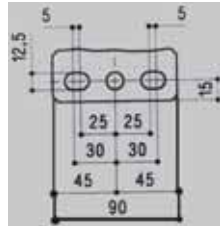
Commercial
Distribution

Connection terminals

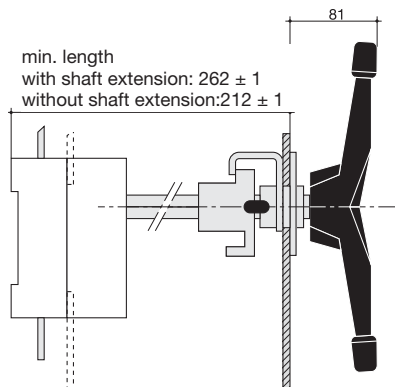
800A



1250-1600A



Rotary handle



Switches with rotary handle from 800A to 1600A

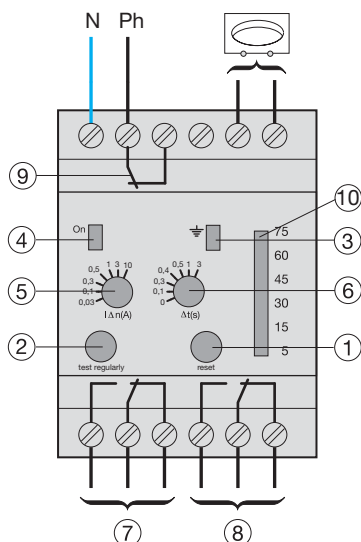
Ref.	In(A)	A	B	C	H	J	N	O	P	R	S	T	V	W	Y
HA360	800	280	320	214	50	255	127,5	127,5	80	50	60,5	7	47,5	47,5	46,5
HA460	800	360	320	214	50	335	167,5	167,5	80	50	60,5	7	47,5	47,5	46,5
HA362	1250	372	288	215	66,5	347	173,5	173,5	120	90	44	8	53,5	53,5	47,5
HA462	1250	492	288	215	66,5	467	233,5	233,5	120	90	44	8	53,5	53,5	47,5
HA364	1600	372	288	215	66,5	347	173,5	173,5	120	90	44	8	53,5	53,5	47,5
HA464	1600	492	288	215	66,5	467	233,5	233,5	120	90	44	8	53,5	53,5	47,5

Technical characteristics

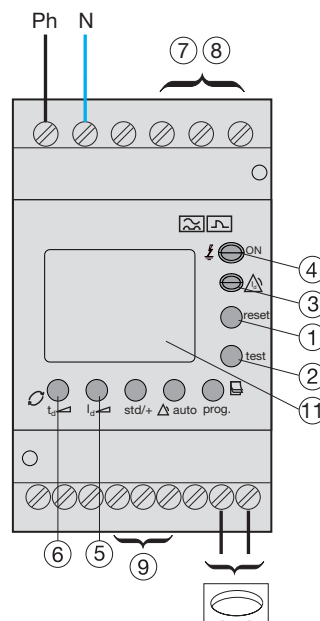
	HR500	HR502	HR510	HR520	HR525	HR534	
supply voltage M 50/60 Hz	230 V ± 20%						
supervised power voltage M 50/60 Hz	50 to 700 V						
standard output 1 OF (tripping at 85 % of IΔn ± 15 %)	yes	yes	yes	yes	yes	yes	
positive safety output	yes	yes	yes	yes	yes	yes	
pre-alarm fault output	no	no	yes	yes	yes	yes	
external test and reset button	no	no	no	no	yes	yes	
sensitivity IΔn	30 mA	300 mA	30 - 100 - 300 - 500 mA - 1 - 3 - 10 A	30 - 100 - 300 - 500 mA - 1 - 3 - 10 A	30 - 100 - 300 - 500 mA - 1 - 3 - 10 - 30 A	30 - 100 - 300 - 500 mA - 1 - 3 - 10 - 30 A	
temporization (± 20%)	instantaneous		inst., 0,1-0,3-0,4-0,5-1-3s	inst., 0,1-0,3-0,4-0,5-1-3-5s	inst., \overline{S} -0,02 - 0,1 - 0,3 - 0,4 - 0,5 - 1 - 3 - 5 - 10 s		
A type	yes	yes	yes	yes	yes	yes	
high immunity HI	yes	yes	yes	yes	no	no	
consummation	3 VA	3 VA	5 VA	5 VA	6 VA	6 VA	
control output	free potential changeover switch						
breaking capacity (standard output, positive safety, pre-alarm 50%)	5 A / 250 V AC1		6 A / 250 V AC1				
torroid allowed overload	30 kA / 100 ms						
voltage for reset and test push buttons	100 to 250 V						
maxi length of test/reset connection	200 m						
maxi length of torroid/relay connection	50 m maxi with twisted cable 1,5 - 25 m non-twisted cable						
relay connection : collar terminal	rigid	1,5 mm ² to 4 mm ²				0,5 mm ² to 2 mm ²	
	flexible	1 mm ² to 2,5 mm ²				0,5 mm ² to 2 mm ²	
torroid connection	rigid	1,5 mm ² to 4 mm ²				0,5 mm ² to 2 mm ²	
	flexible	1 mm ² to 6 mm ²				0,5 mm ² to 2 mm ²	
operating temperature	- 10 to +55 °C						
storage temperature	- 25 to +70 °C						

Commercial Distribution

HR510, HR520



HR525

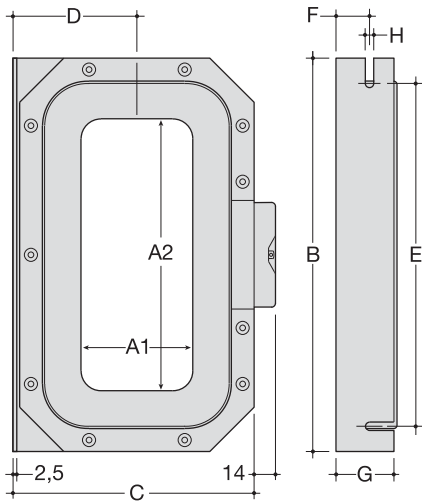


Product presentation :

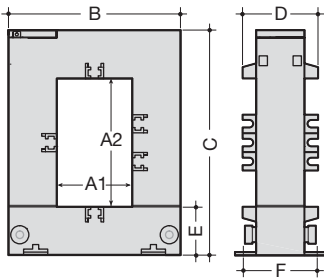
- ① reset push button
- ② test push button
- ③ fault indicator
- ④ supply indicator
- ⑤ IΔn ratings (A)
- ⑥ temporization Δt (s)
- ⑦ standard output 1 OF
- ⑧ positive safety output
- ⑨ pre-alarm output
- ⑩ barregraph : indicates continuously the value of the leakage current, 5 to 15 %, 15 to 30 %, 30 to 45 %, 45 to 60 % and 60 to 75 % of IΔn.
- ⑪ LCD display

Technical characteristics

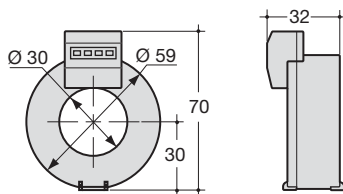
Rectangular torroids :
HR830, HR831, HR832



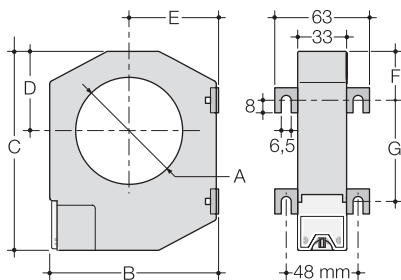
Open rectangular torroids:
HR820 to HR824



Circular torroids :
HR700



HR741 to HR745



Dimensions for rectangular and circular torroids (in mm)

ref.	A	A1	A2	B	C	D	E	F	G	H
HR830	-	70	175	260	162	85	225	22	40	7,5
HR831	-	115	305	400	225	116	360	25	48	8,5
HR832	-	150	350	460	270	140	415	28	48	8,5

Commercial
Distribution

Dimensions for open rectangular torroids (in mm)

ref.	A1	A2	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

Dimensions for circular torroids (in mm)

ref.	A	B	C	D	E	F	G
HR741	Ø 35	79	100	35	43	26	48,5
HR742	Ø 70	110	130	52	57	32	66
HR743	Ø 105	146	170	72	73	38	94
HR744	Ø 140	196	220	97	98	48,5	123
HR745	Ø 210	284	299	141	142	69	161

Torroid capacity

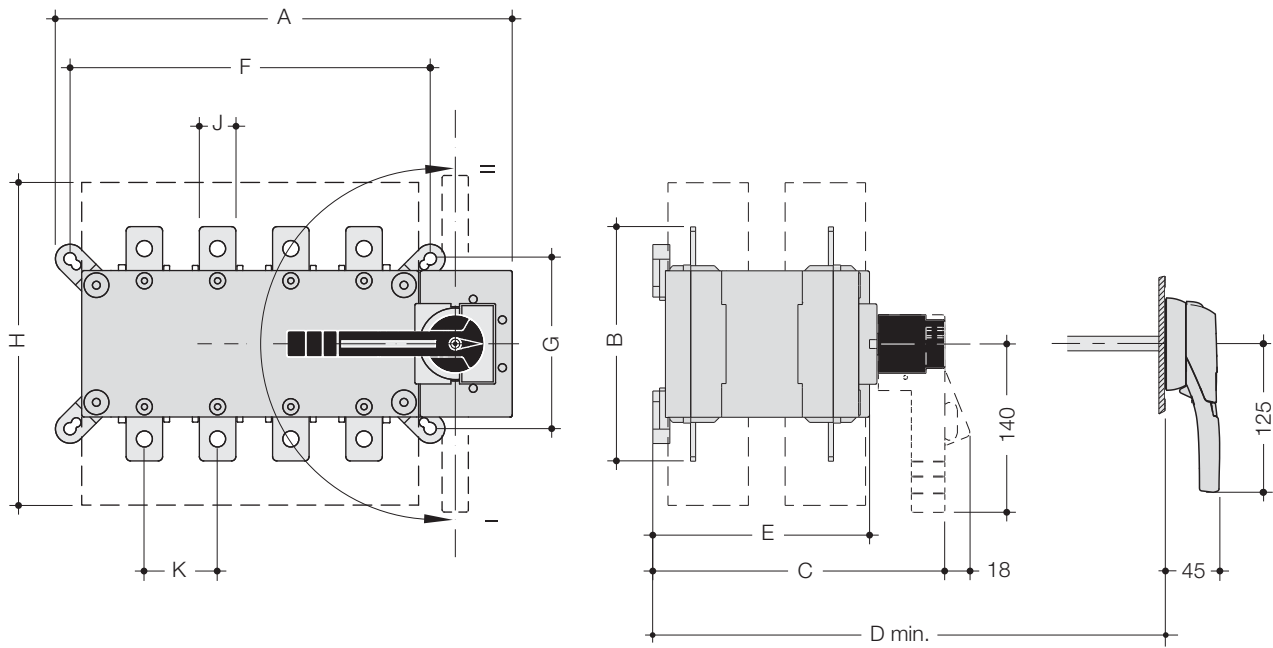
Commercial Distribution

Torroid inner diameter		U 1000 R2V copper (1 conductor)	U 1000 R2V copper (1 conductor)	U 1000 R2V copper (2 conductors)	U 1000 R2V copper (4 conductors)	U 1000 R2V copper (4 conductors) stripped	U 1000 R2V copper (2 conductors) stripped
30	HR700	4 x 16 mm ²	2 x 50 mm ²	35 mm ²	35 mm ²	35 mm ²	50 mm ²
35	HR701	4 x 25 mm ²	2 x 70 mm ²	35 mm ²	50 mm ²	35 mm ²	70 mm ²
70	HR702	4 x 185 mm ²	2 x 400 or 4 x 150mm ²	35 mm ²	240 mm ²	35 mm ²	300 mm ²
105	HR703	4 x 500 mm ²	2 x 630 or 4 x 185mm ²	35 mm ²	300 mm ²	35 mm ²	300 mm ²
140	HR704	4 x 630 mm ²	2 x 630 or 4 x 240mm ²	35 mm ²	300 mm ²	35 mm ²	300 mm ²
210	HR705	4 x 630 mm ²	2 x 630 or 4 x 240mm ²	35 mm ²	300 mm ²	35 mm ²	300 mm ²
70 x 175	HR830	4 x 630 mm ²	2 x 630 or 4 x 240mm ²	35 mm ²	300 mm ²	35 mm ²	300 mm ²
115 x 305	HR831	4 x 630 mm ²	2 x 630 or 4 x 240mm ²	35 mm ²	300 mm ²	35 mm ²	300 mm ²
150 x 350	HR832	4 x 630 mm ²	2 x 630 or 4 x 240mm ²	35 mm ²	300 mm ²	35 mm ²	300 mm ²
20 x 30	HR820	4 x 16 mm ²	2 x 70 mm ²	35 mm ²	10 mm ²	35 mm ²	16 mm ²
50 x 80	HR821	4 x 240 mm ²	2 x 630 or 4 x 185mm ²	35 mm ²	120 mm ²	35 mm ²	150 mm ²
80 x 80	HR822	4 x 500 mm ²	2 x 630 or 4 x 185mm ²	35 mm ²	300 mm ²	35 mm ²	300 mm ²
80 x 120	HR823	4 x 630 mm ²	2 x 630 or 4 x 240mm ²	35 mm ²	300 mm ²	35 mm ²	300 mm ²
80 x 160	HR824	4 x 630 mm ²	2 x 630 or 4 x 240mm ²	35 mm ²	300 mm ²	35 mm ²	300 mm ²

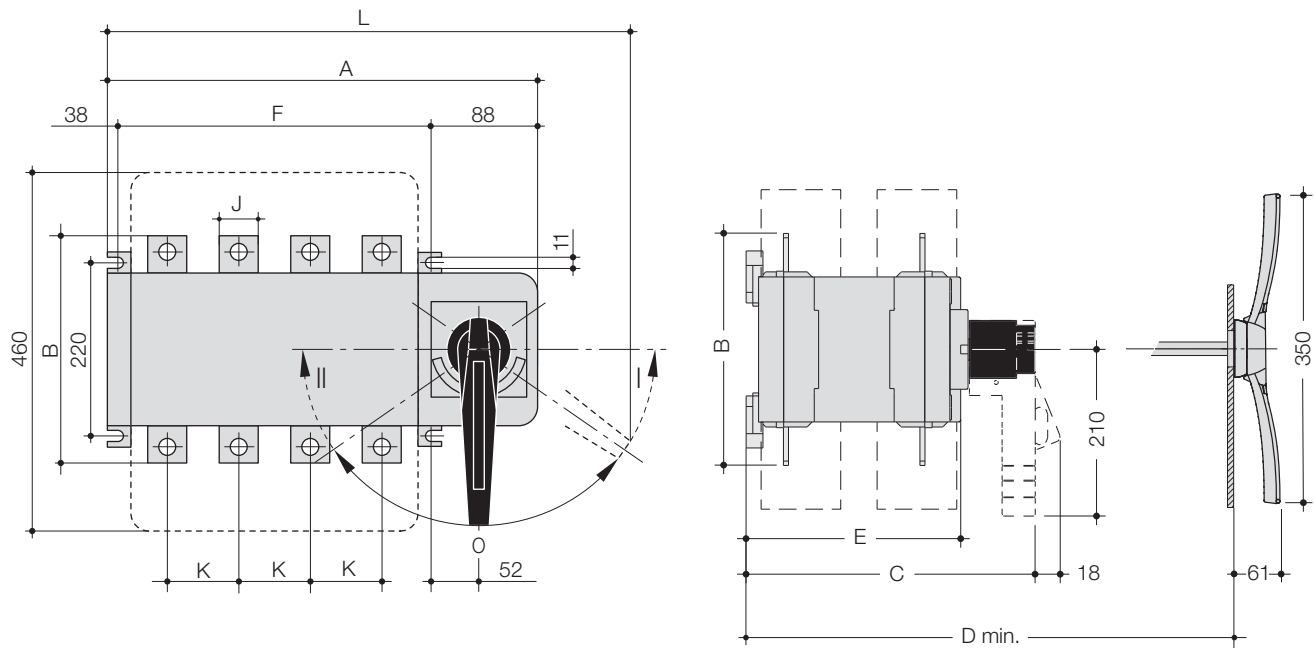
Torroid inner diameter		H07 V - U copper (1 conductor)	H07 V - U copper (1 conductor)
30	HR700	4 x 35 mm ²	2 x 70 mm ²
35	HR701	4 x 50 mm ²	2 x 95 mm ²
70	HR702	4 x 240 mm ²	2 x 400 or 4 x 185 mm ²
105	HR703	4 x 400 mm ²	2 x 400 or 4 x 240 mm ²
140	HR704	4 x 400 mm ²	2 x 400 or 4 x 240 mm ²
210	HR705	4 x 400 mm ²	2 x 400 or 4 x 240 mm ²
70 x 175	HR830	4 x 400 mm ²	2 x 400 or 4 x 240 v
115 x 305	HR831	4 x 400 mm ²	2 x 400 or 4 x 240 mm ²
150 x 350	HR832	4 x 400 mm ²	2 x 400 or 4 x 240 mm ²
20 x 30	HR820	4 x 10 mm ²	2 x 35 mm ²
50 x 80	HR821	4 x 185 mm ²	2 x 240 mm ²
80 x 80	HR822	4 x 400 mm ²	2 x 400 or 4 x 240 v
80 x 120	HR823	4 x 400 mm ²	2 x 400 or 4 x 240 mm ²
80 x 160	HR824	4 x 400 mm ²	2 x 400 or 4 x 240 mm ²

Changeover switches

HI452, HI454, HI456, HI458



HI460, HI462, HI464



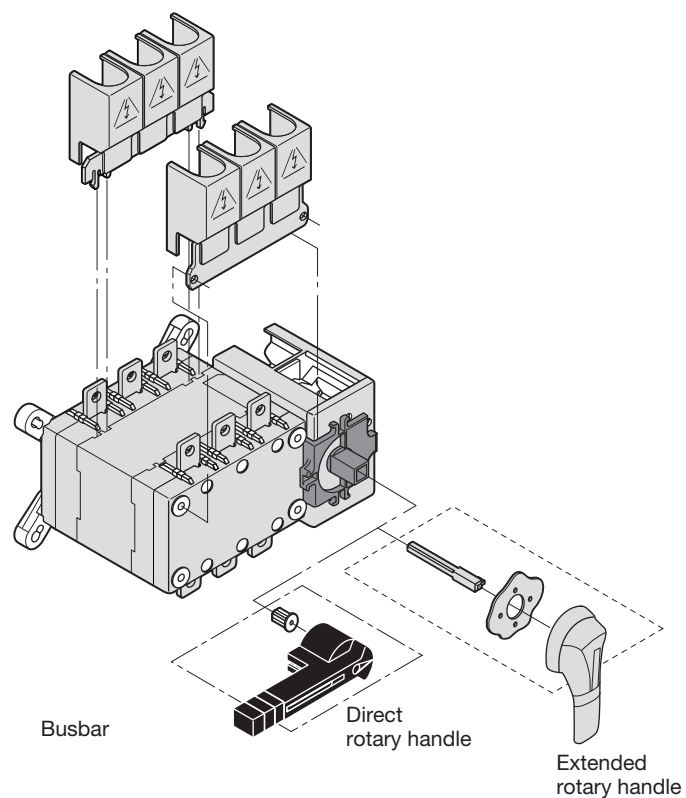
Dimensions (in mm)

	A	B	C	D mini.	E	F	G	H	J	K	L
HI452	251	135	218	208	148	186	101	235	20	36	-
HI454	312	160	218	208	148	246	116	280	25	50	-
HI456	312	170	218	208	148	246	116	280	35	50	-
HI458	379	260	295	285	225	306	176	400	45	65	-
HI460	460	320	374	390	302	335	220	460	50	80	609
HI462	592	330	374	390	302	467	220	460	60	120	741
HI464	592	360	374	390	302	467	220	460	90	120	741

Technical characteristics

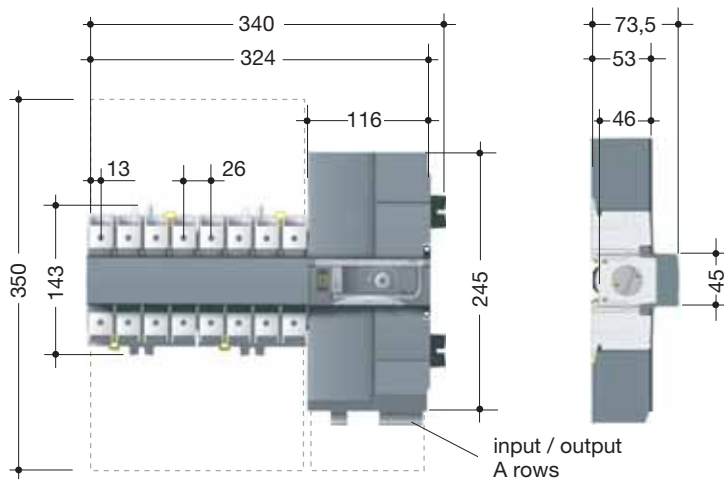
	HI452	HI454	HI456	HI458	HI460	HI462	HI464
In	160 A	250 A	400 A	630 A	800 A	1250 A	1600 A
insulation voltage U_i (V)	800	800	800	1000	1000	1000	1000
impulse withstand voltage U_{imp} (kV)	8	12	8	12	12	12	12
le AC 22, 400 V (A)	160	250	400	630	800	1250	1600
le AC 23, 400 V (A)	160	250	250	500	800	1250	1600
operational power AC 23A à 400 VM (kW)	80	132	220	280	450	710	710
short circuit current with gG DIN fuses (kA)	100	50	18	70	50	100	100
associated fuse rated (A)	160	250	400	630	800	1250	2 x 800
rated short circuit making capacity I_{cm} (A peak)	12	17	15,3	30	48	75	86
rated short time withstand current I_{cw} (kA/1s)	7	9	9	13	26	50	50
mechanical endurance (cycles)	10 000	10 000	10 000	5 000	3000	4000	4000
connection for lugs (mm ²)	95	150	240	2 x 300	2 x 300	4 x 185	6 x 185

Mounting



Changeover switches

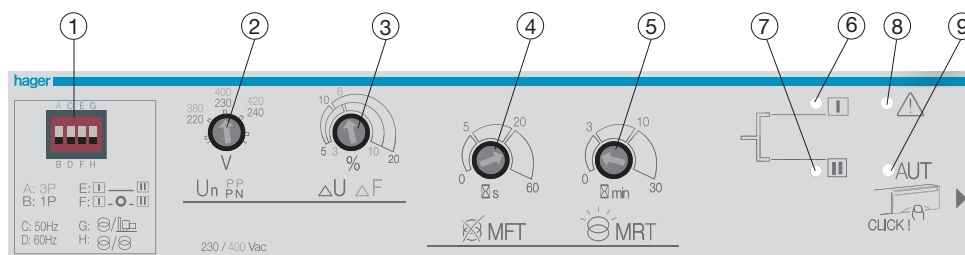
HIC406A, HIC408A, HIC410A, HIC 412A, HIC416A



Commercial
Distribution

	HIC402A	HIC404A	HIC406A	HIC408A	HIC410A	HIC412A	HIC416A
In	20 A	40 A	63 A	80 A	100 A	125 A	160 A
rated insulation voltage U_i	(V) 800	800	800	800	800	800	800
rated impulse withstand voltage U_{imp}	(kV) 6	6	6	6	6	6	6
le AC 22, 400 V	(A) 20	40	63	80	100	125	160
le AC 23, 400 V	(A) 20	43	63	80	100	125	160
operational power AC 23 A at 400 V~	(kW) 9	18,5	30	37	45	45	63
short circuit current with gG DIN fuses	(kA) 50	50	50	50	50	50	50
associated fuse rated	(A) 20	40	63	80	100	125	160
short circuit making capacity I_{cc}	(A peak) 17	17	17	17	17	17	17
rated short time withstand current I_{cw}	(kA/1s) 4	4	4	4	4	4	4
mechanical endurance	(cycles) 10 000	10 000	10 000	10 000	10 000	10 000	10 000
connection	(mm ²) 70	70	70	70	70	70	70

Settings



① small switches configurator : single or three phase network, 50 or 60 Hz frequency, 0 position stay option - 0 or 2 s.
On O position, network/network or network/genset mode (source 1 priority or not after external validation via inputs 207 and 208 of A row).

② rated insulation voltage setting U_n

③ voltage threshold / frequency setting (ΔU : 5 to 20 %, ΔF : 2 to 10 %, hysteresis $\Delta U/F$ 20%)

④ safety switch temporization (0 to 60 s)

⑤ return to O position temporization (0 to 30 min.)

⑥ source I status indicator

⑦ source II status indicator

⑧ product status indicator

⑨ automatic/manual mode indicator

Modular Devices & Connection

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.



Devices	
Metering & Monitoring	2.3
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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 - 01 8835844.



ECN140D

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 loads.

Characteristics:

- Complies with EN 50470-3.
- Class B
- Energy readout: 7 digits.
- Backlit display.
- Indication of instantaneous power consumption.
- Total / partial counter.
- Storage of energy values.
- LED flashes according to consumption.
- Display indication in case of incorrect wiring.
- Voltage 230V a.c. 50Hz.
- Direct connection.
- Current = 40A.

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	ECN140D



ECP140D



SMC120R

Single Phase kWh Meters - Direct 40A & 80A

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 loads.

Characteristics:

- Fully compliant with the European standard EN 50470-3.
- Class B
- Accuracy $\pm 1\%$.
- Energy readout: 7 digits.
- Backlit display.
- Indication of instantaneous power consumption.
- Total / partial counter.
- 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.
- Max cable size = 16mm.
- MID approved.
- Pulsed output/modbus available.
- Sealable terminal cover.

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.
Single phase kWh meter direct 40A MID SO	1 Mod	ECP140D
Single phase kWh meter direct 40A MID Modbus	1 Mod	ECR140D
Single phase kWh meter direct 80A MID SO	2 Mod	ECP180D
Single phase kWh meter direct 80A MID Modbus	2 Mod	ECR180D
120 Ohm end resistor for Modbus RTU	-	SMC120R



ECP180T

Single Phase kWh Meters - Multi Tarriff

Description	Width (1 Mod =17.5mm)	Cat ref.
Single phase kWh meter direct 3 x 80A SO	4 Mod	ECP180T
Single phase kWh meter direct 3 x 80A Modbus	4 Mod	ECR180T
120 Ohm end resistor for Modbus RTU	-	SMC120R

Three Phase kWh Meters - Direct

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 loads.

Characteristics

- Fully compliant with the European standard EN 50470-3
- Class B
- Accuracy $\pm 1\%$
- Energy readout: 7 digits
- Backlit display
- Indication of instantaneous power consumption
- MID approved
- Pulsed output/modbus available
- 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: 250mA to 125A
- Max cable size = 16mm
- Sealable terminal cover.

Note:

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



ECP380D

Description	Width (1 Mod =17.5mm)	Cat ref.
Three phase kWh meter direct 80A MID SO	4 Mod	ECP380D
Three phase kWh meter direct 80A MID Modbus	4 Mod	ECR380D
Three phase kWh meter direct 125A MID SO	6 Mod	ECP310D
Three phase kWh meter direct 125A MID Modbus	6 Mod	ECR310D
120 Ohm end resistor for Modbus RTU	-	SMC120R



ECP300C

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 loads.

Characteristics

- Fully compliant with the European standard EN 50470-3
- Class B
- Accuracy $\pm 1\%$
- Energy readout: 7 digits
- Backlit display
- Indication of instantaneous power consumption
- MID approved
- Pulsed output/modbus available
- 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 = 1mA
- Max current on CT secondary = 6A
- Sealable terminal cover

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.
Three phase kWh meter via CT, 1A or 5A, MID SO	4 Mod	ECP300C
Three phase kWh meter via CT, 1A or 5A, MID Modbus	4 Mod	ECR300C
120 Ohm end resistor for Modbus RTU	-	SMC120R

Modular Devices
& Connection



TXF121

KNX Interface for Energy Meters

Description:

- The KNX interface for TXF121 energy meters allows remote reading of data and values from single phase and three phase hager energy meters.

Description	Width (1 Mod =17.5mm)	Cat ref.
KNX Interface for Energy Meter	1 Mod	TXF121

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 2.44.



SRA00505

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



SBN140

Switch Disconnectors

- For use as a switch disconnector in all types of circuits.
- Complies with: IEC 60947-3 for all ratings and to EN60669 for ratings from 16A to 63A

Features

- All switches have a green / red indication on the toggle giving positive contact indication.

Technical data

- Utilisation category AC22A 230V / 400V
- In: 16A to 32A frame size 1. Connection capacity: 16mm² - rigid conductor, 10mm² - flexible conductor
- In: 32A to 63A frame size 2. Connection capacity: 25mm² - rigid conductor, 16mm² - flexible conductor
- In: 63A to 125A frame size 3. Connection capacity: 50mm² - rigid conductor, 35mm² - flexible conductor



Description	Frame size	Mod. width	Pack qty.	Cat ref.
Single pole switch disconnectors				
1 x 16A - 230V AC	1	1	12	SBN116
1 x 25A - 230V AC	1	1	12	SBN125
1 x 32A - 230V AC	1	1	12	SBN132
1 x 32A* - 230V AC	2	1	12	SBN133
1 x 40A - 230V AC	2	1	12	SBN140
1 x 63A - 230V AC	2	1	12	SBN163
1 x 63A* - 230V AC	3	1	12	SBN164
1 x 80A - 230V AC	3	1	12	SBN180
1 x 100A - 230V AC	3	1	12	SBN190
1 x 125A - 230V AC	3	1	12	SBN199



SBN240



Description	Frame size	Mod. width	Pack qty.	Cat ref.
Double pole switch disconnectors				
2 x 16A - 230V AC	1	1	12	SBN216
2 x 25A - 230V AC	1	1	12	SBN225
2 x 32A - 230V AC	1	1	12	SBN232
2 x 32A* - 230V AC	2	2	6	SBN233
2 x 40A - 400V AC	2	2	6	SBN240
2 x 63A - 400V AC	2	2	6	SBN263
2 x 63A* - 400V AC	3	2	6	SBN264
2 x 80A - 400V AC	3	2	6	SBN280
x 2 x 100A - 400V AC	3	2	6	SBN290
2 x 125A - 400V AC	3	2	6	SBN299



SBN340



Description	Frame size	Mod. width	Pack qty.	Cat ref.
Three pole switch disconnectors				
3 x 16A - 400V AC	1	2	6	SBN316
3 x 25A - 400V AC	1	2	6	SBN325
3 x 32A - 400V AC	1	2	6	SBN332
3 x 32A* - 400V AC	2	3	4	SBN333
3 x 40A - 400V AC	2	3	4	SBN340
3 x 63A - 400V AC	2	3	4	SBN363
3 x 63A* - 400V AC	3	3	4	SBN364
3 x 80A - 400V AC	3	3	4	SBN380
3 x 100A - 400V AC	3	3	4	SBN390
3 x 125A - 400V AC	3	3	4	SBN399



SBN440



Description	Frame size	Mod. width	Pack qty.	Cat ref.
Four pole switch disconnectors				
4 x 16A - 400V AC	1	2	6	SBN416
4 x 25A - 400V AC	1	2	6	SBN425
4 x 32A - 400V AC	1	2	6	SBN432
4 x 32A* - 400V AC	2	4	3	SBN433
4 x 40A - 400V AC	2	4	3	SBN440
4 x 63A - 400V AC	2	4	3	SBN463
4 x 63A* - 400V AC	3	4	3	SBN464
4 x 80A - 400V AC	3	4	3	SBN480
4 x 100A - 400V AC	3	4	3	SBN490
4 x 125A - 400V AC	3	4	3	SBN499

Switch Disconnectors

- For use as a switch disconnector in all types of circuits.
- Complies with: IEC 60947-3 for all ratings and to EN60669 for ratings from 16A to 63A.

Features

- All switches have a green / red indication on the toggle giving positive contact indication.

Technical data

- Utilisation category AC22A 230V / 400V
- In: 16A to 32A frame size 1.
- Connection capacity: 16mm² - rigid conductor, 10mm² - flexible conductor
- In: 32A to 63A frame size 2.
- In: 80A to 125A frame size 3.
- Connection capacity: 50mm² - rigid conductor, 35mm² - flexible conductor



SBR163

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Single pole switch disconnectors				
1 x 40A - 230V AC	2	1	12	SBR140
1 x 63A - 230V AC	2	1	12	SBR163
1 x 80A - 230V AC	3	1	12	SBR180
1 x 100A - 230V AC	3	1	12	SBR190
1 x 125A - 230V AC	3	1	12	SBR199



Description	Frame size	Mod. width	Pack qty.	Cat ref.
Double pole switch disconnectors				
2 x 40A - 400V AC	2	2	6	SBR240
2 x 63A - 400V AC	3	2	6	SBR263
2 x 80A - 400V AC	3	2	6	SBR280
2 x 100A - 400V AC	3	2	6	SBR290
2 x 125A - 400V AC	3	2	6	SBR299



SBR263

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Three pole switch disconnectors				
3 x 40A - 400V AC	2	3	4	SBR340
3 x 63A - 400V AC	2	3	4	SBR363
3 x 80A - 400V AC	3	3	4	SBR380
3 x 100A - 400V AC	3	3	4	SBR390
3 x 125A - 400V AC	3	3	4	SBR399



SBR399

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Four pole switch disconnectors				
4 x 63A - 400V AC	2	4	3	SBR463
4 x 100A - 400V AC	3	4	3	SBR490
4 x 125A - 400V AC	3	4	3	SBR499



SBR499



SBT116

Switch Disconnectors with Indicator Light

- For use as a switch disconnector in all types of circuits.
- Complies with:
- IEC 60947-3 and EN60669

Features

- Orange LED indicator light.
- LED life time: 100 000 h.
- All switches have a green / red indication on the toggle giving positive contact indication

Technical data

- Utilisation category AC22A 230V / 400V
- In: 16A to 32A frame size 1.
- Connection capacity: 16mm² - rigid conductor, 10mm² - flexible conductor

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Single pole switch disconnectors with indicator light top				
1 x 16A - 230V AC	1	1	12	SBT116
1 x 25A - 230V AC	1	1	12	SBT125
1 x 32A - 230V AC	1	1	12	SBT132

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Single pole switch disconnectors with indicator light bottom				
1 x 16A - 230V AC	1	1	12	SBB116
1 x 25A - 230V AC	1	1	12	SBB125
1 x 32A - 230V AC	1	1	12	SBB132

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Double pole switch disconnectors with indicator light top				
2 x 16A - 230V AC	1	1	12	SBT216
2 x 25A - 230V AC	1	1	12	SBT225
2 x 32A - 230V AC	1	1	12	SBT232

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Double pole switch disconnectors with indicator light bottom				
2 x 16A - 230V AC	1	1	12	SBB216
2 x 25A - 230V AC	1	1	12	SBB225
2 x 32A - 230V AC	1	1	12	SBB232

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Double pole switch disconnectors with indicator light top & bottom				
2 x 16A - 230V AC	1	1	12	SBM216
2 x 25A - 230V AC	1	1	12	SBM225
2 x 32A - 230V AC	1	1	12	SBM232

Auxiliaries & Accessories

Auxiliary contact

- The auxiliary contact is common to the whole range of switch disconnectors from 16A to 125A with or without indicator light

Features

- The auxiliary contact have a mechanical indicator to show the position of the contact

Technical data

- Utilisation category AC12A 230V / 400V
- Connection capacity: 10mm² - rigid conductor, 6mm² - flexible conductor

Sealable terminal shrouds

- The sealable terminal shroud is compatible with switch disconnectors ratings from 32A to 63A frame size 2.
- For ratings from 63A to 125A frame size 3 switch disconnector, only the disible part is compatible to protect the front screw heads.

Phase barrier shield

- The phase barrier shield is compatible with switch disconnectors ratings ratings from 32A to 125A frame size 2&3.

Padlocking kit

- Allows to lock the device in the OFF and ON positions.
- Will accept two padlocks with hasps of 4.75mm diameter max. (supplied without padlock).



ESC080

Description	Mod. width	Pack qty.	Cat ref.
Auxiliary contact 1NO + 1NC			
Compatible with disconnector switches from 16 to 125A	0.5	1	ESC080

Description	Pack qty.	Cat ref.
Terminal shroud Compatible with switch disconnector from 32A to 63A frame size 2		
To shroud the connection terminal and screws. The screw cover can be sealed.	4	MZN120



MZN120

Description	Pack qty.	Cat ref.
Phase barrier shield		
Phase barrier shield	3	MZN121



MZN121

Description	Pack qty.	Cat ref.
Padlocking kit		
Padlocking kit	2	MZN175



MZN175



SFT232

Switch Disconnectors

- For use as a switch disconnector in all types of circuits.
- Complies with: IEC 60947-3 for all ratings and to EN60669 for ratings from 16A to 63A

Technical data

- Utilisation category AC22A 230V / 400V
- In: 16A to 40A frame size 1.
- Connection capacity: 16mm² - rigid conductor, 10mm² - flexible conductor

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Centre OFF changeover switch I-0-II and common point on top				
1 x 25A - 230V AC	1	1	12	SFT125
1 x 32A - 230V AC	1	1	12	SFT132
1 x 40A - 230V AC	1	1	12	SFT140
2 x 25A - 230V AC	1	2	6	SFT225
2 x 32A - 230V AC	1	2	6	SFT232
2 x 40A - 230V AC	1	2	6	SFT240
3 x 40A - 400V AC	1	3	4	SFT340
4 x 40A - 230V AC	1	4	3	SFT440



SFB125

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Centre OFF changeover switch I-0-II and common point on bottom				
1 x 16A - 230V AC	1	1	12	SFB116
1 x 25A - 230V AC	1	1	12	SFB125
1 x 32A - 230V AC	1	1	12	SFB132
2 x 16A - 230V AC	1	2	6	SFB216
2 x 25A - 230V AC	1	2	6	SFB225
2 x 32A - 230V AC	1	2	6	SFB232



SFH125

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Changeover switch I-II and common point on top				
1 x 25A - 230V AC	1	1	12	SFH125
1 x 32A - 230V AC	1	1	12	SFH132
2 x 25A - 230V AC	1	2	6	SFH225
2 x 32A - 230V AC	1	2	6	SFH232

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Changeover switch I-II and common point on bottom				
1 x 16A - 230V AC	1	1	12	SFL116
1 x 25A - 230V AC	1	1	12	SFL125
1 x 32A - 230V AC	1	1	12	SFL132
2 x 16A - 230V AC	1	2	6	SFL216
2 x 25A - 230V AC	1	2	6	SFL225
2 x 32A - 230V AC	1	1	6	SFL232

Description	Frame size	Mod. width	Pack qty.	Cat ref.
Changeover switch I-II				
1 x 25A - 230V AC	1	1	12	SFM125
1 x 32A - 230V AC	1	1	12	SFM132

Description	Cat ref.
Centre-off changeover double pole	
2 pole changeover switch 63A I-0-II	SF263

Light Sensitive Switch

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 2.47.



EEN100

Description	Width (1 Mod =17.5mm)	Cat ref.
Light Sensitive Switch- delivered with: a separate surface photo electric cell EEN003	1 Mod	EE100
Light Sensitive Switch - delivered with: a separate flush photo electric cell EEN002	1 Mod	EE101
Two Channels Light Sensitive Switch		EE200
Two Channels Light Sensitive Switch EE200 delivered with surface cell EE003		EE201
Two Channels Light Sensitive Switch for Cascading		EE202
Two Chnls. Light Sens. Sw. for Cascading EE202 delivered with surface cell EEN003		EE203
Compact light switch IP 55 / integrated cell, basic 8A (without settings)		EE701
Compact light switch IP 55 / integrated cell, enhanced 16A (with settings)		EE702

Light Sensitive Programmer

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 2.47.



EE171

Description	Width	Cat ref.
Light Sensitive Programmer with Surface Cell	3 Mod	EE110
Light Sensitive Programmer	3 Mod	EE171

Astronomical Time Switch

Characteristics

- Astronomical time switches must be used in conjunction with a suitable rated contactor. Weekly cycle. Delivered with key EGO05. Protected cable clamps capacity: rigid : 1.5 to 10mm², flexible : 1 to 6mm²

Description	Cat ref.
1 Channel 230V~50 Hz, Changeover Contact 16A AC1, Operating Reserve Lithium Battery 5 years	EE180
2 Channels 230V~50 Hz, 2 Changeover Contacts 16A AC, Operating Reserve Lithium Battery 5 years	EE181



EE180

Replacement Photo Electric Cell

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



EVN011



EVN004



EV100



EV108



LZ060

Universal Dimmers

	EVN011	EVN012	EVN002	EVN004	EV100	EV102	EV106	EV108
Supply voltage	230 V +/- 10 %							
Frequency	50/60 Hz				50 Hz			
Load consumption	0,2 W				3 W			
Load control type	direct						through dimmer	
Remote power	300 W		500 W		20 to 1000 W		contact 10A - 230V	
Compatible load types :	300 W - Incandescent 230 V - Halogen 230 V - VLV halogen with transformer - Dimmable fluocompact - Fluocompact & LED not dimmable - Dimmable LED 230 V		500 W 300 W 300 VA 60 W 60 W		1000 W 500 W 500 VA 100 W -		-	
1/10 V control	-				1 input	1 input/ output	1 output	
1/10 V control status	-				slave	slav./mast.	master	
I max. authorized for PB light	5 mA	-	5 mA		-			
max. PB-dimmers distance or 1-10 V control	50 m							
dim PB and ON/OFF on module	no		yes					
Number of preset lighting levels	-			1	-	2	-	3
Preset lighting levels control entry	-			1	-	2	-	2
Min. and max. dim lighting setting	-				yes			
On/Off status indication output	-					1 contact O	-	
Values digital display	-					yes		
Max. power dissipation	2,1 W	4,5 W		15 W		6 W		
IP	IP 20							
Operating temperature	- 10°C to + 45°C							
Storage temperature	- 25°C to + 70°C				- 20°C to + 60°C			
Rigid connection	1,5 to 6 mm ²				1,5 to 10 mm ²			
Flexible connection	1 to 6 mm ²				1 to 6 mm ²			

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)	Pack qty.	Cat ref.
300W Standard Version	1 Mod	1	EVN011
300W Comfort Version	1 Mod	1	EVN012
500W Standard Version	2 Mod	1	EVN002
500W Comfort Version	2 Mod	1	EVN004
1000W Standard Version	5 Mod	1	EV100
1000W Advanced Version	5 Mod	1	EV102
1/10V Pilot Dimmer Standard Version	4 Mod	1	EV106
1/10V Pilot Dimmer Advanced Version	4 Mod	1	EV108
Heat Dissipation Insert	0.5 Mod	12	LZ060

Description	230V		110/127V
	Standard Contactors	Hum-free Contactors	Standard Contactors
1 Normally Open	ESC125 (25A-250V)		
1 Normally Closed	ESC126 (25A-250V)		
2 Normally Open	ESC225 (25A-250V) ESC240 (40A-440V) ESC263 (63A-440V)	ESC225S (25A-250V) ESC240S (40A-440V) ESC263S (63A-440V)	ESM225 (25A-250V)
2 Normally Closed	ESC226 (25A-250V) ESC241 (40A-440V) ESC264 (63A-440V)		
1 NO & 1 NC	ESC227 (25A-250V)		ESM227 (25A-250V)
3 Normally Open	ESC325 (25A-440V) ESC340 (40A-440V) ESC363 (63A-440V)	ESC325S (25A-440V) ESC340S (40A-440V) ESC363S (63A-440V)	
4 Normally Open	ESC425 (25A-440V) ESC440 (40A-440V) ESC463 (63A-440V)	ESC425S (25A-440V) ESC440S (40A-440V) ESC463S (63A-440V)	ESM440 (40A-440V)
4 Normally Closed	ESC426 (25A-440V) ESC441 (40A-440V) ESC464 (63A-250V)	ESC426S (25A-440V)	
2 NO & 2 NC	ESC427 (25A-440V) ESC442 (40A-250V) ESC465 (63A-440V)	ESC427S (25A-440V)	
3 NO & 1 NC	ESC428 (25A-440V) ESC443 (40A-440V) ESC466 (63A-440V)	ESC428S (25A-440V)	

Description	24V		12V		8/12V
	Standard Contactors	Hum-free Contactors	Standard Contactors	Hum-free Contactors	Standard Contactors
1 Normally Open	ESD125 (25A-250V)				ESL125 (25A-250V)
1 Normally Closed					
2 Normally Open	ESD225 (25A-250V) ESD240 (40A-440V) ESD263 (63A-440V)	ESD225S (25A-250V) ESD240S (40A-440V) ESD263S (63A-440V)	ESL240 (40A-440V) ESL263 (63A-440V)	ESL225S (25A-250V) ESL240S (40A-440V) ESL263S (63A-440V)	ESL225 (25A-250V)
2 Normally Closed	ESD226 (25A-250V) ESD241 (40A-440V) ESD264 (63A-440V)		ESL241 (40A-440V) ESL264 (63A-440V)		ESL226 (25A-250V)
1 NO & 1 NC	ESD227 (25A-250V)				ESL227 (25A-250V)
3 Normally Open		ESD325S (25A-440V)			
4 Normally Open	ESD425 (25A-440V) ESD440 (40A-440V) ESD463 (63A-440V)	ESD425S (25A-440V) ESD440S (40A-440V) ESD463S (63A-440V)	ESL425 (25A-440V) ESL440 (40A-440V) ESL463 (63A-440V)	ESL425S (25A-440V) ESL440S (40A-440V) ESL463S (63A-440V)	
4 Normally Closed	ESD426 (25A-250V) ESD464 (63A-250V)	ESD426S (25A-440V)	ESL426 (25A-440V)	ESL426S (25A-440V)	
2 NO & 2 NC	ESD427 (25A-440V)	ESD427S (25A-440V)	ESL427 (25A-440V)	ESL427S (25A-440V)	
3 NO & 1 NC	ESD428 (25A-440V)	ESD428S (25A-440V)	ESL428 (25A-440V)	ESL428S (25A-440V)	



ESC225



ESD263



ESC325



ESC425



ESC463

Contactors

- Contactors are essential power devices to control heating, lighting or ventilation systems.
- They are recommended in association with control and energy management devices (thermostats, delay timers, programmers...)
- Standard 1 module and 2 module versions are recommended for applications where a reduced consumption and heating dissipation are needed.
- Complies to IEC 61095.
- The contactors can be associated with the auxiliary contact ESC080 for remote signalling.
- It is recommended to use a heat dissipation insert LZ060 between each 3 products.

Description	Type	Coil AC 50 Hz	In power circuit AC7-a / AC1	Width	Pack qty.	Cat ref.	
Contactor	1NO	230 V	25A-250V	1 Mod	12	ESC125	
		24V	25A-250V	1 Mod	1	ESD125	
		8/12V	25A-250V	1 Mod	1	ESL125	
	1NC	230V	25A-250V	1 Mod	1	ESC126	
	2NO	230V	25A-250V	1 Mod	12	ESC225	
			40A-440V	3 Mod	1	ESC240	
			63A-440V	3 Mod	1	ESC263	
	2NO	24V	25A-250V	1 Mod	12	ESD225	
			40A-440V	3 Mod	1	ESD240	
			63A-440V	3 Mod	1	ESD263	
	2NO	12V	40A-440V	3 Mod	1	ESL240	
			63A-440V	3 Mod	1	ESL263	
	2NO	8/12V	25A-250V	1 Mod	1	ESL225	
	2NO	110/127V	25A-250V	1 Mod	1	ESM225	
			230V	25A-250V	1 Mod	12	ESC226
	2NC	230V	40A-440V	3 Mod	1	ESC241	
			63A-440V	3 Mod	1	ESC264	
			24V	25A-250V	1 Mod	1	ESD226
	2NC	24V	40A-440V	3 Mod	1	ESD241	
			63A-440V	3 Mod	1	ESD264	
			12V	40A-440V	3 Mod	1	ESL241
	2NC	12V	63A-440V	3 Mod	1	ESL264	
			8/12V	25A-250V	1 Mod	1	ESL226
	1NO+1NC	230V	25A-250V	1 Mod	12	ESC227	
			24V	25A-250V	1 Mod	1	ESD227
			8/12V	25A-250V	1 Mod	1	ESL227
			110/127V	25A-250V	1 Mod	1	ESM227
	3NO		25A-440V	2 Mod	6	ESC325	
			40A-440V	3 Mod	4	ESC340	
			63A-440V	3 Mod	1	ESC363	
	4NO	230 V	25A-440V	2 Mod	6	ESC425	
			40A-440V	3 Mod	4	ESC440	
			63A-440V	3 Mod	4	ESC463	
	4NO	24V	25A-440V	2 Mod	2	ESD425	
			40A-440V	3 Mod	3	ESD440	
			63A-440V	3 Mod	3	ESD463	

Description	Type	Coil AC 50 Hz	In power circuit AC7-a / AC1	Width	Pack qty.	Cat ref.
Contactor	4NO	12 V	25A-250V	2 Mod	1	ESL425
			40A-440V	3 Mod	1	ESL440
			63A-440V	3 Mod	1	ESL463
	4NO	110/127V	40A-440V	3 Mod	1	ESM440
	4NC	230V	25A-440V	2 Mod	1	ESC426
40A-440V			3 Mod	1	ESC441	
63A-250V			3 Mod	1	ESC464	
	4NC	24V	25A-250V	2 Mod	1	ESD426
			63A-250V	3 Mod	1	ESD464
	4NC	12V	25A-440V	2 Mod	1	ESL426
	2NO+2NC	230V	25A-440V	2 Mod	1	ESC427
			40A-440V	3 Mod	1	ESC442
			63A-440V	3 Mod	4	ESC465
	2NO+2NC	24V	25A-440V	2 Mod	1	ESD427
	2NO+2NC	12V	25A-440V	2 Mod	1	ESL427
	3NO+1NC	230V	25A-440V	2 Mod	6	ESC428
			40A-440V	3 Mod	4	ESC443
			63A-440V	3 Mod	1	ESC466
	3NO+1NC	24V	25A-440V	2 Mod	1	ESD428
	3NO+1NC	12V	25A-440V	2 Mod	1	ESL428



ESC225S



ESC425S



ESC463S

Hum-free Contactors

- Contactors are essential power devices to control heating, lighting or ventilation systems.
- They are recommended in association with other control and energy management devices (thermostats, delay timers, programmers...)
- The hum-free versions are recommended for housing applications where silent operating is requested.
- Complies to IEC 61095.
- The contactors can be associated with the auxiliaries contact ESC080 for remote signaling, except the ESx225S.
- It is recommended to use a heat dissipation insert LZ060 between each product.

Description	Type	Coil AC 50 Hz	In power circuit AC7-a / AC1	Width	Pack qty.	Cat ref.	
Hum-free contactor	2NO	230 V 50/60 Hz 220V DC	25A-250V	1 Mod	12	ESC225S	
			40A-440V	3 Mod	4	ESC240S	
			63A-440V	3 Mod	4	ESC263S	
	2NO	24V 50Hz 24V DC	25A-250V	1 Mod	1	ESD225S	
			40A-440V	3 Mod	1	ESD240S	
			63A-440V	3 Mod	1	ESD263S	
	2NO	12V 50Hz 12V DC	25A-250V	1 Mod	1	ESL225S	
			40A-440V	3 Mod	1	ESL240S	
			63A-440V	3 Mod	1	ESL263S	
	3NO	230V 50/60 Hz 220V DC	25A-440V	2 Mod	6	ESC325S	
			40A-440V	3 Mod	1	ESC340S	
			63A-440V	3 Mod	1	ESC363S	
	3NO	24V 50Hz 24V DC	25A-440V	2 Mod	1	ESD325S	
			40A-440V	3 Mod		ESD440S	
			63A-440V	3 Mod		ESD463S	
	4NO	230V 50/60 Hz 220V DC	25A-440V	2 Mod	6	ESC425S	
			40A-440V	3 Mod	1	ESC440S	
			63A-440V	3 Mod	1	ESC463S	
	4NO	24V 50Hz 24V DC	25A-440V	2 Mod		ESD425S	
			40A-440V	3 Mod		ESD440S	
			63A-440V	3 Mod		ESD463S	
	4NO	12V 50Hz 12V DC	25A-440V	2 Mod	1	ESL425S	
			40A-440V	3 Mod	1	ESL440S	
			63A-440V	3 Mod	1	ESL463S	
	4NC	230V 50/60 Hz 220V DC	25A-440V	2 Mod	1	ESC426S	
			24V 50 Hz 24V DC	25A-440V	2 Mod	1	ESD426S
			12V 50Hz 12V DC	25A-440V	2 Mod	1	ESL426S
	2NO+2NC	230V 50/60 Hz 220V DC	25A-440V	2 Mod	1	ESC427S	
			24V 50Hz 24V DC	25A-440V	2 Mod	1	ESD427S
			12V 50 Hz 12V DC	25A-440V	2 Mod	1	ESL427S
	3NO+1NF	230V 50/60 Hz 220V DC	25A-440V	2 Mod	1	ESC428S	
			24V 50Hz 24V DC	25A-440V	2 Mod	1	ESD428S
			12V 50 Hz 12V DC	25A-440V	2 Mod	1	ESL428S

Override Contactors

- For the remote switching and control of power circuits.
- They are equipped with a 3 position manual control button: permanent ON, automatic mode, permanent OFF.
- Can be associated with the auxiliary contact ESC080 for remote signaling.
- Complies to IEC 61095.
- Auxiliary contact
- Associated with a contactor, it allows remote signaling.
- It is recommended to use a heat dissipation insert LZ060 between each 3 products.

Description	Type	Coil AC 50 Hz	In power circuit AC7-a / AC1	Width	Pack qty.	Cat ref.
Override contactor	1NO	230V	25A-250V	1 Mod	12	ERC125
	2NO	230V	25A-250V	1 Mod	12	ERC225
			40A-440V	3 Mod	4	ESC240
			63A-440V	3 Mod	1	ERC263
	2NO	24V	25A-250V	1 Mod	1	ERD225
			40A-440V	3 Mod	1	ERD240
			63A-440V	3 Mod	1	ERD263
		8/12V	25A-250V	3 Mod	1	ERL225
			40A-440V	3 Mod	1	ERL240
			63A-440V	3 Mod	6	ERL263
2NC	230V	25A-250V	1 Mod	12	ERC226	
3NO	230V	25A-440V	2 Mod	6	ERC325	
4NO	230V	25A-440V	2 Mod	6	ERC425	
		24V	25A-440V	2 Mod	6	ERD425
		12V	25A-440V	2 Mod	1	ERL425
4NC	230V	25A-440V	2 Mod	1	ERC426	
2NO+2NC	230V	25A-440V	2 Mod	1	ERC427	
3NO+1NC	230V	25A-440V	2 Mod	1	ERC428	



ERC225



ERC425

Modular Devices
& Connection

Night & Day Contactors

- Night & day contactors allows the functioning of electrical devices during off-peak hours, especially storage heaters and water-heaters.
- The manual override allows: temporary override with automatic return at next coil energization, permanent switch-off in case of long leave.
- Standard 1z and 2z versions are recommended for applications where a reduced consumption and heating dissipation are needed.
- The hum-free versions ETCx25S are recommended for housing applications where silent operating is requested.
- Hum-free operating is guaranteed in time, switching noise is reduced.
- Complies to NF EN 61095

Description	Type	Coil AC	In power circuit AC7-a / AC1	Mod Width 17,5 mm	Pack qty.	Cat ref.
Night & Day Contactors	2NO	230V 50Hz	25A-250V	1	1	ETC225
	2NC	230V 50Hz	25A-250V	1	1	ETC226
	1NO+1NC	230V 50Hz	25A-400V	1	1	ETC227
	3NO	230V 50Hz	25A-440V	2	1	ETC325
			40A-440V	3	1	ETC340
			63A-440V	3	1	ETC363
4NO	230V 50Hz	25A-440V	2	1	ETC425	
		40A-440V	3	1	ETC440	
		63A-440V	3	1	ETC463	
Hum-free Night & Day Contactors	2NO	230V 0/60Hz 220V DC	25A-250V	1	1	ETC225S
	3NO	230V 0/60Hz 220V DC	25A-250V	2	1	ETC325S
	4NO	230V 50/60 Hz 220V DC	25A-250V	2	1	ETC425S



ETC225



ETC425S



ERC225S



ERC425S

Hum-free Override Contactors

- For the remote switching and control of power circuits.
- They are equipped with a 3 position manual control button: permanent ON, automatic mode, permanent OFF.
- The hum-free versions are recommended for housing applications where silent operating is requested.
- Complies to IEC 61095.
- Can be associated with the auxiliary contact ESC080, except 1 module hum-free contactors (ERC225S).
- It is recommended to use a heat dissipation insert LZ060 between each product.

Description	Type	Coil AC 50 Hz	In power circuit AC7-a / AC1	Width	Pack qty.	Cat ref.
Hum-free override contactor	2NO	230V 50/60 Hz 220V DC	25A-250V	1 Mod	1	ERC225S
			40A-440V	3 Mod	1	ESC240S
		24V 50Hz 24V DC	40A-440V	3 Mod	1	ERD240S
			63A-440V	3 Mod	1	ERD263S
		12V 50Hz 12V DC	40A-440V	3 Mod	1	ERL240S
			63A-440V	3 Mod	1	ERL263S
	3NO	230V 50/60 Hz 220V DC	25A-440V	2 Mod	6	ERC325S
	4NO	230V 50/60 Hz 220V DC	25A-440V	2 Mod	1	ERC425S
			25A-440V	2 Mod	1	ERD425S
		24V 50Hz 24V DC	25A-440V	2 Mod	1	ERD425S
		12V 50Hz 12V DC	25A-440V	2 Mod	1	ERL425S

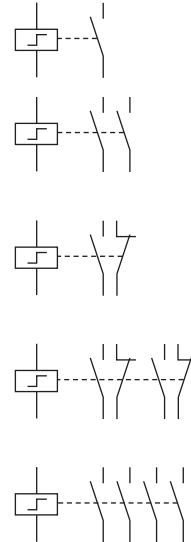
Latching Relays

- Latching relays - 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
- 1 Mod = 17.5mm, 2 Mod = 35mm, 3 Mod = 52.5mm, 4 Mod = 70mm



EPN510

Description	Coil	Power circuit AC1	Mod. Width	Cat ref.
Latching Relay 1 NO	230V 50Hz	16A - 250V~	1	EPN510
	24V 50Hz	16A - 250V~	1	EPN513
Latching Relay 2 NO	230V 50Hz	16A - 250V~	1	EPN520
	24V 50Hz	16A - 250V~	1	EPN524
	12V 50Hz	16A - 250V~	1	EPN521
Latching Relay 1 NC + 1NO	230V 50Hz	16A - 250V~	1	EPN515
	24V 50Hz	16A - 250V~	1	EPN518
	12V 50Hz	16A - 250V~	1	EPN519
Latching Relay 2 NC + 2 NO	230V 50Hz	16A - 250V~	2	EPN525
	24V 50Hz	16A - 250V~	2	EPN528
	12V 50Hz	16A - 250V~	2	EPN529
Latching Relay 4 NO	230V 50Hz	16A - 400V~	2	EPN540
	24V 50Hz	16A - 400V~	2	EPN541



EPN540

Modular Devices
& Connection

Auxiliary Contacts

Description	Power circuit	Mod. Width	Cat ref.
Auxiliary Contact	2A - 250V~	8.75mm 0.5	EPN051
Auxiliary Contacts for Centralised Control	24A - 230V~	0.5	EPN050



ERD218



ERC418



EN145

Relays, Hum-free, Interface

Relays

- To provide remote control of low power circuits max.16A.
- They are equipped with a 3 position manual control button: permanent ON, automatic mode, permanent OFF.
- Complies to IEC 61095.
- It is recommended to use a heat dissipation insert LZ060 between each 3 products.

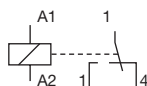
Auxiliary contact

- Associated with a relay, it allows remote signaling.
- Mechanical status indicator

Interface relays

- Power contacts adapted to very low voltage circuits. It is operating silently.
- A signal indicates when the coil is under voltage.
- These relays ensure a galvanic isolation between LV and VLV up to 4kV.

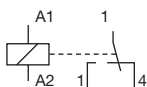
Description	Type	Coil AC 50 Hz	Power circuit AC7-a / AC1	Mod. Width 17,5 mm	Pack qty.	Cat ref.
Relays	2NO	230V	16A - 250V~	1	1	ERC216
		24V	16A - 250V~	1	1	ERD216
		8/12V	16A - 250V~	1	1	ERL216
	2NC	230V	16A - 250V~	1	1	ERC217
		24V	16A - 250V~	1	1	ERD217
		8/12V	16A - 250V~	1	1	ERL217
	1NO+1NC	230V	16A - 250V~	1	12	ERC218
		24V	16A - 250V~	1	1	ERD218
		8/12V	16A - 250V~	1	1	ERL218
	3NO	230V	16A-440V	2	1	ERC316
		24V	16A-440V	2	1	ERD316
		12V	16A-440V	2	1	ERL316
	4NO	230V	16A-440V	2	1	ERC416
		24V	16A-440V	2	1	ERD416
		12V	16A-440V	2	1	ERL416
Hum-free Relays	2NO+2NC	24V AC/DC	16A-440V	2	1	ERD418S
		12V AC/DC	16A-440V	2	1	ERL418S



Interface relays VLV/LV

coil voltage:
10 to 26V AC/DC
output: 1 changeover contact
max. 5A 230V AC
min. 10mA - 12V DC

EN145



Interface relays LV/VLV

coil voltage:
230V AC
output: 1 changeover contact
max. 5A 230V AC
min. 10mA - 12V DC

EN146

Auxiliaries for Contactors and Relays

Auxiliary contact

- Associated with a relay or a contactor, it allows to show the product status or remote signaling.
- Not compatible with 1 module hum-free contactors and EN145 / EN146.

Heat dissipation insert

- It is recommended to use a heat dissipation insert LZ060 between each 3 products.

Sealing covers

- Not compatible with EN145 / EN146.

Description		Mod. Width 17.5mm	Pack qty.	Cat ref.
Auxiliary contact In power circuit AC7-a / AC1	1NO+1NF 6A-250V	0.5	1	ESC080
Sealing cover	for 1 module contactors	1	10	ESC001
	for 2 module contactors	2	10	ESC002
	for 3 module contactors	3	10	ESC003
Heat dissipation insert		0.5	12	LZ060



ESC080



ESC002



LZ060



SVN311



SVN411



SVN312



SVN413

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
Contacts: 2 NO	1 Mod	SVN371
Contacts: 2NO + Green Push Button	1 Mod	SVN373
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
Contacts: 2 NO : Green	1 Mod	SVN461
Contacts: 2 NO : Red	1 Mod	SVN462
Pushbuttons (Latching) 16A - 250V a.c. Without Indicator Light		
Contacts: 1 NO	1 Mod	SVN312
Contacts: 1NC	1 Mod	SVN321
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
Contacts: 2 NO : Green	1 Mod	SVN463
Contacts: 2 NO : Red	1 Mod	SVN464

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.



SVN121



SVN127

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 Colour: Clear (Double Indicator)	1 Mod	SVN128
Indicator Colour: Red/Orange/Green (Triple Indicator)	1 Mod	SVN129
Indicator Colour: Green (Triple Indicator)	1 Mod	SVN221
Indicator Colour: Red/Orange/Blue (Triple Indicator)	1 Mod	SVN222

Indicator Lights 12/48V

Indicator Colour: Green	1 Mod	SVN131
Indicator Colour: Red	1 Mod	SVN132
Indicator Colour: Orange	1 Mod	SVN133
Indicator Colour: Blue	1 Mod	SVN134
Indicator Colour: Clear	1 Mod	SVN135
Indicator Colour: Green/Red	1 Mod	SVN136

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

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/12V a.c. 50Hz, 20VA 50/60 Hz	4 Mod	ST309
230V/24V a.c. 50Hz, 20VA 50/60 Hz	4 Mod	ST310
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



ST313

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.

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



ST301



SU212

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



SU214

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

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, Permanent OFF.
- 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 120 hours.
- For a selection chart see page 2.56, for technical data see page 2.55.

Connection

- 1-6mm².



EHN010



EHN171

Description	Voltage Supply	Width (1 Mod =17.5mm)	Cat ref.
1 Channel Time Switches without Supply Failure Reserve			
Daily Dial, 1 NO Changeover Contact, 16A 250V AC1	230V a.c. 50Hz	1 Mod	EHN010
Daily Dial, 1 NO Contact, 16A 250V a.c. AC1	230V a.c. 50Hz	3 Mod	EHN110
1 Channel Time Switches with Supply Failure Reserve			
Daily Dial, 1 Changeover Contact, 16A 250V AC1	230V a.c. 50/60Hz	1 Mod	EHN011
Daily Dial, 1 NO Contact, 16A 250V AC1	230V a.c. 50/60Hz	3 Mod	EHN111
Weekly Dial, 1 NO Contact, 16A 250V AC1	230V a.c. 50/60Hz	3 Mod	EHN171

Modular Devices
& Connection



EG071



EG103



EG203

Modular Devices
& Connection

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).

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 AC 1, 3 year reserve	1 Mod	EG010
Weekly Cycle, Capacity 20 program steps, 230V 50/60 Hz	1 Mod	EG170
Weekly Cycle, Capacity 20 program steps Output: 1 changeover contact 16A - 250V AC 1, 3 year reserve	1 Mod	EG071
1 Channel Digital Time Switch		
Weekly Cycle (Basic Version), Output: 1 changeover contact 16A - 250V AC 1, Delivered with key EG005	2 Mod	EG103
Weekly Cycle (Advanced Version), Output: 1 changeover contact 16A - 250V AC 1, Delivered with key EG005	2 Mod	EG103E
Capacity : 56 program steps, Output: 1 changeover contact, μ 16A - 250V~ AC1	2 Mod	EG103B
Capacity: 56 program step, Output: 1 changeover contact, μ 16A - AC1 - 12/24 V AC/DC, 50/60 Hz	2 Mod	EG103V
2 Channel Digital Time Switch (not compatible with program key)		
Capacity : 20 program steps to be divided between the 2 channels 230V 50/60 Hz	3 Mod	EG210
2 Channel Digital Time Switch		
Weekly Cycle (Basic Version), Output: 2 changeover contact 16A - 250V AC 1, Delivered with key EG005	2 Mod	EG203
Weekly Cycle (Advanced Version), Output: 2 changeover contact 16A - 250V AC 1, Delivered with key EG005	2 Mod	EG203E
Capacity: 56 program steps, Output: 2 changeover contacts, μ 16A - 250V~ AC1	2 Mod	EG203B
Capacity: 20 program steps to be divided between the 2 channels 230v 50/60 Hz	3 Mod	EG270
2 Channels Yearly Time Switch. Voltage Rating: 230V~ 50/60 Hz. Output: 2 changeover contacts, 10A - 250V~ AC1	4 Mod	EG293B

4 Channel Digital Time Switches

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 2.56.



EG493E

Description	Width (1 Mod =17.5mm)	Cat ref.
4 Channel Yearly Time Switch	4 Mod	EG493E
Spare grey programming key for timers EG493E		EG007
Interface between PC & key interface module, with software on CD		EG003
Interface between PC & key interface module, with USB		EG003U
4 Channel Weekly Time Switch. Voltage Rating: 230V~ 50/60 Hz, Output: 4 changeover contacts, 16A - 230V~ AC1	4 Mod	EG470
4 Channel Weekly Time Switch. Output: 2 changeover contacts + 2NO contacts, 10A - 250V ~ AC1. Delivered with programming key.	4 Mod	EG403E

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 2.59.



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.
Interface between PC & key interface module, with software on CD		EG003
Interface between PC & key interface module, with USB	1	EG003U
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



EG003U



EMN001

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 2.60.

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



EMN005



EZN001

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 2.61.



EZN002



EZN004

Description	Pack qty.	Cat ref.
<p>Delay On 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr</p>	1 Mod	EZN001
<p>Delay Off 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr</p>	1 Mod	EZN002
<p>Adjustable Time On 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr</p>	1 Mod	EZN003
<p>Timer 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr</p>	1 Mod	EZN004
<p>Symmetrical Flasher 1 changeover contact 10A / 230V a.c. AC1 Time delay T:0.1s to 10hr</p>	1 Mod	EZN005
<p>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</p>	1 Mod	EZN006

Connection Of Devices

Insulated busbars, junction blocks, distribution blocks, terminals... all that is needed to quickly and efficiently mount devices in enclosures and distribution boards.





KB163P



KB163N



KB190C



KB263A



KB363C



KB463A

Prong Insulated Busbars

Characteristics

- Brown or blue insulated busbars
- For MCBs Ph+N and fuse carriers 1 module spacing.
- Single, double, three and four pole busbars for multipolar MCB from 0,5 to 63A for multipolar, single pole fuse carriers and SB switches.

Description	Section	In	Width	Cat ref.
Single pole 63A to be equipped with protection profiles brown (phase)	10 mm ²	63A	13 modules	KB163P
Single pole 63A to be equipped with protection profiles blue (neutral)	10 mm ²	63A	13 modules	KB163N
Single pole 100A	20 mm ²	100A	24 mod.	KB190C
	20 mm ²	100A	57 mod. (1m)	KB190B
Double pole	10 mm ²	63A	12 mod.	KB263A
	10 mm ²	63A	24 mod.	KB263C
	16 mm ²	80A	56 mod. (1m)	KB280B
Three pole	10 mm ²	63A	12 mod.	KB363A
	10 mm ²	63A	24 mod.	KB363C
	16 mm ²	80A	57 mod. (1m)	KB380B
Four pole to be equipped with busbar ends	10 mm ²	63A	12 mod.	KB463A
	10 mm ²	63A	24 mod.	KB463C
	16 mm ²	80A	56 mod. (1m)	KB480B



KZ021

End Caps (to insulate ends of the busbars)

Description	Cat ref.
End caps for single busbars	KZ021
End caps for double busbars KB263A, KB263C	KZ022
End caps for double/three pole busbars for KB280B, KB363A, KDN263B, KB363C, KB380B, KDN363B	KZ023A
End caps for four pole busbars KB463A, KB463C, KB480B, KDN463B	KZ024



KZ059

Protection profiles

Description	Width	Cat ref.
Protection profiles to insulate the spare prongs	5 modules	KZ059



KD190B



KDN263B



KDN363B



KDN463B

Insulated Busbars & Accessories

Characteristics

Fork insulated busbars

- For modular devices equipped with biconnect terminals; multipolar MCBs from 0,5 to 63A (without Ph+N), RCCBs
- Connection terminals KF83A, KF83C and KF83D are compatible with aluminium and copper conductors.

Description	Section	In	Width	Cat ref.
Fork insulated busbars single pole, 1 mod. step, insulated	20 mm ²	100A	57 mod.(1m)	KD190B
Fork insulated busbars double pole, 2 mod. step, insulated	10mm ²	63A	56 mod.(1m)	KDN263B
Fork insulated busbars three pole, 3 mod. step, insulated	10 mm ²	63A	57 mod.(1m)	KDN363B
Fork insulated busbars 4 pole, 1 mod. step, insulated (L1,L2,L3,N ...)	10 mm ²	63A	56 mod.(1m)	KDN463B
Fork insulated busbars 3 x (P + N) (L1 N,L2 N,L3 N,L1 N,L2 N,L3 N ...)	16 mm ²	80A	12 mod.	KDN451D
Fork insulated busbars 3 x (P + N) (L1 N,L2 N,L3 N,L1 N,L2 N,L3 N ...)	16 mm ²	80A	57 mod. (1m)	KDN451E
Fork connection terminals for fork busbars terminals cable incoming : lateral connection, capacity: 1 x 25 mm ² , cable tightening with 2 screws				KF84A
Prong connection terminals for devices with screw terminal cable incoming : top connection, capacity: 2 x 16 mm ² cable tightening with 2 screws				KF82A
Connection terminals for KB163P and KB83B cable incoming : lateral, connection capacity: 1 x 25 mm ² , cable tightening with 1 screw				KF83A
Connection terminals for KB163P and KB83B cable incoming : lateral, connection capacity: 2 x 25 mm ² , cable tightening with 1 screw				KF83B
Connection terminals for busbars KB190B for KB263 to KB463 cable incoming : lateral or top,connection capacity: 1 x 25 mm ² ,(35 mm ² rigid)				KF83C
Connection terminals for KBN663A to KBN663C cable incoming : lateral or top,connection capacity: 2 x 25 mm ² flexible, (35 mm ² rigid)				KF83D



KF84A



KF82A

Distribution Blocks

Characteristics

Single Pole Distribution Blocks

- Monoblocs, insulated for copper conductor
- Ui: 500V
- Fixing on DIN rail, mounting plate and main devices plate kits.

Stepped Distribution Blocks

- Modular, monobloc for copper conductors
- Removable front cover
- Ui: 500V
- Fixing on DIN rail
- Equipped with an insulated rear plate
- Complies with IEC 60 998-1 and IEC 60947-7-1.

Description		Width mm	Cat ref.
Single pole distribution blocks	125A, Isc peak: 30kA, incoming: 1 x 35 + 1 x 16 mm ² , outgoing: 6 x 16 mm ²	27 mm	KJ02D
	160A, Isc peak: 50kA incoming: 1 x 70 mm ² , outgoing: 6 x 16 mm ²	35 mm	KJ02C
	250A, Isc peak: 50kA, incoming: 1 x 95 mm ² , outgoing: 2 x 25 + 5 x 16 + 4 x 10 mm ²	45 mm	KJ02A
	400A, Isc peak: 50kA, incoming: 1 x 150 mm ² outgoing: 2 x 25 + 5 x 16 + 4 x 10 mm ²	45 mm	KJ02B
Modular distribution monobloc fixing on DIN rail, on mounting plate	100A - four pole, Isc peak: 20kA - Ui: 500V phase: 1 x 25 + 2 x 10 + 5 x 6 mm ² flexible neutral: 1 x 25 + 6 x 10 + 4 x 6 mm ² flexible h. 74,5 x d. 45 mm	98 mm, (5.5 mod.)	KJ02E
Modular distribution blocks fixing on DIN rail, on mounting plate	Brass busbar terminal 4P 100A		KJ100A
	Brass busbar terminal 4P 125A		KJ125B
	Brass busbar terminal 4P 160A		KJ160A
	Supplementary Neutral Bar 100A, 7 connections		KJ07NB
	Supplementary Neutral Bar 125A, 12 connections		KJ12NB
	Supplementary Neutral Bar 125A, 15 connections		KJ15NB



4 x KJ02A



KJ02E



KJ100A



KJ125B

Multi-Connection Distribution Blocks

Characteristics

Four Pole Multi-Connection System 250A

- To supply 2, 3 and 4 pole devices.
- For Quadro enclosures 620 or 700 mm wide.
- Incoming connection with 4 screw lugs.
- Outcoming connection with insulated flexible connectors.

