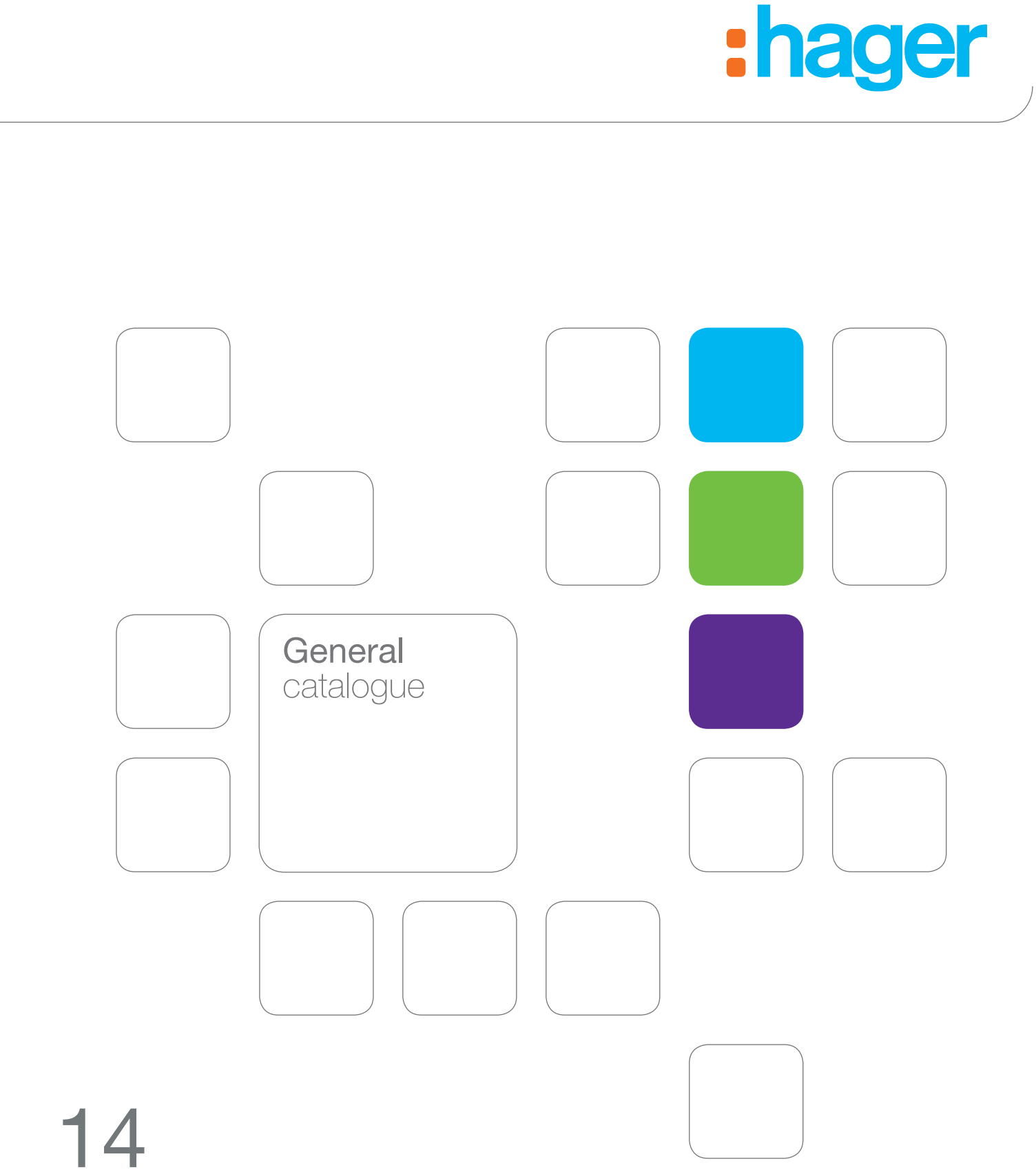


14
15

Dear Friends and Partners,

What innovations are awaiting you next year? What innovative solutions will distinguish themselves from others in residential and commercial buildings?

By browsing through the new catalogue you will find the answers to these questions. Working in close partnership with installers and distributors means that we have been able to develop a whole new range of promising innovations which are not only innovative, but also for practical day to day use. This catalogue shows you the best of these innovations.

In the following pages, you will also find a number of reliable and user - friendly Hager products which have been proven successful over and over again. As a supplier of global solutions, we offer professionals everything they need related to energy distribution, cable management, trunking, home automation systems and security. Providing such a complete range of solutions and services from one unique partner is extremely beneficial for both fitters and prescribers. Electrical installations are not only becoming simpler and faster, but also more reliable, efficient and functional.

Being constantly attentive to our customers' needs means that we are able to fully satisfy their requirements and develop market boosting innovative solutions that allow us to remain the market leader of today and tomorrow.

More than ever, it is essential to have the right partner.

Yours sincerely,

Daniel Hager
CEO Hager Group

Consumer Units

Enclosures

Commercial Distribution

Protection Devices

Modular Devices

tebis KNX Building Automation System

sollysta Wiring Accessories

Junction Boxes & Ceiling Accessories

klik Lighting Connection System

logisty Radio Doorphones

Numerical Index

Consumer Units | Flush Consumer Units
Weather Proof Consumer Units | Skeleton Units

Mini gamma | vector II | volta
vega | Enclosures | orion plus

A Boards | invicta 3 Type B Distribution Boards
invicta 3 Panelboards | Fuse Combination Switches

MCBs | RCCBs | RCBOs | HRC Fuse Carriers
Motor Starters | Earth Fault Relays | h3 MCCBs

Switch Disconnectors | Relays | Contactors
Time Switches | Delay Timers | Transformers | Meters

Room Controllers | Input Products | Output Products
Push Buttons & Remote Controls

White Moulded | Decorative | Grid | IP66

Downlighter Junction Box | Maintenance Free Junction Box
Lampholders | Safety Pendant Sets

LDS | system

For residential apartments

The partner for smart solutions you can trust

Hager is a full-range supplier of electrical installation systems for building, residential and commercial properties. For decades, Hager has been synonymous with an extensive and complete offering. Highest quality, cutting-edge products, modularity, ease of installation, ease of use, excellent service and sophisticated design are the features that distinguish Hager.

Hager: a brand meeting your expectations

As a specialist in
- Power distribution,
- cable management and room connection systems,
- switch programmes and smart building automation as well as safety technology such as alarm systems, smoke detectors and motion detectors.

Hager the supplier for professionals – is a synonym for top quality and innovative technology, as well as good customer relations and reliability. All of which make Hager the partner for smart solutions, you can trust.

New ideas for the customers benefit

Innovations and the systematic enhancement of the products and systems are key features of the Hager brand. It has always been our goal to use new designs and improvements to stay ahead of developments.

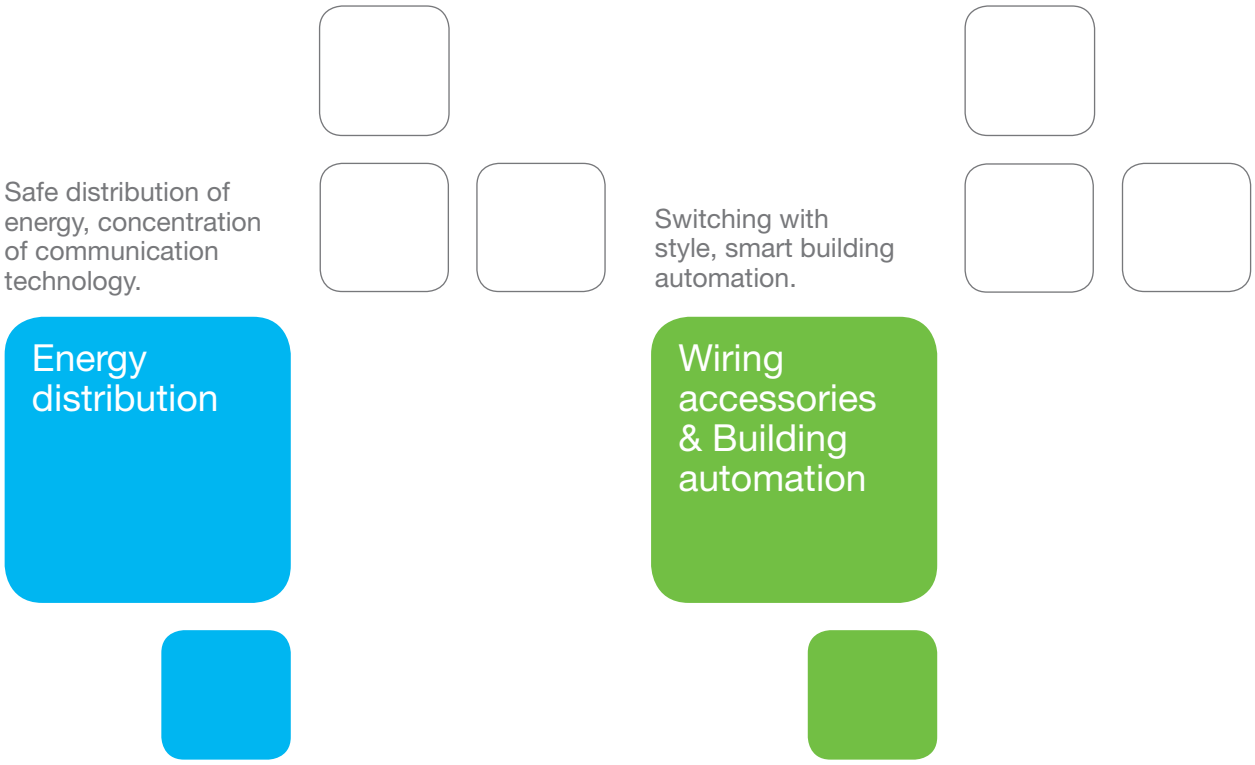
The use of innovations and new technologies at Hager is always customer-driven. Every year, Hager evaluates thousands of customer contacts, resulting in detailed knowledge of its customers' needs in order to work efficiently and successfully. Based on this knowledge, Hager develops the innovative solutions that are so characteristic for the Hager brand. Ease of installation, ease of use, intuitive user interfaces, modularity and durability are brand values that guarantee highest quality throughout in Hager systems.

80 per cent of Hager products and systems are younger than five years. This high degree of innovation enables the users to meet various new challenges effectively. The strong demand for innovations and enhancements is a good indicator for the customer-oriented policy of the Hager brand also resulting in a high turnover at wholesalers.

A flourishing group

Hager belongs to the Hager Group, which is a family owned business with a more than fifty-year tradition. As a global player, the company has about 11,400 employees and a turnover of more than 1.6 billion Euro in 2012.
Today, the Hager Group offers more than 74.000 items.

www.hager.co.uk

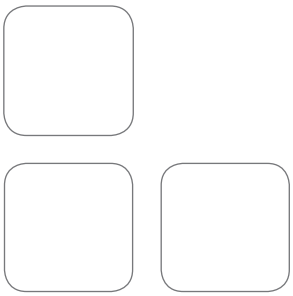


A clear structure - Hager's range of products

Hager has divided its extensive range of products into three areas of application, each marked with a different colour, to help you finding the right product and solution for your individual needs.

As the leading specialist in the field of electrical installations residential and commercial buildings, the Hager brand provides you with everything from one source: systems and solutions – highest quality, reliable and easy to install.

Safety and security
items for buildings,
residents and valuables.



Security

Logisty

To learn more about our systems and solutions, please get in touch.

Sales Hotline Call our Customer Services Centre for all your national sales enquiries.	**01952 675612** sales@hager.co.uk
Sales Faxline	**01952 675645**
Technical Helpline Technical Engineers offer both national and local support.	**01952 675689** technical@hager.co.uk
Technical Faxline	**01952 675557**
Hager Online Visit our website for up to date news on Hager and for general brand information or alternatively e-mail us.	**www.hager.co.uk** info@hager.co.uk
Northern Ireland	**028 9077 3310** **www.hager.ie**

www.hager.co.uk

Design language that everyone understands
Hager Design

For more than five decades, Hager has had a discerning eye when it comes to the functionality and reliability of its systems. This is particularly reflected in the form and design of our products. Hager is steeped in structural design tradition. Which means that a technological product is not simply covered with an elegant shell but developed with functionality in mind, in a way that the exterior mirrors the inner structure. And today the exterior is becoming evermore important. With electrical installations taking over more direct functions in both living and work spaces, aesthetics take on an increasingly important role. So as to best fuse these functional and aesthetic demands, Hager has launched an independent unit together with product designer Erwin van Handenhoven – the Hager-Winco design agency.

“Everything you see and touch highlights the idea of ease and quality.”
Daniel Hager

From the box to the switch
During recent decades, Hager's product variety has increased extensively. We have progressed from being a specialist in meter panel systems to a supplier of complete electro-technical solutions for both smart homes and functional buildings. The demands on design have also multiplied to include cable ducts and service columns in rooms, exclusive ranges of switches and intuitive user interfaces. Every product has a different function and each function calls for a shape of its own. This is why Hager uses a design terminology that includes many stylistic devices.

From the customer to the designer
So that this design language is universally understood, we encourage our customers to have their say too. Right from the very beginning, Hager developed its systems closely with external specialists and selected end-users. To provide a more international product range, we research national traditions, investigate individual wishes and pay close attention to what enthuses our customers. This results in ergonomically designed solutions that enthral – through ease of installation and uncomplicated operation, highest quality and maximum convenience. We call this process the ‘customer’s voice’.

From the present into the future
May 2009 saw the launch of the independent design agency Hager-Winco which was created to meet future customer design requirements. In doing this, we unified the cooperation between Hager and the internationally active product designer Erwin van Handehoven, paving the way for a new chapter in design. Since the fusion, numerous product highlights have emerged, which in their individual ways already fulfil tomorrow’s design demands. You can find many of them in our new Hager catalogue.

Enjoy making some new discoveries!

Erwin van Handenhoven
Designer for Hager

:hager WINco design

Human.
Eco-friendly.
Economic.
Sustainability at Hager Group: E3

"Quidquid agis respice finem" – Whatever you do, consider the consequences. This motto which goes back to the Greek fable writer Aesop (around 600 BC) holds true more than ever today. Induced by technological progress, increasing globalisation and diminishing natural resources, the consequences of our actions are becoming ever more grave. At the same time the calls for greater corporate responsibility are getting louder and louder. Even though Hager Group is only a small cog in a large wheel, we want to move forward in such a way that we leave a clean bill of health for future generations. We have road-mapped our sustainability plan in a concise and clear concept – it is called E3.

And this all-encompassing E3 Hager Group concept deals with how we can use our planet's limited resources in a caring and sparing way. It comprises three pillars – Ethics, Environment and Energy – each of which is supported by a catalogue of clear-cut measures which Hager Group has explicitly committed itself to implementing.

Everyone today talks about sustainability. As a family business, we actively practice it – using E3!

"We act ethically and responsibly, caring for people and our environment"

Daniel Hager

ethics

Our most important natural resource is each individual person. That is why we are prepared to do everything to support our worldwide staff of more than 11,000 ‘positive energisers’ and mobilise new supporters for Hager Group. We have been certified ‘Investors in People’ (IiP) and prioritise structured processes ensuring mutually fair behaviour. What is more, we have committed ourselves to comply with the United Nations Global Compact principles. This undertaking between a company and UNO is concluded on a voluntary basis with the purpose of making globalisation more caring and ecological. And last but not least, we ensure that by using meaningful local Care Management, each Hager Group employee feels at ease.

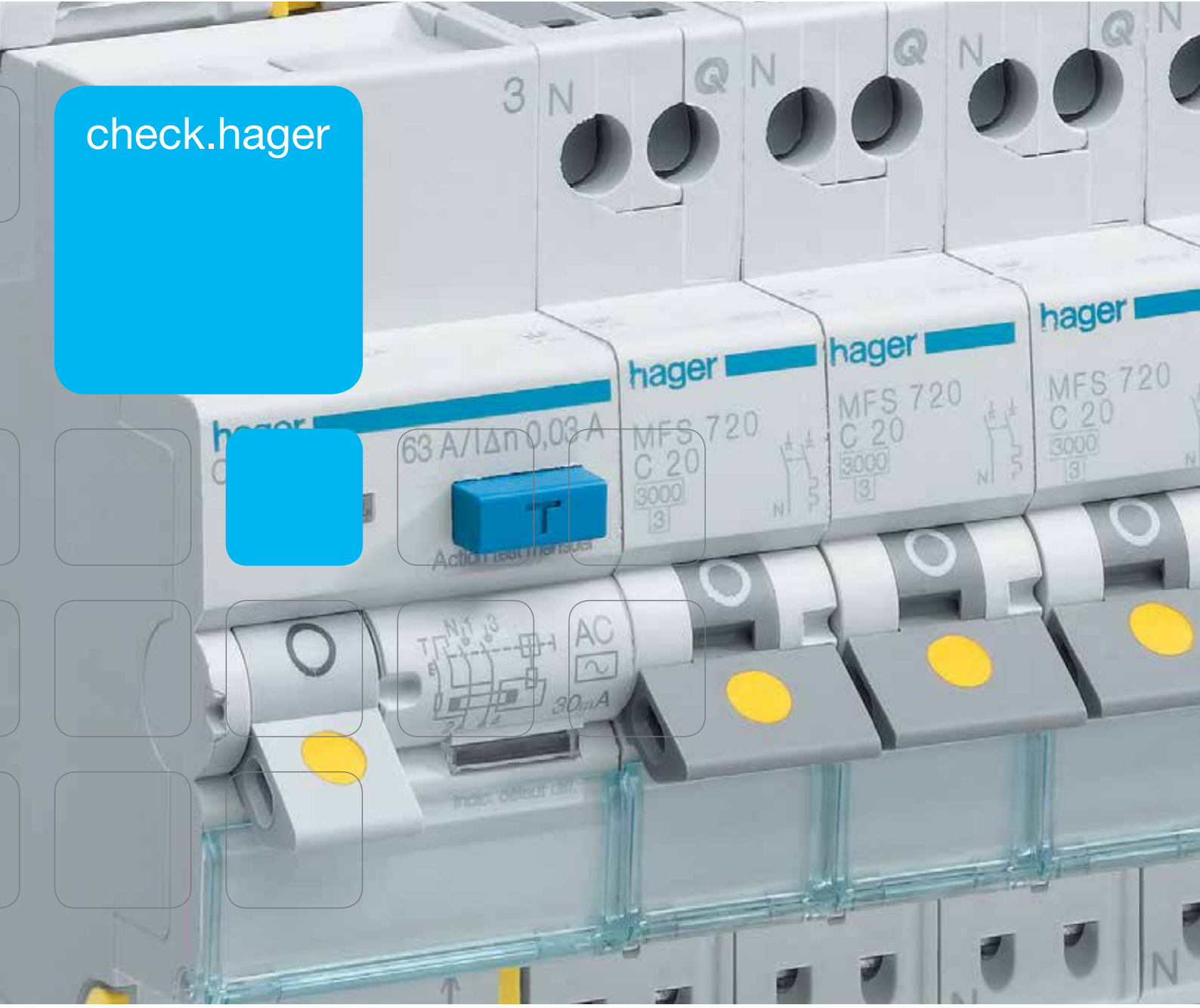
environment

This Care Management approach has been extended to the environment, in that we keep it as clean as possible. And this is why we adhere to the motto ‘less is more’. In real terms this means that eleven of Hager Group’s production sites are already certified under the ISO 14000 environmental management standard. And determined to keep a good thing going, we apply for further certifications year after year. So when developing new products and during manufacturing processes, we focus on eco-design and eco-production.

This includes making an exhaustive product life cycle assessment and optimising it where possible from ecological aspects. When the product is finished, it is packed in such a way that no extra tree is felled – in 100% recycled carton. By doing this we are continually reducing our ecological footprint at the same time as advancing technology in the right direction. This move secured Hager the iF Packaging Design Award 2011.

energy

Taking a step in the right ecological direction is an advantage our customers also benefit from – by using intelligent meters and innovative display software so that energy consumption is clearly visible. This in turn creates better energy awareness. Many of our appliances from dimmers and ultra-sensitive motion detectors all the way to intelligent tebis KNX building automation actively help reduce energy consumption. And last but not least, the use of Hager systems enables renewable resources to be integrated into each and every building, assuring a good future. In a nutshell, we devote all our energy to saving yours!



Counterfeiting:
a plague gaining ground...

The counterfeiting of products is gaining ground throughout the world. In 2002 counterfeiting represented 7% of the worlds trade, this has now risen to 10%. 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 for our customers. 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!

Let's act together!

1

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 data base. If it doesn't have a number please contact us immediately.

2

Dedicated Website
Our customers can access this database to check the authenticity of a Hager product by going to https://check.hager.com The website will check the validity of the identification number on the product and confirm if the product is an authentic Hager product or a suspected counterfeit product, this result will be immediate.

3

Action Plan
Check the identification number by going to https://check.hager.com. If check.hager.com identifies the product as a counterfeit 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.

4

Ethical Charter
As a manufacturer we commit to:

- Provide our customers with the means to check the authenticity of our products.
- To communicate the results of any investigations.

Our distributors commit:

- To make sure that products purchased are not counterfeit products.
- To inform the manufacturers of any offers of 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:

https://check.hager.com

Check hager is a detection weapon to fight against counterfeiting.

Every circuit breaker, switch and earth leakage circuit breaker has a sole identification number recorded by Hager in our database.

Worldwide access to https://check.hager.com by any customer provides a quick and easy way of establishing the authenticity of products.

The information is in real time.

A service geared to your on site needs

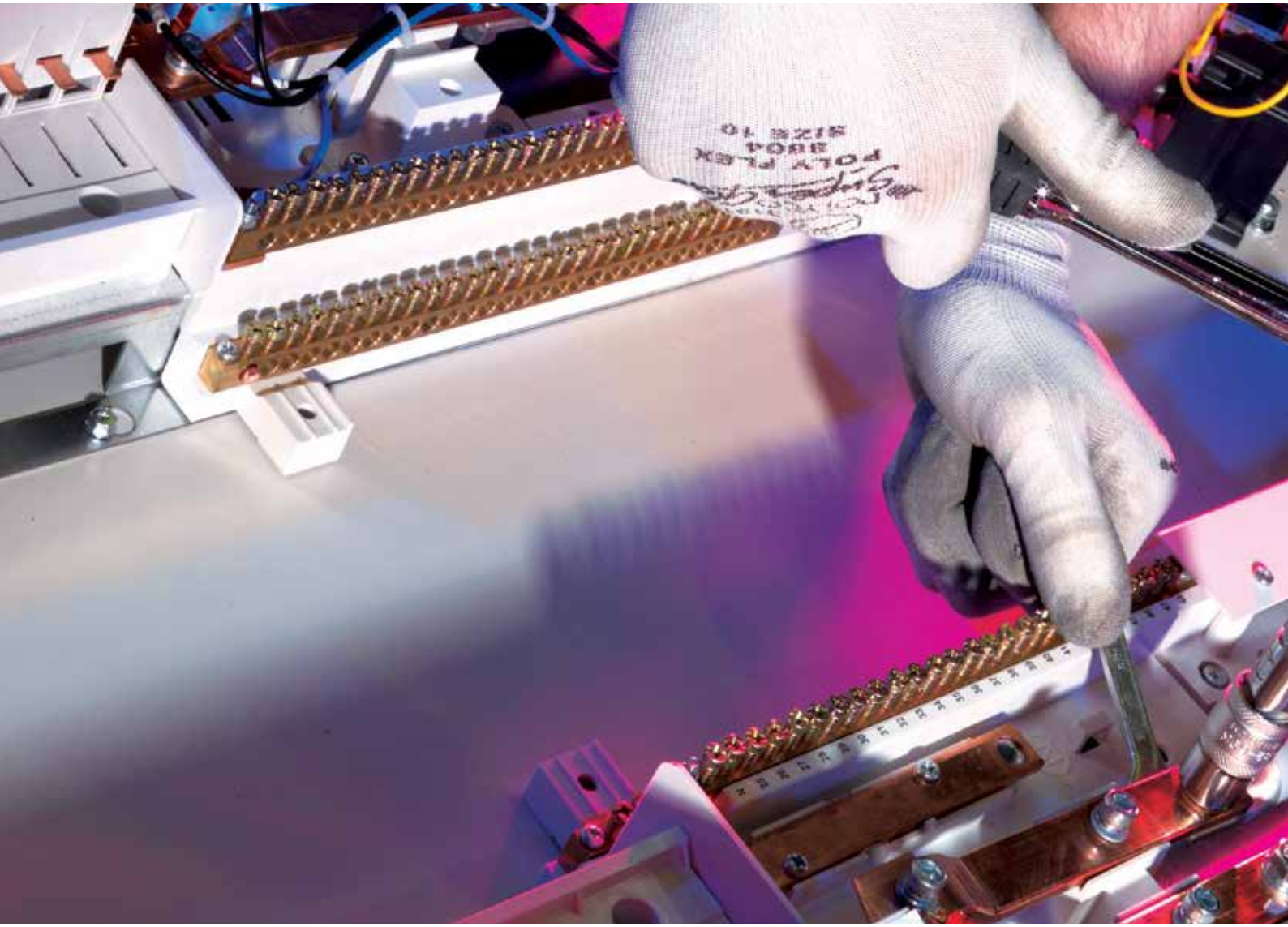
From pre-assembled standard distribution units to bespoke composite TP&N boards, and plug in distribution boards Hager can provide the solution and we will deliver to site to an agreed deadline and to specification. All the power of an experienced design engineering team and an ISO 9001:2000 manufacturing plant is just a telephone call away.

As client requirements become more sophisticated, demands on electrical installation designs have increased. Many electrical distribution solutions require something that cannot be purchased off the shelf.

Whether it is an unusual configuration or simply speed on site that is an issue, Hager's engineered solutions supplies the answer. This Engineered Solutions service puts the power of our design engineers at your fingertips. You give us the specification and we will deliver what you need with the peace of mind of factory assured quality to ISO 9001:2000.

Metering
The Hager lighting and power meter board is a compact solution to meet the demands of energy metering within non-dwelling buildings. The standard power and lighting board is available in this catalogue and comes in two variants to meet the majority of applications.

However for special applications we also offer our full-engineered solutions design and build service. This service can also provide additional features such as data logging and web connectivity for remote meter reading.



1

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.

2

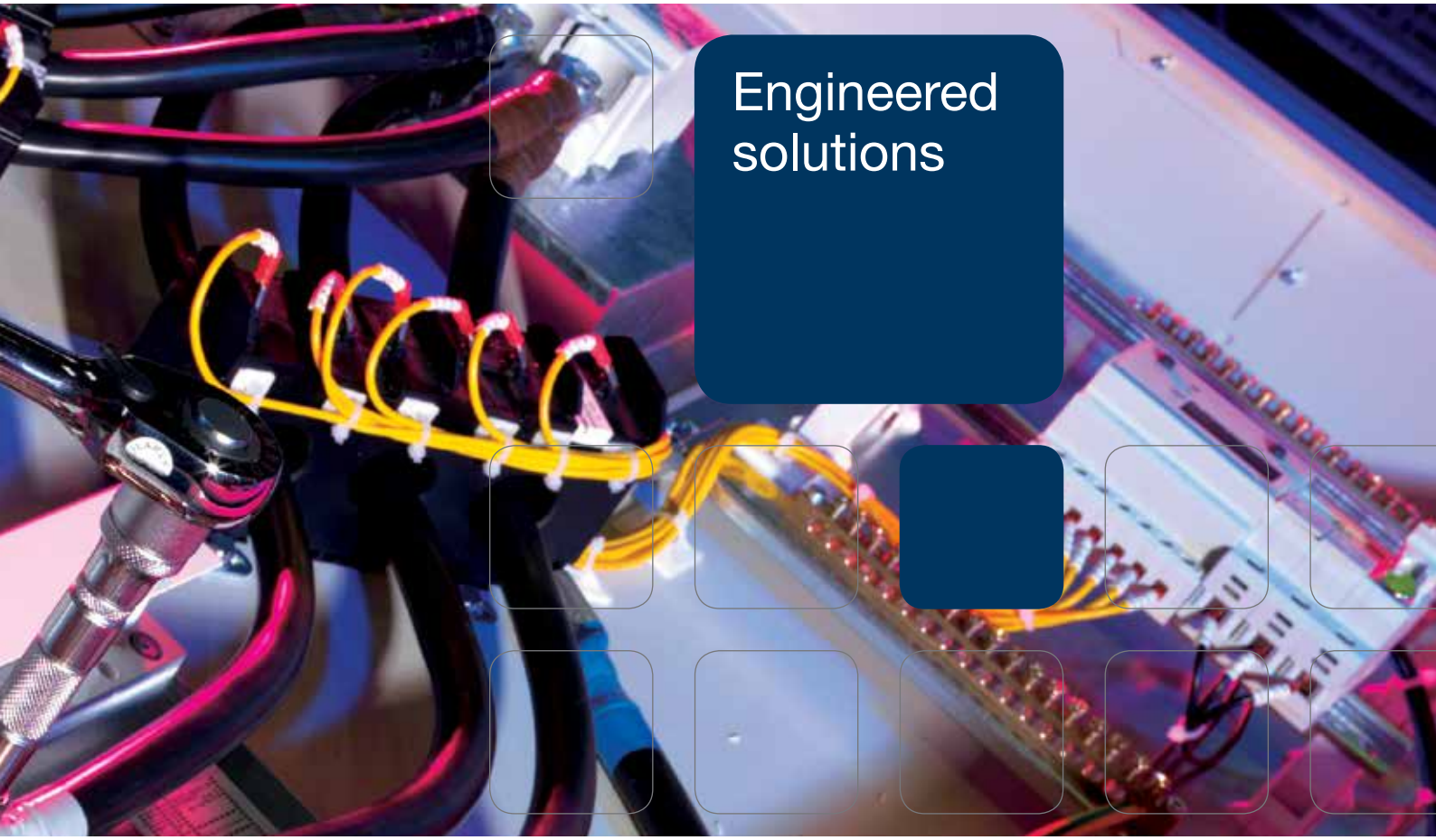
Engineered Consumer Units
Factory assembly of non-standard consumer units, special configurations in standard enclosures or metal DIN rail enclosures. Providing an exact product that meets the requirements of your particular installation needs.

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

3

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

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



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

Engineered Solutions Contact Number **01952 675600**
Call our Customer Services Centre for all your national sales enquiries. estimation@hager.co.uk

Engineered Solutions Faxline **01952 675557**

Consumer Units

Packed with features, the benefit's all yours.

The Hager consumer unit has been developed to accommodate the Building regulations Part M, for integration into the home environment, with great aesthetic design, and plain and glazed door options available.

Through indepth customer research we have incorporated a number of features and benefits for installers, which have resulted in the creation of a range of easy to use, high quality and reliable consumer units.

The range enables full compliance with Amendment 1 of BS 7671 and comes in three standard enclosure types, insulated & hybrid surface mounted and the hybrid flush fit.

DIN Rail Enclosures	1.2
Switch Disconnector Incomer	1.3
RCCB Incomer	1.4
Single Time Delayed RCCB Incomer	1.5
Incomer with Twin RCCB's	1.6
Incomer with Twin RCCB's with Unprotected Ways	1.7
Incomer with Twin RCCB's with 6 Amp RCBO	1.8
Incomer with Twin RCCB's with 40 Amp RCCB	1.9
Twin and Multi Tariff	1.10
Skeleton Units	1.11
Single Phase and Switch Neutral	1.11
Two Row Hybrid Board	1.12
Consumer Unit Accessories	1.13
Garage Units	1.14
IP55 Weather Proof	1.14

Insulated and metal DIN rail enclosures, 1 row from 4 to 22 modules.

Surface mounted enclosures, with a rigid chassis, housing a DIN rail.

Supplied with marking labels and instructions.

Options:
- Keylock
- Plain or glazed door

Complies with BS EN 62208.

For complete accessories list see page 1.13.

For dimensions see page 1.15.

VC008G

DIN Rail - Insulated

Description	Enclosures size	Cat ref. Plain door	Cat ref. Glazed door
8 Module DIN Rail Enclosure	3	**VC008**	**VC008G**
12 Module DIN Rail Enclosure	4	**VC012**	**VC012G**
16 Module DIN Rail Enclosure	5	**VC016**	**VC016G**
22 Module DIN Rail Enclosure	6	**VC022**	**VC022G**

VH012

DIN Rail - Hybrid

Description	Enclosure size	Cat ref. Plain door	Cat ref. Glazed door
4 Module DIN Rail Enclosure	2	**VH004**	**-**
8 Module DIN Rail Enclosure	3	**VH008**	**VH008G**
12 Module DIN Rail Enclosure	4	**VH012**	**VH012G**
16 Module DIN Rail Enclosure	5	**VH016**	**VH016G**
22 Module DIN Rail Enclosure	6	**VH022**	**VH022G**

Insulated and metal enclosures complete with switch disconnector incomer, 1 row from 1 to 20 outgoing ways.

Surface mounted enclosures, with a rigid chassis, complete with a 63 Amp or 100 Amp Switch Disconnector.

Supplied with marking labels, busbar and instructions.

Options:
- Keylock
- Plain or glazed door

Complies with BS EN 60439-3 Annex ZA.

Hybrid = metal back box with insulated cover.

For complete accessories list see page 1.13.

For insulated and hybrid consumer unit dimensions see page 1.15.

VC206

Switch Disconnector Incomer - Insulated

Description	Enclosure size	Cat ref. Plain door	Cat ref. Glazed door
1 Way 63A Switch Disconnector Incomer	1	**VC201**	-
2 Way 63A Switch Disconnector Incomer	1	**VC202**	-
4 Way 63A Switch Disconnector Incomer	3	**VC204**	-
6 Way 63A Switch Disconnector Incomer	3	**VC206**	**VC206G**
4 Way 100A Switch Disconnector Incomer	3	**VC104**	**VC104G**
6 Way 100A Switch Disconnector Incomer	3	**VC106**	**VC106G**
8 Way 100A Switch Disconnector Incomer	4	**VC108**	**VC108G**
10 Way 100A Switch Disconnector Incomer	4	**VC110**	**VC110G**
12 Way 100A Switch Disconnector Incomer	5	**VC112**	**VC112G**
14 Way 100A Switch Disconnector Incomer	5	**VC114**	**VC114G**
16 Way 100A Switch Disconnector Incomer	6	**VC116**	**VC116G**
20 Way 100A Switch Disconnector Incomer	6	**VC120**	**VC120G**

Switch Disconnector Incomer - Hybrid

Description	Enclosure size	Cat ref. Plain door	Cat ref. Glazed door
1 Way 63A Switch Disconnector Incomer	1	**VH201**	-
2 Way 63A Switch Disconnector Incomer	2	**VH202**	-
4 Way 100A Switch Disconnector Incomer	3	**VH104**	**VH104G**
6 Way 100A Switch Disconnector Incomer	3	**VH106**	**VH106G**
8 Way 100A Switch Disconnector Incomer	4	**VH108**	**VH108G**
10 Way 100A Switch Disconnector Incomer	4	**VH110**	**VH110G**
14 Way 100A Switch Disconnector Incomer	5	**VH114**	**VH114G**
16 Way 100A Switch Disconnector Incomer	6	**VH116**	**VH116G**
20 Way 100A Switch Disconnector Incomer	6	**VH120**	**VH120G**

Insulated and metal enclosures complete with RCCB incomer, 1 row from 1 to 18 outgoing ways.

Surface mounted enclosures, with a rigid chassis, housing a 40, 63, 100 30mA RCCB.

Supplied with marking labels, busbar and instructions.

Options:
- Keylock
- Plain or glazed door

Complies with BS EN 60439-3 Annex ZA.

For complete accessories list see page 1.13.

For insulated and hybrid consumer unit dimensions see page 1.15.

VC404H

RCCB Incomer - Insulated

Description	Enclosure size	Cat ref. Plain door
2 Way 40A 30mA RCCB incomer	1	**VC402H**
3 Way 63A 30mA RCCB incomer	3	**VC403H**
4 Way 63A 30mA RCCB incomer	3	**VC404H**
6 Way 63A 30mA RCCB incomer	3	**VC406H**
8 Way 63A 30mA RCCB incomer	4	**VC408H**
4 Way 100A 30mA RCCB incomer	3	**VC304H**
8 Way 100A 30mA RCCB incomer	4	**VC308H**
14 Way 100A 30mA RCCB incomer	5	**VC314H**

VH408H

RCCB Incomer - Hybrid

Description	Enclosure size	Cat ref. Plain door
4 Way 63A 30mA RCCB incomer	3	**VH404H**
6 Way 63A 30mA RCCB incomer	3	**VH406H**
8 Way 63A 30mA RCCB incomer	4	**VH408H**
4 Way 100A 30mA RCCB incomer	3	**VH304H**
6 Way 100A 30mA RCCB incomer	3	**VH306H**
8 Way 100A 30mA RCCB incomer	4	**VH308H**
18 Way 100A 30mA RCCB incomer	6	**VH318H**

Insulated 1 row 12 outgoing way enclosures.

Surface mounted enclosures, with a rigid chassis, housing a Time Delayed RCCB.

Supplied with marking labels, busbar and instructions.

Options:
• Keylock

Complies with BS EN 60439-3 Annex ZA.

For complete accessories list see page 1.13.

For insulated consumer unit dimensions see page 1.15.

VC404H

100A 100mA Time Delayed RCCB Incomer - Insulated

Description	Enclosure size	Cat ref. Glazed door
12 Way Configurable 100A 100mA Time Delayed RCCB 63A 30mA RCCB	5	**VC712TG**

Insulated and metal, split load and configurable enclosures, 1 row from 6-16 outgoing ways.

Surface and Flush mounted enclosures, with a rigid chassis, housing a Switch Disconnector and 2 RCCB's.

Supplied with marking labels, busbar and instructions.

Options:
- Keylock
- Plain or glazed door

Complies with BS EN 60439-3 Annex ZA.

For complete accessories list see page 1.13.

For insulated and hybrid consumer unit dimensions see page 1.15.

For flush consumer unit dimensions see page 1.16.

VC816C

100A Switch plus Twin RCCB - Insulated

Description	Enclosure size	Cat ref. Plain door	Cat ref. Glazed door
6 Way 3+3 100A Switch 2 x 63A 30mA RCCB	4	**VC733H1**	-
10 Way 5+5 100A Switch 2 x 63A 30mA RCCB	5	**VC755H1**	**VC755H1G**
10 Way Configurable 100A Switch 2 x 63A 30mA RCCB	5	**VC710C1**	**VC710C1G**
12 Way 6+6 100A Switch 2 x 63A 30mA RCCB	6	**VC766H1**	**VC766H1G**
12 Way Configurable 100A Switch 2 x 63A 30mA RCCB	6	**VC712C1**	**VC712C1G**
14 Way Configurable 100A Switch 2 x 63A 30mA RCCB	6	**VC714C1**	**VC714C1G**
16 Way Configurable 100A Switch 2 x 63A 30mA RCCB	6	**VC716C1**	**VC716C1G**
10 Way 5+5 100A Switch 2 x 80A 30mA RCCB	5	**VC855H**	-
12 Way 6+6 100A Switch 2 x 80A 30mA RCCB	6	**VC866H**	-
16 Way Configurable 100A Switch 2 x 80A 30mA RCCB	6	**VC816C**	-

100A Switch plus Twin RCCB - Hybrid

Description	Enclosure size	Cat ref. Plain door
10 Way 5+5 100A Switch 2 x 63A 30mA RCCB	5	**VH755H1**
12 Way 6+6 100A Switch 2 x 63A 30mA RCCB	6	**VH766H1**
12 Way Configurable 100A Switch 2 x 63A 30mA RCCB	6	**VH712C1**
14 Way Configurable 100A Switch 2 x 63A 30mA RCCB	6	**VH714C1**
10 Way 5+5 100A Switch 2 x 80A 30mA RCCB	5	**VH855H**
12 Way 6+6 100A Switch 2 x 80A 30mA RCCB	6	**VH866H**

VF710C1

100A Switch plus Twin RCCB - Flush

Description	Enclosure size	Cat ref. Plain door
10 Way Configurable 100A Switch 2 x 63A 30mA RCCB	5	**VF710C1**
12 Way Configurable 100A Switch 2 x 63A 30mA RCCB	6	**VF712C1**
14 Way Configurable 100A Switch 2 x 63A 30mA RCCB	6	**VF714C1**
16 Way Configurable 100A Switch 2 x 63A 30mA RCCB	6	**VF716C1**
12 Way Configurable 100A Switch 2 x 80A 30mA RCCB	6	**VF812C**
14 Way Configurable 100A Switch 2 x 80A 30mA RCCB	6	**VF814C**

Insulated and metal enclosures, 1 row from 10 to 18 outgoing ways.

Surface and Flush mounted enclosures, with a rigid chassis, housing a Switch Disconnector, Twin RCCB and space for RCBOs.

Supplied with marking labels, configurable busbar and instructions.

Options:
- Keylock
- Plain or glazed door

Complies with BS EN 60439-3 Annex ZA.

For complete accessories list see page 1.13.

For insulated and hybrid consumer unit dimensions see page 1.15.

For flush consumer unit dimensions see page 1.16.

VC816CU

100A Switch plus Twin RCCB with Unprotected Ways - Insulated

Description	Enclosure size	Cat ref. Plain door	Cat ref. Glazed door
10 Way Configurable 100A Switch 2 x 63A 30mA RCCB	5	**VC710CU**	**VC710CUG**
16 Way Configurable 100A Switch 2 x 63A 30mA RCCB	6	**VC716CU**	**VC716CUG**
10 Way 3+4+3 100A Switch 2 x 63A 30mA RCCB 3 x MCB	5	**VC7343U**	-
14 Way 5+6+3 100A Switch 2 x 63A 30mA RCCB 3 x MCB	6	**VC7563U**	-
16 Way Configurable 100A Switch 2 x 80A 30mA RCCB	6	**VC816CU**	-
18 Way Configurable 100A Switch 2 x 80A 30mA RCCB	6	**VC818CU**	**VC818CUG**
10 Way 5+4+1 100A Switch 2 x 80A 30mA RCCB 1 x MCB	5	**VC854U**	-
14 Way 5+6+3 100A Switch 2 x 80A 30mA RCCB 3 x MCB	6	**VC8563U**	-
14 Way 7+6+1 100A Switch 2 x 80A 30mA RCCB 1 x MCB	6	**VC876U**	-

VH716CU

100A Switch plus Twin RCCB with Unprotected Ways - Hyrbid

Description	Enclosure size	Cat ref. Plain door	Cat ref. Glazed door
16 Way Configurable 100A Switch 2 x 63A 30mA RCCB	6	**VH716CU**	-
10 Way 3+4+3 100A Switch 2 x 63A RCCB 3 x MCB	5	**VH7343U**	-
16 Way Configurable 100A Switch 2 x 80A 30mA RCCB	6	**VH816CU**	-
10 Way 3+4+3 100A Switch 2 x 80A RCCB 3 x MCB	5	-	**VH8343UG**
10 Way 5+4+1 100A Switch 2 x 80A RCCB 1 x MCB	5	**VH854U**	-
14 Way 7+6+1 100A Switch 2 x 80A RCCB 1 x MCB	6	**VH876U**	-

100A Switch plus Twin RCCB with Unprotected Ways - Flush

Description	Enclosure size	Cat ref. Plain door
16 Way Configurable 100A Switch 2 x 63A 30mA RCCB	6	**VF716CU**
16 Way Configurable 100A Switch 2 x 80A 30mA RCCB	6	**VF816CU**

Insulated and metal enclosures, 1 row from 10 to 14 outgoing ways.

Surface mounted enclosures, with a rigid chassis, housing a Switch Disconnector, Twin RCCB and 6 Amp RCBO.

Supplied with marking labels, busbar and instructions.

Options:
- Keylock

Complies with BS EN 60439-3 Annex ZA.

For complete accessories list see page 1.13.

For insulated and hybrid consumer unit dimensions see page 1.15.

VC776R

100A Switch plus Twin RCCB with 6A RCBO - Insulated

Description	Enclosure size	Cat ref. Plain door	Cat ref. Glazed door
10 Way 5+4+1 100A Switch 2 x 63A 30mA RCCB with 6A RCBO	5	**VC754R**	**VC754RG**
14 Way 7+6+1 100A Switch 2 x 63A 30mA RCCB with 6A RCBO	6	**VC776R**	**-**

100A Switch plus Twin RCCB with 6A RCBO - Hybrid

Description	Enclosure size	Cat ref. Glazed door
10 Way 5+4+1 100A Switch 2 x 63A 30mA RCCB with 6A RCBO	5	**VH754RG**
10 Way 5+4+1 100A Switch 2 x 80A 30mA RCCB with 6A RCBO	5	**VH854RG**
14 Way 7+6+1 100A Switch 2 x 80A 30mA RCCB with 6A RCBO	6	**VH876RG**

Insulated and metal 1 row 12 outgoing way enclosures.

Surface mounted enclosures, with a rigid chassis, housing a Switch Disconnector and 3 RCCBs.

Supplied with marking labels, busbar and instructions.

Options:
• Keylock

Complies with BS EN 60439-3 Annex ZA.

For complete accessories list see page 1.13.

For insulated and hybrid consumer unit dimensions see page 1.15.

VC8552

100A Switch plus Three RCCB with 40A RCCB - Insulated

Description	Enlcosure size	Cat ref. Plain door
12 Way 5+5+2 100A Switch 2 x 80A 30mA RCCB plus 1x 40A 30mA RCCB	6	**VC8552**

VH8552

100A Switch plus Three RCCB with 40A RCCB - Hybrid

Description	Enlcosure size	Cat ref. Plain door
12 Way 5+5+2 100A Switch 2 x 80A 30mA RCCB plus 1x 40A 30mA RCCB	6	**VH8552**

Insulated and metal enclosures 1 row from 12 to 18 outgoing ways.

Surface mounted enclosures, with a rigid chassis, housing a Twin 63A or 100A Switch Disconnector.

Supplied with marking labels, busbar and instructions.

Options:
• Keylock

Complies with BS EN 60439-3 and (Annex ZA 16kA conditional)

For complete accessories list see page 1.13.

For insulated and hybrid consumer unit dimensions see page 1.15.

VC912C

Twin and Multi Tariff - Insulated

Description	Enclosure size	Cat ref. Plain door
12 Way Twin Tariff Configurable 2 x 100A Switch	6	**VC912C**
18 Way Twin Tariff Configurable 2 x 100A Switch	6	**VC918C**
12 Way Multitariff 6+5+1 2 x 100A 1 x 63A Switch	6	**VC9651**

VH918C

Twin and Multi Tariff - Hybrid

Description	Enclosure size	Cat ref. Plain door
18 Way Twin Tariff Configurable 2 x 100A Switch	6	**VH918C**

Skeleton consumer units are designed typically for use in installations in areas with pre-determined space available e.g. Metering cupboards in Local Authority accommodation.

Complies with BS EN 60439-3 and Annex ZA.

For complete accessories list see page 1.13.

VS710C

Skeleton Units

Description	Cat ref. Plain door
12 Way 100A Switch Incomer	**VS112**
10 Way Configurable 100A Switch 1 x 63A 30mA RCCB	**VS710C**
12 Way Configurable 100A Switch 1 x 63A 30mA RCCB	**VS712C**
10 Way 5+4+1 100A Switch 2 x 63A 30mA RCCB 1 x Switch Fed Way for RCBO or MCB (to feed smoke detector for example)	**VS754U**
10 Way 5+4+1 100A Switch 2 x 80A 30mA RCCB 1 x Switch Fed Way for RCBO or MCB (to feed smoke detector for example)	**VS854U**

Consumer Units
Single Phase and Switched Neutral

Insulated and metal enclosures 1 row from 8 to 14 outgoing ways.

Surface mounted enclosures, with a rigid chassis, housing a Switch Disconnector or RCCB Incomer.

Supplied with marking labels, SPSN busbar and instructions.

Options:
- Keylock

Complies with BS EN 60439-3.

For complete accessories list see page 1.13.

For consumer unit dimensions see page 1.15.

Single Phase and Switched Neutral Consumer Unit - Hybrid

These units take Single Pole and Switched Neutral single module MCBs.

Description	Enclosure size	Cat ref. Glazed door
8 Way Metal Single Phase and Switched Neutral 100A 30mA RCCB Incomer	4	**VH308NG**

Hybrid enclosures 2 rows from 21 to 38 outgoing ways.

Surface mounted enclosures, with a rigid chassis, housing a 100A Switch Disconnector.

Supplied with marking labels, busbar and instructions.

Options:
- Keylock
- Plain or glazed door

Complies with BS EN 60439-3 and Annex ZA.

For complete accessories list see page 1.13.

For Two Row Hybrid dimensions see page 1.16

VH124

Two Row Hybrid Board - Hybrid

Description	Cat ref. Plain door	Cat ref. Glazed door
21 Outgoing Ways C/W 100A Switch	**VH124**	**VH124G**
26 Outgoing Ways C/W 100A Switch	**VH129**	**VH129G**
38 Outgoing Ways C/W 100A Switch	**VH141**	**VH141G**

VH726H1

Two Row Hybrid Board - Hybrid

Description	Cat ref. Plain door	Cat ref. Glazed door
26 Way 12+14 100A Switch 2 x 63A 30mA RCD	**VH726H1**	**VH726H1G**
38 Way 18+20 100A Switch 2 x 63A 30mA RCD	**VH738H1**	**VH738H1G**
26 Way 12+14 100A Switch 2 x 80A 30mA RCD	**VH826H**	**VH826HG**
38 Way 18+20 100A Switch 2 x 80A 30mA RCD	**VH838H**	**VH838HG**

The Hager consumer unit has been designed to be the most versatile consumer unit available on the market today.

The accessories below can be used to customise standard consumer units and enclosures to almost any configuration.

VAN00

VAM00

JK01B

VAB08

Description	Pack qty	Cat ref. Plain	Cat ref. Glazed
1 Module busbar blank	25	**JK01B**	
2 Module DIN rail blank piece	5	**VAS02**	
100 Amp terminal block (MCB profile) fits directly onto busbar (cable capacity 50mm²)	1	**KRN190**	
Surge protecion kit	1	**VA02SPD**	
Neutral link	1	**VAN00**	
Door Locking kit	1	**VAL00**	
Incoming tail connection kit	1	**VAM00**	
Dual tariff link kit	1	**VAK0D**	
Split load link kit	1	**VAK0S**	
Triple tariff link kit	1	**VAK0T**	
8 Module busbar	1	**VAB08**	
12 Module busbar	1	**VAB12**	
16 Module busbar	1	**VAB16**	
21 Module busbar	1	**VAB21**	
14 Way SP&SN insulated busbar	1	**VAB14N**	
Terminal bar support clips	5	**VAT00**	
Terminal bar 2 way	1	**VAT02**	
Terminal bar 3 way	1	**VAT03**	
Terminal bar 4 way	1	**VAT04**	
Terminal bar 5 way	1	**VAT05**	
Terminal bar 6 way	1	**VAT06**	
Terminal bar 7 way	1	**VAT07**	
Terminal bar 8 way	1	**VAT08**	
Terminal bar 9 way	1	**VAT09**	
Terminal bar 10 way	1	**VAT10**	
Terminal bar 11 way	1	**VAT11**	
Terminal bar 12 way	1	**VAT12**	
Terminal bar 13 way	1	**VAT13**	
Terminal bar 14 way	1	**VAT14**	
Terminal bar 15 way	1	**VAT15**	
Terminal bar 16 way	1	**VAT16**	
Terminal bar 17 way	1	**VAT17**	
Terminal bar 18 way	1	**VAT18**	
Terminal bar 19 way	1	**VAT19**	
Terminal bar 20 way	1	**VAT20**	
Terminal bar 21 way	1	**VAT21**	
Terminal bar 22 way	1	**VAT22**	
Terminal bar 23 way	1	**VAT23**	
Terminal bar 24 way	1	**VAT24**	
Label pack	1	**VAP00**	
Front cover fixing	2	**VAC00**	
Front cover and door size 3	1	**VAF3S**	**VAF3SG**
Front cover and door size 4	1	**VAF4S**	**VAF4SG**
Front cover and door size 5	1	**VAF5S**	**VAF5SG**
Front cover and door size 6	1	**VAF6S**	**VAF6SG**
Seal strip size 3 - 8 module	2	**VAR3S**	
Seal strip size 4 - 12 module	2	**VAR4S**	
Seal strip size 5 - 16 module	2	**VAR5S**	
Seal strip size 6 - 22 module	2	**VAR6S**	

Our range of garage units comply with BS EN 60439-3 Annex ZA and are available as IP40 and IP55.

Garage units come pre-configured with 32A MCB and 6A MCB for power and lighting.

The weather proof range of consumer units designed to BS EN 60439-3 including Annex ZA.

Rated at IP55 protected against low pressure water splashing from all directions.

For Garage Unit & IP55 Weather Proof dimensions see page 1.17.