Delivered with

- 6 insulated blue cables (6 x 6 mm²),
- 12 insulated brown cables (12 x 6 mm²),
- 2 fixation lugs for Quadro system.

Description			Cat ref.
Four pole multi-connection system 250A	60 outgoing connections: - 25 neutral outgoing - 12 outgoing per phase section: 6 and 10 mm ² withstand current under 40°C: - per pole: 250A - 40A with connector 6 mm ² - 63A with connector 10mm ² Isc peak: 60kA, Un: 500 V AC - 50Hz	without connectors	KJ03A
		with connectors	KJ03B
Connector terminals	to crimp flexible wire of 6 mm ²		KZ007
Cables with connector for KJ03A	40A, 6 mm ²	Blue Cat ref.	KZ001
	40A, 6 mm ²	Brown Cat ref.	KZ002
	63A, 10 mm ²		KZ004
	63A, 10 mm ²		KZ074



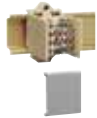
KJ03A



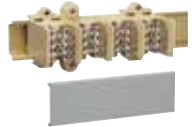
KZ007



KZ001 / KZ002



K018



K024



K037



KR95P / KR15P



K010

Junction Blocks

Characteristics

- For 16 to 35 mm² copper conductors.
- In max: 125A
- To facilitate incoming cables connection and deviations in distribution boards and enclosures: fixing on DIN rail for K024 and K025 blocks, the mounting can be horizontal or vertical.

Junction terminals

- For 25 to 150 mm² copper or aluminium conductors.

Description		Width	Cat ref.
Junction blocks, connection per pole: incoming: 2 x 25 mm ² , outgoing: 4 x 16 mm ² delivered with front protection covers	1 pole, w. 40 x h. 55 x d. 40 mm	2.5 mod.	K018
	2 pole, w. 65 x h. 55 x d. 35 mm	4 modules	K023
	4 pole, w. 120 x h. 55 x d. 45 mm	7 modules	K024
	5 pole, w. 150 x h. 55 x d. 45 mm	8.5 mod.	K025
Junction blocks, connection per pole: incoming: 2 x 35 mm ² , outgoing: 4 x 16 mm ²	1 pole, w. 41 x h. 55 x d. 53 mm	2.5 mod.	K037
Junction terminals fixing on DIN rails can be mounted in Univers and Quadro enclosures	tighten by hexagonal wrench 25 to 95mm ² 25 mm		KR95P
	tighten by hexagonal wrench 35 to 50mm ² 31 mm		KR15P
Connecting bars fixing on DIN rails	2 x 5 connecting for 2,5 mm ² cables		K010
Grounding connection separate wedges	section 50 mm ² , delivered with 2 plates equipped with 70 mm ² cable clamps		K085

Screw Terminals

Characteristics

- Screw terminals
- Tracking resistance KC > 600
- Temperature range 120°C
- For all rail dimensions according to DIN 50022
- Secure fit on all non-standardised, commercially available support profiles 35mm in width
- Mounting or removing transverse to rail possible in both directions
- Uniform dimensions reduce the required accessories
- Built-in, self-loosening protection; vibration and vibration proof
- Large clamping range; suitable for two conductors of the same cross section (for PE only 1 conductor)
- Guided control of conductor in the open terminals by conical insertion funnel
- Screwdriver guidance by arranged sunk clamping screws
- Retained screws when loosening, particularly important for mechanical screwdrivers
- All parts contained in terminal support
- Compact design with side wire entry
- Takes flexible conductors with ferrule to rated cross section
- Low contact resistance due to high contact forces



KXA10LH

Phase Feed Through Terminals

Characteristics

- 400V or 800V
- Colour beige
- The following can be used with 1000V photovoltaic applications: KXA06LH, KXA10LH, KXA16LH, KXB35LH, KXB70LH, and KXB150LH. A rated current of 1000V applies as long as the stripping length, the clearance and creepage distance comply with VDE0110/01.89.

Description	Dimensions	Pack qty.	Cat ref.
2.5 ² Through phase 800V/24A	w. 5 x d. 48.5 x h. 44.5 mm	100	KXA02LH
4 ² Through phase 800V/32A	w. 6 x d. 48.5 x h. 44.5 mm	100	KXA04LH
6 ² Through phase 1000V/41A	w. 8 x d. 53.5 x h. 48 mm	100	KXA06LH
10 ² Through phase 400V/57A	w. 10 x d. 51.5 x h. 58 mm	50	KXA10L
10 ² Through phase 800V/24A	w. 10 x d. 55 x h. 53.8 mm	50	KXA10LH
16 ² Through phase 400V/76A	w. 12 x d. 51.5 x h. 58 mm	50	KXA16L
16 ² Through phase 1000V/71A	w. 12 x d. 57.5 x h. 59.3 mm	50	KXA16LH
35 ² Through phase 400V/125A	w. 16 x d. 51.5 x h. 58 mm	20	KXA35L
35 ² Through phase 1000V/125A	w. 16 x d. 67.6 x h. 70.6 mm	20	KXB35LH
70 ² Through phase 1000V/192A	w. 24 x d. 81.2 x h. 76.8 mm	20	KXB70LH
150 ² Through phase 1000V/309A	w. 28 x d. 98.6 x h. 96 mm	10	KXB150LH

Phase Terminal Blocks

Description	Dimensions	Pack qty.	Cat ref.
2.5 ² Tiered phase 500V/24A	w. 5 x d. 63.9 x h. 65.8 mm	100	KXA02LX
4 ² Tiered phase 400V/32A	w. 6 x d. 63 x h. 61.6 mm	100	KXA04LX
4 ² Earth tiered	w. 6.2 x d. 63.2 x h. 59 mm	100	KXB04EX

Neutral Terminals

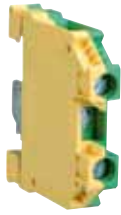
Characteristics

- 400V or 800V
- Colour blue
- Cross sectional area for solid conductors
- The following can be used with 1000V photovoltaic applications: KXA06NH, KXA10NH, KXA16NH, KXB35NH, KXB70NH, and KXB150LH. A rated current of 1000V applies as long as the stripping length, the clearance and creepage distance comply with VDE0110/01.89.



KXA10NH

Description	Dimensions	Pack qty.	Cat ref.
2.5 ² Through neutral 800V/24A	w. 5 x d. 48.5 x h. 44.5 mm	100	KXA02NH
4 ² Through neutral 800V/32A	w. 6 x d. 48.5 x h. 44.5 mm	100	KXA04NH
6 ² Through neutral 1000V/41A	w. 8 x d. 53.5 x h. 48 mm	100	KXA06NH
10 ² Through neutral 400V/57A	w. 10 x d. 51.5 x h. 58 mm	50	KXA10N
10 ² Through neutral 1000V/57A	w. 10 x d. 55 x h. 53.8 mm	50	KXA10NH
16 ² Through neutral 400V/76A	w. 12 x d. 51.5 x h. 58 mm	50	KXA16N
16 ² Through neutral 1000V/71A	w. 12 x d. 57.5 x h. 59.3 mm	50	KXA16NH
35 ² Through neutral 400V/125A	w. 16 x d. 51.5 x h. 58 mm	20	KXA35N
35 ² Through neutral 1000V/125A	w. 16 x d. 67.6 x h. 70.6 mm	20	KXB35NH
70 ² Through neutral 1000V/192A	w. 24 x d. 98.6 x h. 96 mm	20	KXB70NH
150 ² Through neutral 1000V/309A	w. 28 x d. 98.6 x h. 96 mm	10	KXB150NH



KXA10E

Earth Terminals

Characteristics

- Colour yellow/green
- Cross sectional area for solid conductors

Description	Dimensions	Pack qty.	Cat ref.
2.5 ² Protective conductor	w. 5 x d. 48.5 x h. 48.6 mm	100	KXA02E
4 ² Protective conductor	w. 6 x d. 48.5 x h. 51 mm	100	KXB04E
6 ² Protective conductor	w. 8 x d. 53.5 x h. 54 mm	100	KXB06E
10 ² Protective conductor	w. 10 x d. 51.5 x h. 58 mm	50	KXA10E
10 ² Protective conductor	w. 10 x d. 55 x h. 54 mm	50	KXB10E
16 ² Protective conductor	w. 12 x d. 57.5 x h. 57.5 mm	50	KXB16E
16 ² Protective conductor	w. 12 x d. 51.5 x h. 58 mm	50	KXA16E
35 ² Protective conductor	w. 16 x d. 67.6 x h. 63 mm	20	KXB35E1
35 ² Protective conductor	w. 16 x d. 51.5 x h. 58 mm	20	KXB35E

Neutral Terminals

Characteristics

- Neutral separation 400V
- Colour blue
- The N disconnect terminal blocks can be used in cases with a degree of protection of at least IP54 according to IEC 60529 for photovoltaic applications 1000V can be used. It then applies 1000V/6kV/2

Description	Dimensions	Pack qty.	Cat ref.
4 ² Neutral terminal 400V/25A	w. 6 x d. 48.5 x h. 53.5 mm	100	KXA04ND
10 ² Neutral terminal 400V/45A	w. 10 x d. 51.5 x h. 58 mm	50	KXA10ND
16 ² Neutral terminal 400V/62A	w. 12 x d. 51.5 x h. 58 mm	50	KXA16ND

Three Conductor Terminal Blocks with Disconnect Slide

Characteristics

- 400V / 6kV / 3
- For phase-, N-, and PE
- With disconnect slide to neutral separation on busbars 10 x 3 mm

Description	Dimensions	Pack qty.	Cat ref.
4 ² /1 x N- Disconnect L/ 1 x Through/1 x PE	w. 6 x d. 51.5 x h. 90 mm	50	KXA04I3

Three Conductor Terminal Blocks

Characteristics

- N- isolation switching over separation
- For phase-, N-, and PE
- 400V/6kV/3
- Cannot be used with busbar
- Connect at either end of group of terminals

Description	Dimensions	Pack qty.	Cat ref.
4 ² /1 x N Disconnect L/ 1 x Through/1 x PE	w. 6 x d. 51.5 x h. 90 mm	50	KXA04I1

Three Wire Terminals without N- Separation

Characteristics

- Without neutral separation
- For phase-, N-, and PE
- 400V/6kV/3

Description	Dimensions	Pack qty.	Cat ref.
4 ² /1 x Through N/1 x Through L/ 1 x PE	w. 6 x d. 51.5 x h. 90 mm	50	KXA04I2

Supplementary Terminals

Characteristics

- Cannot be used with busbar
- Connect at either end of group of terminals

Description	Dimensions	Pack qty.	Cat ref.
4 ² /2 x Through L	w. 6 x d. 51.5 x h. 90 mm	50	KXA04I4
4 ² /1 x Through L	w. 6 x d. 51.5 x h. 90 mm	50	KXA04I5
4 ² /2 x Through L/1 x PE	w. 6 x d. 51.5 x h. 90 mm	50	KXA04I6
4 ² /1 x Plug fuse/1 x Through L/1 x PE	w. 6 x d. 51.5 x h. 90 mm	50	KXA04I7



KXA04I5

Knife Disconnect Terminal Block

Characteristics

- Open or closed, sealed
- Colour of release lever signals the open state
- 800V/8kV/3

Description	Dimensions	Pack qty.	Cat ref.
4 ² Knife disconnect terminal block, 800V/20A	w. 8 x d. 49.5 x h. 48 mm	50	KXA04KD



KXA04KD

Fuse Terminals

Characteristics

- Open or closed, sealed
- Storage space for a spare fuse
- 800V/8kV/3

Description	Dimensions	Pack qty.	Cat ref.
4 ² G Fuse terminals (5 x 30) Max. 63A	w. 8 x d. 54.5 x h. 77.2 mm	50	KXB04F5
4 ² G Fuse terminals (6.3 x 32) Max. 10A	w. 10 x d. 54.5 x h. 77.2 mm	50	KXB04F6



KXB04F5

Through Terminals, Vertically Bridged

Characteristics

- 400V/5kV/3
- Colour black
- Internal vertical bridged

Description	Dimensions	Pack qty.	Cat ref.
2.5 ² Tiered internal bridged 500V/24A	w. 5 x d. 63.9 x h. 65.8 mm	100	KXA02VB
4 ² Tiered internal bridged 400V/32A	w. 6 x d. 70.5 x h. 61.6 mm	100	KXA04VB



KXA02VB



KWE01B

Endplates Through Terminals

Description	Pack qty.	Cat ref.
Endplate for KXA02LH, KXA04LH	10	KWE01G
Endplate for KXA02NH, KXA04NH	10	KWE01B
Endplate for KXA02E	10	KWE01GR
Endplate for KXA06NH	10	KWE02B
Endplate for KXA10L, KXA16L	10	KWE04G
Endplate for KXA10N, KXA16N	10	KWE04B
Endplate for KXA10LH	10	KWE05G
Endplate for KXA10NH	10	KWE05B
Endplate for KXA10E, KXA16E	10	KWE04GR
Endplate for KXA16LH	10	KWE06G
Endplate for KXA16NH	10	KWE06B
Endplate for KXA35L	10	KWE03G
Endplate for KXA35N	10	KWE03B

Endplates Three Wire Terminals

Description	Pack qty.	Cat ref.
Endplate for KXA04I1 I2 I3 I4 I5 I6	10	KWE21G
Endplate for KXA04I7	10	KWE22G

Endplates N Disconnect Terminal Blocks

Description	Pack qty.	Cat ref.
Endplate for KXA16ND, KXA10ND	10	KWE17B
Endplate for KXA04ND	10	KWE24B

Endplate Tiered and Vertically Bridged Through Terminals

Description	Pack qty.	Cat ref.
Endplate for KXA02VB, KXA02LX	10	KWE25G
Endplate for KXA04VB, KXA04LX	10	KWE26G



KWE27G

Endplate Knife Disconnect Terminals

Description	Pack qty.	Cat ref.
Endplate for KXA04D	10	KWE27G



KWJ150C3

Non Insulated Cross Connector

Description	Pack qty.	Cat ref.
Connecting link 70mm ² , 2 fold	10	KWJ70C2
Connecting link 70mm ² , 3 fold	10	KWJ70C3
Connecting link 150mm ² , 2 fold	10	KWJ150C2
Connecting link 150mm ² , 3 fold	10	KWJ150C3



KWL001

Marking Tags

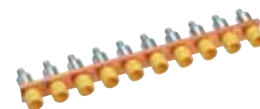
Characteristics

- KW001: Box of 10 digits 0-9 to 50 individual labeling strips, KW002/03/04: numbered sequentially per 25 strips, KW002: numbers 1-100, KW003: numbers 101-200, KW004: L1, L2, L3, N, PE

Description	Pack qty.	Cat ref.
Designation clips box (0-9)	1	KWL001
Designation clips 0-100 (25 strips)	1	KWL002
Designation clips 101-200 (25 strips)	1	KWL003
Designation clips L1, L2, L3, N, PE (25 strips)	1	KWL004

Insulated Cross Connector

Description	Pack qty.	Cat ref.
Insulated jumper bar 2.5 ² , 2 fold	10	KWJ02B2
Insulated jumper bar 2.5 ² , 3 fold	10	KWJ02B3
Insulated jumper bar 2.5 ² , 4 fold	10	KWJ02B4
Insulated jumper bar 2.5 ² , 5 fold	10	KWJ02B5
Insulated jumper bar 2.5 ² , 10 fold	10	KWJ02B10
Insulated jumper bar 4mm ² , 2 fold	10	KWJ04A2
Insulated jumper bar 4mm ² , 3 fold	10	KWJ04A3
Insulated jumper bar 4mm ² , 4 fold	10	KWJ04A4
Insulated jumper bar 4mm ² , 5 fold	10	KWJ04A5
Insulated jumper bar 4 ² , 10 fold	10	KWJ04A10
Insulated jumper bar 4 ² , 12 fold	10	KWJ04A12
Insulated jumper bar 4 ² , 2 fold	10	KWJ04B2
Insulated jumper bar 4 ² , 3 fold	10	KWJ04B3
Insulated jumper bar 4 ² , 4 fold	10	KWJ04B4
Insulated jumper bar 4 ² , 5 fold	10	KWJ04B5
Insulated jumper bar 4 ² , 10 fold	10	KWJ04B10
Insulated jumper bar 6 ² , 2 fold	10	KWJ06B2
Insulated jumper bar 6 ² , 3 fold	10	KWJ06B3
Insulated jumper bar 6 ² , 4 fold	10	KWJ06B4
Insulated jumper bar 6 ² , 5 fold	10	KWJ06B5
Insulated jumper bar 6 ² , 10 fold	10	KWJ06B10
Insulated jumper bar 10 ² , 2 fold	10	KWJ10B2
Insulated jumper bar 10 ² , 3 fold	10	KWJ10B3
Insulated jumper bar 10 ² , 10 fold	10	KWJ10B10
Insulated jumper bar 16 ² , 2 fold	10	KWJ16A2
Insulated jumper bar 16 ² , 3 fold	10	KWJ16A3
Insulated jumper bar 16 ² , 10 fold	10	KWJ16A10
Insulated jumper bar 35 ² , 2 fold	10	KWJ35A2
Insulated jumper bar 35 ² , 3 fold	10	KWJ35A3
Insulated jumper bar 35 ² , 10 fold	10	KWJ35A10



KWJ35A10

Non Insulated Cross Connector

Description	Pack qty.	Cat ref.
Connecting link 70mm ² , 2 fold	10	KWJ70C2
Connecting link 70mm ² , 3 fold	10	KWJ70C3
Connecting link 150mm ² , 2 fold	10	KWJ150C2
Connecting link 150mm ² , 3 fold	10	KWJ150C3



KWJ150C3

Busbar for N Disconnect Terminal Blocks

Description	Pack qty.	Cat ref.
N Busbar	1	KW1NBB

Busbar Terminals for Busbar 10 x 3mm

Description	Pack qty.	Cat ref.
Busbar terminal 16 ²	50	KW16ST
Busbar terminal 16 ² - 35 ²	20	KW35ST



KW16ST

End Clamp (material: plastic)

Description	Pack qty.	Cat ref.
End clamp 35mm ²	100	KWB01
End clamp 150mm ²	100	KWB02



KWB01



KM04L



KM08L



KM07N



KM10B



KM10E



KM13N



KM11B



K151



KM25N



K158



K159

Brass Terminals

Characteristics

- Brass terminals
- For earth, neutral, phase copper conductors.
- In max: 60A

Version without base:

- Can be mounted using KZ bases or rail. Delivered with screws.

Version with base:

- To be clipped on 12 x 2 mm rails.

- Earth: green/yellow base
- Neutral: blue base
- Phase: beige base

Description	Connection Section	With base neutral Cat ref.	With base earth Cat ref.	With base phase Cat ref.	Without base Cat ref.
Brass terminals with base	2x 6 + 2x10mm ² 4 connections plot length 30mm	-	-	KM04L	K140
	4x16 + 4x10mm ² 8 connections 2 plot length 30mm	-	-	KM08L	-
	3x16 + 4x10mm ² 7 connections plot length 49mm	KM07N	KM07E	KM07L	K142
	5x16 + 5x10mm ² 10 connections plot length 67mm	KM10A	KM10B	KM10C	K143
	5x16 + 6x10mm ² 11 connections plot length 73mm	KM11N	KM11E	KM11L	K144
	2x16 (dbl. drive)+ 8x10 mm ² 10 connections plot length 69mm	KM10N	KM10E	KM10L	K145
	6x16 + 7x10mm ² 13 connections plot length 85mm	KM13N	KM13E	-	K148
	1x25+5x16 + 5x10mm ² 11 connections plot length 85mm	-	KM11B	-	K151
	1x25 + 8x16 + 8x10mm ² 17 connections plot length 121mm	KM17N	KM17E	-	K156
	1x25+11x16+13x10mm ² 25 connections plot length 169mm	KM25N	KM25E	-	K158
Brs. terminals without base	1x25 + 8x16 + 29x10 mm2, length 242mm				K159
	1x25 + 16x16 + 61x10 mm2, length 482mm				K160
	1x25 + 33x16 + 129x10 mm2,length 992mm				K162

Bases

Characteristics

- Bases for brass terminals K140 to K162
- Insulated material
- M4 x 8 fixing screws



KZ012



KZ014

Description	Cat ref.
Bases for brass terminals	
K140 to K162 insulated material M4 x 8 fixing screws	blue base, for neutral KZ012
	green/yellow base, for earth KZ013
	beige base, for phase KZ014

Bases & Rails for Terminals & Blocks

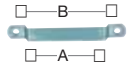
Characteristics

Bases for Brass Terminals

- For the mounting of the KM brass terminals without base.
- Material: flat bar 12 x 2 mm.

Mounting Rails

- For the mounting of junction blocks and terminals into enclosures.
- Electro-zinc coated and bichromated.
- Length: 2m



A089



UT91A



A090

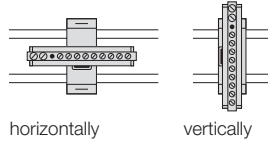


KZ060F



A099

Description		Dimensions.	Cat ref.
Flat bar supports for terminal strips for brass terminals with base	for one brass terminal	A = 55 mm B = 74 mm	A089
Pinch carriers UT91A for brass terminals with base	1 span (250 mm)	A = 205 mm	UT91A
Brass terminals supports for brass terminals with base	for mounting in all boards	length: 2 m	A090
Rail fixing clips KZ060F to fix brass terminals on DIN rails with bases KZ012, KZ013 and KZ014	mounting on DIN rail	width 20 mm	KZ060F

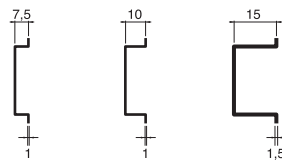


horizontally

vertically

Symmetrical rails, DIN 46277/3, width: 35 mm

1 span (250 mm) depth 7.5 mm **A088**



A088

A098

A099

depth 10 mm **A098**

depth 15 mm **A099**

Asymmetrical rails, DIN 46277/1

1 span (250 mm) depth 7.5 mm **A050**



Insulated Brass Terminals

Description		Pack qty.	Cat ref.
Brass terminals insulated green, earth, IP20	7 x 16mm ²	1	KM07EF
Brass terminals insulated blue, neutral, IP20	7 x 16mm ²	1	KM07NF
Brass terminals insulated green, earth, IP20	12 x 16mm ²	1	KM12EF
Brass terminals insulated blue, neutral, IP20	12 x 16mm ²	1	KM12NF



KM07EF



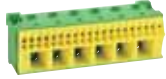
KM12NF



KN06P



KN22N



KN26E



KN99P/N/E



VZ710



VZ711



GZ30A



KN00A



KN07N



KN04P

Quick Connect & Cage Terminals

Characteristics

- For earth, neutral, phase copper conductors.
- The terminals are equipped with direct plug-in quickconnect terminals for 1,5 to 4 mm² plug-in wires and cage terminals for 1,5 to 25 mm² standard wires.
- Can be clipped on premounted bases for volta, vector, vega D, gala and gamma enclosures.
- Available as accessories.
- Complies with EN 60998. For technical information see page 2.59.

Description	Terminal qty. quick connect 1.5 to 4mm ²	Cage 1.5 to 25mm ²	Blue neutral Cat ref.	Brown phase Cat ref.	Green/yellow earth Cat ref.
Quickconnect and cage	5	1	KN06N	KN06P	KN06E
	8	2	KN10N	KN10P	KN10E
	11	3	KN14N	KN14P	KN14E
	14	4	KN18N	KN18P	KN18E
	17	5	KN22N	KN22P	KN22E
	20	6	KN26N	KN26P	KN26E

Accessories

Description		Cat ref.
Equipotential bridgings to connect 2 quickconnect terminals	for neutral terminals (pack of 10)	KN99N
	for phase terminals (pack of 10)	KN99P
	for earth terminals (pack of 10)	KN99E
Bases for quickconnect terminals	for volta, vector	VZ711
	vega 18 surface	VZ710
	gamma	GZ30A
	FW enclosure	UZ00K1
Universal bases for terminals to be fixed on 12 x 2 mm flat bars of DIN rails in Quadro and Univers enclosures	length: 105 mm pre-cut base to fit with the terminals dimensions	KN00A
	Incoming cage terminals allow the connection of cables up to 25 mm ² U _i = 630V, 90A, can be clipped on quickconnect bases	neutral terminals: 4 x 25 mm ²
	neutral terminals: 7 x 25 mm ²	KN07N
	phase terminals: 4 x 25 mm ²	KN04P
	phase terminals: 7 x 25 mm ²	KN07P



Engineered solutions.

From pre-assembled standard distribution units to bespoke composite TP&N boards and plug in distribution boards, we can provide the solution.

:hager

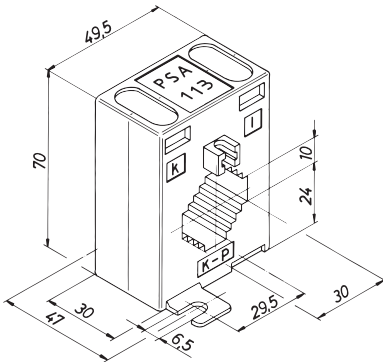
	EC150	EC152	EC154M	EC350	EC352	EC360	EC362	EC364M	EC365B	TE360	EC370	EC372	TE370
Electrical Characteristics													
Voltage	230V~ ±15%						230V~ ±15%			400V~ ±15%			
Frequency	50/60Hz						50/60Hz						
Consumption	< 10VA and 1W						< 10 VA and 3W						
Data													
Connection	Direct									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 Output													
	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: -20°C to +70°C, Operating temperature: -10°C to +55°C												
Connection capacity	Rigid: 1.5 to 16mm ² Flexible: 1 to 16mm ²						Rigid: 1.5 to 35mm ² Flexible: 1 to 35mm ²			Rigid: 1.5 to 10mm ² Flexible: 1 to 6mm ²			

Technical Data (to EN/IEC60044-1)

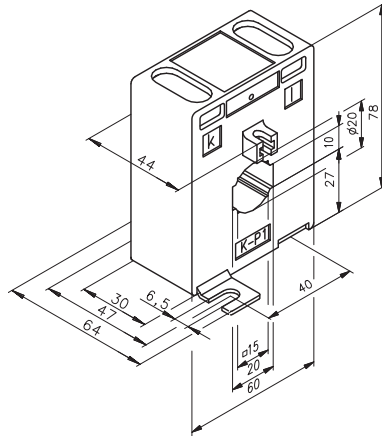
Primary rated current	50 A - 2000 A
Rated secondary current	5 A
Rated frequency	50 - 60 Hz
Highest voltage for equipment U_m	720 V
Rated power-frequency withstand voltage (r.m.s.)	3 kV
Instrument security factor (FS)	FS 5
Rated continuous thermal current	$1,2 \times I_n$
current rating	120 %
Rated short time thermal current	$I_{th} = 60 \times I_n$ (max 50 kA)
Rated dynamic current:	$I_{dyn} = 2,5 \times I_{th}$ (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

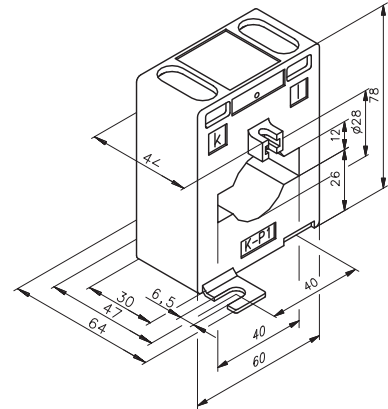
SRA01005, SRA01505, SRA02005, SRA02505, SRC04005, SRC06005



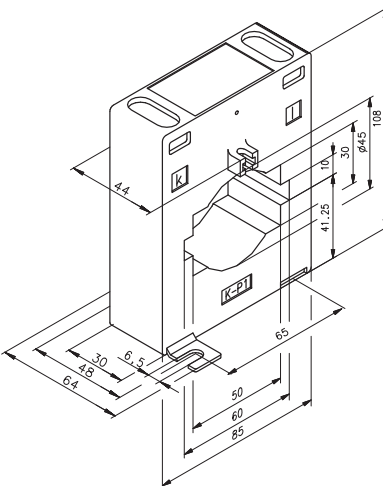
SRA00505



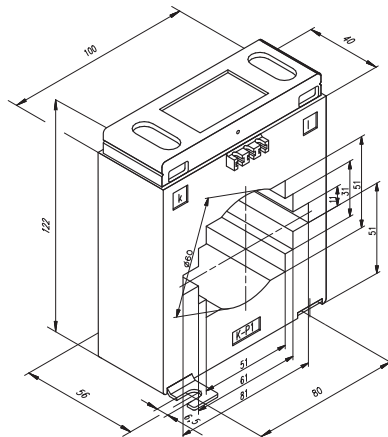
SRI03005



SRD08005, SRD10005, SRD15005



SRE20005



Electrical Characteristics Changeover Switches

Family	SF							
Modular size	1 module			2 module				4 module
Cat ref.	SFH125	SFM125	SFT125	SFH225	SFT225	SFT240	SF263	
Thermal current I _{th} (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 I _{cw} (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 mm ²	35 mm ²	35mm ²	25 mm ²	25 mm ²	25 mm ²	25 mm ²
flexible cable section	10 mm ²	10 mm ²	10 mm ²	16 mm ²	16 mm ²	16 mm ²	16 mm ²
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 cycles)	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

Electrical Characteristics Switch Disconnectors

Family	SBx / SFx			SBx			SBx			
Number of pole	1P - 2P - 3P - 4P									
Frame size	frame size 1			frame size 2			frame size 3			
Comply to standard	IEC 60947-3	ok			ok			ok		
	IEC 60669-2-4	ok			ok			-		
Thermal current I _{th} (40°C)	16A	25A	32A	32A	40A	63A	63A	80A	100A	125A
Operational frequency	50/60 Hz			50/60 Hz			50/60 Hz			
Rated insulation voltage (U _i)	440V			440V			440V			
Rated impulse withstand voltage U _{imp}	3kV			6 kV			6 kV			
Protection degree	3 (SB) / 2 (SF)			3			3			
Working temperature	-20 to 50°C									
Storage temperature	-40 to 80°C									

Operational Currents I_e

Rated voltage	load duty category										
400V AC	AC 21-A ⁽¹⁾	16A	25A	32A	32A	40A	63A	63A	80A	100A	125A
	AC 22-A ⁽¹⁾	16A	25A	32A	32A	40A	63A	63A	80A	100A	125A
	AC 23-A ⁽¹⁾	10A	10A	10A	32A	40A	40A	40A	40A	40A	40A

Short circuit characteristics

Rated short time withstand current 1s I _{cw} (rms)	IEC 60947-3	240A	375A	480A	480A	600A	945A	945A	960A	1200A	1500A
Prospective short circuit current (rms)	EN 60669-2-4	3kA			6kA			n/a			

Mechanical characteristics

Rigid cable section	16 mm ²	25 mm ²	50 mm ²
Flexible cable section	10 mm ²	16 mm ²	35 mm ²
Tightening torque	1.8 Nm	2.8 Nm	3.6 Nm
Busbar thickness	n/a	1 to 1.5 mm	1.5 to 2 mm
IP protection degree	20		
Mechanical endurance (number of cycles)	100000	30000	20000
Electrical endurance @ AC22 (number of cycles)	25000	5000	2500

⁽¹⁾ A category: frequent operation

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 **EE100** 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 **EE100** 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

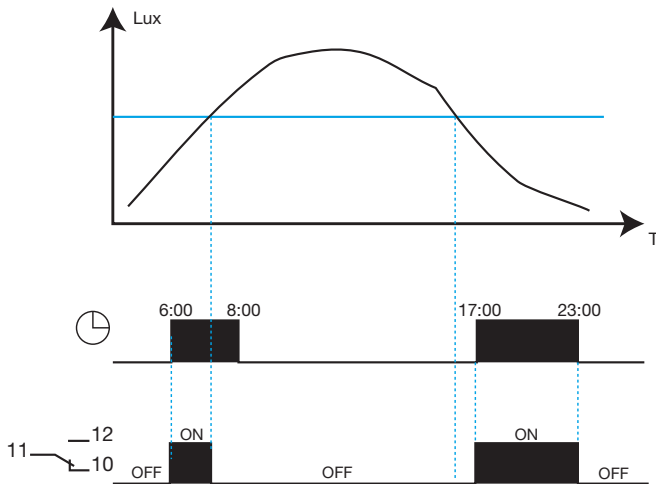
The output of the **EE171** during the programmed ON time period is:

- 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

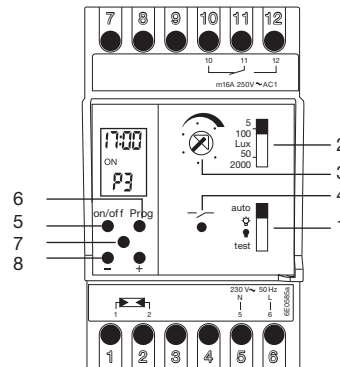
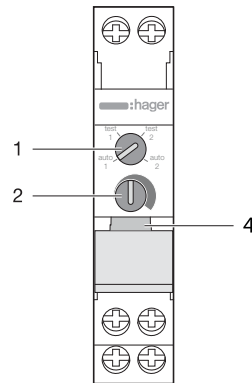
The output of the **EE171** during the programmed off time period is:

- 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

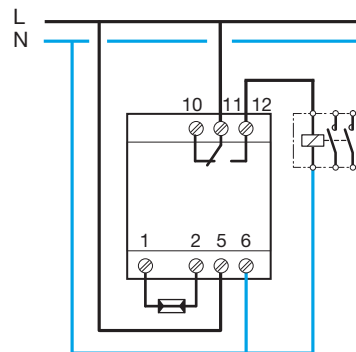


The programmable light sensitive switch **EE171** has two main functions:

- 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	-30°C to +60°C	-30°C to +60°C

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	-30°C to +60°C (cell) -10°C to +50°C (modular device)
Storage Temperature	-20°C to +60°C
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

Technical Characteristics

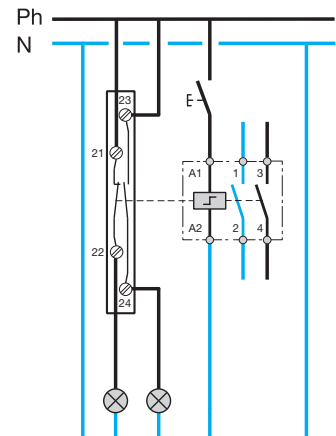
	EPN510 EPN515 EPN520	EPN513 EPN518 EPN524	EPN519 EPN521	EPN525 EPN540	EPN528 EPN541	EPN529
Voltage	230V	24V	12V	230V	24V	12V
Start Consumption	24VA	24VA	24VA	48VA	47VA	TBC
Contact Rating	AC1	-	16A 250V~ ¹	-	-	-
Electrical Endurance AC1 - 16A	150,000 Operations					
Mechanical Endurance	500,000 Operations					
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	0.5 to 4mm ²					
Rigid	1 to 6mm ²					
Power:						
Flexible	1 to 6mm ²					
Rigid	1.5 to 10mm ²					

¹ 400~ for **EPN540** and **EPN541**.

Modular Devices
& Connection

Auxiliary Contacts (EPN051)

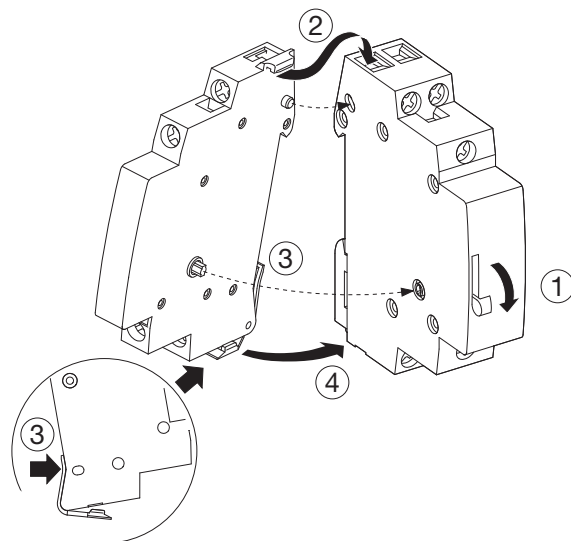
The range of latching relays have been designed for use with an auxiliary contact. The devices simply clip on the side of the relay.



Technical Characteristics

	EPN051
Voltage	-
Contact Rating	2A / 250V
I _{min} / 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.

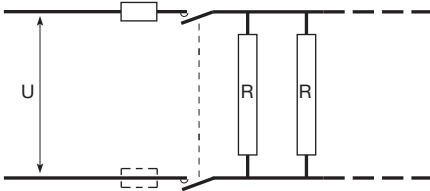
Type of Load

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.

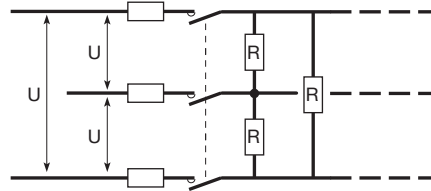
Heat Dissipation Inserts

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

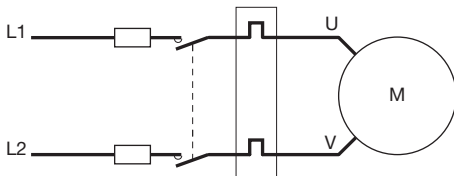


Modular Devices & Connection

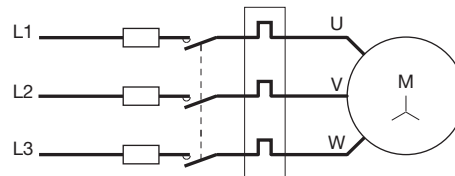
		Number of operations					
		100,000	150,000	200,000	500,000	1,000,000	
Max. load in kW	230V	16A	3	2.5	1.9	0.85	0.7
		25A	4.6	4	3	1.35	1
		40A	7.3	6.3	4.7	2.2	1.6
		63A	11.6	10	7.5	3.5	2.5
	400V	16A	8.9	8	5.8	2.8	2
		25A	13.8	12	8.6	4.3	3
		40A	22	18.5	14.385	6.3	5
		63A	35	30	22.6	10.2	7.6

Contactor selection when using with motors

Single Phase 230V (AC3 or AC7b)



Three Phase 400V (AC3 or AC7b)



Maximum load in kW	Single Phase with Capacitor 230V	Three Phase (AC3 or AC7) 400V	Choice of Contactor According to control diagram	
			2 Wires	3 Wires
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.

Description	Modular contact						Auxiliary contact
	Relay	Contactor	Relay	Contactor	Contactor	Contactor	Contactor
Standard conformity	EN 61095						
Approvals	NF - VDE- IMQ - KEMA - RMC / CCC						
Number of modules	1		2		3		½
Thermal current I _{th} (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 I _e	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 I _e	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 @ I _e 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	-
Opening delay	15ms	15ms	15ms	15ms	20ms	20ms	-

Connection

Main contact cable section	Rigid	1...10mm ²	1...10mm ²	1...10mm ²	1...10mm ²	4...25mm ²	4...25mm ²	1...6mm ²
	Flexible	1...6mm ²	1...6mm ²	1...6mm ²	1...6mm ²	4...16mm ²	4...16mm ²	1...6mm ²
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...10mm ²	1...10mm ²	1...10mm ²	1...10mm ²	1...10mm ²	1...10mm ²	-
	Flexible	1...6mm ²	1...6mm ²	1...6mm ²	1...6mm ²	1...6mm ²	1...6mm ²	-
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
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Storage temperature

	-40°C to +80°C
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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.

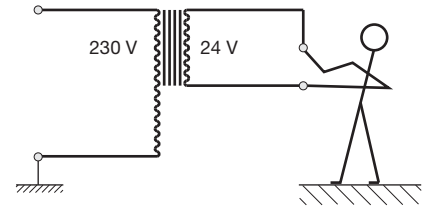
	Lamp Power	16A	25A	16A +	25A +	40A	63A	
Compact fluo lamps								
Compact fluo lamp with external electronic ballast	5W	11	15	17	27	49	76	
	7W	11	15	17	27	49	76	
	9W	9	13	16	26	40	63	
	11W	9	13	16	26	40	63	
	15W	7	11	14	22	36	57	
	18W	7	11	14	22	36	57	
	20W	7	11	14	22	36	57	
	23W	7	11	14	22	36	57	
Compact 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	

	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
	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

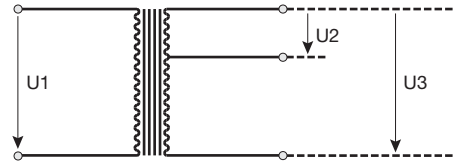
Safety Transformers

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 $U \leq 50V$. 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

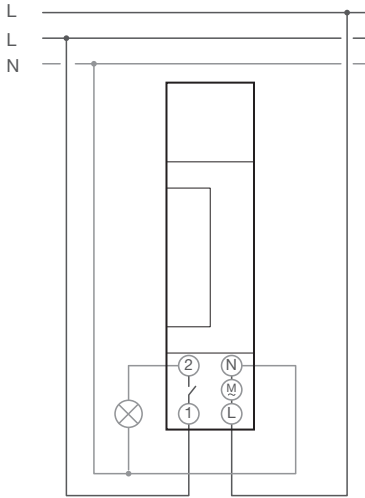
Technical Specification

	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
		$I_n = 0.5A$	$I_n = 1A$	$I_n = 2A$	$I_n = 2.08A$	$I_n = 1.33A$	$I_n = 5.25A$
	U3	12 Volts	12 Volts	12 Volts	24 Volts	24 Volts	24 Volts
		$I_n = 0.33A$	$I_n = 0.67A$	$I_n = 1.33A$	$I_n = 1.04A$	$I_n = 0.67A$	$I_n = 2.63A$
No Load	U2	12 Volts	15 Volts	12 Volts	14 Volts	16 Volts	14 Volts
Secondary Voltage	U3	18 Volts	22 Volts	19 Volts	29 Volts	30 Volts	27 Volts
Galvanic Insulation	4kV	4kV	4kV	4kV	4kV	4kV	4kV
Max Functional Temperature	35°C	35°C	35°C	35°C	35°C	35°C	35°C
Overload and S/C Protection	Thermal cut out in the primary winding						
Insulation Class	H	H	B	B	B	B	H

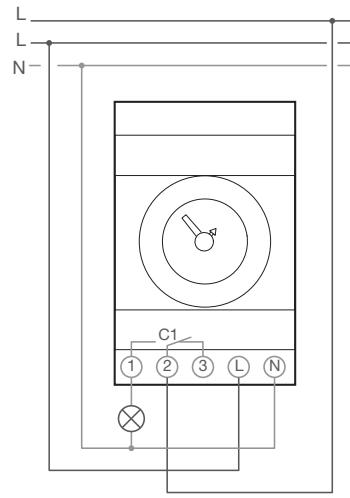
Technical Specifications

	EHN011	EHN010	EHN110	EHN111	EHN171	EG103E	EG203E	EG493E
Version	Daily				Weekly			Weekly & Annual
Voltage Supply	230V 50/60Hz	230V 50Hz	230V 50Hz	230V 50/60Hz	230V 50/60Hz	230VAC 50/60Hz	230VAC 50/60Hz	230VAC 50/60Hz
Consumption	0.5W	1W	0.9W	0.5W	0.5W	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	2 Volt Free Change- over Con- tacts	2 Volt Free 2 NO Changeover Contact Contacts
Switching Capacity								
AC 1	16A/250V	16A/250V	16A/250V	16A/250V	16A/250V	16A AC1 /250V 4A DC 1 /12V	16A AC1 /250V 4A DC 1 /12V	10A AC1 /250V
Inductive Load cos 0.6	4A / 250V	4A / 250V	4A / 250V	4A / 250V	2.5A / 250V	10A / 250V	10A / 250V	10A / 250V
Incandescent Lamp	1000W	1000W	1100W	900W	900W	2300W	2300W	1500W
LED Lamp ≤2W >2W	30W (15x2W) 300W (20x15W)	30W (15x2W) 300W (20x15W)	20W 180W	20W 180W	20W 180W	-	-	-
Halogen Lighting	1000W	1000W	1100W	1100W	1100W	2300W	2300W	1500W
Fluorescent lamps (electronic ballast)	600W (10x58W)	600W (10x58W)	-	-	-	-	-	-
Fluorescent lamps With ballast Without ballast	600VA(max 70µF) 1000VA	600VA(max 70µF) 1000VA	-	-	-	-	-	-
Compensated Fluorescent Tubes (max 45µF)	-	-	400VA	400VA	400VA	400W	400W	400W
Non Compensated Fluorescent Tubes Compensated in Series	-	-	1100VA	1100VA	1100VA	1000W	1000W	800W
Compact Fluorescent Tubes	150W	150W	90W	90W	90W	500W	500W	400W
Minimum Current AC 1	-	-	-	-	-	100mA / 250V	100mA / 250V	100mA / 250V
Minimum Current DC 1	-	-	-	-	-	-	-	-
Galvanic Insulation Between Power Supply and Output	-	-	-	-	-	< 4 kV	< 4 kV	< 4 kV
Characteristics								
Technology	Quartz	Quartz	Quartz	Quartz	Quartz	-	-	-
Dial	24hrs	24hrs	24hrs	24hrs	7 days	-	-	-
Minimum Switching	15min	15min	15min	15min	2h	-	-	-
Programming Capacity	-	-	-	-	-	56 Steps	56 Steps	300 Steps
Minimum Time Between 2 Steps	-	-	-	-	-	1min	1min	1min
Working Accuracy	1sec per day	1sec per day	Network synchronous	1sec per day	1sec per day	±1.5sec / 24h	±1.5sec / 24h	±0.2sec / 24h
Supply Failure Reserve	120hrs	No	No	120hrs	120hrs	5 Yrs lithium battery	5 Yrs lithium battery	5 Yrs Lithium Battery
Manual Switch Type	Off Auto On	Off Auto On	Off Auto On	Off Auto On	Off Auto On	-	-	-
Protection Degree	-	-	-	-	-	IP20	IP20	IP20
Environment								
Working Temperature	-10°C to +50°C	-20°C to +50°C	-20°C to +55°C	-10°C to +55°C	-10°C to +55°C	-5°C to +45°C	-5°C to +45°C	-10°C to +45°C
Storage Temperature	-25°C to +70°C	-25°C to +70°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	-20°C to +70°C
Connection								
Flexible	1 to 6mm ²	1 to 6mm ²	1 to 6mm ²	1 to 6mm ²	1 to 6mm ²	1.5 to 10mm ²	1.5 to 10mm ²	1 to 4mm ²
Rigid	-	-	-	-	-	1 to 6mm ²	1 to 6mm ²	1.5 to 6mm ²

EHN010 / EHN011
 230 VM ±10% 50/60Hz



EHN110 / EHN111 / EHN171
 230 VM ±10% 50/60Hz



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
	EHN010 EHN011	EHN110 EHN111 EHN171	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	EHN010 EHN011	EHN110 EHN111	EG010			
7 Days		EHN171	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 cosφ = 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

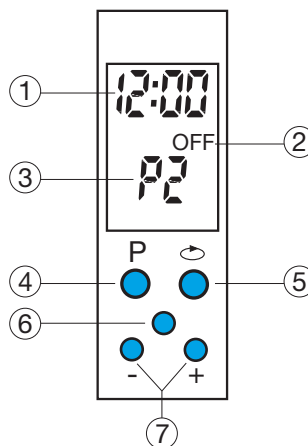
Environment

Working Temperature	-10°C to +50°C
Storage Temperature	-10°C to +60°C
Cable Capacity	1 to 4mm ²
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



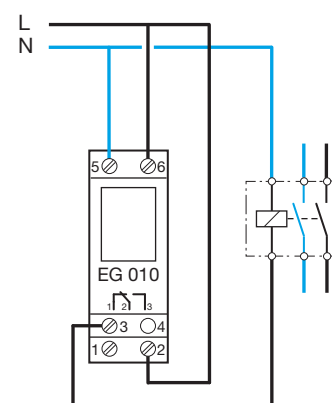
Display

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 cosφ = 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 4mm ²

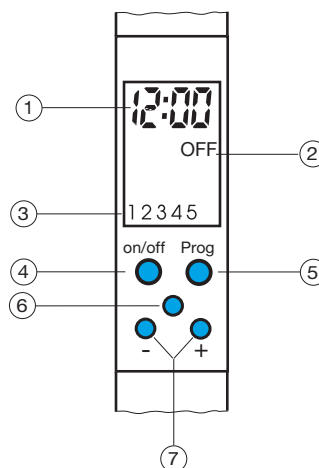
Product Presentation

Display

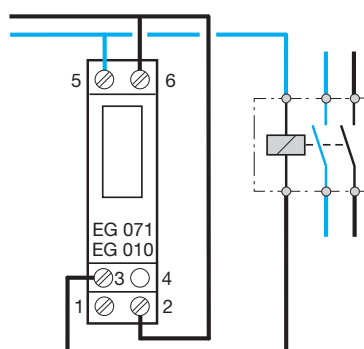
1. Time
2. Circuit Status
3. Days of the week

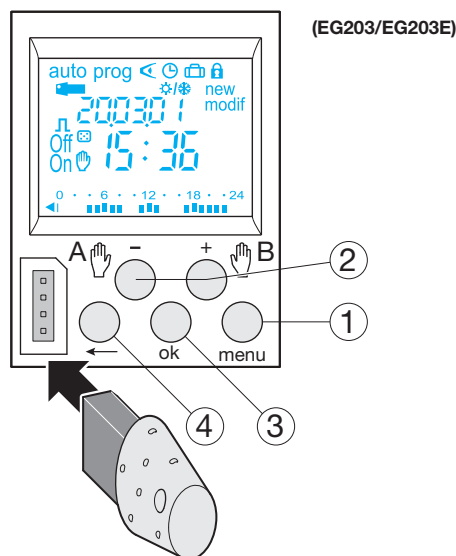
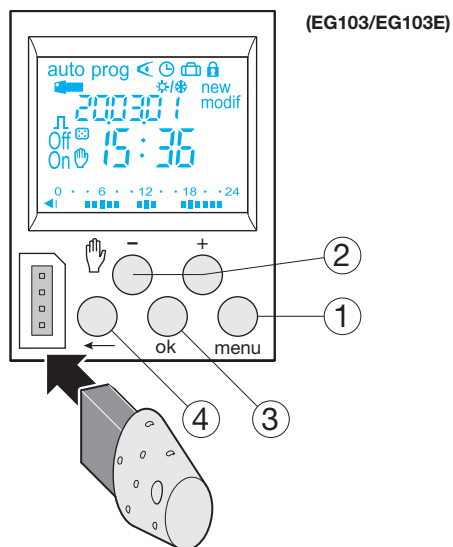
Buttons

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



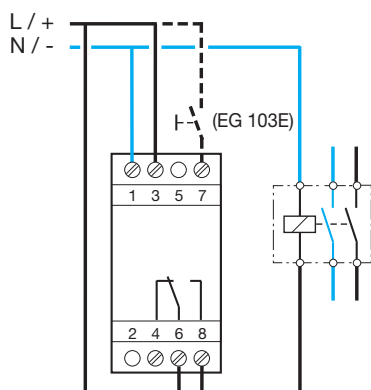


Keys

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.

Connection Diagram EG103*

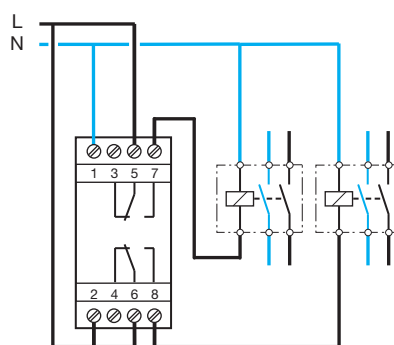


Major Characteristics

- 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 EG203*

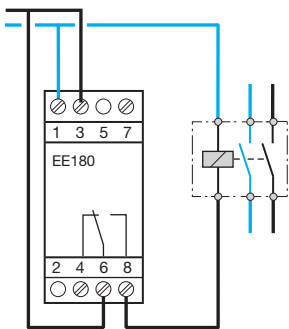


Technical Characteristics

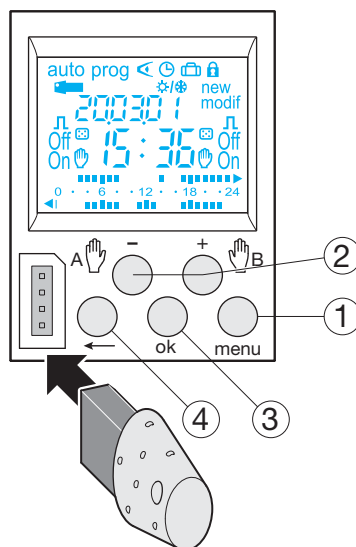
	EE180 (1 Channel)	EE181 (2 Channel)
Width in 17.5mm Modules	2	2
Supply Voltage	230V AC (+10 % / -15%, 50/60Hz)	
Number of Outputs	1	2
Characteristics of Relay	Change over contact 16A C 1 250V /10A cos phi = 0.6	
Incandescent	2300W	
230V Halogen	2300W	
Standards	CE + CTICK and CEI 60-669	
Connection		
Flexible	1 to 6mm ²	
Rigid	1.5 to 10mm ²	
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 interruption	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	

Modular Devices & Connection

Electrical Connection EE180 : 1 Channel



Product Presentation

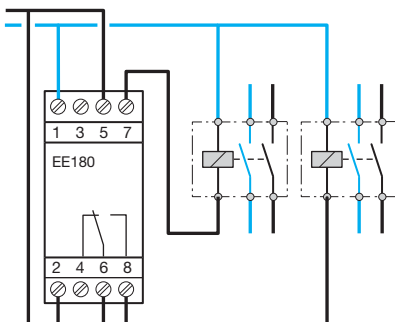


Keys

- | | |
|---------|--|
| 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 🖐 | 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.

EE181 : 2 Channels



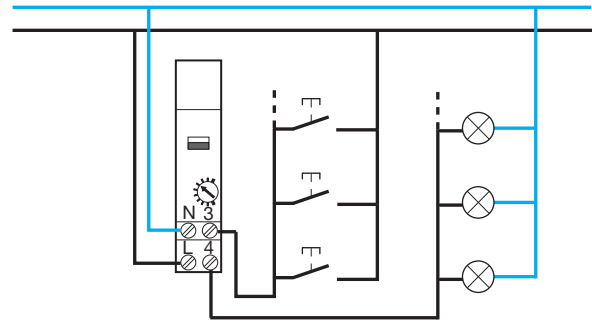
Time Lag Switches

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.

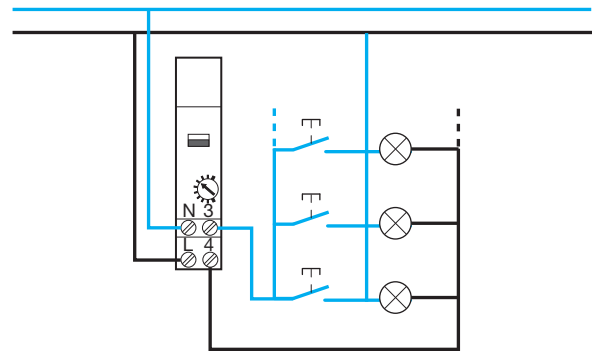
Technical Specification

	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	60 x 7W or 40 x 11W or 32 x 15W or 20 x 23W 23000W	-	-
with Conventional Ballast	-	-	-
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 6mm ²	1 to 6mm ²	1 to 6mm ²
Rigid	1.5 to 10mm ²	1.5 to 10mm ²	1.5 to 10mm ²
Connection EM001/EM002	-	2 wires 1.5	-

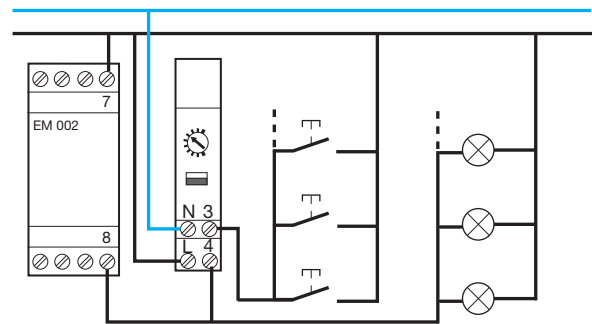
Wiring Diagrams 4-Wire



3-Wire



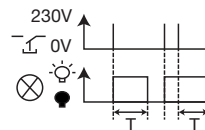
Combination EMN002 with EMN001



A: Basic Mode

Press push button to switch ON the light. After a set time (Adjustable "T"), the light will switch OFF automatically.

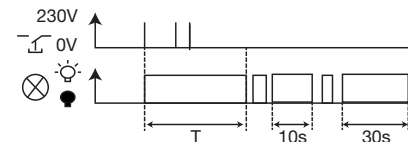
A



B: Prewarning Mode

A signal (blink) will appear before the end of the lighting period.

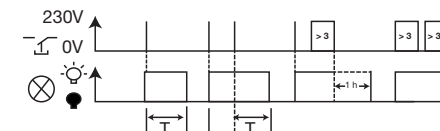
B



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 button for more than 3 seconds, a time lag of one hour begins.

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:

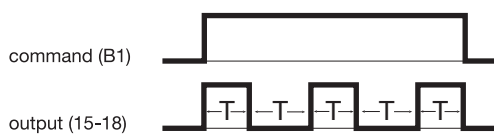
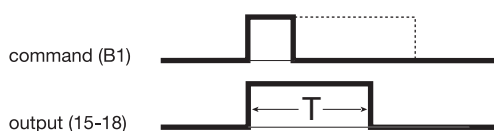
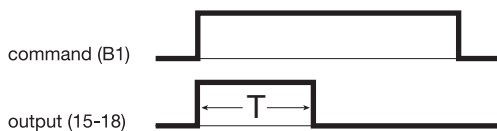
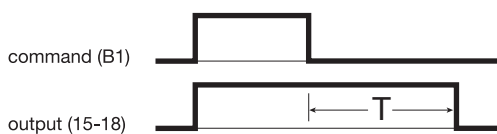
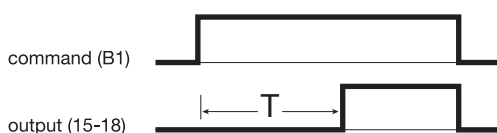
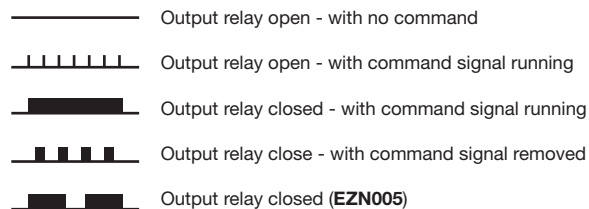
- **Delay on** - intended to delay the starting or switching of a circuit for a set period of time following the command signal e.g. to delay the starting of motor loads where a large number of motors are to be started by the same switch to reduce the effects of the starting currents.
- **Delay off** - 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 - whichever is shorter).
- C** = Delay off.
- D** = Delay on.
- E** = Delay on (output relay closes either at end of command or after set time period - whichever is shorter).
- F** = Symmetrical timer.

On selection - contact permanently closed

Off selection - contact permanently open

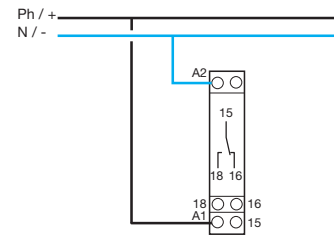


Technical Specifications

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 Cycles
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 6mm ²
Rigid	1.5 to 10mm ²

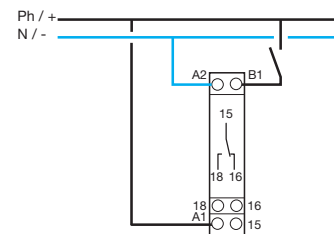
Functional characteristics EZN001, EZN003, EZN005, EZN006 (functions D,E,F)

CD : Command.
O : Output.
T : Time delay.

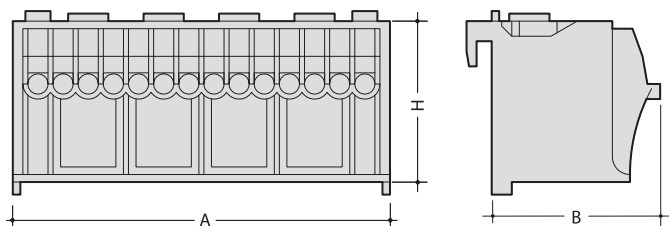


EZN002, EZN004, EZN006 (functions A,B,C)

indicator light (for versions with NO contact).
ON
OFF



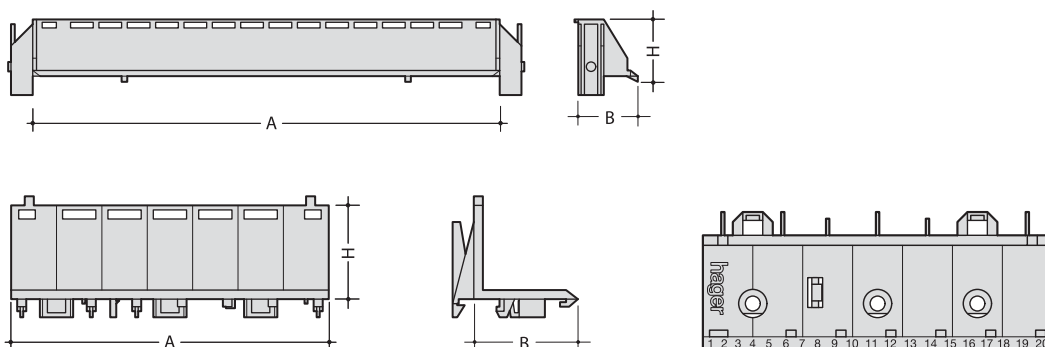
Neutral, earth and phase terminals



	Quick Connect Terminals						Cage Terminals	
	KN06N KN06P KN06E	KN10N KN10P KN10E	KN14N KN14P KN14E	KN18N KN18P KN18E	KN22N KN22P KN22E	KN26N KN26P KN26E	KN04N KN04P	KN07N KN07P
H	33	33	33	33	33	33	33	33
A	30	45	60	75	90	105	45	75
B	34	34	34	34	34	34	18	18

Modular Devices
& Connection

Terminal Supports

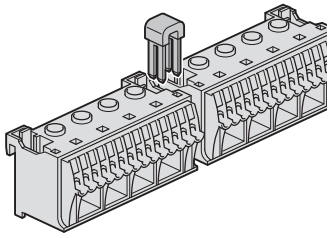


	VZ711 volta, vector	VZ710 vega, vega D	GZ30A gamma	KN00A universal supports
H	32	35	30	35
A	240	315	195	105
B	42	42	42	42
Number	47	62	38	20

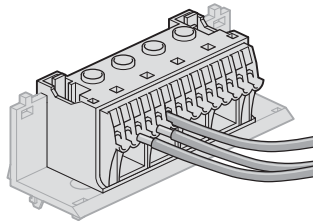
The number indicates the quantity of quickconnect terminals on the support.

Connection

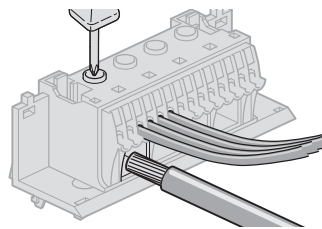
Bridge for 2 terminals



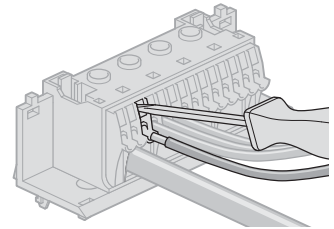
Quick Connect 1.5 to 4 mm² wires



Max. 25 mm² wires in a cage terminal

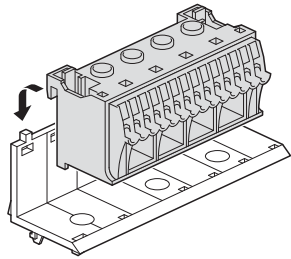


Disconnecting with screwdriver

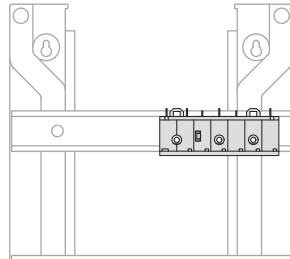


Mounting

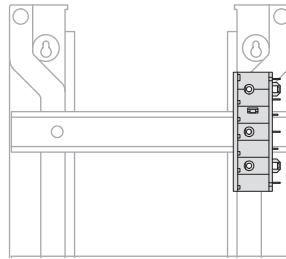
Clipping on terminal bases and universal bases



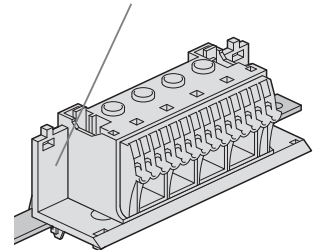
Universal support :
Horizontal mounting on DIN rail



Vertical mounting on DIN rail



Divisible universal support



Combinations: quantity of Quick Connect terminals on the bases

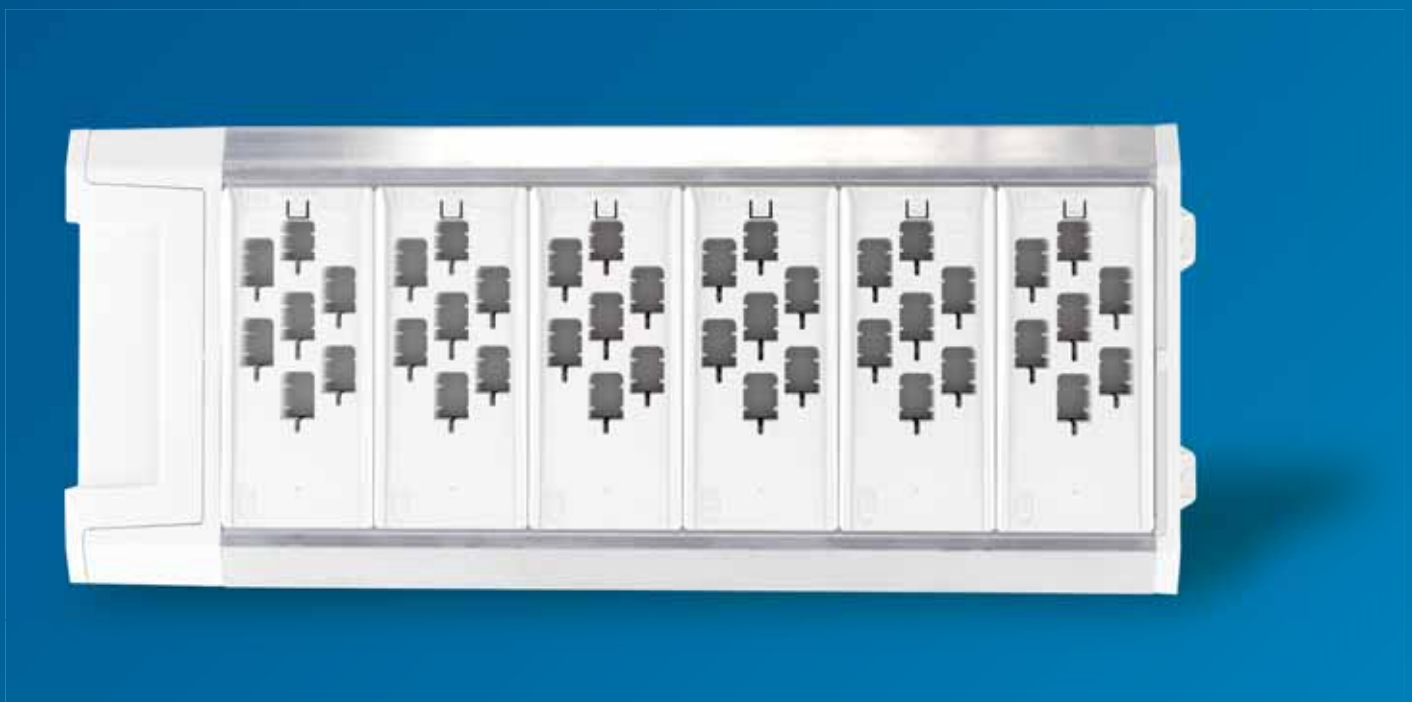
Quick Connect terminals	KN06N/P/E	KN10N/P/E KN04N/P	KN14N/P/E	KN18N/P/E KN07N/P	KN22N/P/E	KN26N/P/E
Number of blocks	1	1.5	2	2.5	3	3.5

Quick Connect terminals bases	VZ710 Vega 18 surface, Vega D	GZ30A Gamma	VZ711 vector, volta, Gala, Vega 18 flush	KN00A universal support
number of blocks	10.5	6.5	8	3.5

The bases above accept blocks combinations (neutral, phase and earth).
Connection between same terminals is done using equipotential bridgings (KN99x).

Lighting Connection

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.



Klik

Klik 7	3.3
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Klik 4	3.13
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Controls

Klik 7 Controls	3.7
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Klik 4 Controls	3.17
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Special Application Controls	3.8
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Technical Pages	3.19
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KLMB6WG

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.
- 6 & 12 outlets.
- 16A Rated BS 5733:2010 .
- Short circuit tested: 1500A conditional rating.

Description	Cat ref.
Marshalling Box, Single Supply, Wire In, Plug Out	
6 Way	KLMB6WG
12 Way	KLMB12WG



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

Klik 7 Pre-wired Plugs

Characteristics:

- Connections to luminaire is made via pre wired plug and lead. All leads are low smoke zero halogen and carry CPR rating Dca- S1b, d2, a2.
- Standard, digital and emergency luminaires.
- Short circuit tested: 1500A conditional rating.
- Cable standard EN 61535.
- 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 **K7B3M075W** will now become **K7B3M075WDCA**. For a full supersession chart, see page 3.21.



K7B3M075WDCA

K7 Range	B Function	3M Length	075 Core Size	W Wired or Plug End	DCA CPR Rating
Z Link Lead, Power, Emergency, Switched Line, Control	B Standard Luminaire			E Emergency Exit Luminaire	
J Standard Luminaire, Emergency	F Switch Drop Lead			P Dimmable Luminaire	
T Dimmable Luminaire, Emergency					

Description	Cat ref.
Pre-wired Plugs for Standard Luminaires	
6A Luminaire Lead 3m 0.75mm ² 3 Core Plug to Wire	K7B3M075WDCA ★
6A Luminaire Lead 5m 0.75mm ² 3 Core Plug to Wire	K7B5M075WDCA ★
10A Luminaire Lead 3m 1mm ² 3 Core Plug to Wire	K7B3M1WDCA ★
10A Luminaire Lead 5m 1mm ² 3 Core Plug to Wire	K7B5M1WDCA ★
16A Luminaire Lead 5m 1.5mm ² 3 Core Plug to Wire	K7B5M15WDCA ★
10A Luminaire Lead 3m 1mm ² 4 Core Plug to Wire	K7J3M1WDCA ★
10A Luminaire Lead 5m 1mm ² 4 Core Plug to Wire	K7J5M1WDCA ★
Pre-wired Plugs for Emergency Exit Luminaires	
16A Luminaire Lead 3m 1.5mm ² 3 Core Plug to Wire	K7E3M15WDCA ★
16A Luminaire Lead 5m 1.5mm ² 3 Core Plug to Wire	K7E5M15WDCA ★
16A Luminaire Lead 7m 1.5mm ² 3 Core Plug to Wire	K7E7M15WDCA ★



K7T3M075WDCA

Klik 7 Pre-wired Plugs for Dimmable Luminaires

Description	Cat ref.
Pre-wired Plugs for Dimmable Luminaires	
6A Luminaire Lead 1.5m 0.75mm ² 5 Core Plug to Wire	K7P1M075WDCA ★
6A Luminaire Lead 3m 0.75mm ² 5 Core Plug to Wire	K7P3M075WDCA ★
6A Luminaire Lead 5m 0.75mm ² 5 Core Plug to Wire	K7P5M075WDCA ★
6A Luminaire Lead 7m 0.75mm ² 5 Core Plug to Wire	K7P7M075WDCA ★
10A Luminaire lead 1.5m 1mm ² 5 core Plug to Wire	K7P1M1WDCA ★
10A Luminaire Lead 3m 1mm ² 5 Core Plug to Wire	K7P3M1WDCA ★
10A Luminaire Lead 5m 1mm ² 5 Core Plug to Wire	K7P5M1WDCA ★
10A Luminaire Lead 7m 1mm ² 5 Core Plug to Wire	K7P7M1WDCA ★
16A Luminaire lead 1.5m 1.5mm ² 5 core Plug to Wire	K7P1M15WDCA ★
16A Luminaire Lead 3m 1.5mm ² 5 Core Plug to Wire	K7P3M15WDCA ★
16A Luminaire Lead 5m 1.5mm ² 5 Core Plug to Wire	K7P5M15WDCA ★
16A Luminaire Lead 7m 1.5mm ² 5 Core Plug to Wire	K7P7M15WDCA ★
Pre-wired Plugs for Dimmable Luminaires with Emergency	
6A Luminaire Lead 1.5m 0.75mm ² 6 Core Plug to Wire	K7T1M075WDCA ★
6A Luminaire Lead 3m 0.75mm ² 6 Core Plug to Wire	K7T3M075WDCA ★
6A Luminaire Lead 5m 0.75mm ² 6 Core Plug to Wire	K7T5M075WDCA ★
6A Luminaire Lead 7m 0.75mm ² 6 Core Plug to Wire	K7T7M075WDCA ★
10A Luminaire Lead 1.5m 1mm ² 6 Core Plug to Wire	K7T1M1WDCA ★
10A Luminaire Lead 3m 1mm ² 6 Core Plug to Wire	K7T3M1WDCA ★
10A Luminaire Lead 5m 1mm ² 6 Core Plug to Wire	K7T5M1WDCA ★



K7F5M1WDCA

Klik 7 Pre-wired Plugs for Switch Drops

Characteristics:

- The switch drop pre-wired lead allows plug in switch to KLMB connection. All leads are low smoke zero halogen and are factory connected and tested.
- 16A Rated.
- Short circuit tested: 1500A conditional rating.
- Cable standard BS 7211.
- **Note: for other switch drop options, use wireable plug, see page 3.22.**

Description	Cat ref.
Pre-wired Plugs for Switch Drops	
10A Switch Drop Lead 5m 1mm ² 4 Core Plug to Wire	K7F5M1WDCA ★
10A Switch Drop Lead 10m 1mm ² 4 Core Plug to Wire	K7F10M1WDCA ★
10A Switch Drop Lead 15m 1mm ² 4 Core Plug to Wire	K7F15M1WDCA ★

Klik 7 Pre-wired Marshalling Box Link Leads

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 3.4 .
- 1.5mm² CSA.
- 3m, & 5m lengths.
- Standard, Digital and Emergency Luminaires.
- 16A Rated.
- EN 61535.
- Short circuit tested: 1500A conditional rating.