GD24H

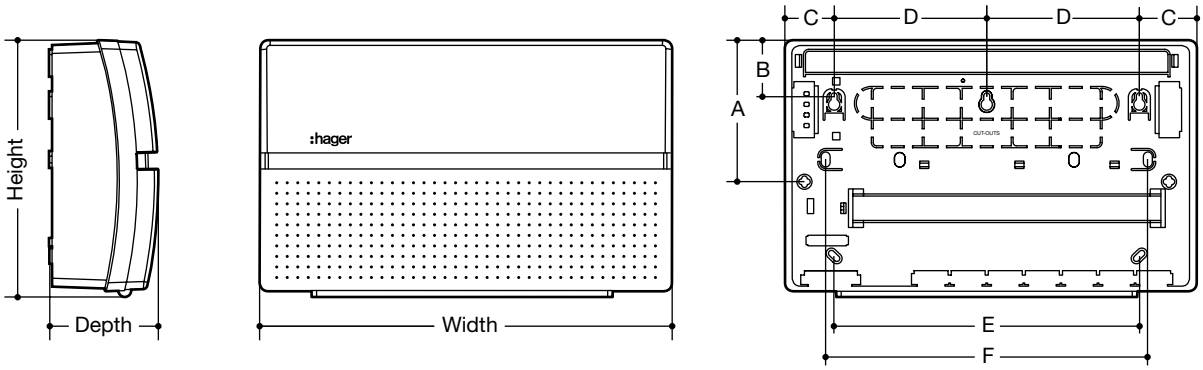
Garage Unit

Description	Cat ref.
2 Way 40A RCCB with 32A MCB and 6A MCB, IP55	**VE24H**
2 Way 40A RCCB with 32A MCB and 6A MCB, IP40	**GD24H**

VW110G

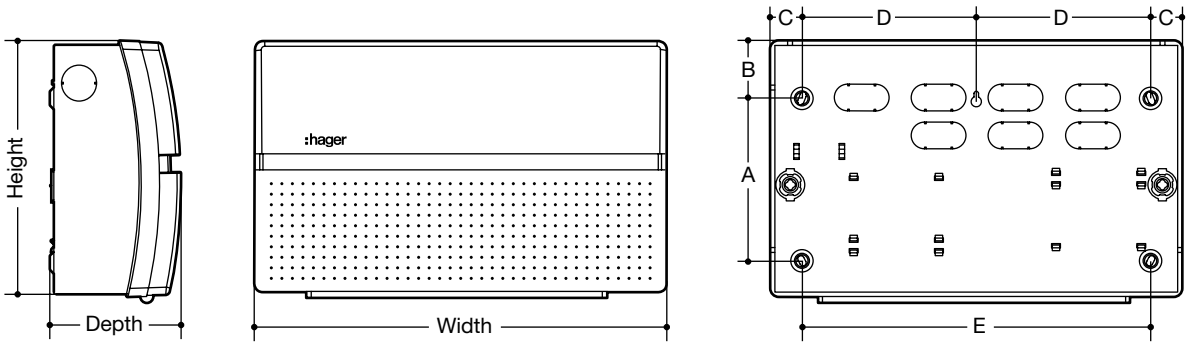
IP55 Weather Proof

Description	Cat ref.
10 Way 100A Switch Incomer IP55	**VW110G**
10 Way 100A 30mA RCCB Incomer IP55	**VW310G**
20 Way Split Load 100A Switch 80A 30mA RCCB IP55	**VW620G**



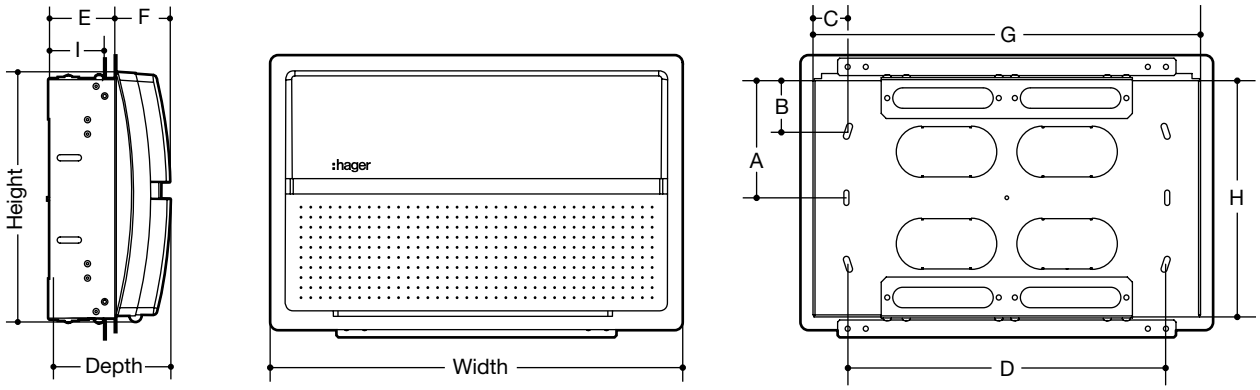
Insulated Enclosures

Enclosure Size	Dimensions (mm)			Fixing Centres (mm)					
	Width	Height	Depth	A	B	C	D	E	F
VC201	110	180	94	-	-	-	-	-	-
VC202	110	180	94	-	-	-	-	-	-
3	240	245	105	115	50	45	72	145	160
4	310	245	105	115	50	45	107	215	230
5	380	245	105	115	50	45	143	285	302
6	490	245	105	115	50	45	195	395	410



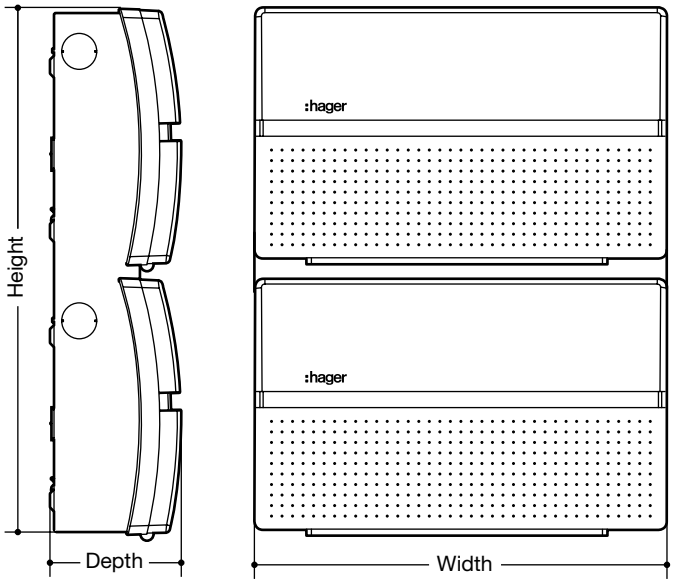
Hybrid Enclosures

Enclosure Size	Dimensions (mm)			Fixing Centres (mm)				
	Width	Height	Depth	A	B	C	D	E
VH201	168	193	124	-	-	-	-	-
VH202	168	193	124	-	-	-	-	-
2	220	230	110	165	32	55	N/A	163
3	240	245	120	150	55	30	89	178
4	310	245	120	150	55	30	125	250
5	380	245	120	150	55	30	160	320
6	490	245	120	150	55	30	214	429



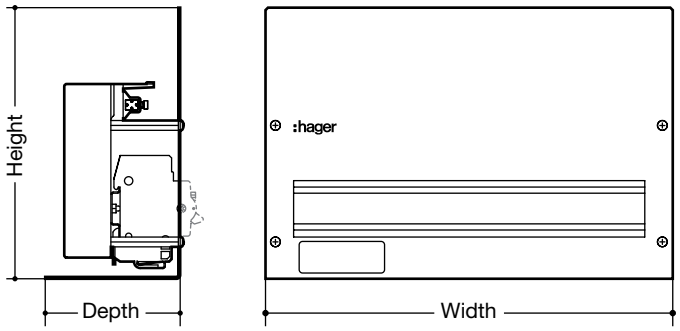
Flush Enclosures

Enclosure Size	Dimensions (mm)			Fixing Centres (mm)						Cut out size (mm)		
	Width	Height	Depth	A	B	C	D	E	F	G	H	I
5	413	257	120	115	50	50	290	65	55	388	232	55
6	**520**	**257**	**120**	**115**	**50**	**50**	**397**	**65**	**55**	**495**	**232**	**55**



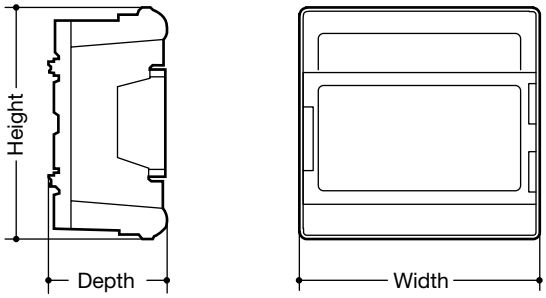
Hybrid Enclosures

Enclosure Size	Dimensions (mm)		
	Width	Height	Depth
VH124	**310**	**504**	**122**
VH124G	**310**	**504**	**122**
VH129	**381**	**504**	**122**
VH129G	**381**	**504**	**122**
VH141	**489**	**504**	**122**
VH141G	**489**	**504**	**122**
VH726H1	**381**	**504**	**122**
VH726H1G	**381**	**504**	**122**
VH738H1	**489**	**504**	**122**
VH738H1G	**489**	**504**	**122**
VH826H	**381**	**504**	**122**
VH826HG	**381**	**504**	**122**
VH838H	**489**	**504**	**122**
VH838HG	**489**	**504**	**122**



Skeleton (Mantel)

Dimensions (mm)			
Width	**Height**	**Depth**	**Fixing Centres (mm)**
331	**221**	**74**	**320**



Garage Units & IP55 Weather Proof

	Dimensions (mm)		
	Width	**Height**	**Depth**
VE24H	**180**	**110**	**82**
GD24H	**168**	**193**	**113**
VW110G	**310**	**302**	**151**
VW310G	**310**	**302**	**151**
VW620G	**310**	**427**	**151**

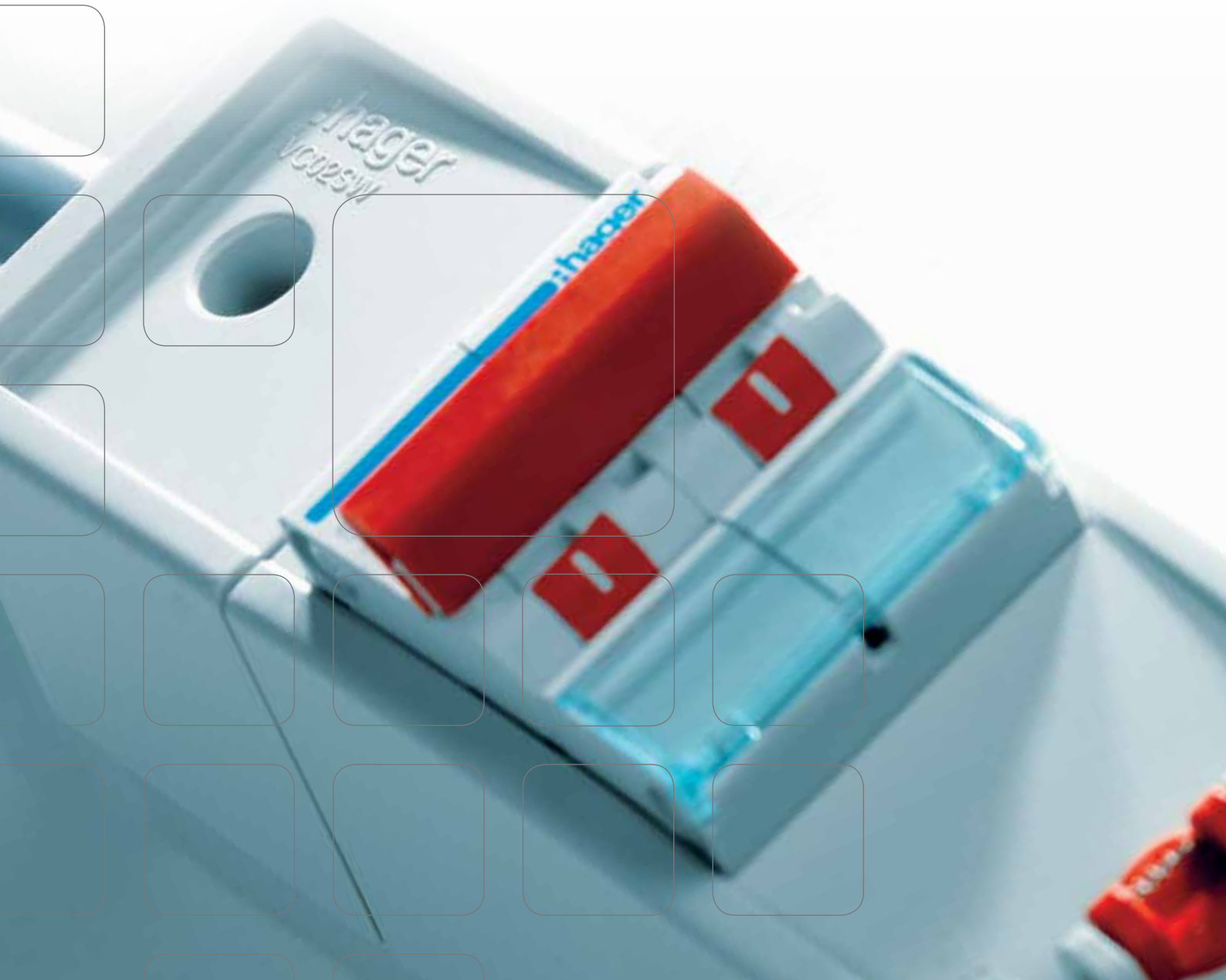
Torque Settings

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

Enclosures

The new generation

Hager enclosures are available in many sizes ranging from the 2 to 10 modules insulated mini gamma, 3 to 36 module IP55 Weather Proof, volta II Flush and vector II multi row enclosures plus the Metal and GRP range of IP65 orion plus enclosures.



mini gamma Enclosures	2.2
vector II Weather Proof Enclosures	2.4
vega Surface Mounting Enclosures	2.5
volta II Flush Mounting Enclosures	2.6
Meter Box Switch	2.7
Enclosures & Accessories	2.7
orion plus Metal IP65 Enclosures & Accessories	2.8
orion plus GRP IP65 Enclosures & Accessories	2.9
Brass Terminals ≤ 60A	2.11
Rail Mounted Terminals	2.12
Insulated Busbars Prong	2.13
Insulated Busbars Fork	2.14

Insulated enclosures 1 row from 2 to 10 modules.

Surface mounted enclosures, with a rigid, chassis, housing a DIN rail.

Supplied with Earth terminals (except GD102E), marking labels and sealing grommets to maintain Class II.

Options (see page 2.3):
- Keylock
- Plain or transparent door
- Terminals and terminal supports

For dimensions see page 2.15.

GD102E

GD106E

mini gamma

Description	Cat ref.
2 Modules compatible with WAGO type 273 connector block (not supplied).	**GD102E**
4 Modules E: 2 x 16 + 2 x 10mm² (capacity to fit an additional 4 hole terminal bar on existing support)	**GD104E**
6 Modules E: 2 x 16 + 2 x 10mm² (capacity to fit an additional two 4 hole terminal bars or one 7 hole terminal bar on existing support)	**GD106E**
8 Modules E: 3 x 16 + 4 x 10mm² (capacity to fit an additional two 4 hole terminal bars or one 7 hole terminal bar on existing support)	**GD108E**
10 Modules E: 3 x 16 + 4 x 10mm² (capacity to fit an additional three 4 hole terminal bars or two 7 hole terminal bars on existing support)	**GD110E**

GP108P

mini gamma Plain Doors

Plain door with integrated handle (use of door increases IP rating to IP40)

For Cat ref.	Cat ref.
GD102E	**GP102P**
GD104E	**GP104P**
GD106E	**GP106P**
GD108E	**GP108P**
GD110E	**GP110P**

GP110T

mini gamma Transparent Doors

Transparent door with integrated handle (use of door increases IP rating to IP40)

For Cat ref.	Cat ref.
GD102E	**GP102T**
GD104E	**GP104T**
GD106E	**GP106T**
GD108E	**GP108T**
GD110E	**GP110T**

GZ108ES

Terminal Support
(no terminals)

For Cat ref.	Cat ref.
GD104E	**GZ104S**
GD106E	**GZ106S**
GD108E	**GZ108S**
GD110E	**GZ110S**

GZ04E

Terminals (63A Rating)

Cable capacity	Neutral (blue) Cat ref.	Earth (green) Cat ref.
2 x 16mm² + 2 x 10mm²	**GZ04N**	**GZ04E**
3 x 16mm² + 4 x 10mm²	**GZ07N**	**GZ07E**

VZ313

Keylock

Description	Cat ref.
Keylock for plain or transparent door	**VZ313**

Enclosure with door
1 row for 3, 6, 10 and 12 modules
2 row for 24 modules
3 row for 36 modules
Adjustable depth DIN rail (except VE103U).

Supplied with sealing plugs to re-instate IP rating after fixing.
Front cover sealing.

Door operation
3-10 modules - vertical hinging retained in open position at 90°
12-36 modules - horizontal hinging.

Hinging reversible (left or right).

Colour: RAL 7035 (light grey).

Wiring ducts 12 - 36 module enclosures/mini wiring channels left and right ensures conductors are neatly dressed.

IP 55: AC 400V.
insulation class: class II

For dimensions see page 2.15.

VE212U

vector II Enclosures

Description	Moulded blanks (In front cover)	Cat ref.
1 row, 3 modules N: 1 x 25 + 3 x 16, E: 1 x 25 + 5 x 16	2 x 1/2	**VE103U**
1 row, 6 modules N: 1 x 25 + 5 x 16, E: 1 x 25 + 7 x 16	2 x 1	**VE106U**
1 row, 10 modules N: 1 x 25 + 9 x 16, E: 1 x 25 + 11 x 16	2 x 1	**VE110U**
1 row, 12 modules N: 1 x 25 + 10 x 16, E: 1 x 25 + 13 x 16		**VE112U**
2 rows, 24 modules N: 1 x 25 + 16 x 16, E: 1 x 25 + 16 x 16		**VE212U**
3 rows, 36 modules N: 1 x 25 + 19 x 16, E: 1 x 25 + 19 x 16		**VE312U**

VZ428

Earth and Neutral for TP&N Connection Assembly

Description	Cat ref.
3 x (3 x 16mm² + 2 x 10mm²) 270mm wide N: 1 x (5 x 16mm² + 6 x 10mm²) In: 63A To fit 12 module wide enclosure only	**VZ428**

VZ403

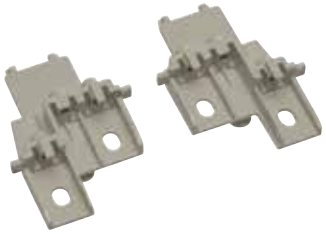
Earth and Neutral for Single Phase Connection Assembly

Description	Cat ref.
2 x (3 x 16mm² + 4 x 10mm²) 270mm wide In: 63A To fit 12 module wide enclosure only	**VZ403**

VZ311

Key Lock

Description	Cat ref.
For all enclosures with 2 keys	**VZ311**



VZ744

Sliding Support

Description	Cat ref.
1 Set = 2 Supports for fixing of additional terminal supports in bottom part of enclosure (VE112U and above)	**VZ744**

IP40 surface mounting enclosures
with transparent or plain doors; 1-3 rows 18 to 54 modules. 63A max. total load.

Enclosures are of an insulating material coloured white RAL 9016.

The enclosures feature a removable chassis with DIN rails for ease of installation.

Top and bottom cable entry plates are removable and interchangeable. The door is also reversible with an integral flush handle.

Options
• Door lock

For dimensions see page 2.16.

VB18B

vega Enclosures

Description	Quick connect earth terminals	Cat ref. Plain door	Cat ref. Glazed door
1 row, 18 modules	4 x 25mm², 14 x 4mm²	**VB18B**	**VB18R**
2 rows, 36 modules	7 x 25mm², 25 x 4mm²	**VB36B**	**VB36R**
3 rows, 54 modules	10 x 25mm², 34 x 4mm²	**VB54B**	**VB54R**

VZ708

VZ707

vega Accessories

Description	Characteristics	Pack qty	Cat ref.
Key lock for vega Enclosures	Supplied with 2 keys	1	**VZ310**
Connection Assembly 63A	2 x (3 x 16mm² + 4 x 10mm²)	1	**VZ708**
Connection Assembly 63A	2 x (3 x 16mm² + 2 x 10mm²)	1	**VZ709**
Coupling pieces for joining two enclosures		1 set	**VZ703**
Replacement cable entry plates top or bottom	With circular cut outs for cables and conduits	10	**VZ706**
	With rectangular cut outs for cable trunking	10	**VZ707**
Blanking clips	1/2 module (8.7mm)	50	**P031F**
to blank out a complete row	1 module (17.5mm)	50	**P032F**
	18 module	10	**JP015**

IP30 Flush mounting enclosures with doors
1-4 rows
12-48 modules
63A max total load

- Enclosure manufactured from insulated material
- Frame and door manufactured from metal
- Reversible door
- Delivered with earth block, blanking clips and circuit identification labelling
- Integrated spirit level

For dimensions see page 2.16.

VU48EP

volta II Enclosures

Description	Quick connect earth terminals	Cat ref.
1 Row 12 Modules	3 x 25mm² + 11 x 4mm²	**VU12EP**
2 Rows 24 Modules	5 x 25mm² + 17 x 4mm²	**VU24EP**
3 Rows 36 Modules	6 x 25mm² + 20 x 4mm²	**VU36EP**
4 Rows 48 Modules	8 x 25mm² + 28 x 4mm²	**VU48EP**

VZ403

volta II Accessories

Description	Characteristics	Cat ref.
Key lock	Supplied with 2 keys replaces original catch	**VZ302N**
Connection assembly single phase 63A	2 x (3 x 16mm² + 4 x 10mm²) 270mm wide	**VZ403**
Connection assembly 63A	2 x (3 x 16mm² + 4 x 10mm²) 1 x (4 x 16mm² + 7 x 10mm²) 270mm wide	**VZ428**
Mounting kit for partition walls Comprising: • 4 support clamps • 4 screws	For mounting flush enclosures in partition walls	**VZ405N**

KN14E

KN10N

KN99E

Quick Connect Terminals

Description	*Length* (mm)	*No. Quick* Connect Terminals 4mm²	*No. Screw* Terminals 25mm²	Cat ref. Neutral	Cat ref. Earth
6 Connection Terminal Block	30	5	1	**KN06N**	**KN06E**
10 Connection Terminal Block	45	8	2	**KN10N**	**KN10E**
14 Connection Terminal Block	60	11	3	**KN14N**	**KN14E**
18 Connection Terminal Block	75	13	5	**KN18N**	**KN18E**
22 Connection Terminal Block	90	16	6	**KN22N**	**KN22E**
26 Connection Terminal Block	105	19	7	**KN26N**	**KN26E**
Pack of 10 Terminal Interconnectors		-	-	**KN99N**	**KN99E**

1 row boxes 1-5 modules
This range is ideally suited for the installation of individual modular devices. (RCCBs, MCBs, RCBO's, Switch Disconnectors etc).

The range is available without door, with plain door or with glazed door.

Where larger cables need to be accommodated for switch disconnectors etc extra cabling space is provided in the extended height versions.

All boxes from 2-5 modules are fitted with an earth bar as standard and for those with doors the catch can be replaced with the optional key locking facility.

These enclosures feature:
- Ample wiring space
- Plain or glazed doors
- Optional key lock

For dimensions see page 2.17.

IU41

Enclosures

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

Note: Recommended maximum cable capacity
* extended height = 35mm^2 all other references = 6mm^2

Accessories

Description	Cat ref.
Keylock with 2 keys suitable for all enclosures fitted with door - IU enclosure	**IKL1**
100A Double Pole Switch Disconnector	**SBN290**
63A 30mA Double Pole RCCB	**CDC263U**
100A 30mA Double Pole RCCB	**CD284U**
100A Single Module Terminal Block (MCB profile)	**KRN190**
125A Single Module Terminal Block (MCB profile)	**KRN199**

Meter Box Switch

VC02SW is an enclosed switch disconnector suitable for meter box applications where an isolating switch between the electricity meter and consumer unit is required.

It benefits from twin cable clamps which have been additionally proven to secure insulated and sheathed meter tales with conductor sizes ranging from 16-35mm^2. This unique feature greatly reduces the strain on the switch terminals reducing the likelihood of loose electrical connections.

The anti-tamper screw cap is a unique feature of VC02SW, allowing the supply authority to simply secure the main cover in place following installation. The device can also be locked in the open/off position with the appropriate Hager accessory.

VC02SW conforms with BS EN 60947-3:2009+A1:2012 which facilitates the installation to comply with BS 7671 IET Wiring Regulations, in particular guidance given in table 53.4.

For dimensions see page 2.17.

VC02SW

Description	Cat ref.
Meter Box Switch	**VC02SW**

Enclosures with plain door
steel colour RAL 7035
insulation class : I ⏚

IP 65 / door closed
according to BS EN 60529
1.5mm thick sheet steel for body and door

These enclosures feature:
- 2 removable gland plates for cable entry on top and bottom
- Earth studs on both body and door
- Door easily removable
- Plain door equipped with one or two locks with triangular 8mm bit centres, located out of the sealed area

Options:
- Key lock
- Wall fixing brackets
- Mounting plate
- Equipment kits for modular devices

For full dimensions see page 2.18.

FL110A

orion plus Metal Enclosures

Dimensions Height x Width x Depth (mm)	No. of locks	Cat ref. Plain door	Cat ref. Glazed door
300 x 250 x 160	1	**FL102A**	**-**
350 x 300 x 160	1	**FL104A**	**FL154A**
350 x 300 x 200	1	**FL105A**	**FL155A**
500 x 300 x 200	1	**FL110A**	**FL160A**
500 x 400 x 200	1	**FL112A**	**FL162A**
650 x 400 x 200	2	**FL117A**	**FL167A**
650 x 400 x 250	2	**FL118A**	**FL168A**
650 x 500 x 250	2	**FL120A**	**FL170A**
800 x 600 x 300	2	**FL124A**	**FL174A**
950 x 600 x 300	2	**FL126A**	**FL176A**
950 x 800 x 300	2	**FL128A**	**FL178A**

FL96Z

FL80Z

FL95Z

FL85Z

FL874A

orion plus Metal Enclosure Accessories

Description	Cat ref.
Key lock to be mounted on the triangular lock	**FL96Z**
1 set of 2 key locks with male square 8mm, with 1 key	**FL80Z**
Key lock for FL201B	**FL94Z**
1 set of 2 locks doublebars 3mm with 1 key	**FL95Z**
Metallic wall fixing brackets with screws (set of 4)	**FL85Z**
Kit for earth connection (for metal enclosures)	**FL874A**
orion plus spray paint kit (RAL7035)	**FL672Z**

Enclosure with plain door
Made of glass reinforced polyester (GRP)
Colour : RAL 7035
FL 201B : RAL 7032
Body made out of one piece up to height 800mm

IP 65 / door closed BS EN 60529
insulation class : II ⧈

These enclosures feature :
- Plain door equipped with one or two locks with triangular 8mm centres, located out of the sealed area, gasket directly moulded on the door
- Studs in the back of the enclosure for mounting plate fastening

Options:
- Key lock
- Wall fixing brackets
- Mounting plate
- Equipment kits for modular devices.

For full dimensions see page 2.19.

FL216B

orion plus GRP Enclosures

Dimensions Height x Width x Depth (mm)	No. of locks	Cat ref. Plain door	Cat ref. Glazed door
300 x 250 x 160	1	**FL201B** [1]	-
350 x 300 x 160	1	**FL204B**	**FL254B**
500 x 300 x 200	2	**FL209B**	**FL259B**
500 x 400 x 200	2	**FL213B**	**FL263B**
650 x 400 x 200	2	**FL216B**	**FL266B**
650 x 500 x 250	2	**FL221B**	**FL271B**
800 x 600 x 300	2	**FL229B**	**FL279B**
1200 x 850 x 300	1	**FL327B**	**FL527B**

[1] FL201B made of polycarbonate

FL96Z

orion plus GRP Enclosure Accessories

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

FL81Z

FL97Z

FL863Z

FL408A

orion plus GRP Enclosure Plain Mounting Plates

Steel sheet 2mm thickness, aluminium zinc. Fixed directly to the back of the enclosure or on the sides allowing the in-depth setting (fitting with slides FL450A). For dimensions see page 2.19.

For enclosures	Dimensions Height x Width (mm)	Cat ref.
FL201B	300 x 250	**FL41G**
FL102A, FL152A	300 x 250	**FL402A**
FL104A, FL105A, FL204B, FL154A, FL155A, FL254B	350 x 300	**FL404A**
FL110A, FL209B, FL160A, FL259B	500 x 300	**FL407A**
FL112A, FL213B, FL162A, FL263B	500 x 400	**FL408A**
FL117A, FL118A, FL216B, FL167A, FL168A, FL266B	650 x 400	**FL412A**
FL120A, FL221B, FL170A, FL271B	650 x 500	**FL413A**
FL124A, FL229B, FL174A, FL279B	800 x 600	**FL415A**
FL126A, FL176A	900 x 600	**FL416A**
FL128A, FL178A	950 x 800	**FL417A**
FL327B, FL527B	1150 x 850	**FL522E**

Blank Front Cover for Modular Chassis

For enclosures	Width	Cat ref.
FL980A, FL981A	300mm	**FL02Z**
FL992A, FL993A	400mm	**FL03Z**
FL994A	500mm	**FL04Z**
FL996A, FL997A	600mm	**FL05Z**
FL998A	800mm	**FL06Z**

FL981A

FL992A

Equipment Kits for Modular Chassis

On Chassis
Only for FL980A and FL981A, composed of:
- DIN rails (slide length 44mm) assembled on chassis and adjustable in depth (of front plates with slide).

On Vertical Rail
Composed of:
- 2 vertical rail, DIN rail (slide length 44mm).
- Front plates with slit.
- A cross-rail allowing the assembly of bars on base and slides).

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

Description
Brass terminals with/without support for neutral/earth/phase connections.

Colour Code
Neutral = Blue support
Earth = Green/Yellow support
Phase = Brown support

Insulated support can be fitted on DIN rail with KZ060 rail clip or flat bar 12 x 2mm.

KM04L

KM13N

Brass Terminals ≤ 60A With Support

Connections: number + section	Neutral Cat ref.	Earth Cat ref.	Phase Cat ref.
2 x 16 + 2 x 10mm² 4 Connections Length 30mm	-	-	**KM04L**
3 x 16 + 4 x 10mm² 7 Connections Length 49mm	**KM07N**	**KM07E**	**KM07L**
5 x 16 + 5 x 10mm² 10 Connections Length 67mm	**KM10D**	**KM10F**	-
5 x 16 + 6 x 10mm² 11 Connections Length 73mm	**KM11N**	**KM11E**	**KM11L**
2 x 16 (Double Drive) + 8 x 10mm² 10 Connections Length 69mm	**KM10N**	**KM10E**	-
6 x 16 + 7 x 10mm² 13 Connections Length 85mm	**KM13N**	**KM13E**	-
1 x 25 + 5 x 16 + 5 x 10mm² 11 Connections Length 85mm	-	**KM11B**	-
1 x 25 + 8 x 16 + 8 x 10mm² 17 Connections Length 121mm	**KM17N** (2 supports)	**KM17E**	-
1 x 25 + 11 x 16 + 13 x 10mm² 25 Connections Length169mm	**KM25N**	**KM25E**	-

K144

Brass Terminals ≤ 60A Without Support

Connections: number + section	Cat ref.
2 x 16 + 2 x 10mm² 4 Connections Length 30mm	**K140**
3 x 16 + 4 x 10mm² 7 Connections Length 49mm	**K142**
5 x 16 + 5 x 10mm² 10 Connections Length 67mm	**K143**
5 x 16 + 6 x 10mm² 11 Connections Length 73mm	**K144**
2 x 16 (Double Drive) + 8 x 10mm² 10 Connections Length 69mm	**K145**
6 x 16 + 7 x 10mm² 13 Connections Length 85mm	**K148**
1 x 25 + 5 x 16 + 5 x 10mm² 11 Connections Length 85mm	**K151**
1 x 25 + 8 x 16 + 8 x 10mm² 17 Connections Length 121mm	**K156**
1 x 25 + 11 x 16 + 13 x 10mm² 25 Connections Length169mm	**K158**
1 x 25 + 8 x 16 + 29 x 10mm² Long Length Terminals Length 242mm	**K159**
1 x 25 + 16 x 16 + 61 x 10mm² Fixing on Flat Bar 12 x 2 with Supports Length 482mm	**K160F**

KZ012

Terminal Supports

For K140 - K160 terminals insulating material M4 x 8 fixing screws

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

KZ060

Rail Clip

For fixing terminals on DIN Rails not for; KM04L, KM10D, KM10F, KM10N, KM10E

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

Description
To prewire incoming & outgoing circuits in distribution boards.

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

Phase	Rated Current	Neutral	Rated Current
KXA02LH	24A	**KXA02NH**	24A
KXA04LH	32A	**KXA04NH**	32A
KXA06LH	41A	**KXA06NH**	41A
KXA10L	57A	**KXA10N**	57A
KXA16L	76A	**KXA16N**	76A
KXA35L	125A	**KXA35N**	125A
KXB70LH	192A	**KXB70NH**	179A

Feed through Rail Mounted Terminals

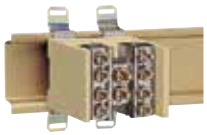
Nominal	Min-Max	Rated voltage	Phase Cat ref.	Neutral Cat ref.	Earth Cat ref.
2.5mm²	(0.5mm² - 4mm²)	800V	**KXA02LH**	**KXA02NH**	**KXA02E**
4mm²	(0.5mm² - 6mm²)	800V	**KXA04LH**	**KXA04NH**	**KXB04E**
6mm²	(0.5mm² - 10mm²)	800V	**KXA06LH**	**KXA06NH**	**KXB06E**
10mm²	(1.5mm² - 16mm²)	400V	**KXA10L**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

End Plates Beige

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

End Stops

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



K037

Connection Blocks in ≤ 125A Single Pole

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

KB163P

Insulated Single Pole Busbars - Prong

Description	Cat ref.
63A 13 Modules Single Pole Brown Insulation (Phase)	**KB163P**
63A 13 Modules Single Pole Blue Insulation (Neutral)	**KB163N**
100A 24 Modules Single Pole	**K171UK**
Endcaps for Single Pole Busbars	**KZ021**

KB263C

Insulated Double Pole Busbars - Prong

Description	Cat ref.
63A 24 Modules Double Pole	**KB263C**
80A 56 Modules Double Pole	**KB280B**
10 Endcaps for Double Pole Busbars	**KZ023A**

KB363C

Insulated Triple Pole Busbars - Prong

Description	Cat ref.
63A 24 Modules Triple Pole	**KB363C**
80A 57 Modules Triple Pole	**KB380B**
10 Endcaps for Triple Pole Busbars	**KZ023A**

Insulated Four Pole Busbars - Prong

Description	Cat ref.
63A 24 Modules Four Pole	**KB463C**
80A 56 Modules Four Pole	**KB480B**
Endcaps for Four Pole Busbars	**KZ024**

KF50SB

KF83D

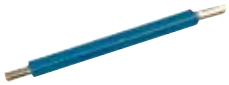
Cable Connectors

Description	Cat ref.
Connection terminal - Cable connection up to 50mm^2 Direct busbar connection 160A/ 690V	**KF50SB**
Prong Type Connection from the Top for Cables 25mm^2	**KF81A**
Prong Type Connection from the Top for Cables 16mm^2	**KF82A**
Prong Type Connection from the Side for Cables 35mm^2	**KF83D**
Fork Type Connection from the Side for Cables 25mm^2	**KF84A**

Neutral Assembly

Description	Cat ref.
DIN Rail Mounted 5 x 16mm^2 and 9 x 10mm^2	**KM14N**

KE01R



KE01B

Insulated Flexible Links 100A Rating

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

⬭ = Connection to modular device ⬬ = Connection to terminal bar

KD190B

KDN263B

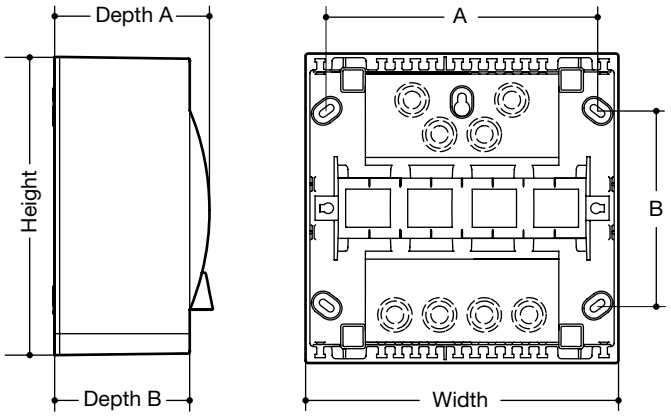
Insulated Busbars - Fork

Description	Cat ref.
100A 57 Modules Single Pole (Section: 20mm$^{2)}$	**KD190B**
63A 24 Modules Double Pole Insulated (Section: 10mm$^{2)}$	**KDN263B**
63A 57 Modules Triple Pole Insulated	**KDN363B**
63A 56 Modules Four Pole Insulated (Section 10mm^{2})	**KDN463B**

KZ059

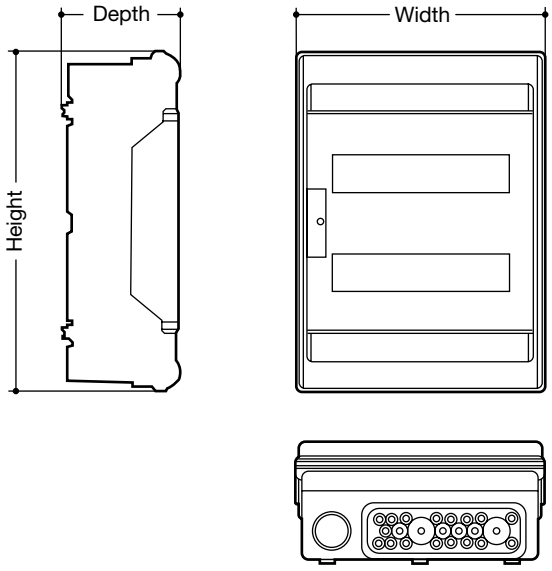
Insulating Strip

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



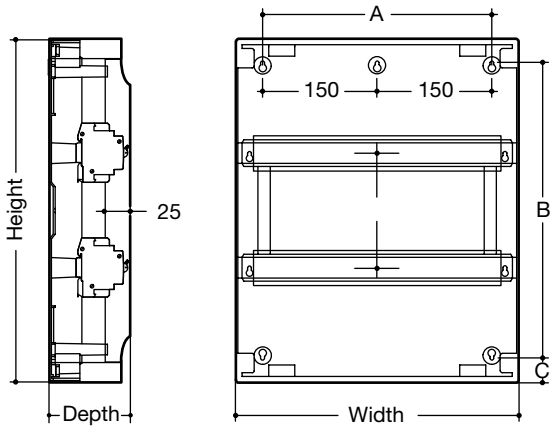
mini gamma

	Dimensions (mm)				Fixing Centres	
	Width	**Height**	**Depth A**	**Depth B**	**A**	**B**
GD102E	55	160	94	82	N/A	N/A
GD104E	110	180	94	82	86	114
GD106E	146	180	94	82	122	114
GD108E	182	180	94	82	159	114
GD110E	218	180	94	82	195	114



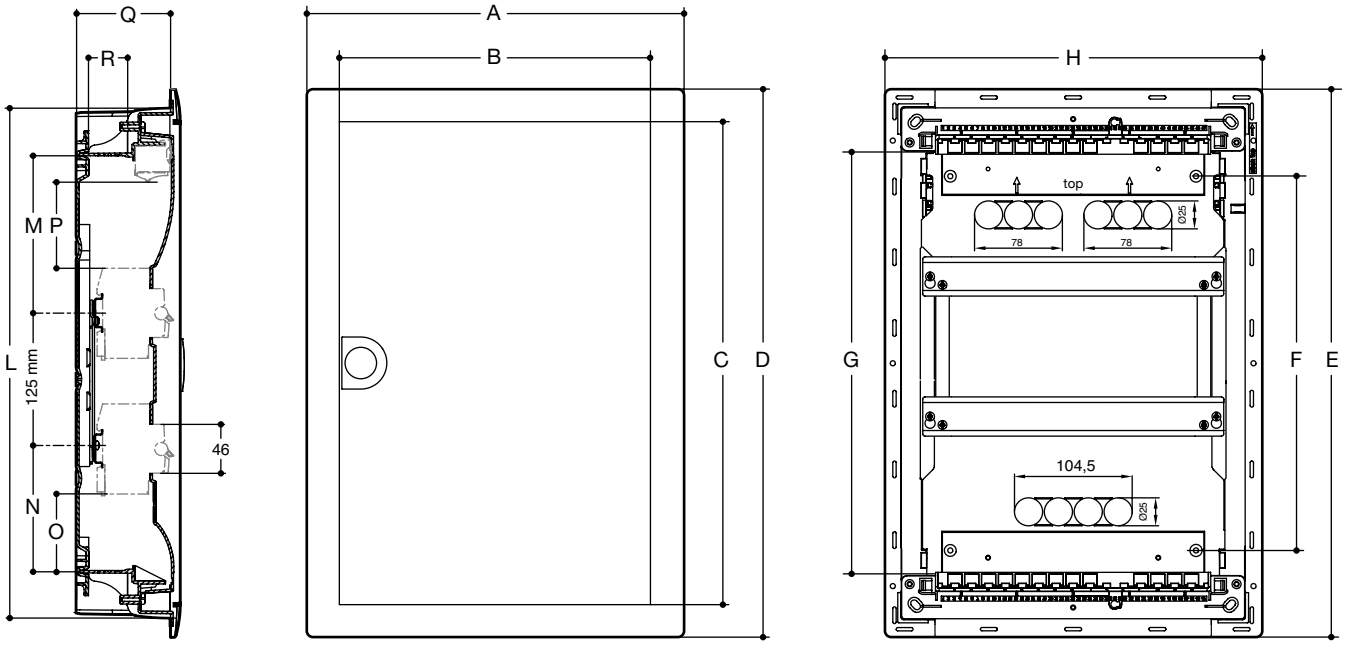
vector II Weatherproof Enclosures

	Dimensions (mm)		
	Width	**Height**	**Depth**
VE103U	110	175	93
VE106U	164	190	113
VE110U	236	210	114
VE112U	310	302	151
VE212U	310	427	151
VE312U	310	552	151



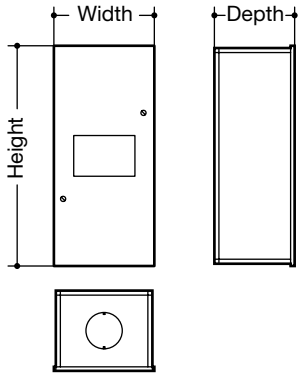
vega Enclosures

	Dimensions (mm)					
	Width	**Height**	**Depth**	**A**	**B**	**C**
VB18B	370	300	145	300	236	32
VB18R	370	300	145	300	236	32
VB36B	370	450	145	300	386	32
VB36R	370	450	145	300	386	32
VB54B	370	600	145	300	536	32
VB54R	370	600	145	300	536	32



volta II Enclosures

	Dimensions (mm)														
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**
VE12EP	348	288	296.5	356.5	335	185	224	330	321	130	104	56	64	89	40
VU24EP	348	288	445.5	505.5	484	334	373	330	470	144	114	66	79	89	40
VU36EP	348	288	570.5	630.5	609	459	498	330	595	144	114	66	79	89	40
VU48EP	348	288	695.5	755.5	734	584	623	330	720	144	114	66	79	89	40



Enclosures and Switch Fuses

	Dimensions (mm)				
	Width	**Height**	**Depth**	**Connection**	**Knockouts**
IU41	50	152	61.5	Earth only	2 x 20mm
IU2	80	152	61.5	Earth only	2 x 20mm
IU3		152	61.5	Earth only	2 x 20mm
IU2/D		152	87.5	Earth only	2 x 20mm
IU2/GD		152	87.5	Earth only	2 x 20mm
IU3/D		152	87.5	Earth only	2 x 20mm
IU42		312	61.5	Earth only	2 x 20mm
IU42/D		312	100	Earth only	2 x 20mm
IU4	115	187	61.5	Earth only	2 x 25mm
IU4/D		187	87.5	Earth only	2 x 25mm
IU44	125	312	73.5	Earth only	None
IU45		312	73.5	Earth only	None
IU44/D		312	99.5	Earth only	None
IU44/GD		312	99.5	Earth only	None

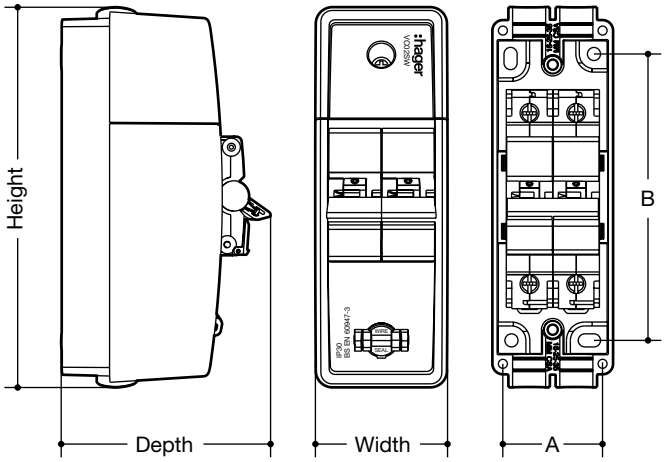
Meter Box Switch

VC02SW is an Enclosed Switch Disconnector suitable for Meter Box Applications where an isolating switch between the electricity meter and consumer unit is required.

The twin cable clamps have been additionally proven to secure insulated and sheathed meter tales with conductor sizes ranging from 16-35mm². This greatly reduces the strain on the switch terminals reducing the likelihood of loose electrical connections.

The anti-tamper screw cap is another unique feature of VC02SW, which allows the supply authority to simply secure the main cover in place following installation. The device can also be locked in the open/off position with the appropriate Hager accessory.

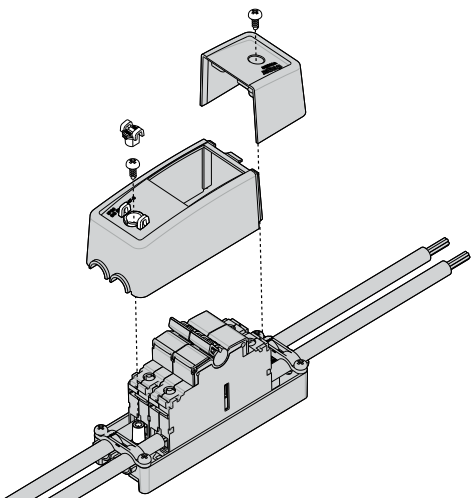
VC02SW conforms with BS EN 60947-3:2009+A1:2012 which facilitates the installation to comply with BS 7671 IET Wiring Regulations, in particular guidance given in table 53.4.



Meter Box Switch Dimensions

	Dimensions (mm)			Fixing Centres (mm)	
	Width	**Height**	**Depth**	**A**	**B**
VC02SW	**50**	**145**	**78.5**	**31**	**109**

Installation



VC02SW (BS EN 60947-3:2009+A1:2012)

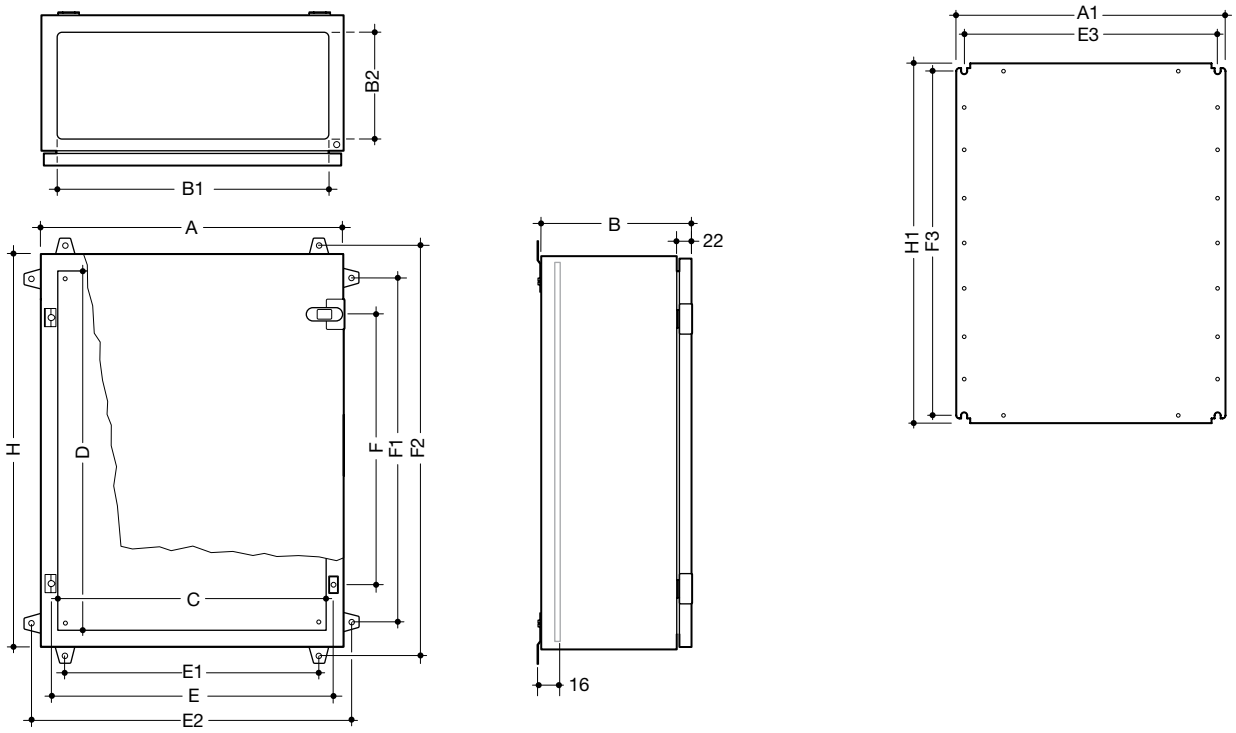
Comes complete with three part enclosure comprising of base, supply authority cover and end installer cover.

Factory fitted SBR290, 100A switch.

2 x Cable clamps: subjected to additional pull force tests for use with 16/25/35mm² insulated and sheathed meter tail cables.

6 x M4x10mm PZ2 self tapping plastite screws.

1 x Anti-tamper screw cap (supply authority use). (Hager wire seal available separately: MZN176).

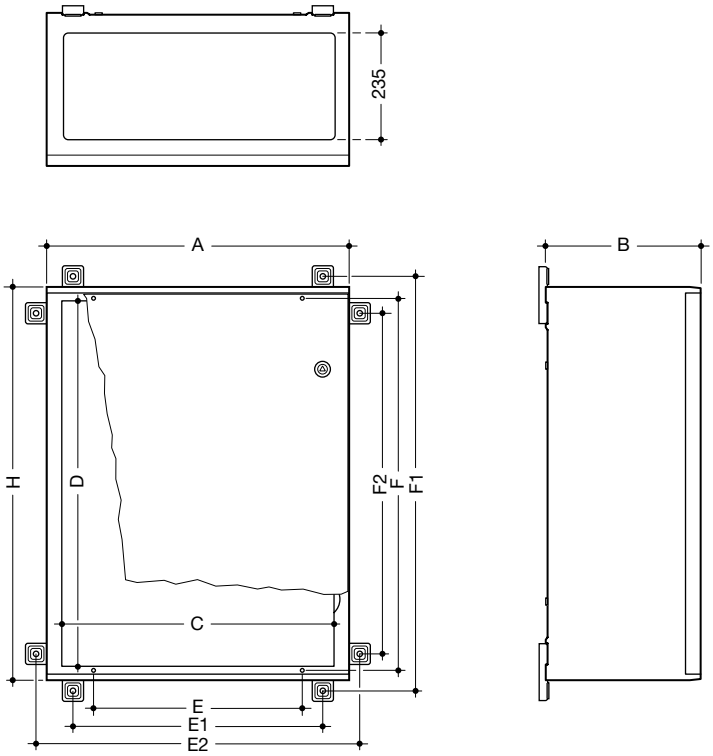


Metal Enclosures Dimensions

		Dimensions (mm)							Outside Fixing				Inside Fixing	
References	**Rows**	**A**	**H**	**B**	**B1**	**B2**	**C**	**D**	**E1**	**E2**	**F1**	**F2**	**E**	**F**
FL102A	-	250	300	160	195	80	200	250	210	320	220	332	169	208
FL104A	2	300	350	160	245	80	250	300	260	370	272	382	219	258
FL105A	2	300	350	200	245	120	250	300	260	370	272	382	219	258
FL110A	3	300	500	200	245	120	250	450	260	370	422	532	219	408
FL112A	3	400	500	200	345	120	350	450	360	470	422	532	319	408
FL117A	4	400	650	200	3458	120	350	600	360	470	572	682	319	558
FL118A	4	400	650	250	345	170	350	600	360	470	572	682	319	558
FL120A	4	500	650	250	445	170	450	600	460	570	572	682	419	558
FL124A	5	600	800	300	545	220	550	750	560	670	722	832	519	708
FL126A	6	600	950	300	545	220	550	900	560	670	872	982	519	858
FL128A	6	800	950	300	745	220	750	900	760	870	872	982	719	858

Mounting Plate Dimensions

		Plate dimensions (mm)		Fixing plates	
Full plates	**For enclosures**	**A1**	**H1**	**E3**	**F3**
FL402A	FL102A	193	280	169	208
FL404A	FL104A,FL105A, FL204B	243	330	219	258
FL407A	FL110A, FL209B	243	480	219	258
FL408A	FL112A, FL213B	343	480	219	408
FL412A	FL117A, FL118A, FL216B	343	630	319	408
FL413A	FL120A, FL221B	443	630	319	558
FL415A	FL123A, FL124A, FL229B	543	780	319	558
FL416A	FL125A, FL126A	543	930	419	558
FL417A	FL127A, FL128A	743	930	419	558
FL522E	FL327B, FL527B	693	1080	719	858



GRP Enclosure Dimensions

		Dimensions (mm)						Inside Fixing		Outside Fixing		
References	**Rows**	**A**	**H**	**B**	**C**	**D**	**E**	**F**	**E1**	**E2**	**F1**	**F2**
FL201B	1	250	300	160	-	-	-	-	-	-	-	-
FL204B	2	300	350	160	250	300	219	258	339	339	269	389
FL209B	3	300	500	200	250	450	219	408	339	339	419	539
FL213B	3	400	500	200	350	450	319	408	439	439	419	539
FL216B	4	400	650	200	350	600	319	558	439	439	569	689
FL221B	4	500	650	250	450	600	419	558	539	539	569	689
FL229B	5	600	800	300	550	750	519	708	639	639	719	839
FL327B	-	850	1200	300	750	1050	-	-	-	-	-	-

Torque Settings

					Tightening torque (N.m)		Cable Stripping (mm)
	Pz No.	**(mm)**	**(mm)**		**Single Cable**	**Multi Cables**	
Consumer unit terminals							
Earth and neutral terminal bars	2	6.5	-	-	2	2	10
Isolation							
SB switch disconnectors	2	6.5	-	-	3.2	3.2	15
Circuit protection							
MTN MCB	2	6.5	-	-	2.8	2.8	13
NBN/NCN/NDN MCB	2	6.5	-	-	2.8	2.8	13
RCBO	2	5.5	-	-	2.1	2.1	13
RCCB	2	5.5	-	-	2.8	2.8	13

Commercial distribution

The complete service offering

Over the past two years we have focused on changing the nature of sub and final distribution. The results of this are the 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.

A Boards, SP&N Distribution Boards	3.2
invicta 3 A Boards, SP&N Distibution Boards	3.4
invicta 3 Type B Distribution Boards	3.6
invicta 3 Panelboards	3.26
Fuse Combination Switches 20 - 800A	3.42
Switch Disconnectors 20 - 800A	3.44
IP65 Switch Disconnectors 10 - 80A	3.45
Enclsoed MCCBs & Switch Fuses	3.46

SP&N distribution boards
SP&N distribution boards are available from 4-28 outgoing ways. The range comes with a choice of either 100A 2P switch disconnector, 63A 30mA 2P RCCB or 100A 30mA 2P RCCB, or a range of split load versions.

The range has the following features:
- Ample wiring space, with provision to accept RCBO's
- Full complement of earth and neutral terminal bars to accept up to 25mm² incoming and 16mm² outgoing cable
- Accepts most consumer unit accessories
- Suitable for cable entry/exit on all sides and back

Construction
Manufactured from 0.9mm CR4 cold reduced mild steel, phosphate pretreated and powder coated to 00A01 BS 4800.

Complies with BS EN 61439-3.

DIN Rail Enclosures
One, two or three row 8-66 modules enclosures, fitted with DIN rails to accept any combination of Hager modular devices from the simplest switch and MCB arrangements to the more sophisticated control and protection system.

These enclosures feature:
- Ample wiring space
- Full complement of earth and neutral bars fitted as standard
- Significant knockout provision
- Plain doors only
- Optional key lock

Complies with BS EN 62208.

For dimensions see page 3.5.