K7Z3M15PDCA

Description

Cat ref.

Pre-wired Link Leads - L, N, SL, CPC, DA+, DA-, Emergency

16A Link Lead 5m 1.5mm² 7 Core Plug to Plug

K7Z5M15PDCA ★

Ceiling Roses

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.



KLPCR7

Description

Cat ref.

16A 7 Pin Ceiling Rose

KLPCR7

Wireable / Rewireable Plug

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.



K7PLUG

Description

Cat ref.

16A Wireable Klik 7 Plug

K7PLUG



EE816



EED503



EED513



EE807

Occupancy Sensors with Remote Programming & Control Options

- **EE816** - Detector for control of digital (DSI/DALI) luminaires
- Direct control of a light load.
- Lux level and ON delay adjustable via potentiometers or **EE807** remote control.
- DALI/DSI bus output accommodates up to 24 ballasts.
- 230V wall switch override.
- Presence or absence detection available.
- Presence or Absence detection available.
- Programmable from **EE807**
- 7m Range
- **EE807** - IR programming tool
- Installer remote control to commission settings.
- **EE808** - IR remote control
- Customer remote control for override operation.
- Complies with EN 60669-2-1.
- **EED503, EED513, EER503, EER513** -
- For spaces requiring modern, high-performance equipment
- Can be adjusted with the EE807 remote control
- Controlled with the EE808 remote control
- Can function as both master and slave
- Zero-crossing contact compatible with LED loads
- LED status visible on the front of the product
- 20m Range
- Commercial applications, office floors, reception areas, high traffic areas

Description	Cat ref.
Wireable Digital PIR Occupancy Sensor - Dimmable & Daylight Linked	EE816
Large area motion/presence detector 20 m, DALI 2 flush mounted	EED503 ★
Large area motion/presence detector 20 m, DALI 2 surface mounted	EED513 ★
Large area motion/presence detector 20 m, ON/OFF flush mounted	EER503 ★
Large area motion/presence detector 20 m, ON/OFF surface mounted	EER513 ★
Programming Tool	EE807
Remote Control for the End User	EE808
Backbox Accessory for Surface BESA Detectors	EEK005

High Bay, High Ceiling Detector



EED518

- **EED518, EER518** -For spaces requiring modern, high-performance equipment.
- Can be adjusted with the EE807 remote control
- Controlled with the EE808 remote control
- Can function as both master and slave
- Zero-crossing contact compatible with LED loads
- LED status visible on the front of the product
- Commercial applications, high ceilings, storage warehouse

Description	Cat ref.
Motion detector for high ceilings 22 x 12 metres, DALI 2 surface mounted	EED518 ★
Motion detector for high ceilings 22 x 12 metres, ON/OFF surface mounted	EER518 ★

Occupancy Sensors

Characteristics

EE810, EE811 and EE812

- High performance presence detector that will be used in premises or in passage areas, where they increase comfort and reduce drastically the energy costs.

Combination of a presence area and a motion area.

- The presence area is especially interesting in offices, where the motion area may be used in long corridors.
- Head rotation for detection area adjustment.
- Settings via potentiometers.

Applications

EE810 - 1 channel detector

- Direct control of a light load or used as a slave for detection area enlargement.
- Lux level and ON delay setting via potentiometers.
- Test mode in order to set lux level and the detection pattern.

EE811 - 2 channels detector

- Light relay output for direct control of a light load.
- Presence output potential free relay.
- Lux level, on delay setting for light channel and presence channel via potentiometers.
- Input for slave (EE810) and/or override push button.

EE812 - Light regulator 1/10V

- Light regulator with 1/10V output in order to control electronic ballasts and/or Hager dimmers EV100/EV102.
- Detector especially dedicated for energy saving and comfort purpose.
- Input for slave (EE810) and/or override pushbutton in order to modify the setpoints.
- Lux level, On delay for light channel and min level via potentiometers.
- 3 functional modes : no dimming, dimming with local setpoint, dimming with remote setpoint.

EE813 : accessory to surface mounting.

Complies with IEC 60 609-1 and 60 669-2-1.

Description	Cat ref.
Presence detector 1 channel	EE810
Presence detector 2 channels	EE811
Presence detector 1/10V	EE812
Mounting accessory for surface mounting can be used with EE810, EE811, EE812	EE813
Presence detector monobloc on/off, switched phase 16A AC1 230V, power supply: 230V AC, 360°	EE815
Presence detector monobloc DALI/DSI for lighting regulation, power supply: 230V AC, 360°	EE816



EE810

Hyper Frequency Detector

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 360°.
- Complies with BS EN 60669-1, BS EN 60669-2-1.

Description	Cat ref.
360° Hyper Frequency Sensor	EE883
Protection Basket for Hyper Frequency Sensor	EEK006



EE883

Corridor Motion Detector

EE880 - Infra-red corridor motion detector for surface mounting.

- 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.
- **EED505, EED515, EER505, EER515** -For spaces requiring modern, high-performance equipment
- Can be adjusted with the EE807 remote control
- Controlled with the EE808 remote control
- Can function as both master and slave
- Zero-crossing contact compatible with LED loads
- LED status visible on the front of the product
- 30x5m Range

Description	Flush Cat ref.	Surface Cat ref.
PIR Corridor Motion Detector 4x20 metres		EE880
Corridor motion detector 30 x 5 metres ON/OFF	EER505 ★	EER515 ★
Corridor motion detector 30 x 5 metres DALI 2	EED505 ★	EED515 ★



EE880



EE820

Motion Detectors

Characteristics:

- These devices are made for automatic control of lighting in both the residential and private/public industry sectors.
- They are automatically switch on lighting when a person's movement is detected and light is needed. The lights turn off after a preset duration.

EE820/821, EE830/831, EE840/841, EE825/826, EE827/828

- This waterproof detector range (IP55) is mainly dedicated to outdoor applications.
- They are equipped with Fresnel lenses that permit to get a high detection performance.
- Detector 140° for access control and perimeter lighting
- 200° models to survey a house facade
- 360° to cover a house corner
- The fixing accessories allow ceiling and corner mounting.
- Settings: The timer and the lux level are set locally, via potentiometer.

Complies to IEC 60 669-1 and 60 669-2-1.

Standard IR Detectors

Characteristics:

- Surface
- 230 V~ 50/60 Hz
- Lux: 5 to 1000 lux
- Timer: pulse, 5s to 15 min
- Contact 10A AC1

Description	Version	Cat ref.
Standard wall-mounted IR detectors		
Phase outlet 230V 10A resistive	140° white	EE820
	140° anthracite	EE821
	200° white	EE830
	200° anthracite	EE831
Dry contact outlet 230V 10A resistive	360° white	EE840
	360° anthracite	EE841



EE850

Description	Version	Cat ref.
Enhanced wall-mounted IR detectors		
Dry contact outlet 230V 16A resistive setting and override through IR remote control	140° white	EE850
	140° anthracite	EE851
	220° white	EE860
	220° anthracite	EE861
	220/360° white	EE870
	220/360° anthracite	EE871
IR remote control for enhanced detectors, setting and lighting control functions		EE806



EE825

Description	Version	Cat ref.
Mounting accessories		
Corner mounting accessories for standard 140° and 200°detectors	white	EE825
	anthracite	EE826
Corner mounting accessories for standard 360° enhanced & radio TRExxx detectors	white	EE855
	anthracite	EE856
Ceiling mounting accessories for standard 140° and 200°detectors	white	EE827
	anthracite	EE828



Klik LCM

Lighting Control Module



Most lighting control requires commissioning.

Klik LCM can be set up using our easy programming tool KlikLink, allowing quick and easy commissioning, whether completed by the contractor or a commissioning engineer.

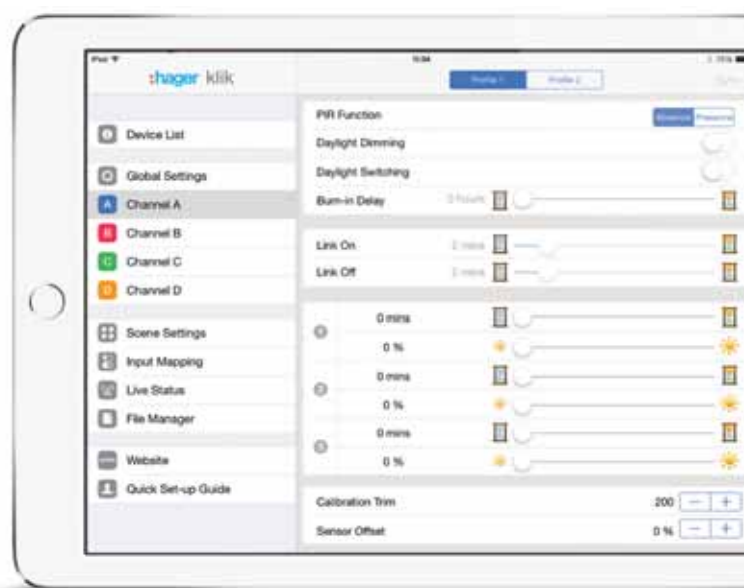
:hager

Klik

Lighting Control Module



Klik LCM's (Lighting Control Module) enable the control of an area with up to 4 different control groups. Each group of outputs can control standard switched and/ or digital dimmable (DALI/ DSI) luminaires. The control module can be connected to up to 4 SELV occupancy sensors and up to 4 wall switch overrides (double retractive, centre off). Any switch or occupancy sensor can be assigned to any output. The programming is carried out with iPad and communicates with the LCM via Bluetooth.



SELV Switching / Dimming

Each channel is capable of being switched via one of 4 or more switch inputs.



Sensor with integral lux sensor (SELV)

This allows daylight dimming and switching utilising any natural light available



Scene setting

4 lighting scenes are possible (plus global Up/ Down-On/Off) controlled via centre-off 2 pole retractive grid switch modules and 2 separate scene profiles are available.



Partition switch

This allows total and separate control of a room with a partition and switch fitted.



Corridor hold

Linking LCMs with RJ45 lead to hold designated corridor area



Integral emergency test timers

Emergency test carried out via an emergency test switch (can be set for up to 5 hours). Whilst on test the other luminaires will dim to a pre-set value.



Presence & absence sensing

Each output channel can be set to Presence or Absence individually.



Light level offset between channels

This function allows phasing channels to set as a percentage of the lead channel. (E.g. 10%, 60%, 80%, 100%)



Three level timeout

At timeout, lighting can turn Off or Dim down in three stages.



Dimming - DSI, DALI (Broadcast)

Broadcast on the required channel to all connected luminaire

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 accomplished via KlikLink app, available on iOS for iPad.



KLCM413WETBT

Description
13 Way 4 Channel LCM Wire in, Plug out, 230V EM Test Override
KlikLink iPad App

Cat ref.
KLCM413WETBT
Search KlikLink in iPad App Store



KlikLink App (Shown on iPad, not included)

Lighting Control Module Occupancy Sensors

Characteristics:

- Klik SELV 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.



KLCM-OS

Description	Range	Cat ref.
Klik LCM Occupancy Sensor with 1 Sensor Head	5m	KLCM-OS
Klik LCM Occupancy Sensor with 1 Sensor Head	10m	KLCM-10S
Klik LCM Corridor Sensor with 3 Sensor Heads	15 x 5m	KLCM-3OS
Klik LCM Wide Area Sensor with 5 Sensor Heads	15 x 15m	KLCM-5OS



KLCM-5OS

Lighting Control Module Switch Drop Leads (Grey)

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 retractable wall switch, please see below

Description	Cat ref. Red	Cat ref. Grey
RJ45 SELV Switch Drop Lead		
5m	KLO5RJ45R	KLO5RJ45G
10m	KLO10RJ45R	KLO10RJ45G
15m	KLO15RJ45R	KLO15RJ45G
20m	KLO20RJ45R	KLO20RJ45G
30m	KLO30RJ45R	KLO30RJ45G
40m	KLO40RJ45R	KLO40RJ45G
50m	KLO50RJ45R	KLO50RJ45G
RJ45 Splitter	KLORJ45CON	



KLO15RJ45G



KLO15RJ45R

User Controls

Characteristics:

- Our Sollysta grid retractable wall switches make the perfect user control companion to the LCM.
- Other grid finishes are available, please see our Wiring Accessories catalogue for the full range.

Description	Cat ref.
Sollysta Grid Retractive Wall Switch	
1 Gang Grid Plate	WMGP1
1 Gang Grid Frame	WMGF1
2 Way & Centre Off Retractive Wall Switch	WMGS13R



WMGS13R

Lighting, Connection & Control



KLDS4

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.



KLDS6BLACK

Description	White Cat ref.	Black Cat ref.
4 Way Klik Lighting Distribution Unit	KLDS4	
6 Way Klik Lighting Distribution Unit	KLDS6	KLDS6BLACK
8 Way Klik Lighting Distribution Unit	KLDS8	
10 Way Klik Lighting Distribution Unit	KLDS10	
12 Way Klik Lighting Distribution Unit	KLDS12	

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.
- Connections to luminaire is made via pre wired plug and lead. All leads are low smoke zero halogen and carry CPR rating Dca- S1b, d2, a2.
- All leads have prepared ends.



PCR2000/1.0

Description	Box Qty.	LSZH Cat ref.
6A Plug-in Ceiling Rose with 0.75mm² Flexible Cord		
1 Metre	10	K4PCR20001M075DCA ★
2 Metre	10	K4PCR20002M075DCA ★
3 Metre	5	K4PCR20003M075DCA ★
4 Metre	5	K4PCR20004M075DCA ★
6A Plug-in Ceiling Rose with 1mm² Flexible Cord		
2 Metre	10	K4PCR20002M1DCA ★
3 Metre	5	K4PCR20003M1DCA ★
4 Metre	5	K4PCR20004M1DCA ★
5 Metre	5	K4PCR20005M1DCA ★

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.
- Connections to luminaire is made via pre wired plug and lead. All leads are low smoke zero halogen and carry CPR rating Dca- S1b, d2, a2
- All leads have prepared ends.



CR64AX/1.0

Description	Box Qty.	LSZH Cat ref.
6A Pre-wired Ceiling Rose with 0.75mm² Flexible Cord		
1 Metre	10	K4PCR64AX1M075DCA ★
2 Metre	10	K4PCR64AX2M075DCA ★
3 Metre	5	K4PCR64AX3M075DCA ★
4 Metre	5	K4PCR64AX4M075DCA ★
6A Pre-wired Ceiling Rose with 1mm² Flexible Cord		
2 Metre	10	K4PCR64AX2M1DCA ★
3 Metre	5	K4PCR64AX3M1DCA ★
4 Metre	5	K4PCR64AX4M1DCA ★
5 Metre	5	K4PCR64AX5M1DCA ★

3 Pin Pre-wired 6A Plugs

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.
- Connections to luminaire is made via pre wired plug and lead. All leads are low smoke zero halogen and carry CPR rating Dca- S1b, d2, a2.

Description	Quantity	LSZH Cat ref.
6A Pre-wired Plugs		
2 Metre	10	K4P222M075DCA ★
3 Metre	5	K4P223M075DCA ★
4 Metre	5	K4P224M075DCA ★
6A Pre-wired Plugs with 1mm² Flexible Cord		
2 Metre	10	K4P222M1DCA ★
3 Metre	5	K4P223M1DCA ★
4 Metre	5	K4P224M1DCA ★
5 Metre	5	K4P225M1DCA ★

4 Pin (Including Auxiliary) Pre-wired 6A Plugs - White

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.
- Connections to luminaire is made via pre wired plug and lead. All leads are low smoke zero halogen and carry CPR rating Dca- S1b, d2, a2
- All leads have prepared ends.

Description	Quantity	LSZH Cat ref.
6A Pre-wired Plugs with 0.75mm² Flexible Cord		
2 Metre	10	K4P64AX2M075DCA ★
3 Metre	5	K4P64AX3M075DCA ★
4 Metre	5	K4P64AX4M075DCA ★
6A Pre-wired Plugs with 1mm² Flexible Cord		
2 Metre	10	K4P64AX2M1DCA ★
3 Metre	5	K4P64AX3M1DCA ★
4 Metre	5	K4P64AX4M1DCA ★
5 Metre	5	K4P64AX5M1DCA ★

4 Pin (Including Auxiliary) Pre-wired 6A Plugs - Red

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.
- Connections to luminaire is made via pre wired plug and lead. All leads are low smoke zero halogen and carry CPR rating Dca- S1b, d2, a2.
- All leads have prepared ends.

Description	Quantity	LSZH Cat ref.
6A Pre-wired Plugs with 0.75mm² Flexible Cord		
2 Metre	10	K4P64AXR2M075DCA ★
3 Metre	5	K4P64AXR3M075DCA ★
4 Metre	5	K4P64AXR4M075DCA ★
6A Pre-wired Plugs with 1mm² Flexible Cord		
2 Metre 1.00mm ² Flexible Cord	10	K4P64AXR2M1DCA ★
3 Metre 1.00mm ² Flexible Cord	5	K4P64AXR3M1DCA ★
4 Metre 1.00mm ² Flexible Cord	5	K4P64AXR4M1DCA ★
5 Metre 1.00mm ² Flexible Cord	5	K4P64AXR5M1DCA ★



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
3 Pin Plug-in Ceiling Rose Black	10	PCR2000BLACK



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
Ceiling Rose Cover Black	10	A1BLACK



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
3 Pin Plug Black	10	P22BLACK



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

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 Round Socket Black	10	S64BLACK



S64AX

Moulded Mounting Boxes

Description	Quantity	Cat ref.
Round Surface Box White	10	MB2



MB2



EE815

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 (without cable)	EE815



EE807

EE808

Remote Controls for Sensors

Characteristics:

- **EE807** programming tool is easy to use with 2 memory settings to enable repeatability.
- **EE808** 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	EE807
Remote Control	EE808



EE005

Accessories

Description	Cat ref.
Backbox Accessory for Surface BESA Detectors	EEK005



EE804A

Occupancy/Movement 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

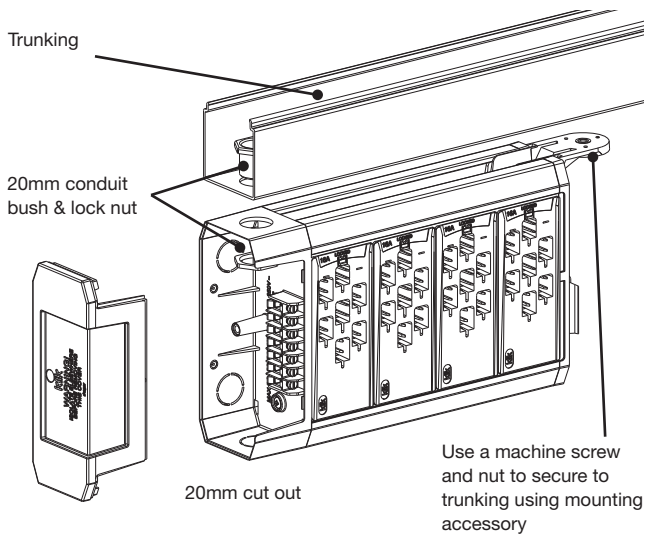
Description	Cat ref.
Occupancy/Movement Detector 360° Surface Mounted	EE804A
Occupancy/Movement Detector 360° Flush Mounted	EE805A



EE805A

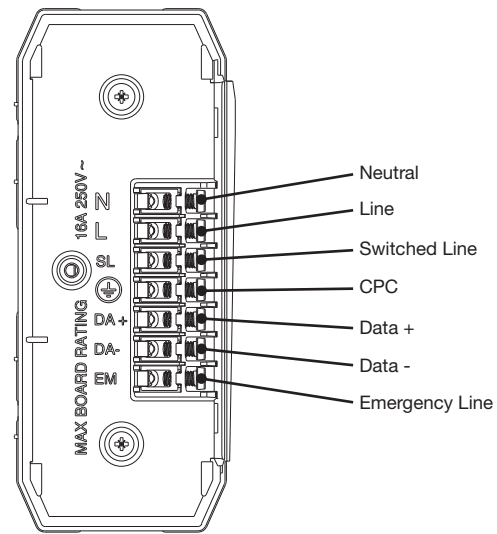
Mounting Options for Trunking

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

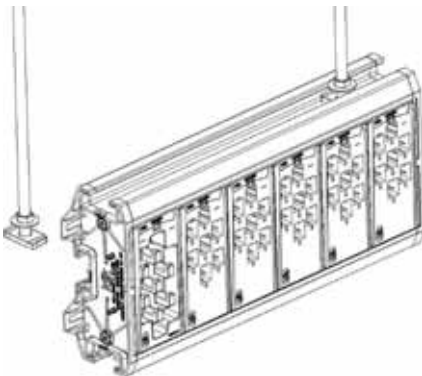
Klik 7 Pin LMB has seven screw terminals available to the installer and are arranged in the end cap as per diagram. DA+/DA- connections can be used for DALI/DSI control.



Mounting Options for Drop Rod (Lighting Marshalling Box)

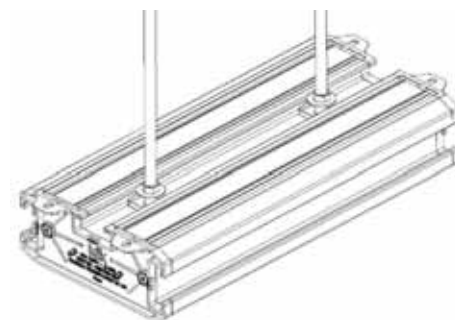
Option 1.

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.

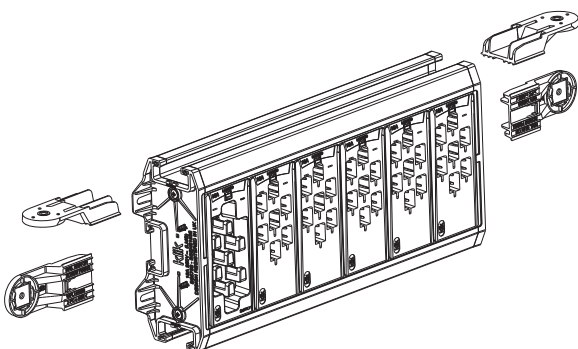
Single sided LMB can be mounted from the top as option 1 or from the rear as shown. Note: Double sided LMBs can only be mounted with option 1.



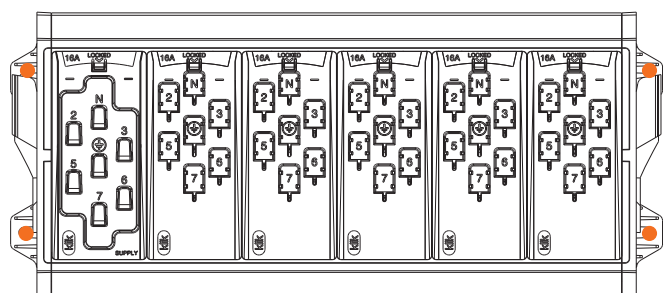
Mounting Options for Wall & Ceiling

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.

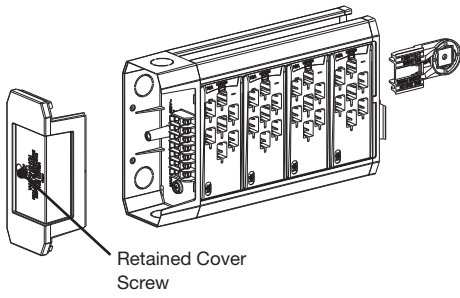
Note: Double sided LMB can only be mounted on top channel slot.



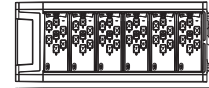
Screw mounting tabs (x4)



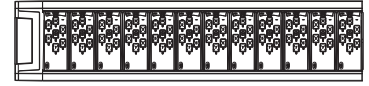
Lighting Marshalling Boxes (LMB) - Fixed Wiring
16A Rated LMB Complying to BS 5733:2010



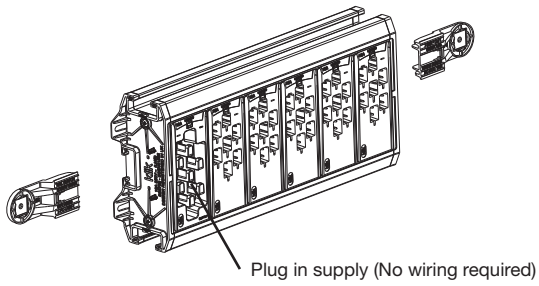
KLMB6W



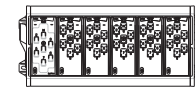
KLMB12W



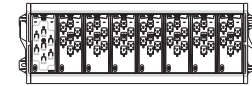
Lighting Marshalling Boxes (LMB) - Pluggable
16A Rated LMB Complying to BS 5733:2010



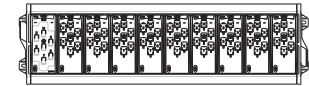
KLMB5P



KLMB7P



KLMB9P

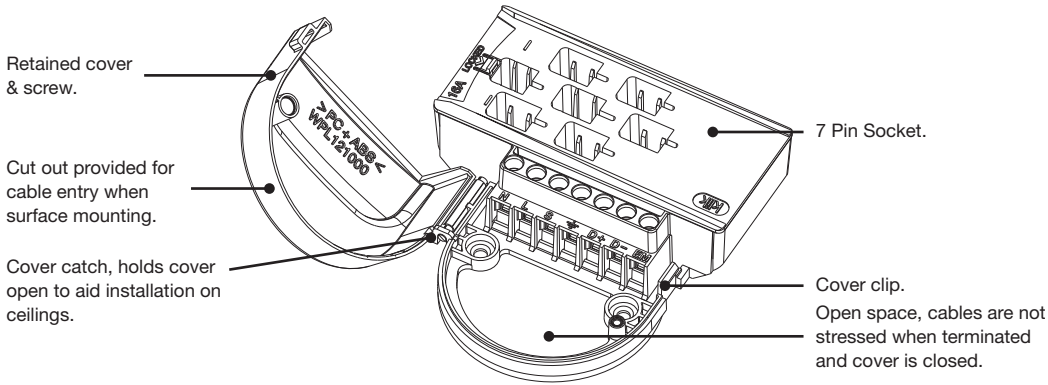


KLMB11P

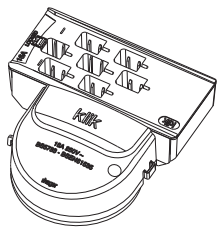


Previous Reference	Description	New Reference	New Description
K7B3M075W	6A Lighting Lead 3m 0.75mm 3 Core P-W	K7B3M075WDCA ★	6A Lighting Lead 3m 0.75mm 3 Core P-W
K7B3M1W	10A Lighting Lead 3m 1mm 3 Core P-W	K7B3M1WDCA ★	10A Lighting Lead 3m 1mm 3 Core P-W
K7B5M075W	6A Lighting Lead 5m 0.75mm 3 Core P-W	K7B5M075WDCA ★	6A Lighting Lead 5m 0.75mm 3 Core P-W
K7B5M1W	10A Lighting Lead 5m 1mm 3 Core P-W	K7B5M1WDCA ★	10A Lighting Lead 5m 1mm 3 Core P-W
K7E3M15W	16A Lighting Lead 3m 1.5mm 3 Core P-W	K7E3M15WDCA ★	16A Lighting Lead 3m 1.5mm 3 Core P-W
K7E5M15W	16A Lighting Lead 5m 1.5mm 3 Core P-W	K7E5M15WDCA ★	16A Lighting Lead 5m 1.5mm 3 Core P-W
K7F5M1W	10A Switch Drop Lead 5m 1mm 4 Core P-W	K7F5M1WDCA ★	10A Switch Drop Lead 5m 1mm 4 Core P-W
K7E7M15W	16A Luminaire Lead 7m 1.5mm ² 3 Core Plug to Wire	K7E7M15WDCA ★	16A Luminaire Lead 7m 1.5mm ² 3 Core Plug to Wire
K7F10M1W	10A Switch Drop Lead 10m 1mm 4 Core P-W	K7F10M1WDCA ★	10A Switch Drop Lead 10m 1mm 4 Core P-W
K7F15M1W	10A Switch Drop Lead 15m 1mm 4 Core P-W	K7F15M1WDCA ★	10A Switch Drop Lead 15m 1mm 4 Core P-W
K7J3M1W	10A Lighting Lead 3m 1mm 4 Core P-W	K7J3M1WDCA ★	10A Lighting Lead 3m 1mm 4 Core P-W
K7J5M1W	10A Lighting Lead 5m 1mm 4 Core P-W	K7J5M1WDCA ★	10A Lighting Lead 5m 1mm 4 Core P-W
K7P1M075W	6A Lighting Lead 1.5m 0.75mm 5 Core P-W	K7P1M075WDCA ★	6A Lighting Lead 1.5m 0.75mm 5 Core P-W
K7P1M15W	16A Lighting lead 1m 1.5mm 5 core P-W	K7P1M15WDCA ★	16A Lighting lead 1.5m 1.5mm 5 core P-W
K7P1M1W	10A Lighting lead 1m 1mm 5 core P-W	K7P1M1WDCA ★	10A Lighting lead 1.5 1mm 5 core P-W
K7P3M075W	6A Lighting Lead 3m 0.75mm 5 Core P-W	K7P3M075WDCA ★	6A Lighting Lead 3m 0.75mm 5 Core P-W
K7P3M15W	16A Lighting Lead 3m 1.5mm 5 Core P-W	K7P3M15WDCA ★	16A Lighting Lead 3m 1.5mm 5 Core P-W
K7P3M1W	10A Lighting Lead 3m 1mm 5 Core P-W	K7P3M1WDCA ★	10A Lighting Lead 3m 1mm 5 Core P-W
K7P5M075W	6A Lighting Lead 5m 0.75mm 5 Core P-W	K7P5M075WDCA ★	6A Lighting Lead 5m 0.75mm 5 Core P-W
K7P5M15W	16A Lighting Lead 5m 1.5mm 5 Core P-W	K7P5M15WDCA ★	16A Lighting Lead 5m 1.5mm 5 Core P-W
K7P7M15W	16A Lighting Lead 7m 1.5mm 5 Core P-W	K7P7M15WDCA ★	16A Lighting Lead 5m 1.5mm 5 Core P-W
K7P5M1W	10A Lighting Lead 5m 1mm 5 Core P-W	K7P5M1WDCA ★	10A Lighting Lead 5m 1mm 5 Core P-W
K7P7M1W	10A Lighting Lead 7m 1mm 5 Core P-W	K7P7M1WDCA ★	10A Lighting Lead 7m 1mm 5 Core P-W
K7T1M075W	6A Lighting Lead 1.5m 0.75mm 6 Core P-W	K7T1M075WDCA ★	6A Lighting Lead 1.5m 0.75mm 6 Core P-W
K7T1M1W	10A Lighting Lead 1.5m 1mm 6 Core P-W	K7T1M1WDCA ★	10A Lighting Lead 1.5m 1mm 6 Core P-W
K7T3M075W	6A Lighting Lead 3m 0.75mm 6 Core P-W	K7T3M075WDCA ★	6A Lighting Lead 3m 0.75mm 6 Core P-W
K7T3M1W	10A Lighting Lead 3m 1mm 6 Core P-W	K7T3M1WDCA ★	10A Lighting Lead 3m 1mm 6 Core P-W
K7T5M075W	6A Lighting Lead 5m 0.75mm 6 Core P-W	K7T5M075WDCA ★	6A Lighting Lead 5m 0.75mm 6 Core P-W
K7T7M075W	6A Lighting Lead 7m 0.75mm 6 Core P-W	K7T7M075WDCA ★	6A Lighting Lead 7m 0.75mm 6 Core P-W
K7T5M1W	10A Lighting Lead 5m 1mm 6 Core P-W	K7T5M1WDCA ★	10A Lighting Lead 5m 1mm 6 Core P-W
K7B5M15W	16A Lighting Lead 5m 1.5mm ² 3 Core Plug to Wire	K7B5M15WDCA ★	16A Lighting Lead 5m 1.5mm ² 3 Core Plug to Wire
K7Z3M15P	16A Lighting Link Lead 3m 1.5mm 7 Core P-P	K7Z3M15PDCA ★	16A Lighting Link Lead 3m 1.5mm 7 Core P-P
K7Z5M15P	16A Lighting Link Lead 5m 1.5mm 7 Core P-P	K7Z5M15PDCA ★	16A Lighting Link Lead 5m 1.5mm 7 Core P-P

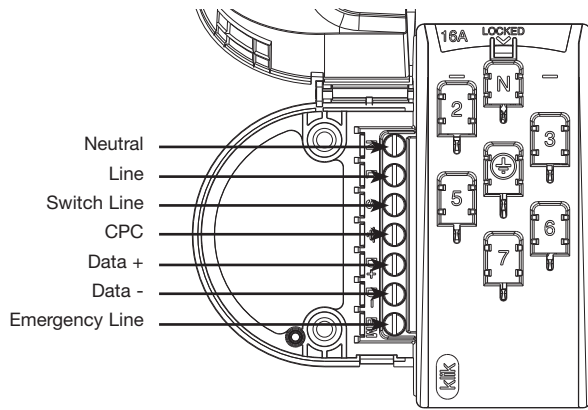
KLPCR - Surface Mount Connector



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.

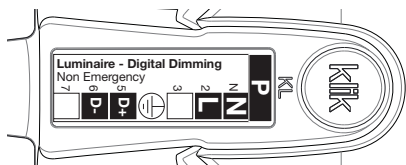


K7PLUG Wireable Plug Configurations and Labels

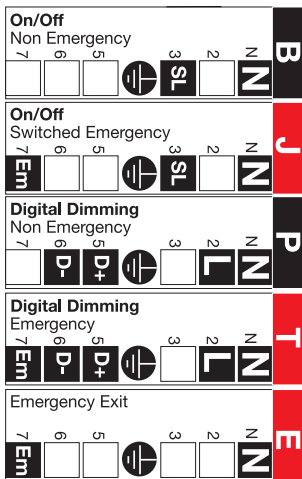
Self Adhesive ID Labels:

Apply label for the type of lead you are making.

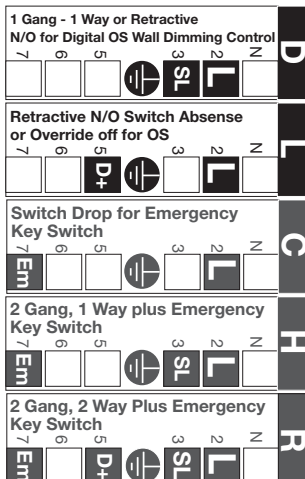
Lighting configurations for on / off and dimmable solutions.



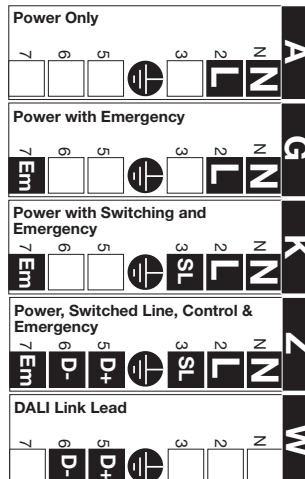
Luminaire Connections



Switch Drops

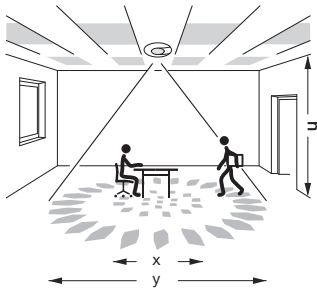


Link Lead



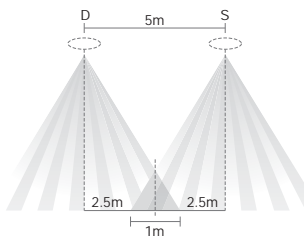
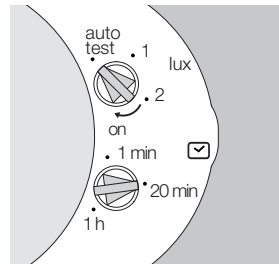
EEK Sensors

Detection areas

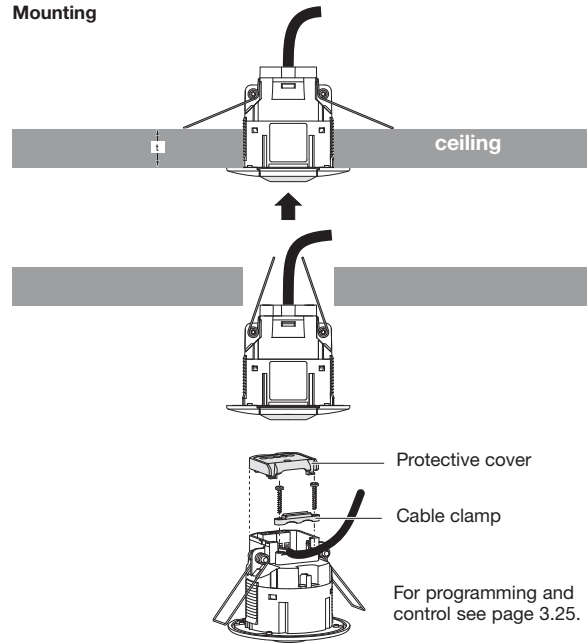


H	2.5m	3m	3.5m
X	5m	5m	5m
Y	7m	8m	9m

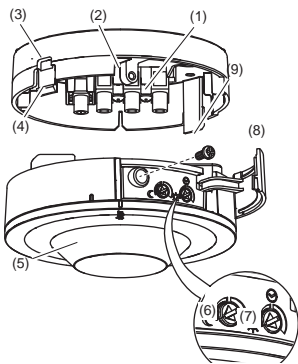
**Settings EEK513P/EEK515P
EEK523P/EEK525P**



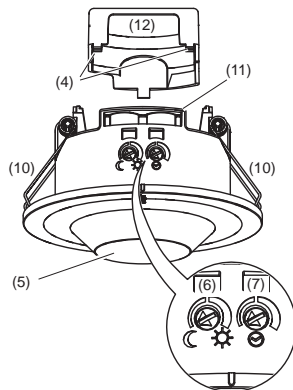
Mounting



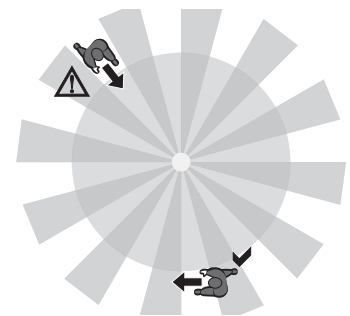
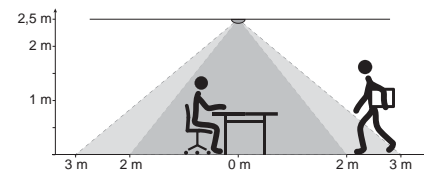
EE804A / EE805A Sensors



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



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.
LSOH 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

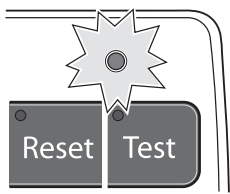
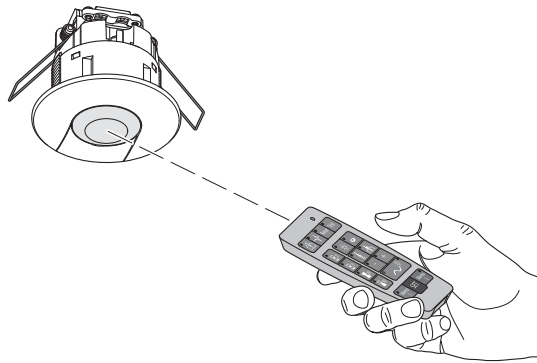
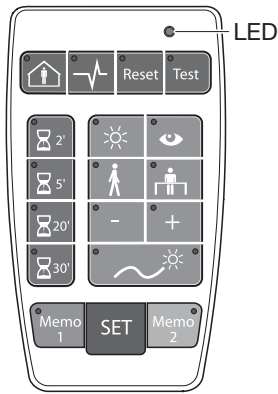
Product Description	Klik Product identification	BS number	Description
Klik Distribution Boxes	KLDS KLMB	BS 5733:2010	General requirements for Electrical Accessories
Occupancy Sensor	EEK*W	BS EN 60669-1, BS EN 60669-2-1	Switches for household & similar fixed electrical installations Part 2-1 for Electronic 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
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				
	0.75mm ²	1.0mm ²	1.5mm ²	2.5mm ²	4.0mm ²
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

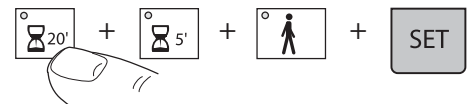
Example: reset



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.

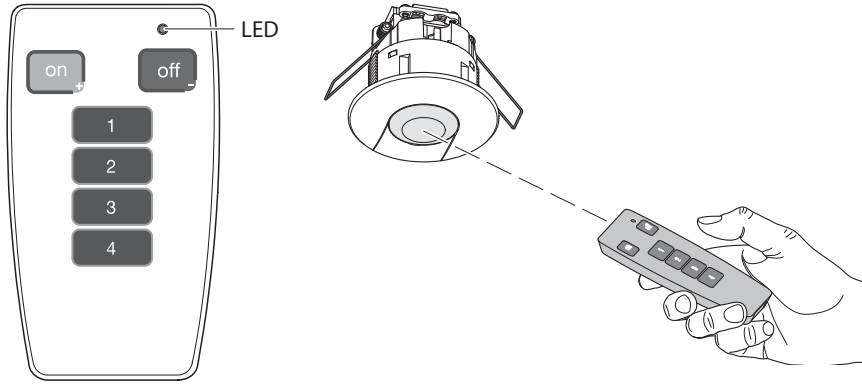


In the case of 2 opposite states the green LED denotes ON and red LED denotes OFF (except Presence / Absence).

When no function is selected all LED's are OFF.

Settings available

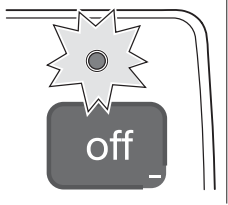
Key	Meaning	Indication	Function
	Presence	Green LED on	Presence on (automation mode)
	Absence	Red LED on	Absence on (semi automatic mode)
	Power Up	Green LED on	The light is automatically switched on for 30 seconds after power up
		Red LED on	During warm up phase, the light output is off
Reset	Reset	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



Use

The remote control allows the user to set or modify settings on the presence detectors **EEK513W** and **EE815**.

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

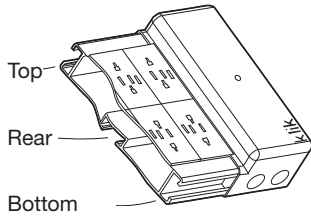
Key	Action	Function	Product Type
on +	Short Press (< 5s.)	On	EE815
	Long Press (> 5s.)	Dim up	EE815
off -	Short Press	Off	EE815
	Long Press (> 5s.)	Dim down	EE815
1	Short Press	To start scene 1	
2	Short Press	To start scene 2	
3	Short Press	To start scene 3	
4	Short Press	To start scene 4	

	Klik 4		
			
	Wireable, Flush Mount	Wireable, Surface Mount	Wireable, Flush Mount
Technical characteristics	EE815	EE804A	EE805A
Supply voltage	230V~ 50Hz	230V - 50Hz	230V - 50Hz
Detection type	Presence	Motion / Presence	Motion / Presence
Parasitic power	270mW	0.3W	0.3W
Detection (Length)	7m	6m	6m
Detection (Width)	7m	6m	6m
Detection angle	360°	360°	360°
Detection frequency	-	-	-
Receiver class	-	-	-
Standby consumption	2.4VA/270mW	-	-
	1min to 1hour	5s - 30min	5s - 30min
Duration of time delay (S2)	-	-	-
Luminosity threshold	5 to 1000 Lux	5 - 1000	5 - 1000
Recommended installation height	2.5m	2.5m	2.5m
Operating temperature	-10°C to +45°C	-5 - +45	-5 - +45
Storage temperature	-20°C to +60°C	-25 - +70	-25 - +70
Insulation class	II	11	11
Protection rating	IP41	IP21	IP21
Standards	BS EN 60669-1 BS EN 60669-2-1		
Pollution degree	2		
Connection stranded	0.5mm ² to 1.5mm ²	1mm - 2.5mm	1mm - 2.5mm
Connection solid	0.5mm ² to 1.5mm ²	1mm - 2.5mm	1mm - 2.5mm
Switching channel	1	1	1
Lighting loads 230V~ AC1	16A	10A	10A
Switching capacity (Incandescent)	2300W	2300W	2300W
Halogen lamps LV	-		
Halogen ELV (12 or 24V) via ferromagnetic or electronic transformer	1500W	2300W	2300W
Compact fluorescent	23 X 23W	20 x 20W	20 x 20W
LED	20 X20W	20 x 20W	20 x 20W
Parallel compensated fluorescent tubes	1000W	1000W	1000W
Fluorescent tubes non-compensated	1000W	1000W	1000W
Electronic ballast	-	1000W	1000W
DSI/DALI ballast	-	-	-
Remote programming	EE807	-	-
Remote control	EE808	-	-
Adjustable shutters (supplied)	✘	✘	✘
Dimensions (L*W*H)	80 x 80 x 70mm	ø 100 x 50mm	ø 90 x 61mm

Klik 7	Special Applications			
 <p>Digital, Wireable, Flush</p>	 <p>Wireable, Surface Mount, Corridor</p>	 <p>Wireable, Surface Mount, Hyper Frequency</p>	 <p>Wireable, Semi-Recessed, 1 / 2 Channel</p>	 <p>Large area motion/presence detector 20 m Flush / surface</p>
EE815	EE880	EE883	EE810 / EE811	EER503/EER513
230V~ 50Hz	230V~ 50Hz	230V~ 50Hz	230V~ 50Hz	230 V v, +10%/-15%,240 V v, +6/-6% 50/60 Hz
Presence	Motion	Motion	Presence	Motion and presence detector
60mW	1W	1W	1.2W	
7m	20m	1m to 8m	15.5m	20m
7m	4m	1m to 8m	8m	10m
360°	360°	360°	360°	360°
-	-	5.8 Ghz ± 0.075 Ghz	-	
-	-	2	-	
60mW	1W	1W	1.2W	< 0.5 W
1min to 1hour	5sec to 15 min	5sec to 15 min	1min to 30min	
-	-	-	30sec to 60min	
5 to 1000 Lux	2 to 2000 lux	2... 2000 lux	5 to 1200Lux	
2.5m	3 m	2.5 m	3 m	
-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	35°C to +70°C	35°C to +70°C	10°C to +60°C	
II	II	II	II	
IP41	IP54	IP54	IP41	
BS EN 60669-1 BS EN 60669-2-1	BS EN 60669-1 BS EN 60669-2-1	BS EN 60669-2-1 EN 300 440-1 V1.3.1	BS EN 60669-1 BS EN 60669-2-1	
2	2	2	2	
0.5mm ² to 1.5mm ²	Max 1.5mm ²	Max 1.5mm ²	1mm ² to 4mm ²	
0.5mm ² to 1.5mm ²	Max 1.5mm ²	Max 1.5mm ²	1mm ² to 4mm ²	
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)	-	-	-	
EE807	x	x	x	EE807
EE808	x	x	x	EE808
x	x	x	x	
80 x 80 x 70mm	125 x 125 x 60mm		110 x 110 x 70mm	(Ø x H) 85 x 75.9 mm flush mounted EER503 (Ø x H) 105 x 59.7 mm surface mounted EER513

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



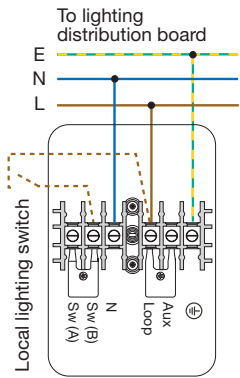
Screw to surface



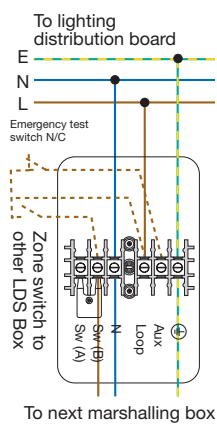
Drop rods on rear



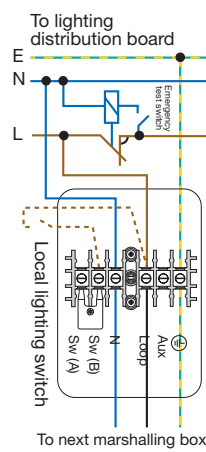
Local Lighting Switch Control Permanent emergency feed



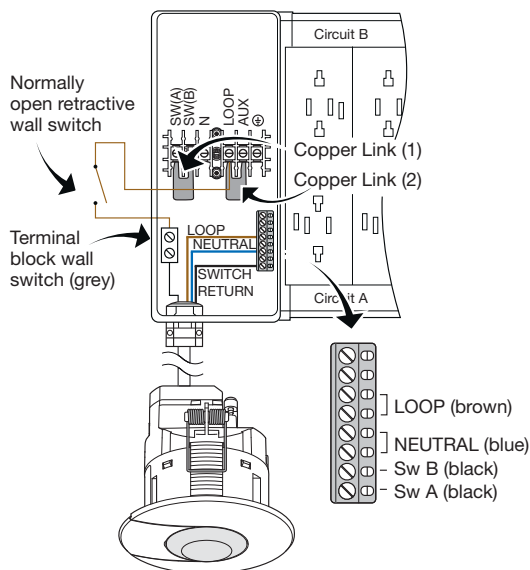
Local Lighting Switch Control Centralised emergency test via key switch



Zone Lighting Control Local emergency test control

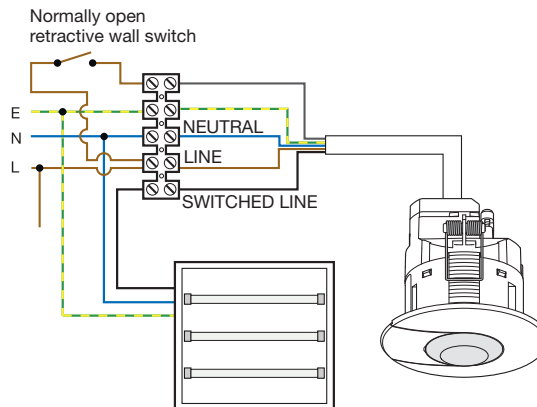


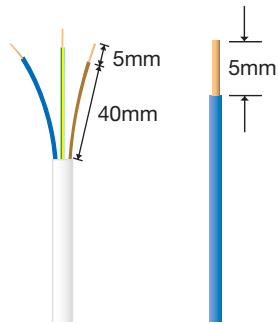
All ways switched by a single Hager occupancy sensor



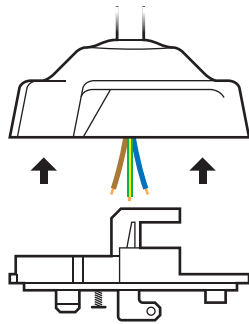
Switch wire to be connected as required.

Connected directly to a single luminaire

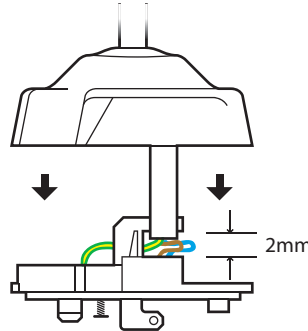




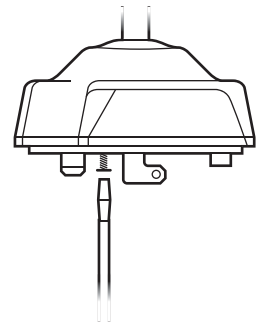
1. Strip cable as above -
Note: Trim cable tails to double over for better terminal contact.



2. Remove plug cover.
3. Pass cable through plug cover centre hole.

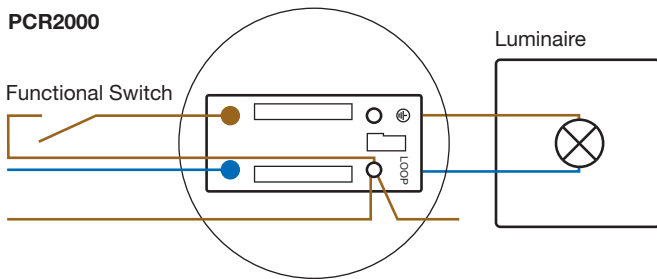


4. Terminate conductors into terminals.
5. Push outer sheath of cable firmly into jaws of sheath grip, making sure that at least 2mm of sheath protrudes below the grip.

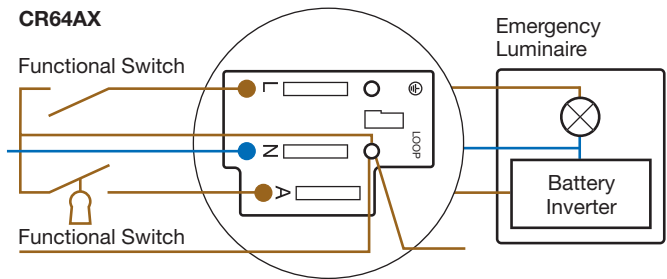


6. Refit cover.

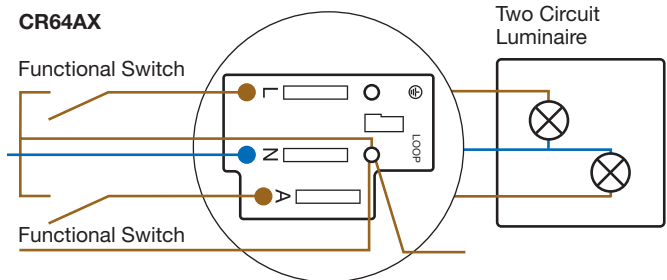
PCR2000



CR64AX



CR64AX



Note: earth connections omitted for clarity

Residential Distribution.

If home is where the heart is, then the consumer unit is its heartbeat. Discover our range of consumer units and small enclosures (conforming to I.S.10101 regulations and EN 61439-3 standards) are available in functional, stylish and innovative options for any home. Whilst our protection devices, including RCCBs, MCB's and RCBO's, offer protection from any unwanted bumps in the road.



Consumer Units

Surface Mounted Consumer Units	4.3
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Flush Mounted Consumer Units	4.9
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Enclosures

Surface Mounted Enclosures	4.11
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RCCBs	4.29
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MCBs	4.29
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RCBOs	4.29
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Arc Fault Detection Devices	4.31
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Surge Protection	4.32
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Switching

Switch Disconnectors	4.35
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Auxiliaries & Accessories	4.38
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Changeover Switches	4.39
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Technical Pages

4.40



SBE8101



SBE8101SPD

I.S.10101 Gamma IP30

Characteristics:

- Surface mounting enclosures, 1 - 4 rows, 13 - 52 modules.
- Conforms to EN 61439-3 and I.S.10101
- Made of insulating material coloured RAL 9010.
- Insulating chassis and frame.
- Fixed DIN rail for devices of a maximum shoulder measurement of 45mm.
- Distance between rail 125mm
- Premarked cable entries on top, bottom and side.
- Delivered with plain door and back plate, blanking strips and marking strip
- Optional; additional connection assemblies, cable trunking, back plates, plain and transparent doors, door locks.

Description	Dimensions mm	Pre-fitted devices	Cat ref.
Incomer: Isolator			
1 row 13 modules	h.250 x w.250 x d.103	1 x 80A Isolator (SBR280) 1 x 63A RCD (CDA263U) 4 x 20A MCB (MBN120W) 1 x 32A MCB (MBN132W) 2 x 6A RCBO (ADA306G)	SBE7101
2 rows 26 modules	h.375 x w. 250 x d.103	same as SBE7101	SBE8101
3 rows 39 modules	h.500 x w. 250 x d.103	same as SBE7101	SBE9101
4 rows 52 modules	h.625 x w. 250 x d.103	same as SBE7101	SBE10101
2 rows 26 modules SP	h.375 x w. 250 x d.103	1 x 80A Isolator (SBR280) 1 x 63A RCD (CDA263U) 4 x 20A MCB (MBN120W) 1 x 32A MCB (MBN132W) 2 x 6A RCBO (ADA306G) 1 x 2P Surge Protection Device	SBE8101SPD
3 rows 39 modules	h.500 x w. 250 x d.103	same as SBE8101SPD	SBE9101SPD
4 rows 52 modules	h.625 x w. 250 x d.103	same as SBE8101SPD	SBE10101SPD
Incomer: MCB			
2 rows 26 modules	h.375 x w. 250 x d.103	1 x 63A MCB (NBN263R) 1 x 63A RCD (CDA263U) 4 x 20A MCB (MBN120W) 1 x 32A MCB (MBN132W) 2 x 6A RCBO (ADA306G)	SBM8101
3 rows 39 modules	h.500 x w. 250 x d.103	same as SBM8101	SBM9101
4 rows 52 modules	h.625 x w. 250 x d.103	same as SBM8101	SBM10101
2 rows 26 modules	h.375 x w. 250 x d.103	1 x 63A MCB (NBN263R) 1 x 63A RCD (CDA263U) 4 x 20A MCB (MBN120W) 1 x 32A MCB (MBN132W) 2 x 6A RCBO (ADA306G) 1 x 2P Surge Protection Device	SBM8101SPD
3 rows 39 modules	h.500 x w. 250 x d.103	same as SBM8101SPD	SBM9101SPD
4 rows 52 modules	h.625 x w. 250 x d.103	same as SBM8101SPD	SBM10101SPD

I.S.10101 Meter Tail Kit

Description	Dimensions mm	Pre-fitted devices	Cat ref.
1 row 3 modules	h.175 x w.110 x d.95	Meter Tail Protection Unit B Type 10kA MCB + VE103L enclosure	MCU10101B
1 row 3 modules	h.175 x w.110 x d.95	Meter Tail Protection Unit C Type 10kA MCB + VE103L enclosure	MCU10101C

Gamma IP30

Characteristics:

- Surface mounting enclosures, 1- 4 rows, 13 - 52 modules.
- Conforms to EN 61439-3.
- Made of insulating material coloured RAL 9010.
- Insulating chassis and frame.
- Fixed DIN rail for devices of a maximum shoulder measurement of 45mm.
- Distance between rail 125mm
- Premarked cable entries on top, bottom and side.
- Delivered with plain door and back plate, blanking strips and marking strip
- Optional; additional connection assemblies, cable trunking, back plates, plain and transparent doors, door locks.



SBE700



SBM900

Description	Dimensions mm	Pre-fitted devices	Qty.	Cat ref.
1 row 13 modules	h.250 x w.250 x d.103	1 x 80A Isolator (SBR180) 1 x 40A RCD (CDA240U) 1 x 32A MCB (MBN132W) 2 x 10A MCB (MBN110W) 4 x 20A MCB (MBN120W)	1	SBE700
2 rows 26 modules	h.375 x w. 250 x d.103	1 x 80A Isolator (SBR180) 1 x 40A RCD (CDA263U) 1 x 32A MCB (MBN132W) 2 x 10A MCB (MBN110W) 4 x 20A MCB (MBN120W)	1	SBE800
3 rows 39 modules	h.500 x w. 250 x d.103	Same devices as SBE800	1	SBE900
4 rows 52 modules	h.625 x w. 250 x d.103	Same devices as SBE800		SBE1000
1 row 13 modules	h.250 x w. 250 x d.103	1 x 63A MCB (NBN163R) 1 x 40A RCD (CDA240U) 1 x 32A MCB (MBN132W) 2 x 10A MCB (MBN110W) 4 x 20A MCB (MBN120W)	1	SBM700
2 rows 26 modules	h.500 x w. 250 x d.103	1 x 63A MCB (NBN163R) 1 x 40A RCD (CDA263U) 1 x 32A MCB (MBN132W) 2 x 10A MCB (MBN110W) 4 x 20A MCB (MBN120W)	1	SBM800
3 rows 39 modules	h.500 x w. 250 x d.103	Same devices as SBM800	1	SBM900
4 rows 52 modules	h.625 x w. 250 x d.103	Same devices as SBM800	1	SBM1000

Meter Tail Kit

Description	Dimensions mm	Pre-fitted devices	Qty.	Cat ref.
1 row 3 modules	h.175 x w.110 x d.95	VE103L Enclosure + NBN163R	1	MCU63
1 row 3 modules	h.175 x w.110 x d.95	VE103L Enclosure + NCN163A	1	MCU64



MCU63

Residential Distribution

Shower Changeover Units

Description	Qty.	Cat ref.
Priority c/o unit	1	SHN1
Non priority c/o unit c/w door	1	SHN2
3 shower c/o unit c/w door (non priority)	1	SHN3
7 way consumer unit c/w 2 shower non priority	1	CU684



SHN1



GP213P GP213T

Doors - Plain & Transparent

Characteristics:

- Doors for gamma enclosures offer an additional protection of modular devices and increases ingress protection to IP40.
- Plain (RAL 9010) or transparent.
- Conforms to IEC 60695-2-10, IEC 60695-2-11: 850°C.

Description	Qty.	Cat ref.
Plain door depth: 30 mm for SBx700	1	GP113P
Plain door depth: 30 mm for SBxSBx800	1	GP213P
Plain door depth: 30 mm for SBxSBx900	1	GP313P
Transparent door depth: 30 mm for SBx700	1	GP113T
Transparent door depth: 30 mm for SBxSBx800	1	GP213T
Transparent door depth: 30 mm for SBxSBx900	1	GP313T

Door Lock with Key

Characteristics:

- Door lock with key for doors GP113P, GP213P, GP313P, GP113T, GP213T, GP313T.

Description	Qty.	Cat ref.
Door lock with key	1	GZ35A



GS113D

Back Plates

Characteristics:

- Back plate insulated material for enclosure SBx700, SBx800, SBx900.

Description	Qty.	Cat ref.
Back plate for SBx700	1	GS113D
Back plate for SBx800	1	GS213D
Back plate for SBx900	1	GS313D



S35S

Blanking Strips

Characteristics:

- Blanking strip to blank unused rows.

Description	Qty.	Cat ref.
Blanking strip width 12 modules	10	S35S
Blanking strip width 0.5 module	10	P031F
Blanking strip width 1 module	10	P032F



KB163P



KB163N

Busbars

Description	Mod. width	Qty.	Cat ref.
Single Pole 63A to be equipped with protection profiles, brown (phase), 10mm ²	13	1	KB163P
Single Pole 63A to be equipped with protection profiles, blue (neutral), 10mm ²	13	1	KB163N

I.S.10101 Vega Consumer Units

Consumer units with opaque or transparent doors, 1 - 4 rows, 18 - 72 modules.

Insulated unit, color RAL 9010, for energy distribution in residential installations or small commercial premises.

The chassis is removable one at a time and the DIN rails are removable one by one, using the clips. The DIN rails can be lowered to accommodate devices with a higher shoulder. For technical details see page 4.39.

The cabinet offers plenty of cabling space

- Between DIN rail and cabinet bottom: 47.5 mm,
- Between lowered DIN rail and bottom of cabinet: 18 mm
- Lateral wiring space between wall and DIN rail: 30 mm
- Distance between DIN rail: 150 mm

The cable entry plates are provided with clips which may also be screwed.

Delivered with

"Easy Wall Fixation" fastening system with plugs to guarantee class II, drawing board, shutters, label holder with marking labels, quickconnect grounding modules.

Options

- Lock with key nr. 1242E or 405
- IP41 kit
- Horizontal or vertical combination kits
- Wiring ducts
- Plate with flexible cable entries

Characteristics

- IP40 (with door) / IK07
- Insulation class: II
- In 90 A for 1 and 2-row enclosures
- In 125 A for 3 and 4-row enclosures
- Incandescent wire: 650 ° C

Norms

CEBEC

Conforms with EN 60670-24, EN 61439-3 and I.S.10101



VB8101T



VB8101TSPD

Description	Dimensions mm	Plain Door Cat ref.	Transparent Door Cat ref.
Enclosure 1 row, 18 mod. E: 2x(1x25 + 5x16 + 5x10) N: 2x(1x25 + 5x16 + 5x10) 1 x 80A Isolator (SBR280) 1 x 63A RCD (CDA263U) 4 x 20A MCB (MBN120W) 1 x 32A MCB (MBN132W) 2 x 6A RCBO (ADA306G)	w.400 x h.325 x d.146	VB7101P	VB7101T
Enclosure 2 rows, 36 mod. E: 2x(1x25 + 8x16 + 8x10) N: 2x(1x25 + 8x16 + 8x10) Same devices as VB7101P	w.400 x h.475 x d.146	VB8101P	VB8101T
Enclosure 3 rows, 54 mod. E: 2x(1x25 + 11x16 + 13x10) N: 2x(1x25 + 11x16 + 13x10) Same devices as VB7101P	w.400 x h.625 x d. 14	VB9101P	VB9101T
Enclosure 4 rows, 72 mod. E: 2x(1x25 + 11x16 + 13x10) N: 2x(1x25 + 11 x16 + 13x10) + 2x(1x25 + 5x16 + 5x10) Same devices as VB7101P	w.400 x h.775 x d.146	VB10101P	VB10101T
Enclosure 1 row, 18 mod. E: 2x(1x25 + 5x16 + 5x10) N: 2x(1x25 + 5x16 + 5x10) 1 x 80A Isolator (SBR280) 1 x 63A RCD (CDA263U) 4 x 20A MCB (MBN120W) 1 x 32A MCB (MBN132W) 2 x 6A RCBO (ADA306G) 1 x 2P Surge Protection Device	w.400 x h.325 x d.146	VB7101PSPD	VB7101TSPD
Enclosure 2 rows, 36 mod. E: 2x(1x25 + 8x16 + 8x10) N: 2x(1x25 + 8x16 + 8x10) Same devices as VB7101PSPD	w.400 x h.475 x d.146	VB8101PSPD	VB8101TSPD
Enclosure 3 rows, 54 mod. E: 2x(1x25 + 11x16 + 13x10) N: 2x(1x25 + 11x16 + 13x10) Same devices as VB7101PSPD	w.400 x h.625 x d. 14	VB9101PSPD	VB9101TSPD
Enclosure 4 rows, 72 mod. E: 2x(1x25 + 11x16 + 13x10) N: 2x(1x25 + 11 x16 + 13x10) + 2x(1x25 + 5x16 + 5x10) Same devices as VB7101PSPD	w.400 x h.775 x d.146	VB10101PSPD	VB10101TSPD



VB800P



VB800T

Vega Consumer Units

Consumer units with opaque or transparent doors, 1 - 4 rows, 18 - 72 modules.

Insulated unit, color RAL 9010, for energy distribution in residential installations or small commercial premises.

The chassis is removable one at a time and the DIN rails are removable one by one, using the clips. The DIN rails can be lowered to accommodate devices with a higher shoulder. For technical details see page 4.39.

The cabinet offers plenty of cabling space

- Between DIN rail and cabinet bottom: 47.5 mm,
- Between lowered DIN rail and bottom of cabinet: 18 mm
- Lateral wiring space between wall and DIN rail: 30 mm
- Distance between DIN rail: 150 mm

The cable entry plates are provided with clips which may also be screwed.

Delivered with

"Easy Wall Fixation" fastening system with plugs to guarantee class II, drawing board, shutters, label holder with marking labels, quickconnect grounding modules.

Options

- Lock with key nr. 1242E or 405
- IP41 kit
- Horizontal or vertical combination kits
- Wiring ducts
- Plate with flexible cable entries

Characteristics

- IP40 (with door) / IK07
- Insulation class: II
- In 90 A for 1 and 2-row enclosures
- In 125 A for 3 and 4-row enclosures
- Incandescent wire: 650 ° C

Norms

CEBEC

Conforms with EN 60670-24 and EN 61439-3

Description		Dimensions mm	Cat ref.
Enclosure with transparent door 1 row, 18 modules	E: 2x(1x25 + 5x16 + 5x10) N: 2x(1x25 + 5x16 + 5x10) 1 x 80A Isolator (SBR180) 1 x 40A RCD (CDA240U) 1 x 32A MCB (MBN132W) 2 x 10A MCB (MBN110W) 4 x 20A MCB (MBN120W)	w.400 x h.325 x d.146	VB700T
Enclosure with opaque door 1 row, 18 modules	E: 2x(1x25 + 5x16 + 5x10) N: 2x(1x25 + 5x16 + 5x10) Same devices as VB700T	w.400 x h.325 x d.146	VB700P
Enclosure with transp. door 2 rows, 36 modules	E: 2x(1x25 + 8x16 + 8x10) N: 2x(1x25 + 8x16 + 8x10) Same devices as VB700T	w.400 x h.475 x d.146	VB800T
Enclosure with opaque door 2 rows, 36 modules	E: 2x(1x25 + 8x16 + 8x10) N: 2x(1x25 + 8x16 + 8x10) Same devices as VB700T	w.400 x h.475 x d.146	VB800P
Enclosure with transparent door 3 rows, 54 modules	E: 2x(1x25 + 11x16 + 13x10) N: 2x(1x25 + 11x16 + 13x10) Same devices as VB700T	w.400 x h.625 x d. 14	VB900T
Enclosure with opaque door 3 rows, 54 modules	E: 2x(1x25 + 11x16 + 13x10) N: 2x(1x25 + 11 x16 + 13x10) Same devices as VB700T	w.400 x h.625 x d.146	VB900P
Enclosure with transparent door 4 rows, 72 modules	E: 2x(1x25 + 11x16 + 13x10) N: 2x(1x25 + 11 x16 + 13x10) + 2x(1x25 + 5x16 + 5x10) Same devices as VB700T	w.400 x h.775 x d.146	VB1000T
Enclosure with opaque door 4 rows, 72 modules	E: 2x(1x25 + 11x16 + 13x10) N: 2x(1x25 + 11 x16 + 13x10) + 2x(1x25 + 5x16 + 5x10) Same devices as VB700T	w.400 x h.775 x d.146	VB1000P

Vega Enhanced Consumer Units

Consumer units with transparent doors, 2 - 3 rows, 36 - 54 modules.

Insulated unit, color RAL 9010, for energy distribution in residential installations or small commercial premises. Suitable for use with enhanced 16kVa supply.

The cabinet offers plenty of cabling space

- Between DIN rail and cabinet bottom: 47.5 mm,
- Between lowered DIN rail and bottom of cabinet: 18 mm
- Lateral wiring space between wall and DIN rail: 30 mm
- Distance between DIN rail: 150 mm

The cable entry plates are provided with clips which may also be screwed.

Delivered with

"Easy Wall Fixation" fastening system with plugs to guarantee class II, drawing board, shutters, label holder with marking labels, quickconnect grounding modules.

Options

- Lock with key nr. 1242E or 405
- IP41 kit
- Horizontal or vertical combination kits
- Wiring ducts
- Plate with flexible cable entries

Characteristics

- IP40 (with door) / IK07
- Insulation class: II
- In 90 A for 2-row enclosures
- In 125 A for 3-row enclosures
- Incandescent wire: 650 ° C

Norms

CEBEC

Conforms with EN 60670-24 and EN 61439-3



VBE880A

Description		Dimensions mm	Cat. ref.
Enclosure with transparent door 2 rows, 36 modules	E: 2x(1x25 + 8x16 + 8x10) N: 2x(1x25 + 8x16 + 8x10) 1 x 80A Isolator (SBR180) 1 x 80A RCD (CD283U) 1 x 32A MCB (MBN132W) 2 x 10A MCB (MBN110W) 4 x 20A MCB (MBN120W)	w.400 x h.475 x d.146	VBE880A
Enclosure with opaque door 3 rows, 54 modules	E: 2x(1x25 + 11x16 +13x10) N: 2x(1x25 + 11x16 +13x10) Same devices as VBE880A	w.400 x h.625 x d.146	VBE980A

Description	For enclosure	Cat. ref.
Transparent door (supplied as spare part)	VB118W	VZ118T
	VB218W	VZ218T
	VB318W	VZ318T
	VB418W	VZ418T
Opaque door (supplied as spare part)	VB118J	VZ118P
	VB218J	VZ218P
	VB318J	VZ318P
	VB418J	VZ418P
Key lock delivered with 2 keys	for transparent door: lock 1242E	VZ310TVB
	for opaque door: lock 1242E	VZ310PVB



VZ318T

VZ318P



VZ310PVB

Refer to page 4.12 for additional terminals



VF8101



VF8101SPD

I.S.10101 Volta VF Series

Characteristics:

- Distribution enclosures with metallic door 2 to 4 rows, 24 to 48 modules.
- Conforms to EN 61439-3 and I.S.10101
- Flush mounting in brick or partition walls removable chassis.
- For devices of shoulder measurement 47mm, distance between rails 125mm, flush part made out of insulated material, frame and door manufactured from metal, reversible door with integrated handle, sealable from cover, colour RAL 9010, complete with plain door.
- Options; key lock, connection assembly.