JK104

100A Switch Disconnector Incomer

Description	Cat ref.
4 Way 100A Switch Disconnector Incomer	**JK104**
6 Way 100A Switch Disconnector Incomer	**JK106**
10 Way 100A Switch Disconnector Incomer	**JK110**
14 Way 100A Switch Disconnector Incomer	**JK114**
20 Way 100A Switch Disconnector Incomer	**JK120**
28 Way 100A Switch Disconnector Incomer	**JK128**

JK404H

63A 30mA RCCB Incomer

Description	Cat ref.
4 Way 63A 30mA RCCB Incomer	**JK404H**
6 Way 63A 30mA RCCB Incomer	**JK406H**
10 Way 63A 30mA RCCB Incomer	**JK410H**
14 Way 63A 30mA RCCB Incomer	**JK414H**
20 Way 63A 30mA RCCB Incomer	**JK420H**

JK304H

100A 30mA RCCB Incomer

Description	Cat ref.
4 Way 100A 30mA RCCB Incomer	**JK304H**
6 Way 100A 30mA RCCB Incomer	**JK306H**
10 Way 100A 30mA RCCB Incomer	**JK310H**
14 Way 100A 30mA RCCB Incomer	**JK314H**
20 Way 100A 30mA RCCB Incomer	**JK320H**
28 Way 100A 30mA RCCB Incomer	**JK328H**

100A Switch Disconnector and 63A 30mA RCCB

Description	Cat ref.
6 Way Split Load Configurable 100A Switch 63A 30mA RCCB	**JK706C**
10 Way Split Load Configurable 100A Switch 63A 30mA RCCB	**JK710C**
14 Way Split Load Configurable 100A Switch 63A 30mA RCCB	**JK714C**

100A Switch Disconnector and 100A 30mA RCCB

Description	Cat ref.
28 Way Split Load Configurable 100A Switch 100A 30mA RCCB	**JK527H**

DIN Rail Enclosures

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

invicta 3 SP&N distribution boards
Boards are available with 14 & 29 outgoing ways. The range comes with a 100A 2P switch disconnector.

The range has the following features:

- Ample wiring space, with provision to accept RCBO's
- Full complement of earth and neutral terminal bars to accept up to 25mm^2 incoming and 16mm^2 outgoing cable
- Accepts most consumer unit accessories
- Suitable for cable entry/exit on all sides and back

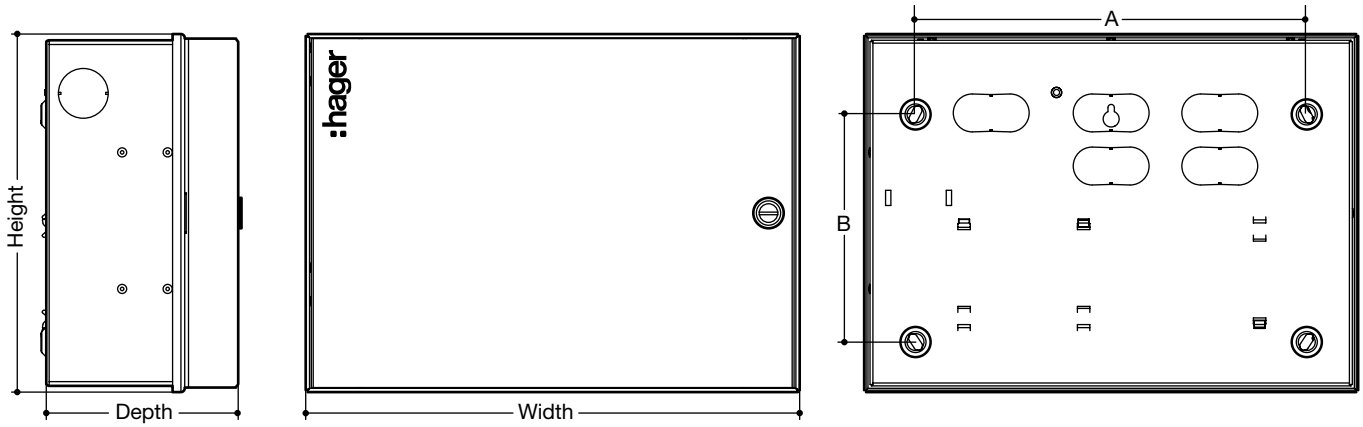
Enclosures are available with plain or glazed doors.

For dimensions see page 3.5.

JK114AG

100A Switch Disconnector Incomer

Description	Cat ref. Plain Door	Cat ref. Glazed Door
1 Row, 14 Way	**JK114A**	**JK114AG**
2 Row, 29 Way	**JK129A**	**JK129AG**

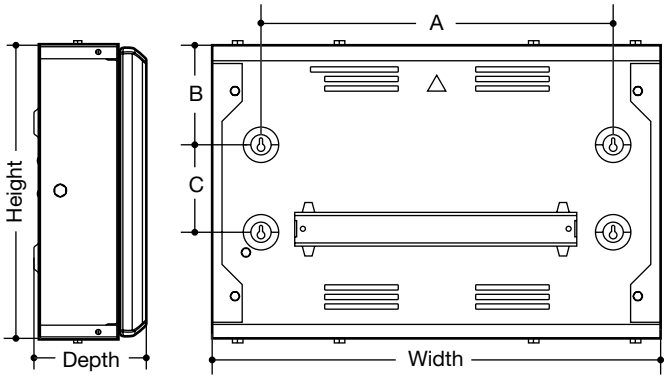


SP&N A Boards

Modules	Dimensions Width	Height	Depth	Fixing Centres A	B	Knockout Size	N° of Knockouts Top	Bottom	Left	Right	Back
8	254	236	125	186	150	ø 20	3	3	-	-	-
						ø 32	1	1	1	1	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	3
12	326	236	125	258	150	ø 20	6	6	-	-	-
						ø 32	1	1	1	1	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	5
16	398	236	125	330	150	ø 20	8	8	-	-	-
						ø 32	1	1	1	1	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	7
22	505	236	125	437	150	ø 20	11	11	-	-	-
						ø 32	1	1	1	1	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	9
2 x 12	326	472	125	258	388	ø 20	6	6	-	-	-
						ø 32	1	1	2	2	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	6
2 x 16	398	472	125	330	388	ø 20	8	8	-	-	-
						ø 32	1	1	2	2	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	8
2 x 22	505	472	125	437	388	ø 20	11	11	-	-	-
						ø 32	1	1	2	2	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	10
3 x 22	505	708	125	437	624	ø 20	11	11	-	-	-
						ø 32	1	1	3	3	-
						ø 25	1	1	-	-	-
						25 x 50	-	-	-	-	15

invicta 3 SP&N A Boards

	Dimensions (mm) Height	Width	Depth	Fixing Centres (mm) A	B	C
JK114A/AG	300	465	132.5	350	35	228
JK129A/AG	450	465	132.5	330	35	378



invicta 3 Type B Boards

125A and 250A boards with multiple incomer choices

Our invicta 3 type B distribution board is the solution for modern commercial installations. The invicta 3 range includes both 125A and 250A boards with multiple incomer choices.

Our IP65 TP&N distribution boards are suitable for three phase applications where a high IP rating is required.

125A Incoming 63A Outgoing Distribution Boards	3.8
125A Meter Packs	3.9
125A Dual Metered Boards & Data Logger	3.10
125A Dual Meter Incomer Kits	3.11
250A Incoming 63A Outgoing Distribution Boards	3.12
250A Meter Packs & Dual Meter Incomer Kits	3.13
125A & 250A DIN Extension Boxes	3.14
125A & 250A Cable Spreader Boxes	3.15
125A & 250A Side DIN Boxes	3.16
125A & 250A Side Extension Boxes	3.17
125A & 250A Accessories & Spares	3.18
IP65 TP&N Distribution Boards	3.19

invicta 3 125A TP&N Distribution Boards
Surface mounted steel enclosures.

Enclosure degree of protection: IP3X

Enclosures are available with plain or glazed doors.

Fully shrouded copper busbar, rated 25kA short circuit conditional current.

Supplied without incoming and outgoing devices.

A Hager incoming kit must be used.

Complies with BS EN 61439-3.

For dimensions see page 3.21.

JK106BG

invicta 3 (125A Incoming 63A Outgoing)

Description	Cat ref. Plain door	Cat ref. Glazed door
4 Triple Pole Ways	**JK104B** [1]	**JK104BG** [1]
6 Triple Pole Ways	**JK106B** [1]	**JK106BG** [1]
8 Triple Pole Ways	**JK108B** [1]	**JK108BG** [1]
12 Triple Pole Ways	**JK112B**	**JK112BG**
16 Triple Pole Ways	**JK116B**	**JK116BG**
18 Triple Pole Ways	**JK118B**	**JK118BG**
24 Triple Pole Ways	**JK124B**	**JK124BG**

[1] A JK101SE is required to provide additional incoming cable space, see page 3.15.

JK11003S

125A Incomer Kits (note: these incomer kits will only fit the 125A board(s)

Description	Cat ref.
3 Pole 100A Switch Disconnector Incomer Kit (fits within distribution board)	**JK11003S**
4 Pole 100A Switch Disconnector Incomer Kit (fits within distribution board)	**JK11004S**
3 Pole 125A Switch Disconnector Incomer Kit (fits within distribution board)	**JK11253S**
4 Pole 125A Switch Disconnector Incomer Kit (fits within distribution board)	**JK11254S**
4 Pole 63A Contactor Incomer Kit includes Switch Disconnector (fits below distribution board, 300mm high)	**JK10634C** [2]
4 Pole 100A Contactor Incomer Kit includes Switch Disconnector (fits below distribution board, 450mm high)	**JK11004C** [2]
125A Direct Connection Kit (fits within distribution board)	**JK11254D**
4 Pole 63A 30mA RCCB Incomer Kit (fits within distribution board)	**JK10634RH**
4 Pole 100A 30mA RCCB Incomer Kit (fits within distribution board)	**JK11004RH**
4 Pole 100A 300mA RCCB Incomer Kit (fits within distribution board)	**JK11004RL**
4 Pole 100A 300mA Time Delayed RCCB Incomer Kit (fits within distribution board)	**JK11004RLD**
4 Pole 100A 100mA RCCB Incomer Kit (fits within distribution board)	**JK11004RM**
4 Pole 100A 100mA Time Delayed RCCB Incomer Kit (fits within distribution board)	**JK11004RMD**
125A 4 pole Changeover Incomer Kit	**JK11254CO**

[2] A 300 / 450mm space is required below the board for fitting, see page 3.22 for dimensions.

MCB
Type B, C & D 10kA & 15kA Single and Triple Pole

For a full list of protection devices see section 4.

Cat ref.		0.5A	1A	2A	3A	4A	6A	10A	16A	20A
B Curve	Single Pole	-	-	-	-	-	**NBN106A**	**NBN110A**	**NBN116A**	**NBN120A**
	Triple Pole	-	-	-	-	-	**NBN306A**	**NBN310A**	**NBN316A**	**NBN320A**
C Curve	Single Pole	**NCN100A**	**NCN101A**	**NCN102A**	**NCN103A**	**NCN104A**	**NCN106A**	**NCN110A**	**NCN116A**	**NCN120A**
	Triple Pole	**NCN300A**	**NCN301A**	**NCN302A**	**NCN303A**	**NCN304A**	**NCN306A**	**NCN310A**	**NCN316A**	**NCN320A**
D Curve	Single Pole	**NDN100A**	**NDN101A**	**NDN102A**	**NDN103A**	**NDN104A**	**NDN106A**	**NDN110A**	**NDN116A**	**NDN120A**
	Triple Pole	**NDN300A**	**NDN301A**	**NDN302A**	**NDN303A**	**NDN304A**	**NDN306A**	**NDN310A**	**NDN316A**	**NDN320A**

JK140MJ

125A Meter Packs (note: these meter packs will only fit the 125A board(s)

These kits fit into the main distribution board. (When fitting a meter pack to a JK104B(G) & JK106B(G), a JK101SE is required to provide additional incoming cable space).

For sub billing metering applications please contact our Technical Support Helpline.

Each meter pack contains:
Meter, 3 Pole CT Block, 3 x Fuses & Carriers on DIN rail, Wiring Loom, Incoming Shroud, Instructions (including torque settings for electrical connections).

Description	Cat ref.
Digital Multifunction Meter Pack Pulsed	**JK140MP**
Digital Multifunction Meter Pack ModBus	**JK140MJ**
kWh Meter Pack Pulsed	**JK142BA**

25A	32A	40A	50A	63A
NBN125A	**NBN132A**	**NBN140A**	**NBN150A**	**NBN163A**
NBN325A	**NBN332A**	**NBN340A**	**NBN350A**	**NBN363A**
NCN125A	**NCN132A**	**NCN140A**	**NCN150A**	**NCN163A**
NCN325A	**NCN332A**	**NCN340A**	**NCN350A**	**NCN363A**
NDN125A	**NDN132A**	**NDN140A**	**NDN150A**	**NDN163A**
NDN325A	**NDN332A**	**NDN340A**	**NDN350A**	**NDN363A**

RCBO Single Pole Sensitivity 30mA (10kA) Type B

Current rating	Cat ref.
6A	**ADB106**
10A	**ADB110**
16A	**ADB116**
20A	**ADB120**
25A	**ADB125**
32A	**ADB132**
40A	**ADB140**
45A	**ADB145**
50A	**ADB150**

RCBO Single Pole Sensitivity 30mA (10kA) Type C

Current rating	Cat ref.
6A	**ADC106**
10A	**ADC110**
16A	**ADC116**
20A	**ADC120**
25A	**ADC125**
32A	**ADC132**
40A	**ADC140**
45A	**ADC145**
50A	**ADC150**

The lighting and power meter board is a compact solution to meet the demands of energy metering within non-dwelling buildings.

The metered boards are supplied with meters that offer a pulsed or modbus output.

The board is provided with the 125A incomer pre-fitted helping to save on installation time.

For metered board dimensions see page 3.25.

For dual meter incomer kit dimensions see page 3.24.

JKD1812B

125A Dual Metered Boards

Description	Cat ref. Pulsed	Cat ref. Modbus
Composite Split Lighting / Power Metered Board 4 / 6	**JKD146B**	**JKD146BM**
Composite Split Lighting / Power Metered Board 6 / 8	**JKD168B**	**JKD168BM**
Composite Split Lighting / Power Metered Board 4 / 16	**JKD1416B**	**JKD1416BM**
Composite Split Lighting / Power Metered Board 8 / 12	**JKD1812B**	**JKD1812BM**

JK107DL

Data Logger

Description	Cat ref.
ULog allows collection of data from up to 8 pulsed output meters allowing data to be analysed by a remote PC (.csv file output into spreadsheets / database).	**JK107DL**

- Instant access and data logging plus 1 temperature input.
- Up to 8 pulsed inputs (CP1 - CP8).
- Transfer data via Ethernet, RS232/485.
- Logs up to 100 days of data from every 1 to 60 second intervals.
- DIN or direct fixing.
- 2 part terminals for easy conneciton.
- Works seamslessly on an Intranet with a fixed IP address.

Each fully assembled* meter pack contains:
1 x Incoming Switch
2 of each of the following:
Meter, 3 Pole CT Block, 3 x Fuses & Carriers on DIN rail, Wiring Loom, Incoming Shroud, Instructions (including torque settings for electrical connections), Off Set Incoming Links, Neutral Connection Block and Extension Box with Glazed Doors.

* distribution boards supplied separately to be assembled on site.

For dual meter incomer kit dimensions see page 3.24.

JKD125BMP (shown fitted with 2x JK108BG distribution boards (not incldued)

Dual 125A Meter Incomer Kits (note: these dual meter incomer kits will only fit the 125A board(s)

Description	Cat ref.
Dual kWh Meter Pack 125A Incomer Pulsed	**JKD125BKWP**
Dual Multifunction Meter Pack 125A Incomer Pulsed	**JKD125BMP**
Dual Multifunction Meter Pack 125A Incomer ModBus	**JKD125BMM**

invicta 3 250A TP&N Distribution Boards
Surface mounted steel enclosures.

Enclosure degree of protection: IP3X

Enclosures are available with plain or glazed doors.

Fully shrouded copper busbar, rated 25kA short circuit conditional current.

Supplied without incoming and outgoing devices.

A Hager incoming kit must be used.

Complies with BS EN 61439-3.

For dimensions see page 3.21.

JK206BG

invicta 3 (250A Incoming 63A Outgoing)

Description	Cat ref. Plain door	Cat ref. Glazed door
8 Triple Pole Ways	**JK208B**	**JK208BG**
12 Triple Pole Ways	**JK212B**	**JK212BG**
16 Triple Pole Ways	**JK216B**	**JK216BG**
18 Triple Pole Ways	**JK218B**	**JK218BG**
24 Triple Pole Ways	**JK224B**	**JK224BG**

250A Incomer Kits (note: these incomer kits will only fit the 250A board(s)

Description	Cat ref.
3 Pole 250A MCCB Incomer Kit (fits within distribution board)	**JK22503M**
4 Pole 250A MCCB Incomer Kit (fits within distribution board)	**JK22504M**
3 Pole 250A Switch Disconnector Incomer Kit (fits within distribution board)	**JK22503S**
4 Pole 250A Switch Disconnector Incomer Kit (fits within distribution board)	**JK22504MCS**
4 Pole 250A Direct Connection Kit (fits within distribution board)	**JK22504D**
4 Pole 160A Contactor Incomer Kit includes Switch Disconnector (fits below distribution board, 450mm high) [1]	**JK21604C** [1]
3 Pole 125A MCCB Incomer Kit (fits within distribution board)	**JK21253M**
4 Pole 125A MCCB Incomer Kit (fits within distribution board)	**JK21254M**

[1] A 450mm space is required below the board for fitting, see page 3.24 for dimensions

MCB
Type B, C & D 10kA & 15kA Single and Triple Pole

For a full list of protection devices see section 4.

Cat ref.		0.5A	1A	2A	3A	4A	6A	10A	16A	20A
B Curve	Single Pole	-	-	-	-	-	**NBN106A**	**NBN110A**	**NBN116A**	**NBN120A**
	Triple Pole	-	-	-	-	-	**NBN306A**	**NBN310A**	**NBN316A**	**NBN320A**
C Curve	Single Pole	**NCN100A**	**NCN101A**	**NCN102A**	**NCN103A**	**NCN104A**	**NCN106A**	**NCN110A**	**NCN116A**	**NCN120A**
	Triple Pole	**NCN300A**	**NCN301A**	**NCN302A**	**NCN303A**	**NCN304A**	**NCN306A**	**NCN310A**	**NCN316A**	**NCN320A**
D Curve	Single Pole	**NDN100A**	**NDN101A**	**NDN102A**	**NDN103A**	**NDN104A**	**NDN106A**	**NDN110A**	**NDN116A**	**NDN120A**
	Triple Pole	**NDN300A**	**NDN301A**	**NDN302A**	**NDN303A**	**NDN304A**	**NDN306A**	**NDN310A**	**NDN316A**	**NDN320A**

250A Meter Packs (note: these incomer kits will only fit the 250A board(s)

These kits fit into the main distribution board.

Each meter pack contains:
Meter, 3 Pole CT Block, 3 x Fuses & Carriers on DIN rail, Wiring Loom, Incoming Shroud, Instructions (including torque settings for electrical connections).

Description	Cat ref.
Digital Multifunction Meter Pack Pulsed	**JK240MP**
Digital Multifunction Meter Pack ModBus	**JK240MJ**
kWh Meter Pack Pulsed	**JK242BA**

JKD250BMP (shown fitted with 2x JK208BG distribution boards (not incldued)

Dual Meter 250A Incomer Kits (note: these dual meter incomer kits will only fit the 250A board(s)

Each meter pack contains:
1x Incoming Switch.

2 of each of the following: Meter, 3 Pole CT Block, 3 x Fuses & Carriers on DIN rail, Wiring Loom, Incoming Shroud, Instructions (including torque settings for electrical connections), Off Set Incoming Links, Neutral Connection Block and Extension Box with Glazed Doors.

Description	Cat ref.
Dual kWh Meter Pack 250A Incomer Pulsed	**JKD250BKWP**
Dual Multifunction Meter Pack 250A Incomer Pulsed	**JKD250BMP**
Dual Multifunction Meter Pack 250A Incomer ModBus	**JKD250BMM**

25A	32A	40A	50A	63A
NBN125A	**NBN132A**	**NBN140A**	**NBN150A**	**NBN163A**
NBN325A	**NBN332A**	**NBN340A**	**NBN350A**	**NBN363A**
NCN125A	**NCN132A**	**NCN140A**	**NCN150A**	**NCN163A**
NCN325A	**NCN332A**	**NCN340A**	**NCN350A**	**NCN363A**
NDN125A	**NDN132A**	**NDN140A**	**NDN150A**	**NDN163A**
NDN325A	**NDN332A**	**NDN340A**	**NDN350A**	**NDN363A**

RCBO Single Pole Sensitivity 30mA (10kA) Type B

Current rating	Cat ref.
6A	**ADB106**
10A	**ADB110**
16A	**ADB116**
20A	**ADB120**
25A	**ADB125**
32A	**ADB132**
40A	**ADB140**
45A	**ADB145**
50A	**ADB150**

RCBO Single Pole Sensitivity 30mA (10kA) Type C

Current rating	Cat ref.
6A	**ADC106**
10A	**ADC110**
16A	**ADC116**
20A	**ADC120**
25A	**ADC125**
32A	**ADC132**
40A	**ADC140**
45A	**ADC145**
50A	**ADC150**

Extension boxes have plain or glazed doors and DIN rail chassis.

Complies with BS EN 62208.

Full width enclosure provided with 16 modular ways per row.

For dimensions see page 3.22.

JK116EG

DIN Extension Boxes for 125A Primary Boards

Description	Number of Rows	Number of DIN Module Ways	Cat ref. Plain door	Cat ref. Glazed door
125A DIN Extension Box	1	16	**JK116E**	**JK116EG**
125A DIN Extension Box	2	32	**JK132E**	**JK132EG**

JK216E

DIN Extension Boxes for 250A Primary Boards

Description	Number of Rows	Number of DIN Module Ways	Cat ref. Plain door	Cat ref. Glazed door
250A DIN Extension Box	1	16	**JK216E**	**JK216EG**
250A DIN Extension Box	2	32	**JK232E**	**JK232EG**

Three Phase kWh Meters - Direct 63A

Voltage 230/400V~ 50/60Hz, Starting current = 40mA,
Base current = 10A, Max current = 63A

Cat ref.	Description
EC350	Energy meter with pulsed output and total / partial counter
EC352	Energy meter with pulsed output - total / partial counter and 2 tariffs

Three Phase kWh Meters - Connection via Current Transformers

To be connected to CT with 5A on the secondary
Voltage 230/400V~ 50/60Hz, Starting current = 10mA,
Max current on CT secondary = 6A

Cat ref.	Description
EC370	Energy meter with pulsed output and total / partial counter
EC372	Energy meter with puseld output - total / partial counter and 2 tariffs
TE370	Energy meter with KNX ouput

Three Phase kWh Meters - Direct 100A

Voltage 230/400V~ 50/60Hz, Starting current = 80mA,
Base current = 20A, Max current = 100A

Cat ref.	Description
EC360	Energy meter with pulsed output and total / partial counter
EC362	Energy meter with pulsed output - total / partial counter and 2 tariffs
EC364M	Energy meter with pulsed output - with MID approval
EC365B	Energy meter with bidirectional counter
TE360	Energy meter with KNX output

Current Transformers

Cat ref.	Ratio
SR051	50/5
SR101	100/5
SR150	150/5
SR200	200/5

Cat ref.	Ratio
SR250	250/5
SR300	300/5
SR400	400/5
SR600	600/5

Cable spreader boxes are used for additional cabling space therefore do not require doors. If doors are desired optional door kits are available.

Complies with BS EN 62208

Full width enclosure provided with 16 modular ways per row.

For dimensions see page 3.22.

JK101SE

Cable Spreader Boxes for 125A & 250A Primary Boards

Description	125A Cat ref.	250A Cat ref.
Small Cable Spreader Box *	**JK101SE**	**JK201SE**
Large Cable Spreader Box *	**JK102LE**	**JK202LE**

* no door included (see below for door kit).

JK101DK

Optional Door Kits for Cable Spreader Boxes (above)

Description	125A Cat ref.	250A Cat ref.
Small Cable Spreader Box Door Kit	**JK101DK**	**JK101DK**
Large Cable Spreader Box Door Kit	**JK102DK**	**JK102DK**

Low Noise Contactors

Cat ref.	Type	Coil AC Voltage	Power circuit AC1
ESC225S	25A 2NO	230V 50Hz	25A - 400V~
ESC240S	40A 2NO	230V 50Hz	40A - 400V~
ESC263S	63A 2NO	230V 50Hz	63A - 400V~
ESC325S	25A 3NO	230V 50Hz	25A - 400V~
ESC340S	40A 3NO	230V 50Hz	40A - 400V~
ESC428S	25A 3NO + 1NC	230V 50Hz	25A - 400V~
ESC425S	25A 4NO	230V 50Hz	25A - 400V~
ESC440S	40A 4NO	230V 50Hz	40A - 400V~
ESC463S	63A 4NO	230V 50Hz	63A - 400V~
ESC426S	25A 4NC	230V 50Hz	25A - 400V~

Digital Time Switches

Cat ref.	Description
EG010	1 Channel Time Switch (Daily Cycle)
EG071	1 Channel TIme Switch (Weekly Cycle)
EG103	1 Channel Time Switch (Weekly Cycle - Basic Version)
EG203	2 Channel Time Switch (Weekly Cycle - Basic Version)
EG103E	1 Channel Time Switch (Weekly Cycle - Evolution Version)
EG203E	2 Channel Time Switch (Weekly Cycle - Evolution Version)
EG493E	4 Channel Time Switch (Weekly / Annual Cycle)
EE180	1 Channel Astronomical Time Switch
EE181	2 Channel Astronomical Time Swtich

Surge Protection Devices

Cat ref.	Description
SPN140D	Single Pole 1.2kV
SPN215R	2 Poles 1ø + N 1.0kV
SPN415R	4 Poles 3ø + N 1.2kV

For a full list of modular devices and technical details see section 5.

Side extension boxes provide a new concept for distribution boards to allow DIN rail mounted devices to be fitted on site.

They can be horizontally or vertically attached to distribution boards using 1 x JK100HK.

* All Side DIN Boxes supplied with 2x removable gland plates.

For dimensions see page 3.21.

JK104BDFG

Side DIN Boxes for 125A Primary Boards

Description	Number of Rows	Number of DIN Module Ways	Cat ref. Glazed door
32 Way Side DIN Box for JK104B	2	32	**JK104BDFG**
32 Way Side DIN Box for JK106B	2	32	**JK106BDFG**
48 Way Side DIN Box for JK108B	3	48	**JK108BDFG**
64 Way Side DIN Box for JK112B	4	64	**JK112BDFG**
80 Way Side DIN Box for JK116B	5	80	**JK116BDFG**

JK208BDFG

Side DIN Boxes for 250A Primary Boards

Description	Number of Rows	Number of DIN Module Ways	Cat ref. Glazed door
80 Way Side DIN Box for JK208B	5	80	**JK208BDFG**
80 Way Side DIN Box for JK212B	5	80	**JK212BDFG**
96 Way Side DIN Box for JK216B	6	96	**JK216BDFG**
112 Way Side DIN Box for JK218B	7	112	**JK218BDFG**
128 Way Side DIN Box for JK224B	8	128	**JK224BDFG**

Three Phase kWh Meters - Direct 63A

Voltage 230/400V~ 50/60Hz, Starting current = 40mA,
Base current = 10A, Max current = 63A

Cat ref.	Description
EC350	Energy meter with pulsed output and total / partial counter
EC352	Energy meter with pulsed output - total / partial counter and 2 tariffs

Three Phase kWh Meters - Connection via Current Transformers

To be connected to CT with 5A on the secondary
Voltage 230/400V~ 50/60Hz, Starting current = 10mA,
Max current on CT secondary = 6A

Cat ref.	Description
EC370	Energy meter with pulsed output and total / partial counter
EC372	Energy meter with puseld output - total / partial counter and 2 tariffs
TE370	Energy meter with KNX ouput

Three Phase kWh Meters - Direct 100A

Voltage 230/400V~ 50/60Hz, Starting current = 80mA,
Base current = 20A, Max current = 100A

Cat ref.	Description
EC360	Energy meter with pulsed output and total / partial counter
EC362	Energy meter with pulsed output - total / partial counter and 2 tariffs
EC364M	Energy meter with pulsed output - with MID approval
EC365B	Energy meter with bidirectional counter
TE360	Energy meter with KNX output

Current Transformers

Cat ref.	Ratio
SR051	50/5
SR101	100/5
SR150	150/5
SR200	200/5

Cat ref.	Ratio
SR250	250/5
SR300	300/5
SR400	400/5
SR600	600/5

Side extension boxes provide a new concept for distribution boards to allow cable ways to be fitted on site.