Description	Dimensions mm	Pre-fitted devices	Qty.	Cat ref.
2 rows, 24 modules	w.348 x h.505 x d.89	1 x 80A Isolator (SBR280) 1 x 63A RCD (CDA263U) 4 x 20A MCB (MBN120W) 1 x 32A MCB (MBN132W) 2 x 6A RCBO (ADA306G)	1	VF8101
3 rows, 36 modules	w.348 x h.630 x d.89	same as VF8101	1	VF9101
4 rows, 48 modules	w.348 x h.755 x d.89	same as VF8101	1	VF10101
2 rows, 24 modules	w.348 x h.505 x d.89	1 x 80A Isolator (SBR280) 1 x 63A RCD (CDA263U) 4 x 20A MCB (MBN120W) 1 x 32A MCB (MBN132W) 2 x 6A RCBO (ADA306G) 1 x 2P Surge Protection Device		VF8101SPD
3 rows, 36 modules	w.348 x h.630 x d.89	same as VF8101SPD		VF9101SPD
4 rows, 48 modules	w.348 x h.755 x d.89	same as VF8101SPD		VF10101SPD

Volta VF Series

Characteristics:

- Distribution enclosures with metallic door 1 to 4 rows, 12 to 48 modules.
- Conforms to EN 61439-3.
- Flush mounting in brick or partition walls removable chassis.
- For devices of shoulder measurement 47mm, distance between rails 125mm, flush part made out of insulated material, frame and door manufactured from metal, reversible door with integrated handle, sealable from cover, colour RAL 9010, complete with plain door.
- Options; key lock, connection assembly.



VF700

Description	Dimensions mm	Pre-fitted devices	Qty.	Cat ref.
1 row, 12 modules	w.348 x h.356 x d.89	1 x 80A Isolator (SBR180) 1 x 40A RCD (CDA240U) 1 x 32A MCB (MBN132W) 2 x 10A MCB (MBN110W) 4 x 20A MCB (MBN120W)	1	VF700
2 rows, 24 modules	w.348 x h.505 x d.89	1 x 80A Isolator (SBR180) 1 x 63A RCD (CDA263U) 1 x 32A MCB (MBN132W) 2 x 10A MCB (MBN110W) 4 x 20A MCB (MBN120W)	1	VF800
3 rows, 36 modules	w.348 x h.630 x d.89	same as VF800	1	VF900
4 rows, 48 modules	w.348 x h.755 x d.89	same as VF800	1	VF1000

Doors - Steel & Transparent

Characteristics:

- Doors for Volta consumer units VF700, VF800 and VF900.

Description	Qty.	Transp. door Cat ref.	Steel door & frame Cat ref.
Door for VF700 consumer unit	1	VZ131	VZ261
Door for VF800 consumer unit	1	VZ132	VZ262
Door for VF900 consumer unit	1	VZ133	VZ263

Keylock Standard

Characteristics:

- Keylock for Volta consumer unit, delivered with 2 keys

Description	Qty.	Cat ref.
Keylock standard with 2 keys	1	VZ303

Blanking Strip

Characteristics:

- Blanking strip to blank unused rows.



S35S

Description	Qty.	Cat ref.
Blanking strip width 12 modules premarked	10	S35S

Connection Assembly

Characteristics:

- Connection assembly single phase and TP + N63A



VZ403

Description	Qty.	Cat ref.
Connection assembly single phase, 2 x (3 x 16 + 4 x 10)	1	VZ403
TP + N63A, 3 x (3 x 16 + 2 x 10), 1 x (5 x 16 + 6 x 10)	1	VZ428

Busbars

Description	Mod. width	Qty.	Cat ref.
Single Pole 63A to be equipped with protection profiles, brown (phase), 10mm ²	13	1	KB163P
Single Pole 63A to be equipped with protection profiles, blue (neutral), 10mm ²	13	1	KB163N



KB163P



KB163N



IP30 IK 07

Gamma 13

Characteristics:

- IP30 surface mounting enclosures 1 to 4 rows, from 13 to 52 modules. IP 30 - IK 07 (without door), IP 40 - IK 07 (with door).
- Enclosures are of an insulating material coloured RAL 9010.
- Insulating chassis and frame.
- Fixed DIN rail for devices of a maximum shoulder measurement of 45mm.
- Distance between rails 125mm.
- Premarked cable entries on top, bottom and side.
- Delivered with marking strip and blanking clips.
- DIN rail distance between centres: 125 mm.
- IEC 60 695-2-10 and 11: 750°C for enclosures, doors and 960°C for plates.
- Complies with IEC 61439-3.
- Options: Doors, back plates and key locks.
- For technical details see page 4.38.



GD113H



GD213H

Description	Dimensions mm	Brass terminal	Module blanks	Cat ref.
1 row, 13 mod	w.250 x h.250 x d.103	N: 1 x 25 + 11 x 16 + 13 x 10 N: 1 x 25 + 8 x 16 + 8 x 10 E: 1 x 25 + 11 x 16 + 13 x 10	6 mod	GD113H
2 rows, 26 mod	w.250 x h.375 x d.103	N: 1 x 25 + 11 x 16 + 13 x 10 N: 1 x 25 + 8 x 16 + 8 x 10 E: 1 x 25 + 11 x 16 + 13 x 10	6 mod	GD213H
3 rows, 39 mod	w.250 x h.500 x d.103	N: 1 x 25 + 11 x 16 + 13 x 10 N: 1 x 25 + 8 x 16 + 8 x 10 E: 1 x 25 + 11 x 16 + 13 x 10	13 mod	GD313H
4 rows, 52 mod	w.250 x h.625 x d.103	N: 1 x 25 + 11 x 16 + 13 x 10 E: 1 x 25 + 11 x 16 + 13 x 10	13 mod	GD413H



GP213P-GP213T



S35S

Accessories

Characteristics

Doors

- Doors for gamma enclosures offer an additional protection of modular devices and increases ingress protection to IP40.
- Plain (RAL9010) or transparent
- Delivered with: 2 hinges, Latch, 2 screws
- Options: Lock
- EC 60 695-2-10 and 11. 750°C: enclosures, doors, 960°C: plates

Description		Transp. door Cat ref.	Plain door Cat ref.
Door depth: 30mm	for GD113H	GP113T	GP113P
	for GD213H	GP213T	GP213P
	for GD313H	GP313T	GP313P
	for GD413H	GP413T	GP413P
Door lock with key for doors GD113P to GD413P and GD113T to GD413T			GZ35A
Back plate insulated material	for GD113H		GS113D
	for GD213H		GS213D
	for GD313H		GS313D
	for GD413H		GS413D
Blanking strip to blank unused rows, pack qty. 10	12 modules		S35S
	½ module		P031F
	1 module		P032F

Gamma 18

Characteristics:

- Enclosures 1 to 4 rows, from 18 to 72 modules.
- Delivered with: IP2X earth terminal + terminal support, IP2X Ph + N terminals (except 1R) + mounting plate (except 1 & 2R) accessories for vertical and horizontal connecting (except 1R), marking strip, blanking clips.
- IP 30 - IK 07 (without door) IP 30 - IK 07 (with door)
- Distance between rails 125mm.
- IEC 60 695-2-10 and 11. 750°C: enclosures, 960°C: plates.
- Options: Doors, backplates, keylocks.
- Complies with IEC61 439-3.
- Screw-type terminal bars cannot be fitted to Gamma 18 enclosures.



GD218A

Description	Dimensions mm	Quick connect	Module blanks	Cat ref.
1 row, 18 mod	w.355 x h.250 x d.103	E: 4 x 25 + 14 x 4 mm ²	6 mod	GD118A
2 rows, 36 mod	w.355 x h.375 x d.103	Ph: 2 x 16 + 2 x 10 mm ² N: 2 x 16 + 2 x 10 mm ² E: 6 x 25 + 20 x 4 mm ²	12 mod	GD218A
3 rows, 54 mod	w.355 x h.500 x d.103	Ph: 3 x 16 + 4 x 10 mm ² N: 3 x 16 + 4 x 10 mm ² E: 8 x 25 + 28 x 4 mm ²	18 mod	GD318A
4 rows, 72 mod	w.355 x h.625 x d.103	Ph: 3 x 16 + 4 x 10 mm ² N: 3 x 16 + 4 x 10 mm ² E: 10 x 25 + 34 x 4 mm ²	24 mod	GD418A

Accessories

Description	Transp. door Cat ref.	Plain door Cat ref.
Plain and transparent doors, depth: 30mm for GD118A, GD018A	GP118T	GP118P
for GD218A	GP218T	GP218P
for GD318A	GP318T	GP318P
for GD418A	GP418T	GP418P



GP118P-GP118T

Description	Cat ref.
Keylock for plain and transparent doors	GZ35A

Description	Cat ref.
Back plates, insulated material, class II, to mount on the back of gamma 18 enclosure	
for GD118A	GS118D
for GD218A	GS218D
for GD318A	GS318D
for GD418A	GS418D



GS218D

Description	Modules	Cat ref.
Blanking clips to blank unused rows	½ mod	P031
	1 mod	P032
Blanking strip to blank a complete unused row	18 mod	JP015

Additional Terminals

Description	Terminal block with support		Terminal block w/o support
	Neutral Cat. ref.	Earth Cat. ref.	Cat. ref.
Terminal block 3 x 16 + 4 x 10 mm ²	KM07N	KM07E	K142
Terminal block 5 x 16 + 6 x 10 mm ²	KM11N	KM11E	K144
Terminal block 6 x 16 + 7 x 10 mm ²	KM13N	KM13E	K148
Terminal block 1 x 25 + 8 x 16 + 8 x 10 mm ²	KM17N	KM17E	K156
Terminal block 1 x 25 + 11 x 16 + 3 x 10 mm ²	KM25N	KM25E	K158



KM07N



KM13N



KM25N



GD104N



GD108N

Mini Gamma Enclosures

Characteristics

- Enclosures 1 row, from 2 to 10 modules
- Surface mounting enclosures, rigid bottom with fixed DIN rail for devices of a maximum shoulder measurement 47mm
- Sealable cover.
- With marking strips and screw cap cover for class II
- IEC 60 695-2-1/0 and 60 695-2-1/1.
- For technical details see page 4.38.

Options

- Door lock with key
- Plain or transparent door
- Earth and neutral terminals

Description	Brass terminal	Cat ref.
1 row, 2 modules, w. 55 x h. 160 x d. 82 mm		GD102N
1 row, 4 modules w. 110 x h. 180 x d. 82 mm	E: 2 x 16 + 2 x 10, N: 2 x 16 + 2 x 10	GD104N
1 row, 6 modules, w. 146 x h. 180 x d. 82 mm	E: 2 x 16 + 2 x 10, N: 2 x 16 + 2 x 10	GD106N
1 row, 8 modules, w. 182 x h. 180 x d. 82 mm	E: 3 x 16 + 4 x 10, N: 3 x 16 + 4 x 10	GD108N
1 row, 10 modules, w. 218 x h. 180 x d. 82 mm	E: 3 x 16 + 4 x 10, N: 3 x 16 + 4 x 10	GD110N



GP102T



GD104S

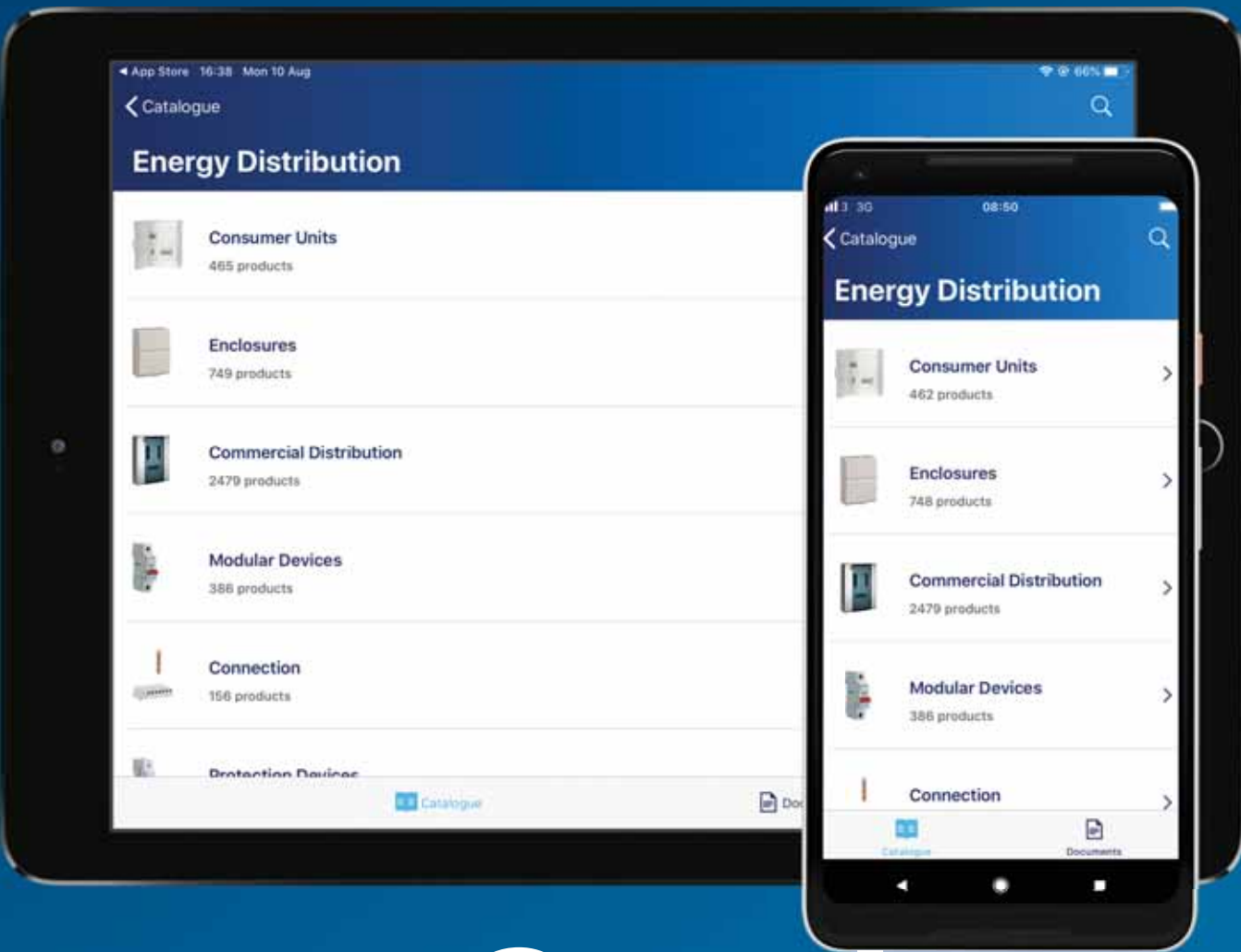


GZ04N

Accessories

Description		Transp. door Cat ref.	Plain door Cat ref.
Doors with integrated handle	for GD102N	GP102T	GP102P
	for GD104N	GP104T	GP104P
	for GD106N	GP106T	GP106P
	for GD108N	GP108T	GP108P
	for GD110N	GP110T	GP110P

Description	Cat ref.
Keylock for plain or transparent door	VZ313
N-terminal 4 connections 2 x 16 + 2x 10	GZ04N
N-terminal 7 connections 3 x 16 + 4 x 10	GZ07N
PE-terminal 4 connections 2 x 16 + 2 x 10	GZ04E
PE-terminal 7 connections 3 x 16 + 4 x 10	GZ07E
Terminal support for GD104N	GZ104S
Terminal support for GD106N	GZ106S
Terminal support for GD108N	GZ108S
Terminal support for GD110N	GZ110S



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VB318W



VB318J

Vega Enclosures

Enclosures with opaque or transparent doors, 1 - 4 rows, 18 - 72 modules.

Insulated enclosure, color RAL 9010, for energy distribution in residential installations or small commercial premises. The chassis is removable one at a time and the DIN rails are removable one by one, using the clips. The DIN rails can be lowered to accommodate devices with a higher shoulder. For technical details see page 4.39.

The cabinet offers plenty of cabling space

- Between DIN rail and cabinet bottom: 47.5 mm,
- Between lowered DIN rail and bottom of cabinet: 18 mm
- Lateral wiring space between wall and DIN rail: 30 mm
- Distance between DIN rail: 150 mm

The cable entry plates are provided with clips which may also be screwed.

Delivered with

"Easy Wall Fixation" fastening system with plugs to guarantee class II, drawing board, shutters, label holder with marking labels, quickconnect grounding modules.

Options

- Lock with key nr. 1242E or 405
- IP41 kit
- Horizontal or vertical combination kits
- Wiring ducts
- Plate with flexible cable entries

Characteristics

- IP40 (with door) / IK07
- Insulation class: II
- In 90 A for 1 and 2-row enclosures
- In 125 A for 3 and 4-row enclosures
- Incandescent wire: 650 ° C

Norms

CEBEC

Conforms with EN 60670-24 et EN 61439-3

Description		Dimensions mm	Cat ref.
Enclosure with transparent door 1 row, 18 modules	E: 2x(1x25 + 5x16 + 5x10) N: 2x(1x25 + 5x16 + 5x10)	w.400 x h.325 x d.146	VB118W
Enclosure with opaque door 1 row, 18 modules	E: 2x(1x25 + 5x16 + 5x10) N: 2x(1x25 + 5x16 + 5x10)	w.400 x h.325 x d.146	VB118J
Enclosure with transp. door 2 rows, 36 modules	E: 2x(1x25 + 8x16 + 8x10) N: 2x(1x25 + 8x16 + 8x10)	w.400 x h.475 x d.146	VB218W
Enclosure with opaque door 2 rows, 36 modules	E: 2x(1x25 + 8x16 + 8x10) N: 2x(1x25 + 8x16 + 8x10)	w.400 x h.475 x d.146	VB218J
Enclosure with transparent door 3 rows, 54 modules	E: 2x(1x25 + 11x16 + 13x10) N: 2x(1x25 + 11x16 + 13x10)	w.400 x h.625 x d. 14	VB318W
Enclosure with opaque door 3 rows, 54 modules	E: 2x(1x25 + 11x16 + 13x10) N: 2x(1x25 + 11 x16 + 13x10)	w.400 x h.625 x d.146	VB318J
Enclosure with transparent door 4 rows, 72 modules	E: 2x(1x25 + 11x16 + 13x10) N: 2x(1x25 + 11 x16 + 13x10) + 2x(1x25 + 5x16 + 5x10)	w.400 x h.775 x d.146	VB418W
Enclosure with opaque door 4 rows, 72 modules	E: 2x(1x25 + 11x16 + 13x10) N: 2x(1x25 + 11 x16 + 13x10) + 2x(1x25 + 5x16 + 5x10)	w.400 x h.775 x d.146	VB418J

Residential Distribution



VZ318T



VZ318P



VZ318P

Accessories

Description	For enclosure	Cat ref.
Transparent door (supplied as spare part)	VB118W	VZ118T
	VB218W	VZ218T
	VB318W	VZ318T
	VB418W	VZ418T
Opaque door (supplied as spare part)	VB118J	VZ118P
	VB218J	VZ218P
	VB318J	VZ318P
	VB418J	VZ418P
Key lock delivered with 2 keys	for transparent door: lock 1242E	VZ310TVB
	for opaque door: lock 1242E	VZ310PVB

Refer to page 4.12 for additional terminals

Vector Enclosures IP55

Characteristics:

- Surface mounting enclosures with transparent doors
- 1 to 4 rows from 2 to 48 modules
- 1 to 3 rows from 18 to 54 modules
- Adjustable DIN rail for shoulder measurement 47 and 63 mm
- Transparent hinged cover (2 to 10) or door (12 to 54)
- 2 lateral knock outs for cable entry or coupling pieces
- With premarked knock outs for bushes or cable glands M20, M25, M32, M40 and M50
- Delivered with loose cable bushes
- Colour : light grey RAL 7035
- Nominal Voltage : U_i 400V~
- Nominal current : 63A at 230/400V~
- IP65 IK07 < 12 modules (IP65 when fitted with IP65 rated cable glands)
- IK08 > 12 modules
- Class II
- IEC 61 439-3
- IEC 60 695-2-10 and 60 695-2-11: 850°C
- For technical details see page 4.40.



VE212R



VE106R



VE312R



VE218R

Description	Dimensions mm	Cat. ref.
Surface mounting enclosures with transparent door, 1 row 2 + 1 mod.	E: 2x16 + 2x10 mm ² N: 2x16 + 2x10 mm ²	w.111 x h.175 x d.93 VE103L
Surface mounting enclosures with transparent door, 1 row, 4 + 2 mod.	E: 3x16 + 4x10 mm ² N: 3x16 + 4x10 mm ²	w.165 x h.190 x d.113 VE106R
Surface mounting enclosures with transparent door, 1 row, 8 + 2 mod.	E: 5x16 + 6x10 mm ² N: 5x16 + 6x10 mm ²	w.237 x h.210 x d.114 VE110L
Surface mounting enclosures with transparent door, 1 row, 12 mod.	E: 1x25 + 5x16 +7x10 mm ² N: 1x25 + 5x16 +7x10 mm ² N: 6x16 +7x10 mm ²	w.310 x h.302 x d.151 VE112R
Surface mounting enclosures with transparent door, 2 rows, 24 mod.	E: 1x25 + 11x16 +13x10 mm ² N: 1x25 + 5x16 +7x10 mm ² N: 1x25 + 5x16 +7x10 mm ²	w.310 x h.427 x d.151 VE212R
Surface mounting enclosures with transparent door, 3 rows, 36 mod.	E: 1x25 + 8x16 +8x10 mm ² N: 1x25 + 8x16 +8x10 mm ² N: 1x25 + 8x16 +8x10 mm ²	w.310 x h.552 x d.151 VE312R
Surface mounting enclosures with transparent door, 4 rows, 48 mod.	E: 1x25 + 11x16 +13x10 mm ² E: 1x25 + 11x16 +13x10 mm ² N: 1x25 + 11x16 +13x10 mm ² N: 1x25 + 11x16 +13x10 mm ²	w.310 x h.677 x d.151 VE412Y
Surface mounting enclosures with transparent door, 1 row, 18 mod.	E: 1x25 + 11x16 +13x10 mm ² N: 1x25 + 5x16 +7x10 mm ² , N: 1x25 + 5x16 +7x10 mm ²	w.418 x h.302 x d.151 VE118R
Surface mounting enclosures with transparent door, 2 rows, 36 mod.	E: 1x25 + 8x16 +8x10 mm ² N: 1x25 + 8x16 +8x10 mm ² , N: 1x25 + 8x16 +8x10 mm ²	w.418 x h.452 x d.151 VE218R
Surface mounting enclosures with transparent door, 3 rows, 54 mod.	E: 1x25 + 11x16 +13x10 mm ² N: 1x25 + 11x16 +13x10 mm ² , N: 1x25 + 11x16 +13x10 mm ²	w.418 x h.602 x d.151 VE318Y

Residential Distribution

Accessories

Description	Cat. ref.
Single phase connection assembly 63A, snaps on lateral support	2x(3x16 + 4x10mm ²) VZ403
Three phase + N connection assembly 63A, snaps on lateral support	3x(3x16 + 2x10mm ²), 1x(5x16 + 6x10mm ²) VZ428
Lock with 2 keys for all enclosures from 2 to 54 modules	VZ311
Coupling sleeve to juxtapose enclosures, reduces IP to IP54 fit on lateral PG21 knock outs of the enclosures VE112, VE212, VE112, VE212, VE312, VE412, VE118, VE218, VE318	VZ754
Cable entry reduction of ingress protection to IP54	14xM20 + 10xM25 + 2xM32 VZ758
IP65 cable gland, M20	VZ020M
Blanking strips RAL 7035	6 modules VZ413
	12 modules VZ415
	18 modules VZ416
Brackets for terminal support	VZ744



VZ403



VZ754



VZ744

Refer to page 4.12 for additional terminals



VS108TDI



VS212TDI



VS412TDI

Golf Enclosures

Characteristics:

- Surface mounted distribution box from 1 to 4 rows, from 4 to 72 modules.
- Opaque or transparent door for devices up to 70 mm installation depth.
- DIN profile for modular devices 47 mm under the cover.
- Distance between the DIN profiles axis 125 mm.
- Distribution boards manufactured from plastic material.
- Door can be fitted on right or left without dismantling the cover.
- Optional lock with keys.
- Door opens up to 180°
- Enclosure can be installed either way up.
- Cable entries for cable, conduit and trunking.

Components included

- Brass screw-type terminals
- Directly fixed DIN rails to the wall box allow enough room behind for wiring.
- Marking stickers.
- Towers to fix cable ties for clear cable management are included, cable-retaining clips are optional (except in 4 and 8 module enclosures).
- Door protected by a plastic film.
- Carton packaging.

Technical data

- IP rating: IP30 without door, IP40 with door, IK07
- Isolation Class II
- White colour RAL 9010
- Rated current for devices up to 63 A
- Rated insulation: 400 V a.c./50 Hz
- Glow wiring test: 650°C
- Certification according to IEC 61 439-3.
- All products conform to the ROHS and WEEE directives.
- For technical details see page 4.41.

Description		Dimensions mm	Cat ref.
Golf surface mounted enclosure 1 row 4 modules	N: 2x16mm ² + 2x10mm ² E: 2x16mm ² + 2x10mm ² N: 2x16mm ² + 2x10mm ²	h.184 x w.138 x d.99	VS104TDI
Golf surface mounted enclosure 1 row 8 modules	N: 3x16mm ² + 4x10mm ² E: 2x16mm ² + 3x10mm ² N: 2x16mm ² + 3x10mm ²	h.184 x w.210 x d.99	VS108TDI
Golf surface mounted enclosure 1 row 12 modules	N: 3x16mm ² + 4x10mm ² E: 3x16mm ² + 4x10mm ² N: 3x16mm ² + 4x10mm ²	h.252 x w.282 x d.99	VS112TDI
Golf surface mounted enclosure 1 row 18 modules	N: 3x16mm ² + 4x10 mm ² E: 1x25mm ² + 4x16mm ² + 5x10mm ² N: 3x16mm ² + 3x10mm ²	h.257 x w.426 x d.72	VS118TDI
Golf surface mounted enclosure 1 rows 22 modules	N: 3x16mm ² + 4x10mm ² E: 6x16mm ² + 7x10mm ² N: 6x16mm ² + 7x10mm ²	h.252 x w.462 x d.99	VS122TDI
Golf surface mounted enclosure 2 rows 24 modules	N: 5x16mm ² + 5x10mm ² E: 4x16mm ² + 5x10mm ² N: 4x16mm ² + 5x10mm ²	h.377 x w.282 x d.99	VS212TDI
Golf surface mounted enclosure 2 rows 36 modules	N: 3 x 16mm ² + 4 x 10mm ² E: 1x25mm ² + 6x16mm ² + 7x10mm ² N: 3 x 16mm ² + 4 x 10mm ²	h.377 x w.390 x d.99	VS218TDI
Golf surface mounted enclosure 3 rows 36 modules	N: 5x16mm ² + 6x10mm ² E: 5x16mm ² + 6x10mm ² N: 5x16mm ² + 6x10mm ²	h.500 x w.282 x d.99	VS312TDI
Golf surface mounted enclosure 3 rows 54 modules	N: 3x16mm ² + 4x10mm ² E: 1x25mm ² + 7x16mm ² + 8x10mm ² N: 3x16 mm ² + 4x10mm ²	h.500 x w.390 x d.99	VS318TDI
Golf surface mounted enclosure 4 row 48 modules	N: 5x16mm ² + 6x10mm ² E: 6x16mm ² + 8x10mm ² N: 5x16mm ² + 6x10mm ²	h.647 x w.282 x d.99	VS412TDI
Golf surface mounted enclosure 4 rows 72 modules	N: 3 x 16 mm ² + 4 x 10 mm ² E: 1x25mm ² + 8x16mm ² + 9x10mm ² N: 3x16mm ² + 4x10mm ²	h.647 x w.390 x d.99	VS418TDI

Accessories

Characteristics

New golf enclosures include an excellent range of accessories, every single feature is designed to save time and increase simplicity of mounting. It is also possible to find spare parts and additional accessories to the range, such as keys, locks and doors. Plain doors made of plastic material, RAL 9010. Transparent doors made of polycarbonate.

Description	For enclosure	Transp. door Cat ref.	Plain door Cat ref.
Doors (spare parts)	VF/VS104	VZ621N	VZ601N
	VF/VS108	VZ622N	VZ602N
	VF/VS112	VZ623N	VZ603N
	VF/VS212	VZ624N	VZ604N
	VF/VS312	VZ625N	VZ605N
	VF/VS412	VZ626N	VZ606N
	VF/VS118	VZ627N	VZ607N
	VF/VS218	VZ628N	VZ608N
	VF/VS318	VZ629N	VZ609N
	VF/VS418	VZ630N	VZ610N
Lock, supplied with 2 keys			VZ794N
Cable guides VF/VS, 4 pieces			VZ699N
Class II caps VS and horizontal assembly kit, 4 pieces			VZ789N
Brick wall mounting brackets, 4 pieces			VZ786N
Transparent label holder VF/VS 450 mm, 5 pieces			VZ787N
Labelling sticker, 10 pieces			VZ788N



VZ610N



VZ630N



VZ794N



VZ699N



VZ789N



VZ786N



VZ787N

Additional Terminals

Description	Terminal block with support		Terminal block w/o support
	Neutral Cat. ref.	Earth Cat. ref.	Cat ref.
Terminal block 3 x 16 + 4 x 10 mm ²	KM07N	KM07E	K142
Terminal block 5 x 16 + 6 x 10 mm ²	KM11N	KM11E	K144
Terminal block 6 x 16 + 7 x 10 mm ²	KM13N	KM13E	K148
Terminal block 1 x 25 + 8 x 16 + 8 x 10 mm ²	KM17N	KM17E	K156
Terminal block 1 x 25 + 11 x 16 + 3 x 10 mm ²	KM25N	KM25E	K158



KM07N



KM13N



KM25N



DR32SIE



HE47SN-IRL

DR Metal Enclosures

Characteristics

- Easy to install
- Removable DIN chassis
- Height adjustable DIN chassis
- Centre distance between two rows is 150mm
- Removable door
- Removable prepunched top and bottom gland plates

Technical Data

- 1.2mm thickness sheet steel with Epoxy powder coating in RAL 9002
- IP4x
- Suitable for modular incomers and outgoing only
- Accessories like key lock, joining kits, etc.
- Boards can be assembled vertically
- Complies with BS EN61439-1 and EN61439-3.
- For technical details see page 4.42.

Description	Dimensions mm	Cat ref.
Enclosure, 1 row 16 modules, N: 3x16mm ² + 4x10mm ² , E: 1x25mm ² + 8x16mm ² + 8x10mm ² , N: 1x25mm ² + 5x16mm ² + 5x10mm ²	h.325 x w.405 x d.120	DR16SIE
Enclosure, 2 rows 32 modules, N: 6x16mm ² + 7x10 mm ² , E: 1x25mm ² + 14x16mm ² + 16x10mm ² , N: 1x25mm ² + 8x16mm ² + 8x10mm ²	h.480 x w.405 x d.120	DR32SIE
Enclosure, 1 rows 6 + 9 modules, E: 15x16mm ² , N: 9x16mm ² + 5x16mm ²	h.230 x w.390 x d.90	HE47SN-IRL



FW424WT

FW2 Metal Enclosures

Characteristics

- FW2 surface enclosure
- Metal inserts / cover plates
- Depth 150mm
- For devices up to 125A
- From 3 (36 modules) to (252 modules) 7 rows
- Complete with door, metal covers and PE/N terminals
- Colour RAL 9010
- Cable entry top and bottom
- IP30
- Complies with EN61439-1.

Description	Dimensions mm	Cat ref.
Enclosure, 3 rows, 36 modules, brass terminals 2x(6x16 ² +7x10 ²)	h. 641 x w. 355 x d.150	FW312WT
Enclosure, 3 rows, 72 modules, brass terminals 2x(1x25 ² +8x16 ² +8x10 ²)	h. 641 x w. 571 x d.150	FW324WT
Enclosure, 4 rows, 48 modules, brass terminals 2x(6x16 ² +7x10 ²)	h. 791 x w. 355 x d.150	FW412WT
Enclosure, 4 rows, 96 modules, brass terminals 2x(1x25 ² +11x16 ² +13x10 ²)	h. 791 x w. 571 x d.150	FW424WT
Encl. 4 rows, 144 mod., brass terminals 2x(1x25 ² +11x16 ² +13x10 ²), 2x(6x16 ² +7x10 ²)	h. 791 x w. 787 x d.150	FW436WT
Enclosure, 5 rows, 60 modules, brass terminals 1x(1x25 ² +8x16 ² +8x10 ²)	h. 941 x w. 355 x d.150	FW512WT
Enclosure, 5 rows, 120 modules, brass terminals 2x(1x25 ² +11x16 ² +13x10 ²)	h. 941 x w. 571 x d.150	FW524WT
Encl. 5 rows, 180 mod. brs. term. 2x(1x25 ² +11x16 ² +13x10 ²), 2x(1x25 ² +8x16 ² +8x10 ²)	h. 941 x w. 787 x d.150	FW536WT
Encl. 6 rows, 72 mod. brass terminals 1x(1x25 ² +8x16 ² +8x10 ²), 1x(6x16 ² +7x10 ²)	h. 1091 x w. 355 x d.150	FW612WT
Enclosure, 6 rows, 144 modules, brass terminals 2x(1x25 ² +11x16 ² +13x10 ²)	h. 1091 x w. 571 x d.150	FW624WT
Encl. 6 rows, 216 mod. brs. term. 2x(1x25 ² +11x16 ² +13x10 ²), 2x(1x25 ² +8x16 ² +8x10 ²)	h. 1091 x w. 787 x d.150	FW636WT
Enclosure, 7 rows, 252 modules, brass terminals	h. 1241 x w. 787 x d.150	FW736WT

Accessories for FW2 Enclosures

Description	For enclosure	Modules	Qty.	Cat. ref.
Terminal support and cable strain-relief bar	FWx12FT	12	1	FZ12H
	FWx12FT	24	1	FZ24H
	FWx36FT	36	1	FZ36H
Keylock			1	FZ597
Door with frame	FW312FT		1	FW312FD
	FW324FT		1	FW324FD
	FW412FT		1	FW412FD
	FW424FT		1	FW424FD
	FW436FT		1	FW436FD
	FW512FT		1	FW512FD
	FW524FT		1	FW524FD
	FW536FT		1	FW536FD
	FW612FT		1	FW612FD
	FW624FT		1	FW624FD
	FW636FT		1	FW636FD
FW736FT		1	FW736FD	



FZ24H + KM25N



FZ597



FW424FD

Additional Terminals

Description	Terminal block with support		Terminal block w/o support	Cat. ref.
	Neutral Cat. ref.	Earth Cat. ref.		
Terminal block 3 x 16 + 4 x 10 mm ²	KM07N	KM07E		K142
Terminal block 5 x 16 + 6 x 10 mm ²	KM11N	KM11E		K144
Terminal block 6 x 16 + 7 x 10 mm ²	KM13N	KM13E		K148
Terminal block 1 x 25 + 8 x 16 + 8 x 10 mm ²	KM17N	KM17E		K156
Terminal block 1 x 25 + 11 x 16 + 3 x 10 mm ²	KM25N	KM25E		K158



KM07N



KM13N



KM25N



FWB52

FW Metal Enclosures

Characteristics

- Distribution enclosures
- Extra slim depth 160 mm
- Insulation class: II - IP44
- For devices up to 125A
- 3 to 7 rows, 1 to 7 sections, from 36 to 336 modules
- For distribution < 125A in commercial installations
- For modular devices on DIN rails, max. depth 96 mm, shoulder measuring 47mm, depth: 160 mm
- Enclosure manufactured from sheet steel
- Colour RAL 9010 (pure white)
- Polyester front covers width 1 section
- 12 modules per row
- 125 mm between DIN rails
- 63 A connection assembly with earth and neutral bar in each section
- Quick Connect terminals
- For technical details see page 4.43.

Ingress protection

- IP44 to IEC 529
- Class II, additional internal insulation by polystyrene plates (P.S.), glow wire test till 850°C, extinguishing = 5 sec.

Rated insulated Voltage

- U_i : 400 V ~
- I_n : 125A - three phase 380 V ~

Options

- Trimming frame
- Lock with key
- Separators
- Connection assembly TP+N 63A
- Sealing kit

Description	Height mm	w. x d. mm	Fields	Rows	Modules	Cat ref.
FW metal surface enclosures	500	300 x 160	1	3	36	FWB31
	500	550 x 160	2	3	72	FWB32
	500	800 x 160	3	3	108	FWB33
	500	1050 x 160	4	3	144	FWB34
	650	300 x 160	1	4	48	FWB41
	650	550 x 160	2	4	96	FWB42
	650	800 x 160	3	4	144	FWB43
	650	1050 x 160	4	4	192	FWB44
	800	300 x 160	1	5	60	FWB51
	800	550 x 160	2	5	120	FWB52
	800	800 x 160	3	5	180	FWB53
	800	1050 x 160	4	5	240	FWB54
	950	300 x 160	1	6	72	FWB61
	950	550 x 160	2	6	144	FWB62
	950	800 x 160	3	6	216	FWB63
	950	1050 x 160	4	6	288	FWB64
	1100	300 x 160	1	7	84	FWB71
	1100	550 x 160	2	7	168	FWB72
	1100	800 x 160	3	7	252	FWB73
	1100	1050 x 160	4	7	336	FWB74

Accessories

Characteristics

Complete spans for modular devices and telecom applications can be easily integrated in the enclosure and combined according to needs.

Description	Height mm	Width mm	No. of spans	Rows	Modules.	Cat. ref.
Mounting kits for enclosures 500mm	450	250	1	3	36	UW31V
Mounting kits for enclosures 650mm	600	250	1	4	48	UW41V
Mounting kits for enclosures 800mm	750	250	1	5	60	UW51V
Mounting kits for enclosures 950mm	900	250	1	6	72	UW61V
Mounting kits for enclosures 1100mm	1050	250	1	7	84	UW71V
Kits for perforated mounting plates (to be used with partitions)	310	248	1	3		UN31TN
	310	498	2	3		UN32TN
	460	248	1	4		UN41TN
	460	498	2	4		UN42TN
	610	248	1	5		UN51TN
	610	498	2	5		UN52TN
	760	248	1	6		UN61TN
	760	498	2	6		UN62TN
	910	248	1	7		UN71TN
	910	498	2	7		UN72TN
Perforated mounting plates	240	248	1	2		UZ21M6
	310	248	1	3		UZ31M5
	390	248	1	3		UZ31M6
	310	498	2	3		UZ32M5
	460	248	1	4		UZ41M5
	570	248	1	4		UZ41M6
	460	498	2	4		UZ42M5
	610	248	1	5		UZ51M5
	610	498	2	5		UZ52M5
	760	248	1	6		UZ61M5
	760	498	2	6		UZ62M5
	Set of 2 uprights for enclosure h.500 mm					
Set of 2 uprights for enclosure h.650 mm						UN04A
Set of 2 uprights for enclosure h.800 mm						UN05A
Set of 2 uprights for enclosure h.950 mm						UN06A
Set of 2 uprights for enclosure h.1100 mm						UN07A
Connection earth for perforated plates	400mm, 1,5 mm ²					UL01G1
Connection assembly TP+N 63A, to be fitted on the uprights of the 1 section wide chassis 3 x (1x25 + 2x16 + 3x10), N: 1x25 + 3x16 + 7x10						F010
Opened protective covers DIN rails with distance between the centres: 125mm, for modular devices	150	250	1	1	12	US11A3
	300	250	1	2	24	US21A3
	450	250	1	3	36	US31A3
	600	250	1	4	48	US41A5
	750	250	1	5	60	US51A5
	900	250	1	6	72	US61A5
Closed protective covers	150	250	1	1	12	US11A1
	300	250	1	2	24	US21A1
	450	250	1	3	36	US31A1
	600	250	1	4	48	US41A1
	750	250	1	5	60	US51A1
	150	500	2	1	24	US12A1
	300	500	2	2	48	US22A1
	450	500	2	3	72	US32A1
	600	500	2	4	96	US42A1
	150	500	3	1	24	US13A1
	300	500	3	2	48	US23A1
	450	500	3	3	72	US33A1



UW61V



UN61TN



UZ61M5



UN03A

Residential
Distribution



F010



US31A3



UZ04A1

UZ05A1



UZ03A1



UZ01A2



UZ40F1



ZZ10H



UZ25V2

UZ01V2



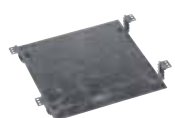
FZ803B



FZ890N



U850S



UT26B

Accessories

Description	Qty.	Cat ref.
Double towers with screw	1	UZ04A1
Top tower overpart, 15 mm / 1 set = 4 pieces	1 set	UZ05A1
Tower underparts with bar	1	UZ03A1
Low tower underparts	1	UZ01A2
Partitions vertical for enclosures height 500 mm	1	UZ30F1
Partitions vertical for enclosures height 650 mm	1	UZ40F1
Partitions vertical for enclosures height 800 mm	1	UZ50F1
Partitions vertical for enclosures height 950 mm	1	UZ60F1
Partitions vertical for enclosures height 1100 mm	1	UZ70F1
Partitions horizontal for 1 span width	1	ZZ10H
Cable guides, strap small section, 1 set = 20 pieces	1set	UZ25V2
Fixing support for cable guide, vertical, clip fixing	1	UZ01V2
Wall fixing brackets, for flush and surface mounting, 1 set = 4 pieces	1set	FZ803B
Suspension rail length: 2 m, to mount enclosures, delivered with 4 brackets	1set	FZ890N
Suspension brackets for wall fixing rails FZ890N	1	FZ799N
Strain relief rails length: 140mm for mounting on lower/upper part profile C 25 x 10 mm, slot 11mm	1	U850S
Mounting plates with adjustable angle brackets, h.115 x w.210 mm, lowering 29 mm	1	UT26A
Mounting plates with adjustable angle brackets, h.215 x w.210 mm, lowering 29 mm	1	UT26B
Locks with 2 keys, to replace the original lock	1	FZ597N
Sealing caps without cap	1	FZ226
Sealing caps with cap, male square 8 mm centre, plastic	1	FZ821N
Sealing caps with cap, male square 6 mm centre, metal	1	FZ822N
Sealing caps with cap, with slot, plastic	1	FZ823N
Sealing caps with cap, with lock cylinder	1	FZ824N
Rails 7.5 mm lowered, 1 span, lowering up to 21 mm	1	UT22B
Rails 7.5 mm lowered, 1 span, lowering up to 32 mm	1	U82A
Diagram holders, flexible, A4 format, self adhesive to stick inside the doors	10	FZ794
Diagram holders, rigid, A4 format, made of metal sheet, delivered with fixing screws (from door height 800 mm and width 550 mm)	1	FZ707
Cable entry plate replacement	1	FZ403
Touch up paint for final touch colour RAL 9010 (pure white)	1	FZ791N
Blanking strips length 221 mm, to blank opening 9 mm pre-cut, RAL 9010 (pure white)	10	S35S
Blank strips length 221 mm, lockable, to blank & lock opening 9 mm pre-cut, RAL 9010 (pure white)	10	ZZ34S
Identifier strips, 1 span, to stick on protection plates, delivered with label (1 set = 12 pieces)	1 set	UZ005
Identifier labels, 1 span, to insert in UZ005 identifier strip, available on sheet (1 sheet = 12 labels)	1	UZ006
Marking systems, 1 set = 10 pieces, sheet "circuits caption" to stick on the inner side of the door	1 set	VZ717
Marking strips, 1 set = 10 pieces, transparent strip, with 14 module length label	1 set	VZ602
Connection assemblies for Quick Connect	1	UZ00K1
Universal adapters		KN00A
Level adapters		UZ00K2

Accessories

Description	Height mm	Width mm	For enclosure	Cat. ref.
Finishing frame max. adjustment 45 mm for enclosures:	500	300	FWB31	FZ011B
	500	550	FWB32	FZ012B
	500	800	FWB33	FZ013B
	500	1050	FWB34	FZ014B
	650	300	FWB41	FZ021B
	650	550	FWB42	FZ022B
	650	800	FWB43	FZ023B
	650	1050	FWB44	FZ024B
	800	300	FWB51	FZ11B
	800	550	FWB52	FZ12B
	800	800	FWB53	FZ13B
	800	1050	FWB54	FZ14B
	950	300	FWB61	FZ21B
	950	550	FWB62	FZ22B
	950	800	FWB63	FZ23B
	950	1050	FWB64	FZ24B
1100	300	FWB71	FZ31B	
1100	550	FWB72	FZ32B	
1100	800	FWB73	FZ33B	
1100	1050	FWB74	FZ34B	



FZ22B



FZ001N

Description	For enclosure	Qty.	Left door Cat ref.	Right door Cat ref.
Plain doors	FWB31	1	-	FZ001N
	FWB32	1	-	FZ002N
	FWB33	1	FZ003N	FZ002N
	FWB34	1	FZ004N	FZ002N
	FWB41	1	-	FZ005N
	FWB42	1	-	FZ006N
	FWB43	1	FZ007N	FZ006N
	FWB44	1	FZ008N	FZ006N
	FWB51	1	-	FZ009N
	FWB52	1	-	FZ010N
	FWB53	1	FZ011N	FZ010N
	FWB54	1	FZ012N	FZ010N
	FWB61	1	-	FZ013N
	FWB62	1	-	FZ014N
	FWB63	1	FZ015N	FZ014N
	FWB64	1	FZ016N	FZ014N
	FWB71	1	-	FZ021N
	FWB72	1	-	FZ022N
	FWB73	1	FZ023N	FZ022N
	FWB74	1	FZ024N	FZ022N
Slotted doors	FWB42	1	-	FZ006NV
	FWB43	1	FZ007NV	FZ006NV
	FWB51	1	-	FZ009NV
	FWB52	1	-	FZ010NV
	FWB53	1	FZ011NV	FZ010NV
	FWB62	1	-	FZ014NV
	FWB71	1	-	FZ021NV
FWB72L	1	-	FZ022NV	



FZ106N

Accessories

Description	For enclosure Height mm	For enclosure Width mm	For enclosure Cat. ref.	Cat ref.
Transparent doors, w. 550mm, 2 sections	500	550 to 1050	FWB32, FWB33, FWB34	FZ107N
	650	550 to 1050	FWB42S, FWB43S, FWB44S	FZ104N
	800	550 to 1050	FWB52S, FWB53S, FWB54S	FZ106N
	950	550 to 1050	FWB62S, FWB63S, FWB64S	FZ110N
	1100	550 to 1050	FWB72S, FWB73S, FWB74S	FZ102N
Transparent doors, w. 300mm, 1 section	500	300	FWB31	FZ105N
	650	300	FWB41	FZ108N

All transparent doors can also use for appliance FW flush mounting.



FZ401

Description	Cat ref.
Set of stoppers to block opened cable entries	FZ401
Door shield with handle with camlock, IP44	FZ598N
Cable entry for top and bottom	FZ425
Cable entry for rear cable entry	FZ428
Fixing screws for plates, spare screws, sealable for plate	UZ06A1



FZ598N



FZ425



FZ428



UZ06A1

Residential Distribution

Volta Enclosures

Characteristics

- Distribution enclosure with metallic door, 1 to 4 rows, 12 to 48 modules
- Assembly of devices: to 63A
- Quick connection for the cover with 90° screw, sealable
- Reversible frame with 15mm perpendicularity adjustment
- Integrated spirit level
- Reversible door with integrated handle
- Frame height 9mm
- Brass terminal
- Side cabling channel
- Colour : RAL 9010 (pure white)
- IEC 61439-3. For technical details see page 4.45

Delivered with:

- Neutral and earth terminals
- Plaster connection
- Clip for circuit designation table on door (except 12 module enclosure)
- IEC60695-2-10, IEC60695-2-11: 850°C.

Description	Dimensions mm	Cat ref.
Volta flush mounting enclosure, 1 row 12 modules, N: (1x25 + 5x16 + 7x10)+(1x25 + 3x16 + 7x10), E: (1x25 + 5x16 + 7x10)	h. 356 x w. 348	VU12IE
Volta flush mounting enclosure, 2 rows 24 modules, N: (1x25 + 7x16 + 9x10)+(1x25 + 3x16 + 7x10), E: (1x25 + 7x16 + 9x10)	h. 505 x w. 348	VU24IE
Volta flush mounting enclosure, 3 rows 36 modules, N: (1x25 + 9x16 + 12x10) + (1x25 + 3x16 + 7x10), E: (1x25 + 9x16 + 12x10)	h. 630 x w. 348	VU36IE
Volta flush mounting enclosure, 4 rows 48 modules, N: (1x25 + 11x16 + 13x10)+(1x25 + 3x16 + 7x10), E: (1x25 + 11x16 + 13x10)	h. 755 x w. 348	VU48IE



VU24IE



VU36IE

Accessories

Description		1 Qty.	Cat ref.
Keylock standard		1	VZ302N
Spare keys, set of 2 keys, for lock VZ302N		1 set	VZ304N
Lock bolts, set of 2 lock bolts		1 set	VZ225N
Transpar. door for flush mounting Volta encl. frame w. 40mm, Colour RAL 9010 white	1 row	1	VZ131N
	2 rows	1	VZ132N
	3 rows	1	VZ133N
	4 rows	1	VZ134N
Raising frame to convert stnrd. version into "flat" version with 72mm installation depth	for VU12IE	1	VZ111N
	for VU24IE	1	VZ112N
	for VU36IE	1	VZ113N
	for VU48IE	1	VZ114N
Support frame for mirror and picture insert	support frame, Volta, 2 rows, white	1	VZ801N
	support frame, Volta, 3 rows, white	1	VZ802N
	support frame, Volta, 2 rows, black	1	VZ803N
	support frame, Volta, 3 rows, black	1	VZ804N
	support frame, Volta, 2 rows, matt silver	1	VZ807N
	support frame, Volta, 3 rows, matt silver	1	VZ808N
	support frame, Volta, 2 rows, sky blue	1	VZ809N
	support frame, Volta, 3 rows, sky blue	1	VZ810N
Mirror	mirror for Volta, 2 rows	1	VZ811N
	mirror for Volta, 3 rows	1	VZ812N
Picture insert	picture insert, Volta, 2 rows	1	VZ813N
	picture insert, Volta, 3 rows	1	VZ814N
Pinboard door black expanded plastic plate with aluminium frame colour: silver, for Volta, 2 rows		1	VZ292N
Pinboard door black expanded plastic plate with aluminium frame colour: silver, for Volta, 3 rows		1	VZ293N
Mounting kit for hollow wall distribution enclosures		1	VZ405N



VZ131N



VZ808N



VZ293N

Refer to page 4.27 for additional terminals



VF104TDI



VF212TDI



VF312TDI

Golf Enclosures

Characteristics

- Flush mounted distribution boxes from 1 to 4 rows, from 4 to 48 modules
- Opaque or transparent door for devices up to 70 mm installation depth
- DIN profile for modular
- devices 47 mm under the cover
- Distance between the DIN rails axis 125 mm
- Distribution boards manufactured from plastic material
- Door can be fitted on right or left without dismantling the cover
- Door opens up to 180°. Wall box and cover can be installed either way up
- Removable cable entry slider
- Cable entries for cable and conduit
- Complies with IEC 61 439-3

Delivered with

- Brass screw-type terminals
- Marking stickers
- Towers to fix cable ties for clear cable management are included, cable retaining clips are optional (except in 4 and 8 module enclosures.)
- Door protected by a plastic film
- Carton packaging
- DIN rails directly fixed to the wall box allow room for wiring behind them

Optional

- Lock and key
- Cable retaining clips

Description	Wall niche dimensions mm	Cat ref.
Golf flush mounted enclosure, 1 row 4 mod. N: 2x16mm ² + 2x10mm ² , E: 2x16mm ² + 2x10mm ² , N: 2x16mm ² + 2x10mm ²	h.189 x w.170 x d.72	VF104TDI
Golf flush mounted enclosure, 1 row 8 mod. N: 3x16mm ² + 4x10mm ² E: 3x16mm ² + 3x10mm ² , N: 3x16mm ² + 3x10mm ²	h.189 x w.242 x d.72	VF108TDI
Golf flush mounted enclosure, 1 row 12 mod. N: 3x16mm ² + 5x10mm ² , E: 3x16mm ² + 4x10mm ² , N: 3x16mm ² + 4x10 mm ²	h.257 x w.318 x d.72	VF112TDI
Golf flush mounted enclosure, 1 row 22 mod.N: 3x16mm ² + 4x10mm ² E: 6x16mm ² + 7x10mm ² , N: 6x16mm ² + 7x10mm ²	h.257 x w.498 x d.72	VF122TDI
Golf flush mounted enclosure, 2 rows 24 mod. N: 5x16mm ² + 5x10mm ² , E: 4x16mm ² + 5x10mm ² , N: 4x16mm ² + 5x10mm ²	h.382 x w.318 x d.72	VF212TDI
Golf flush mounted enclosure, 3 rows 36 mod. N: 5x16mm ² + 6x10mm ² , E: 5x16 mm ² + 6x10 mm ² , N: 5x16mm ² + 6x10mm ²	h.507 x w.318 x d.72	VF312TDI
Golf flush mounted enclosure, 4 rows 48 mod. N: 5 x 16 mm ² + 6 x 10 mm ² , E: 6 x 16 mm ² + 7 x 10 mm ² , N: 6 x 16 mm ² + 7 x 10 mm ²	h.652 x w.318 x d.72	VF412TDI

Residential Distribution



KM07N



KM13N



KM25N

Additional Terminals

Description	Terminal block with support		Terminal block w/o support
	Neutral Cat. ref	Earth Cat. ref	Cat ref.
Terminal block 3 x 16 + 4 x 10 mm ²	KM07N	KM07E	K142
Terminal block 5 x 16 + 6 x 10 mm ²	KM11N	KM11E	K144
Terminal block 6 x 16 + 7 x 10 mm ²	KM13N	KM13E	K148
Terminal block 1 x 25 + 8 x 16 + 8 x 10 mm ²	KM17N	KM17E	K156
Terminal block 1 x 25 + 11 x 16 + 3 x 10 mm ²	KM25N	KM25E	K158

FW Enclosures

Characteristics

- Complete FW flush enclosure, with PE/N terminals per field DIN Rail 35 x 7.5mm, 125mm gap
- For devices up to 125A
- Complete boards come with door, DIN Rail chassis and shock protective cover
- Quick Connect Terminals for ease and safety
- Cable entries top and bottom
- Flat trimming frames
- Colour: RAL 9010 (pure white)
- Integrated cable rails
- Depth 112 mm
- Material: sheet steel
- Complies with IEC 61 439-3., IEC 60 695-2-10, IEC 60 695-2-11
- Glow wire test: 850°C
- For technical details see page 4.47.



FWU62S

Description	h. x w. mm	PE/N Terminals	Fields	Rows	Modules	Cat ref.
FW flush enclosure	500 x 300	2 x 10 + 1 x 18	1	3	36	FWU31S
	500 x 550	2 x 10 + 1 x 18	2	3	72	FWU32S
	500 x 800	2 x 10 + 1 x 18	3	3	108	FWU33S
	650 x 300	2 x 10 + 1 x 22	1	4	48	FWU41S
	650 x 550	2 x 10 + 1 x 22	2	4	96	FWU42S
	650 x 800	2 x 10 + 1 x 22	3	4	144	FWU43S
	800 x 300	2 x 10 + 1 x 22	1	5	60	FWU51S
	800 x 550	2 2 x 10 + 1 x 22 25	2	5	120	FWU52S
	800 x 800	2 x 10 + 1 x 22	3	5	180	FWU53S
	950 x 300	2 x 10 + 1 x 22	1	6	72	FWU61S
	950 x 550	2 x 10 + 1 x 22	2	6	144	FWU62S
	950 x 800	2 x 10 + 1 x 22	3	6	216	FWU63S
	1100 x 300	2 x 10 + 1 x 22	1	7	84	FWU71S
	1100 x 550	2 x 10 + 1 x 22	2	7	168	FWU72S
	1100 x 800	2 x 10 + 1 x 22	3	7	252	FWU73S

For non Quick Connect Terminal, use KMxxx accessories below.

Accessories

Description	PE/N Terminals	Section in mm ²	Qty.	Cat ref.
PE + N connections snap on lateral support	2 x 13 each	6 x 16, 7 x 10	2	KM13A
	2 x 22 each	10 x 16, 12 x 10	2	KM22A
	2 x 25 each	11 x 16, 14 x 10	2	KM25A
	4 x 5 each	1 x 25, 2 x 16, 2 x 10	1	KM05B



KM25A



KM05B



CDA240U



CDA516D

RCCBs A type 6kA and 10kA 30mA

- Compact devices which provide RCD earth leakage protection (protect against electrical shocks by direct or indirect contacts). To open automatically in the event of an earth fault between phase and earth and/or neutral and earth.
- High sensitivity: 30mA instantaneous tripping (fixed)
- Medium sensitivity: 100mA, 300mA instantaneous or selective tripping (fixed)
- Current rating: 25 to 125A. Voltage rating: 230V AC (2P). Poles: 2P. Type: A. Frequency: 50Hz
- Connection capacity 25 to 63A: rigid conductors 25mm, flexible conductors 16mm²
- Connection capacity 80 and 100A: rigid conductors 50mm², flexible conductors 35mm²
- A type suitable for residual pulsating direct currents, whether suddenly applied or slowly rising. They are used whenever fault currents are not sinusoidal. Complies with EN61008-1. For technical details see page 4.51.

Description	In/A	Quantity	Cat ref.
RCCBs A type, 6kA 30mA, 2 Pole	25A	1	CDA225U
	40A	1	CDA240U
	63A	1	CDA263U
	80A	1	CD283U
	100A	1	CD285U
RCCBs A type, 10kA 30mA, 2 Pole	16A	1	CDA516D
	25A	1	CDA525D
	40A	1	CDA540D
	63A	1	CDA563D

MCBs Type B & C 6kA Single Pole

- Protection and control of circuits against overloads and short circuits.
- Circuit isolation..
- Breaking capacity : 6kA (IEC 60 898-1).
- Curves : B curve : 3 to 5 In. Voltage rating : 240/400V AC. Current rating : 6 to 63A.
- Frequency : 50/60Hz. Climate sealed : T2.
- Will accept accessories, except MUxxxx.
- Connection capacity: rigid conductors : 25mm², flexible conductors : 16mm².
- Complies with IEC 60 898-1 and EN 60898-1



MBN116W

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.	C Curve without accessories Cat ref.
6A	1 Mod	12	MBN106W	MCN106A	MU106A
10A	1 Mod	12	MBN110W	MCN110A	MU110A
16A	1 Mod	12	MBN116W	MCN116A	MU116A
20A	1 Mod	12	MBN120W	MCN120A	MU120A
25A	1 Mod	12	MBN125W	MCN125A	MU125A
32A	1 Mod	12	MBN132W	MCN132A	MU132A
40A	1 Mod	12	MBN140W	MCN140A	MU140A
50A	1 Mod	12	MBN150W	MCN150A	MU150A
63A	1 Mod	12	MBN163W	MCN163A	MU163A

Residential Distribution

RCBOs Type B & C - 30mA 6kA, 1 Pole

- Compact protection devices which combine the overcurrent functions of an MCB with the earth fault functions of an RCCB in a single unit. A range of sensitivity and current ratings are available for use in domestic installations.
- Insulated DIN clip
- Complies with BS EN 61009-1, IEC61009-1, IEC61009-2-2,
- Sensitivities (fixed)
- 10mA and 30mA
- Breaking capacity: 10kA. Flying neutral lead: 200mm
- Terminal Capacities: 25mm² rigid, 16mm² flexible
- Application: 1 module devices provide a compact solution for installation in consumer units.
- These devices are 1 pole & solid neutral. Operating Voltage: 230V(AC) + 10%/-15% 50H. Locking kit = MZN175



ADA106U

Description	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	1 Mod	1	ADA106U	ADA156U
10A	1 Mod	1	ADA110U	ADA160U
16A	1 Mod	1	ADA116U	ADA166U
20A	1 Mod	1	ADA120U	ADA170U
25A	1 Mod	1	ADA125U	ADA175U
32A	1 Mod	1	ADA132U	ADA182U

Reduced Height RCBOs Type B - 30mA 6kA, 1 Pole

- Reduced height RCBO is designed to give more space in the consumer unit. The functional earth has been removed to allow easier installation.
- Compact protection devices which provide MCB overload protection and RCD earth leakage protection (protect against electrical shocks by direct or indirect contact).
- Sensitivity: High sensitivity: 30mA instant tripping (fixed). Medium sensitivity: 300mA instant tripping (fixed).
- Current rating: 6 to 32A.
- Curves: B.
- Voltage rating: 230V AC.
- A type.
- Frequency: 50Hz.
- Connection capacity: rigid conductors: 25mm², flexible conductors: 16mm².
- A type: Detects residual sinusoidal alternating currents, whether suddenly applied or slowly rising. They are used whenever fault currents are not sinusoidal. It is able to detect DC fault current generated by loads like washing machines, speed drives, microprocessing, electronic ballast.
- Approved according to EN 61009-1.



ADA307G

Description	Breaking capacity (IEC 60 898-1)	Width (17.5mm)	Quantity	B Curve Cat ref.
6A	6kA	1 mod	1	ADA307G
10A	6kA	1 mod	1	ADA311G
16A	6kA	1 mod	1	ADA317G
20A	6kA	1 mod	1	ADA321G
25A	6kA	1 mod	1	ADA326G
32A	6kA	1 mod	1	ADA333G

Standard Height RCBOs Type B - 30mA 6kA, 1 Pole

Description	Breaking capacity (IEC 60 898-1)	Width (17.5mm)	Quantity	Cat ref.
40A	6kA	1 mod	1	ADA140G
45A	6kA	1 mod	1	ADA145G

RCBOs Type B & C - 30mA 6kA, 2 Pole

- Compact protection devices which provide MCB overload protection and RCD earth leakage protection (protect against electrical shocks by direct or indirect contact).
- Sensitivity: High sensitivity: 30mA instant tripping (fixed). Medium sensitivity: 300mA instant tripping (fixed).
- Current rating: 6 to 40A.
- Curves: B. Voltage rating: 230V AC.
- Frequency: 50Hz.
- Connection capacity: rigid conductors: 25mm², flexible conductors: 16mm².
- A type: Detects residual sinusoidal alternating currents, whether suddenly applied or slowly rising. They are used whenever fault currents are not sinusoidal. It is able to detect DC fault current generated by loads like washing machines, speed drives, microprocessing, electronic ballast.
- Approved according to EN 61009-1. **(Suitable for use in ROI)**



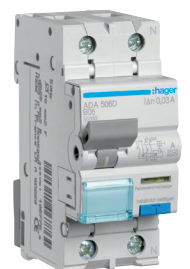
AD916J

Residential
Distribution

Description	Breaking capacity (IEC 60 898-1)	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	6kA	2 mod	1	AD906J	AD956J
10A	6kA	2 mod	1	AD910J	AD960J
16A	6kA	2 mod	1	AD916J	AD966J
20A	6kA	2 mod	1	AD920J	AD970J
25A	6kA	2 mod	1	AD925J	AD975J
32A	6kA	2 mod	1	AD932J	AD982J
40A	6kA	2 mod	1	AD940J	AD990J

RCBOs Type B & C - 30mA 10kA, 2 Pole

Description	Breaking capacity (IEC 60 898-1)	Width (17.5mm)	Quantity	B Curve Cat ref.	C Curve Cat ref.
6A	10kA	2 mod	1	ADA506D	ADA556D
10A	10kA	2 mod	1	ADA510D	ADA560D
16A	10kA	2 mod	1	ADA516D	ADA566D
20A	10kA	2 mod	1	ADA520D	ADA570D
25A	10kA	2 mod	1	ADA525D	ADA575D
32A	10kA	2 mod	1	ADA532D	ADA582D



ADA506D



ADS967D

FI / LS switch for 127 V networks, 1P + N, 6 kA, Quick Connect

Current Characteristics Fi - Type	Modules	Cat ref.
RCBO 1P+N 6kA 127V B-16A 30mA A Class QC&QB	2	ADS917D
RCBO 1P+N 6kA 127V C-16A 30mA A Class QC&QB	2	ADS967D

See Modular Devices & Connection page 2.31 for suitable busbars.



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



ARC906U

Arc Fault Detection Devices

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)	B Curve Cat ref.	B Curve Cat ref.
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

Surge Protection Type 1 + 2

Technical Data

Conforms to IEC61643-1: T1 + T2
 Rated operational voltage: 230/400V
 Frequency: 50/60Hz
 Protection level up: 1.5kV
 Operating temperature: -40 to 80°C
 Rated voltage U_c according to IEC61643-1: 350V

Characteristics

- For mounting on top hat rails
- Integrated remote signalling contact
- Contact type: 1 changeover contact



SPA800



SPA081

Backup fuse	Earthing network	Modules	Nominal discharge capacity	Total discharge capacity	VPE	Cat ref.
315A	TN-C	6	25kA	75	1	SPA800
315A	TT/TN-S	8	25kA	100	1	SPA801

Replacement plug-in module for SPA80x

Description	Backup fuse	PU	Cat ref.
Plug-in module LN/PEN 350V 25kA	315A	1	SPA081

Surge Protection Type 2

These are used to limit the voltage to the specified values and can be connected downstream of combination protection and type 1 protection.

Surge Protection Type 2, 1 pole

Technical Data

Conforms to IEC61643-11: T2
 Rated operational voltage: 230V
 Frequency: 50/60Hz
 Discharge capacity: 20kA
 Protection level up: 1.35kV
 Number of modules: 1
 Operating temperature: -40 to 80°C
 Rated voltage U_c according to IEC61643-1: 275V

Characteristics

- Integrated remote signalling contact
- Contact type: 1 changeover contact



SPB140R

Description	Cat ref.	With remote contact Cat ref.
Surge protection T2, 1 pole, 40kA, TNC	SPB140D	SPB140R

Surge Protection Type 2, 2 pole

Technical Data

Conforms to IEC61643-11: T2
 Rated operational voltage: 230V
 Frequency: 50/60Hz
 Discharge capacity: 20kA
 Protection level up: 1.35kV
 Number of modules: 2
 Operating temperature: -40 to 80°C
 Rated voltage U_c according to IEC61643-1: 275V

Characteristics

- Integrated remote signalling contact
- Contact type : 1 changeover contact



SPB208D

Description	Cat ref.	With remote contact Cat ref.
Surge protection T2, 2 pole, 8kA, TNS/TT	SPB208D	-
Surge protection T2, 2 pole, 15kA, TNS/TT	SPB215D	SPB215R
Surge protection T2, 2 pole, 40kA, TNS/TT	SPB240D	SPB240R
Surge protection T2, 2 pole, 65kA, TNS/TT	-	SPB265R



SPB415R

Surge Protection Type 2, 4 pole

Technical Data

Conforms to IEC61643-11: T2
 Rated operational voltage: 230/400V
 Frequency: 50/60Hz
 Discharge capacity: 20kA
 Protection level up: 1.35kV
 Number of modules: 4
 Operating temperature: -40 to 80°C
 Rated voltage U_c according to IEC61643-1: 275V

Characteristics

- Integrated remote signalling contact
- Contact type : 1 changeover contact



SPB008D

Description	Cat ref.	With remote contact Cat ref.
Surge protection T2, 4 pole, 8kA, TNS/TT	SPB408D	-
Surge protection T2, 4 pole, 15kA, TNS/TT	SPB415D	SPB415R
Surge protection T2, 4 pole, 40kA, TNS/TT	SPB440D	SPB440R
Surge protection T2, 4 pole, 65kA, TNS/TT	-	SPB465R

Replacement plug-in module Type 2

Description	Cat ref.
Cartridge L-N, In 2kA, I _{max} 8kA	SPB008D
Cartridge T2 L-N U _c 275V U _p 1.35kV	SPB015
Cartridge L-N, In 5kA, I _{max} 15kA	SPB015D
Cartridge T2 N-PE U _c 260V U _p 1.5kV	SPB015N
Cartridge L-N, In 20kA, I _{max} 40kA	SPB040D
Cartridge N-PE, In 20kA, I _{max} 40kA	SPB040N
Cartridge N-PE, In 20kA, I _{max} 65kA	SPB065N
Cartridge L-N, In 20kA, I _{max} 65kA	SPB065R



SPV340

Surge Protection Type 2, 3 pole, PV

Technical Data

Conforms to IEC61643-1: T2
 Rated operational voltage: 1000V DC
 Protection level up: 3.7kV
 Operating temperature: -40 to 80°C

Characteristics

- Integrated remote signalling contact
- Contact type : 1 changeover contact

Description	Cat ref.
Surge protection T2, 3 pole, 40kA, PV	SPV340

Plug-in module Type 2, PV

Nominal discharge capacity	Protection level	PU	Cat ref.
40kA	1.9kV	1	SPV040

Surge Protection Type 3

These are used to limit the voltage to $\leq 1.5kV$. Surge protection type 3 should be located as close as possible to the end of the device, so that the voltage level can be reduced to a tolerable value and recouplings can be neutralised.

Surge Protection Type 3

Technical Data

Conforms to IEC61643-11: T3
 Rated operational voltage: 230V
 Frequency: 50/60Hz
 Protection level up: 1.4kV
 Operating temperature: -40 to 80°C

Characteristics

- Integrated remote signalling contact
- Contact type: 1 changeover contact



SPC203N

Description	Modules	PU.	Cat ref.
Surge protection T3, 1 pole + N, 5kA	1	1	SPC203N
Surge protection T3, 3 pole + N, 3kA	2	1	SPC403N

Accessories for Surge Protection Type 3

Technical Data

Conforms to IEC61643-11: T3
 Rated operational voltage: 230V
 Frequency: 50/60Hz
 Protection level up: 1.4kV
 Operating temperature: -40 to 80°C



SPC023N

Description	PU.	Cat ref.
Plug-in module T3 1 pole Uc 264V In 5kA	1	SPC023N
Surge protection T3, N-PE Uc 264V In 3kA	1	SPC043N

Surge Protection for IP Broadband Connections

Description	Protection level	PU.	Cat ref.
Surge protection for VDSL	250V	1	SPK603
Surge protection for (A) DSL and ISDN	300V	1	SPK602



SPK603

Residential
Distribution



SBN140

Switch Disconnectors

- For use as a switch disconnector in all types of circuits.
- Complies with: IEC 60947-3 for all ratings and to EN60669 for ratings from 16A to 63A

Features

- All switches have a green / red indication on the toggle giving positive contact indication.

Technical data

- Utilisation category AC22A 230V / 400V
- In: 16A to 32A frame size 1. Connection capacity: 16mm² - rigid conductor, 10mm² - flexible conductor
- In: 32A to 63A frame size 2. Connection capacity: 25mm² - rigid conductor, 16mm² - flexible conductor
- In: 63A to 125A frame size 3. Connection capacity: 50mm² - rigid conductor, 35mm² - flexible conductor



Description	Frame size	Mod. width	Qty.	Cat ref.
Single pole switch disconnectors				
1 x 16A - 230V AC	1	1	12	SBN116
1 x 25A - 230V AC	1	1	12	SBN125
1 x 32A - 230V AC	1	1	12	SBN132
1 x 32A* - 230V AC	2	1	12	SBN133
1 x 40A - 230V AC	2	1	12	SBN140
1 x 63A - 230V AC	2	1	12	SBN163
1 x 63A* - 230V AC	3	1	12	SBN164
1 x 80A - 230V AC	3	1	12	SBN180
1 x 100A - 230V AC	3	1	12	SBN190
1 x 125A - 230V AC	3	1	12	SBN199



SBN240



Description	Frame size	Mod. width	Qty.	Cat ref.
Double pole switch disconnectors				
2 x 16A - 230V AC	1	1	12	SBN216
2 x 25A - 230V AC	1	1	12	SBN225
2 x 32A - 230V AC	1	1	12	SBN232
2 x 32A* - 230V AC	2	2	6	SBN233
2 x 40A - 400V AC	2	2	6	SBN240
2 x 63A - 400V AC	2	2	6	SBN263
2 x 63A* - 400V AC	3	2	6	SBN264
2 x 80A - 400V AC	3	2	6	SBN280
x 2 x 100A - 400V AC	3	2	6	SBN290
2 x 125A - 400V AC	3	2	6	SBN299



SBN340



Description	Frame size	Mod. width	Qty.	Cat ref.
Three pole switch disconnectors				
3 x 16A - 400V AC	1	2	6	SBN316
3 x 25A - 400V AC	1	2	6	SBN325
3 x 32A - 400V AC	1	2	6	SBN332
3 x 32A* - 400V AC	2	3	4	SBN333
3 x 40A - 400V AC	2	3	4	SBN340
3 x 63A - 400V AC	2	3	4	SBN363
3 x 63A* - 400V AC	3	3	4	SBN364
3 x 80A - 400V AC	3	3	4	SBN380
3 x 100A - 400V AC	3	3	4	SBN390
3 x 125A - 400V AC	3	3	4	SBN399



SBN440



Description	Frame size	Mod. width	Qty.	Cat ref.
Four pole switch disconnectors				
4 x 16A - 400V AC	1	2	6	SBN416
4 x 25A - 400V AC	1	2	6	SBN425
4 x 32A - 400V AC	1	2	6	SBN432
4 x 32A* - 400V AC	2	4	3	SBN433
4 x 40A - 400V AC	2	4	3	SBN440
4 x 63A - 400V AC	2	4	3	SBN463
4 x 63A* - 400V AC	3	4	3	SBN464
4 x 80A - 400V AC	3	4	3	SBN480
4 x 100A - 400V AC	3	4	3	SBN490
4 x 125A - 400V AC	3	4	3	SBN499

Switch Disconnectors

- For use as a switch disconnector in all types of circuits.
- Complies with: IEC 60947-3 for all ratings and to EN60669 for ratings from 16A to 63A.

Features

- All switches have a green / red indication on the toggle giving positive contact indication.

Technical data

- Utilisation category AC22A 230V / 400V
- In: 16A to 32A frame size 1.
- Connection capacity: 16mm² - rigid conductor, 10mm² - flexible conductor
- In: 32A to 63A frame size 2.
- In: 80A to 125A frame size 3.
- Connection capacity: 50mm² - rigid conductor, 35mm² - flexible conductor



SBR163

Description	Frame size	Mod. width	Qty.	Cat ref.
Single pole switch disconnectors				
1 x 40A - 230V AC	2	1	12	SBR140
1 x 63A - 230V AC	2	1	12	SBR163
1 x 80A - 230V AC	3	1	12	SBR180
1 x 100A - 230V AC	3	1	12	SBR190
1 x 125A - 230V AC	3	1	12	SBR199



Description	Frame size	Mod. width	Qty.	Cat ref.
Double pole switch disconnectors				
2 x 40A - 400V AC	2	2	6	SBR240
2 x 63A - 400V AC	3	2	6	SBR263
2 x 80A - 400V AC	3	2	6	SBR280
2 x 100A - 400V AC	3	2	6	SBR290
2 x 125A - 400V AC	3	2	6	SBR299



SBR263

Description	Frame size	Mod. width	Qty.	Cat ref.
Three pole switch disconnectors				
3 x 40A - 400V AC	2	3	4	SBR340
3 x 63A - 400V AC	2	3	4	SBR363
3 x 80A - 400V AC	3	3	4	SBR380
3 x 100A - 400V AC	3	3	4	SBR390
3 x 125A - 400V AC	3	3	4	SBR399



SBR399

Description	Frame size	Mod. width	Qty.	Cat ref.
Four pole switch disconnectors				
4 x 63A - 400V AC	2	4	3	SBR463
4 x 100A - 400V AC	3	4	3	SBR490
4 x 125A - 400V AC	3	4	3	SBR499



SBR499



SBT116

Switch Disconnectors with Indicator Light

- For use as a switch disconnector in all types of circuits.
- Complies with:
- IEC 60947-3 and EN60669

Features

- Orange LED indicator light.
- LED life time: 100 000 h.
- All switches have a green / red indication on the toggle giving positive contact indication

Technical data

- Utilisation category AC22A 230V / 400V
- In: 16A to 32A frame size 1.
- Connection capacity: 16mm² - rigid conductor, 10mm² - flexible conductor

Description	Frame size	Mod. width	Qty.	Cat ref.
Single pole switch disconnectors with indicator light top				
1 x 16A - 230V AC	1	1	12	SBT116
1 x 25A - 230V AC	1	1	12	SBT125
1 x 32A - 230V AC	1	1	12	SBT132

Description	Frame size	Mod. width	Qty.	Cat ref.
Single pole switch disconnectors with indicator light bottom				
1 x 16A - 230V AC	1	1	12	SBB116
1 x 25A - 230V AC	1	1	12	SBB125
1 x 32A - 230V AC	1	1	12	SBB132

Description	Frame size	Mod. width	Qty.	Cat ref.
Double pole switch disconnectors with indicator light top				
2 x 16A - 230V AC	1	1	12	SBT216
2 x 25A - 230V AC	1	1	12	SBT225
2 x 32A - 230V AC	1	1	12	SBT232

Description	Frame size	Mod. width	Qty.	Cat ref.
Double pole switch disconnectors with indicator light bottom				
2 x 16A - 230V AC	1	1	12	SBB216
2 x 25A - 230V AC	1	1	12	SBB225
2 x 32A - 230V AC	1	1	12	SBB232

Description	Frame size	Mod. width	Qty.	Cat ref.
Double pole switch disconnectors with indicator light top & bottom				
2 x 16A - 230V AC	1	1	12	SBM216
2 x 25A - 230V AC	1	1	12	SBM225
2 x 32A - 230V AC	1	1	12	SBM232

Auxiliaries & Accessories

Auxiliary contact

- The auxiliary contact is common to the whole range of switch disconnectors from 16A to 125A with or without indicator light

Features

- The auxiliary contact have a mechanical indicator to show the position of the contact

Technical data

- Utilisation category AC12A 230V / 400V

- Connection capacity: 10mm² - rigid conductor, 6mm² - flexible conductor

Sealable terminal shrouds

- The sealable terminal shroud is compatible with switch disconnectors ratings from 32A to 63A frame size 2.

- For ratings from 63A to 125A frame size 3 switch disconnector, only the disible part is compatible to protect the front screw heads.

Phase barrier shield

- The phase barrier shield is compatible with switch disconnectors ratings ratings from 32A to 125A frame size 2&3.

Padlocking kit

- Allows to lock the device in the OFF and ON positions.

- Will accept two padlocks with hasps of 4.75mm diameter max. (supplied without padlock).



ESC080

Description	Mod. width	Qty.	Cat ref.
Auxiliary contact 1NO + 1NC			
Compatible with disconnector switches from 16 to 125A	0.5	1	ESC080

Description	Qty.	Cat ref.
Terminal shroud Compatible with switch disconnector from 32A to 63A frame size 2		
To shroud the connection terminal and screws. The screw cover can be sealed.	4	MZN120



MZN120

Description	Qty.	Cat ref.
Phase barrier shield		
Phase barrier shield	3	MZN121



MZN121

Description	Qty.	Cat ref.
Padlocking kit		
Padlocking kit	2	MZN175



MZN175



SFT232

Switch Disconnectors

- For use as a switch disconnector in all types of circuits.
- Complies with: IEC 60947-3 for all ratings and to EN60669 for ratings from 16A to 63A

Technical data

- Utilisation category AC22A 230V / 400V
- In: 16A to 40A frame size 1.
- Connection capacity: 16mm² - rigid conductor, 10mm² - flexible conductor

Description	Frame size	Mod. width	Qty.	Cat ref.
Centre OFF changeover switch I-0-II and common point on top				
1 x 25A - 230V AC	1	1	12	SFT125
1 x 32A - 230V AC	1	1	12	SFT132
1 x 40A - 230V AC	1	1	12	SFT140
2 x 25A - 230V AC	1	2	6	SFT225
2 x 32A - 230V AC	1	2	6	SFT232
2 x 40A - 230V AC	1	2	6	SFT240
3 x 40A - 400V AC	1	3	4	SFT340
4 x 40A - 230V AC	1	4	3	SFT440



SFB125

Description	Frame size	Mod. width	Qty.	Cat ref.
Centre OFF changeover switch I-0-II and common point on bottom				
1 x 16A - 230V AC	1	1	12	SFB116
1 x 25A - 230V AC	1	1	12	SFB125
1 x 32A - 230V AC	1	1	12	SFB132
2 x 16A - 230V AC	1	2	6	SFB216
2 x 25A - 230V AC	1	2	6	SFB225
2 x 32A - 230V AC	1	2	6	SFB232



SFH125

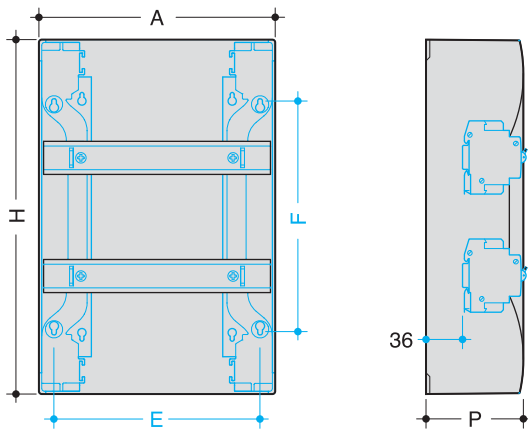
Description	Frame size	Mod. width	Qty.	Cat ref.
Changeover switch I-II and common point on top				
1 x 25A - 230V AC	1	1	12	SFH125
1 x 32A - 230V AC	1	1	12	SFH132
2 x 25A - 230V AC	1	2	6	SFH225
2 x 32A - 230V AC	1	2	6	SFH232

Residential Distribution

Description	Frame size	Mod. width	Qty.	Cat ref.
Changeover switch I-II and common point on bottom				
1 x 16A - 230V AC	1	1	12	SFL116
1 x 25A - 230V AC	1	1	12	SFL125
1 x 32A - 230V AC	1	1	12	SFL132
2 x 16A - 230V AC	1	2	6	SFL216
2 x 25A - 230V AC	1	2	6	SFL225
2 x 32A - 230V AC	1	1	6	SFL232

Description	Frame size	Mod. width	Qty.	Cat ref.
Changeover switch I-II				
1 x 25A - 230V AC	1	1	12	SFM125
1 x 32A - 230V AC	1	1	12	SFM132

Gamma 13

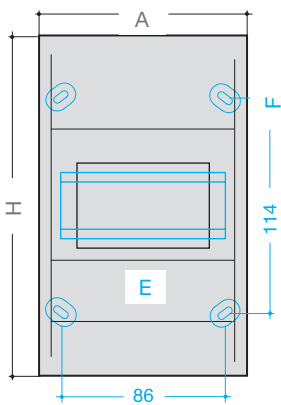


Dimensions

References	Dimensions (mm)			Fixing centers	
	A	H	P	E	F
GD113H	250	250	103	180	177
GD213H	250	375	103	180	302
GD313H	250	500	103	180	427
GD413H	250	625	103	180	552

Note : allow 28 mm extra in width for door opening.

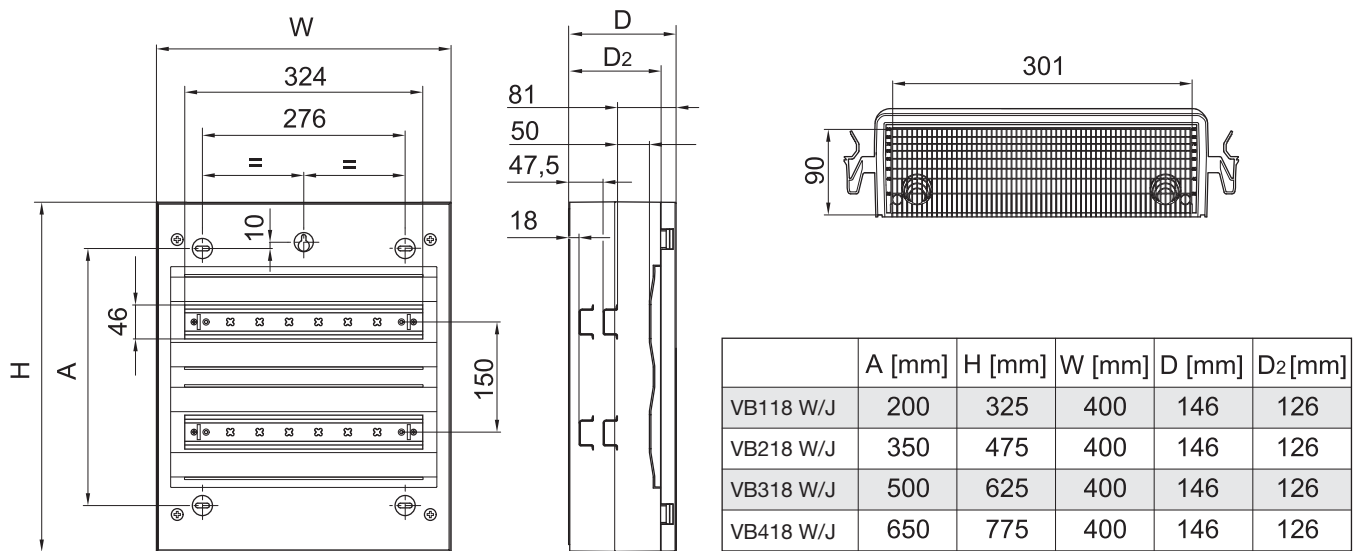
Mini Gamma



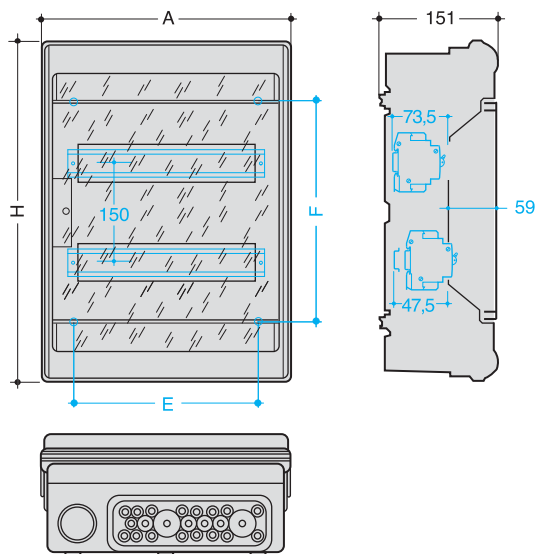
Dimensions

References	Dimensions (mm)			Fixing centers	
	A	H	depth	E	F
GD102E	55	160	82	-	-
GD104E	110	180	82	86	114
GD106E	146	180	82	124	114
GD108E	182	180	82	158	114
GD110E	218	180	82	194	114

Vega



VE212R - 2 Rows 24 Modules

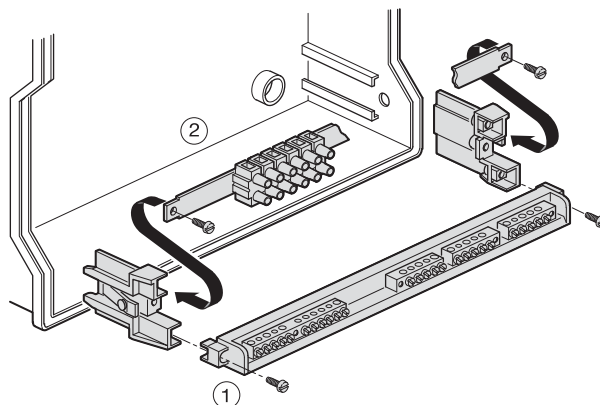


Dimensions in mm

Ref.		R	enclosure dimension		fixing centres	
			A	H	E	F
VE103L	3	1	111	175	-	147
VE106R	6	1	165	190	108	158
VE110L	10	1	237	210	180	173
VE112R	12	1	310	302	230	155
VE212R	24	2	310	427	230	280
VE312R	36	3	310	552	230	405
VE412F	48	4	310	677	230	550
VE118R	18	1	418	302	338	155
VE218R	36	2	418	452	338	305
VE318Y	54	3	418	602	338	455

Connection assembly

Mounting on insulating support at both end of the chassis
Additional connection assembly : VZ403 or VZ428



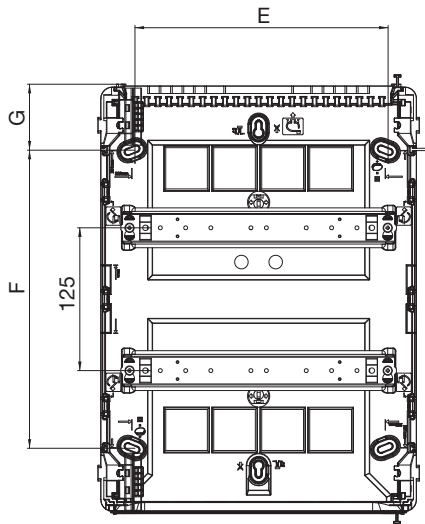
Ref.	knock outs	side mounted
VE103L	2 x M20	-
VE106R	1 x M20 + 1 x M25 + 1 x M20/32	2 x 16
VE110L	1 x M20/32 + 1 x M25 + 3 x M20	2 x 16
VE112R	2 x M20/32/40 + 2 x M25/32 + 3 x M25 + 6 x M20	2 x 21
VE212R	1 x M20/40/50 + 2 x M20/32 + 12 x M25 + 2 x M20	2 x 21
VE312R	2 x M20/32/40 + 2 x M25/32 + 3 x M25 + 6 x M20	3 x 21
VE412F	1 x M20/40/50 + 2 x M20/32 + 12 x M25 + 2 x M20	3 x 21
VE118R	2 x M20/32/40 + 2 x M25/32 + 3 x M25 + 6 x M20	4 x 21
VE218R	1 x M20/40/50 + 2 x M20/32 + 12 x M25 + 2 x M20	4 x 21
VE318R	2 x M20/32/40 + 2 x M25/32 + 3 x M25 + 6 x M20	5 x 21

Cable Entries

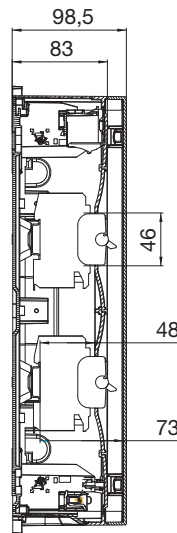
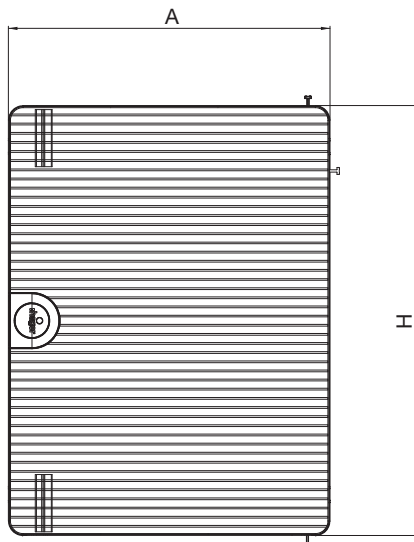
Cable entries top/bottom

One side cable entry optimised for use of trunking, knockout-type.

The other side pre cuts with diameters 20 mm, 25 mm, 32 mm and 40 mm the wall box is 180° turnable.

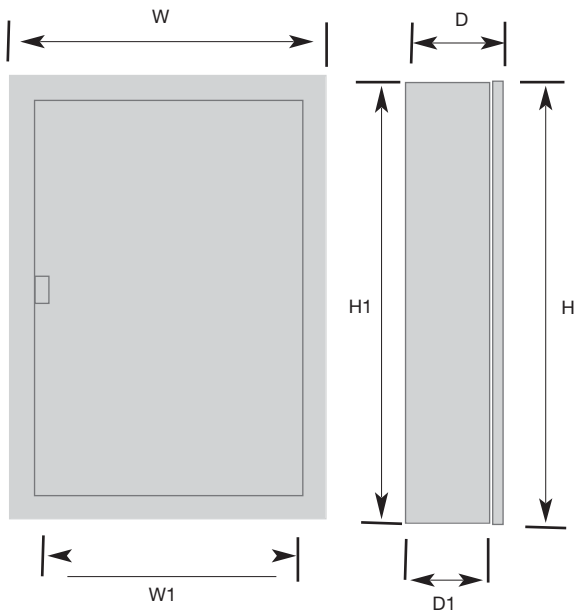


Ref.		Dimension		Wall fixation		
		A	H	E	F	G
VS104...	1 row 4	137,5	183,5	101	68	58
VS108...	1 row 8	209,5	183,5	173,5	68	58
VS112...	1 row 12	281,5	251,5	221,5	135,5	58
VS212...	2 row 12	281,5	376,5	221,5	260,5	58
VS312...	3 row 12	281,5	500	221,5	385,5	58
VS412...	4 row 12	281,5	646,5	221,5	491	58
VS118...	1 row 18	389,5	251,5	329,5	135,5	58
VS218...	2 row 18	389,5	376,5	329,5	260,5	58
VS318...	3 row 18	389,5	500	329,5	385,5	58
VS418...	4 row 18	389,5	646,5	329,5	491	58
VS122...	1 row 22	461,5	251,5	401,5	135,5	58



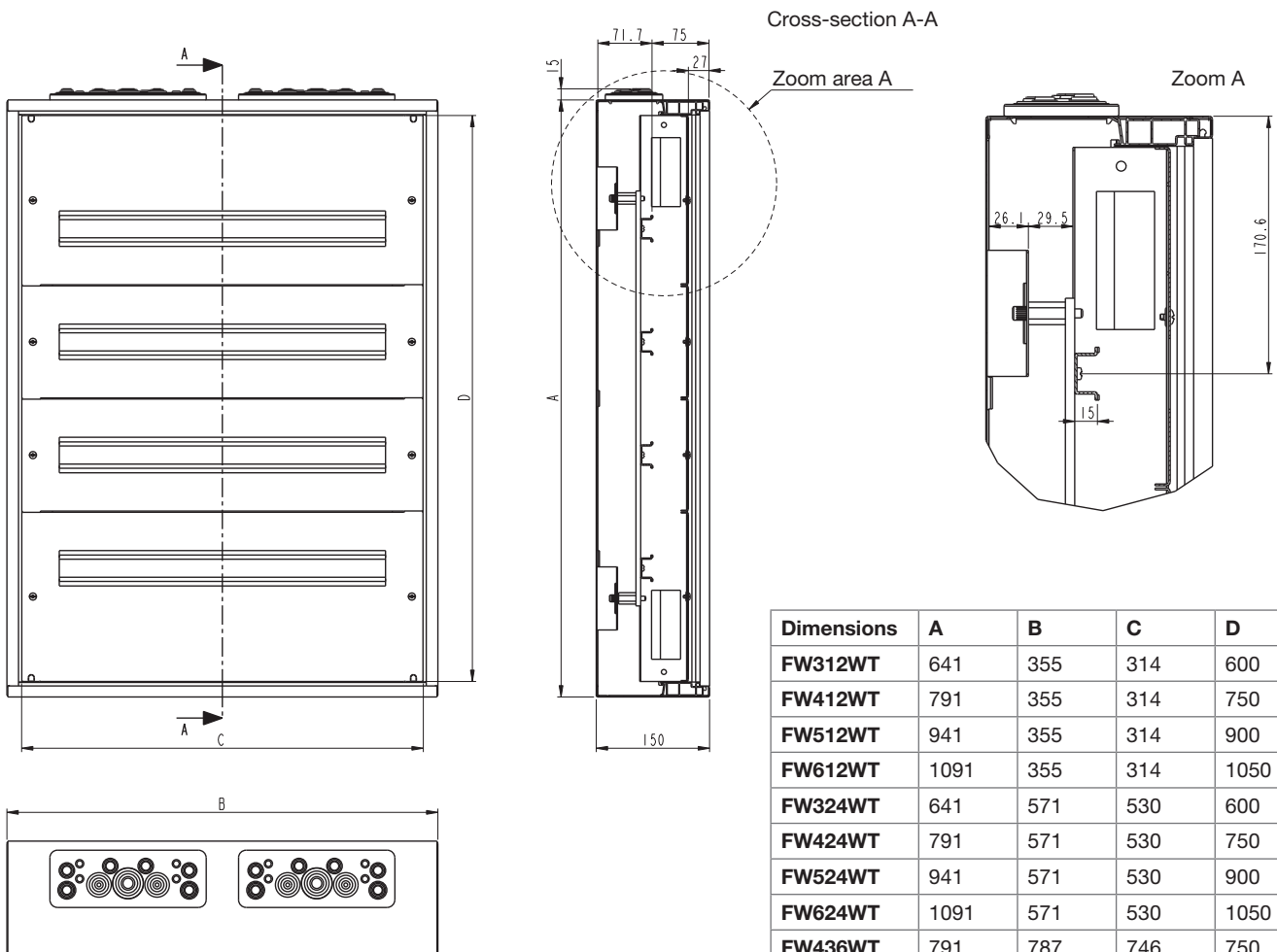
Residential
Distribution

DR Metal Enclosure (surface)



Reference	H	W	H1	W1	D1
DR16S	325	405	320	400	110
DR32S	475	405	470	400	110

FW2 Metal Enclosure (surface)



Dimensions	A	B	C	D
FW312WT	641	355	314	600
FW412WT	791	355	314	750
FW512WT	941	355	314	900
FW612WT	1091	355	314	1050
FW324WT	641	571	530	600
FW424WT	791	571	530	750
FW524WT	941	571	530	900
FW624WT	1091	571	530	1050
FW436WT	791	787	746	750
FW536WT	941	787	746	900
FW636WT	1091	787	746	1050
FW736WT	1241	787	746	1200

Residential
Distribution

FW Metal Enclosures General Description

Surface mounting enclosures for domestic and commercial electrical distribution.

Included in delivery :

- enclosures with door,
- carrier rails with complete board,
- device covers with 46mm slots, with complete board,

Complies with Standards :

IEC 61 439-3

Nominal Voltage:

AC 230/400V, 50Hz

Current rating:

for devices up to 125A

Protection class:

II (insulation protected)

IP rating:

IP44

Protection details:

Protection against direct contact: IP3X behind the door

Protection with indirect contact: insulation protection

Door :

frontal fastening, with internal hinges, all adjustable, removable without tools, optionnally attachable on right or left, width from 800mm double door, opening angle 110°.

Door lock :

twist release lock, exchangeable with other locks, 3 point bar locks on double door cabinet.

Quick Connect Terminals or brass terminals :

(according the versions) :

please contact us

Colour :

RAL 9010 (pure white)

Cable entries :

cable entry plates top and bottom made of plastic to feed in the cable from the front.

Material :

Housing and door made of steel, powder coated.

Carrier rails :

Steel, powder coated.

Supports :

Plastic

Device rails :

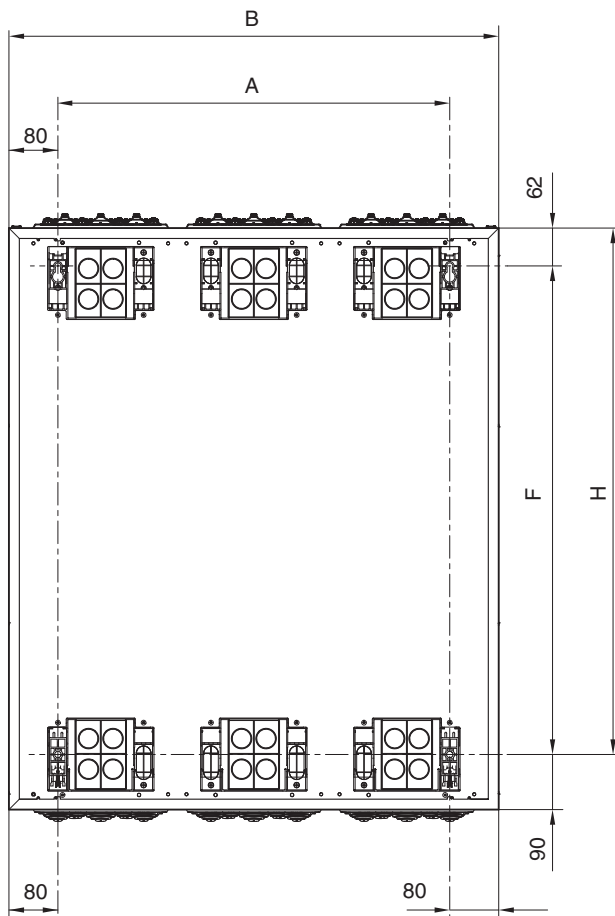
Steel, galvanised

Covers and knockouts :

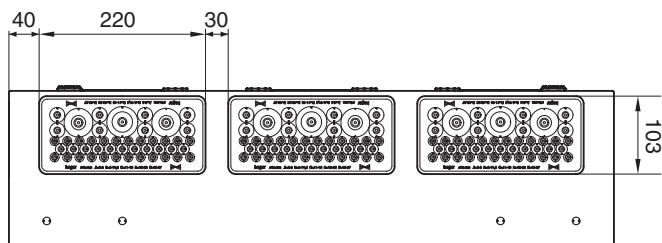
Plastic

	height (mm)	width (mm)	depth (mm)	DIN rails (12 z)	fields across	No of modules	IP class (standard)
FWB31	500	300	161	3	1	36	IP44
FWB32		550	161	3	2	72	IP44
FWB33		800	161	3	3	108	IP44
FWB34		1050	161	3	4	144	IP44
FWB41	650	300	161	4	1	48	IP44
FWB42		550	161	4	2	96	IP44
FWB43		800	161	4	3	144	IP44
FWB44		1050	161	4	4	192	IP44
FWB51	800	300	161	5	1	60	IP44
FWB52		550	161	5	2	120	IP44
FWB53		800	161	5	3	180	IP44
FWB54		1050	161	5	4	240	IP44
FWB61	950	300	161	6	1	72	IP44
FWB62		550	161	6	2	144	IP44
FWB63		800	161	6	3	216	IP44
FWB64		1050	161	6	4	288	IP44
FWB71	1100	300	161	7	1	84	IP44
FWB72		550	161	7	2	168	IP44
FWB73		800	161	7	3	252	IP44
FWB74		1050	161	7	4	336	IP44

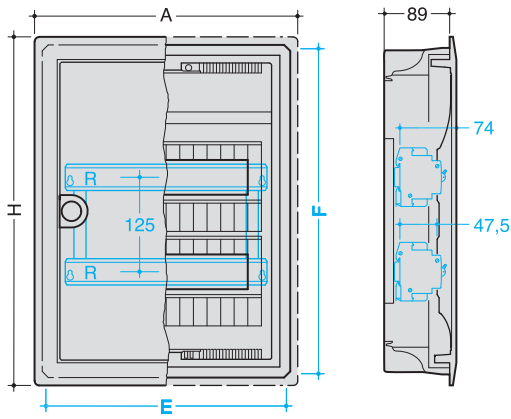
FWB surface enclosures



Ref.	dimensions			
	H	B	A	F
FWB31	500	300	348	140
FWB32	500	550	348	390
FWB33	500	800	348	640
FWB34	500	1050	348	890
FWB41	650	300	498	140
FWB42	650	550	498	390
FWB43	650	800	498	640
FWB44	650	1050	498	890
FWB51	800	300	648	140
FWB52	800	550	648	390
FWB53	800	800	648	640
FWB54	800	1050	648	890
FWB61	950	300	798	140
FWB62	950	550	798	390
FWB63	950	800	798	640
FWB64	950	1050	798	890
FWB71	1100	300	948	140
FWB72	1100	550	948	390
FWB73	1100	800	948	640
FWB74	1100	1050	948	890



VU24IE - 2 rows 24 modules



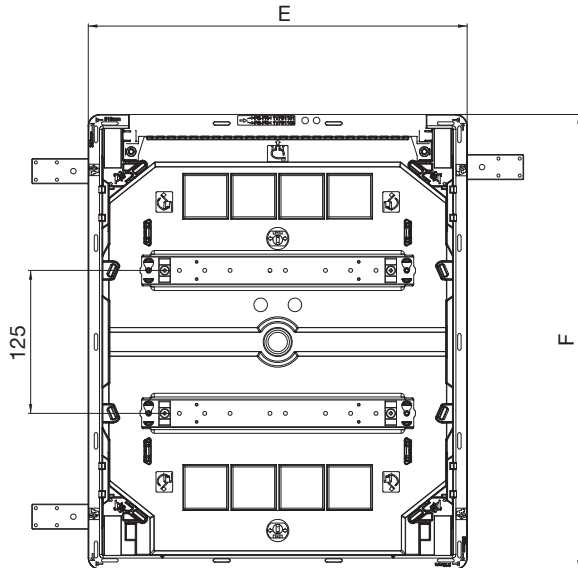
Dimensions in mm

Ref.		R	Enclosure dimension		Wall box hollow wall	
			A	H	E	F
VU12IE	12 ■	1	348	356	315	322
VU24IE	24 ■	2	348	505	315	471
VU36IE	36 ■	3	348	630	315	596
VU48IE	48 ■	4	348	755	315	721

Cable Entries

Top/bottom

One side cable entry slide, knockout-type, (VF104... and VF108...). The other side pre cuts with diameters 20 mm, 25 mm, 32 mm and 40 mm the wall box is 180° turnable (slider can be placed at top or bottom).



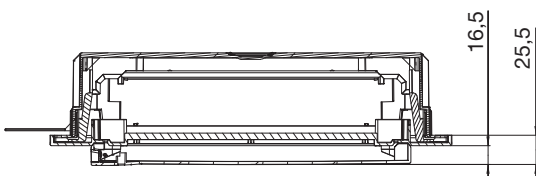
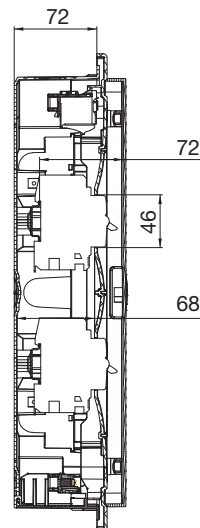
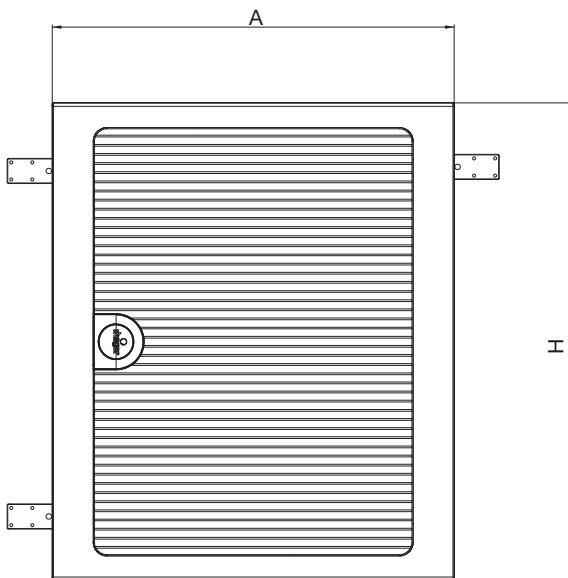
Side

Each one knockout Ø 25 mm on the left and right in the upper and lower connection space.

As of 2 rows, knockouts Ø 25 mm on the left and right between the device rows. (no knockouts at 4 and 8 module enclosures).

Ref.		Dimension (mm)			
		Frame		Wall niche	
		A	H	E	F
VF104...	1 row 4	204	225	170	189
VF108...	1 row 8	275	225	242	189
VF112...	1 row 12	352	293	318	257
VF212...	2 row 12	352	418	318	382
VF312...	3 row 12	352	543	318	507
VF412...	4 row 12	352	688	318	652
VF118...	1 row 18	460	293	426	257
VF218...	2 row 18	460	418	426	382
VF318...	3 row 18	460	543	426	507
VF418...	4 row 18	460	688	426	652
VF122...	1 row 22	532	293	498	257

For the wall niche, these dimensions are minimal.



General Description

Flush mounting enclosures for domestic and commercial electrical distribution.

Included in delivery :

- enclosures with door,
- carrier rails with complete board,
- device covers with 46mm slots, with complete board,
- comes fitted with quickconnect

Quick Connect Terminals in complete boards or with brass terminals (according the versions)

Complies with Standards :

IEC 61 439-3

Nominal voltage:

AC 400V / 50Hz

Current rating:

for devices up to 125A

Protection class:

II (insulation protected)

IP rating:

IP30

Protection details:

Protection against direct contact: IP3X behind the door

Protection with indirect contact: insulation protection

Door :

frontal fastening, with internal hinges, all adjustable, removable without tools, optionnally attachable on right or left, width from 800mm double door, opening angle 110°.

Door lock :

twist release lock, exchangeable with other locks, 3 point bar locks on double door cabinet.

Quick Connect Terminals :

built in per field to every complete board quickconnect

Colour :

RAL 9010 (pure white)

Cable entries :

cable entry plates top and bottom made of plastic to feed in the cable from the front.

Material :

Housing and door made of steel, powder coated.

Carrier rails :

Steel, powder coated.

Supports :

Plastic

Device rails :

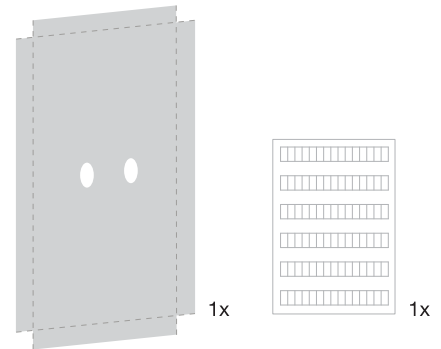
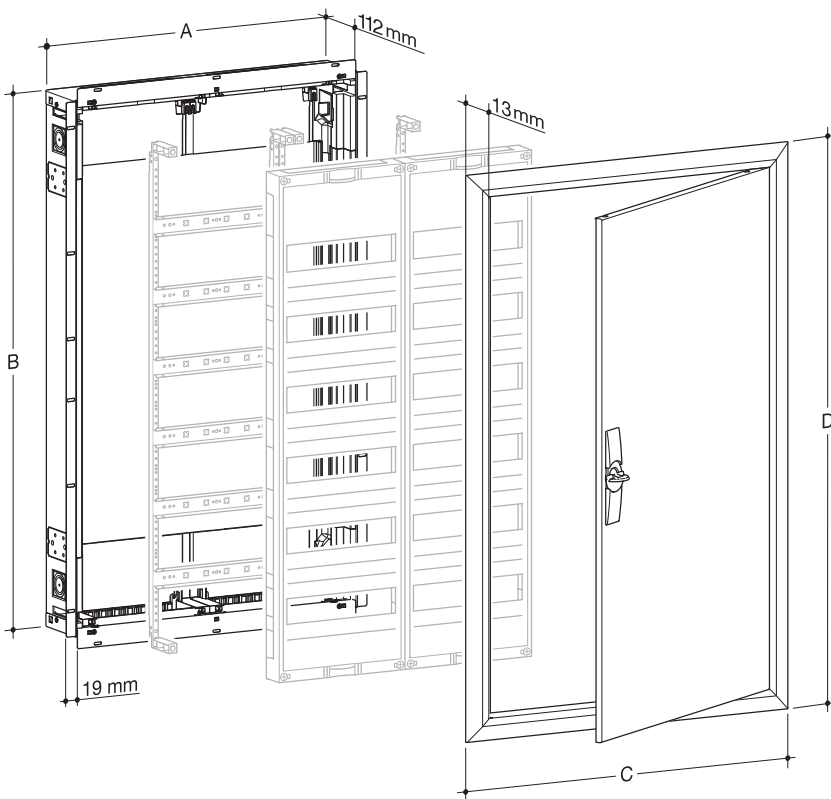
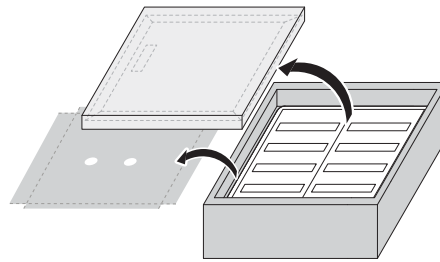
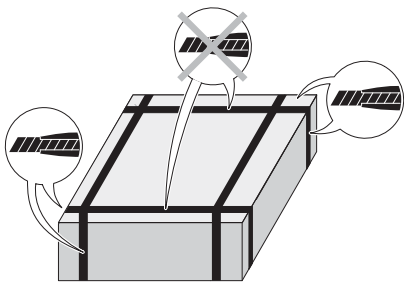
Steel, galvanised

Covers and knockouts :

Plastic

	height (mm)	width (mm)	depth (mm)	DIN rails (12 z)	fields across	Nr of modules	IP class (standard)
FWU31S	500	300	112	3	1	36	IP30
FWU32S		550	112	3	2	72	IP30
FWU33S		800	112	3	3	108	IP30
FWU41S	650	300	112	4	1	48	IP30
FWU42S		550	112	4	2	96	IP30
FWU43S		800	112	4	3	144	IP30
FWU51S	800	300	112	5	1	60	IP30
FWU52S		550	112	5	2	120	IP30
FWU53S		800	112	5	3	180	IP30
FWU61S	950	300	112	6	1	72	IP30
FWU62S		500	112	6	2	144	IP30
FWU63S		800	112	6	3	216	IP30
FWU71S	1100	300	112	7	1	84	IP30
FWU72S		550	112	7	2	168	IP30
FWU73S		800	112	7	3	252	IP30

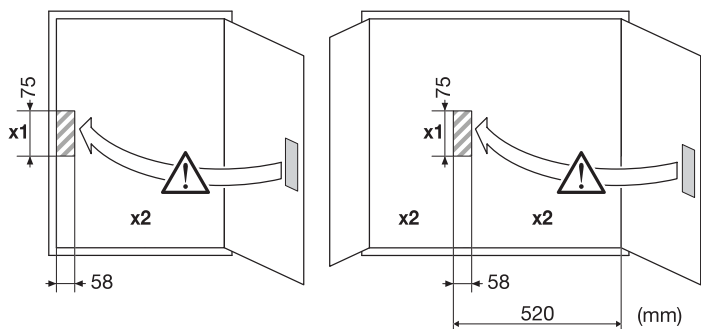
FW Flush Enclosures - Mounting instructions



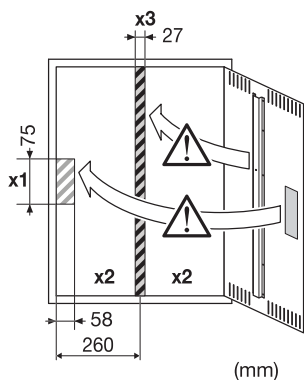
Residential
Distribution

	A (mm)	B (mm)	C (mm)	D (mm)
FWU31..	310	502	353	553
FWU32..	560	502	603	553
FWU33..	810	502	853	553
FWU41..	310	652	353	703
FWU42..	560	652	603	703
FWU43..	810	652	853	703
FWU51..	310	802	353	853
FWU52..	560	802	603	853
FWU53..	810	802	853	853
FWU61..	310	952	353	1003
FWU62..	560	952	603	1003
FWU63..	805	952	853	1003
FWU71..	310	1102	353	1153
FWU72..	560	1102	603	1153
FWU73..	810	1102	853	1153

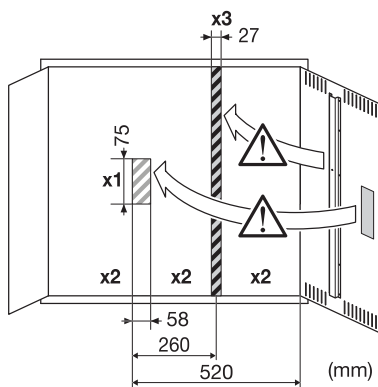
FWU31, 41, 51, 61, 71... FWU33, 43...



FWU52, 62, 72...

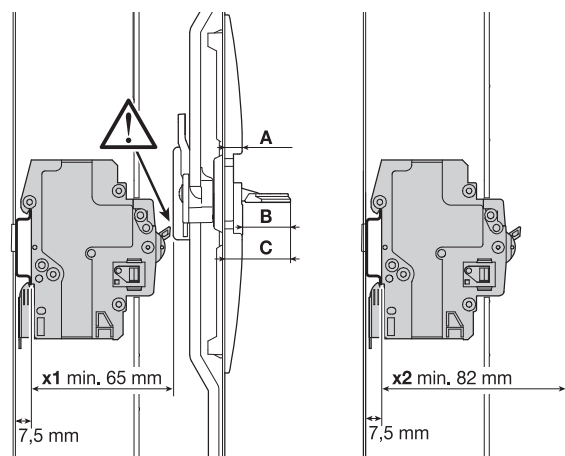
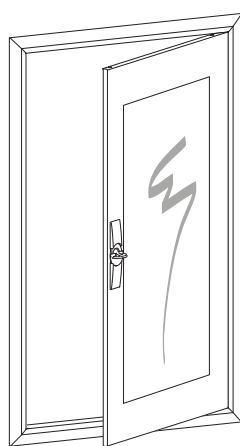
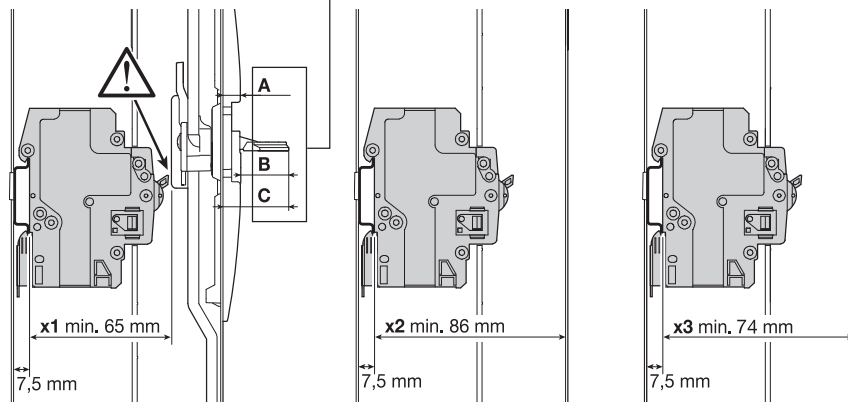
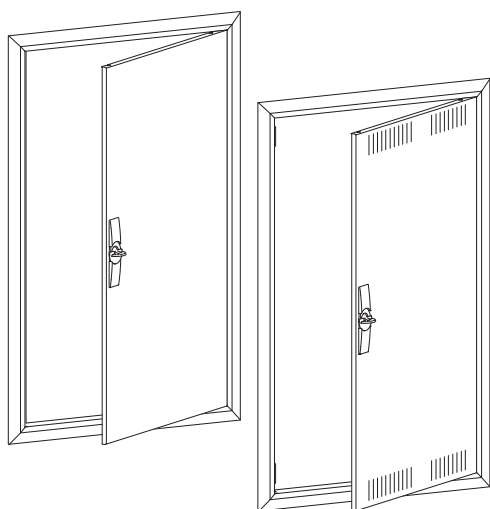


FWU53, 63, 73...

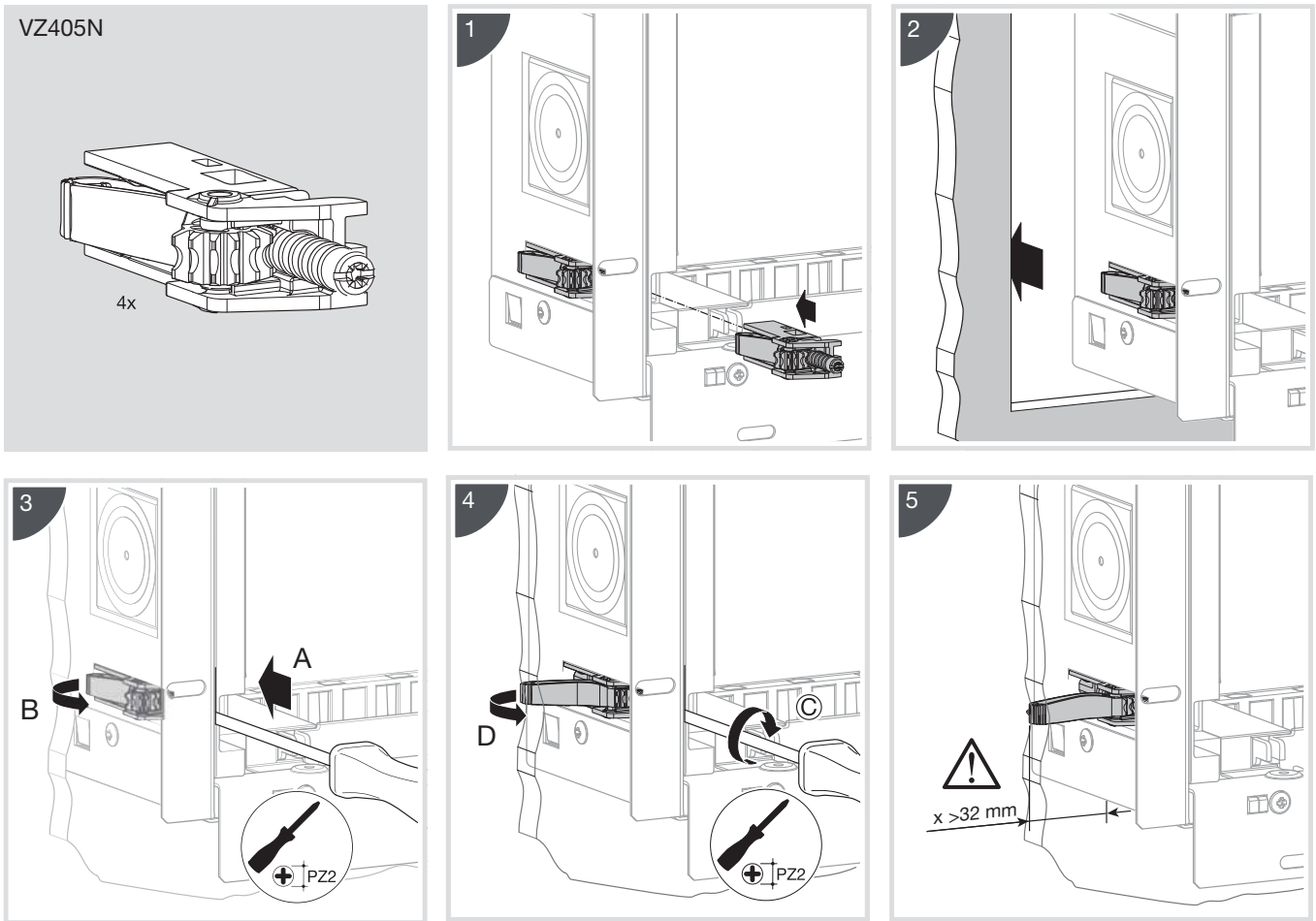


		A (mm)	B (mm)	C (mm)
FZ598N		8,5	23	31,5
FZ598		6	17	23

Residential
Distribution



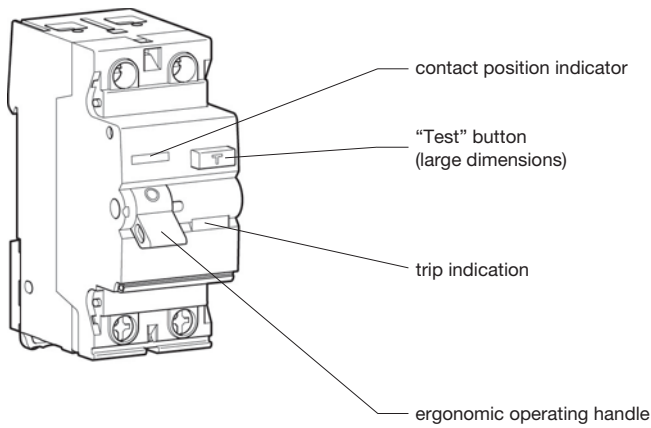
Mounting Hollow Wall Anchor Accessory



Mounting the VZ405N hollow wall anchor in wall cabinets.

Keeping space free around the sides in the wall cavity
To mount the VZ405N hollow wall anchor, a minimum distance of 32 mm must be kept free around the sides so that the hollow wall anchor can be flipped forward unhampered.

RCCBs



Contact positioning indicator

The mechanical indicator on the front of RCCB shows the physical position of the contacts.

- Red indication for closed contacts
- Green indication for open contacts

The green indication is the guarantee that the contacts are open and that the terminals are not live.

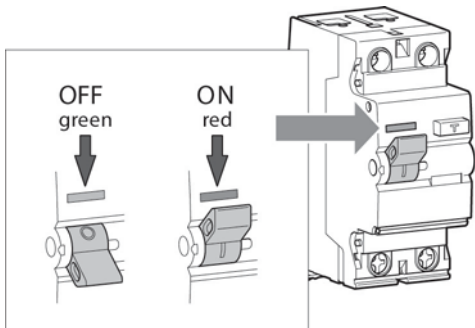
Trip indicator

The status of the RCCB can be visualised by the colour of the trip indicator in addition to the position of the operating lever.

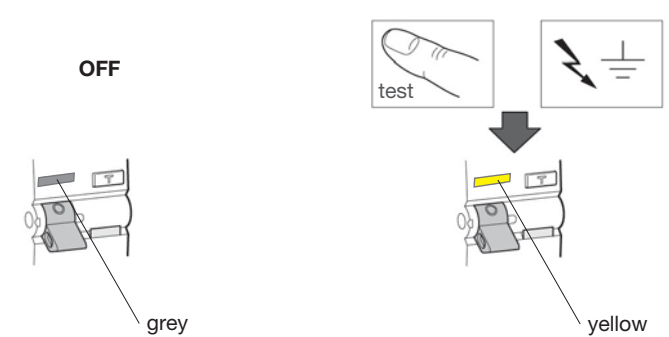
- Grey indication for normal conditions (even when operating lever is in ON/OFF position)
- Yellow indication for tripped condition, operating lever in OFF position.

Similar condition exists when TEST button is pushed or RCCB is remotely tripped via protection auxiliaries.

Positive contact indication



Earth leakage fault indication



Residual Current Devices

A residual current device (RCCB) 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.

For fixed domestic installations and similar applications we have two types :

- Residual current operated circuit-breaker without integral over-current protection (RCCBs) which should comply with the requirements of IEC 61 008
- Residual current operated circuit-breaker with integral over-current protection (RCBOs) which should comply with the requirements of IEC 61 009

Both RCCBs and RCBOs are further divided into types depending on their operating function :

Type AC For which tripping is ensured for residual sinusoidal alternating currents, whether suddenly applied or slowly rising. Marked with the symbol:



Type A For which tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether suddenly applied or slowly rising. Marked with the symbol:



Type S For selectivity, with time-delay. Marked with the symbol:



RCCBs must be protected against short-circuits by means of circuit-breakers or fuses. RCBOs have their own in built short-circuit protection, up to it's rated value.

The drawing opposite shows how a torroid is located around the line and neutral conductors to measure the magnetic fields created by the current flowing in these conductors. The sum of the magnetic fields set up by these currents (which takes into consideration both the magnitude and phase relationship of the currents) is detected by the torroid.

In a normal healthy circuit the vector sum of the current values added together will be zero. Current flowing to earth, due to a line earth fault, will return via the earth conductor, and regardless of load conditions will register as a fault. This current flow will give rise to a residual current (I_{res}) which will be detected by the device.

It is most important that the line and neutral conductors are passed through the torroid. A common cause of nuisance operation is the failure to connect the neutral through the device.

RCCBs work just as well on three phase or three phase and neutral circuits, but when the neutral is distributed it must pass through the torroid.

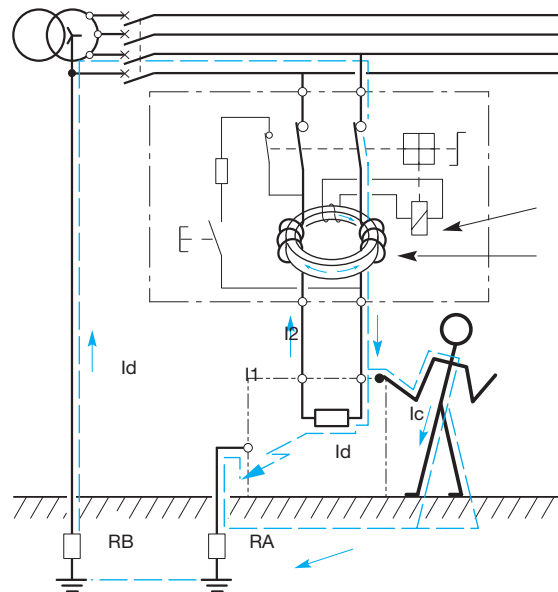
RCCBs are not suitable for use on DC systems and unearthed networks.

RCCBs – domestic installation

RCCBs can be installed in two ways:

1. whole house protection.
2. selective protection.

Principle



Current flowing through torroid in healthy circuit

$$I_{res} = I_1 - I_2 = 0$$

Current flowing through torroid in circuit with earth fault I_3

$$I_{res} = I_1 - I_2 + I_3 = I_3$$

Whole house protection is provided typically by a consumer unit where the RCCB device serves as the main switch. Although very popular this suffers from a disadvantage: all circuits are disconnected in the event of fault. Selective protection can be provided by associating the RCCB with identified high risk circuits by adopting one or more of the following :

- Split busbar consumer unit:
All circuits are fed via an overall isolator and selected circuits fed additionally via the RCCB. Typical circuits fed direct are lighting, freezer, storage heating; and circuits fed via the RCCB are socket outlets, garage circuits. This concept minimises inconvenience in the event of fault.

Individual RCBO

Each separate final circuit requiring protection by a RCD can be supplied through an RCBO. This method provides the best solution for minimising inconvenience.

Nuisance tripping

All Hager RCCBs incorporate a filtering device preventing the risk of nuisance tripping due to transient AC Voltages (lightning, line disturbances on other equipment...) and transient currents (from high capacitive circuit).

Pulsating DC fault current sensitive

Increasingly, semi-conductors are also extensively used in computers, VDUs, printers, plotters... all of which may be fed from the mains electrical supply. The presence of semi-conductors may result in the normal sinusoidal AC waveform being modified. For example, the waveform may be rectified or, as in asymmetric phase control devices, the waveform may be chopped. The resulting waveforms are said to have a pulsating DC component.

In the event of an earth fault occurring in equipment containing semi-conductor devices, there is a probability that the earth fault current will contain a pulsating DC component.

Standard type AC may not respond to this type of earth fault current and the intended degree of protection will not be provided.

Use of RCCBs

RCCBs offer excellent protection against earth fault currents; the main areas of application being as follows:

- Zs value too high to allow disconnection in the required time

Where the overcurrent protection or a circuit breaker cannot provide disconnection within the specified time because the earth fault loop impedance is too high the addition of RCCB protection may well solve the problem without any other change in the system. Because of its high sensitivity to earth fault current and its rapid operating time, in most cases the RCCB will ensure disconnection within the specified time. This is achieved without any detriment to overcurrent discrimination because, unlike the situation in a fuse based system, the increased sensitivity is obtained without increasing sensitivity to overcurrent faults. Use of RCCBs in this way can be particularly useful for construction sites and bathrooms where disconnection times are more stringent than for standard installations. (Construction sites - 0.2s at 220-277V, bathrooms - 0.4s).

The limitation to this technique is the requirement that the rated residual operating current multiplied by Zs should not exceed 50V. This is to avoid the danger of exposed conductive parts reaching an unacceptably high Voltage level.

Residual current protection can even be added to a completed distribution system where the value of Zs is excessive, either because of a design oversight or subsequent wiring modification.

- Protection against shock by direct contact

So far we have considered shock by indirect contact only. Direct contact is defined thus:

Direct contact - contact of persons or livestock with live parts which may result in electric shock. The consideration here is not the hazard of parts becoming live as a result of a fault but the possibility of touching circuit conductors which are intentionally live.

RCCBs, although affording good protection against the potentially lethal effects of electric shock, must not be used as a the sole means of protection against shock by direct contact. The Electricity at Work Act recommends the use of RCCBs, "...danger may be reduced by the use of a residual current device but states that this should be "...considered as a second line of defence". The Wiring Regulations defines the other measures that should be taken i.e.

- insulation of live parts.
- barriers or enclosures.
- obstacles.
- placing live parts out of reach.

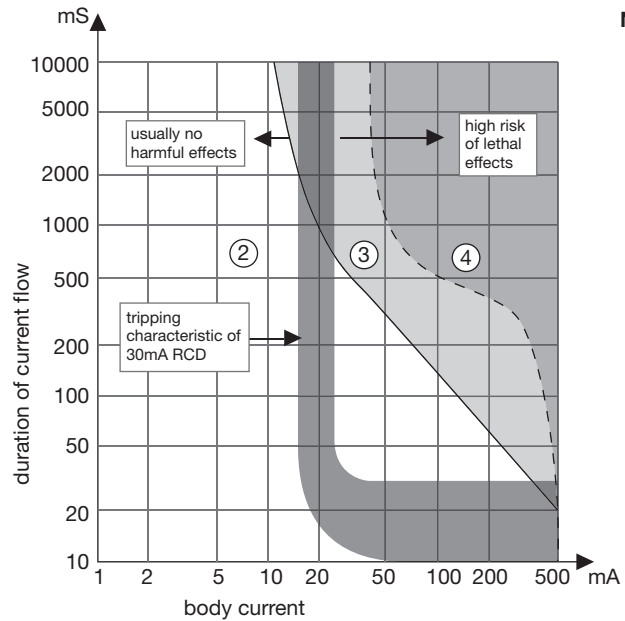
Additionally an RCCB used for this purpose should have:

- a sensitivity of 30mA
- an operating time not exceeding 40mS at a residual current of 150mA.

The specified sensitivity is based on research that has been carried out to estimate the effect various levels and duration of current can have on the human body. This experience is summarised in a graph shown in 'IEC 479-1: Effects of current passing through the human body'. A simplified version of this graph is shown opposite. It shows that very small currents can be tolerated for reasonably long periods and moderate currents for very short periods. It can be seen, for instance, that 100mA for 100mS or 20mA for 500mS will not normally cause any harmful effect. 200mA for 200mS or 50mA for 500mS which are in Zone 3, would be more dangerous; and shock levels in Zone 4 carry a risk of lethal consequences.

The tripping characteristic for a 30mA RCCB is also shown in the graph. It shows the level of current required to cause the RCCB to trip, for example; 50mA will cause a trip but not 10mA. Comparing its characteristic with the various zones on the graph it can be seen that the 30mA RCCB gives a very good measure of protection against the hazards associated with electric shock. Where a higher level of protection is required, for example in laboratories, 10mA devices are available.

IEC 60 479-1



Note :

Although RCCBs are extremely effective devices they must never be used as the only method of protection against electric shock. With or without RCCBs protection all electrical equipment should be kept in good condition and should never be worked on live.

Protection against shock outside the equipotential bonding zone

Bonding conductors are used in an installation to maintain metallic parts, as near as possible, to the same potential as earth. Working with portable equipment outside this equipotential bonding zone, e.g. in the car park of a factory, introduces additional shock hazards. Socket outlets rated 32A or less 'which may be reasonably expected to supply portable equipment for use outdoors' should have at least one socket nominated for outdoor use. This socket should be equipped with 30 mA RCCB protection unless fed from an isolating transformer or similar device, or fed from a reduced Voltage.

Protection in special situations

The use of RCCBs is obligatory or recommended in the following situations:

- caravans: 30mA RCCB should be used.
- TT systems.
- swimming pools: 30mA RCCB for socket outlets in Zone B obligatory; recommended in Zone C.
- agricultural and horticultural: 30mA RCCB for socket outlets and for the purpose of protection against fire, $RCCB \leq 0.5A$ sensitivity.
- construction sites: 30mA RCCB recommended.

Portable equipment

With the exception mentioned above, where a socket is specifically designated for work outside the equipotential bonding zone, the Wiring Regulations demand the use of RCCBs to protect the users of portable equipment. It is widely recognised that their use has made a significant contribution to safety in the workplace and the home.

Protection against fire hazards

The provisions in the Wiring Regulations for protection against shock by indirect contact ensure rapid disconnection under earth fault assuming the fault has negligible impedance. Under such conditions the fault current, as we have seen, is sufficiently great to cause the overcurrent protection device to quickly disconnect the fault. However high impedance faults can arise where the fault current is sufficient to cause considerable local heat without being high enough to cause tripping of the overcurrent protective device. The heat generated at the point of the fault may initiate a fire long before the fault has deteriorated into a low impedance connection to earth.

The provision of residual current protection throughout a system or in vulnerable parts of a system will greatly reduce the hazard of fire caused by such faults.

PEN conductors

The use of RCCBs with PEN conductors is prohibited. A PEN conductor is a single conductor combining the functions of neutral conductor and protective conductor. This being so, when the PEN conductor is taken through the torroid of an RCCB, earth faults will go undetected because the return path for the earth fault current is included in the residual sum.

Auxiliary contacts

A range of auxiliaries, alarm and shunt contacts are available for Hager RCCBs.

Supply entry

Top or bottom feed.

Auxiliaries for MCBs & RCCBS

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

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.

MZ203 Shunt Trip*

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

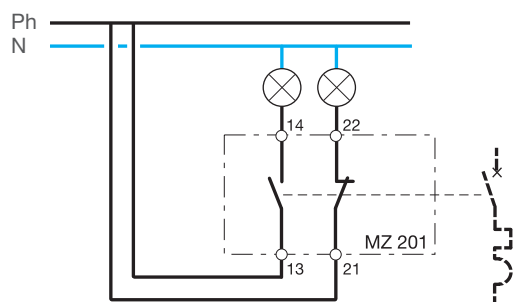
MZ206 Under Voltage Release*

Allows the MCB to trip when the Voltage drops or by pressing a remote off switch (ie emergency stop).

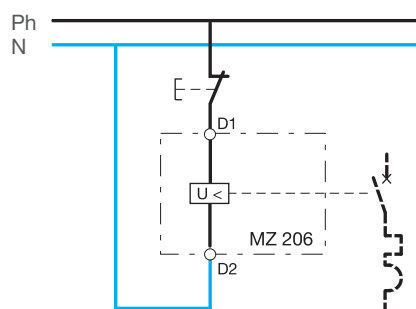
* Indication that the product has tripped due to the Voltage release is provided by a flag on the product.

Wiring diagram

MZ201 auxiliary contact or MZ202 alarm contact



MZ206 under Voltage release



Electrical characteristics

	MZ201/MZ206	MZ203	MZ206
	1 x O 1 x C contact 230V AC 6A - AC1		
		230/415 V AC 110/130 ...	230V AC 50 Hz

Electrical connection

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

MZ203

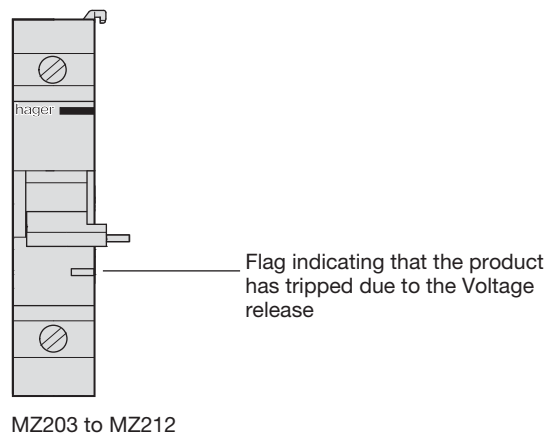
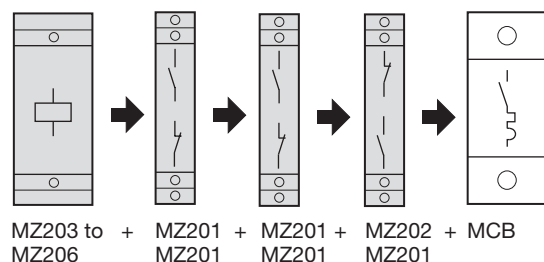
Power - 8VA
tolerance : -15% of Un

MZ206

Latching Voltage is between 35 and 70% of Un 230V AC
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).



		SPA801
Tested to		EN 61643-11, IEC 61643-11
SPD type / class		Type 1 + Type 2 Class 1 + Class 2
Nominal voltage	U_n	240/415V (6=50/60 Hz) Tolerance: 0V... U_c
Rated voltage	U_c	350V (50/60 Hz)
Voltage protection level	U_p	$\leq 1.5kV$
Residual current	I_{PE}	$\leq 0.01mA$
Impulse current (10/350) TNS	I_{imp}	25kA (L-N-PE) 100kA (L1,L2,L3,N -PE)
Impulse current (10/350) TNS	I_{imp}	25kA (L-N) 100kA (L1, L2,L3, N -PE)
Short Circuit Current Rating	$I_{sc cr}$	50kA _{rms}
Rated load current	I_{fi}	50kA _{rms}
TNS,TT (serial/parallel)		OK
IT, TNC		OK
F1 max (serial)		125 A gG
F1 max (Parallel)		315A gG
Humidity		5%...95%
9°C		-40/+80°C (+60°C by serial connection)
Ports		1
IP Code		20 (built in)
LxWxH		95 mm x 143 mm x 74mm

Connection

DIN VDE 0100-534 IEC 60364-5-53	A	b	$\leq 0,5 m$
	B	a + b	$\leq 0,5 m$

L1, L2, L3, N, PE, \

2,5 mm → 35 mm

TT/TNS Serial Wiring

F1 A gG	$S_L = S_N$ mm ²	S_L mm ²	$S_{PE(N)}$ mm ²
40	61	66	
50	10	16	10
63	10	16	10
80	16	16	16
100	25	16	16
125	35	16	16

F1 gG	
F1	F1 $\leq 125 A$
	OK
	F1 > 125 A
	TNS parallel

TT/TNS Parallel Wiring

F1 - F2 gG		$S_L = S_N$ mm ²	$S_{PE(N)}$ mm ²	S_L mm ²
F1	F1 > 315A	6	6	16
	↓	6	6	16
	F2 $\leq 315 A$	6	6	16
F2	F1 $\leq 315 A$	10	10	16
	↓	10	10	16
	OK	16	16	16
		16	16	16
200		25	25	16
250		35	35	16
315		35	35	16
400	≤ 250	35	35	16
≥ 500	≤ 315	35	35	16

F1 - F2 gG	
F1	F1 > 315A
	↓
	F2 $\leq 315 A$
	↓
	OK

Fault Indication

AC: 250 V / 1A
DC: 125 V / 0.2A

7 mm 7 mm

max. 1,5 mm

0,25 Nm

Grün/Green/Vert/
Zielony/Verde/
Zelená → OK

Rot/Red/Rouge/
Czerwony/Vermelho/
Cervená → ~~OK~~

Connection

OK

SPA081 SPA001N

A
B

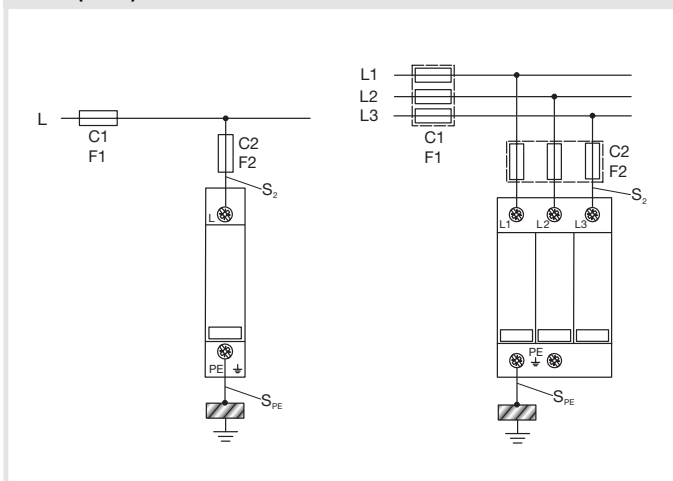
≥6.5 mm

Click!