These are available in either half or full distribution board width. They can be horizontally or vertically attached to distribution boards using 1 x JK100HK.

Can be used with invicta 3 Panelboards JN & JF.

* All Side Extension Boxes supplied with 2x removable gland plates.

For dimensions see page 3.23.

JK104BSF

Side Extension Boxes for 125A Primary Boards

Description	Cat ref. Plain door
4 Way Side Extension Box for JK104B Full Width	**JK104BSF**
6 Way Side Extension Box for JK106B Full Width	**JK106BSF**
8 Way Side Extension Box for JK108B Full Width	**JK108BSF**
12 Way Side Extension Box for JK112B Full Width	**JK112BSF**
16 Way Side Extension Box for JK1116B Full Width	**JK116BSF**

Side Extension Boxes for 250A Primary Boards

Description	Cat ref. Plain door
8 Way Side Extension Box for JK208B Full Width	**JK208BSF**
12 Way Side Extension Box for JK212B Full Width	**JK212BSF**
16 Way Side Extension Box for JK216B Full Width	**JK216BSF**
18 Way Side Extension Box for JK218B Full Width	**JK218BSF**
24 Way Side Extension Box for JK224B Full Width	**JK224BSF**

JK104BSH

Half Width Side Extension Boxes for 125/250A Primary Boards

Doors are not available.

Description	Cat ref. 125A	Cat ref 250A
4 Way Half Width Extension Box	**JK104BSH**	-
6 Way Half Width Extension Box	**JK106BSH**	-
8 Way Half Width Extension Box	**JK108BSH**	**JK208BSH**
12 Way Half Width Extension Box	**JK112BSH**	**JK212BSH**
16 Way Half Width Extension Box	**JK116BSH**	**JK216BSH**
18 Way Half Width Extension Box	-	**JK218BSH**
24 Way Half Width Extension Box	-	**JK224BSH**
Small Half Width Filler Box	**JK101BSH**	**JK201BSH**

Low Noise Contactors

Cat ref.	Type	Coil AC Voltage	Power circuit AC1
ESC225S	25A 2NO	230V 50Hz	25A - 400V~
ESC240S	40A 2NO	230V 50Hz	40A - 400V~
ESC263S	63A 2NO	230V 50Hz	63A - 400V~
ESC325S	25A 3NO	230V 50Hz	25A - 400V~
ESC340S	40A 3NO	230V 50Hz	40A - 400V~
ESC428S	25A 3NO + 1NC	230V 50Hz	25A - 400V~
ESC425S	25A 4NO	230V 50Hz	25A - 400V~
ESC440S	40A 4NO	230V 50Hz	40A - 400V~
ESC463S	63A 4NO	230V 50Hz	63A - 400V~
ESC426S	25A 4NC	230V 50Hz	25A - 400V~

Digital Time Switches

Cat ref.	Description
EG010	1 Channel Time Switch (Daily Cycle)
EG071	1 Channel TIme Switch (Weekly Cycle)
EG103	1 Channel Time Switch (Weekly Cycle - Basic Version)
EG203	2 Channel Time Switch (Weekly Cycle - Basic Version)
EG103E	1 Channel Time Switch (Weekly Cycle - Evolution Version)
EG203E	2 Channel Time Switch (Weekly Cycle - Evolution Version)
EG493E	4 Channel Time Switch (Weekly / Annual Cycle)
EE180	1 Channel Astronomical Time Switch
EE181	2 Channel Astronomical Time Swtich

Surge Protection Devices

Cat ref.	Description
SPN140D	Single Pole 1.2kV
SPN215R	2 Poles 1ø + N 1.0kV
SPN415R	4 Poles 3ø + N 1.2kV

For a full list of modular devices and technical details see section 5.

JK01B

JK222PK

invicta 3 125A & 250A 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**
Triple pole earth bar kit high integrity - 2 x 15 connections	**JK030BEB**	**JK030BEB**
Document clip	**JK01DC**	**JK01DC**

JK06TK

invicta 3 125A & 250A Trunking Kits and Spares

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

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

invicta 3 125A & 250A Spares

Description	125A Spares Cat ref.	250A Spares Cat ref.
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**

IP65 TP&N distribution boards are suitable for three phase applications where a high IP rating is required. The distribution boards are available with either a steel or GRP enclosure.

Incoming devices are supplied separately, and with a choice of 10 primary distribution boards up to 100 TP&N configurations are possible.

Available up to 125A direct connection with outgoing distribution through 4, 6, 8, 12 or 16 ways, rated for MCBs from 0.5A to 63A.

Complies with BS EN 61439-3.

JK106BD

IP65 Distribution Boards - Metal

Rated at 125A max

Ways	Dimensions (mm) (HxWxD)	Cat ref.
4	800 x 600 x 300	**JK104BD**
6	800 x 600 x 300	**JK106BD**
8	800 x 600 x 300	**JK108BD**
12	950 x 600 x 300	**JK112BD**
16	950 x 600 x 300	**JK116BD**

JK106BF

IP65 Distribution Boards - Insulated

Rated at 125A max

Ways	Dimensions (mm) (HxWxD)	Cat ref.
4	800 x 600 x 300	**JK104BF**
6	800 x 600 x 300	**JK106BF**
8	800 x 600 x 300	**JK108BF**
12	1150 x 850 x 300	**JK112BF**
16	1150 x 850 x 300	**JK116BF**

JK11003S

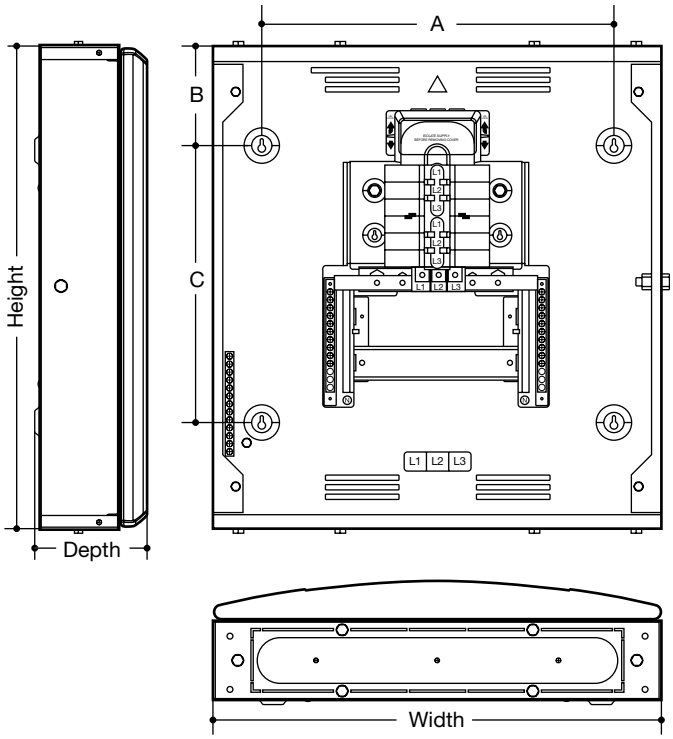
125A Incomer Kits

Description	Cat ref.
3 Pole 100A Switch Disconnector Incomer Kit (fits within distribution board)	**JK11003S**
4 Pole 100A Switch Disconnector Incomer Kit (fits within distribution board)	**JK11004S**
3 Pole 125A Switch Disconnector Incomer Kit (fits within distribution board)	**JK11253S**
125A Direct Connection Kit (fits within distribution board)	**JK11254D**
4 Pole 63A 30mA RCCB Incomer Kit (fits within distribution board)	**JK10634RH**
4 Pole 100A 30mA RCCB Incomer Kit (fits within distribution board)	**JK11004RH**
4 Pole 100A 300mA RCCB Incomer Kit (fits within distribution board)	**JK11004RL**
4 Pole 100A 300mA Time Delayed RCCB Incomer Kit (fits within distribution board)	**JK11004RLD**
4 Pole 100A 100mA RCCB Incomer Kit (fits within distribution board)	**JK11004RM**
4 Pole 100A 100mA Time Delayed RCCB Incomer Kit (fits within distribution board)	**JK11004RMD**

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 / 400V	230 / 400V
IP Protection	IP3X to BS EN 60529	IP3X to BS EN 60529
Enclosure Body Type	Steel	Steel
Enclosure Paint Type	Powder coat Grey white RAL 9002	Powder coat Grey white RAL 9002
Cable Entry	Obround protected cable entry points	Obround protected cable entry points
Terminal Connection Capacity		
Incoming Line Terminal	50mm²	120mm²
Incoming Earth Terminal	M8 stud	M8 stud
Incoming Neutral Terminal	50mm² cage or M6 stud	50mm² cage or M6 stud
Outgoing Earth Terminals	16mm²	16mm²
Outgoing Neutral Terminals	16mm²	16mm²
Enclosure Earth Stud	M8	M8
Installation		
Mounting	4 x key hole fixing holes plus central top key hole for one fixing hanging / levelling	4 x key hole fixing holes plus central top key hole for one fixing hanging / levelling
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)	(mm)		Tightening torque (N.m)		Cable Stripping (mm)
					Single Cable	Multi Cables	
Consumer unit terminals							
Earth and neutral terminal bars	2	6.5	-	-	2	2	10
Isolation							
SB switch disconnectors	2	6.5	-	-	3.6	3.6	15
Circuit protection							
MTN MCB	2	6.5	-	-	2.8	2.8	13
NBN/NCN/NDN MCB	2	6.5	-	-	2.8	2.8	13
RCBO	2	5.5	-	-	2.1	2.1	13
RCCB	2	5.5	-	-	2.8	2.8	13



125A Primary Boards

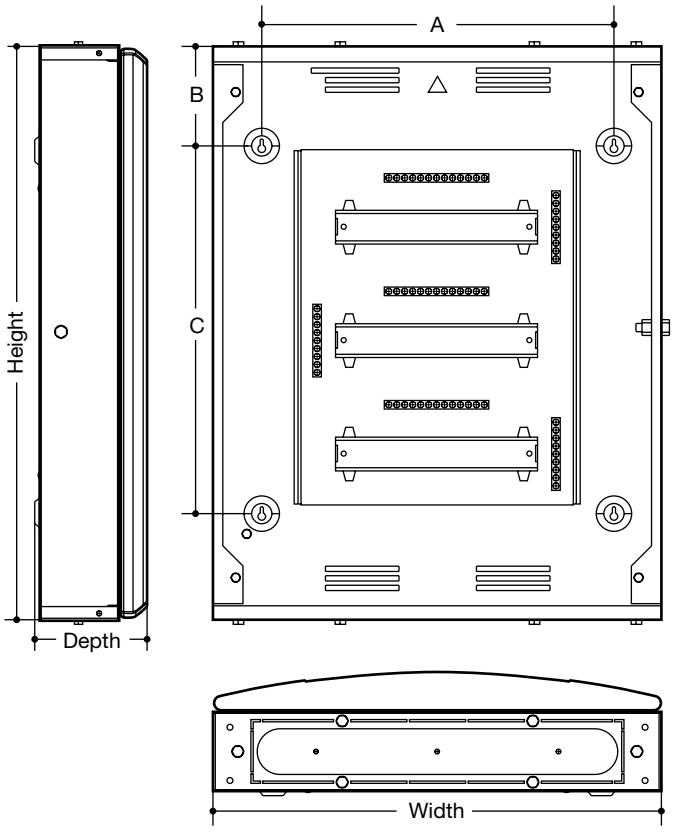
	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK104B/BG	500	465	132.5	365	100	300
JK106B/BG	550	465	132.5	365	100	350
JK108B/BG	625	465	132.5	365	100	425
JK112B/BG	850	465	132.5	365	100	650
JK116B/BG	950	465	132.5	365	100	750
JK118B/BG	1100	465	132.5	365	100	900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

250A Primary Boards

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

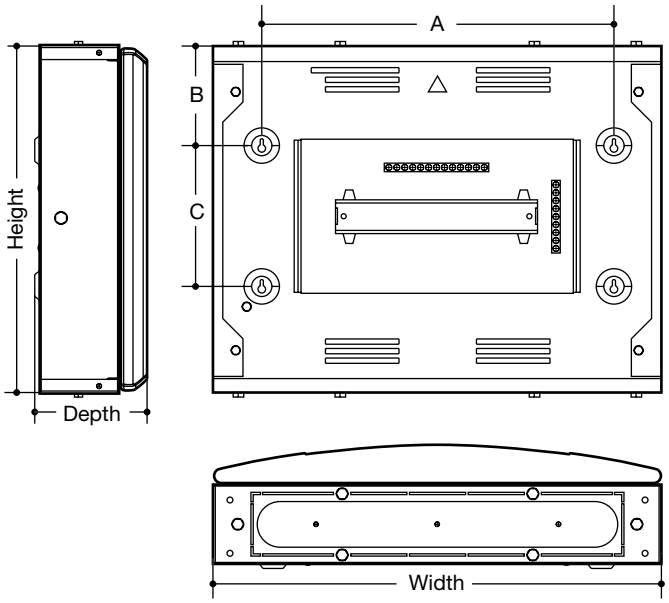


125A Side DIN Boxes

	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

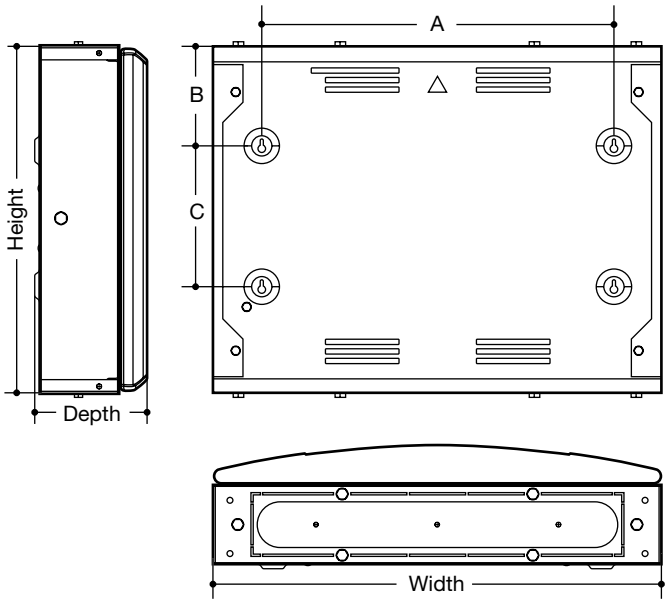


125A DIN Extension Boxes

	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

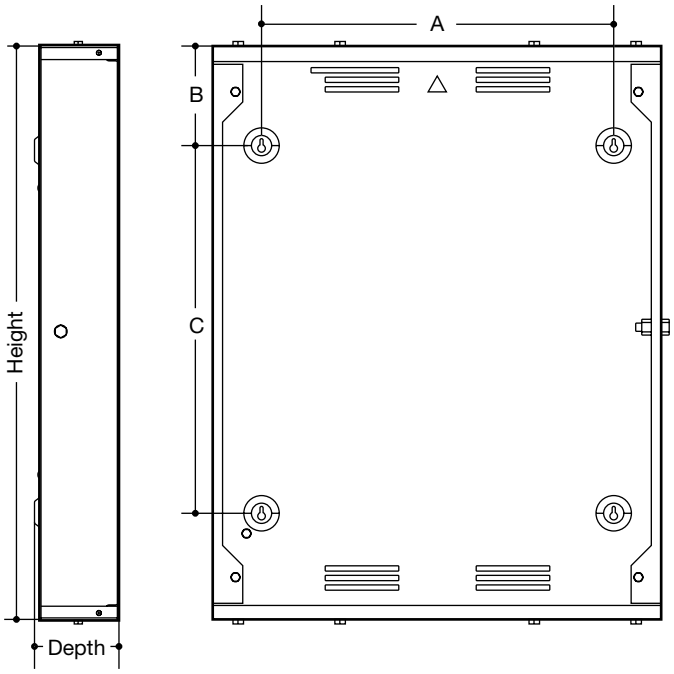


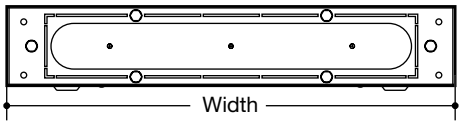
125A Cable Spreader Boxes

	Dimensions (mm)				Fixing Centres (mm)		
	Height	**Width**	**Depth without door**	**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 without door**	**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





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

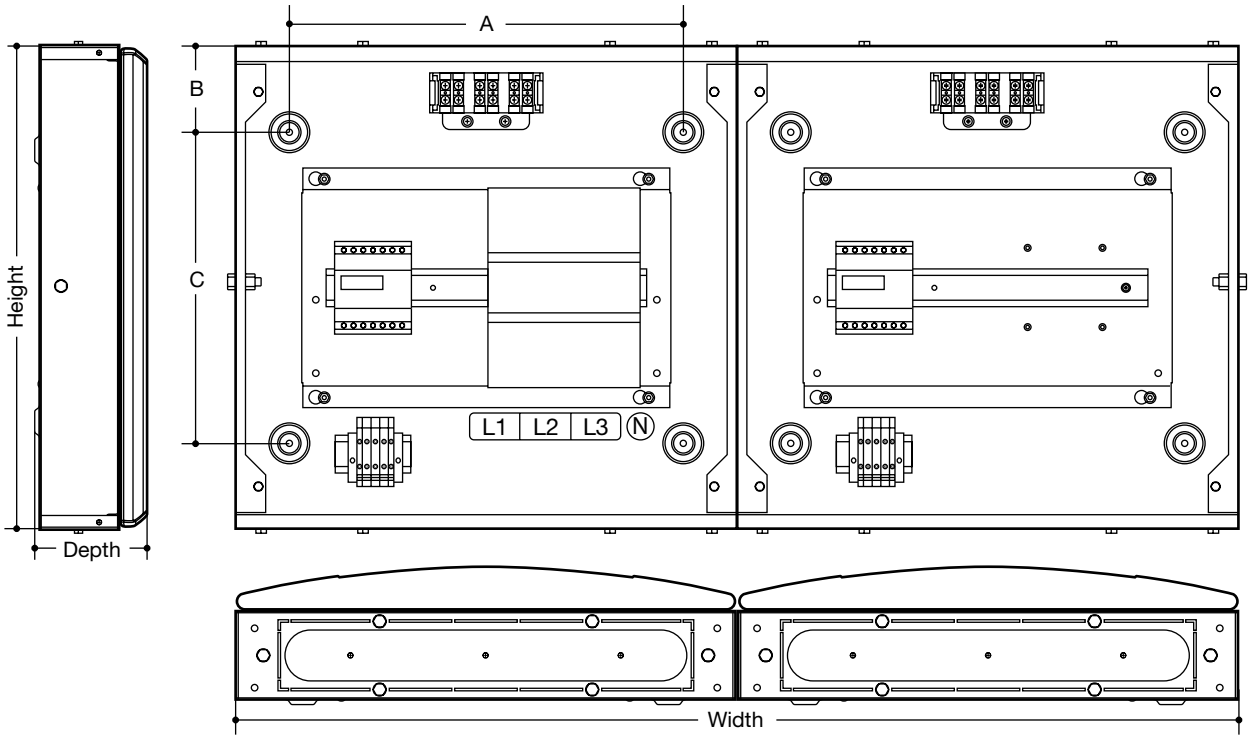
	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK208BSF	950	465	124.5	365	100	750
JK212BSF	1100	465	124.5	365	100	900
JK216BSF	1250	465	124.5	365	100	1050
JK218BSF	1400	465	124.5	365	100	1200
JK224BSF	1550	465	124.5	365	100	1350

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

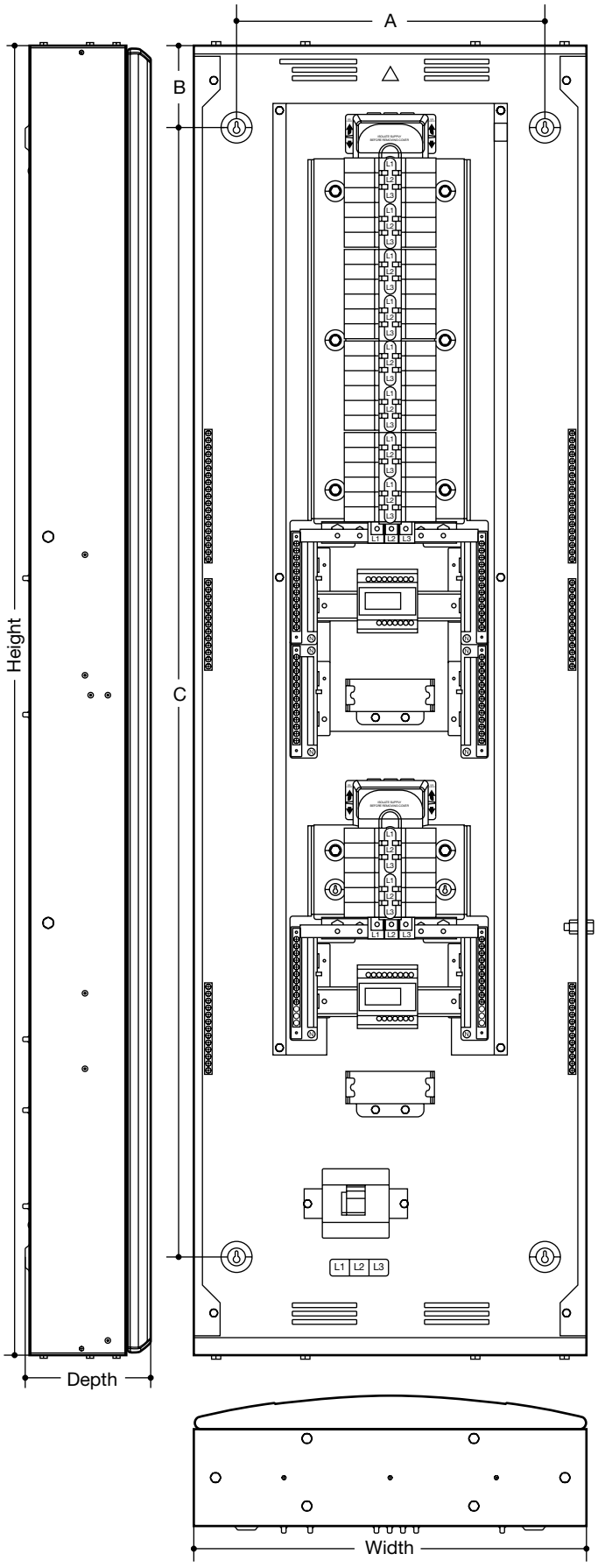


125A Dual Meter Incomer Kits

	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JKD125BKWP	450	930	132.5	365	80	290
JKD125BKWM	450	930	132.5	365	80	290
JKD125BMP	450	930	132.5	365	80	290
JKD125BMM	450	930	132.5	365	80	290

250A Dual Meter Incomer Kits

	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JKD250BKWP	625	930	165.5	365	100	425
JKD250BKWM	625	930	165.5	365	100	425
JKD250BMP	625	930	165.5	365	100	425
JKD250BMM	625	930	165.5	365	100	425



125A Rated Metered Boards

	Dimensions (mm)			Fixing Centres (mm)		
	Height	**Width**	**Depth**	**A**	**B**	**C**
JK146B/M	1250	465	165.5	365	100	1050
JK168B/M	1400	465	165.5	365	100	1200
JKD1416B/M	1550	465	165.5	365	100	1350
JKD1812B/M	1550	465	165.5	365	100	1350

invicta 3 Panelboards

Helping you to meet Part L2 of the Building Regulations

The last few years have seen a major change in the design and installation of commercial electrical distribution systems. The panelboard is at the heart of such a system, whether acting as the main incoming board or as part of the sub distribution. Modern electrical distribution systems have more RCD protection, more metering and more control devices. Panelboards have to offer a flexible solution to help meet these needs.

The new invicta 3 panelboard range includes 250A, 400A, 630A & 800A panelboards with new MCCB incomers. Prewired meter packs allow installers to fit metering into the board. All the internal wiring is included. Installation is fast and simple, thanks to a number of features. There is generous space where it is needed for cable bending radii at the top, bottom and sides of the board and twin and earth neutral bars allow easy identification of earth and neutral conductors with the corresponding line conductors.

250A Incoming 125A Outgoing Panelboards	3.28
250A Rated DIN Extension Boxes, Cable Spreader Boxes & Accessories	3.29
400A Incoming 125A Outgoing Panelboards	3.30
400A Rated DIN Extension Boxes, Cable Spreader Boxes & Accessories	3.31
630A / 800A Incoming 125/250A Outgoing Panelboards	3.32
630A / 800A Rated Pan Assemblies	3.33
630A / 800A Rated DIN Extension Boxes, Cable Spreader Boxes	3.34
800A Incoming 125/250A Outgoing Panelboards	3.35

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

Construction
Enclosures manufactured from 1.2mm DC01M cold reduced mild steel, phosphate pretreated and powder coated to 00A01 BS4800.

Specification
Complies with BS EN 61439-2.
Enclosure degree of protection: IP3X

Internal separation Form 3A.
4, 6, 8, 12, 16 Triple Pole outgoing ways.

Cable Capacity Incomers
3 and 4 pole MCCB.
Cable capacity 185mm^2
max lug width 25mm.
3 and 4 pole non auto MCCB.
Cable capacity 185mm^2
max lug width 25mm
Direct connection kit.
M8 hexagonal bolt.
(Larger cables can be connected by using extended connections, see page 4.38 MCCB section).

Outgoers
1 & 3 pole MCCB 70mm^2 flexible.
1 & 3 pole MCCB 95mm^2 solid.

Busbar Ratings
Busbar rated current 250A continuous.
Busbar rated short-time withstand current 25kA for 1s direct connected (unconditional).

Outgoing MCCBs
Single pole 16-125A (10 ratings)
Fixed thermal, fixed magnetic trips.
Triple pole 25-125A (6 ratings), adjustable thermal fixed magnetic trips.

Form 3B is achieved using the optional terminal shield (see MCCB accessories on page 4.42).

For accessories see page 3.29.
For dimensions see page 3.39.

JN204BG

invicta 3 Panelboards (250A Incoming 125A Outgoing)

Comprises of enclosure, pan assembly, twin neutral and earth bar.
Supplied without incoming kit (one of the incomer kits listed below must be used).

Description	Cat ref. Plain door	Cat ref. Glazed door
4 Way	**JN204B**	**JN204BG**
6 Way	**JN206B**	**JN206BG**
8 Way	**JN208B**	**JN208BG**
12 Way	**JN212B**	**JN212BG**
16 Way	**JN216B**	**JN216BG**

Incomer Kits

Description	Cat ref.
3 Pole 250A MCCB Incomer Kit (Adj. Thermal 0.63, 0.8, 1) 40kA (Magnetic 5, 7, 9, 11 x I_n)	**JN223BM**
4 Pole 250A MCCB Incomer Kit (Adj. Thermal 0.63, 0.8, 1) 40kA (Magnetic 5, 7, 9, 11 x I_n)	**JN224BM**
3 Pole 250A Non-Auto MCCB Incomer Kit	**JN223BS**
4 Pole 250A Non-Auto MCCB Incomer Kit	**JN224BS**
250A Direct Connection Kit	**JN224BD**

For RCD incomer option & engineered solutions contact our Technical Support Helpline on 01952 675689

JN204BPA

250A Rated Pan Assemblies

Description	Cat ref.
JN204B Pan Assembly	**JN204BPA**
JN206B Pan Assembly	**JN206BPA**
JN208B Pan Assembly	**JN208BPA**
JN212B Pan Assembly	**JN212BPA**
JN216B Pan Assembly	**JN216BPA**

Outgoing Devices

MCCBs - Single Pole

Rating.	18kA Fixed Thermal Mag 10 x I_n	25kA Fixed Thermal Mag 10 x I_n
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 - 1x I_n Mag 10 x I_n	25kA Adjustable Thermal 0.63 - 0.8 - 1x I_n Mag 10 x I_n
25A	**HDA025U**	**HHA025U**
40A	**HDA040U**	**HHA040U**
63A	**HDA063U**	**HHA063U**
80A	**HDA080U**	**HHA080U**
100A	**HDA100U**	**HHA100U**
125A	**HDA125U**	**HHA125U**

DIN Extensions 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.