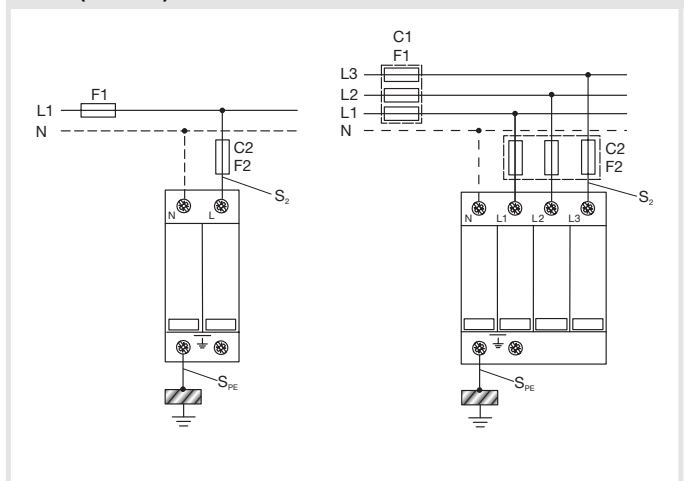
		SPBX15D/R	SPBX40D/R	SPBX65R
Tested to			EN 61643-11, IEC 61643-11	
TT/TN/TNC-S			OK	
Nominal voltage	U_n	240/415V (50/60Hz)		
Residual current (N-PE)	I_{PE}	<5 μ A (SPB2xxx, SPB4XXX) <0.4mA (SPB1XXX, SPB3XXX)		
Rated loaded current	I_{fi}	100A _{rms}		
Humidity		5% ...95%		
9°C		-40/+80°C		
Ports		1		
IP Code		20 (built in)		
Rated voltage	U_c	275V (L-N); 260V (N-PE) 320V (L-N); 264V (N-PE)-SPBX65R		
Nominal discharge current (8/20 μ s)	I_n	5kA	20kA	20kA
Maximum discharge current (8/20 μ s)	I_{max}	15kA	40kA	65kA
Voltage protection level	U_p	\leq 1kV	\leq 1.35kV	\leq 1.45kV
C2 max. hager		32A "C"	32A "C"	63A "C"
F2 max		125A gG	125A gG	160A gG
Short circuit current rating	I_{sc}	25 kA _{rms}	25 kA _{rms}	25 kA _{rms}
Replacement cartridge L-N		SPB015D	SPB040D	SPB065R
Replacement Cartridge N-PE		SPB040N	SPB040N	SPB065N

	L x W x H (mm)	L x W x H (mm)
	$I_{max} = 15 \text{ kA}, 40 \text{ kA}$	$I_{max} = 65 \text{ kA}$
1P	65.7 x 17.5 x 98.7	77.5 x 17.5 x 98.7
2P	65.7 x 35.6 x 98.7	77.5 x 35.6 x 98.7
3P	65.7 x 53 x 98.7	77.5 x 53 x 98.7
4P	65.7 x 71 x 98.7	77.5 x 71 x 98.7

1P-3P (TN-C)



2P-4P (TN-S/TT)



Backup fuse

	SPBX15D/R SPBX40D/R	SPBX65R
F1	F1 >125 A gG ↓ F2 ≤ 125 A gG	F1 >160 A gG ↓ F2 ≤ 160 A gG
F2	F1 ≤ 125 A gG ↓ ⊗	F1 ≤ 160 A gG ↓ ⊗

Backup MCB* (I_{sc} = 10 kA)

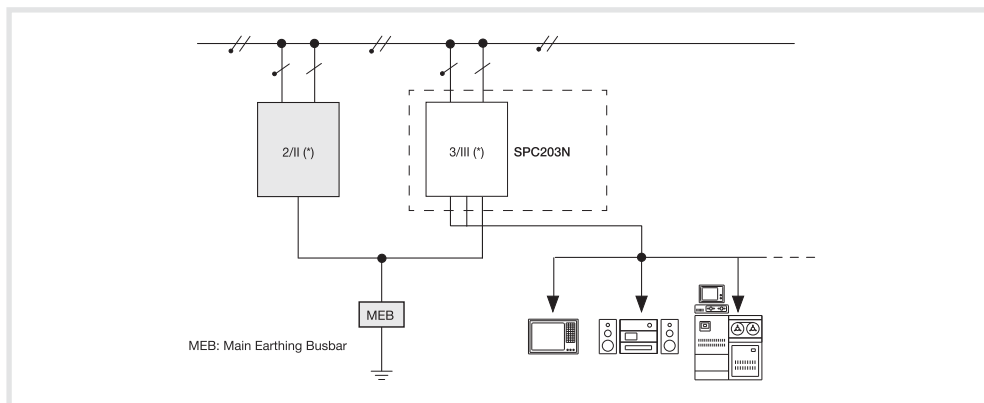
	SPBX15D/R SPBX40D/R	SPBX65R
C1	C1 >32A "C" ↓ C2 ≤ 32A "C"	C1 >63A "C" ↓ C2 ≤ 63A "C"
C2	C1 ≤ 32A "C" ↓ ⊗	C1 ≤ 63A "C" ↓ ⊗

Type			SPBX15x SPBX40x	SPBX65R
F1 A/gG	S ₂ mm ²	S _{PE} mm ²	F2 A/gG	F2 A/gG
25	6	6	-	-
35	6	6	-	-
40	6	6	-	-
50	6	6	-	-
63	10	10	-	-
80	10	10	-	-
100	16	16	-	-
125	16	16	-	-
160	25	25	125	-
> 160	25	25	125	160

Characteristics

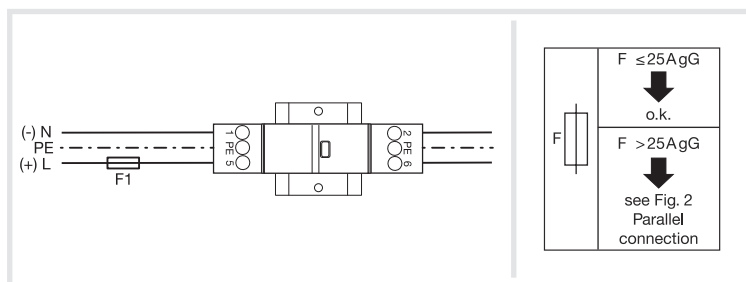
Tested to		EN 61643-11, IEC 61643-11
System		TNS-TT
F1 max		25A/32A (gG/B/C)
Nominal discharge current (8/20 μ s)	I_n	L(N)/PE, L/N = 5kA
Short circuit current rating	I_{sccr}	10kA _{rms}
Residual current (N-PE)	I_{PE}	<5 μ A
Nominal voltage	U_n	230 V (50/60 Hz)
Rated voltage	U_c	264 V (50/60 Hz)
	U_{oc}	L(N)/PE, L/N = 6kV
Voltage protection level	U_p	L/N \leq 1.4kV, L(N)/PE \leq 1.4kV
Humidity		5%...95%
θ C		-40/+80°C
Ports		1
IP code		IP20 (built in)
L x W x H		101mm x 17.7mm x 74.5mm
	I_L	26A (30°)

Indoor use only - there is no distance from the SPD to any earthed conductive surface required



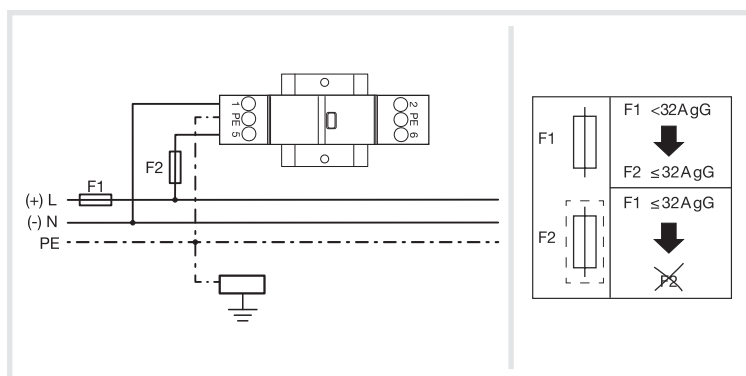
Serial Connection

Backup Fuse



Parallel Connection

Backup Fuse

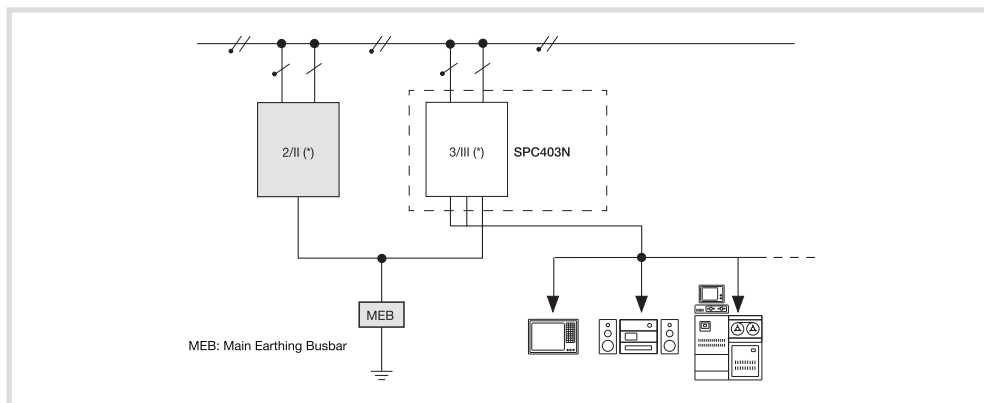


Residential Distribution

Characteristics

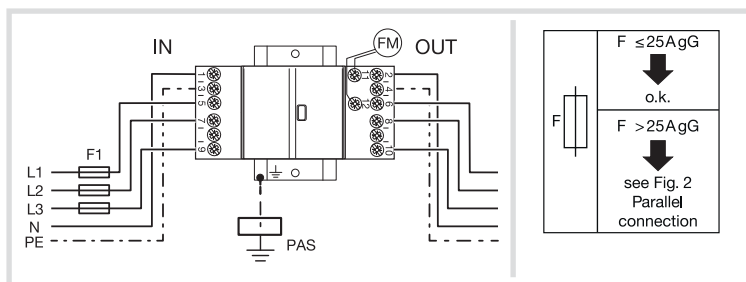
Tested to		EN 61643-11, IEC 61643-11
System		TT, TN
F1 max		25A (gG/B/C)
Nominal discharge current (8/20 μ s)	I_n	L1-L2-L3(N)/PE, L1-L2-L3/N = 3kA
Short circuit current rating	I_{sccr}	15kA _{rms}
Residual current (N-PE)	I_{PE}	<5 μ A
Nominal voltage	U_n	230 V/400 V (50/60 Hz)
Rated voltage	U_c	264 V (50/60 Hz)
	U_{oc}	L1-L2-L3(N)/PE, L1-L2-L3/N = 6kV
Voltage protection level	U_p	L1-L2-L3/N \leq 1.4kV, L1-L2-L3/N/PE \leq 1.5kV
Humidity		5%...95%
9°C		-40/+70°C
Ports		1
IP code		IP20 (built in)
L x W x H		90mm x 36mm x 73mm
	I_L	26A (30°)

Indoor use only - there is no distance from the SPD to any earthed conductive surface required



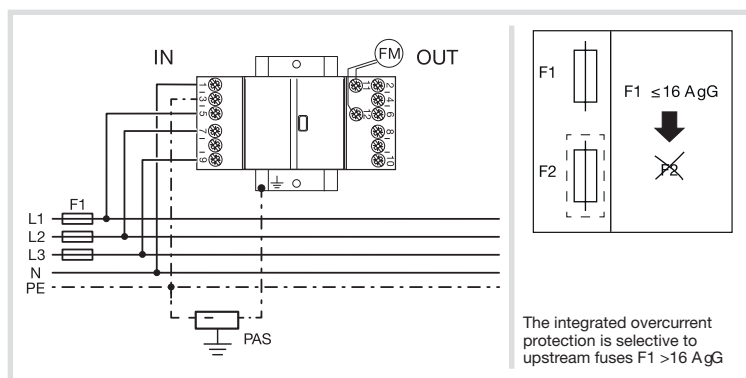
Serial Connection

Backup Fuse



Parallel Connection

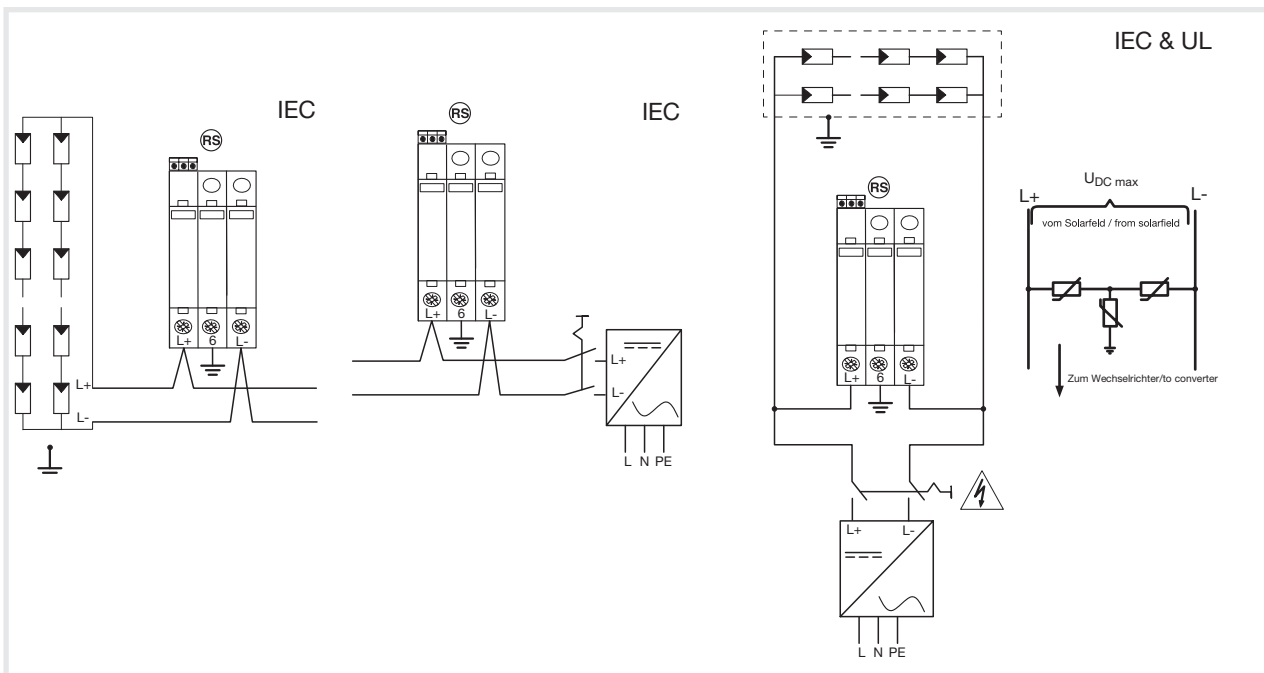
Backup Fuse



Characteristics

Tested to		EN 50539-11
Voltage protection level	U_p	$\leq 3.7\text{kV}$
Rated voltage	U_{cpv}	$\leq 1170\text{ V DC}$
Nominal Discharge Current (8/20 μs)	I_n	15kA
Short Circuit Current Rating	I_{scpv}	2000A
	I_L	80A
	I_{max}	40kA (8/20 μs)
Residual Current AC	$I_{pe,AC}$	$\leq 250\mu\text{A}$
Residual Current DC	$I_{pe,DC}$	$\leq 20\mu\text{A}$
Humidity		5%...95%
9°C		-40/+80°C
Ports		1
IP code		IP20 (built in)
L x W x H		98.7mm x 52.4mm x 65.7mm

Indoor use only



Basic Principles

The proper selection of the correct circuit protective device requires an understanding of the potential hazards against which protection for safety is required. The Wiring Regulations identify several hazards:

- electric shock
- thermal effects
- overcurrent
- underVoltage
- isolation

Electric shock

Electric shock is divided into two parts:

- direct contact: contact with parts which result in an electric shock in normal service
- indirect contact: contact with exposed conductive parts which result in an electric shock in case of a fault.

To protect against direct contact the Wiring Regulations suggest the following basic measures should be taken:

- (1) by insulation of live parts
- (2) by enclosures or barriers
- (3) by obstacles
- (4) by placing out of reach

To protect against indirect contact the Wiring Regulations suggest the following basic measures should be taken:

- (1) earthed equipotential bonding and automatic disconnection of supply
- (2) use of class II equipment or equivalent insulation
- (3) non-conducting location
- (4) earth-free local equipotential bonding
- (5) electrical separation

Of these five measures, the first is by far the most commonly used:

- (1) earthed equipotential bonding and automatic disconnection of supply:

In each installation main equipotential bonding conductors shall connect the main earthing terminal of the installation; this metalwork comprises exposed conductive parts which are part of the electrical installation itself and extraneous conductive parts including the following:

- main water pipes
- gas installation pipes
- other service pipes and ducting
- risers of central heating and air conditioning systems
- exposed metal parts of the building structure

This bonding creates a zone within which any Voltages appearing between exposed conductive parts and extraneous conductive parts, are minimised; the earth fault loop impedance must have a value low enough to allow sufficient current to flow for the circuit protective device to operate rapidly to disconnect the supply; disconnection must be sufficiently fast so that Voltages appearing on the bonded metalwork cannot persist long enough to cause danger; depending on the operating characteristics of the protective device and the earth impedance, such disconnection may be achieved either by overcurrent devices, Fuses, Miniature Circuit Breakers, (i.e. MCBs) or by Residual Current Devices, (i.e. RCCBs).

Thermal Effect

Refers to heat generated by the electrical equipment in normal use and under fault conditions. The proper selection of equipment complying with the latest product standards is essential in providing protection against thermal effects.

Overcurrent

Defined as a current exceeding the rated value of the circuit components. It may be caused by the overloading of a healthy circuit or it may take the form of a short-circuit current, defined as an "overcurrent resulting from a fault of negligible impedance between live conductors having a difference in potential under normal operating conditions". Overcurrent protection may be provided by using fuses or circuit breakers singly or in combination.

UnderVoltage

Refers to the dangers that could be caused by the reduction or loss in Voltage and the subsequent restoration, such as the unexpected re-starting of motors or the automatic closing of protective devices. The proper selection of control and protective devices must take the protection against underVoltage into consideration.

Isolation

Every circuit shall be provided with means of isolation (except in certain cases) to prevent or remove hazards associated with the installation, equipment and machines. The new standards for circuit breakers and switch-fuses now take this into account.

Protection against shock by indirect contact

Indirect contact - is the contact of persons or livestock with exposed conductive parts made live by a fault and which may result in electric shock. An example would be where the insulation of an electric heater has broken down resulting in a live conductor internally touching the casing. This could result in the heater casing being raised to a hazardous Voltage level, causing electric shock to a person touching it.

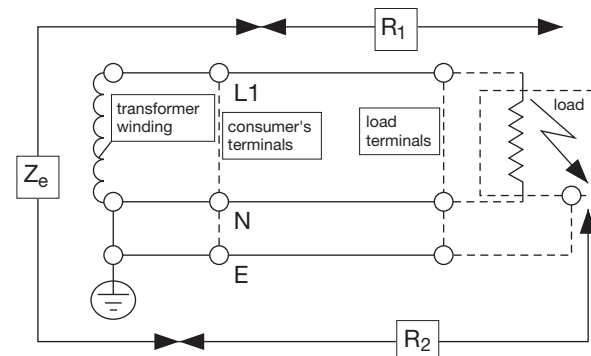
Two important measures must be taken to prevent this hazard:

- the impedance of circuit conductors is kept to a minimum. The earthfault loop impedance (Z_e) is used as a measure of the circuit impedance under fault conditions.
- the overcurrent device protecting the circuit is selected to rapidly disconnect an earth fault.

The effect of these two measures is inter-related.

1. By ensuring that the circuit protective conductor is of a low impedance, the Voltage to which the live casing is raised, under fault conditions, is kept to a minimum.
2. The low impedance path provided by the circuit conductors and the circuit protective conductor will result in a high level of current in the event of an earth fault. This high fault current ensures that the overcurrent protective device will disconnect the fault in a short time, reducing the interval during which the casing of the faulty equipment is live.

Components of earth fault loop impedance (Z_e) in a system.



(Earth fault at load between conductor and casing).

$$Z_e = Z_e + (R_1 + R_2)$$

Earth fault loop impedance (Z_e)

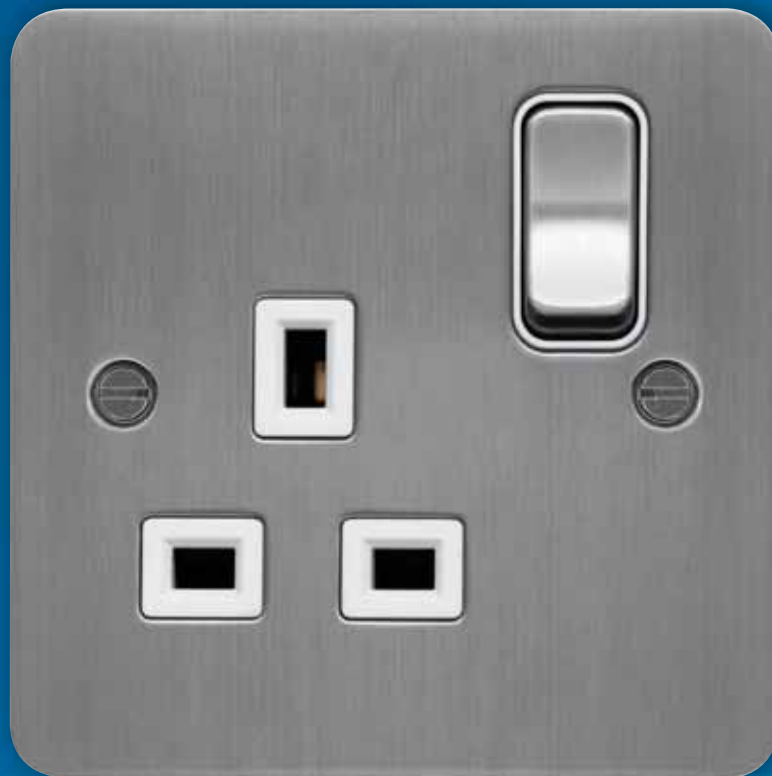
To ensure the impedance of conductors in a circuit is sufficiently low the system designer has to establish the value of the earth fault loop impedance.

Z_e is a measure of the earth fault current loop, comprising the phase conductor and the earth conductor. It comprises the complete loop including the winding of the transformer from which the circuit is supplied as defined by the following:

Z_e is the part of the earth fault loop impedance external to the installation, its value can be measured or a nominal value can be obtained from the supply authority.

Wiring Accessories

Our beautiful range of Sollysta wiring accessories include Decorative, IP66, Metalclad and USB connectivity. Connect wires securely with our Junction Boxes and dazzle from up high with our range of ceiling accessories.



Sollysta

White Moulded	5.3
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Decorative	5.17
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Metalclad	5.37
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IP66	5.41
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Junction Boxes

Traditional Junction Boxes	5.42
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Maintenance Free Junction Boxes	5.42
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Downlighter Junction Boxes	5.42
----------------------------	------

Ceiling Accessories

Safety Lampholders	5.43
--------------------	------

Safety Pendants	5.43
-----------------	------

Technical Pages	5.45
-----------------	------



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 5.45
- 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:

- 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 5.45
- 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 5.45
- 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	
With Retractive Switch	WMPS12R
With Bell Symbol	WMPS12RB
With Wide Rocker	WMPS12RW

Rotary Push Button Dimmer Kits

Characteristics:

- Suitable for most D shaft push and rotary dimmer switch modules
- Maintains Sollysta aesthetic for a wide range of manufacturer's switches
- Plate and matching button(s) supplied.
- Supplied with M3.5 x 30mm long fixing screws and screw covers

Description	Cat ref.
Rotary Push Button Dimmer Switches	
1 Gang Rotary Dimmer Switch Plate Kit	WMDRP1KIT
2 Gang Rotary Dimmer Switch Plate Kit	WMDRP2KIT
3 Gang Rotary Dimmer Switch Plate Kit	WMDRP3KIT
4 Gang Rotary Dimmer Switch Plate Kit	WMDRP4KIT

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 5.45
- Supplied with M3.5 x 20mm long fixing screws.

Description	Cat ref.
3 Pole Isolator Switches	
Isolator Switch	WMPS3PI
Isolator Switch with Fan Symbol	WMPS3PIF



WMPS3PIF

Immersion Switch

Characteristics:

- Complies with BS EN 60669-2-4.
- LED indication.
- All terminal screws upward facing for ease of installation
- Clearly printed terminal marking.
- Capacity of each terminal 2 x 6mm², 1 x 10mm²
- For mounting boxes see selection chart on page 5.45
- Supplied with M3.5 x 30mm long fixing screws.

Description	Cat ref.
Immersion Switch	
Immersion Switch	WMIMS1N



WMIMS1N



WMSS82



WMS51



WMSS82USB

Switched & Unswitched Socket Outlets (13A)

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 2.5mm² conductors switched; 3 x 2.5mm² unswitched (for other sized conductors see terminal capacities on page 5.46)
- **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 DC 2.4A total max.
- For mounting boxes see selection chart on page 5.45
- 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
13A 2 Gang Double Pole Dual Earth & Two USB A+C Ports	WMSS82-USBAC
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
Unswitched Socket Outlets	
13A 1 Gang	WMS81
13A 2 Gang Dual Earth	WMS82
5A 1 Gang	WMS51



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

Unswitched & Switched 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 5.45
- We also offer a bespoke printing service for your individual requirements. Please contact our Customer Service at customer.service@hager.ie.



WMSSU83

Description	Cat ref.
13A Unswitched Fused Connection Units	
FCU	WMSU83
With Flex Outlet	WMSU83FO
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



WMSSU83N

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

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

Continued overleaf

Unswitched & Switched Fused Connection Units (13A) - Continued

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 5.45
- Supplied with M3.5 x 30mm long fixing screws.
- We also offer a bespoke printing service for your individual requirements. Please contact our Customer Service at customer.service@hager.ie for further details.

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



WMDP84FON

Double Pole Switches (20A)

Characteristics:

- Complies with BS EN 60669-1, AC 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 5.45
- Supplied with M3.5 x 30mm long fixing screws.
- We also offer a bespoke printing service for your individual requirements. Please contact our Customer Service at customer.service@hager.ie 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

Double Pole Switches (20A) (Continued)

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



WMDP85N

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 6mm², 1 x 10mm².
- For mounting boxes see selection chart on page 5.45
- Supplied with M3.5 x 30mm long fixing screws.
- We also offer a bespoke printing service for your individual requirements. Please contact our Customer Service at customer.service@hager.ie for further details.

Description	Cat ref.
50A Double Pole Switches	
With LED Indicator (1 Gang)	WMDP50N
Vertical with LED Indicator (2 Gang)	WMDP50VN



WMDP50N

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, toothbrushes, and similar appliances rated 50 VA or less.
- Input 230V AC output dual voltage 230V AC and 115V AC 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



WMRJ45

Data

Characteristics:

- 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.
Data	
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



XH9001

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

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.

Description	Cat ref.
Euro Style Accommodation Plates	
1 Module	WMP1EU
2 Modules	WMP2EU
4 Modules	WMP4EU



WMP2EU

Euro Style Modules

Characteristics:

- Please note: these Euro Modules are industry standard units and are not colour matched to Sollysta plates.

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	WMSAT	WMSATB
Single Blank	1	WMMB	WMMBB
PIR Occupancy Sensor 5m	1	WMPPIR05X	-
PIR Occupancy Sensor 10m	1	WMPPIR10X	-
HDMI	2	WMMHDMI	WMMHDMIB
Diplexer - TV & FM Radio	2	WMMDX	WMMDXB
Triplexer - TV, Satellite & FM Radio	2	WMMTX	WMMTXB
Quadplexer - TV, Satellite, FM Radio & Return	2	WMMQX	WMMQXB



WMMBTM

WMSAT



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 45°.
- 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

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 Customer Service at customer.service@hager.ie 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	WMGS22RB
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 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



WMGKB1



WMINDRED



WMGSDP2/CHD



WMGSDP2/EF

Grid Switches (Continued)

Characteristics:

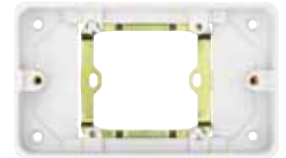
- Complies with BS EN 606691-1 switches, BS 5733 fuse carrier.
- Shallowest switch modules which clip in from the front for ease of installation and maintenance.
- Terminal screw can be accessed with modules clipped into frames.
- Frames locate to finished wall level.
- Frames clip together to ease alignment for 6 gang and 8 gang applications.
- We also offer a bespoke printing service for your individual requirements. Please contact our Customer Service at customer.service@hager.ie 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	-

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
Single Blank Plate	WMP1
Twin Blank Plate	WMP2



PULLCORD



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

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 Supply'	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



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 5.45
- 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
Black Nickel	-	WRPS12BNB

Raised Plate 10AX 2 Gang 2 Way

Polished Steel	WRPS22PSW	WRPS22PSB
Brushed Steel	WRPS22BSW	WRPS22BSB
Black Nickel	-	WRPS22BNB

Raised Plate 10AX 3 Gang 2 Way

Polished Steel	WRPS32PSW	WRPS32PSB
Brushed Steel	WRPS32BSW	WRPS32BSB
Black Nickel	-	WRPS32BNB

Raised Plate 10AX 4 Gang 2 Way

Polished Steel	WRPS42PSW	WRPS42PSB
Brushed Steel	WRPS42BSW	WRPS42BSB
Black Nickel	-	WRPS42BNB

Raised Plate 10AX 1 Gang 2 Way Wide Rocker

Polished Steel	WRPS12WPSW	WRPS12WPSB
Brushed Steel	WRPS12WBSW	WRPS12WBSB
Black Nickel	-	WRPS12WBNB

Raised Plate 10AX 2 Gang 2 Way Wide Rocker

Polished Steel	WRPS22WPSW	WRPS22WPSB
Brushed Steel	WRPS22WBSW	WRPS22WBSB
Black Nickel	-	WRPS22WBNB

Raised Plate Intermediate Switch

Polished Steel	WRPS16PSW	WRPS16PSB
Brushed Steel	WRPS16BSW	WRPS16BSB
Black Nickel	-	WRPS16BNB

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 5.45
- 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
Black Nickel	-	WFPS12BNB
Flat Plate 10AX 2 Gang 2 Way		
Polished Steel	WFPS22PSW	WFPS22PSB
Brushed Steel	WFPS22BSW	WFPS22BSB
Black Nickel	-	WFPS22BNB
Flat Plate 10AX 3 Gang 2 Way		
Polished Steel	WFPS32PSW	WFPS32PSB
Brushed Steel	WFPS32BSW	WFPS32BSB
Black Nickel	-	WFPS32BNB
Flat Plate 10AX 4 Gang 2 Way		
Polished Steel	WFPS42PSW	WFPS42PSB
Brushed Steel	WFPS42BSW	WFPS42BSB
Black Nickel	-	WFPS42BNB
Flat Plate 10AX 1 Gang 2 Way Wide Rocker		
Polished Steel	WFPS12WPSW	WFPS12WPSB
Brushed Steel	WFPS12WBSW	WFPS12WBSB
Black Nickel	-	WFPS12WBNB
Flat Plate 10AX 2 Gang 2 Way Wide Rocker		
Polished Steel	WFPS22WPSW	WFPS22WPSB
Brushed Steel	WFPS22WBSW	WFPS22WBSB
Black Nickel	-	WFPS22WBNB
Flat Plate Intermediate Switch		
Polished Steel	WFPS16PSW	WFPS16PSB
Brushed Steel	WFPS16BSW	WFPS16BSB
Black Nickel	-	WFPS16BNB



WFPS22PSW



WFPS22WBSW



WFPS12BNB



Dimmers Raised Plate

Characteristics:

- Suitable for most D shaft push and rotary dimmer switch modules
- Maintains Sollysta aesthetic for a wide range of manufacturer's switches
- Plate and matching button(s) supplied.
- Supplied with M3.5 x 30mm long fixing screws

Description	Cat ref.
Raised Dimmer Switch Front Plate	
1G Dimmer Switch Plate Kit Brushed Steel	WRDRP1BSKIT
1G Dimmer Switch Plate Kit Polished Steel	WRDRP1PSKIT
2G Dimmer Switch Plate Kit Brushed Steel	WRDRP2BSKIT
2G Dimmer Switch Plate Kit Polished Steel	WRDRP2PSKIT
3G Dimmer Switch Plate Kit Brushed Steel	WRDRP3BSKIT
3G Dimmer Switch Plate Kit Polished Steel	WRDRP3PSKIT
4G Dimmer Switch Plate Kit Brushed Steel	WRDRP4BSKIT
4G Dimmer Switch Plate Kit Polished Steel	WRDRP4PSKIT

Dimmers Flat Plate

Description	Cat ref.
Flat Dimmer Switch Front Plate	
1G Dimmer Switch Plate Kit Brushed Steel	WFDRP1BSKIT
1G Dimmer Switch Plate Kit Polished Steel	WFDRP1PSKIT
2G Dimmer Switch Plate Kit Brushed Steel	WFDRP2BSKIT
2G Dimmer Switch Plate Kit Polished Steel	WFDRP2PSKIT
3G Dimmer Switch Plate Kit Brushed Steel	WFDRP3BSKIT
3G Dimmer Switch Plate Kit Polished Steel	WFDRP3PSKIT
4G Dimmer Switch Plate Kit Brushed Steel	WFDRP4BSKIT
4G Dimmer Switch Plate Kit Polished Steel	WFDRP4PSKIT

Isolator Switches

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 5.45
- 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
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Raised Plate 3 Pole Fan Isolator Switch

Polished Steel	WRPS3PIPSW	WRPS3PIPSB
Brushed Steel	WRPS3PIBSW	WRPS3PIBSB
Black Nickel	-	WRPS3PIBNB



WRPS3PIPSW

Flat Plate 3 Pole Fan Isolator Switch

Polished Steel	WFPS3PIPSW	WFPS3PIPSB
Brushed Steel	WFPS3PIBSW	WFPS3PIBSB
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: 5 x 2.5mm² conductors, switched; 4 x 2.5mm² unswitched (for other sized conductors see terminal capacities on page 5.46).
- For mounting boxes see selection chart on page 5.45
- 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 DC 2.4A total max.
- All decorative USB sockets come with spacer colour matched to insert.

Description	Cat ref. White Insert	Cat ref. Black Insert
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Raised Plate 1 Gang Double Pole Switched Socket

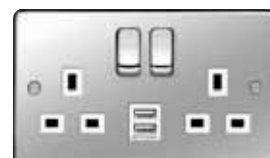
Polished Steel	WRSS81PSW	WRSS81PSB
Brushed Steel	WRSS81BSW	WRSS81BSB
Black Nickel	-	WRSS81BNB



WRSS81BNB

Raised Plate 2 Gang Double Pole Switched Socket Dual Earth

Polished Steel	WRSS82PSW	WRSS82PSB
Brushed Steel	WRSS82BSW	WRSS82BSB
Black Nickel	-	WRSS82BNB



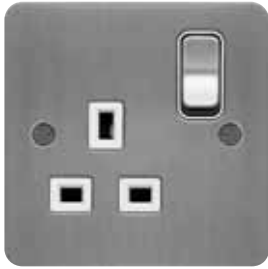
WRSS82PSW-USB

Raised Plate 5A 1 Gang Unswitched Socket

Polished Steel	WRS51PSW	WRS51PSB
Brushed Steel	WRS51BSW	WRS51BSB
Black Nickel	-	WRS51BNB

Raised Plate 2 Gang Double Pole Dual Earth Switched Socket & Two USB Ports

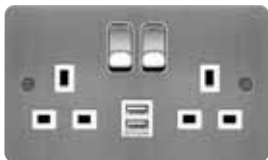
Polished Steel	WRSS82PSW-USBS	WRSS82PSB-USBS
Brushed Steel	WRSS82BSW-USBS	WRSS82BSB-USBS
Black Nickel	-	WRSS82BNB-USBS



WFSS81BSW



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
Black Nickel	-	WFSS81BNB
Flat Plate 2 Gang Double Pole Switched Socket Dual Earth		
Polished Steel	WFSS82PSW	WFSS82PSB
Brushed Steel	WFSS82BSW	WFSS82BSB
Black Nickel	-	WFSS82BNB
Flat Plate 5A 1 Gang Unswitched Socket		
Polished Steel	WFSS51PSW	WFSS51PSB
Brushed Steel	WFSS51BSW	WFSS51BSB
Black Nickel	-	WFSS51BNB
Flat Plate 2 Gang Double Pole Dual Earth Switched Socket & Two USB Ports		
Polished Steel	WFSS82PSW-USBS	WFSS82PSB-USBS
Brushed Steel	WFSS82BSW-USBS	WFSS82BSB-USBS
Black Nickel	-	WFSS82BNB-USBS

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 5.45.
- 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
Black Nickel	-	WRSSU83BNB

Raised Plate 13A FCU Switched with Flex Outlet

Polished Steel	WRSSU83FOPSW	WRSSU83FOPSB
Brushed Steel	WRSSU83FOBSW	WRSSU83FOBSB
Black Nickel	-	WRSSU83FOBNB

Raised Plate 13A FCU Unswitched

Polished Steel	WRSU83PSW	WRSU83PSB
Brushed Steel	WRSU83BSW	WRSU83BSB
Black Nickel	-	WRSU83BNB



WRSSU83FOBSW

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
Black Nickel	-	WFSSU83BNB

Flat Plate 13A FCU Switched with Flex Outlet

Polished Steel	WFSSU83FOPSW	WFSSU83FOPSB
Brushed Steel	WFSSU83FOBSW	WFSSU83FOBSB
Black Nickel	-	WFSSU83FOBNB

Flat Plate 13A FCU Unswitched

Polished Steel	WFSU83PSW	WFSU83PSB
Brushed Steel	WFSU83BSW	WFSU83BSB
Black Nickel	-	WFSU83BNB



WFSU83BSW



WFSSU83FOBNB



WRDP84BNB

Double Pole Switches Raised Plate (20A)

Characteristics:

- Complies with BS EN 60699-2-4 AC 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 5.45.
- 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
Black Nickel	-	WRDP84BNB
Raised Plate 20A Double Pole Switch with Flex Outlet		
Polished Steel	WRDP84FOPSW	WRDP84FOPSB
Brushed Steel	WRDP84FOBSW	WRDP84FOBSB
Black Nickel	-	WRDP84FOBNB
Raised Plate 20A Double Pole Switch with LED Indicator		
Polished Steel	WRDP84NPSW	WRDP84NPSB
Brushed Steel	WRDP84NBSW	WRDP84NBSB
Black Nickel	-	WRDP84NBNB



WFDP84FOPSW

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
Black Nickel	-	WFDP84BNB
Flat Plate 20A Double Pole Switch with Flex Outlet		
Polished Steel	WFDP84FOPSW	WFDP84FOPSB
Brushed Steel	WFDP84FOBSW	WFDP84FOBSB
Black Nickel	-	WFDP84FOBNB
Flat Plate 20A Double Pole Switch with LED Indicator		
Polished Steel	WFDP84NPSW	WFDP84NPSB
Brushed Steel	WFDP84NBSW	WFDP84NBSB
Black Nickel	-	WFDP84NBNB



WFDP84BSW

Double Pole Switches Raised Plate (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 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 5.45.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.



WRDP50NBSW

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
Black Nickel	-	WRDP50NBNB

Double Pole Switches Flat Plate (50A)

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
Black Nickel	-	WFDP50NBNB



WFDP50NPSB

Tall Double Pole Switches Raised Plate (50A)

Description	Cat ref. White Insert	Cat ref. Black Insert
Raised Plate 50A Tall Double Pole Switch 1 Gang with LED Indicator		
Polished Steel	WRDP50VNPSW	WRDP50VNPSB
Brushed Steel	WRDP50VNBSW	WRDP50VNBSB
Black Nickel	-	WRDP50VNB

Tall Double Pole Switches Flat Plate (50A)

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate 50A Tall Double Pole Switch 1 Gang with LED Indicator		
Polished Steel	WFDP50VNPSW	WFDP50VNPSB
Brushed Steel	WFDP50VNBSW	WFDP50VNBSB
Black Nickel	-	WFDP50VNB



WFDP50VNBSB



WRSO100PSW

Shaver Socket Raised Plate

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, toothbrushes, and similar appliances rated 50 VA or less.
- Input 230V AC output dual voltage 230V AC and 115V AC 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
Black Nickel	-	WRSO100BNB

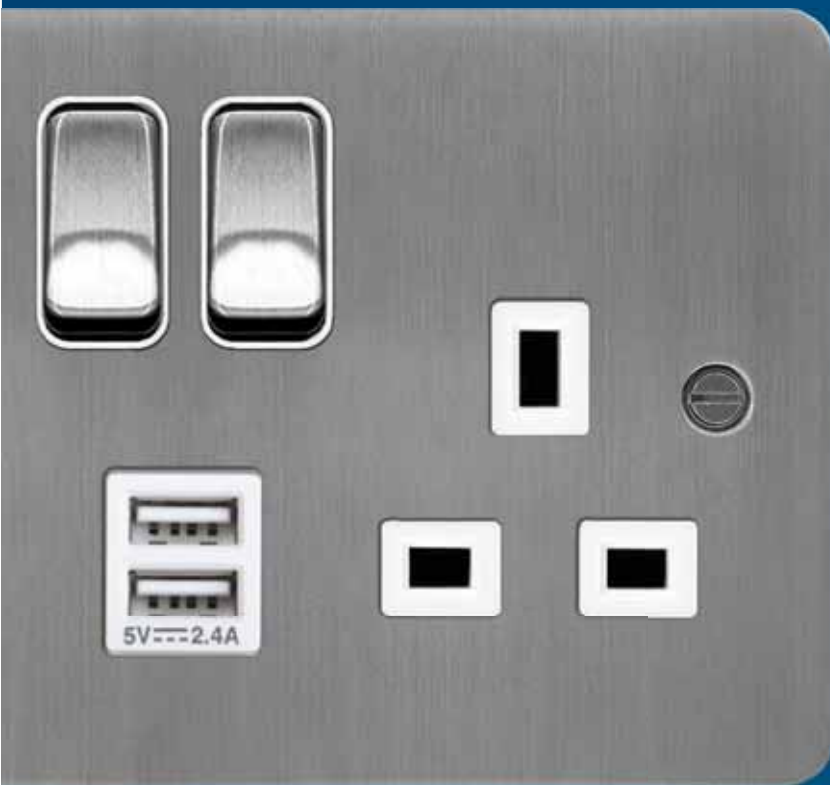


WFSO100PSW

Shaver Socket Flat Plate

Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate 115/230V Shaver Socket		
Polished Steel	WFSO100PSW	WFSO100PSB
Brushed Steel	WFSO100BSW	WFSO100BSB
Black Nickel	-	WFSO100BNB

Sollysta Decorative Double Socket with USB



Style

& Substance

With built-in intelligent connection for improved charging speed and our patented three pin shutter mechanism, it has all of the high quality Sollysta features you have come to love.

For more information visit hager.ie

:hager



WRRJ45PSW

Data Raised Plate

Characteristics:

- 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 RJ45 Socket		
Polished Steel	WRRJ45PSW	WRRJ45PSB
Brushed Steel	WRRJ45BSW	WRRJ45BSB
Black Nickel	-	WRRJ45BNB



WFRJ45PSB

Data Flat Plate

Description

Flat Plate RJ45 Socket

Description	Cat ref. White Insert	Cat ref. Black Insert
Polished Steel	WFRJ45PSW	WFRJ45PSB
Brushed Steel	WFRJ45BSW	WFRJ45BSB
Black Nickel	-	WFRJ45BNB

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
Black Nickel	-	WRSATBNB
Raised Plate Single CO-AX TV Outlet Female		
Polished Steel	WRTVFPSW	WRTVFPSB
Brushed Steel	WRTVFBSW	WRTVFBSB
Black Nickel	-	WRTVFBNB
Raised Plate Double TV & FM/DAB CO-AX Socket Outlet		
Polished Steel	WRDXPSW	WRDXPSB
Brushed Steel	WRDXBSW	WRDXBSB
Black Nickel	-	WRDXBNB
Raised Plate Triplexer TV, FM/DAB & Satellite Outlet		
Polished Steel	WRTXPSW	WRTXPSB
Brushed Steel	WRTXBSW	WRTXBSB
Black Nickel	-	WRTXBNB
Raised Plate Quadplexer TV, FM/DAB, Satellite 1 & Satellite 2 Outlet		
Polished Steel	WRQXPSW	WRQXPSB
Brushed Steel	WRQXBSW	WRQXBSB
Black Nickel	-	WRQXBNB



WRSATBSW



WRSATPSW



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
Black Nickel	-	WFSATBNB
Flat Plate Single CO-AX TV Outlet Female		
Polished Steel	WFTVFPSW	WFTVFPSB
Brushed Steel	WFTVFBSW	WFTVFBSB
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
Black Nickel	-	WFDXBNB
Flat Plate Triplexer TV, FM/DAB & Satellite Outlet		
Polished Steel	WFTXPSW	WFTXPSB
Brushed Steel	WFTXBSW	WFTXBSB
Black Nickel	-	WFTXBNB
Flat Plate Quadplexer TV, FM/DAB, Satellite 1 & Satellite 2 Outlet		
Polished Steel	WFQXPSW	WFQXPSB
Brushed Steel	WFQXBSW	WFQXBSB
Black Nickel	-	WFQXBNB



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
Black Nickel	-	WRP1EUBNB
Raised Plate 2 Modules		
Polished Steel	WRP2EUPSW	WRP2EUPSB
Brushed Steel	WRP2EUBSW	WRP2EUBSB
Black Nickel	-	WRP2EUBNB
Raised Plate 4 Modules		
Polished Steel	WRP4EUPSW	WRP4EUPSB
Brushed Steel	WRP4EUBSW	WRP4EUBSB
Black Nickel	-	WRP4EUBNB



WRP1EUPSB

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
Black Nickel	-	WFP1EUBNB
Flat Plate 2 Modules		
Polished Steel	WFP2EUPSW	WFP2EUPSB
Brushed Steel	WFP2EUBSW	WFP2EUBSB
Black Nickel	-	WFP2EUBNB
Flat Plate 4 Modules		
Polished Steel	WFP4EUPSW	WFP4EUPSB
Brushed Steel	WFP4EUBSW	WFP4EUBSB
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
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

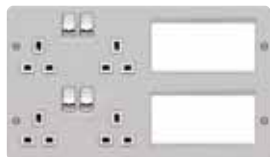


WMMBTM

WMMSAT



WMMQXB



WFTVLPPSW

Euro Lounge Plates

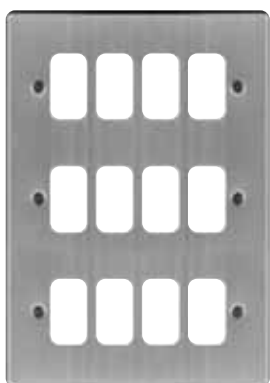
Description	Cat ref. White Insert	Cat ref. Black Insert
Flat Plate Lounge Plate for TV, Power & Data		
Polished Steel	WFTVLPPSW	WFTVLPPSB
Brushed Steel	WFTVLPBSW	WFTVLPBSB
Black Nickel	-	WFTVLPBNB
White Metal	WFTVLPWW	-
Raised Plate Lounge Plate for TV, Power & Data		
White Metal	WRTVLPWW	-
Lounge Plate Back Box		
Steel	WFTVBOX	-



WFGP1PS

Grid Plates Raised Plate

Description	Cat ref.
Raised Plate 1 Gang Grid Plate	
Polished Steel	WRGP1PS
Brushed Steel	WRGP1BS
Black Nickel	WRGP1BN
Raised Plate 2 Gang Grid Plate	
Polished Steel	WRGP2PS
Brushed Steel	WRGP2BS
Black Nickel	WRGP2BN
Raised Plate 3 Gang Grid Plate	
Polished Steel	WRGP3PS
Brushed Steel	WRGP3BS
Black Nickel	WRGP3BN
Raised Plate 4 Gang Grid Plate	
Polished Steel	WRGP4PS
Brushed Steel	WRGP4BS
Black Nickel	WRGP4BN
Raised Plate 6 Gang (3 x 2) Grid Plate	
Polished Steel	WRGP6PS
Brushed Steel	WRGP6BS
Black Nickel	WRGP6BN
Raised Plate 8 Gang (4 x 2) Grid Plate	
Polished Steel	WRGP8PS
Brushed Steel	WRGP8BS
Black Nickel	WRGP8BN
Raised Plate 12 Gang (4 x 3) Grid Plate	
Polished Steel	WRGP12PS
Brushed Steel	WRGP12BS
Black Nickel	WRGP12BN



WRGP12BS

Grid Plates Flat Plate

Description	Cat ref.
Flat Plate 1 Gang Grid Plate	
Polished Steel	WFGP1PS
Brushed Steel	WFGP1BS
Black Nickel	WFGP1BN
Flat Plate 2 Gang Grid Plate	
Polished Steel	WFGP2PS
Brushed Steel	WFGP2BS
Black Nickel	WFGP2BN
Flat Plate 3 Gang Grid Plate	
Polished Steel	WFGP3PS
Brushed Steel	WFGP3BS
Black Nickel	WFGP3BN
Flat Plate 4 Gang Grid Plate	
Polished Steel	WFGP4PS
Brushed Steel	WFGP4BS
Black Nickel	WFGP4BN
Flat Plate 6 Gang (3 x 2) Grid Plate	
Polished Steel	WFGP6PS
Brushed Steel	WFGP6BS
Black Nickel	WFGP6BN
Flat Plate 8 Gang (4 x 2) Grid Plate	
Polished Steel	WFGP8PS
Brushed Steel	WFGP8BS
Black Nickel	WFGP8BN
Flat Plate 12 Gang (4 x 3) Grid Plate	
Polished Steel	WFGP12PS
Brushed Steel	WFGP12BS
Black Nickel	WFGP12BN



WFGP1PS



WFGP2BS

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

Wiring
Accessories

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 Customer Service at customer.service@hager.ie 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	WMGS22RB
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 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	-

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 Customer Service at customer.service@hager.ie 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



WMGSDP2N/MW

Wiring
Accessories



WMGB1BSW



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
Black Nickel	-	WMGS12BNB
20A Intermediate Switch		
Polished Steel	WMGS16PSW	WMGS16PSB
Brushed Steel	WMGS16BSW	WMGS16BSB
Black Nickel	-	WMGS16BNB
20A 2 Way Retractive Switch		
Polished Steel	WMGS22RPSW	WMGS22RPSB
Brushed Steel	WMGS22RBSW	WMGS22RBSB
Black Nickel	-	WMGS22RBNB
20A 1 Way Double Pole Switch		
Polished Steel	WMGSDP2PSW	WMGSDP2PSB
Brushed Steel	WMGSDP2BSW	WMGSDP2BSB
Black Nickel	-	WMGSDP2BNB
13A Fuse Carrier		
Polished Steel	WMGFU13PSW	WMGFU13PSB
Brushed Steel	WMGFU13BSW	WMGFU13BSB
Black Nickel	-	WMGFU13BNB
Blank Module		
Polished Steel	WMGB1PSW	WMGB1PSB
Brushed Steel	WMGB1BSW	WMGB1BSB
Black Nickel	-	WMGB1BNB

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
Black Nickel	WRP1BN

Raised Plate Twin Blank Plate	
Polished Steel	WRP2PS
Brushed Steel	WRP2BS
Black Nickel	WRP2BN



WRP2PS

Blank Plates Flat Plate

Description	Cat ref.
Flat Plate Switch Blank Plate	
Polished Steel	WFP1PS
Brushed Steel	WFP1BS
Black Nickel	WFP1BN

Flat Plate Twin Blank Plate	
Polished Steel	WFP2PS
Brushed Steel	WFP2BS
Black Nickel	WFP2BN



WFP1BS



WPPS12



WPDP50VN

Metalclad Wall Switches

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.
- 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
Wall Switches Grey			
50A Double Pole Switch 1 Gang with LED Indicator	WPDP50N	WPDP50NB	WPDP50NBKO
20A Double Pole Switch with Flex Outlet	WPDP84FO	WPDP84FOB	WPDP84FOBKO
20A Double Pole Switch with LED Indicator & Flex Outlet	WPDP84FON	WPDP84FONB	WPDP84FONBKO
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

Tall Double Pole Switches Raised Plate (50A)

Description	Cat ref. White Insert	Cat ref. Black Insert
Raised Plate 50A Tall Double Pole Switch 2 Gang with LED Indicator		
Grey Raised Plate 50A Tall Double Pole Switch 2 Gang with LED Indicator	WPDP50VN	-



WPPS3I

Isolator Switches

Characteristics:

- Complies with BS 60669-2-4
- Rated short circuit current 1500A tested with Hager MTN110 6kA curve MCB
- Terminal conductors 2x 4.0mm²
- Supplied with M3.5 x 30mm fixing screws

Description	Cat ref.
3 Pole Isolator Switch	
3 Pole Isolator Switch 10A 250V~	WPPS3I



WPPS81

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 5.46).
- Available as plate only for installation with standard wall box.
- **Sockets with USB - 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** - USB output: 5V DC 2.4A total max.

Description	Cat ref. Plate Only	Cat ref. With Backbox Without Knockouts	Cat ref. With Backbox With Knockouts
Socket Outlets Grey			
1 Gang Double Pole Switch Socket	WPPS81	WPPS81B	WPPS81BKO
1 Gang Double Pole Switch Socket with LED Indicator	WPPS81N	WPPS81NB	WPPS81NBKO
2 Gang Double Pole Switch Socket	WPPS82	WPPS82B	WPPS82BKO
2 Gang Double Pole Switch Socket with LED Indicator	WPPS82N	WPPS82NB	WPPS82NBKO
2 Gang Double Pole Switch Socket Outboard Rockers	WPPS82O	WPPS82OB	WPPS82OBKO
2 Gang Double Pole Switch Socket with Two USB Ports	WPPS82-USB	WPPS82B-USB	WPPS82BKO-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.
- 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
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



WPSSU83FON

Metalclad Grid Plates

Characteristics:

- For Grid Switches, please see page 5.12

Description	Cat ref. Plate Only	Cat ref. With Backbox Without Knockouts	Cat ref. With Backbox With Knockouts
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



WPGP1



WPGP2



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 Grey			
1 Module Euro Plate	WPP1EU	WPP1EUB	WPP1EUBKO
2 Module Euro Plate	WPP2EU	WPP2EUB	WPP2EUBKO
4 Module Euro Plate	WPP4EU	WPP4EUB	WPP4EUBKO



WMMBTM

WMMSAT

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
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



WMMQXB

Metalclad Accessories

Description	Cat ref. Plate Only	Cat ref. With Backbox Without Knockouts	Cat ref. With Backbox With Knockouts
Accessories Grey			
Single Backbox	-	WPB140	WPB140KO
Twin Backbox	-	WPB240	WPB240KO
Two Row Twin Backbox	-	WPB6840	WPB6840KO
Single Blank Plate	WPP1	WPP1B	WPP1BKO
Twin Blank Plate	WPP2	WPP2B	WPP2BKO



WPB140KO



WXPPS12

Wall Switches

Characteristics:

- IP66 rating conforms to BS EN 60529 : 1992.
- Functional products tested and certified to BS EN 60669-1, AC 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.
10A 1 Gang 2 Way Switch	90 x 90	WXPPS12
10A 2 Gang 2 Way Switch	90 x 90	WXPPS22
20A Double Pole 1 Gang 1 Way Switch	90 x 90	WXPPD84
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, AC 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

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 5.48.



Description	Terminal capacity (mm ²)	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

J501

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 5.48.



Description	Terminal capacity	Pack qty.	Cat ref.
Maintenance Free 32A - 3 Terminals	3 x 4mm ² x (0.5 - 4.0)	10	J803
Maintenance Free 20A - 4 Terminals	4 x 4mm ² x (0.5 - 4.0)	10	J804

J804

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 5.48.



Description	Terminal capacity	Pack qty.	Cat ref.
Downlighter Junction Box	3 x (3 x 1.5mm ²) 1 x (2 x 1.5mm ²)	10	J501

J501

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 5.48.

Description	Terminal capacity	Pack qty.	Cat ref.
No Terminals	-	10	J701
With Terminal Block, Cable Ties & Related Wiring Card	4 x 1.5mm ²	10	J701/TB



J701/TB



SEL212

Safety Lampholders

Characteristics:

- Complies with BS EN 7895.
- T2 heat resistance rating: 210°C.
- 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 30°.
- Access lampholders have integral **RL624** ceiling rose base and heat resisting PVC tails.
- All pendants incorporate automatic cord grips and sleeve caps for ease of flexible cord stripping.

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



SEL354

Safety Straight Batten Lampholders

Three Terminal - Home Office Shield	20	SEL354
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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



SEL96T



624SEL212/6

Safety Pendants Sets with Access to 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 to 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

Safety Lampholders with Safety Covers

Pendant Set 6" with Safety Cover	10	624SEL212SC6
Batten Lampholder with Safety Cover	10	SEL96TSC

Super Access Terminal Bank Type Ceiling Rose

Characteristics:

- Pendant set complies with BS EN 60598-1.
- 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 (Home Office Shield and Shade Ring)

Characteristics:

- Suitable for use with any lampholder or batten lampholder.

Description	Pack qty.	Cat ref.
Short Skirts	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
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

Accessory Type	Rating	Maximum number of conductors per terminal (Solid or Stranded conductors BS 6004)						
		1.0 mm ²	1.5 mm ²	2.5 mm ²	4.0 mm ²	6.0 mm ²	10.0 mm ²	16.0 mm ²
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.

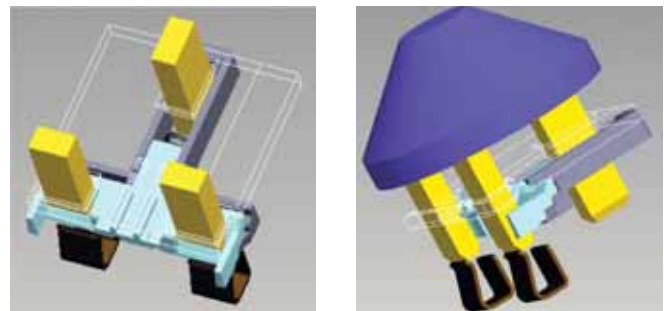
For a full list of products generally available from stock please go to www.hager.ie/printedproducts.

We also offer a bespoke printing service for your individual requirements. Please contact our Customer Service at customer.service@hager.ie 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.



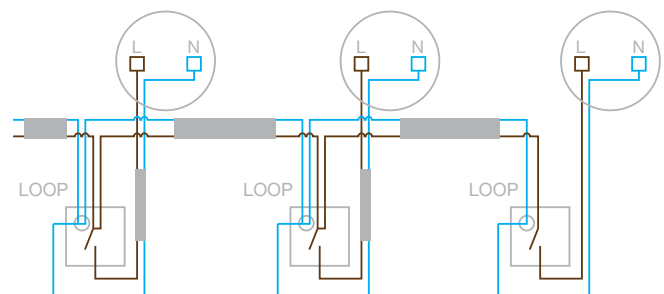
Neutral Loop Terminal

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 AC and 1500 V DC 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 first character numeral:
Protection against foreign objects

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

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 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 tilted 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

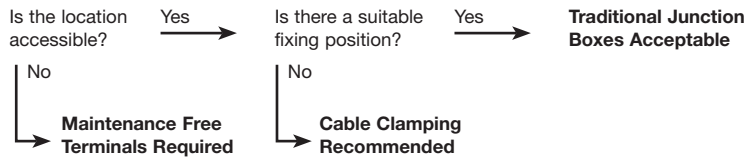
Additional letter (in option)
Protection of people against access to hazardous parts

	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 - ϕ 2.5mm
D	Protected against access to hazardous parts with a wire - ϕ 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

Junction Box Selection Chart



Description	N° of Terminals	Terminal Rating	Reference	Benefits / Considerations
Downlighter Junction Box	3 x 3 x 1.5mm ² 1 x 2 x 1.5mm ²	16A	J501	Provided with cable clamps and separate terminals for flex
Maintenance Free Junction Box	3 x 4 x (0.5-4.0mm ²)	32A	J803	Suitable for use in inaccessible locations
	4 x 4 x (0.5 - 4.0mm ²)	20A	J804	
Traditional Junction Boxes	4	20A	J201	Acceptable for locations which are accessible
	4	20A	J301	
	3	30A	J401	
	6	20A	J601	

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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

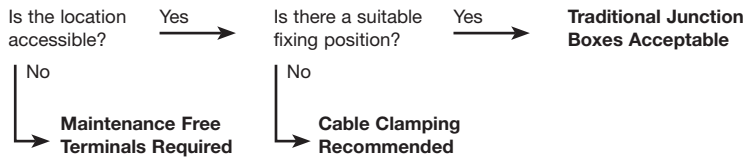
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	6	20A	J601	

KNX Building Automation

A building which can think for itself? The future is here. Our building automation offer in Tebis.KNX can turn a building into an intelligent machine. It provides true control of heating, lighting and privacy and creates energy savings all year round. Be in control or let it do the work for you. Automation so intuitive, you won't even know it's there.



06

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Hager makes things easy

KNX overview

KNX is an established standard everywhere, and one that our whole system range is fluent in. Any easy installation can be extended using quicklink wireless solutions or imported fully into the ETS software. Hager considers it essential that each one of its customers experiences this consistent concept, and by providing it, ensures they benefit from a solution that will hold up over the long term and offer as many expansion options as possible. **Guaranteed fit for the future**

Comparison of systems



quicklink wireless modules
– Solution for individual rooms
– Retrofitting of existing buildings

Visit hager.ie to view our full KNX solutions catalogue or contact us to request a printed catalogue.



easy configurations
– Complete solution for residential buildings
– Excellent functions for private households

Visit hager.ie to view our full KNX easy catalogue or contact us to request a printed catalogue.



system programming
– Premium solution for residential buildings
– Meets complex requirements of functional buildings

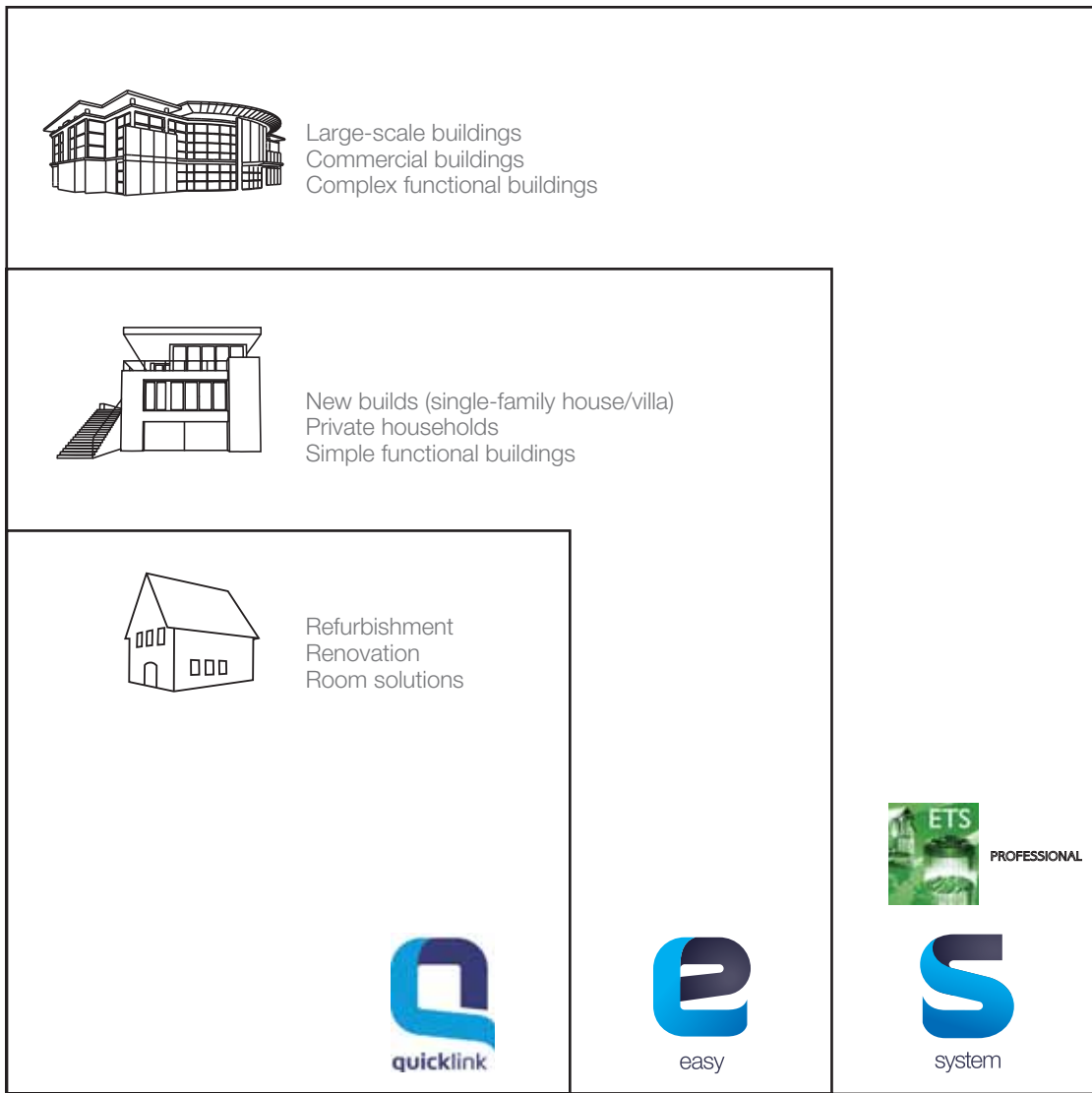
Visit hager.ie to view our full KNX solutions catalogue or contact us to request a printed catalogue.

T +353 (0)1 8835844

E customer.service@hager.ie

W hager.ie

Building types



Installation complexity

Come and join us in the wireless revolution

If you're considering retrofitting, modernizing or upgrading a house, you're probably tempted by the benefits of a smart home. But the cost and time of hard-wiring systems may make you think twice.

Fortunately, there's a simple solution. With coviva, you can transform existing electrical installations into a smart home without any construction work or cable routing.

Simply combine coviva's micromodules with a smartbox and the coviva app to create a smart home that's easy to install, monitor and control.

Micromodules: the foundation of home automation

When it comes to home retrofitting, less is more.

Less cabling through the walls and less rebuilding work means more convenience for you. And it's all possible thanks to coviva micromodules.

Micromodules are the first step towards a smart home.

Once installed behind existing switches or connection boxes, they communicate wirelessly to automate multiple functions throughout the home, including lights and blinds.



Quick installation. Easy implementation

Once the micromodules are connected, they're ready to go. In an instant, they can control dimming settings, on/off switches and raise/lower functions.*

Universal controls

Each micromodule can be linked to a button, which is fast and easy to program.

Superior wireless reach

The micromodules are designed to deliver exceptional wireless reach. Indoors, they can cross through 2 concrete slabs and still transmit up to 30 meters. Outdoors, their range extends as far as 100 meters in an open field.

Update as desired with KNX standard.

Some providers of smart home solutions use closed proprietary systems. Hager uses the internationally-recognized KNX standard, which is compatible with more than 300 brands. Which means you can guarantee your customers a high-quality system well into the future.

quicklink

The perfect retrofit solution, quicklink is our wireless alternative to Intelligent Building System technologies. There's no need to lay costly control lines. And, with no programming tools required, system launch couldn't be easier.

easy

Designed for new constructions and extensive renovations, easy offers a simple solution for configuring a KNX system quickly and intuitively. All you need is an easy configuration server, a tablet and the easy app. And if you want to expand your easy configuration in the future, just add a quicklink wireless solution.

KNX ETS

ETS is the standard software used in building automation. The bus system, its actuators and its sensors are used for a wide range of applications – to control lights and blinds, regulate the temperature in individual rooms and much more.



Hager offers a complete
range of KNX systems
and a variety of applications

system (ETS)

High-end solutions for residential,
commercial and administrative
buildings

easy

Complete home solutions

quicklink wireless module

For individual rooms and retrofitting



quicklink



easy



system



Making it really easy To create an intelligent home



You can program lighting scenarios to suit your customers' wishes, allowing them to create the atmosphere they are looking for quickly and easily. **Dimming control for setting the mood.**



Design, operation and functionality at the peak of perfection. Hager makes smart home solutions an affordable option for anyone, with technology that is making inroads into average private households. Your customers are sure to love the new level of convenience it affords them. **Intelligent control centre.**



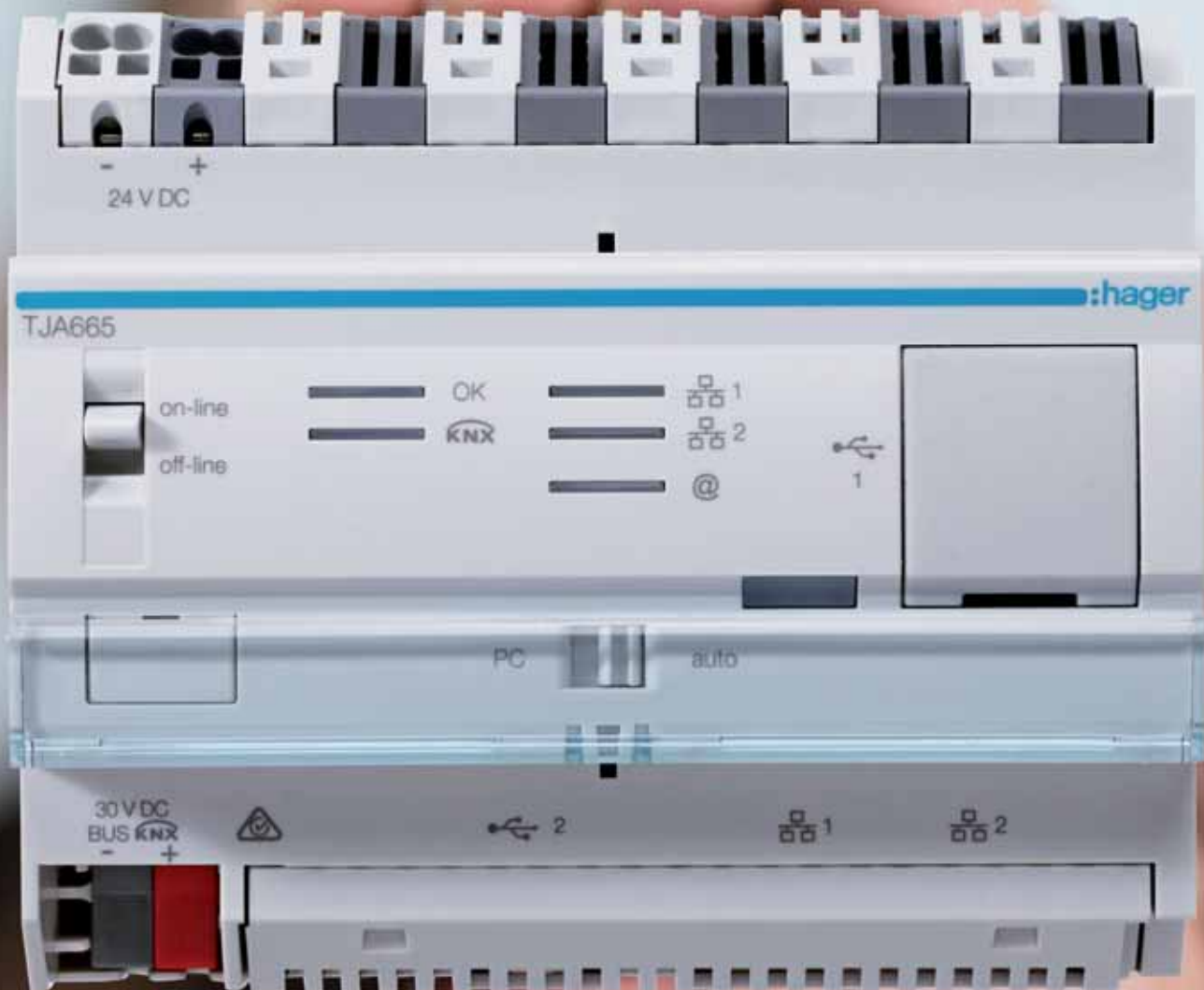


The system makes operating roller shutters and blinds convenient and so easy, even a child could do it. The option to shade or darken a space at the touch of a button creates more comfortable surroundings for your customers. **Raised potential.**

The option to switch everything off saves customers looking back over their shoulders after leaving the house. The simple control concept creates an intelligent home – even when the occupants are outside it. **Reassuring security solution.**



easy installation



The easy configuration server is at the heart of the system. It is connected to the KNX system and acts as an intelligent partner during configuration. The easy configuration server forms the programming interface between the KNX installation and you while you are performing the configuration work on a tablet. Central management.

The new easy actuators are equipped with all the functions that residential buildings need – whether these involve switching lights on and off or dimming them, moving blinds, creating light scenes, or adapting to wind and weather conditions. easy systems come complete with all the security and comfort functions customers expect.

Visually speaking, the only way in which the easy actuators differ is their light-grey operation buttons – and inside the system, the easy functionality is virtually the sole difference.

Whether customers want to switch lights on and off and move blinds using combination actuators, or dim state-of-the-art lighting using dim actuators, easy actuators are capable of all this and more.



The new flush-mounted switching outputs are available as 1gang and 2gang switching outputs (in two versions). The 1gang output can be used for all types of lighting control – meaning not just switching lights on and off, but time, override, logic and scene functions too. With the 2gang output, there is the option of controlling two lighting circuits, a roller shutter/blind motor or a fan (2-stage activation).

A new feature comes in the form of the actuators that have been specifically developed for project business, which accommodate a high number of channels at an attractive price. In the 16gang and 20gang versions for lighting and blinds, as well as the 12gang versions for blinds at 230 V, they combine a large number of channels within a small space.



easy products

A place in the sun

The new easy actuators feature not only multifunctional binary outputs, but also specialist KNX blind outputs. Together with the new GPS weather station, this makes it possible to create a variety of comfort scenarios – including gradual roller shutter motions or blind slats that rotate in line with the sun. This both creates a more comfortable atmosphere for users and reduces lighting and heating costs.



KNX weather station with GPS

The new weather station, featuring a GPS antenna, measures precipitation, temperature, wind speed and the sun's position with accuracy. Based on this information, convenient shade and heat protection functions – such as position tracking and sun tracking – can be configured for up to four building facades.

This allows blinds to be used for cooling in summer and sunlight to be used for heating in winter. It is also possible to program a rain, frost and wind alarm, with 3 stages in each case. The date, time and exact location coordinates are received via the GPS signal, and the station switches from summer to winter time automatically. The easy visualisation concept allows advanced functions to be added, such as set-point settings, process logic and timers. The weather station is mounted horizontally on the outer wall, enabling the sensors to detect sun, wind and rain without obstructions.

KNX blind outputs

Five easy actuators with an option of 4, 8 or – a new addition – 12 outputs are available for activating roller shutter and blind motors. The 12gang output can normally be used to control any kind of shutters found in a small bungalow.

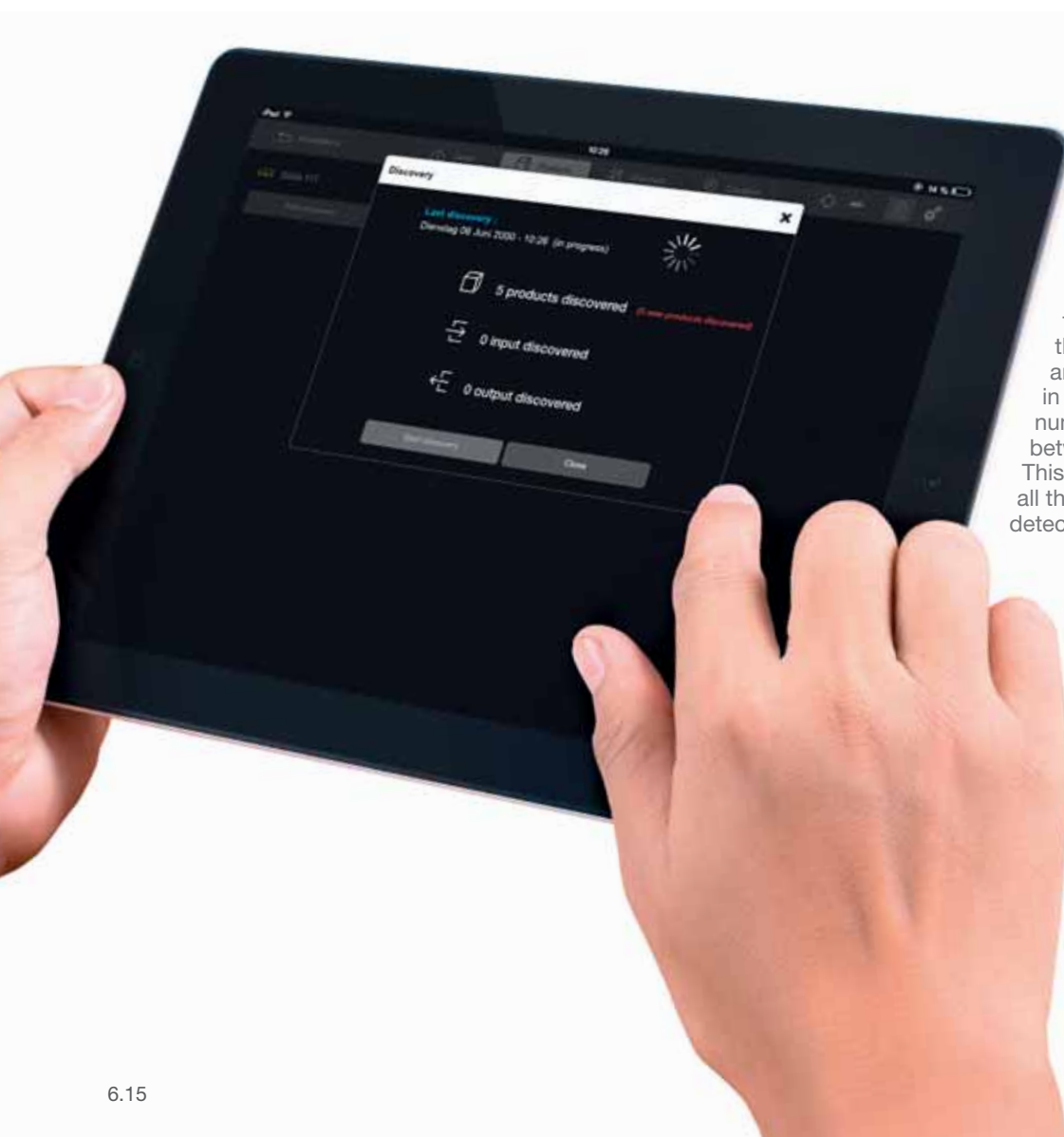
The 12gang output is supplied with 230 V. Depending on the rated voltage of the roller shutter and blind motors, the 4gang and 8gang outputs are available for either 230 V or a 24 V extra-low voltage.





easy configuration

KNX easy provides an intuitive means of configuring KNX systems. Just connect to the new easy service tool wirelessly using a tablet – and from that point, everything practically runs itself. **Brilliantly simple.**



Step 1: Reading in

Once you have created a new project, activate the 'Start discovery' function. All the KNX products installed in the system, plus their inputs and outputs, will now be read in and listed according to their number. The software distinguishes between wired and radio products. This allows you to check whether all the installed devices have been detected.



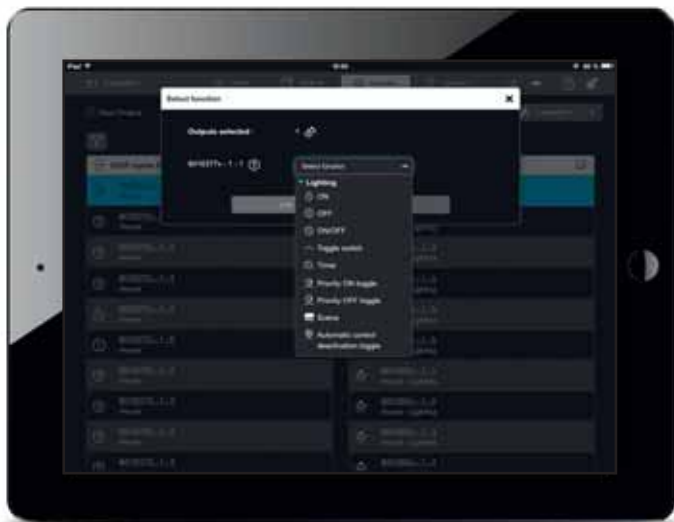
Step 2: Labelling

easy speaks in plain language – meaning no abbreviated forms and no codes! You start by creating a simple name for the building, then giving names to each individual room and assigning the rooms to each floor. The next step is to label all the KNX products with all the inputs and outputs. Once the individual functions and their parameters have been defined, the inputs and outputs are assigned to the rooms that have been created.

Step 3: Linking

You now select the inputs and outputs you require using the touchscreen function. You can simultaneously select multiple inputs and outputs that you wish to link. A filter function makes it possible to create quick and simple links for group switching, for instance.

Once you have selected the channels to be linked, press the 'Link' symbol.



Step 4: Function

The final step involves choosing the appropriate function. You may want the button to switch the lighting on or off, for example – but whatever the case, a whole range of KNX functions is available for selection. Once you have selected the function, operation can start immediately.

easy operation

The new KNX sensors from Berker provide the perfect partners to easy actuators. Their design lines might be familiar, but they have a new stand-out feature – a reimagined sensibility. This allows customers to find the perfect solution to suit any need – from the attractively priced push-button option to the dimmable push-button, all the way through to the intuitive room controller. All the sensors can be combined with one another. **A versatile selection.**



Switch, illuminate, protect

The new KNX push-buttons with integrated BCU (bus coupling unit) appear so simple from the outside, but are so smart on the inside: they easily connect to the in-house KNX system via the integrated bus coupling unit. Rockers in the centre allow the upper and lower push-button areas to be assigned separate functions. The 1gang push-button is able to trigger two control commands and the 2gang push-button four control commands. Each rocker has a status LED that also serves as orientation lighting. The LED colour can be customised as red, green or blue as well. And to stop any sticky fingers making off with such an appealing item, the push-button module and supporting ring can be bolted firmly together – the perfect thief deterrent.

New:

1gang to 4gang KNX push-button

Switch on your senses. The new Berker KNX push-buttons make it possible to produce entire scenes and logic combinations. Users are also invited to use their senses of vision, hearing and touch, thanks to LEDs that can be dimmed in any required RGB colour combination, an integrated buzzer that can be felt when it is activated via the easy configuration, and a built-in temperature sensor to which a second sensor can be connected if required – for underfloor heating, to take one example. Available in the design lines S, B, Q, K and R in all standard colours.



KNX room thermostat and room controller

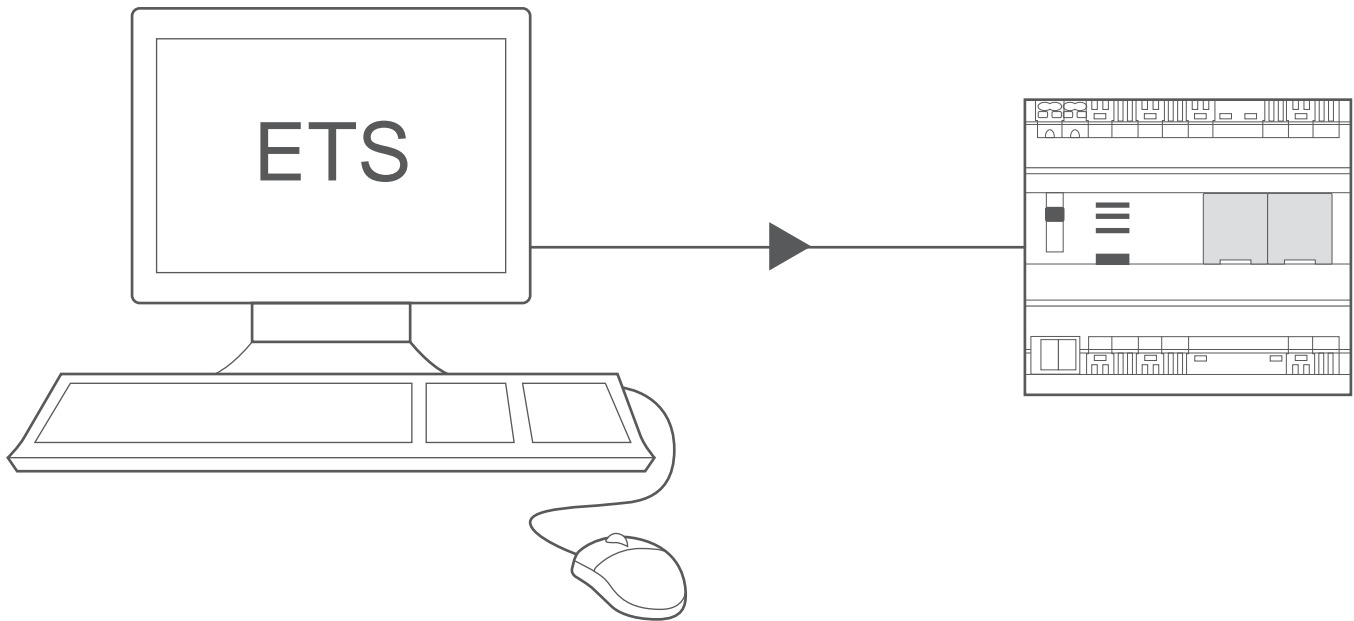
The new Berker KNX room thermostat and room controller make an impact not once, but twice – thanks both to their attractive design and to their innovative operating concept featuring the wipe-and-type function that is exclusive to Berker. Simply wipe along the sensor strip and tap to select from a whole range of building functions. **Beautifully smart.**



System programming premium KNX solution

For large-scale and commercial projects requesting a whole range of functionalities, system is the most adapted solution. Our KNX system range has been developed for the most complex and demanding installations. Our wide range of KNX devices offers very advanced configuration possibilities in ETS software. The range of KNX modules consists in output devices for shutters and lighting management as well as binary modules with current measurement.





Configuration

ETS is the software used for the configuration of every KNX solution. To configure the products, the computer has to be plugged to the installation via a gateway.

The software includes many features, such as:

- easy and quick integration of wireless KNX products in the installation
- user-friendly interface
- simple database
- possibility to track changes related to the project...

Benefits

- Efficient installation: ETS 5 configuration software has become so simple and intuitive to use for a quick configuration
- A wide range of products to answer all type of projects
- Comfort as its best: possibility to set unlimited number of various scenarios
- Safer installations: would any problem occur, it is possible to troubleshoot easily and quickly



KNX inputs, outputs and system components

With KNX, a building provides a significant contribution to looking after itself: motion detectors activate lighting as necessary. Windows and doors left open by accident are signalled using magnetic contacts and can be closed automatically. In addition, when the windows are open, the heating/cooling system reduces output. Using the KNX bus system, your house can learn to adapt to changed environmental conditions.



KNX remote control and visualisation

Intuitive control: one interface to manage your home. domovea is the dashboard for your home, providing you with intuitive control of the different devices in your home. Lights, shutters, heating, air conditioning or alarm system; for each room or the full floor... It's so simple to use: everything can be controlled from one single point. You can enjoy domovea from your home computer, laptop, smartphone, tablet or dedicated touch panel, all with the same look & feel.



Berker B.IQ

A wide array of alternative materials and colours have been added to the convenient variety of KNX functionality of the Berker B.IQ.

- Frameless KNX push-button with full-material rockers (glass, stainless steel and aluminium)
- High scope of functions in the KNX applications through devices integrating thermostats
- The attractive appearance is rounded off using white status LEDs and a blue operation LED
- Suitable variants for all materials and colours of sockets in the Berker B.7 switch range.



Berker TS Sensor

Understatement is an art, and the Berker TS Sensor makes it perfect. Up to eight functions are concealed under a pure surface that is practically flush with the wall, and can be custom-labelled on request. A single touch is all it takes to control lights, heating or blinds. In this way, the Berker TS Sensor can offer an exciting variety of possibilities – and, at the same time, still seems as calm as possible.



Berker TS/TS Crystal

Behind its elegantly purist exterior, there is an unexpected wealth of technical options: the Berker TS allows operation, not only of multiple light sources, but, if so desired, also of intelligent building control systems. With their fine platform and switching knobs **MADE WITH SWAROVSKI ELEMENTS**, the Berker TS Crystal lends refinement to any atmosphere.



Berker R.1/R.3 Touch Sensors

Just right for the switch programmes in the R.-Design is the Berker Touch Sensor – in a soft (R.1) and cornered (R.3) contour as well as in the glass surfaces black and polar white.

The KNX-Touch Sensor has the same assembly height as the switches in the R.-Design.

With its integrated bus coupling unit, a variety of building functions can be read and controlled through it.



tebis



quicklink wireless modules

- Solution for individual rooms
- Retrofitting of existing buildings

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easy configurations

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- Premium solution for residential buildings
- Meets complex requirements of functional buildings

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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

#		ADA195U	1.151	BD226	1.145	BTH480E	1.148
		ADA306G	4.30	BD240	1.145		
		ADA310G	4.30	BD241	1.145	C	
52031	3.18	ADA316G	4.30	BD263	1.145	CCA216U	1.151
52032	3.18	ADA320G	4.30	BD264	1.145	CD283U	1.151, 4.29
52035	3.18	ADA325G	4.30	BD325	1.145	CD285U	1.151, 4.29
52038	3.18	ADA332G	4.30	BD326	1.145	CD480A	1.152
52045	3.18	ADA506D	1.150, 4.30	BD340	1.145	CD484A	1.152
52541	3.18	ADA510D	1.150, 4.30	BD341	1.145	CDA225U	1.151, 4.29
52542	3.18	ADA516D	1.150, 4.30	BD363	1.145	CDA240U	1.151, 4.29
52545	3.18	ADA520D	1.150, 4.30	BD364	1.145	CDA263U	1.151, 4.29
52546	3.18	ADA525D	1.150, 4.30	BD425	1.145	CDA425U	1.151
624SEL212/12	5.45	ADA532D	1.150, 4.30	BD426	1.145	CDA440U	1.151
624SEL212/6	5.45	ADA556D	1.150, 4.30	BD440	1.145	CDA463U	1.151
624SEL212/9	5.45	ADA560D	1.150, 4.30	BD441	1.145	CDA490	1.152
624SEL212SC6	5.45	ADA566D	1.150, 4.30	BD463	1.145	CDA516D	1.151, 4.29
624SEL214/6	5.45	ADA570D	1.150, 4.30	BD464	1.145	CDA525D	1.151, 4.29
800LBS	1.133	ADA575D	1.150, 4.30	BDC280E	1.148	CDA540D	1.151, 4.29
		ADA582D	1.150, 4.30	BDC380E	1.148	CDA563D	1.151, 4.29
A		ADM406C	1.150	BDC480E	1.148	CDA580W	1.151
A050	1.97, 2.40	ADM410C	1.150	BDC825	1.146	CDA584W	1.151
A088	1.97, 2.40	ADM413C	1.150	BDC840	1.146	CDA680D	1.151
A089	2.40	ADM416C	1.150	BDC863	1.146	CDA684D	1.151
A090	2.40	ADM420C	1.150	BDH280E	1.148	CDA690	1.151
A098	1.97, 2.40	ADM425C	1.150	BDH380E	1.148	CDB516D	1.152
A099	1.97, 2.40	ADM432C	1.150	BDH480E	1.148	CDB516E	1.152
A099B	1.97	ADM440C	1.150	BDH825	1.146	CDB525D	1.152
A099C	1.97	ADM456C	1.150	BDH840	1.146	CDB525E	1.152
A099D	1.97	ADM460C	1.150	BDH863	1.146	CDB640D	1.152
A099E	1.97	ADM463C	1.150	BE163T	1.122	CDB663D	1.152
A1	3.15	ADM466C	1.150	BE264	1.145	CE240J	1.151
A1/R	3.15	ADM470C	1.150	BE464	1.145	CE281J	1.152
A1BLACK	3.15	ADM475C	1.150	BF163T	1.122	CE285J	1.152
ACA106U	1.151	ADM482C	1.150	BF225	1.145	CE440J	1.151
ACA110U	1.149	ADM490C	1.150	BF226	1.145	CE463J	1.151
ACA116U	1.149	ADS917D	1.149, 4.31	BF240	1.145	CE481J	1.152
ACA120U	1.149	ADS967D	1.149, 4.31	BF241	1.145	CE485J	1.152
ACA125U	1.149	AF956J	1.150	BF263	1.145	CEA263N	1.151
ACA132U	1.149	AF960J	1.150	BF264	1.145	CEA580W	1.151
ACA140U	1.149	AF966J	1.150	BF325	1.145	CEA584W	1.151
ACA145U	1.149	AF970J	1.150	BF326	1.145	CEA680W	1.151
ACA156U	1.149	AF975J	1.150	BF340	1.145	CEA684W	1.151
ACA160U	1.149	AF982J	1.150	BF341	1.145	CF225J	1.152
ACA166U	1.149	AF990J	1.150	BF363	1.145	CF240J	1.152
ACA170U	1.149	ARC506U	1.158	BF364	1.145	CF263J	1.152
ACA175U	1.149	ARC510U	1.158	BF425	1.145	CF280C	1.152
ACA182U	1.149	ARC513U	1.158	BF426	1.145	CF284C	1.152
ACA190U	1.149	ARC516U	1.158	BF440	1.145	CF425J	1.152
ACA195U	1.149	ARC520U	1.158	BF441	1.145	CF440J	1.152
AD906J	1.150, 4.30	ARC525U	1.158	BF463	1.145	CF463J	1.152
AD910J	1.150, 4.30	ARC532U	1.158	BF464	1.145	CF480C	1.152
AD916J	1.150, 4.30	ARC540U	1.158	BFC480E	1.148	CF484C	1.152
AD920J	1.150, 4.30	ARC556U	1.158	BFC825	1.146	CFA580W	1.152
AD925J	1.150, 4.30	ARC560U	1.158	BFC840	1.146	CFA680U	1.152
AD932J	1.150, 4.30	ARC563U	1.158	BFC863	1.146	CFA684W	1.152
AD940J	1.150, 4.30	ARC566U	1.158	BFH480E	1.148	CFB640D	1.152
AD956J	1.150, 4.30	ARC570U	1.158	BFH825	1.146	CFB663D	1.152
AD960J	1.150, 4.30	ARC575U	1.158	BFH840	1.146	CN284J	1.152
AD966J	1.150, 4.30	ARC582U	1.158	BFH863	1.146	CN484A	1.152
AD970J	1.150, 4.30	ARC590U	1.158	BG264	1.145	CNA584W	1.152
AD975J	1.150, 4.30	ARC906U	4.31	BG364	1.145	CNA684D	1.152
AD982J	1.150, 4.30	ARC910U	4.31	BG464	1.145	CP280E	1.152
AD990J	1.150, 4.30	ARC916U	4.31	BN264	1.145	CP284J	1.152
ADA106U	1.121, 4.29	ARC920U	4.31	BN464	1.145	CP484D	1.152
ADA110U	1.121, 4.29	ARC925U	4.31	BP264	1.145	CPA684D	1.152
ADA116U	1.122, 4.29	ARC932U	4.31	BP364	1.145	CR64AX	3.15
ADA120U	1.122, 4.29	ARC940U	4.31	BP464	1.145	CR64AX/1.0	3.13
ADA125U	1.122, 4.29	ARC956U	4.31	BPC863	1.146	CR64AX/1.0LSF/2	3.13
ADA132U	1.122, 4.29	ARC960U	4.31	BR264	1.145	CR64AX/1.0LSF/3	3.13
ADA140G	4.30	ARC966U	4.31	BS263	1.145	CR64AX/1.0LSF/4	3.13
ADA140U	1.149	ARC970U	4.31	BS264	1.145	CR64AX/1.0LSF/5	3.13
ADA145G	4.30	ARC975U	4.31	BS363	1.145	CR64AX/1.0PVC/2	3.13
ADA145U	1.149	ARC982U	4.31	BS364	1.145	CR64AX/1.0PVC/3	3.13
ADA156U	1.121, 4.29	ARC990U	4.31	BS464	1.145	CR64AX/1.0PVC/4	3.13
ADA160U	1.123, 4.29			BSC863	1.146	CR64AX/1.0PVC/5	3.13
ADA166U	1.122, 4.29	B		BTC280E	1.148	CR64AX/2.0	3.13
ADA170U	1.122, 4.29	BC226	1.145	BTC380E	1.148	CR64AX/3.0	3.13
ADA175U	1.122, 4.29	BD163T	1.122	BTC480E	1.148	CR64AX/4.0	3.13
ADA182U	1.122, 4.29	BD225	1.145	BTH280E	1.148	CR64AX/LSF/1.0	3.13
ADA190U	1.151			BTH380E	1.148		

FC126	1.64	FL123A	1.100	FL314A	1.102	FL405A	1.101
FC192	1.69	FL124A	1.100	FL315A	1.102	FL405B	1.105
FC193	1.69	FL125A	1.100	FL316A	1.102	FL406A	1.101
FC210	1.63	FL126A	1.100	FL317A	1.102	FL406B	1.105
FC211	1.63	FL127A	1.100	FL320B	1.105	FL407A	1.101
FC212	1.63	FL128A	1.100	FL321B	1.105	FL407B	1.105
FC213	1.63	FL129A	1.100	FL322A	1.102	FL408A	1.101
FC214	1.63	FL130A	1.100	FL322B	1.105	FL409A	1.101
FC215	1.63	FL151A	1.107	FL323A	1.102	FL410A	1.101
FC216	1.63	FL152A	1.100	FL324A	1.102	FL410B	1.105
FC218	1.63	FL153A	1.101	FL325A	1.102	FL411A	1.101
FC219	1.63	FL154A	1.100	FL325B	1.105	FL411B	1.105
FC230	1.64	FL155A	1.100	FL326A	1.102	FL412A	1.101
FC310	1.64	FL156A	1.101	FL326B	1.105	FL412B	1.105
FC311	1.64	FL157A	1.101	FL327A	1.102	FL413A	1.101
FC312	1.64	FL158A	1.101	FL327B	1.105	FL414A	1.101
FC313	1.64	FL159A	1.100	FL32S	1.7	FL415A	1.101
FC314	1.64	FL160A	1.100	FL330B	1.105	FL416A	1.101
FC315	1.64	FL161A	1.100	FL331B	1.105	FL417A	1.101
FC316	1.64	FL162A	1.100	FL332B	1.105	FL418A	1.101
FC317	1.64	FL163A	1.101	FL333A	1.102	FL419A	1.101
FC318	1.64	FL164A	1.101	FL335A	1.102	FL422A	1.101
FC319	1.64	FL165A	1.101	FL336A	1.102	FL423A	1.101
FC330	1.64	FL166A	1.101	FL337A	1.102	FL424A	1.101
FC331	1.64	FL167A	1.100	FL33S	1.7	FL425A	1.101
FC332	1.64	FL168A	1.100	FL340B	1.105	FL426A	1.101
FC333	1.64	FL169A	1.100	FL342B	1.105	FL427A	1.101
FC334	1.64	FL170A	1.100	FL343A	1.102	FL428A	1.101
FC335	1.64	FL171A	1.100	FL344B	1.105	FL429A	1.101
FC336	1.64	FL172A	1.100	FL345A	1.102	FL430A	1.101
FC337	1.64	FL173A	1.100	FL346A	1.102	FL431A	1.101
FC338	1.64	FL174A	1.100	FL346B	1.105	FL432A	1.101
FC339	1.64	FL175A	1.100	FL347A	1.102	FL433A	1.101
FC340	1.64	FL176A	1.100	FL348B	1.105	FL450A	1.117
FC341	1.64	FL177A	1.100	FL34S	1.7	FL461A	1.113
FC342	1.64	FL178A	1.100	FL350B	1.105	FL462A	1.113
FC343	1.64	FL179A	1.100	FL352B	1.105	FL463A	1.113
FC344	1.64	FL180A	1.100	FL354B	1.105	FL465A	1.113
FC345	1.64	FL204A	1.103	FL356B	1.105	FL466A	1.114
FC346	1.64	FL204B	1.103	FL358B	1.105	FL467A	1.114
FC347	1.64	FL209B	1.103	FL360B	1.105	FL468A	1.114
FC348	1.64	FL210Z	1.117	FL361A	1.115	FL472A	1.101
FC349	1.64	FL212Z	1.82	FL362A	1.115	FL473A	1.101
FC350	1.64	FL213B	1.103	FL362B	1.105	FL474A	1.101
FC415	1.63	FL214Z	1.82	FL363A	1.115	FL475A	1.101
FC416	1.63	FL216B	1.103	FL364A	1.115	FL476A	1.101
FC419	1.69	FL216Z	1.117	FL364B	1.105	FL477A	1.101
FC425	1.63	FL220Z	1.82	FL365A	1.115	FL478A	1.101
FC426	1.63	FL221B	1.103	FL366A	1.115	FL479A	1.101
FC429	1.69	FL224Z	1.82	FL366B	1.105	FL480A	1.101
FC445	1.63	FL226Z	1.117	FL367A	1.115	FL481A	1.101
FC446	1.63	FL229B	1.103	FL368A	1.115	FL482A	1.101
FC455	1.63	FL230Z	1.117	FL368B	1.105	FL483A	1.101
FC456	1.63	FL234Z	1.117	FL369A	1.115	FL492A	1.117
FC620	1.76	FL236Z	1.117	FL371A	1.115	FL493A	1.117
FC664	1.69	FL252Z	1.117	FL372A	1.115	FL494A	1.117
FC671	1.69	FL253Z	1.117	FL373A	1.115	FL495A	1.117
FL000A	1.102	FL254B	1.103	FL374A	1.115	FL496A	1.117
FL101A	1.101	FL254Z	1.117	FL380AH	1.115	FL500A	1.102
FL102A	1.100	FL255Z	1.117	FL380B	1.110	FL500B	1.105
FL103A	1.101	FL256Z	1.117	FL381AH	1.115	FL500E	1.106
FL104A	1.100	FL258Z	1.117	FL381B	1.110	FL501A	1.102
FL105A	1.100	FL259B	1.103	FL382B	1.110	FL501B	1.105
FL106A	1.101	FL259Z	1.117	FL385B	1.110	FL501E	1.111
FL107A	1.101	FL263B	1.103	FL386B	1.110	FL502A	1.102
FL108A	1.101	FL266B	1.103	FL387B	1.110	FL502B	1.105
FL109A	1.100	FL271B	1.103	FL390B	1.110	FL502E	1.111
FL110A	1.100	FL279B	1.103	FL391AH	1.115	FL503A	1.102
FL111A	1.100	FL300B	1.105	FL391B	1.110	FL503E	1.106
FL112A	1.100	FL301B	1.105	FL392AH	1.115	FL505B	1.105
FL113A	1.101	FL302B	1.105	FL392B	1.110	FL506B	1.105
FL114A	1.101	FL305B	1.105	FL393AH	1.115	FL507B	1.105
FL115A	1.101	FL306B	1.105	FL399AH	1.115	FL510B	1.105
FL116A	1.101	FL307B	1.105	FL400B	1.105	FL510E	1.105
FL117A	1.100	FL310B	1.105	FL401A	1.101	FL511B	1.105
FL118A	1.100	FL311A	1.102	FL401B	1.105	FL511E	1.105
FL119A	1.100	FL311B	1.105	FL402A	1.101	FL512B	1.105
FL120A	1.100	FL312A	1.102	FL402B	1.105	FL512E	1.105
FL121A	1.100	FL312B	1.105	FL403A	1.101	FL520B	1.105
FL122A	1.100	FL313A	1.102	FL404A	1.101	FL520E	1.105

FL521B	1.105	FL71Z	1.117	FM318	1.73	FN091E	1.77
FL521E	1.105	FL722E	1.102	FM319	1.73	FN092E	1.77
FL522B	1.105	FL723E	1.102	FM400	1.74	FN093E	1.77
FL522E	1.105	FL724E	1.102	FM401	1.74	FN097E	1.77
FL525B	1.105	FL725E	1.102	FM402	1.74	FN098E	1.77
FL526B	1.105	FL72S	1.7	FM403	1.74	FN100E	1.77
FL527B	1.105	FL733E	1.102	FM404	1.74	FN101E	1.77
FL52S	1.7	FL734E	1.102	FM405	1.74	FN102E	1.77
FL530B	1.105	FL735E	1.102	FM406	1.74	FN103E	1.77
FL530E	1.105	FL73S	1.7	FM407	1.74	FN104E	1.77
FL531B	1.105	FL74S	1.7	FM408	1.74	FN109E	1.77
FL531E	1.105	FL74Z	1.111	FM409	1.74	FN111E	1.77
FL532B	1.105	FL75Z	1.111	FM417	1.74	FN112E	1.77
FL532E	1.105	FL76Z	1.111	FM418	1.74	FN117E	1.77
FL53S	1.7	FL77Z	1.111	FM419	1.74	FN121E	1.77
FL541A	1.101	FL80Z	1.108	FM427	1.74	FN206E	1.78
FL541E	1.112	FL81Z	1.109	FM428	1.74	FN207E	1.78
FL542A	1.101	FL82Z	1.108	FM429	1.74	FN216E	1.78
FL542E	1.112	FL85Z	1.108	FM437	1.74	FN217E	1.78
FL543A	1.101	FL863Z	1.39	FM438	1.74	FN246E	1.78
FL544A	1.101	FL871Z	1.117	FM439	1.74	FN247E	1.78
FL545A	1.101	FL874A	1.108	FM450	1.73	FN266E	1.78
FL546A	1.101	FL93Z	1.108	FM484	1.74	FN267E	1.78
FL547A	1.101	FL94Z	1.109	FM486	1.74	FN276E	1.78
FL548A	1.101	FL957A	1.101	FM517	1.75	FN277E	1.78
FL549A	1.101	FL958A	1.101	FM518	1.75	FN286E	1.77
FL54S	1.7	FL959A	1.101	FM519	1.75	FN287E	1.77
FL550A	1.101	FL95Z	1.108	FM530	1.75	FN289E	1.77
FL550E	1.105	FL960A	1.101	FM531	1.75	FN291E	1.77
FL551A	1.101	FL961A	1.101	FM532	1.75	FN292E	1.77
FL551E	1.105	FL962A	1.101	FM533	1.75	FN296E	1.78
FL552A	1.101	FL96Z	1.108	FM534	1.75	FN297E	1.78
FL552E	1.105	FL979A	1.100	FM535	1.75	FN356E	1.78
FL553A	1.101	FL97Z	1.109	FM536	1.75	FN357E	1.78
FL554A	1.101	FL980A	1.103	FM537	1.75	FN366E	1.78
FL555A	1.101	FL981A	1.100	FM538	1.75	FN367E	1.78
FL556A	1.101	FL982A	1.100	FM539	1.75	FN376E	1.78
FL557A	1.101	FL983A	1.100	FM540	1.75	FN377E	1.78
FL558A	1.101	FL98Z	1.111	FM541	1.75	FN406E	1.78
FL559A	1.101	FL990A	1.102	FM542	1.75	FN407E	1.78
FL560E	1.105	FL990B	1.106	FM543	1.75	FN426E	1.78
FL561E	1.105	FL990C	1.114	FM544	1.75	FN427E	1.78
FL562E	1.105	FL991A	1.102	FM545	1.75	FN430E	1.81
FL570E	1.105	FL991B	1.106	FM546	1.75	FN433E	1.78
FL571E	1.105	FL992A	1.102	FM547	1.75	FN437E	1.78
FL572E	1.105	FL992B	1.106	FM548	1.75	FN438E	1.78
FL580E	1.113	FL993A	1.102	FM549	1.75	FN440E	1.78
FL581E	1.113	FL993B	1.106	FM557	1.75	FN441E	1.78
FL582E	1.113	FL994A	1.102	FM558	1.75	FN442E	1.78
FL590E	1.106	FL994B	1.106	FM559	1.75	FN443E	1.78
FL591E	1.106	FL995A	1.102	FM567	1.75	FN444E	1.78
FL592E	1.106	FL995B	1.106	FM568	1.75	FN451E	1.78
FL600E	1.106	FL996A	1.102	FM569	1.75	FN453E	1.78
FL601E	1.106	FL997A	1.102	FM630	1.74	FN454E	1.78
FL602E	1.106	FL998A	1.102	FM635	1.74	FN459E	1.78
FL610E	1.106	FL999A	1.102	FM640	1.68	FN506E	1.77
FL620E	1.106	FL99Z	1.109	FM653	1.76	FN507E	1.77
FL630A	1.106	FM107	1.73	FN013E	1.77	FN510E	1.80
FL630E	1.116	FM108	1.73	FN017E	1.77	FN511E	1.80
FL640E	1.106	FM109	1.73	FN018E	1.77	FN516	1.78
FL643A	1.101	FM117	1.73	FN020E	1.77	FN516E	1.78
FL644A	1.101	FM118	1.73	FN021E	1.77	FN517E	1.78
FL645A	1.101	FM119	1.73	FN022E	1.77	FN526E	1.77
FL646A	1.103	FM200	1.73	FN023E	1.77	FN527E	1.77
FL647A	1.103	FM201	1.73	FN024E	1.77	FN536E	1.78
FL649A	1.101	FM202	1.73	FN029E	1.77	FN537E	1.78
FL670A	1.108	FM203	1.73	FN031E	1.77	FN546E	1.77
FL672E	1.114	FM204	1.73	FN032E	1.77	FN547E	1.77
FL672Z	1.117	FM205	1.73	FN037E	1.77	FN690E	1.82
FL702E	1.102	FM206	1.73	FN046E	1.77	FN691E	1.82
FL703E	1.102	FM207	1.73	FN047E	1.77	FN692E	1.82
FL704E	1.102	FM208	1.73	FN073E	1.77	FN696E	1.78
FL705E	1.102	FM209	1.73	FN077E	1.77	FN696EP	1.79
FL70Z	1.117	FM217	1.73	FN078E	1.77	FN697E	1.78
FL710E	1.106	FM218	1.73	FN080E	1.77	FN697EP	1.79
FL711E	1.102	FM219	1.73	FN081E	1.77	FN700E	1.78
FL712E	1.102	FM307	1.73	FN082E	1.77	FN701E	1.78
FL713E	1.102	FM308	1.73	FN083E	1.77	FN706E	1.78
FL714E	1.102	FM309	1.73	FN084E	1.77	FN711E	1.78
FL715E	1.102	FM317	1.73	FN089E	1.77	FN726E	1.78

FN727E	1.78	FP92TN2	1.4	FR34E	1.25	FWU31S	4.28
FN736E	1.78	FP93TN2	1.4	FR34E	1.5	FWU32S	4.28
FN737E	1.78	FP94TN2	1.4	FR35E	1.5	FWU33S	4.28
FN746E	1.78	FP95TN2	1.4	FR41E	1.5	FWU41S	4.28
FN747E	1.78	FR011R	1.9	FR42E	1.5	FWU42S	4.28
FN862E	1.82	FR012R	1.9	FR43E	1.5	FWU43S	4.28
FN863E	1.82	FR013R	1.9	FR44E	1.5	FWU51S	4.28
FN864E	1.82	FR014R	1.9	FR45E	1.5	FWU52S	4.28
FN865E	1.82	FR015R	1.9	FR51E	1.5	FWU53S	4.28
FN866E	1.82	FR01E	1.5	FR52E	1.5	FWU61S	4.28
FN867E	1.82	FR021R	1.9	FR53E	1.5	FWU62S	4.28
FN873E	1.82	FR022R	1.9	FR54E	1.5	FWU63S	4.28
FN875E	1.82	FR023R	1.9	FR55E	1.5	FWU71S	4.28
FN877E	1.82	FR024R	1.9	FR61E	1.5	FWU72S	4.28
FN879E	1.82	FR025R	1.9	FR62E	1.5	FWU73S	4.28
FN882E	1.82	FR02E	1.5	FR63E	1.5	FZ001N	1.20, 4.24
FN883E	1.82	FR03E	1.5	FR64E	1.5	FZ001R	1.52
FN884E	1.82	FR04E	1.5	FR65E	1.5	FZ002N	1.20, 4.24
FN885E	1.82	FR05E	1.5	FR71E	1.5	FZ002R	1.52
FN886E	1.82	FR11E1	1.8	FR72E	1.5	FZ003N	1.20
FN887E	1.82	FR11E2	1.8	FR73E	1.5	FZ003R	1.52
FN891E	1.79	FR12E1	1.8	FR74E	1.5	FZ004N	1.20
FN892E	1.79	FR12E2	1.8	FR75E	1.5	FZ004R	1.52
FN893E	1.79	FR13E1	1.8	FR81E	1.5	FZ005N	1.20, 4.24
FN894E	1.79	FR13E2	1.8	FR82E	1.5	FZ005R	1.52
FN895E	1.79	FR14E1	1.8	FR83E	1.5	FZ006N	1.20, 4.24
FN896E	1.79	FR14E2	1.8	FR84E	1.5	FZ006NV	4.24
FN896EP	1.79	FR15E1	1.8	FR85E	1.5	FZ007N	1.20
FN897E	1.79	FR15E2	1.8	FR91E	1.5	FZ008N	1.20
FN897EP	1.79	FR21E1	1.8	FR92E	1.5	FZ009N	1.20, 4.24
FN942E	1.81	FR21E2	1.8	FR92G	1.5	FZ009NV	4.24
FN943E	1.83	FR21G1	1.8	FR93E	1.5	FZ010N	1.20, 4.24
FN944E	1.83	FR21G2	1.8	FR93G	1.5	FZ010NV	4.24
FN950	1.81	FR21K1	1.8	FR94E	1.5	FZ011B	1.4, 4.24
FN951	1.81	FR21K2	1.8	FR94G	1.5	FZ011N	1.20
FN952	1.81	FR21V1	1.8	FR95E	1.5	FZ011R	1.6
FN970E	1.83	FR21V2	1.8	FW312FD	4.20	FZ012B	1.4, 4.24
FN971E	1.83	FR22E1	1.8	FW312WT	4.19	FZ012N	1.20
FN972E	1.83	FR22E2	1.8	FW324FD	4.20	FZ012R	1.6
FP01TN2	1.4	FR22G1	1.8	FW324WT	4.19	FZ013B	1.4, 4.24
FP02TN2	1.4	FR22G2	1.8	FW412FD	4.20	FZ013N	1.16, 4.24
FP03TN2	1.4	FR22K1	1.8	FW412WT	4.19	FZ013R	1.6
FP04TN2	1.4	FR22K2	1.8	FW424FD	4.20	FZ014B	1.4, 4.24
FP05TN2	1.4	FR22V1	1.8	FW424WT	4.19	FZ014N	1.20, 4.24
FP11TN2	1.4	FR22V2	1.8	FW436FD	4.20	FZ014NV	4.24
FP12TN2	1.4	FR23E1	1.8	FW436WT	4.19	FZ014R	1.6
FP13TN2	1.4	FR23E2	1.8	FW512FD	4.20	FZ015B	1.4
FP14TN2	1.4	FR23G1	1.8	FW512WT	4.19	FZ015N	1.16
FP15TN2	1.4	FR23G2	1.8	FW524FD	4.20	FZ015R	1.6
FP31TN2	1.4	FR23K1	1.8	FW524WT	4.19	FZ016N	1.20
FP32TN2	1.4	FR23K2	1.8	FW536FD	4.20	FZ017N	1.20
FP33TN2	1.4	FR23V1	1.8	FW536WT	4.19	FZ018N	1.20
FP34TN2	1.4	FR23V2	1.8	FW612FD	4.20	FZ019N	1.20
FP35TN2	1.4	FR24E1	1.8	FW612WT	4.19	FZ020N	1.20
FP41TN2	1.4	FR24E2	1.8	FW624FD	4.20	FZ021B	1.4, 4.24
FP42TN2	1.4	FR24G1	1.8	FW624WT	4.19	FZ021N	1.16, 4.24
FP43TN2	1.4	FR24G2	1.8	FW636FD	4.20	FZ021NV	4.24
FP44TN2	1.4	FR24K1	1.8	FW636WT	4.19	FZ021R	1.52
FP45TN2	1.4	FR24K2	1.8	FW736FD	4.20	FZ022B	1.4, 4.24
FP51TN2	1.4	FR24V1	1.8	FW736WT	4.19	FZ022N	1.20, 4.24
FP52TN2	1.4	FR24V2	1.8	FWB31	4.21	FZ022NV	4.24
FP53TN2	1.4	FR25E1	1.8	FWB32	4.21	FZ022R	1.52
FP54TN2	1.4	FR25E2	1.8	FWB33	4.21	FZ023B	1.4, 4.24
FP55TN2	1.4	FR25G1	1.8	FWB34	4.21	FZ023N	1.16
FP61TN2	1.4	FR25G2	1.8	FWB41	4.21	FZ023R	1.52
FP62TN2	1.4	FR25K1	1.8	FWB42	4.21	FZ024B	1.4, 4.24
FP63TN2	1.4	FR25K2	1.8	FWB43	4.21	FZ024N	1.20
FP64TN2	1.4	FR25V1	1.8	FWB44	4.21	FZ024R	1.52
FP65TN2	1.4	FR25V2	1.8	FWB51	4.21	FZ025B	1.4
FP71TN2	1.4	FR26E1	1.8	FWB52	4.21	FZ025N	1.20
FP72TN2	1.4	FR26E2	1.8	FWB53	4.21	FZ025R	1.52
FP73TN2	1.4	FR26G1	1.8	FWB54	4.21	FZ026N	1.16
FP74TN2	1.4	FR26G2	1.8	FWB61	4.21	FZ027N	1.20
FP75TN2	1.4	FR26K1	1.8	FWB62	4.21	FZ028N	1.16
FP81TN2	1.4	FR26K2	1.8	FWB63	4.21	FZ029N	1.20
FP82TN2	1.4	FR26V1	1.8	FWB64	4.21	FZ030N	1.20
FP83TN2	1.4	FR26V2	1.8	FWB71	4.21	FZ031N	1.16
FP84TN2	1.4	FR31E	1.5	FWB72	4.21	FZ031R	1.6
FP85TN2	1.4	FR32E	1.5	FWB73	4.21	FZ032N	1.20
FP91TN2	1.4	FR33E	1.5	FWB74	4.21	FZ032R	1.6

FZ033N	1.16	FZ355	1.13	FZ453N	1.13	FZ739C	1.34
FZ033R	1.6	FZ35B	1.4	FZ454	1.13	FZ757A4	1.31
FZ034N	1.20	FZ360	1.22	FZ455N	1.13	FZ757A5	1.31
FZ034R	1.6	FZ361	1.22	FZ456	1.13	FZ757M	1.31
FZ035N	1.20	FZ362	1.22	FZ457	1.13	FZ760E	1.81
FZ035R	1.6	FZ363N	1.22	FZ45B	1.4	FZ767	1.81
FZ041R	1.6	FZ364	1.22	FZ460N	1.21	FZ771A	1.29
FZ042R	1.6	FZ365N	1.22	FZ466N	1.21	FZ772A	1.29
FZ043R	1.6	FZ366	1.22	FZ468N	1.21	FZ773A	1.29
FZ044R	1.6	FZ367	1.22	FZ501N	1.15	FZ774A	1.29
FZ045R	1.6	FZ368	1.22	FZ502	1.38	FZ775A	1.29
FZ051R	1.6	FZ369	1.22	FZ502N	1.15	FZ776A	1.29
FZ052R	1.6	FZ36H	4.20	FZ503	1.38	FZ7801	1.34
FZ053R	1.6	FZ370	1.22	FZ503N	1.15	FZ7811	1.34
FZ054R	1.6	FZ371	1.22	FZ504N	1.15	FZ7821	1.34
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FZ062R	1.6	FZ374	1.22	FZ515	1.75	FZ794	1.18, 4.23
FZ063R	1.6	FZ375	1.23	FZ516	1.75	FZ795	1.68
FZ064R	1.6	FZ380	1.23	FZ517	1.75	FZ797A	1.34
FZ065R	1.6	FZ401	1.19, 4.25	FZ518N	1.14	FZ799N	1.19, 4.23
FZ071R	1.6	FZ402	1.32	FZ519	1.28	FZ800A	1.31
FZ072R	1.6	FZ403	1.69, 4.23	FZ51B	1.4	FZ800B	1.31
FZ073R	1.6	FZ404	1.32	FZ520	1.28	FZ800C	1.31
FZ074R	1.6	FZ406M	1.32	FZ52B	1.4	FZ800D	1.31
FZ075R	1.6	FZ407M	1.32	FZ530	1.28	FZ800E	1.31
FZ081R	1.6	FZ408M	1.32	FZ530N	1.14	FZ800F	1.31
FZ082R	1.6	FZ409M	1.33	FZ531	1.28	FZ801	1.39
FZ083R	1.6	FZ410M	1.33	FZ531N	1.14	FZ801A	1.34
FZ084R	1.6	FZ411M	1.33	FZ532	1.28	FZ801B	1.34
FZ085R	1.6	FZ412M	1.33	FZ532N	1.14	FZ803B	1.19, 4.23
FZ091R	1.6	FZ413M	1.32	FZ533	1.28	FZ818	1.31
FZ092R	1.6	FZ415E	1.32	FZ533N	1.14	FZ821N	1.14, 4.23
FZ093R	1.6	FZ415N	1.48	FZ534	1.38	FZ822N	1.14, 4.23
FZ094R	1.6	FZ415S	1.32	FZ534N	1.14	FZ823N	1.14, 4.23
FZ095R	1.6	FZ417	1.33	FZ535	1.38	FZ824N	1.14, 4.23
FZ102N	1.16, 4.25	FZ41B	1.4	FZ535N	1.14	FZ829	1.35
FZ105N	4.25	FZ420	1.22	FZ537	1.28	FZ831	1.35
FZ106N	1.16, 4.25	FZ421A	1.33	FZ539	1.14	FZ833N	1.14
FZ107N	4.25	FZ422	1.32	FZ53B	1.4	FZ834N	1.14
FZ108N	4.25	FZ424N	1.21	FZ548N	1.15	FZ835N	1.14
FZ110N	1.16, 4.25	FZ425	1.21, 4.25	FZ54B	1.4	FZ836N	1.14
FZ11B	1.4, 4.24	FZ426	1.21	FZ55B	1.4	FZ837N	1.14
FZ12B	1.4, 4.24	FZ427L	1.21	FZ596	1.13	FZ838N	1.14
FZ12H	4.20	FZ427R	1.21	FZ597	1.68, 4.20	FZ839N	1.14
FZ13B	1.4, 4.24	FZ428	1.19, 4.25	FZ597N	1.13, 4.23	FZ8441	1.34
FZ14B	1.4, 4.24	FZ42B	1.4	FZ598N	1.13, 4.25	FZ8451	1.34
FZ15B	1.4	FZ435A	1.33	FZ631A	1.50	FZ8461	1.34
FZ164N	1.16	FZ43B	1.4	FZ632A	1.50	FZ850	1.75
FZ191N	1.16	FZ441	1.13	FZ633A	1.50	FZ850M	1.21
FZ192N	1.16	FZ441B	1.15	FZ634A	1.50	FZ850S	1.18
FZ193N	1.16	FZ441N	1.13	FZ635A	1.50	FZ851	1.34
FZ194N	1.16	FZ441S	1.15	FZ636A	1.50	FZ890N	1.19, 4.23
FZ199N	1.20	FZ442	1.13	FZ641A	1.50		
FZ200N	1.20	FZ442B	1.15	FZ642A	1.50		
FZ201N	1.20	FZ442N	1.13	FZ643A	1.50		
FZ202N	1.20	FZ442S	1.15	FZ644A	1.50		
FZ203N	1.20	FZ443	1.13	FZ645A	1.50	GD102N	4.13
FZ204N	1.20	FZ443B	1.15	FZ646A	1.50	GD104N	4.13
FZ205N	1.20	FZ443N	1.13	FZ651A	1.50	GD106N	4.13
FZ206N	1.20	FZ443S	1.15	FZ652A	1.50	GD108N	4.13
FZ21B	1.4, 4.24	FZ444	1.13	FZ653A	1.50	GD110N	4.13
FZ226	1.14, 4.23	FZ444B	1.15	FZ654A	1.50	GD113H	4.11
FZ226N	1.20	FZ444N	1.13	FZ655A	1.50	GD118A	4.12
FZ227N	1.20	FZ444S	1.15	FZ656A	1.50	GD213H	4.11
FZ22B	1.4, 4.24	FZ445	1.13	FZ661A	1.50	GD218A	4.12
FZ230A	1.36	FZ445B	1.15	FZ662A	1.50	GD313H	4.11
FZ230B	1.36	FZ445N	1.13	FZ663A	1.50	GD318A	4.12
FZ23B	1.4, 4.24	FZ448	1.32	FZ664A	1.50	GD413H	4.11
FZ24B	1.4, 4.24	FZ449	1.68	FZ665A	1.50	GD418A	4.12
FZ24H	4.20	FZ449N	1.13	FZ666A	1.50	GP102P	4.13
FZ25B	1.4	FZ44B	1.4	FZ680	1.111	GP102T	4.13
FZ31B	1.4, 4.24	FZ44N	1.13	FZ707	1.18, 4.23	GP104P	4.13
FZ32B	1.4, 4.24	FZ450	1.68	FZ714	1.15	GP104T	4.13
FZ33B	1.4, 4.24	FZ450N	1.13	FZ721A	1.28	GP106P	4.13
FZ34B	1.4, 4.24	FZ451	1.68	FZ721B	1.28	GP106T	4.13
FZ351	1.13	FZ451N	1.13	FZ737B	1.15	GP108P	4.13
FZ352	1.13	FZ452	1.68	FZ738	1.15	GP108T	4.13
FZ353	1.13	FZ452N	1.13	FZ739A	1.34	GP110P	4.13
FZ354	1.13	FZ453	1.68	FZ739B	1.34	GP110T	4.13
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GP113T	4.11, 4.5	HAE312	1.181	HED251H	1.170	HIC406A	1.187
GP118P	4.12	HAE316	1.181	HED400H	1.170	HIC408A	1.187
GP118T	4.12	HAE410	1.181	HED401H	1.170	HIC410A	1.187
GP213P	4.11, 4.5	HAE412	1.181	HED630H	1.170	HIC412A	1.187
GP213T	4.11, 4.5	HAE416	1.181	HED631H	1.170	HIC412E	1.188
GP218P	4.12	HAL70	5.46	HEE800H	1.173	HIC412G	1.188
GP218T	4.12	HAL72	5.46	HEE801H	1.173	HIC416A	1.187
GP313P	4.11, 4.5	HBA125H	1.161	HEE970H	1.173	HIC416E	1.188
GP313T	4.11, 4.5	HBA126H	1.161	HEE971H	1.173	HIC416G	1.188
GP318P	4.12	HBA127H	1.161	HEF980H	1.176	HIC420E	1.188
GP318T	4.12	HBA128H	1.161	HEF981H	1.176	HIC420G	1.188
GP413P	4.11	HBA160H	1.161	HEF990H	1.176	HIC425G	1.188
GP413T	4.11	HBA161H	1.161	HEF991H	1.176	HIC440E	1.188
GP418P	4.12	HBB161H	1.164	HFD306	1.183	HIC440G	1.188
GP418T	4.12	HBB251H	1.164	HFD312	1.183	HIC463E	1.188
GS113D	4.11, 4.5	HBD401H	1.170	HFD316	1.183	HIC463G	1.188
GS118D	4.12	HBD631H	1.170	HFD325	1.183	HIC480E	1.188
GS213D	4.11, 4.5	HCA125H	1.161	HFD340	1.183	HIC480G	1.188
GS218D	4.12	HCA126H	1.161	HFD363	1.183	HIC490E	1.188
GS313D	4.11, 4.5	HCA160H	1.161	HFD406	1.183	HIC490G	1.188
GS318D	4.12	HCA161H	1.161	HFD412	1.183	HIC491E	1.188
GS413D	4.11	HCB250H	1.164	HFD416	1.183	HIC491G	1.188
GS418D	4.12	HCB251H	1.164	HFD425	1.183	HIC492E	1.188
GZ04E	4.13	HCD400H	1.170	HFD440	1.183	HIC492G	1.188
GZ04N	4.13	HCD401H	1.170	HFD463	1.183	HIC493E	1.188
GZ07E	4.13	HCD630H	1.170	HHA014Z	1.130	HIC493G	1.188
GZ07N	4.13	HCD631H	1.170	HHA018Z	1.130	HIC494E	1.188
GZ104S	4.13	HCE800H	1.173	HHA023Z	1.130	HIC494G	1.188
GZ106S	4.13	HCE801H	1.173	HHA025H	1.160	HIC495E	1.188
GZ108S	4.13	HCE970H	1.173	HHA025U	1.130	HIC495G	1.188
GZ110S	4.13	HCE971H	1.173	HHA026H	1.160	HIM302	1.185
GZ30A	2.41	HCF980H	1.176	HHA030Z	1.130	HIM304	1.185
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		HCF990H	1.176	HHA040H	1.160	HIM308	1.185
		HCF991H	1.176	HHA040U	1.130	HIM402	1.185
		HDA014Z	1.130	HHA041H	1.160	HIM404	1.185
		HDA016L	1.160	HHA048Z	1.130	HIM406	1.185
		HDA017L	1.160	HHA061Z	1.130	HIM408	1.185
		HDA018Z	1.130	HHA063H	1.160	HMB180	1.147
		HDA020L	1.160	HHA063U	1.130	HMB190	1.147
		HDA021L	1.160	HHA064H	1.160	HMB199	1.147
		HDA023Z	1.130	HHA078Z	1.130	HMB280	1.147
		HDA025L	1.160	HHA080H	1.160	HMB290	1.147
		HDA025U	1.130	HHA080U	1.130	HMB299	1.147
		HDA026L	1.160	HHA081H	1.160	HMB380	1.147
		HDA030Z	1.130	HHA098Z	1.130	HMB390	1.147
		HDA032L	1.160	HHA100H	1.160	HMB480	1.147
		HDA033L	1.160	HHA100U	1.130	HMB490	1.147
		HDA038Z	1.130	HHA101H	1.160	HMB499	1.147
		HDA040L	1.160	HHA123Z	1.130	HMC180	1.123
		HDA040U	1.130	HHA125H	1.160	HMC190	1.123
		HDA041L	1.160	HHA125U	1.130	HMC199	1.123
		HDA048Z	1.130	HHA126H	1.160	HMC280	1.147
		HDA050L	1.160	HHA160H	1.160	HMC290	1.147
		HDA051L	1.160	HHA161H	1.160	HMC299	1.147
		HDA061Z	1.130	HI405R	1.185	HMC380	1.123
		HDA063L	1.160	HI406R	1.185	HMC390	1.123
		HDA063U	1.130	HI451	1.186	HMC399	1.123
		HDA064L	1.160	HI452	1.186	HMC480	1.147
		HDA078Z	1.130	HI454	1.186	HMC490	1.147
		HDA080L	1.160	HI456	1.186	HMC499	1.147
		HDA080U	1.130	HI458	1.186	HMD180	1.123
		HDA081L	1.160	HI460	1.186	HMD190	1.123
		HDA098Z	1.130	HI462	1.186	HMD199	1.123
		HDA100L	1.160	HI464	1.186	HMD280	1.147
		HDA100U	1.130	HIB412M	1.188	HMD290	1.147
		HDA101L	1.160	HIB416M	1.188	HMD299	1.147
		HDA123Z	1.130	HIB420M	1.188	HMD380	1.123
		HDA125L	1.160	HIB425M	1.188	HMD390	1.123
		HDA125U	1.130	HIB440M	1.188	HMD399	1.123
		HDA126L	1.160	HIB463M	1.188	HMD480	1.147
		HDA160L	1.160	HIB480M	1.188	HMD490	1.147
		HDA161L	1.160	HIB490M	1.188	HMD499	1.147
		HE47SN-IRL	4.19	HIB491M	1.188	HNA025H	1.161
		HEC040H	1.167	HIB492M	1.188	HNA026H	1.161
		HEC041H	1.167	HIB493M	1.188	HNA040H	1.161
		HEC125H	1.167	HIB494M	1.188	HNA041H	1.161
		HEC126H	1.167	HIB495M	1.188	HNA063H	1.161
		HEC250H	1.167	HIC225E	1.188	HNA064H	1.161
		HEC251H	1.167	HIC402A	1.187	HNA080H	1.161
		HED250H	1.170	HIC404A	1.187	HNA081H	1.161

H

HNA100H	1.161	HXB069H	1.166	HYA023H	1.163	HYE032H	1.175
HNA101H	1.161	HXB070H	1.166	HYA024H	1.163	HYE033H	1.175
HNA125H	1.161	HXB071H	1.166	HYA027H	1.163	HYE034H	1.175
HNA126H	1.161	HXC001H	1.168	HYA028H	1.163	HYG021H	1.169
HNA160H	1.161	HXC002H	1.168	HYA029H	1.130	HYG022H	1.169
HNA161H	1.161	HXC003H	1.168	HYA033H	1.163	HYG041H	1.169
HNB100H	1.134	HXC004H	1.168	HYA035H	1.163	HZ022	1.181
HNB101H	1.164	HXC005H	1.168	HYA036H	1.163	HZ023	1.182
HNB125H	1.134	HXC008H	1.168	HYA086H	1.163	HZ033	1.182
HNB126H	1.164	HXC011H	1.168	HYA087H	1.163	HZ034	1.182
HNB160H	1.134	HXC013H	1.168	HYA088H	1.163	HZ035	1.182
HNB161H	1.164	HXC014H	1.168	HYA089H	1.163	HZ036	1.182
HNB200H	1.134	HXC015H	1.168	HYA090H	1.163	HZ037	1.182
HNB201H	1.164	HXC018H	1.168	HYA091H	1.163	HZ043	1.182
HNB250H	1.134	HXC019H	1.168	HYB001H	1.166	HZ044	1.182
HNB251H	1.164	HXC021H	1.168	HYB002H	1.166	HZ045	1.182
HNC040H	1.167	HXC024H	1.168	HYB005H	1.166	HZ046	1.182
HNC041H	1.167	HXC025H	1.171	HYB006H	1.166	HZ047	1.182
HNC125H	1.167	HXC026H	1.171	HYB010H	1.166	HZ062	1.181
HNC126H	1.167	HXC030H	1.168	HYB011H	1.166	HZ082	1.181
HNC250H	1.167	HXC039H	1.169	HYB012H	1.166	HZ092	1.185
HNC251H	1.167	HXC040H	1.169	HYB019H	1.163	HZ093	1.181
HND250H	1.170	HXC042H	1.169	HYB021H	1.166	HZ095	1.181
HND251H	1.170	HXC051H	1.168	HYB022H	1.166	HZ096	1.181
HND400H	1.170	HXC053H	1.168	HYB023H	1.166	HZ156	1.186
HND401H	1.170	HXC054H	1.168	HYB024H	1.166	HZ156R	1.185
HND630H	1.170	HXC055H	1.168	HYB025H	1.166	HZ157	1.186
HND631H	1.170	HXC065H	1.169	HYB026H	1.166	HZ158	1.186
HNE800H	1.173	HXC066H	1.169	HYB027H	1.166	HZ159	1.186
HNE801H	1.173	HXD030H	1.171	HYB028H	1.166	HZ160	1.186
HNE970H	1.173	HXD031H	1.171	HYB031H	1.166	HZ160M	1.186
HNE971H	1.173	HXD039H	1.132	HYB032H	1.166	HZ160R	1.185
HNF980H	1.176	HXD040H	1.172	HYB092H	1.166	HZ161M	1.186
HNF981H	1.176	HXD042H	1.172	HYB094H	1.166	HZ162	1.188
HNF990H	1.176	HXD051H	1.171	HYC003H	1.169	HZ162M	1.186
HNF991H	1.176	HXD053H	1.171	HYC004H	1.169	HZ163	1.188
HR500	1.159	HXD054H	1.171	HYC010H	1.169	HZ163M	1.186
HR502	1.159	HXD055H	1.171	HYC011H	1.169	HZ164	1.188
HR510	1.159	HXD065H	1.172	HYC019H	1.169	HZ164M	1.186
HR520	1.159	HXD066H	1.172	HYC021H	1.169	HZ166	1.188
HR522	1.159	HXD068H	1.172	HYC022H	1.169	HZC001	1.181
HR523	1.159	HXE011H	1.174	HYC025H	1.169	HZC002	1.182
HR525	1.159	HXE013H	1.174	HYC026H	1.169	HZC003	1.182
HR534	1.159	HXE014H	1.174	HYC027H	1.169	HZC010	1.180
HR700	1.159	HXE015H	1.174	HYC028H	1.169	HZC011	1.180
HR741	1.159	HXE018H	1.174	HYC031H	1.169	HZC014	1.181
HR742	1.159	HXE019H	1.174	HYC032H	1.169	HZC016	1.185
HR743	1.159	HXE030H	1.174	HYC041H	1.169	HZC101	1.182
HR744	1.159	HXE031H	1.174	HYD003H	1.172	HZC102	1.182
HR745	1.159	HXE040H	1.175	HYD004H	1.172	HZC103	1.181
HR822	1.159	HXE042H	1.175	HYD005H	1.172	HZC104	1.181
HR823	1.159	HXE051H	1.174	HYD006H	1.172	HZC105	1.182
HR824	1.159	HXE053H	1.174	HYD007H	1.172	HZC106	1.182
HR830	1.159	HXE054H	1.174	HYD008H	1.172	HZC111	1.180
HR831	1.159	HXE055H	1.174	HYD010H	1.172	HZC112	1.180
HR832	1.159	HXE065H	1.175	HYD011H	1.172	HZC113	1.180
HXA001H	1.162	HXE066H	1.175	HYD012H	1.172	HZC114	1.181
HXA002H	1.162	HXF001H	1.177	HYD013H	1.172	HZC115	1.181
HXA003H	1.162	HXF002H	1.177	HYD014H	1.172	HZC116	1.181
HXA004H	1.162	HXF003H	1.177	HYD015H	1.172	HZC201	1.182
HXA005H	1.162	HXF004H	1.177	HYD019H	1.172	HZC202	1.182
HXA011H	1.162	HXF005H	1.177	HYD021H	1.172	HZC203	1.182
HXA013H	1.162	HXF008H	1.177	HYD022H	1.172	HZC204	1.182
HXA014H	1.162	HXF030H	1.178	HYD023H	1.172	HZC205	1.182
HXA015H	1.162	HXF031H	1.178	HYD024H	1.172	HZC206	1.182
HXA021H	1.162	HXF039H	1.178	HYD025H	1.172	HZC211	1.180
HXA024H	1.162	HXF040H	1.178	HYD026H	1.172	HZC212	1.180
HXA025H	1.162	HXF042H	1.178	HYD027H	1.172	HZC213	1.180
HXA026H	1.162	HXF051H	1.177	HYD028H	1.172	HZC214	1.180
HXA030H	1.162	HXF053H	1.177	HYD031H	1.172	HZC215	1.180
HXA031H	1.162	HXF054H	1.177	HYD032H	1.172	HZC216	1.180
HXA039H	1.130	HXF055H	1.177	HYD033H	1.172	HZC217	1.181
HXA051H	1.162	HY170	1.84	HYD034H	1.172	HZC218	1.181
HXA053H	1.162	HYA005H	1.163	HYD093H	1.172	HZC311	1.180
HXA054H	1.162	HYA006H	1.163	HYD095H	1.172	HZC312	1.180
HXA055H	1.162	HYA013H	1.163	HYD096H	1.172	HZC706	1.185
HXB040H	1.166	HYA014H	1.163	HYD097H	1.172	HZC707	1.186
HXB042H	1.166	HYA015H	1.163	HYD098H	1.172	HZC709	1.185
HXB065H	1.166	HYA019H	1.163	HYE007H	1.175	HZF001	1.183
HXB066H	1.166	HYA021H	1.130	HYE008H	1.175	HZF102	1.183
HXB068H	1.166	HYA022H	1.163	HYE031H	1.175	HZF201	1.137

HZF202	1.137	JF412B	1.131	JG33BLS	1.140	JK108B	1.121
HZF203	1.137	JF412BG	1.131	JG40BLS	1.140	JK108BA3	1.121
HZF204	1.137	JF416B	1.131	JG416DC	1.139	JK108BA3-DK	1.127
HZF205	1.137	JF416BG	1.131	JG41BLS	1.140	JK108BD	1.121
HZF206	1.137	JF418B	1.131	JG425DC	1.139	JK108BDF A3	1.126
HZF207	1.137	JF418BG	1.131	JG440DC	1.139	JK108BDFG	1.126
HZF301	1.137	JF443BM	1.131	JHF80206B	1.135	JK108BF	1.121
HZF302	1.137	JF443BS	1.131	JHF80206BG	1.135	JK108BG	1.121
HZF501	1.183	JF444BD	1.131	JHF80210B	1.135	JK108BSF	1.126
HZF502	1.183	JF444BM	1.131	JHF80210BG	1.135	JK108BSH	1.126
HZF503	1.183	JF444BS	1.131	JHF80404B	1.135	JK110	1.119
HZF504	1.183	JF60204B	1.133	JHF80404BG	1.135	JK11003S	1.122
HZF505	1.183	JF60204BG	1.133	JHF80408B	1.135	JK11004C	1.122
HZI002	1.186	JF608B	1.133	JHF80408BG	1.135	JK11004RH	1.122
HZI003	1.186	JF608BG	1.133	JHF80414B	1.135	JK11004RL	1.122
HZI004	1.185	JF801E	1.131	JHF80414BG	1.135	JK11004RLD	1.122
HZI010	1.188	JF801EG	1.131	JHF80612B	1.135	JK11004RM	1.122
HZI201	1.188	JF801SPD	1.131	JHF80612BG	1.135	JK11004RMD	1.122
HZI202	1.188	JF80206B	1.133	JHF812B	1.135	JK11004S	1.122
HZI203	1.188	JF80206BG	1.133	JHF812BG	1.135	JK11253S	1.122
HZI204	1.188	JF80210B	1.133	JHF818B	1.135	JK11254CO	1.122
HZI205	1.188	JF80210BG	1.133	JHF818BG	1.135	JK11254D	1.122
HZI206	1.188	JF803E	1.131	JHF883BM	1.135	JK11254S	1.122
HZI210	1.187	JF803EG	1.131	JHF884BM	1.135	JK112B	1.121
HZI230	1.187	JF803PM	1.134	JK008	1.120	JK112BA3	1.121
HZI300	1.187	JF80404B	1.133	JK012	1.120	JK112BA3-DK	1.127
HZI400	1.187	JF80404BG	1.133	JK016	1.120	JK112BD	1.121
HZI401	1.187	JF80408B	1.133	JK01B	1.127	JK112BDF A3	1.126
HZI811	1.188	JF80408BG	1.133	JK01DC	1.127	JK112BDFG	1.126
HZI812	1.188	JF80414B	1.133	JK022	1.120	JK112BF	1.121
HZI910	1.188	JF80414BG	1.133	JK024	1.120	JK112BG	1.121
HZI911	1.188	JF805DK	1.132	JK030BEB	1.127	JK112BSF	1.126
		JF805E	1.132	JK032	1.120	JK112BSH	1.126
		JF80612B	1.133	JK044	1.120	JK114	1.119
		JF80612BG	1.133	JK04TC	1.127	JK114AG	1.120
IDCTOOL	5.9, 5.14	JF806DK	1.132	JK04TE	1.127	JK116B	1.121
		JF806E	1.132	JK04TJ	1.127	JK116BA3	1.121
		JF812B	1.133	JK04TK	1.127	JK116BA3-DK	1.127
		JF812BG	1.133	JK04TL	1.127	JK116BD	1.121
J201	5.43	JF818B	1.133	JK04TP	1.127	JK116BDF A3	1.126
J301	5.43	JF818BG	1.133	JK066	1.120	JK116BDFG	1.126
J401	5.43	JF843BM	1.133	JK06TC	1.127	JK116BF	1.121
J501	5.43	JF844BM	1.133	JK06TE	1.127	JK116BG	1.121
J601	5.43	JF844BSW	1.133	JK06TJ	1.127	JK116BSF	1.126
J701	5.43	JF863BM	1.133	JK06TK	1.127	JK116BSH	1.126
J701/TB	5.43	JF864BM	1.133	JK06TL	1.127	JK116E	1.125
J803	5.43	JF864BSW	1.133	JK06TP	1.127	JK116EA3	1.125
J804	5.43	JF884BD	1.133	JK1/2TOPSHROUD	1.127	JK116EA3-DK	1.125
JAB402B	1.138	JF95A	1.130	JK1/INCOMSHROUD	1.127	JK116EG	1.125
JAB403B	1.138	JF96BP	1.129	JK1/NEUTRALSHROUD	1.127	JK118B	1.121
JAB406B	1.138	JFB202U	1.137	JK100HK	1.127	JK118BA3	1.121
JAB410B	1.138	JFB203U	1.137	JK100TAP	1.127	JK118BA3-DK	1.127
JAC316	1.138	JFB302U	1.137	JK101BSH	1.126	JK118BG	1.121
JAC412B	1.138	JFB303U	1.137	JK101DK	1.125	JK120	1.119
JAC416	1.138	JFB402U	1.137	JK101SE	1.125	JK124B	1.121
JAE320	1.138	JFB403U	1.137	JK102DK	1.125	JK124BA3	1.121
JAE325	1.138	JFD206U	1.137	JK102LE	1.125	JK124BA3-DK	1.127
JAE420	1.138	JFD306U	1.137	JK104	1.119	JK124BG	1.121
JAE425	1.138	JFD406U	1.137	JK104B	1.121	JK125BSP	1.127
JAG331	1.138	JFE210U	1.137	JK104BA3	1.121	JK128	1.119
JAG340	1.138	JFE310U	1.137	JK104BA3-DK	1.127	JK129AG	1.120
JAG431	1.138	JFE410U	1.137	JK104BD	1.121	JK132E	1.125
JAG440	1.138	JFG312U	1.137	JK104BDF A3	1.126	JK132EA3	1.125
JAH363	1.138	JFG316U	1.137	JK104BDFG	1.126	JK132EA3-DK	1.125
JAH380	1.138	JFG320U	1.137	JK104BF	1.121	JK132EG	1.125
JAH463	1.138	JFG325U	1.137	JK104BG	1.121	JK1PLATEB	1.127
JAH480	1.138	JFG412U	1.137	JK104BSF	1.126	JK1PLATEM	1.127
JC10L	1.137	JFG416U	1.137	JK104BSH	1.126	JK2/INCOMSHROUD	1.127
JC20L	1.137	JFG420U	1.137	JK106	1.119	JK201BSH	1.126
JC40L	1.137	JFG425U	1.137	JK10634C	1.122	JK201SE	1.125
JC60L	1.137	JFH331U	1.137	JK10634RH	1.122	JK20210B	1.123
JC63L	1.137	JFH340U	1.137	JK106B	1.121	JK20210BG	1.123
JE001	1.96	JFH431U	1.137	JK106BA3	1.121	JK20210BGSD	1.123
JE003	1.96	JFH440U	1.137	JK106BA3-DK	1.127	JK20210BSD	1.123
JF003BP	1.135	JFI363U	1.137	JK106BD	1.121	JK20216B	1.123
JF296A	1.130	JFI380U	1.137	JK106BDF A3	1.126	JK20216BG	1.123
JF403PM	1.132	JFI463U	1.137	JK106BDFG	1.126	JK20216BGSD	1.123
JF406B	1.131	JFI480U	1.137	JK106BF	1.121	JK20216BSD	1.123
JF406BG	1.131	JFPLATE	1.130	JK106BG	1.121	JK20220B	1.123
JF408B	1.131	JG31BLS	1.140	JK106BSF	1.126	JK20220BG	1.123
JF408BG	1.131	JG32BLS	1.140	JK106BSH	1.126	JK20220BGSD	1.123

JK20220BSD	1.123	JKD1164PM	1.121	K159	2.39	K7Z5M15P	3.6
JK202LE	1.125	JKD125PM	1.122	K160	2.39	KB163N	2.31, 4.10, 4.5
JK208B	1.123	JKD125TPM	1.122	K162	2.39	KB163P	2.31, 4.10, 4.5
JK208BA3	1.123	JKD1416PM	1.121	K7A10M15P	3.6	KB190B	2.31
JK208BA3-DK	1.127	JKD146PM	1.121	K7A5M15P	3.6	KB190C	2.31
JK208BDFA3	1.126	JKD164PM	1.121	K7B1M075W	3.4	KB263A	2.31
JK208BDFG	1.126	JKD166PM	1.121	K7B1M075WPCR	3.3	KB263C	2.31
JK208BG	1.123	JKD168PM	1.121	K7B1M1W	3.4	KB280B	2.31
JK208BSF	1.126	JKD1812PM	1.121	K7B3M075W	3.4	KB363A	2.31
JK208BSH	1.126	JKD186PM	1.121	K7B3M075WPCR	3.3	KB363C	2.31
JK21253M	1.124	JKD188PM	1.121	K7B3M15W	3.4	KB380B	2.31
JK21254M	1.124	JKD250PM	1.124	K7B3M1W	3.4	KB463A	2.31
JK212B	1.123	JKD250TPM	1.124	K7B5M075W	3.4	KB463C	2.31
JK212BA3	1.123	JKD2884PM	1.123	K7B5M15W	3.4	KB480B	2.31
JK212BA3-DK	1.127	JKLABELPACK	1.127	K7B5M1W	3.4	KD190B	2.31
JK212BDFA3	1.126	JN001BP	1.130	K7B7M075W	3.4	KDN263B	2.31
JK212BDFG	1.126	JN11004SM	1.129	K7B7M1W	3.4	KDN363B	2.31
JK212BG	1.123	JN12506SM	1.129	K7D10M15W	3.5	KDN451D	2.31
JK212BSF	1.126	JN15508SM	1.129	K7D15M15W	3.5	KDN451E	2.31
JK212BSH	1.126	JN201BE	1.130	K7D5M15W	3.5	KDN463B	2.31
JK21604C	1.124	JN201BEG	1.130	K7E11M15W	3.4	KF82A	2.31
JK216B	1.123	JN201NS	1.130	K7E3M15W	3.4	KF83A	2.31
JK216BA3	1.123	JN201SPD	1.129	K7E5M15W	3.4	KF83B	2.31
JK216BA3-DK	1.127	JN202SPD	1.129	K7E7M15W	3.4	KF83C	2.31
JK216BDFA3	1.126	JN203BE	1.130	K7F10M1W	3.5	KF83D	2.31
JK216BDFG	1.126	JN203BEG	1.130	K7F15M1W	3.5	KF84A	2.31
JK216BG	1.123	JN204B	1.129	K7F5M1W	3.5	KJ02A	1.93, 2.32
JK216BSF	1.126	JN204BG	1.129	K7G10M15P	3.6	KJ02B	1.93, 2.32
JK216BSH	1.126	JN205BE	1.130	K7G5M15P	3.6	KJ02C	1.93, 2.32
JK216E	1.125	JN205DK	1.130	K7J1M075W	3.4	KJ02D	1.93, 2.32
JK216EA3	1.125	JN206B	1.129	K7J1M075WPCR	3.3	KJ02E	2.32
JK216EA3-DK	1.125	JN206BE	1.130	K7J1M1W	3.4	KJ03A	1.93, 2.32
JK216EG	1.125	JN206BG	1.129	K7J3M075W	3.4	KJ03B	1.93, 2.32
JK218B	1.123	JN206DK	1.130	K7J3M075WPCR	3.3	KJ07NB	2.32
JK218BA3	1.123	JN208B	1.129	K7J3M15P	3.4	KJ100A	2.32
JK218BA3-DK	1.127	JN208BG	1.129	K7J3M15W	3.4	KJ125B	2.32
JK218BDFA3	1.126	JN212B	1.129	K7J3M1W	3.4	KJ12NB	2.32
JK218BDFG	1.126	JN212BG	1.129	K7J5M075W	3.4	KJ15NB	2.32
JK218BG	1.123	JN216B	1.129	K7J5M15P	3.4	KJ160A	2.32
JK218BSF	1.126	JN216BG	1.129	K7J5M15W	3.4	KLCM-10S	3.12
JK218BSH	1.126	JN223BM	1.129	K7J5M1W	3.4	KLCM-30S	3.12
JK222PK	1.127	JN223BS	1.129	K7J7M075W	3.4	KLCM412P	3.12
JK224B	1.123	JN224BD	1.129	K7J7M15P	3.4	KLCM413W	3.12
JK224BA3	1.123	JN224BM	1.129	K7J7M1W	3.4	KLCM413WIET	3.12
JK224BA3-DK	1.127	JN224BS	1.129	K7J9M075W	3.4	KLCM-50S	3.12
JK224BDFA3	1.126	JN2PLATE	1.130	K7J9M1W	3.4	KLCM-OS	3.12
JK224BDFG	1.126	JN3003TM	1.129	K7K5M15P	3.6	KLDS10	3.13
JK224BG	1.123	JN300CF	1.129	K7P1M075W	3.5	KLDS12	3.13
JK224BSF	1.126	JN4506TM	1.129	K7P1M075WPCR	3.3	KLDS4	3.13
JK224BSH	1.126	JN450CF	1.129	K7P1M15W	3.5	KLDS6	3.13
JK22503M	1.124	JN9502SM	1.129	K7P1M1W	3.5	KLDS6BLACK	3.13
JK22503S	1.124	JP015	4.12	K7P3M075W	3.5	KLDS8	3.13
JK22504D	1.124	JP024	1.96	K7P3M075WPCR	3.3	KLMB10W	3.3
JK22504M	1.124	JZA700	1.138	K7P3M15W	3.5	KLMB11P	3.3
JK22504MCS	1.124	JZA701	1.137	K7P3M1W	3.5	KLMB12W	3.3
JK232E	1.125	JZA702	1.137	K7P5M075W	3.5	KLMB244W	3.3
JK232EA3	1.125	JZA703	1.137	K7P5M15W	3.5	KLMB244WD	3.3
JK232EA3-DK	1.125			K7P5M1W	3.5	KLMB255W	3.3
JK232EG	1.125	K		K7P7M075W	3.5	KLMB264WD	3.3
JK240PM	1.124			K7P7M15W	3.5	KLMB266W	3.3
JK250BSP	1.127			K7P7M1W	3.5	KLMB284WD	3.3
JK25A	4.31	KK010	2.33	K7PLUG	3.6	KLMB4W	3.3
JK2PLATEB	1.127	K018	2.33	K7PLUGPCR	3.6	KLMB5P	3.3
JK2PLATEM	1.127	K023	2.33	K7T1M075W	3.5	KLMB6W	3.3
JK304H	1.119	K024	2.33	K7T1M075WPCR	3.3	KLMB7P	3.3
JK306H	1.119	K025	2.33	K7T1M1W	3.5	KLMB8W	3.3
JK310H	1.119	K037	2.33	K7T3M075W	3.5	KLMB9P	3.3
JK314H	1.119	K070	1.97	K7T3M075WPCR	3.3	KLO10RJ45G	3.12
JK320H	1.119	K071	1.97	K7T3M15P	3.5	KLO10RJ45R	3.12
JK328H	1.119	K073	1.97	K7T3M15W	3.5	KLO15RJ45G	3.12
JK404H	1.119	K074	1.97	K7T3M1W	3.5	KLO15RJ45R	3.12
JK406H	1.119	K085	2.33	K7T5M075W	3.5	KLO20RJ45G	3.12
JK410H	1.119	K140	2.39	K7T5M15P	3.5	KLO20RJ45R	3.12
JK414H	1.119	K142	2.39, 4.12, 4.18, 4.20, 4.27	K7T5M15W	3.5	KLO30RJ45G	3.12
JK420H	1.119	K143	2.39	K7T5M1W	3.5	KLO30RJ45R	3.12
JK527H	1.119	K144	2.39, 4.12, 4.18, 4.20, 4.27	K7T7M075W	3.5	KLO40RJ45G	3.12
JK706C	1.119	K145	2.39	K7T7M15P	3.5	KLO40RJ45R	3.12
JK710C	1.119	K148	2.39, 4.12, 4.18, 4.20, 4.27	K7T7M1W	3.5	KLO50RJ45G	3.12
JK714C	1.119	K151	2.39	K7W3M075W	3.6	KLO50RJ45R	3.12
JKD11212PM	1.121	K156	2.39, 4.12, 4.18, 4.20, 4.27	K7W5M075W	3.6	KLO5RJ45G	3.12
JKD1128PM	1.121	K158	2.39, 4.12, 4.18, 4.20, 4.27	K7Z3M15P	3.6	KLO5RJ45R	3.12