For dimensions see page 3.39.

JK2 side extension boxes can be used with this range see page 3.23.

JN201BE

DIN Extension Boxes

Supplied with DIN Rail

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**

JN205BE

Cable Spreader Box

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**

JN201BA

Meter Pack 250A

Comprises of a digital multi function meter, 3 x control circuit fuse carriers, wiring harness and CTs. The meter pack fits directly into the main panelboard.

Description	Cat ref.
Digital Multifunction Meter Pack Pulsed	**JN201BA**
Digital Multifunction Meter Pack ModBus	**JN201MJ**

JN001BP

Accessories

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

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

Construction
Enclosures manufactured from 1.5mm DC01M cold reduced mild steel, phosphate pretreated and powder coated to 00A01 BS4800.

Specification
Complies with BS EN 61439-2.
Enclosure degree of protection: IP3X
Internal separation
Form 3A
6, 8, 12, 16, 18 Triple Pole outgoing ways.

Cable Capacity Incomers
3 and 4 pole MCCB.
Cable capacity 240mm^2
max lug width 35mm.
3 and 4 pole non auto MCCB.
Cable capacity 240mm^2.
Max lug width 35mm on extended connections fitted to incomer.
Direct connection kit.
M10 hexagonal bolt

Cable Capacity Outgoers
1 & 3 pole MCCB 70mm^2 flexible.
1 & 3 pole MCCB 95mm^2 solid.

Busbar Ratings
Busbar rated current:
400A continuous
Busbar rated short-time withstand current 35kA for 1s direct connected (unconditional)

Outgoing MCCBs
Single pole 16-125A (10 ratings).
Fixed thermal, fixed magnetic trips.
Triple pole 20-125A (6 ratings) adjustable thermal fixed magnetic trips.

For dimensions see page 3.40.

JF406B

invicta 3 Panelboards (400A Incoming 125A Outgoing)

Comprises of enclosure, pan assembly, neutral bar and earth bar.
Supplied without incoming kit (one of the incomer kits listed below must be used).

Description	Cat ref. Plain door	Cat ref. Glazed door
6 Way	**JF406B**	**JF406BG**
8 Way	**JF408B**	**JF408BG**
12 Way	**JF412B**	**JF412BG**
16 Way	**JF416B**	**JF416BG**
18 Way	**JF418B**	**JF418BG**

Incomer Kits

Description	Cat ref.
3 Pole 400A MCCB Incomer Kit 50kA (Adjustable Thermal 0.4, 0.5, 0.63, 0.8, 0.9, 0.95 1.0 x I_n) (Electronic LSI x7 I_r Characteristics)	**JF443BM**
4 Pole 400A MCCB Incomer Kit 50kA (Adjustable Thermal 0.4, 0.5, 0.63, 0.8, 0.9, 0.95 1.0 x I_n) (Electronic LSI x7 I_r Characteristics)	**JF444BM**
3 Pole 400A Switch Disconnector (Non-Auto MCCB) Incomer Kit	**JF443BS**
4 Pole 400A Switch Disconnector (Non-Auto MCCB) Incomer Kit	**JF444BS**
400A Direct Connection Kit	**JF444BD**

For RCD incomer option contact our technical support helpline on 01952 675689

400A Rated Pan Assemblies

Description	Cat ref.
JF406B 6 Way Pan Assembly	**JF406BPA**
JF408B 8 Way Pan Assembly	**JF408BPA**
JF412B 12 Way Pan Assembly	**JF412BPA**
JF416B 16 Way Pan Assembly	**JF416BPA**
JF418B 18 Way Pan Assembly	**JF418BPA**

Outgoing Devices

MCCBs - Single Pole

Rating.	18kA Fixed Thermal Mag 10 x I_n	25kA Fixed Thermal Mag 10 x I_n
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 - 1x I_n Mag 10 x I_n	25kA Adjustable Thermal 0.63 - 0.8 - 1x I_n Mag 10 x I_n
25A	**HDA025U**	**HHA025U**
40A	**HDA040U**	**HHA040U**
63A	**HDA063U**	**HHA063U**
80A	**HDA080U**	**HHA080U**
100A	**HDA100U**	**HHA100U**
125A	**HDA125U**	**HHA125U**

DIN Extensions 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.

For dimensions see page 3.40.

For a h3 MCCBs see page 4.40 onwards.

JF801E

DIN Extension Boxes (to fit JF4 & JF8 boards)

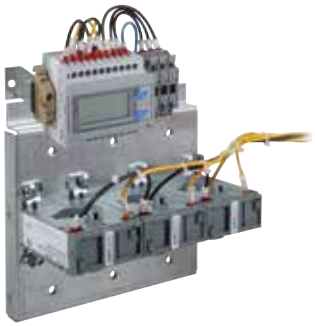
Supplied with DIN Rail.

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**

JF805E

Cable Spreader Box (to fit JF4 & JF8 boards)

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**



JF403BA

Meter Pack 400A

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

Description	Cat ref.
Digital Multifunction Meter Pack Pulsed	**JF403BA**
Digital Multifunction Meter Pack ModBus	**JF403MJ**

Accessories

Description	Cat ref.
Locking Kit for Incoming Device (All Ratings)	**HXD039H**
Allen Key Set	**JF296A**
End 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**

For other accessories see MCCB pages 4.42-4.43.

Construction
Enclosure manufactured from 1.5mm DC01M cold reduced mild steel, phosphate pretreated and powder coated to 00A01 BS4800.

Removable gland plates are provided top and bottom for ease of installation.

The removal of the gland plates and cable spreader also allows the mounting of DIN rail extension boxes and meter packs.

Specification
Complies with BS EN 60439-1.
Enclosure degree of protection: IP3X
Internal separation.
Form 3A.
8, 12, 18 TP outgoing ways.

Incomers
Switch Disconnector 630A/800A.
MCCB 400A/630A.
Direct connection 800A.
M12 hexagonal bolt.

Busbar Ratings
Busbar rated current: 800A
Busbar rated short time withstand current 35kA for 1x direct connection (unconditional).

Outgoing MCCBs
Single pole up to 125A - 70mm² flexible.
Single pole up to 125A - 95mm² solid.
Triple pole up to 250A -120mm² flexible.

Incomers Cable capacity
400A – 2 x 240mm²
630A – 2 x 240mm²

For dimensions see page 3.40.

JF608B

invicta 3 Panelboards (630A / 800A Incoming, 125A Outgoing)

Description	Cat ref. Plain door	Cat ref. Glazed door
8 Way	**JF608B** [1]	**JF608BG** [1]
12 Way	**JF812B**	**JF812BG**
18 Way	**JF818B**	**JF818BG**

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

JF60204B

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

These boards will accept a range of MCCB frame sizes:
- 125A frame: 16-125A SP/TP
- 250A frame: 80-250A TP only

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

[2] Max allowed incomer of 630A on this panelboard

Incomer Kits

Description	Cat ref.
4 Pole 400A Load Break Switch 25kA	**JF844BSW** [3]
4 Pole 630A Load Break Switch 25kA	**JF864BSW** [3]
4 Pole 800A Load Break Switch *Select the required 800A rated panelboard 50kA (e.g. JF80206BG) and add the suffix 800LBS e.g. JF80206BG800LBS	***800LBS**
800A Direct Connection Kit 4 Pole	**JF884BD** [3]
3 Pole 400A MCCB Incomer Kit 50kA	**JF843BM**
4 Pole 400A MCCB Incomer Kit (Adjustable Thermal 0.63, 0.8 - 1 x I_n) 50kA	**JF844BM**
3 Pole 630A MCCB Incomer Kit 50kA	**JF863BM**
4 Pole 630A MCCB Incomer Kit 50kA	**JF864BM**

[3] A 300mm cable spreader box recommended (see page 3.29).

630A / 800A Rated Pan Assemblies

Description	Cat ref.
JF608B Pan Assembly	**JF608BPA ***
JF812B Pan Assembly	**JF812BPA**
JF818B Pan Assembly	**JF818BPA**
JF80210B Pan Assembly	**JF80210BPA**
JF60204B Pan Assembly	**JF60204BPA ***
JF80206B Pan Assembly	**JF80206BPA**
JF80408B Pan Assembly	**JF80408BPA**
JF80414B Pan Assembly	**JF80414BPA**
JF80404B Pan Assembly	**JF80404BPA**
JF80612B Pan Assembly	**JF80612BPA**

* These pan assemblies are rated at 630A

Outgoing Devices Thermal Magnetic

❶ MCCBs x250 40kA - Triple Pole

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

❷ 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**

❷ MCCBs - 125A 25kA Triple Pole Adjustable Thermal

Rating.	18kA Adjustable Thermal 0.63 - 0.8 - 1x I_n Mag 10 x I_n	25kA Adjustable Thermal 0.63 - 0.8 - 1x I_n Mag 10 x I_n
25A	**HDA025U**	**HHA025U**
40A	**HDA040U**	**HHA040U**
63A	**HDA063U**	**HHA063U**
80A	**HDA080U**	**HHA080U**
100A	**HDA100U**	**HHA100U**
125A	**HDA125U**	**HHA125U**

DIN Extensions 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.

For dimensions see page 3.40.

For a h3 MCCBs see page 4.40 onwards.

JF801E

DIN Extension Boxes (to fit JF4 & JF8 boards)

Supplied with DIN Rail

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**

JF805E

Cable Spreader Box (to fit JF4 & JF8 boards)

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**

JF803BA

Meter Pack 800A

These meter packs fit directly into the main panelboard. Spreader box required to mount CT's.

Description	Cat ref.
Digital Multifunction Meter Pack Pulsed	**JF803BA**
Digital Multifunction Meter Pack ModBus	**JF803MJ**

The Hager range of 800A panel boards has been designed to complement our invicta 3 distribution system.

The 800A MCCB incomer board is designed specifically for applications where an adjustable 800A MCCB incomer device is required.

Construction
The enclosure is manufactured from 1.5mm DC01M cold reduced mild steel, phosphate treated and powder coated to 00A01 BS4800.

Busbar Rated current: 800A
35kA for 1 sec.

Removable gland plates are provided top and bottom for ease of installation"

Specification
Complies with BS EN 61439-2
Enclosures degree of protection: IP3X
Internal Separation: Form 3A

Cable Capacity:
Outgoing devices
125A frame (16 - 125A)
Flexible: min 6mm², max 70mm²
Rigid: min 6mm², max 95mm²
250A frame (100 - 250A)
Lug connection: max width 25mm, M8.

For dimensions see page 3.41

invicta 3 Panelboards (800A Incoming 125A Outgoing)

Max. 125A outgoing devices

Description	Cat ref. Plain door	Cat ref. Glazed door
12 Way	**JHF812B**	**JHF812BG**
18 Way	**JHF818B**	**JHF818BG**

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

These boards will accept two MCCB frame sizes
125A frame: 16 - 125A
250A frame: 100 - 250A

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

Incomer Kits

Description	Cat ref. Plain door
800A 3 Pole MCCB Incomer Auto 50kA	**JHF883BM**
800A 4 Pole MCCB Incomer Auto 50kA	**JHF884BM**

Outgoing Devices

❶ MCCBs x250 40kA - Triple Pole

Rating.	Cat ref.
100A	**HNB100H**
125A	**HNB125H**
160A	**HNB160H**
200A	**HNB200H**
250A	**HNB250H**

❷ 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**

❷ MCCBs - 125A 25kA Triple Pole Adjustable Thermal

Rating.	18kA Adjustable Thermal 0.63 - 0.8 - 1x I_n Mag 10 x I_n	25kA Adjustable Thermal 0.63 - 0.8 - 1x I_n Mag 10 x I_n
25A	**HDA025U**	**HHA025U**
40A	**HDA040U**	**HHA040U**
63A	**HDA063U**	**HHA063U**
80A	**HDA080U**	**HHA080U**
100A	**HDA100U**	**HHA100U**
125A	**HDA125U**	**HHA125U**

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**

For other accessories see MCCB pages 4.42-4.43.

Surge **Protection**

Download the guide to Surge Protection Devices at www.hager.co.uk

The Hager surge protection kit can be fitted to any Hager consumer unit to meet Amendment 1 of the 17th Edition.

The surge protection devices in the kit offer type 2 protection to the BS EN 61643 standard, to ensure conformity with the current edition of BS 7671.

When you consider that many homes have a lot of sensitive electronic equipment, such as TVs, Hi-Fis, PCs and printers that would be adversely affected by a voltage surge, then the need for such devices increases.

To find out more visit **hager.co.uk**

hager

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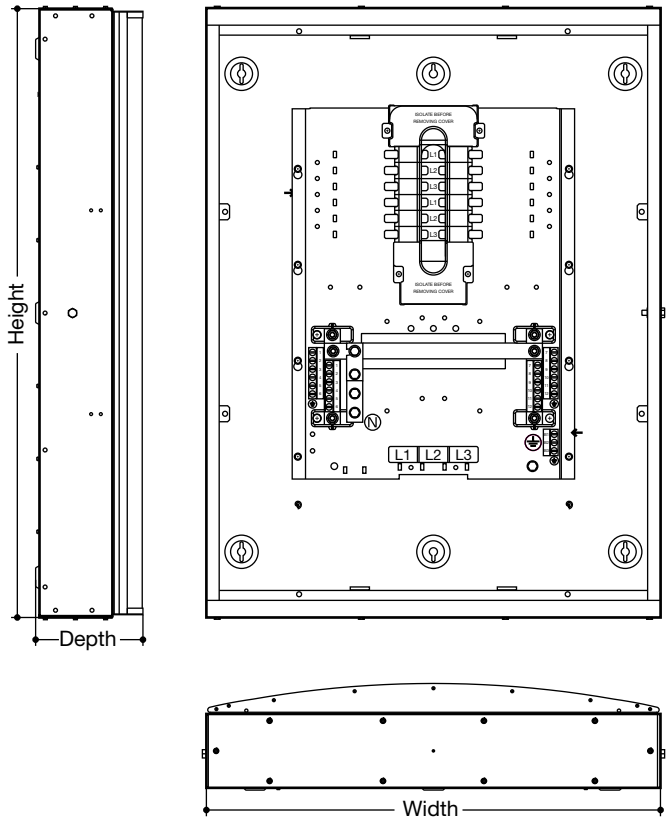
Watch the installation video

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 AC	415V	415V	415V	415V
IP Protection	IP3X			
Enclosure body type	Steel			
Enclosure paint type	Powder coat Grey white RAL 9002			
Cable entry	Via Gland Plates			
Terminal Connection capacity				
Incoming earth terminal	M8	M10	M10	M10
Incoming neutral terminal	M8	M12	M12	M12
Outgoing earth terminals	Up to 50mm²	Up to 50mm²	Up to 50mm²	Up to 50mm²
Outgoing neutral terminals	Up to 50mm²	Up to 50mm²	16A - 125A: Up to 50mm² 100A - 250A: M8 Stud	16A - 125A: Up to 50mm² 100A - 250A: M8 Stud
Enclosure earth stud	M8	M10	M10	M10
Max. Terminal capacity	185mm² (cage)	240mm² (cage)	-	-
Installation				
Mounting	Surface (Wall)			



Primary Boards

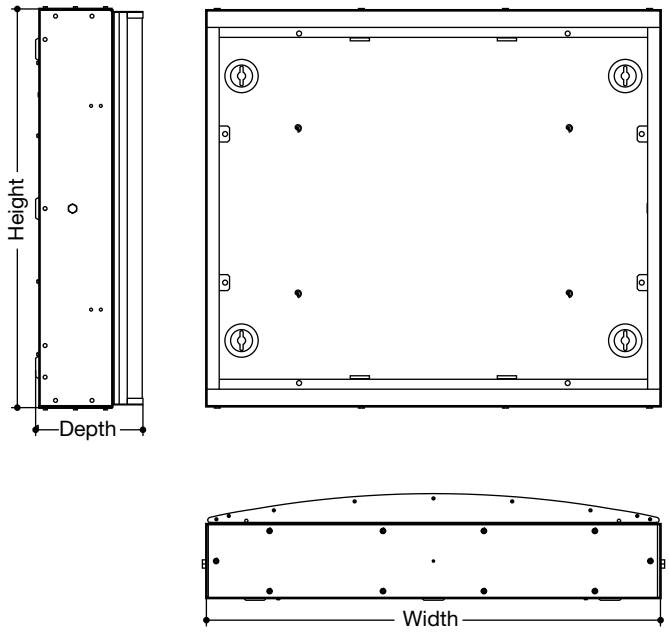
	Dimensions (mm)		
	Height	**Width**	**Depth**
JN204B/G	950	700	160
JN206B/G	1100	700	160
JN208B/G	1100	700	160
JN212B/G	1250	700	160
JN216B/G	1550	700	160

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

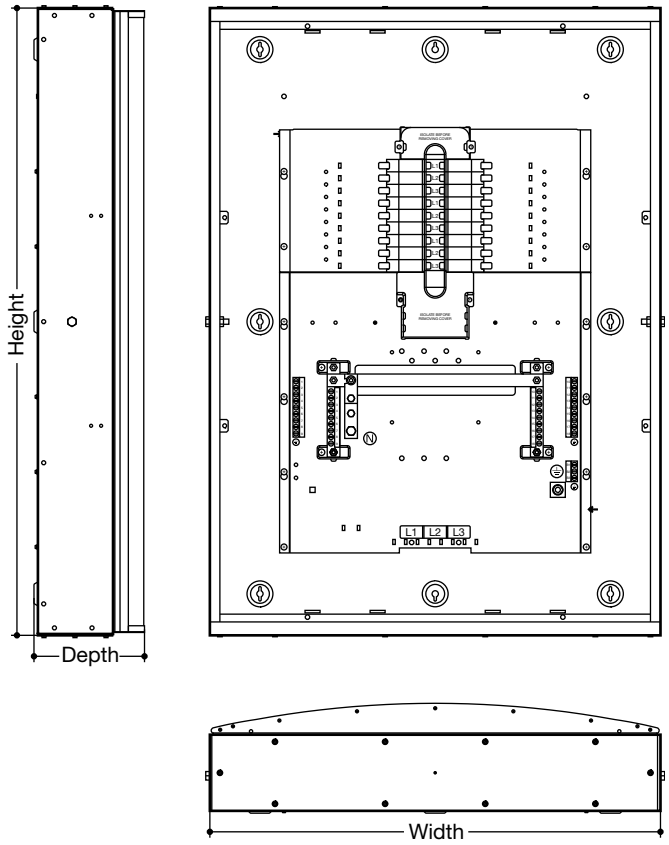
Cables outgoing ways:
25 - 50mm² CSA Flex
25 - 70mm² CSA Solid

MCCB Connections	250A M8
Earth	250A M8
Neutral	250A M8



Extension Boxes

	Dimensions (mm)		
	Height	**Width**	**Depth**
JN201BE/G	300	700	160
JN203BE/G	450	700	160
JN205BE	300	700	125
JN206BE	450	700	125



Primary Boards

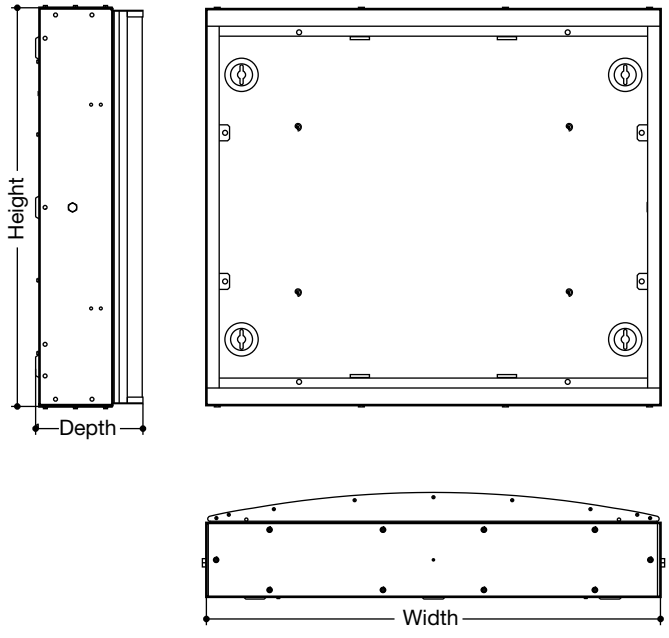
	Dimensions (mm)		
	Height	**Width**	**Depth**
JF406B/G	1250	900	220
JF408B/G	1250	900	220
JF412B/G	1400	900	220
JF416B/G	1550	900	220
JF418B/G	1700	900	220
JF808B/G	1250	900	220
JF812B/G	1400	900	220
JF818B/G	1700	900	220
JF60204B/G	1250	900	220
JF80206B/G	1250	900	220
JF80404B/G	1250	900	220
JF80210B/G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

Terminals

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

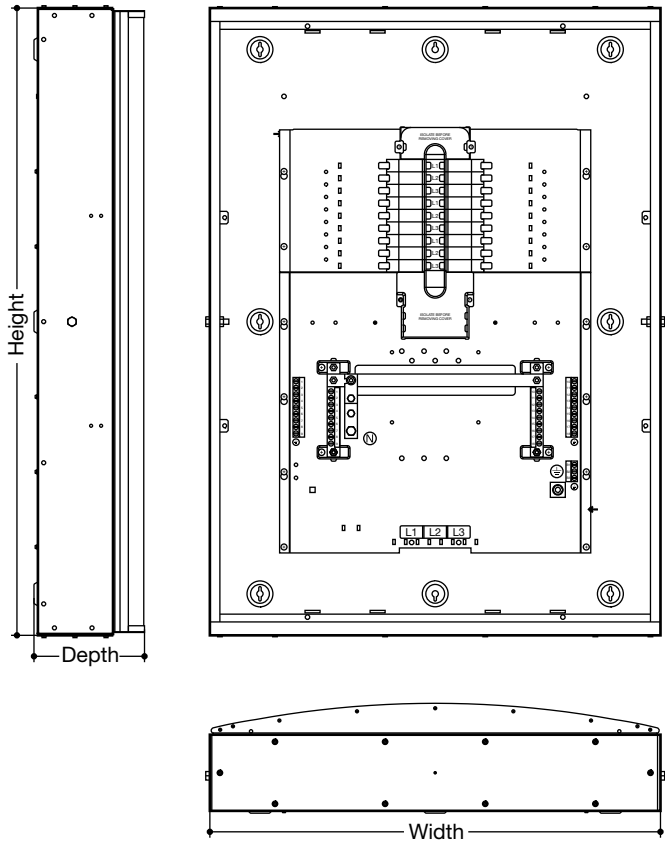
Cables outgoing ways:
25 - 50mm^2 CSA Flex
25 - 70mm^2 CSA Solid

MCCB Connections	400A M10 630A M12
Earth	400A M10 630A M12



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

Description
The Hager range of fuse combination switches has been designed to complement both the TP&N and panelboard ranges by providing individual protection and control of individual circuits.

The enclosures up to 100A have been designed to provide adequate cabling space without the need for additional cable spreader boxes.

Operation of the device is through a door mounted rotary handle which is mechanically interlocked to prevent access to live conductors when the switch is in the on position. The handle is also padlockable in the off position.

All versions will accept standard BS88 fuse links and can be converted to switch disconnector by fitting copper links.

Utilisation category
AC22B - 630 - 800A
AC23 - 20 - 400A

Product features
Complies with:
BS EN 60947-3
IP31.

Range: SPSN 20-100A (4 ratings) TPN 20-630A (12 ratings) TPSN 20-630A (12 ratings)

Note: Maximum rated fuse links are fitted in all fuse combination switches.

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

For dimensions see page 3.47.

For technical information see page 3.48.

JFD206

Fuse Combination Switches Single Pole and Switched Neutral

Description	Cat ref.	Cat ref. Cable extension boxes if required
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 and Neutral

Description	Cat ref.	Cat ref. Cable extension boxes if required
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**

JFG416U

Fuse Combination Switches Triple Pole and Switched Neutral

Description	Cat ref.	Cat ref. Cable extension boxes if required
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

For conversion to isolating switches

Description	Cat ref.
63A	**JC60L**
100A	**JC10L**
125 / 200A	**JC20L**
315 / 400A	**JC40L**
630A	**JC63L**

Description
The Hager range of switch disconnector has been designed to complement the FCS, TPN and panelboard ranges by providing individual protection and control of individual circuits up to 800A.

The enclosures have been designed to provide adequate cabling space without the need for additional cable spreader boxes.

Operation of the device is through a door mounted rotary handle which is mechanically interlocked to prevent access to live conductors when the switch is in the on position. The handle is also padlockable in the off position.

Utilisation category
AC-21
AC-22

Product features
Complies with:
BS EN 60947-3
IP31.

Cable Capacity
20A = 16mm²
32A = 16mm²
63A = 50mm²
100A = 50mm²
125A = 50mm²
160A = 95mm²
200A = 95mm²
250A = 150mm²
315A = 185mm²
400A = 240mm²
630A = 2 x 300mm²
800A = 2 x 300mm²

For technical information see page 3.49.

JAB306

Switch Disconnectors TP&N

Rating	Cat ref.	Cat ref. Cable extension boxes if required
160A	**JAC316**	**JZA700**
200A	**JAE320**	**JZA701**
250A	**JAE325**	**JZA701**
315A	**JAG331**	**JZA701**
400A	**JAG340**	**JZA701**
630A	**JAH363**	**JZA702**
800A	**JAH380**	**JZA702**

JAB402B

Switch Disconnectors TP&SN

Rating	Cat ref.	Cat ref. Cable extension boxes if required
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**

Description
The Hager range of switch disconnectors further complements the existing commercial range giving a range of enclosed switch disconnectors to IP65 for individual isolation.

The devices are padlockable in three positions and offer plenty of cabling space. Clip on auxiliary contacts can be fitted retrospectively.

Product features
Complies with: BS EN 60947-3
IP65 to BS EN 60529

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

Utilisation category
AC-21
AC-22

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

For technical information see page 3.50.

JG01S

IP65 Switch Disconnectors Triple Pole and Neutral

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

Auxiliary Changeover Contacts

Description	Cat ref.
1 NO / 1 NC	**JG10A**
3 NO / 2 NC	**JG20A**

IP65 Switch Disconnectors DC

Description
These DC switches are very popular for use in solar powered photovoltaic applications 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 AC switches used on the outgoing side of the inverter.

Product Features
Complies with: 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.

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

JG440DC

DC Switches

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**

The Hager range of enclosed MCCBs has been designed for individual circuit protection and complements our invicta 3 distribution system.

The devices are mounted in IP31 enclosures, with cable knock outs top and bottom.

Both single and triple pole devices are equipped with fully rated neutral links.

4 Pole versions are available and 4 pole plus RCCB add-on are avialble.

Construction
MCCB
Single pole 63 - 125A (3 ratings)
Triple pole 63 - 125A (3 ratings)
Four pole 63 - 125A (3 ratings)

MCCB-RCCB
Four pole + RCCB 63A & 100A (2 ratings)

Non-Auto MCCB
Triple pole 125A
Four pole 125A

Specification
Complies with BS EN 61439-2

Cable Capacity
63 - 125A
Flexible: min 6mm², max 70mm²
Rigid: min 6mm², max 95mm²

RCCB add-on adjustable from 0.03A, 0.1A, 0.3A, 1A, 3A, 10A

Time delay - Instananious, 60ms, 150ms, 300ms, 500ms, 1s

For Enclosed MCCB technical details and dimensions see page 3.52.