KLORJ45CON	3.12	KWE01G	2.37	KXA10E	2.35	LS703	1.154
KLPCR7	3.6	KWE01GR	2.37	KXA10L	2.34	LS704	1.154
KM04L	2.39	KWE02B	2.37	KXA10LH	2.34	LS712	1.154
KM05B	4.28	KWE03B	2.37	KXA10N	2.34	LS770	1.154
KM07E	2.39	KWE03G	2.37	KXA10ND	2.35	LS771	1.154
KM07E	4.27	KWE04B	2.37	KXA10NH	2.34	LZ060	2.13
KM07EF	2.40	KWE04G	2.37	KXA16E	2.35	LZ060	2.22
KM07L	2.39	KWE04GR	2.37	KXA16L	2.34		
KM07N	2.39	KWE05B	2.37	KXA16LH	2.34		
KM07N	4.27	KWE05G	2.37	KXA16N	2.34	M	
KM07NF	2.40	KWE06B	2.37	KXA16ND	2.35	MB2	3.16
KM08L	2.39	KWE06G	2.37	KXA16NH	2.34	MB2	5.46
KM10A	2.39	KWE17B	2.37	KXA35L	2.34	MB326E/MT	5.46
KM10B	2.39	KWE21G	2.37	KXA35N	2.34	MBN106W	1.141
KM10C	2.39	KWE22G	2.37	KXB04E	2.35	MBN106W	4.29
KM10E	2.39	KWE24B	2.37	KXB04EX	2.34	MBN110W	1.141
KM10L	2.39	KWE25G	2.37	KXB04F5	2.36	MBN110W	4.29
KM10N	2.39	KWE26G	2.37	KXB04F6	2.36	MBN116W	1.141
KM11B	2.39	KWE27G	2.37	KXB06E	2.35	MBN116W	4.29
KM11E	2.39	KWJ02B10	2.38	KXB10E	2.35	MBN120W	1.141
KM11E	4.27	KWJ02B2	2.38	KXB150LH	2.34	MBN120W	4.29
KM11L	2.39	KWJ02B3	2.38	KXB150NH	2.34	MBN125W	1.141
KM11N	2.39	KWJ02B4	2.38	KXB16E	2.35	MBN125W	4.29
KM11N	4.27	KWJ02B5	2.38	KXB35E	2.35	MBN132W	1.141
KM12EF	2.40	KWJ04A10	2.38	KXB35E1	2.35	MBN132W	4.29
KM12NF	2.40	KWJ04A12	2.38	KXB35LH	2.34	MBN140W	1.141
KM13A	4.28	KWJ04A2	2.38	KXB35NH	2.34	MBN150W	1.141
KM13E	2.39	KWJ04A3	2.38	KXB70LH	2.34	MBN150W	4.29
KM13E	4.27	KWJ04A4	2.38	KXB70NH	2.34	MBN163W	1.141
KM13N	2.39	KWJ04A5	2.38	KZ001	1.93	MBN163W	4.29
KM13N	4.27	KWJ04B10	2.38	KZ001	2.32	MBN206W	1.141
KM17E	2.39	KWJ04B2	2.38	KZ002	1.93	MBN210W	1.141
KM17E	4.27	KWJ04B3	2.38	KZ002	2.32	MBN216W	1.141
KM17N	2.39	KWJ04B4	2.38	KZ004	1.93	MBN220W	1.141
KM17N	4.27	KWJ04B5	2.38	KZ004	2.32	MBN225W	1.141
KM22A	4.28	KWJ06B10	2.38	KZ005	1.93	MBN232W	1.141
KM25A	4.28	KWJ06B2	2.38	KZ005	2.32	MBN240W	1.141
KM25E	2.39	KWJ06B3	2.38	KZ007	1.93	MBN250W	1.141
KM25E	4.27	KWJ06B4	2.38	KZ007	2.32	MBN263W	1.141
KM25N	2.39	KWJ06B5	2.38	KZ012	2.39	MBN306W	1.141
KM25N	4.27	KWJ10B10	2.38	KZ013	2.39	MBN310W	1.141
KN00A	2.41	KWJ10B2	2.38	KZ014	2.39	MBN316W	1.141
KN00A	4.23	KWJ10B3	2.38	KZ021	2.31	MBN320W	1.141
KN04N	2.41	KWJ150C2	2.37	KZ022	2.31	MBN325W	1.141
KN04P	2.41	KWJ150C2	2.38	KZ023A	2.31	MBN332W	1.141
KN06E	2.41	KWJ150C3	2.37	KZ024	2.31	MBN340W	1.141
KN06N	2.41	KWJ150C3	2.38	KZ051	1.93	MBN350W	1.141
KN06P	2.41	KWJ16A10	2.38	KZ051	2.32	MBN363W	1.141
KN07N	2.41	KWJ16A2	2.38	KZ052	1.93	MBN406W	1.141
KN07P	2.41	KWJ16A3	2.38	KZ052	2.32	MBN410W	1.141
KN10E	2.41	KWJ35A10	2.38	KZ059	2.31	MBN416W	1.141
KN10N	2.41	KWJ35A2	2.38	KZ060F	2.40	MBN420W	1.141
KN10P	2.41	KWJ35A3	2.38	KZ074	1.93	MBN425W	1.141
KN14E	2.41	KWJ70C2	2.37	KZ074	2.32	MBN432W	1.141
KN14N	2.41	KWJ70C2	2.38	KZ075	1.93	MBN440W	1.141
KN14P	2.41	KWJ70C3	2.37	KZ075	2.32	MBN450W	1.141
KN18E	2.41	KWJ70C3	2.38			MBN463W	1.141
KN18N	2.41	KWL001	2.37	L		MCN106A	1.141
KN18P	2.41	KWL002	2.37	L501PV	1.155	MCN106A	4.29
KN22E	2.41	KWL003	2.37	L502PV	1.155	MCN110A	1.141
KN22N	2.41	KWL004	2.37	LEL212/6	5.46	MCN110A	4.29
KN22P	2.41	KXA02E	2.35	LF302PV	1.155	MCN116A	1.141
KN26E	2.41	KXA02LH	2.34	LF303PV	1.155	MCN116A	4.29
KN26N	2.41	KXA02LX	2.34	LF304PV	1.155	MCN120A	1.141
KN26P	2.41	KXA02NH	2.34	LF306PV	1.155	MCN120A	4.29
KN99E	2.41	KXA02VB	2.36	LF308PV	1.155	MCN125A	1.141
KN99N	2.41	KXA04I1	2.35	LF310PV	1.155	MCN125A	4.29
KN99P	2.41	KXA04I2	2.35	LF312PV	1.155	MCN132A	1.141
KR15P	1.23	KXA04I3	2.35	LF316PV	1.155	MCN132A	4.29
KR15P	2.33	KXA04I4	2.36	LF320PV	1.155	MCN140A	4.29
KR95P	1.23	KXA04I5	2.36	LR701	1.154	MCN150A	1.141
KR95P	2.33	KXA04I6	2.36	LR702	1.154	MCN150A	4.29
KRN190	1.127	KXA04I7	2.36	LR703	1.154	MCN163A	1.141
KS72B	1.92	KXA04KD	2.36	LR704	1.154	MCN163A	4.29
KS72C	1.92	KXA04LH	2.34	LR712	1.154	MCN206A	1.141
KW16ST	2.38	KXA04LX	2.34	LS670	1.154	MCN210A	1.141
KW1NBB	2.38	KXA04ND	2.35	LS671	1.154	MCN216A	1.141
KW35ST	2.38	KXA04NH	2.34	LS672	1.154	MCN220A	1.141
KWB01	2.38	KXA04VB	2.36	LS701	1.154	MCN225A	1.141
KWB02	2.38	KXA06LH	2.34	LS702	1.154	MCN232A	1.141
KWE01B	2.37	KXA06NH	2.34			MCN240A	1.141

MCN250A	1.141	MU216A	1.142	NBN432A	1.144	NDN216A	1.143
MCN263A	1.141	MU220A	1.142	NBN440A	1.144	NDN220A	1.143
MCN306A	1.141	MU225A	1.142	NBN450A	1.144	NDN225A	1.143
MCN310A	1.141	MU232A	1.142	NBN463A	1.144	NDN232A	1.143
MCN316A	1.141	MU240A	1.142	NCN100A	1.121	NDN240A	1.143
MCN320A	1.141	MU250A	1.142	NCN101A	1.121	NDN250A	1.143
MCN325A	1.141	MU263A	1.142	NCN102A	1.121	NDN263A	1.143
MCN332A	1.141	MU306A	1.142	NCN103A	1.121	NDN300A	1.121
MCN340A	1.141	MU310A	1.142	NCN104A	1.121	NDN301A	1.121
MCN350A	1.141	MU316A	1.142	NCN106A	1.121	NDN302A	1.121
MCN363A	1.141	MU320A	1.142	NCN110A	1.121	NDN303A	1.121
MCN406A	1.141	MU325A	1.142	NCN116A	1.122	NDN304A	1.121
MCN410A	1.141	MU332A	1.142	NCN120A	1.122	NDN306A	1.121
MCN416A	1.141	MU340A	1.142	NCN125A	1.122	NDN310A	1.121
MCN420A	1.141	MU350A	1.142	NCN132A	1.122	NDN316A	1.122
MCN425A	1.141	MU363A	1.142	NCN140A	1.122	NDN320A	1.122
MCN432A	1.141	MU406A	1.142	NCN150A	1.122	NDN325A	1.122
MCN440A	1.141	MU410A	1.142	NCN163A	1.122	NDN332A	1.122
MCN450A	1.141	MU416A	1.142	NCN200A	1.143	NDN340A	1.122
MCN463A	1.141	MU420A	1.142	NCN201A	1.143	NDN350A	1.122
MCU10101B	4.3	MU425A	1.142	NCN202A	1.143	NDN363A	1.122
MCU10101C	4.3	MU432A	1.142	NCN203A	1.143	NDN400A	1.144
MCU63	4.4	MU440A	1.142	NCN204A	1.143	NDN401A	1.144
MCU64	4.4	MU450A	1.142	NCN206A	1.143	NDN402A	1.144
MES-LSTI7035	1.31	MU463A	1.142	NCN210A	1.143	NDN403A	1.144
MES-PHZ3K7	1.28	MZ201	1.153	NCN216A	1.143	NDN404A	1.144
MES-PHZ4K8	1.28	MZ202	1.153	NCN220A	1.143	NDN406A	1.144
MES-PHZDB3	1.28	MZ203	1.153	NCN225A	1.143	NDN410A	1.144
MLN706A	1.148	MZ204	1.153	NCN232A	1.143	NDN416A	1.144
MLN710A	1.148	MZ205	1.153	NCN240A	1.143	NDN420A	1.144
MLN716A	1.148	MZ206	1.153	NCN250A	1.143	NDN425A	1.144
MLN720A	1.148	MZ212	1.153	NCN263A	1.143	NDN432A	1.144
MLN732A	1.148	MZN120	2.10	NCN300A	1.121	NDN440A	1.144
MLN740A	1.148	MZN120	4.36	NCN301A	1.121	NDN450A	1.144
MT106A	1.142	MZN121	2.10	NCN302A	1.121	NDN463A	1.144
MT110A	1.142	MZN121	4.36	NCN303A	1.121		
MT116A	1.142	MZN130	1.147	NCN304A	1.121		
MT120A	1.142	MZN131	1.147	NCN306A	1.121		
MT125A	1.142	MZN175	1.149	NCN310A	1.121	P	
MT132A	1.142	MZN175	2.10	NCN316A	1.122	P031	4.12
MT140A	1.142	MZN175	4.31	NCN320A	1.122	P031F	4.11
MT150A	1.142	MZN175	4.36	NCN325A	1.122	P031F	4.55
MT163A	1.142	MZN176	1.153	NCN332A	1.122	P032	4.12
MT206A	1.142	MZN177	1.153	NCN340A	1.122	P032F	4.11
MT210A	1.142			NCN340A	1.122	P032F	4.5
MT216A	1.142			NCN350A	1.122	P22	3.15
MT220A	1.142			NCN363A	1.122	P22/1.0	3.14
MT225A	1.142			NCN400A	1.144	P22/1.0LSF/2	3.14
MT232A	1.142	N75B	1.24	NCN401A	1.144	P22/1.0LSF/3	3.14
MT240A	1.142	NBN106A	1.121	NCN402A	1.144	P22/1.0LSF/4	3.14
MT250A	1.142	NBN110A	1.121	NCN403A	1.144	P22/1.0LSF/5	3.14
MT263A	1.142	NBN116A	1.122	NCN404A	1.144	P22/1.0PVC/2	3.14
MT306A	1.142	NBN120A	1.122	NCN406A	1.144	P22/1.0PVC/3	3.14
MT310A	1.142	NBN125A	1.122	NCN410A	1.144	P22/1.0PVC/4	3.14
MT316A	1.142	NBN132A	1.122	NCN416A	1.144	P22/1.0PVC/5	3.14
MT320A	1.142	NBN140A	1.122	NCN420A	1.144	P22/2.0	3.14
MT325A	1.142	NBN150A	1.122	NCN425A	1.144	P22/3.0	3.14
MT332A	1.142	NBN163A	1.122	NCN432A	1.144	P22/4.0	3.14
MT340A	1.142	NBN163R	1.143	NCN440A	1.144	P22/LSF/1.0	3.14
MT350A	1.142	NBN206A	1.143	NCN450A	1.144	P22/LSF/2.0	3.14
MT363A	1.142	NBN210A	1.143	NCN463A	1.144	P22/LSF/3.0	3.14
MU106A	1.142	NBN216A	1.143	NDN100A	1.121	P22/LSF/4.0	3.14
MU106A	4.29	NBN220A	1.143	NDN101A	1.121	P22BLACK	3.15
MU110A	1.142	NBN225A	1.143	NDN102A	1.121	P64AX	3.15
MU110A	4.29	NBN232A	1.143	NDN103A	1.121	P64AX/1.0	3.14
MU116A	1.142	NBN240A	1.143	NDN104A	1.121	P64AX/1.0LSF/2	3.14
MU116A	4.29	NBN250A	1.143	NDN106A	1.121	P64AX/1.0LSF/3	3.14
MU120A	1.142	NBN263A	1.143	NDN110A	1.121	P64AX/1.0LSF/4	3.14
MU120A	4.29	NBN306A	1.121	NDN116A	1.122	P64AX/1.0LSF/5	3.14
MU125A	1.142	NBN310A	1.121	NDN120A	1.122	P64AX/1.0PVC/2	3.14
MU125A	4.29	NBN316A	1.122	NDN125A	1.122	P64AX/1.0PVC/3	3.14
MU132A	1.142	NBN320A	1.122	NDN132A	1.122	P64AX/1.0PVC/4	3.14
MU132A	4.29	NBN325A	1.122	NDN140A	1.122	P64AX/1.0PVC/5	3.14
MU140A	1.142	NBN332A	1.122	NDN150A	1.122	P64AX/2.0	3.14
MU140A	4.29	NBN340A	1.122	NDN163A	1.122	P64AX/3.0	3.14
MU150A	1.142	NBN350A	1.122	NDN200A	1.143	P64AX/4.0	3.14
MU150A	4.29	NBN363A	1.122	NDN201A	1.143	P64AX/LSF/1.0	3.14
MU163A	1.142	NBN406A	1.144	NDN202A	1.143	P64AX/LSF/2.0	3.14
MU163A	4.29	NBN410A	1.144	NDN203A	1.143	P64AX/LSF/3.0	3.14
MU206A	1.142	NBN416A	1.144	NDN204A	1.143	P64AX/LSF/4.0	3.14
MU210A	1.142	NBN420A	1.144	NDN206A	1.143	P64AX/R	3.15
		NBN425A	1.144	NDN210A	1.143	P64AXR/1.0	3.14

P64AXR/1.0LSF/2	3.14	SBM10101SPD	4.3	SBN433	4.33	SFH125	2.11
P64AXR/1.0LSF/3	3.14	SBM216	2.9	SBN440	2.7	SFH125	4.37
P64AXR/1.0LSF/4	3.14	SBM216	4.35	SBN440	4.33	SFH132	2.11
P64AXR/1.0LSF/5	3.14	SBM225	2.9	SBN463	2.7	SFH132	4.37
P64AXR/1.0PVC/2	3.14	SBM225	4.35	SBN463	4.33	SFH225	2.11
P64AXR/1.0PVC/3	3.14	SBM232	2.9	SBN464	2.7	SFH225	4.37
P64AXR/1.0PVC/4	3.14	SBM232	4.35	SBN464	4.33	SFH232	2.11
P64AXR/1.0PVC/5	3.14	SBM700	4.4	SBN480	2.7	SFH232	4.37
P64AXR/2.0	3.14	SBM800	4.4	SBN480	4.33	SFL116	2.11
P64AXR/3.0	3.14	SBM8101	4.3	SBN490	2.7	SFL116	4.37
P64AXR/4.0	3.14	SBM8101SPD	4.3	SBN490	4.33	SFL125	2.11
P64AXR/LSF/1.0	3.14	SBM900	4.4	SBN499	2.7	SFL125	4.37
P64AXR/LSF/2.0	3.14	SBM9101	4.3	SBN499	4.33	SFL132	2.11
P64AXR/LSF/3.0	3.14	SBM9101SPD	4.3	SBR140	2.8	SFL132	4.37
P64AXR/LSF/4.0	3.14	SBN116	2.7	SBR140	4.34	SFL216	2.11
PCR2000	3.15	SBN116	4.33	SBR163	2.8	SFL216	4.37
PCR2000/1.0	3.13	SBN125	2.7	SBR163	4.34	SFL225	2.11
PCR2000/1.0LSF/2	3.13	SBN125	4.33	SBR180	2.8	SFL225	4.37
PCR2000/1.0LSF/3	3.13	SBN132	2.7	SBR180	4.34	SFL232	2.11
PCR2000/1.0LSF/4	3.13	SBN132	4.33	SBR190	2.8	SFL232	4.37
PCR2000/1.0LSF/5	3.13	SBN133	2.7	SBR190	4.34	SFM125	2.11
PCR2000/1.0PVC/2	3.13	SBN133	4.33	SBR199	2.8	SFM125	4.37
PCR2000/1.0PVC/3	3.13	SBN140	2.7	SBR199	4.34	SFM132	2.11
PCR2000/1.0PVC/4	3.13	SBN140	4.33	SBR240	2.8	SFM132	4.37
PCR2000/1.0PVC/5	3.13	SBN163	2.7	SBR240	4.34	SFT125	2.11
PCR2000/2.0	3.13	SBN163	4.33	SBR263	2.8	SFT125	4.37
PCR2000/3.0	3.13	SBN164	2.7	SBR263	4.34	SFT132	2.11
PCR2000/4.0	3.13	SBN164	4.33	SBR280	2.8	SFT132	4.37
PCR2000/LSF/1.0	3.13	SBN180	2.7	SBR280	4.34	SFT140	2.11
PCR2000/LSF/2.0	3.13	SBN180	4.33	SBR290	2.8	SFT140	4.37
PCR2000/LSF/3.0	3.13	SBN190	2.7	SBR290	4.34	SFT225	2.11
PCR2000/LSF/4.0	3.13	SBN190	4.33	SBR299	2.8	SFT225	4.37
PCR2000BLACK	3.15	SBN199	2.7	SBR299	4.34	SFT232	2.11
PULLCORD	5.11, 5.14	SBN199	4.33	SBR340	2.8	SFT232	4.37
		SBN216	2.7	SBR340	4.34	SFT240	2.11
		SBN216	4.33	SBR363	2.8	SFT240	4.37
		SBN225	2.7	SBR363	4.34	SFT340	2.11
		SBN225	4.33	SBR380	2.8	SFT340	4.37
		SBN232	2.7	SBR380	4.34	SFT440	2.11
		SBN232	4.33	SBR390	2.8	SFT440	4.37
		SBN233	2.7	SBR390	4.34	SHN1	4.4
		SBN233	4.33	SBR399	2.8	SHN2	4.4
		SBN240	2.7	SBR399	4.34	SHN3	4.4
		SBN240	4.33	SBR463	2.8	SMC120R	2.3
		SBN263	2.7	SBR463	4.34	SMC120R	2.3
		SBN263	4.33	SBR490	2.8	SMC120R	2.4
		SBN264	2.7	SBR490	4.34	SMC120R	2.5
		SBN264	4.33	SBR499	2.8	SPA201	1.156
		SBN280	2.7	SBR499	4.34	SPA201	4.32
		SBN280	4.33	SBT116	2.9	SPA401	1.156
		SBN290	2.7	SBT116	4.35	SPD008D	4.32
		SBN290	4.33	SBT125	2.9	SPD008N	4.32
		SBN299	2.7	SBT125	4.35	SPD015D	4.32
		SBN299	4.33	SBT132	2.9	SPD040N	4.32
		SBN316	2.7	SBT132	4.35	SPD140D	4.32
		SBN316	4.33	SBT216	2.9	SPD215D	1.156
		SBN325	2.7	SBT216	4.35	SPD215D	4.32
		SBN325	4.33	SBT225	2.9	SPD240D	4.32
		SBN332	2.7	SBT225	4.35	SPD415D	4.32
		SBN332	4.33	SBT232	2.9	SPD440D	4.32
		SBN333	2.7	SBT232	4.35	SPK102	1.157
		SBN333	4.33	SCREWCOVER	5.14	SPK102	4.32
		SBN340	2.7	SEL106T	5.45	SPK103	1.157
		SBN340	4.33	SEL212	5.45	SPK103	4.32
		SBN363	2.7	SEL214	5.45	SPN015D	1.157
		SBN363	4.33	SEL354	5.45	SPN015R	1.157
		SBN364	2.7	SEL96T	5.45	SPN015R	4.32
		SBN364	4.33	SEL96TSC	5.45	SPN023N	1.157
		SBN380	2.7	SF263	2.11	SPN023N	4.32
		SBN380	4.33	SFB116	2.11	SPN040D	1.157
		SBN390	2.7	SFB116	4.37	SPN040D	4.32
		SBN390	4.33	SFB125	2.11	SPN040N	1.157
		SBN399	2.7	SFB125	4.37	SPN040R	1.157
		SBN399	4.33	SFB132	2.11	SPN040R	4.32
		SBN416	2.7	SFB132	4.37	SPN043N	1.157
		SBN416	4.33	SFB216	2.11	SPN065N	1.157
		SBN425	2.7	SFB216	4.37	SPN065N	4.32
		SBN425	4.33	SFB225	2.11	SPN065R	1.157
		SBN432	2.7	SFB225	4.37	SPN065R	4.32
		SBN432	4.33	SFB232	2.11	SPN080	1.157
		SBN433	2.7	SFB232	4.37	SPN080N	1.157

R

RL602	5.46
RL624	5.46

S

S21	3.16
S26	3.16
S26/TC	3.16
S27	3.16
S28	3.16
S35S	4.10
S35S	4.11
S35S	4.23
S35S	4.5
S64AX	3.16
S64BLACK	3.16
S65AX	3.16
SB432PV	1.155
SBB116	2.9
SBB116	4.35
SBB125	2.9
SBB125	4.35
SBB132	2.9
SBB132	4.35
SBB216	2.9
SBB216	4.35
SBB225	2.9
SBB225	4.35
SBB232	2.9
SBB232	4.35
SBE1000	4.4
SBE10101	4.3
SBE10101SPD	4.3
SBE700	4.4
SBE7101	4.3
SBE800	4.4
SBE8101	4.3
SBE8101SPD	4.3
SBE900	4.4
SBE9101	4.3
SBE9101SPD	4.3
SBM1000	4.4
SBM10101	4.3

SPN115D	1.156	SVN222	2.24	UC221	1.84	UC869	1.94
SPN115D	4.32	SVN311	2.23	UC222	1.84	UC870	1.94
SPN115R	1.156	SVN312	2.23	UC223	1.84	UC871	1.94
SPN115R	4.32	SVN321	2.23	UC224	1.84	UC874	1.94
SPN140D	1.156	SVN321	2.23	UC225	1.84	UC875	1.94
SPN203N	1.157	SVN322	2.23	UC226	1.84	UC876	1.94
SPN203N	4.32	SVN331	2.23	UC230	1.84	UC877	1.94
SPN208D	1.156	SVN332	2.23	UC231	1.84	UC879	1.94
SPN208D	4.32	SVN341	2.23	UC232	1.84	UC911	1.96
SPN215R	1.156	SVN342	2.23	UC233	1.84	UC912	1.96
SPN215R	4.32	SVN351	2.23	UC234	1.84	UC915	1.96
SPN240D	1.156	SVN352	2.23	UC235	1.84	UC916	1.96
SPN240R	1.156	SVN371	2.23	UC236	1.84	UC922	1.92
SPN240R	4.32	SVN371	2.23	UC239	1.84	UC951	1.95
SPN265R	1.156	SVN373	2.23	UC268	1.95	UC960	1.84
SPN265R	4.32	SVN391	2.23	UC270	1.84	UC962	1.95
SPN325	1.155	SVN411	2.23	UC288	1.91	UC964	1.84
SPN403N	1.157	SVN413	2.23	UC289	1.96	UC966	1.92
SPN408D	1.156	SVN422	2.23	UC310H	1.84	UC967	1.92
SPN408D	4.32	SVN432	2.23	UC311H	1.84	UC969	1.95
SPN415D	1.156	SVN433	2.23	UC312H	1.85	UC971	1.97
SPN415R	1.156	SVN441	2.23	UC313H	1.85	UC972	1.97
SPN415R	4.32	SVN452	2.23	UC314H	1.85	UC975	1.97
SPN440D	1.156	SVN461	2.23	UC320H	1.85	UC975S	1.97
SPN440R	1.156	SVN462	2.23	UC321H	1.85	UC976	1.97
SPN440R	4.32	SVN463	2.23	UC321HM	1.85	UC976S	1.97
SPN465R	1.156	SVN464	2.23	UC322H	1.85	UC988	1.91
SPN465R	4.32			UC322HM	1.85	UC990	1.97
SPN504	4.32	T		UC323H	1.85	UC991	1.97
SPN505	4.32			UC324H	1.85	UC992	1.97
SPN801	1.156	TTCC510S	3.7	UC330H	1.85	UD01F1	1.56
SPN801R	1.156	TKK513PE	3.7	UC332	1.84	UD02F1	1.56
SPN802	1.156	TKK515PE	3.7	UC335	1.84	UD11A1	1.53
SPN802R	1.156	TKK523PE	3.7	UC350H	1.86	UD11B1	1.54
SPV025	1.157	TKK525PE	3.7	UC350HM	1.86	UD11C1	1.56
SPV025E	1.157	TXF121	2.5	UC351H	1.86	UD11F1	1.56
SPV025E	4.32			UC351HM	1.86	UD12A1	1.53
SPV325	1.157	U		UC354H	1.86	UD12B1	1.54
SPV325	4.32			UC355H	1.86	UD12C1	1.56
SRA00505	2.6	U82A	4.23	UC360H	1.86	UD12F1	1.56
SRA01005	2.6	U841Y	1.59	UC360HM	1.86	UD13A1	1.53
SRA01505	2.6	U842B	1.23	UC361H	1.86	UD13B1	1.54
SRA02005	2.6	U850S	4.23	UC361HM	1.86	UD21A1	1.53
SRA02505	2.6	UC001	1.84	UC427H	1.85	UD21A2	1.53
SRC04005	2.6	UC003	1.84	UC427HL	1.87	UD21B1	1.54
SRC06005	2.6	UC005	1.84	UC428H	1.85	UD21B2	1.57
SRD08005	2.6	UC008	1.84	UC428HL	1.87	UD21C1	1.56
SRD10005	2.6	UC009	1.84	UC440H	1.86	UD21F1	1.56
SRD15005	2.6	UC010H	1.85	UC441H	1.86	UD22A1	1.53
SRE20005	2.6	UC011H	1.85	UC441HM	1.86	UD22A2	1.53
SRI03005	2.6	UC012H	1.85	UC442H	1.86	UD22B1	1.54
SRZH01	2.6	UC013HX01	1.85	UC442HM	1.86	UD22C1	1.56
ST301	2.24	UC014H	1.85	UC444H	1.86	UD22F1	1.56
ST303	2.24	UC020H	1.85	UC445H	1.86	UD23A1	1.53
ST305	2.24	UC021H	1.85	UC446H	1.86	UD23B1	1.54
ST309	2.24	UC022H	1.85	UC447H	1.86	UD31A1	1.53
ST310	2.24	UC023H	1.85	UC448H	1.86	UD31A2	1.53
ST312	2.24	UC024H	1.85	UC692	1.84	UD31B1	1.54
ST313	2.24	UC030H	1.85	UC811	1.90	UD31B2	1.57
ST314	2.24	UC050H	1.86	UC812	1.90	UD31C1	1.56
ST315	2.24	UC051H	1.86	UC815	1.91	UD31C2	1.56
SU212	2.25	UC054H	1.86	UC816	1.91	UD31F1	1.56
SU213	2.25	UC055H	1.86	UC820	1.90	UD32A1	1.53
SU214	2.25	UC060H	1.86	UC821	1.90	UD32B1	1.54
SU215	2.25	UC061H	1.86	UC822	1.90	UD32C1	1.56
SVN121	2.24	UC127H	1.85	UC823	1.90	UD32C2	1.56
SVN122	2.24	UC128H	1.85	UC824	1.90	UD32F1	1.56
SVN123	2.24	UC140H	1.86	UC825	1.90	UD33A1	1.53
SVN124	2.24	UC141H	1.86	UC826	1.90	UD33B1	1.54
SVN125	2.24	UC142H	1.86	UC827	1.90	UD33C1	1.56
SVN126	2.24	UC144H	1.86	UC828	1.90	UD33C2	1.56
SVN127	2.24	UC145H	1.86	UC830	1.91	UD41A1	1.53
SVN128	2.24	UC146H	1.86	UC832	1.92	UD41A2	1.53
SVN129	2.24	UC147H	1.86	UC834	1.91	UD41B1	1.54
SVN131	2.24	UC148H	1.86	UC842	1.92	UD41B2	1.57
SVN132	2.24	UC200	1.84	UC844	1.92	UD41F1	1.56
SVN133	2.24	UC201	1.84	UC851	1.92	UD42A1	1.53
SVN134	2.24	UC205	1.84	UC853	1.92	UD42B1	1.54
SVN135	2.24	UC209	1.95	UC855	1.92	UD42C1	1.56
SVN136	2.24	UC220	1.84	UC856E	1.92	UD42F1	1.56
SVN221	2.24			UC868	1.94	UE21D1	1.56

UE21D2	1.56	UN51TN	4.22	UT90F	1.17	UZ32M5	4.22
UE21D3	1.56	UN52TN	4.22	UT90G	1.17	UZ40F1	4.23
UE31D6	1.56	UN61TN	4.22	UT90J	1.17	UZ41M1	1.61
UG42Z1	1.57	UN62TN	4.22	UT90L	1.17	UZ41M5	4.22
UG52Z9	1.57	UN71TN	4.22	UT90R	1.17	UZ41M6	4.22
UG72Z12	1.57	UN72TN	4.22	UT91A	2.40	UZ42M1	1.61
UK21A3	1.55	US01A1	1.58	UW31V	4.22	UZ42M5	4.22
UK21B2	1.55	US02A1	1.58	UW41V	4.22	UZ50A	1.30
UK21B2M	1.55	US11A1	1.58	UW51V	4.22	UZ50AK	1.30
UK21BL2	1.55	US11A1	4.22	UW61V	4.22	UZ50F1	4.23
UK21BL2M	1.55	US11A2	1.58	UW71V	4.22	UZ51M1	1.61
UK21L1A	1.55	US11A3	4.22	UZ005	4.23	UZ51M5	4.22
UK21S1	1.55	US11A5	1.58	UZ006	4.23	UZ52M1	1.61
UK22A2	1.55	US12A1	1.58	UZ009	1.18	UZ52M5	4.22
UK31B3	1.55	US12A1	4.22	UZ00A1	1.60	UZ60F1	4.23
UK31B4	1.55	US12A2	1.58	UZ00A2	1.60	UZ61M1	1.61
UK31B4M	1.55	US12A3	1.58	UZ00A3	1.60	UZ61M5	4.22
UK31BL3	1.55	US13A1	1.58	UZ00A4	1.60	UZ62M1	1.61
UK31C2	1.55	US13A1	4.22	UZ00A5	1.60	UZ62M5	4.22
UK31C2M	1.55	US13A2	1.58	UZ00K1	2.41	UZ70F1	4.23
UK32C2	1.55	US21A1	1.58	UZ00K1	4.23	UZ90T1	1.59
UK32C2M	1.55	US21A1	4.22	UZ00K2	4.23	UZ90T2	1.59
UK32D2	1.55	US21A2	1.58	UZ00VL	1.39		
UK32N1A	1.55	US21A3	4.22	UZ00Z1	1.61		
UK32T1	1.55	US21C2	1.58	UZ00Z2	1.61		
UK41C3	1.55	US21C3	1.58	UZ00Z3	1.61		
UK41C4	1.55	US22A1	1.58	UZ00Z4	1.61		
UK42C5	1.55	US22A1	4.22	UZ010	1.18	VB1000P	4.7
UK42T1	1.55	US22A2	1.58	UZ012	1.18	VB1000T	4.7
UK52X2	1.55	US22A8	1.58	UZ014	1.59	VB10101P	4.6
UL01G1	4.22	US22A9	1.58	UZ015	1.59	VB10101PSPD	4.6
UM05A	1.24	US23A1	1.58	UZ01A1	1.60	VB10101T	4.6
UM05B	1.24	US23A1	4.22	UZ01A2	1.60	VB118J	4.15
UM05C	1.24	US23A2	1.58	UZ01A2	4.23	VB118W	4.15
UM05D	1.24	US31A1	1.58	UZ01B4	1.23	VB218J	4.15
UM05G	1.24	US31A1	4.22	UZ01T1	1.59	VB218W	4.15
UM05H	1.24	US31A2	1.58	UZ01V1	1.96	VB318J	4.15
UM05K	1.24	US31A3	4.22	UZ01V2	4.23	VB318W	4.15
UM05L	1.24	US31B1	1.58	UZ01Z1	1.61	VB418J	4.15
UM21A	1.24	US31B5	1.58	UZ01Z2	1.61	VB418W	4.15
UM21B	1.24	US32A1	1.58	UZ020	1.18	VB700P	4.7
UM22A	1.24	US32A1	4.22	UZ02A1	1.60	VB700T	4.7
UM22B	1.24	US32A2	1.58	UZ02A2	1.60	VB7101P	4.6
UM23A	1.24	US32A8	1.58	UZ02A3	1.60	VB7101PSPD	4.6
UM23B	1.24	US32A9	1.58	UZ02T1	1.59	VB7101T	4.6
UM24A	1.24	US33A1	1.58	UZ02Z1	1.60	VB7101TSPD	4.6
UM24B	1.24	US33A1	4.22	UZ02Z2	1.60	VB800P	4.7
UM25A	1.24	US33A2	1.58	UZ03A1	4.23	VB800T	4.7
UM25B	1.24	US41A1	1.58	UZ03T1	1.59	VB8101P	4.6
UM26A	1.24	US41A1	4.22	UZ03Z1	1.60	VB8101PSPD	4.6
UM26B	1.24	US41A2	1.58	UZ03Z2	1.60	VB8101T	4.6
UM30A1	1.92	US41A5	4.22	UZ04A1	4.23	VB8101TSPD	4.6
UM30A2	1.92	US42A1	1.58	UZ04Z1	1.60	VB900P	4.7
UM30A3	1.92	US42A1	4.22	UZ04Z2	1.60	VB900T	4.7
UM30A4	1.92	US42A2	1.58	UZ05A1	1.60	VB9101P	4.6
UM30A5	1.92	US43A4	1.58	UZ05A1	4.23	VB9101PSPD	4.6
UM92V	1.94	US51A1	1.58	UZ06A1	1.59	VB9101T	4.6
UM92W	1.94	US51A1	4.22	UZ06A1	4.25	VB9101TSPD	4.6
UM92X	1.94	US51A5	4.22	UZ06A2	1.60	VBE800A	4.8
UM92Y	1.94	US52A4	1.58	UZ06Z1	1.59	VBE900A	4.8
UM92Z	1.94	US53A4	1.58	UZ06Z4	1.59	VE103L	4.16
UN02A	1.17	US61A5	4.22	UZ07Z1	1.59	VE106R	4.16
UN03A	1.4	UT12HSV	1.44	UZ100	1.59	VE110L	4.16
UN03A	4.22	UT12L	1.17	UZ21M6	4.22	VE112R	4.16
UN04A	1.4	UT12PN	1.17	UZ21MP	1.43	VE118R	4.16
UN04A	4.22	UT12QN	1.17	UZ22MP	1.43	VE212R	4.16
UN05A	1.4	UT21A	1.31	UZ23MP	1.43	VE218R	4.16
UN05A	4.22	UT21B	1.31	UZ24MP	1.43	VE312R	4.16
UN06A	1.4	UT21C	1.31	UZ25A	1.30	VE318Y	4.16
UN06A	4.22	UT21D	1.31	UZ25AK	1.30	VE412Y	4.16
UN07A	1.4	UT21E	1.31	UZ25MP	1.43	VF1000	4.10
UN07A	4.22	UT21F	1.31	UZ25V1	1.96	VF10101	4.9
UN08A	1.4	UT22B	4.23	UZ25V2	1.96	VF10101SPD	4.9
UN09A	1.4	UT26A	4.23	UZ25V2	4.23	VF104TDI	4.27
UN10A	1.4	UT26B	4.23	UZ30F1	4.23	VF108TDI	4.27
UN11A	1.4	UT50C	1.117	UZ30T1	1.59	VF112TDI	4.27
UN12A	1.44	UT87E	1.83	UZ31M1	1.61	VF122TDI	4.27
UN31TN	4.22	UT88A	1.83	UZ31M5	4.22	VF212TDI	4.27
UN32TN	4.22	UT88B	1.83	UZ31M6	4.22	VF312TDI	4.27
UN41TN	4.22	UT88C	1.83	UZ31T1	1.59	VF412TDI	4.27
UN42TN	4.22	UT88D	1.83	UZ32M1	1.61	VF700	4.10
						VF800	4.10

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VF8101	4.9	VZ418T	4.8	WFDP84BSW	5.23	WFP1PS	5.36
VF8101SPD	4.9	VZ418T	4.15	WFDP84FOBNB	5.23	WFP2BN	5.36
VF900	4.10	VZ428	4.10	WFDP84FOBSB	5.23	WFP2BS	5.36
VF9101	4.9	VZ428	4.16	WFDP84FOBSW	5.23	WFP2EUBNB	5.30
VF9101SPD	4.9	VZ601N	4.18	WFDP84FOPBB	5.23	WFP2EUBSB	5.30
VM02SPDIE	4.32	VZ602	4.23	WFDP84FOPBW	5.23	WFP2EUBSW	5.30
VS104TDI	4.17	VZ602N	4.18	WFDP84FOPSB	5.23	WFP2EUPBB	5.30
VS108TDI	4.17	VZ603N	4.18	WFDP84FOPSW	5.23	WFP2EUPBW	5.30
VS112TDI	4.17	VZ604N	4.18	WFDP84NBNB	5.23	WFP2EUPSB	5.30
VS118TDI	4.17	VZ605N	4.18	WFDP84NBSB	5.23	WFP2EUPSW	5.30
VS122TDI	4.17	VZ606N	4.18	WFDP84NBSW	5.23	WFP2PB	5.36
VS212TDI	4.17	VZ607N	4.18	WFDP84NPBB	5.23	WFP2PS	5.36
VS218TDI	4.17	VZ608N	4.18	WFDP84NPBW	5.23	WFP4EUBNB	5.30
VS312TDI	4.17	VZ609N	4.18	WFDP84NPSB	5.23	WFP4EUBSB	5.30
VS318TDI	4.17	VZ610N	4.18	WFDP84NPSW	5.23	WFP4EUBSW	5.30
VS412TDI	4.17	VZ621N	4.18	WFDP84PBW	5.23	WFP4EUPBB	5.30
VS418TDI	4.17	VZ622N	4.18	WFDP84PSW	5.23	WFP4EUPBW	5.30
VU12IE	4.26	VZ623N	4.18	WFDS1BN	5.19	WFP4EUPSB	5.30
VU24IE	4.26	VZ624N	4.18	WFDS1BS	5.19	WFP4EUPSW	5.30
VU36IE	4.26	VZ625N	4.18	WFDS1PB	5.19	WFPS12BNB	5.18
VU48IE	4.26	VZ626N	4.18	WFDS1PS	5.19	WFPS12BSB	5.18
VZ013V	1.39	VZ627N	4.18	WFDS2BN	5.19	WFPS12BSW	5.18
VZ016M	1.38	VZ628N	4.18	WFDS2BS	5.19	WFPS12PBB	5.18
VZ020D	1.38	VZ629N	4.18	WFDS2PB	5.19	WFPS12PBW	5.18
VZ020M	1.38	VZ630N	4.18	WFDS2PS	5.19	WFPS12PSB	5.18
VZ020M	4.16	VZ699N	4.18	WFDS3BN	5.19	WFPS12PSW	5.18
VZ021V	1.39	VZ710	2.41	WFDS3BS	5.19	WFPS12WBNNB	5.18
VZ025D	1.38	VZ711	2.41	WFDS3PB	5.19	WFPS12WBSB	5.18
VZ025M	1.38	VZ717	4.23	WFDS3PS	5.19	WFPS12WBSW	5.18
VZ032D	1.38	VZ744	4.16	WFDS4BN	5.19	WFPS12WPBB	5.18
VZ032M	1.38	VZ754	4.16	WFDS4BS	5.19	WFPS12WPBW	5.18
VZ040M	1.38	VZ758	4.16	WFDS4PB	5.19	WFPS12WPSB	5.18
VZ050M	1.38	VZ786N	4.18	WFDS4PS	5.19	WFPS12WPSW	5.18
VZ063M	1.38	VZ787N	4.18	WFDXBNB	5.29	WFPS16BNB	5.18
VZ111N	4.26	VZ788N	4.18	WFDXBSB	5.29	WFPS16BSB	5.18
VZ112N	4.26	VZ789N	4.18	WFDXBSW	5.29	WFPS16BSW	5.18
VZ113N	4.26	VZ794N	4.18	WFDXPBB	5.29	WFPS16PBB	5.18
VZ114N	4.26	VZ801N	4.26	WFDXPBW	5.29	WFPS16PBW	5.18
VZ118P	4.8	VZ802N	4.26	WFDXPSB	5.29	WFPS16PSB	5.18
VZ118P	4.15	VZ803N	4.26	WFDXPSW	5.29	WFPS16PSW	5.18
VZ118T	4.8	VZ804N	4.26	WFGF1	5.32	WFPS22BNB	5.18
VZ118T	4.15	VZ807N	4.26	WFGF2	5.32	WFPS22BSB	5.18
VZ131	4.10	VZ808N	4.26	WFGF34	5.32	WFPS22BSW	5.18
VZ131N	4.26	VZ809N	4.26	WFGP12BN	5.32	WFPS22PBB	5.18
VZ132	4.10	VZ810N	4.26	WFGP12BS	5.32	WFPS22PBW	5.18
VZ132N	4.26	VZ811N	4.26	WFGP12PB	5.32	WFPS22PSB	5.18
VZ133	4.10	VZ812N	4.26	WFGP12PS	5.32	WFPS22PSW	5.18
VZ133N	4.26	VZ813N	4.26	WFGP1BN	5.32	WFPS22WBNNB	5.18
VZ134N	4.26	VZ814N	4.26	WFGP1BS	5.32	WFPS22WBSB	5.18
VZ218P	4.8			WFGP1PB	5.32	WFPS22WBSW	5.18
VZ218P	4.15	W		WFGP1PS	5.32	WFPS22WPBB	5.18
VZ218T	4.8			WFGP2BN	5.32	WFPS22WPBW	5.18
VZ218T	4.15	WFBTMBNB	5.27	WFGP2BS	5.32	WFPS22WPSB	5.18
VZ225N	4.26	WFBTMBSB	5.27	WFGP2PB	5.32	WFPS22WPSW	5.18
VZ261	4.10	WFBTMBSW	5.27	WFGP2PS	5.32	WFPS32BNB	5.18
VZ262	4.10	WFBTMPBB	5.27	WFGP3BN	5.32	WFPS32BSB	5.18
VZ263	4.10	WFBTMPBW	5.27	WFGP3BS	5.32	WFPS32BSW	5.18
VZ292N	4.26	WFBTMPSB	5.27	WFGP3PB	5.32	WFPS32PBB	5.18
VZ293N	4.26	WFBTMPSW	5.27	WFGP3PS	5.32	WFPS32PBW	5.18
VZ302N	4.26	WFBTSBNB	5.27	WFGP4BN	5.32	WFPS32PSB	5.18
VZ303	4.10	WFBTSBSB	5.27	WFGP4BS	5.32	WFPS32PSW	5.18
VZ304N	4.26	WFBTSBSW	5.27	WFGP4PB	5.32	WFPS3PIBNB	5.20
VZ310PVB	4.8	WFBTSPBB	5.27	WFGP4PS	5.32	WFPS3PIBSB	5.20
VZ310PVB	4.15	WFBTSPBW	5.27	WFGP6BN	5.32	WFPS3PIBSW	5.20
VZ310TVB	4.8	WFBTSPSB	5.27	WFGP6BS	5.32	WFPS3PIPBB	5.20
VZ310TVB	4.15	WFBTSPSW	5.27	WFGP6PB	5.32	WFPS3PIPBW	5.20
VZ311	4.16	WFDP50NBNB	5.24	WFGP6PS	5.32	WFPS3PIPSB	5.20
VZ313	4.13	WFDP50NBSB	5.24	WFGP8BN	5.32	WFPS3PIPSW	5.20
VZ318P	4.8	WFDP50NBSW	5.24	WFGP8BS	5.32	WFPS42BNB	5.18
VZ318P	4.15	WFDP50NPBB	5.24	WFGP8PB	5.32	WFPS42BSB	5.18
VZ318T	4.8	WFDP50NPBW	5.24	WFGP8PS	5.32	WFPS42BSW	5.18
VZ318T	4.15	WFDP50NPSB	5.24	WFP1BN	5.36	WFPS42PBB	5.18
VZ403	4.10	WFDP50NPSW	5.24	WFP1BS	5.36	WFPS42PBW	5.18
VZ403	4.16	WFDP50VNBNNB	5.24	WFP1EUBNB	5.30	WFPS42PSB	5.18
VZ404	1.19	WFDP50VNBSB	5.24	WFP1EUBSB	5.30	WFPS42PSW	5.18
VZ405N	4.26	WFDP50VNBSW	5.24	WFP1EUBSW	5.30	WFQXBNB	5.29
VZ413	4.16	WFDP50VNPBB	5.24	WFP1EUPBB	5.30	WFQXBSB	5.29
VZ415	4.16	WFDP50VNPBW	5.24	WFP1EUPBW	5.30	WFQXBSW	5.29
VZ416	4.16	WFDP50VNPSB	5.24	WFP1EUPSB	5.30	WFQXPBB	5.29
VZ418P	4.8	WFDP50VNPSW	5.24	WFP1EUPSW	5.30	WFQXPBW	5.29
VZ418P	4.15	WFDP84BNB	5.23	WFP1PB	5.36	WFQXPSB	5.29

WFQXPSW	5.29	WFTVLPBSW	5.31	WMGFU13	5.12, 5.33	WMGSDP2/SOV	5.13, 5.33
WFRJ45BNB	5.27	WFTVLPSSB	5.31	WMGFU13BNB	5.35	WMGSDP2/TD	5.13, 5.33
WFRJ45BSB	5.27	WFTVLPSSW	5.31	WMGFU13BSB	5.35	WMGSDP2/WC	5.13, 5.33
WFRJ45BSW	5.27	WFTVLPWW	5.31	WMGFU13BSW	5.35	WMGSDP2/WD	5.13, 5.33
WFRJ45PBB	5.27	WFTXBNNB	5.29	WMGFU13PBB	5.35	WMGSDP2/MM	5.13, 5.33
WFRJ45PBW	5.27	WFTXBBSB	5.29	WMGFU13PBW	5.35	WMGSDP2B/CHD	5.13, 5.33
WFRJ45PSB	5.27	WFTXBBSW	5.29	WMGFU13PSB	5.35	WMGSDP2B/CM	5.13, 5.33
WFRJ45PSW	5.27	WFTXPBB	5.29	WMGFU13PSW	5.35	WMGSDP2B/DW	5.13, 5.33
WFS51BNB	5.21	WFTXPBW	5.29	WMGKS	5.12, 5.33	WMGSDP2B/EF	5.13, 5.33
WFS51BSB	5.21	WFTXPSB	5.29	WMGKS/EL	5.12, 5.33	WMGSDP2B/HB	5.13, 5.33
WFS51BSW	5.21	WFTXPSW	5.29	WMGKSB	5.12, 5.33	WMGSDP2B/FF	5.13, 5.33
WFS51PBB	5.21	WMBTM	5.9	WMGP1	3.12	WMGSDP2B/FRE	5.13, 5.33
WFS51PBW	5.21	WMBTS	5.9	WMGP1	5.12	WMGSDP2B/FRI	5.13, 5.33
WFS51PSB	5.21	WMCS11	5.11	WMGP1G	5.12, 5.15	WMGSDP2B/HB	5.13, 5.33
WFS51PSW	5.21	WMCS12	5.11	WMGP2	5.12	WMGSDP2B/HD	5.13, 5.33
WFSATBNB	5.28	WMCS3PF	5.11	WMGP2G	5.12, 5.15	WMGSDP2B/HTG	5.13, 5.33
WFSATBSB	5.28	WMCS3PI	5.11	WMGP3	5.12	WMGSDP2B/HW	5.13, 5.33
WFSATBSW	5.28	WMCS3PIF	5.11	WMGP3G	5.12, 5.15	WMGSDP2B/MW	5.13, 5.33
WFSATPBB	5.28	WMCS50N	5.11	WMGP4	5.12	WMGSDP2B/MW2	5.13, 5.33
WFSATPBW	5.28	WMDP50N	5.8	WMGP4G	5.12, 5.15	WMGSDP2B/OS	5.13, 5.33
WFSATPSB	5.28	WMDP50N/CK	5.8	WMGP6	5.12	WMGSDP2B/OV	5.13, 5.33
WFSATPSW	5.28	WMDP50N/HB	5.8	WMGP6G	5.12, 5.15	WMGSDP2B/TD	5.13, 5.33
WFSO100BNB	5.25	WMDP50N/OV	5.8	WMGP8	5.12	WMGSDP2B/WC	5.13, 5.33
WFSO100BSB	5.25	WMDP50N/SH	5.8	WMGP8G	5.12, 5.15	WMGSDP2B/WD	5.13, 5.33
WFSO100BSW	5.25	WMDP50NG	5.15	WMGS12	5.12, 5.33	WMGSDP2B/MM	5.13, 5.33
WFSO100PBB	5.25	WMDP50NG/CK	5.15	WMGS12BNB	5.35	WMGSDP2BNNB	5.35
WFSO100PBW	5.25	WMDP50VN	5.8	WMGS12BSB	5.35	WMGSDP2BSB	5.35
WFSO100PSB	5.25	WMDP50VN/CK	5.8	WMGS12BSW	5.35	WMGSDP2BSW	5.35
WFSO100PSW	5.25	WMDP50VN/HB	5.8	WMGS12PBB	5.35	WMGSDP2N	5.12, 5.33
WFS81BNB	5.21	WMDP50VN/OV	5.8	WMGS12PBW	5.35	WMGSDP2N/CHD	5.13, 5.34
WFS81BSB	5.21	WMDP84	5.7	WMGS12PSB	5.35	WMGSDP2N/DW	5.13, 5.34
WFS81BSW	5.21	WMDP84/FRE	5.7	WMGS12PSW	5.35	WMGSDP2N/EF	5.13, 5.34
WFS81PBB	5.21	WMDP84/FRI	5.7	WMGS13L	5.12, 5.33	WMGSDP2N/FF	5.13, 5.34
WFS81PBW	5.21	WMDP84/TD	5.7	WMGS13LB	5.12, 5.33	WMGSDP2N/FRE	5.13, 5.34
WFS81PSB	5.21	WMDP84/MM	5.7	WMGS13LR	5.12, 5.33	WMGSDP2N/FRI	5.13, 5.34
WFS81PSW	5.21	WMDP84DW	5.7	WMGS13R	3.12	WMGSDP2N/HB	5.13, 5.34
WFS82BNB	5.21	WMDP84FO	5.7	WMGS13R	5.12, 5.33	WMGSDP2N/HTG	5.13, 5.34
WFS82BNB-USB	5.21	WMDP84FO/FRE	5.7	WMGS13RB	5.12, 5.33	WMGSDP2N/MW	5.13, 5.34
WFS82BSB	5.21	WMDP84FO/FRI	5.7	WMGS13RR	5.12, 5.33	WMGSDP2N/OL	5.13, 5.34
WFS82BSB-USB	5.21	WMDP84FO/TD	5.7	WMGS16	5.12, 5.33	WMGSDP2N/OS	5.13, 5.34
WFS82BSW	5.21	WMDP84FO/MM	5.7	WMGS16BNB	5.35	WMGSDP2N/OV	5.13, 5.34
WFS82BSW-USB	5.21	WMDP84FON	5.7	WMGS16BSB	5.35	WMGSDP2N/PH	5.13, 5.34
WFS82PBB	5.21	WMDP84FON/DW	5.8	WMGS16BSW	5.35	WMGSDP2N/TD	5.13, 5.34
WFS82PBB-USB	5.21	WMDP84FON/FAN	5.8	WMGS16PBB	5.35	WMGSDP2N/WD	5.13, 5.34
WFS82PBW	5.21	WMDP84FON/FRE	5.8	WMGS16PBW	5.35	WMGSDP2N/MM	5.13, 5.34
WFS82PBW-USB	5.21	WMDP84FON/FRI	5.8	WMGS16PSB	5.35	WMGSDP2N/CHD	5.13, 5.34
WFS82PSB	5.21	WMDP84FON/TD	5.8	WMGS16PSW	5.35	WMGSDP2NB/DW	5.13, 5.34
WFS82PSB-USB	5.21	WMDP84FON/MM	5.8	WMGS22R	5.12, 5.33	WMGSDP2NB/EF	5.13, 5.34
WFS82PSW	5.21	WMDP84N	5.7	WMGS22RBNB	5.35	WMGSDP2NB/FF	5.13, 5.34
WFS82PSW-USB	5.21	WMDP84N/DW	5.8	WMGS22RBSB	5.35	WMGSDP2NB/FRE	5.13, 5.34
WFS82PBB-USB	5.21	WMDP84N/FAN	5.8	WMGS22RBSW	5.35	WMGSDP2NB/FRI	5.13, 5.34
WFS82PBW	5.21	WMDP84N/FRE	5.8	WMGS22RPBB	5.35	WMGSDP2NB/HB	5.13, 5.34
WFS82PBW-USB	5.21	WMDP84N/FRI	5.8	WMGS22RPBW	5.35	WMGSDP2NB/HTG	5.13, 5.34
WFS82PSB	5.21	WMDP84N/TD	5.8	WMGS22RPSB	5.35	WMGSDP2NB/MW	5.13, 5.34
WFS82PSB-USB	5.21	WMDP84N/MM	5.8	WMGS22RPSW	5.35	WMGSDP2NB/OV	5.13, 5.34
WFS82PSW	5.21	WMDP84NG	5.15	WMGSD1L	5.12, 5.33	WMGSDP2NB/TD	5.13, 5.34
WFS82PSW-USB	5.21	WMDP85FON	5.8	WMGSD1LB	5.12, 5.33	WMGSDP2NB/WD	5.13, 5.34
WFS82PBB-USB	5.21	WMDP85N	5.8	WMGSD1S	5.12, 5.33	WMGSDP2NB/MM	5.13, 5.34
WFS82PBW	5.21	WMDR1/400R	5.4	WMGSD1SB	5.12, 5.33	WMGSDP2PBB	5.35
WFS82PBW-USB	5.21	WMDR2/250R	5.4	WMGSD1T	5.12, 5.33	WMGSDP2PBW	5.35
WFS82PSB	5.21	WMDR1KIT	5.4	WMGSD1TB	5.12, 5.33	WMGSDP2PSB	5.35
WFS82PSB-USB	5.21	WMDR2KIT	5.4	WMGSDP2	5.12, 5.33	WMGSDP2PSW	5.35
WFS82PSW	5.21	WMDR3KIT	5.4	WMGSDP2/BOI	5.13, 5.33	WMGSU83N	5.12, 5.33
WFS82PSW-USB	5.21	WMDR4KIT	5.4	WMGSDP2/CHD	5.13, 5.33	WMIMS1N	5.4
WFS82PBB-USB	5.21	WMDS1	5.4	WMGSDP2/CM	5.13, 5.33	WMINDRED	5.12, 5.33
WFS82PBW	5.21	WMDS2	5.4	WMGSDP2/DW	5.13, 5.33	WMINDREDB	5.12, 5.33
WFS82PBW-USB	5.21	WMDS3	5.4	WMGSDP2/EF	5.13, 5.33	WMMB	5.10, 5.30, 5.39
WFS82PSB	5.21	WMDS4	5.4	WMGSDP2/FB	5.13, 5.33	WMMBB	5.30, 5.39
WFS82PSB-USB	5.21	WMDX	5.9	WMGSDP2/FF	5.13, 5.33	WMMBTM	5.10, 5.30, 5.39
WFS82PSW	5.21	WMGB1	5.12, 5.33	WMGSDP2/FRE	5.13, 5.33	WMMBTMB	5.10, 5.30, 5.39
WFS82PSW-USB	5.21	WMGB1BNB	5.35	WMGSDP2/FRI	5.13, 5.33	WMMBTS	5.10, 5.30, 5.39
WFS82PBB-USB	5.21	WMGB1BSB	5.35	WMGSDP2/HB	5.13, 5.33	WMMBTSB	5.10, 5.30, 5.39
WFS82PBW	5.21	WMGB1BSW	5.35	WMGSDP2/HD	5.13, 5.33	WMMDX	5.10, 5.30, 5.39
WFS82PBW-USB	5.21	WMGB1PBB	5.35	WMGSDP2/HTG	5.13, 5.33	WMMDXB	5.10, 5.30, 5.39
WFS82PSB	5.21	WMGB1PBW	5.35	WMGSDP2/HW	5.13, 5.33	WMMHDMI	5.10, 5.30, 5.39
WFS82PSB-USB	5.21	WMGB1PSB	5.35	WMGSDP2/MW	5.13, 5.33	WMMHDMIB	5.10, 5.30, 5.39
WFS82PSW	5.21	WMGB1PSW	5.35	WMGSDP2/MW2	5.13, 5.33	WMMHDMIB	5.10, 5.30, 5.39
WFS82PSW-USB	5.21	WMGF1	3.12	WMGSDP2/OL	5.13, 5.33	WMMPIR05X	5.10, 5.30, 5.39
WFS82PBB-USB	5.21	WMGF1	5.12, 5.32	WMGSDP2/OS	5.13, 5.33	WMMPIR10X	5.10, 5.30, 5.39
WFS82PBW	5.21	WMGF2	5.12, 5.32	WMGSDP2/OV	5.13, 5.33	WMMPP	5.10, 5.30, 5.39
WFS82PBW-USB	5.21	WMGF34	5.12, 5.32	WMGSDP2/PH	5.13, 5.33	WMMQX	5.10, 5.30, 5.39
WFS82PSB	5.21					WMMQXB	5.10, 5.30, 5.39

WMMRJ11	5.10, 5.30, 5.39	WMSS82USB	5.5	WPDP50VN	5.37	WPPS12BKO	5.37
WMMRJ11B	5.10, 5.30, 5.39	WMSS82USBS	5.5	WPDP84FO	5.37	WPPS12BKOW	5.37
WMMRJ45	5.10, 5.30, 5.39	WMSSU83	5.6	WPDP84FOB	5.37	WPPS12BW	5.37
WMMRJ45B	5.10, 5.30, 5.39	WMSSU83/3A	5.6	WPDP84FOBKO	5.37	WPPS12R	5.37
WMMSAT	5.10, 5.30, 5.39	WMSSU83/BO	5.6	WPDP84FOBKOW	5.37	WPPS12RB	5.37
WMMSATB	5.10, 5.30, 5.39	WMSSU83/CTLHTG	5.6	WPDP84FOBW	5.37	WPPS12RBKO	5.37
WMMSP	5.10, 5.30, 5.39	WMSSU83/DW	5.6	WPDP84FON	5.37	WPPS12RBKOW	5.37
WMMTVF	5.10, 5.30, 5.39	WMSSU83/EF	5.6	WPDP84FONB	5.37	WPPS12RBW	5.37
WMMTVFB	5.10, 5.30, 5.39	WMSSU83/FAN	5.6	WPDP84FONBKO	5.37	WPPS12RW	5.37
WMMTVM	5.10, 5.30, 5.39	WMSSU83/FF	5.6	WPDP84FONBKOW	5.37	WPPS12W	5.37
WMMTVMB	5.10, 5.30, 5.39	WMSSU83/FRE	5.6	WPDP84FONBW	5.37	WPPS22	5.37
WMMTX	5.10, 5.30, 5.39	WMSSU83/FRI	5.6	WPDP84FONW	5.37	WPPS22B	5.37
WMMTXB	5.10, 5.30, 5.39	WMSSU83/HTG	5.6	WPDP84FOW	5.37	WPPS22BKO	5.37
WMMUSB	5.10, 5.30, 5.39	WMSSU83/HTR	5.6	WPGP1	5.38	WPPS22BKOW	5.37
WMMUSBB	5.10, 5.30, 5.39	WMSSU83/SHWRPUMP	5.6	WPGP1B	5.38	WPPS22BW	5.37
WMP1	5.14	WMSSU83/SKTBELOW	5.6	WPGP1BKO	5.38	WPPS22W	5.37
WMP1EU	5.10	WMSSU83/TD	5.6	WPGP1BKOW	5.38	WPPS32	5.37
WMP1EUG	5.15	WMSSU83/MM	5.6	WPGP1BW	5.38	WPPS32B	5.37
WMP2	5.14	WMSSU83FO	5.6	WPGP1W	5.38	WPPS32BKO	5.37
WMP2EU	5.10	WMSSU83FO/BO	5.6	WPGP2	5.38	WPPS32BKOW	5.37
WMP2EUG	5.15	WMSSU83FO/DW	5.6	WPGP2B	5.38	WPPS32BW	5.37
WMP2FO	5.5	WMSSU83FO/EF	5.6	WPGP2BKO	5.38	WPPS32W	5.37
WMP4EU	5.10	WMSSU83FO/FF	5.6	WPGP2BKOW	5.38	WPSS81	5.37
WMP4EUG	5.15	WMSSU83FO/FRE	5.6	WPGP2BW	5.38	WPSS81B	5.37
WMP50FO	5.5	WMSSU83FO/FRI	5.6	WPGP2W	5.38	WPSS81BKO	5.37
WMPB1/20	5.14	WMSSU83FO/HTG	5.6	WPGP3	5.38	WPSS81BKOW	5.37
WMPB1/28	5.14	WMSSU83FO/HTR	5.6	WPGP3B	5.38	WPSS81BW	5.37
WMPB1/46	5.14	WMSSU83FO/TD	5.6	WPGP3BKO	5.38	WPSS81N	5.37
WMPB1/BFO	5.14	WMSSU83FO/MM	5.6	WPGP3BKOW	5.38	WPSS81NB	5.37
WMPB2/20	5.14	WMSSU83FON	5.6	WPGP3BW	5.38	WPSS81NBKO	5.37
WMPB2/28	5.14	WMSSU83FON/BO	5.6	WPGP3W	5.38	WPSS81NBKOW	5.37
WMPB2/46	5.14	WMSSU83FON/DW	5.6	WPGP4	5.38	WPSS81NBW	5.37
WMPB2/46CC	5.14	WMSSU83FON/EF	5.6	WPGP4B	5.38	WPSS81NW	5.37
WMPS11	5.3	WMSSU83FON/FAN	5.6	WPGP4BKO	5.38	WPSS81W	5.37
WMPS11/FAN	5.3	WMSSU83FON/FRE	5.6	WPGP4BKOW	5.38	WPSS82	5.37
WMPS12	5.3	WMSSU83FON/FRI	5.6	WPGP4BW	5.38	WPSS82B	5.37
WMPS12R	5.3	WMSSU83FON/HB	5.6	WPGP4W	5.38	WPSS82BKO	5.37
WMPS12RB	5.3	WMSSU83FON/HTG	5.6	WPGP6	5.38	WPSS82BKO-USB	5.37
WMPS12RW	5.3	WMSSU83FON/TD	5.6	WPGP6B	5.38	WPSS82BKOW	5.37
WMPS12RWG	5.15	WMSSU83FON/MM	5.6	WPGP6BKO	5.38	WPSS82BKOW-USB	5.37
WMPS12RWG/FB	5.15	WMSSU83N	5.6	WPGP6BKOW	5.38	WPSS82B-USB	5.37
WMPS12W	5.3	WMSSU83N/BO	5.7	WPGP6BW	5.38	WPSS82BW	5.37
WMPS12WG	5.15	WMSSU83N/DW	5.7	WPGP6W	5.38	WPSS82BW-USB	5.37
WMPS16	5.3	WMSSU83N/EF	5.7	WPGP8	5.38	WPSS82N	5.37
WMPS16WG	5.15	WMSSU83N/FAN	5.7	WPGP8B	5.38	WPSS82NB	5.37
WMPS22	5.3	WMSSU83N/FRE	5.7	WPGP8BKO	5.38	WPSS82NBKO	5.37
WMPS22W	5.3	WMSSU83N/FRI	5.7	WPGP8BKOW	5.38	WPSS82NBKOW	5.37
WMPS22WG	5.15	WMSSU83N/HB	5.7	WPGP8BW	5.38	WPSS82NBW	5.37
WMPS32	5.3	WMSSU83N/HTG	5.7	WPGP8W	5.38	WPSS82NW	5.37
WMPS3PI	5.4	WMSSU83N/TD	5.7	WPP1	5.40	WPSS82O	5.37
WMPS3PIF	5.4	WMSSU83N/MM	5.7	WPP1B	5.40	WPSS82OB	5.37
WMPS42	5.3	WMSSU83NG	5.15	WPP1BKO	5.40	WPSS82OBKO	5.37
WMPS62	5.3	WMSSU83NG/EH	5.15	WPP1BKOW	5.40	WPSS82OBKOW	5.37
WMQX	5.9	WMSSU83NG/PH	5.15	WPP1BW	5.40	WPSS82OBW	5.37
WMRESLOAD	5.4	WMSSU83R	5.16	WPP1EU	5.39	WPSS82OW	5.37
WMRJ11	5.9	WMSSU83RR	5.16	WPP1EUB	5.39	WPSS82-USB	5.37
WMRJ45	5.9	WMSU83	5.6	WPP1EUBKO	5.39	WPSS82W	5.37
WMS51	5.5	WMSU83FO	5.6	WPP1EUBKOW	5.39	WPSS82W-USB	5.37
WMS81	5.5	WMSU83R	5.16	WPP1EUBW	5.39	WPSSU83FO	5.38
WMS82	5.5	WMTVF	5.9	WPP1EUW	5.39	WPSSU83FOB	5.38
WMSAT	5.9	WMTVM	5.9	WPP1W	5.40	WPSSU83FOBKO	5.38
WMSO100	5.9	WMTX	5.9	WPP2	5.40	WPSSU83FOBKOW	5.38
WMSS115	5.5	WMUSBS	5.5	WPP2B	5.40	WPSSU83FOBW	5.38
WMSS81	5.5	WPB140	5.40	WPP2BKO	5.40	WPSSU83FON	5.38
WMSS81G	5.15	WPB140KO	5.40	WPP2BKOW	5.40	WPSSU83FONB	5.38
WMSS81N	5.5	WPB140KOW	5.40	WPP2BW	5.40	WPSSU83FONBKO	5.38
WMSS81R	5.16	WPB140W	5.40	WPP2EU	5.39	WPSSU83FONBKOW	5.38
WMSS81RR	5.16	WPB240	5.40	WPP2EUB	5.39	WPSSU83FONBW	5.38
WMSS82	5.5	WPB240KO	5.40	WPP2EUBKO	5.39	WPSSU83FONW	5.38
WMSS82N	5.5	WPB240KOW	5.40	WPP2EUBKOW	5.39	WPSSU83FOW	5.38
WMSS82O	5.5	WPB240W	5.40	WPP2EUBW	5.39	WPSU83FO	5.38
WMSS82OG	5.15	WPB6840	5.40	WPP2EUW	5.39	WPSU83FOB	5.38
WMSS82ON	5.5	WPB6840KO	5.40	WPP2W	5.40	WPSU83FOBKO	5.38
WMSS82OR	5.16	WPB6840KOW	5.40	WPP4EU	5.39	WPSU83FOBKOW	5.38
WMSS82ORR	5.16	WPB6840W	5.40	WPP4EUB	5.39	WPSU83FOBW	5.38
WMSS82R	5.16	WPDP50N	5.37	WPP4EUBKO	5.39	WPSU83FOW	5.38
WMSS82R/CS	5.16	WPDP50NB	5.37	WPP4EUBKOW	5.39	WRBTMBNB	5.27
WMSS82R/DNS	5.16	WPDP50NBKO	5.37	WPP4EUBW	5.39	WRBTMBSB	5.27
WMSS82R/ES	5.16	WPDP50NBKOW	5.37	WPP4EUW	5.39	WRBTMBSW	5.27
WMSS82R/UPS	5.16	WPDP50NBW	5.37	WPPS12	5.37	WRBTMPBB	5.27
WMSS82RR	5.16	WPDP50NW	5.37	WPPS12B	5.37	WRBTMPBW	5.27

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 €12/£8 shall be payable by the Buyer on orders under the value of €300/£200. The Seller reserves the right to charge the Buyer a reasonable handling 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. 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 agent 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 remain the 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 Republic of Ireland/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 Sale of Goods and Services Act 1980.
- 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 Irish Law and the Irish 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.

Conditions of Use

All products sold by Hager Ltd. (Ireland) should be installed by suitably qualified professional personnel in accordance with the company's instructions, requirements of relevant legislation, regulations (including ETCI & IEE Wiring Regulations) and the accepted practice in the industry.



Hager Ltd. - Ireland

Unit M2
Furry Park Industrial Estate
Swords Road
Santry
Dublin
D09 NY19
Ireland

Republic of Ireland Tel: 1890 551 502
Republic of Ireland Fax: 1890 551 503
Northern Ireland Tel: 00 44 2890 020165
Northern Ireland Fax: 00 353 1 8869520

hager.ie

customer.service@hager.ie

technical.service@hager.ie

Hager Ltd.

Hortonwood 50
Telford
Shropshire
TF1 7FT

Sales Service Centre: 01952 675612
Sales Service Centre Faxline: 01952 675645
Technical Service Centre: 01952 675689
Technical Service Centre Faxline: 01952 675557

hager.co.uk

sales@hager.co.uk

technical@hager.co.uk

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