For Switch Fuse dimensions see page 3.53.

JG31BM

Enclosed MCCBs Single Pole and Neutral

I_nA	I_{cu}	Cat ref.
63A	18kA	**JG25BM**
100A	18kA	**JG28BM**
125A	18kA	**JG31BM**

Enclosed MCCBs Triple Pole and Neutral

I_nA	I_{cu}	Cat ref.
63A (40A-50A 63A)	18kA	**JG26BM**
100A (63A-80A-100A)	18kA	**JG29BM**
125A (80A-100-125A)	18kA	**JG32BM**
125A	Non-Auto	**JG34BS**

Enclosed MCCBs Four Pole

I_nA	I_{cu}	Cat ref.
63A (40A-50A 63A)	18kA	**JG27BM**
63A (40A-50A 63A) + RCCB add-on	18kA	**JG27BR**
100A (63A-80A-100A)	18kA	**JG30BM**
100A (63A-80A-100A) +RCCB add-on	18kA	**JG30BR**
125A (80A-100-125A)	18kA	**JG33BM**
125A	Non-Auto	**JG35BS**

IU44-11

Switch Fuses

For dimensions see page 3.53.

Description	Cat ref.
4 Module Metal Unit 1 x 100A Isolator, AC22A Connection capacity: 50mm² rigid conductor, 35mm² flexible conductor, 1 x 63A Fuse	**IU4-16**
4 Module Metal Unit 1 x 100A Isolator, AC22A Connection capacity: 50mm² rigid conductor, 35mm² flexible conductor, 1 x 80A Fuse	**IU44-18**
4 Module Metal Unit 1 x 100A Isolator, AC22A Connection capacity: 50mm² rigid conductor, 35mm² flexible conductor, 1 x 100A Fuse	**IU44-11**

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)

		Dimensions (mm)		
	Description	**Width**	**Height**	**Depth**
JFB202U	20A SPSN	200	250	150
JFB203U	32A SPSN	200	250	150
JFB302U	20A TPN	200	250	150
JFB303U	32A TPN	200	250	150
JFB402U	20A TPSN	200	250	150
JFB403U	32A TPSN	200	250	150
JFD206U	63A SPSN	300	325	150
JFD306U	63A TPN	300	325	150
JFD406U	63A TPSN	300	325	150
JFE210U	100A SPSN	375	400	200
JFE310U	100A TPN	375	400	200
JFE410U	100A TPSN	375	400	200
JFG312U	125A TPN	375	500	200
JFG412U	125A TPSN	375	500	200
JFG316U	160A TPN	375	500	200
JFG416U	160A TPSN	375	500	200
JFG320U	200A TPN	375	500	200
JFG420U	200A TPSN	375	500	200
JFG325U	250A TPN	375	500	200
JFG425U	250A TPSN	375	500	200
JFH331U	315A TPN	500	650	300
JFH431U	315A TPSN	500	650	300
JFH340U	400A TPN	500	650	300
JFH440U	400A TPSN	500	650	300
JFI363U	630A TPN	600	800	350
JFI463U	630A TPSN	600	800	350
JFI380U	800A TPN	600	800	350
JFI480U	800A TPSN	600	800	350

Cable Extension Boxes for Fuse Combination Switches

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

Switch Disconnectors

All dimensions are in mm and exclude the handle.

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

Protection devices

The complete solution

We offer a wide range of protection devices, such as miniature circuit breakers, auxiliaries and accessories, RCCB add-on blocks, single pole and switched neutral devices, 2 and 4 pole RCCB's, RCCB auxiliaries, RCBO's, HRC fuse carriers, motor starters, earth fault relays, surge protection devices and the new h3 range of moulded case circuit breakers.

Miniature Circuit Breakers 6kA Type B	4.2
Miniature Circuit Breakers 10kA & 15kA Type B,C & D	4.3
RCCB Add-On Blocks for MCB Devices	4.6
One Module Add-on Block Commercial	4.7
Miniature Circuit Breakers 80 - 125A	4.8
Single Pole & Switched Neutral Devices MCB	4.14
Single Pole & Switched Neutral Devices Fuse Carriers	4.15
2 & 4 Pole RCCBs	4.16
RCCB Auxiliaries	4.18
RCBOs	4.19
RCBO Single Pole & Switched Neutral	4.21
HRC Fuse Carriers BS 1361	4.23
HRC Fuse Carriers BS 88	4.24
Motor Starters	4.25
Earth Fault Relays	4.27
Torroids	4.29
Surge Protection Devices	4.30
MCCBs	4.40

Description
Protection and control of circuits against overloads and short circuits.

• For domestic installations

Technical data
Type B tripping characteristics complies with BS EN 60898.
Calibration temperature 30°C
Breaking capacity: 6kA
Voltage rating: 230 - 400V
Current rating: 6 - 63A
Electrical operations: 20,000

Connection capacity
Rigid conductor 25mm²
Flexible conductor 16mm²

MTN163

Single Pole MCBs 6kA Type B

Rating	Width (17.5mm)	Cat ref.
6A	1 Mod	**MTN106**
10A	1 Mod	**MTN110**
16A	1 Mod	**MTN116**
20A	1 Mod	**MTN120**
25A	1 Mod	**MTN125**
32A	1 Mod	**MTN132**
40A	1 Mod	**MTN140**
50A	1 Mod	**MTN150**
63A	1 Mod	**MTN163**

In 0.5 to 63A
Un : 230V-400V

Will accept accessories
see page 4.5

Description
These MCBs allow you to ensure
- Protection of circuits against short circuits
- Protection of circuits against overload current
- Control
- Isolation

Isolation
The state of isolation is clearly indicated by the "OFF" mechanical position on the toggle with the green colour.

Connection capacity
- 25mm² flexible conductor
- 35mm² rigid conductor

Complies with:
- BS EN 60898 (10kA)
- BS EN 60947-2 (15kA)

NCN116A

Single Pole MCBs

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

NCN216A

Double Pole MCBs

Rating	Width (35mm)	Cat ref. "B" Curve	Cat ref. "C" Curve	Cat ref. "D" Cruve
0.5A	2 Mod	-	**NCN200A**	**NDN200A**
1A	2 Mod	-	**NCN201A**	**NDN201A**
2A	2 Mod	-	**NCN202A**	**NDN202A**
3A	2 Mod	-	**NCN203A**	-
4A	2 Mod	-	**NCN204A**	**NDN204A**
6A	2 Mod	**NBN206A**	**NCN206A**	**NDN206A**
10A	2 Mod	**NBN210A**	**NCN210A**	**NDN210A**
16A	2 Mod	**NBN216A**	**NCN216A**	**NDN216A**
20A	2 Mod	**NBN220A**	**NCN220A**	**NDN220A**
25A	2 Mod	**NBN225A**	**NCN225A**	**NDN225A**
32A	2 Mod	**NBN232A**	**NCN232A**	**NDN232A**
40A	2 Mod	**NBN240A**	**NCN240A**	**NDN240A**
50A	2 Mod	**NBN250A**	**NCN250A**	**NDN250A**
63A	2 Mod	**NBN263A**	**NCN263A**	**NDN263A**

In 0.5 to 63A
Un : 230V-400V

Will accept accessories
see page 4.5

Description
These MCBs allow you to ensure
- Protection of circuits against short circuits
- Protection of circuits against overload current
- Control
- Isolation

Isolation
The state of isolation is clearly indicated by the "OFF" mechanical position on the toggle with the green colour.

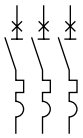
Connection capacity
- 25mm² flexible conductor
- 35mm² rigid conductor

Complies with:
- BS EN 60898 (10kA)
- BS EN 60947-2 (15kA)

Locking kit = MZN175

NCN316A

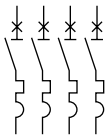
Triple Pole MCBs



Rating	Width (52.5mm)	Cat ref. "B" Curve	Cat ref. "C" Curve	Cat ref. "D" Cruve
0.5A	3 Mod	-	**NCN300A**	**NDN300A**
1A	3 Mod	-	**NCN301A**	**NDN301A**
2A	3 Mod	-	**NCN302A**	**NDN302A**
3A	3 Mod	-	**NCN303A**	**NDN303A**
4A	3 Mod	-	**NCN304A**	**NDN304A**
6A	3 Mod	**NBN306A**	**NCN306A**	**NDN306A**
10A	3 Mod	**NBN310A**	**NCN310A**	**NDN310A**
16A	3 Mod	**NBN316A**	**NCN316A**	**NDN316A**
20A	3 Mod	**NBN320A**	**NCN320A**	**NDN320A**
25A	3 Mod	**NBN325A**	**NCN325A**	**NDN325A**
32A	3 Mod	**NBN332A**	**NCN332A**	**NDN332A**
40A	3 Mod	**NBN340A**	**NCN340A**	**NDN340A**
50A	3 Mod	**NBN350A**	**NCN350A**	**NDN350A**
63A	3 Mod	**NBN363A**	**NCN363A**	**NDN363A**

NCN416A

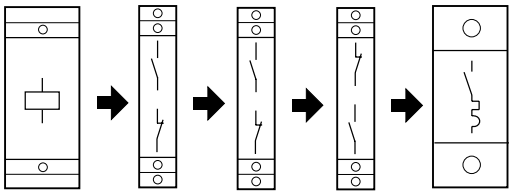
Four Pole MCBs



Rating	Width (70mm)	Cat ref. "B" Curve	Cat ref. "C" Curve	Cat ref. "D" Cruve
0.5A	4 Mod	-	**NCN400A**	**NDN400A**
1A	4 Mod	-	**NCN401A**	**NDN401A**
2A	4 Mod	-	**NCN402A**	**NDN402A**
3A	4 Mod	-	**NCN403A**	**NDN403A**
4A	4 Mod	-	**NCN404A**	**NDN404A**
6A	4 Mod	**NBN406A**	**NCN406A**	**NDN406A**
10A	4 Mod	**NBN410A**	**NCN410A**	**NDN410A**
16A	4 Mod	**NBN416A**	**NCN416A**	**NDN416A**
20A	4 Mod	**NBN420A**	**NCN420A**	**NDN420A**
25A	4 Mod	**NBN425A**	**NCN425A**	**NDN425A**
32A	4 Mod	**NBN432A**	**NCN432A**	**NDN432A**
40A	4 Mod	**NBN440A**	**NCN440A**	**NDN440A**
50A	4 Mod	**NBN450A**	**NCN450A**	**NDN450A**
63A	4 Mod	**NBN463A**	**NCN463A**	**NDN463A**

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

Connection capacity
4mm² flexible
6mm² rigid



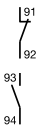
MZ201

Auxiliary Contacts 5A - 230V~

Description	Width (8.75mm)	Cat Ref.
1NO +1NC Allows remote indication of main contact status	½ Mod	**MZ201**

MZ202

Auxiliary Contacts and Alarm Indiction



Description	Width (8.75mm)	Cat Ref.
Allows indication of whether and alarm indication MCB has been turned off or tripped	½ Mod	**MZ202**

MZ204

Shunt Trip

Allows remote tripping of the associated device. Operation of the coil is indicated by a flag on the product fascia.

Description	Width (17.5mm)	Cat Ref.
230V - 415Vac 110V - 130Vdc	1 Mod	**MZ203**
24 - 48Vac 12 - 48Vdc	1 Mod	**MZ204**

MZ2046

Under Voltage Release

Allows MCB to be closed only when voltage is above 85% of Un. MCB will automatically trip when voltage falls to between 70-35% of Un. Operation of the coil is indicated by a flag on the product facia.

Description	Width (17.5mm)	Cat Ref.
230Vac	1 Mod	**MZ206**
48Vdc	1 Mod	**MZ205**

Description
These products provide earth fault protection when associated with the 10kA (types NBN, NCN, NDN) range of MCBs.

They are designed to be fitted to the right hand side of 2 and 4 pole MCBs and the completed unit provides protection against:
- Overload
- Short circuit
- Earth faults

Technical Data
3 Non-Adjustable sensitivities 30, 100 & 300mA
nominal voltage 230 - 400V
protection against nuisance tripping.
2 pole = 2 Modules
4 pole = 3 Modules

BS EN 61009 Appendix G

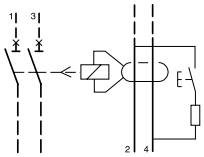
S Selective (time delay) versions are available in 100mA & 300mA.

Connection Capacity
- 16mm² Flexible
- 25mm² Rigid

All devices have a test facility.

BD264

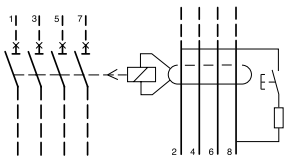
Double Pole RCCB Add-On Blocks



Sensitivity IΔn	In/A	Width (35mm)	Cat ref.
30mA	63A	2 Mod	**BD264**
100mA	63A	2 Mod	**BE264**
300mA	63A	2 Mod	**BF264**
Time Delayed S 100mA	63A	2 Mod	**BN264**
Time Delayed S 300mA	63A	2 Mod	**BP264**

BD464

Four Pole RCCB Add-On Blocks



Sensitivity IΔn	In/A	Width (52.5mm)	Cat ref.
30mA	63A	3 Mod	**BD464**
100mA	63A	3 Mod	**BE464**
300mA	63A	3 Mod	**BF464**
Time Delayed S 100mA	63A	3 Mod	**BN464**
Time Delayed S 300mA	63A	3 Mod	**BP464**

Description
The AOB + MCB combination provides the protective characteristics of both devices, thereby protecting the entire circuit. This results in a significant reduction of time, & cost required.

The one module Add-on Block (AOB) can be used in combination with any Hager 3P commercial range (10kA to 63A) product.

Small footprint of 4 poles wide requiring the use of the adjacent outgoing way.

The 'Type A' Add-On Block gives the added protection against any 'pulsating DC component' generating from such loads as; PCs, motor speed controllers, power tools etc.

One module Add-On Block + MCB combinations suit all Hager distribution boards.

BS EN 61009-1

For technical details see page 4.37

For MCB's see page 4.3 - 4.4

BD163T

One Module Add-on Block
3 Phase earth leakage protection
Up to 63A

Sensitivity IΔn	In/A	Width (35mm)	Cat ref.
30mA	63A	4 Mod	**BD163T**
100mA	63A	4 Mod	**BE163T**
300mA	63A	4 Mod	**BF163T**

Thermal Magnetic Circuit Breakers Curves C & D In 80 to 125 A

These circuit breakers are intended for the protection of the circuits against overloads and short circuits.

HMC C Curve
15 kA
(BS EN 60898 Part 1)
15 kA for 80 - 100 - 125 A:
BS EN 60947-2
Width 1.5 mod/pole

HMD D Curve
15 kA
(BS EN 60898 Part 1)
15 kA for 80 - 100 - 125 A:
BS EN 60947-2
Width 1.5 mod/pole

HMF C Curve
10 kA
(BS EN 60898 Part 1)
10kA for 80 - 100 - 125A:
BS EN 60947-2
width 1.5 mod/pole

These circuit breakers are equipped with reinforced screw cages.

A label holder is integrated under the toggle to ensure the location of the product.

The “OFF” position is clearly shown by a green indicator below the toggle.

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

These circuit breakers have quick closing : fast and simultaneous closing of the contacts, independent of the handling speed.

This increases the life of the circuit breaker whatever the type of load.

Nominal Voltage
230/415 V~
Calibration setting : 30 °C
(BS EN 60898 Part 1)
Insulation voltage : 500 V

Options

Auxiliary
- To visualise the state ON or OFF of the circuit breaker,
- To ON/OFF remotely the circuit breaker

- Locking mechanism

- Terminal covers and phase separators

- RCD add-on blocks

Series HMC, HMD, HMF
- Mounting capability: bistable DIN-rail latches (2 positions) upstream and downstream facilitate the mounting of the circuit breakers on the DIN-rail.

- Terminals with tightening compensation. These circuit breakers are equipped with screw cages with tightening compensation, (reinforcement cage cable holding jaws). These elements contribute to an effective cable tightening over time.

- These circuit breakers are equipped with cable terminals of type “fast on” upstream and downstream to feed an auxiliary low voltage circuit (indicating lights, auxiliary control...)
  Max. current 6A
  Max. cable csa - 6 mm^2

Lockable Toggle
MCB can be locked in “Off” position by the integrated locking facility on the toggle. This lock allows to insert a 2.5-3.5mm plastic cable tie where you can fit a warning card if necessary and allows a safer working environment for all personnel.

RCD Add-On Blocks
Simple, quick, adjustable and fixed
1. Assembly
2. Connection
3. Locking
The assembly of the add-on block is carried out very quickly and easily. Simple and fast : it is a Hager innovation. add-on blocks 125A are available in fixed version and adjustable version.

Model	Icc / Curve	Accessories	Fast-on Connection	Tightening Comp. System	Lockable	Front Product Labelling
HMF	10kA / C	Yes	No	No	Yes	Yes
HMC, HMD	15kA / C, D	Yes	Yes	Yes	Yes	Yes

Curves C
10 kA BS EN 60898-1
10 kA BS EN 60947-2

In 80 to 125A

Tripping Curves
"C" magnetic setting between 5 to 10 In.

Use
Commercial and industrial applications.

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

KEMA
Approved according to BS EN 60898-1.

HMF199T

Single Pole MCBs 10kA C Curve

Rating	Width (26.25mm)	Cat ref.
80A	1 ½ Mod	**HMF180T**
100A	1 ½ Mod	**HMF190T**
125A	1 ½ Mod	**HMF199T**

HMF299T

Double Pole MCBs 10kA C Curve

Rating	Width (52.5mm)	Cat ref.
80A	3 Mod	**HMF280T**
100A	3 Mod	**HMF290T**
125A	3 Mod	**HMF299T**

HMF399T

Triple Pole MCBs 10kA C Curve

Rating	Width (75.75mm)	Cat ref.
80A	4 ½ Mod	**HMF380T**
100A	4 ½ Mod	**HMF390T**
125A	4 ½ Mod	**HMF399T**

HMF499T

Four Pole MCBs 10kA C Curve

Rating	Width (105mm)	Cat ref.
80A	6 Mod	**HMF480T**
100A	6 Mod	**HMF490T**
125A	6 Mod	**HMF499T**

Curves C
15 kA BS EN 60898-1
15 kA BS EN 60947-2

In 80 to 125A

Tripping Curves
"C" magnetic setting between 5 to 10 In.

Use
Commercial and industrial applications.

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

KEMA
Approved according to BS EN 60898-1.

HMC199T

Single Pole MCBs 15kA C Curve

Rating	Width (26.25mm)	Cat ref.
80A	1 ½ Mod	**HMC180T**
100A	1 ½ Mod	**HMC190T**
125A	1 ½ Mod	**HMC199T**

HMC299T

Double Pole MCBs 15kA C Curve

Rating	Width (52.5mm)	Cat ref.
80A	3 Mod	**HMC280T**
100A	3 Mod	**HMC290T**
125A	3 Mod	**HMC299T**

HMC399T

Triple Pole MCBs 15kA C Curve

Rating	Width (78.75mm)	Cat ref.
80A	4 ½ Mod	**HMC380T**
100A	4 ½ Mod	**HMC390T**
125A	4 ½ Mod	**HMC399T**

HMC499T

Four Pole MCBs 15kA C Curve

Rating	Width (105mm)	Cat ref.
80A	6 Mod	**HMC480T**
100A	6 Mod	**HMC490T**
125A	6 Mod	**HMC499T**

Curves D
15 kA BS EN 60898-1
15 kA BS EN 60947-2

In 80 to 125A

Tripping Curves
"D" magnetic setting between 10 to 20 I_n.

Use
Commercial an industrial applications.

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

KEMA
Approved according to BS EN 60898-1

HMD199T

Single Pole MCBs 15kA D Curve

Rating	Width (26.25mm)	Cat ref.
80A	1 ½ Mod	**HMD180T**
100A	1 ½ Mod	**HMD190T**
125A	1 ½ Mod	**HMD199T**

HMD299T

Double Pole MCBs 15kA D Curve

Rating	Width (52.5mm)	Cat ref.
80A	3 Mod	**HMD280T**
100A	3 Mod	**HMD290T**
125A	3 Mod	**HMD299T**

HMD399T

Triple Pole MCBs 15kA D Curve

Rating	Width (78.75mm)	Cat ref.
80A	4 ½ Mod	**HMD380T**
100A	4 ½ Mod	**HMD390T**
125A	4 ½ Mod	**HMD399T**

HMD499T

Four Pole MCBs 15kA D Curve

Rating	Width (105mm)	Cat ref.
80A	6 Mod	**HMD480T**
100A	6 Mod	**HMD490T**
125A	6 Mod	**HMD499T**

MZN130

Terminal Covers Screw Cap

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

MZN131

Phase Separator

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

Fixed
- High sensitivity 30 mA Instantaneous
- Low sensitivity 300 mA Instantaneous

Adjustable
- Sensitivity IΔn 0.3-0.5 - 1A
- Delay SΔt 0 - 60 -150 ms

These devices are intended to be fixed on the right side of the circuit breakers to form differential circuit breakers from 80 to 125A, two, three or four pole.

This "circuit breaker + block" ensures, in addition to the overload and short circuit protection, the protection of the installations against the insulation defects (300mA and 1A) and the protection of the people against the direct contacts (30mA) and indirect (300mA).

Adjustable Blocks
The setting is done by actuating the thumb wheel on the front face. The setting thumb wheels are protected by a transparent sealable cover.

Disassembly
The bistable latch (2 positions) facilitate the assembly or disassembly by the bottom of the "circuit breaker + block."

These RCD add-on blocks exist in version AC and in version A-HI.

Version AC ~
The add-on blocks are protected against unexpected tripping caused by the transitory leakage currents: lightning, capacitive loading.

High Immunity
High Immunity reduces the unexpected tripping when protecting equipment that may generate disturbances (micro-processing, electronic ballast, etc.)

The earth fault is indicated when the handle is in lower position (yellow colour). Test button for earth fault check.

Tightening Compensation Cages
These circuit breaker blocks are equipped with screw cages with tightening compensation, reinforcement arch and cable holding jaws. These elements contribute to an effective tightening over time.

Connection Capacity
- 35mm² flexible connection (50° possible with some terminals),
- 70mm² rigid connection.

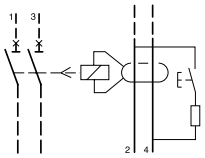
Assembly and disassembly facilitated by the drawer assembly system. The terminal cover is dependent of the add-on block. It is provided with keying systems avoiding the omission of terminal tightening downstream of the circuit breaker.

Nominal voltage: -15 +10 %
2 Poles: 230V
three and four pole: 230 / 400V
test button: 230 / 400V.

In conformity with the requirements of the Appendix G of the BS EN 61009-1.
In conformity with the requirements of standard BS EN 60947-2.

Double Pole RCD Add-On Blocks

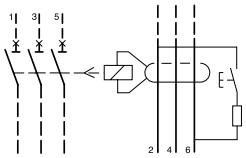
BTC280E



Sensitivity Fixed / Adjustable IΔn	In/A	Width (105mm)	Cat ref.
Fixed 30mA	125A	6 Mod	**BDC280E**
Adjustable 0.3-0.5-1A Time Delayed S 0-60-150ms	125A	6 Mod	**BTC280E**

Triple Pole RCD Add-On Blocks

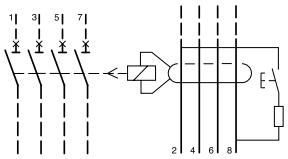
BDC380E



Sensitivity Fixed / Adjustable IΔn	In/A	Width (105mm)	Cat ref.
Fixed 30mA	125A	6 Mod	**BDC380E**
Adjustable 0.3-0.5-1A Time Delayed S 0-60-150ms	125A	6 Mod	**BTC380E**

Four Pole RCD Add-On Blocks

BDC480E



Sensitivity Fixed / Adjustable IΔn	In/A	Width (105mm)	Cat ref.
Fixed 30mA	125A	6 Mod	**BDC480E**
Fixed 300mA	125A	6 Mod	**BFC480E**
Adjustable 0.3-0.5-1A Time Delayed S 0-60-150ms	125A	6 Mod	**BTC480E**

Description
Protection and control of circuits against overloads and short circuits.

Technical Data
Type C tripping characteristics
Complies with BS EN 60-898
Calibration temperature 30°C
Breaking capacity - 6kA
Voltage rating - 230VAC

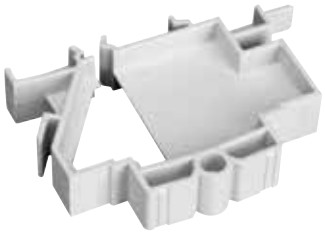
Connection Capacity
Rigid 16mm^2
Flexible 10mm^2

Locking kit = MZN175

MLN710A

Single Pole and Switched Neutral MCB

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



JK01B

Single Module Blank

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

Description
Protection and control of circuits against overloads and short circuits

Technical Data
Characteristics type (fuse) gF
Breaking capacity
10-20A 4kA
25 & 32A - 6kA
Voltage rating - 250VAC

Connection Capacity
Rigid 16mm^2
Flexible 10mm^2

L12401

Single Pole and Switched Neutral Fuse Carriers

Supplied without fuse fitted

Rating	Width (17.5mm)	Cat ref.
10A	1 Mod	**L12401**
16A	1 Mod	**L12501**
20A	1 Mod	**L12601**
25A	1 Mod	**L12701**
32A	1 Mod	**L12801**

Spare Fuse Type gF

Rating	Dimensions	Cat ref.
10A	8.5 x 23mm	**LF138**
16A	10.3 x 25.8mm	**LF139**
20A	8.5 x 31.5mm	**LF140**
25A	10.3 x 31.5mm	**LF141**
32A	10.3 x 38mm	**LF142**

To open a circuit automatically in the event an earth fault between phase and earth, and/or neutral and earth. A wide range of current ratings and sensitivities are available.
Suitable for domestic, commercial and industrial applications.

Technical Data
Complies with BS EN 61008, IEC1008

Sensitivities (Fixed)
10, 30, 100, 300mA & 100 and 300mA time delayed.

Terminal capacities
16-63A Rigid 25mm²
Flexible 16mm²
80&100A Rigid 50mm²
Flexible 35mm²

Features
Positive contact indication is provided by the rectangular flag indicator
Red = Closed
Green = Open
Indication of trip is provided by the oval flag indicator
Yellow = Tripped

All RCCBs have trip free mechanisms and can be padlocked either on or off.

Operating Temperature Range
- 5 to 40ºC class AC
- 25 to 40ºC class A

Operating Voltage
2P 127-230Vac
4P 230-400Vac

Width
2P - 35mm
4P - 70mm

2 Pole RCCB Sensitivity 10mA

Sensitivity type AC	Current rating	Cat ref.
10mA	16A	**CCC216U**

CDC225U

2 & 4 Pole RCCBs Sensitivity 30mA

Sensitivity type AC	Current rating	2 Pole Cat ref.	4 Pole Cat ref.
30mA	25A	**CDC225U**	**CDC425U**
30mA	40A	**CDC240U**	**CDC440U**
30mA	63A	**CDC263U**	**CDC463U**
30mA	80A	**CD280U**	**CD480U**
30mA	100A	**CD284U**	**CD484U**

2 & 4 Pole RCCBs Sensitivity 100mA

Sensitivity type AC	Current rating	2 Pole Cat ref.	4 Pole Cat ref.
100mA	25A	**CEC225U**	**CEC425U**
100mA	40A	**CEC240U**	**CEC440U**
100mA	63A	**CEC263U**	**CEC463U**
100mA	80A	**CE280U**	**CE480U**
100mA	100A	**CE284U**	**CE484U**

CFC425U

2 & 4 Pole RCCBs Sensitivity 300mA

Sensitivity type AC	Current rating	2 Pole Cat ref.	4 Pole Cat ref.
300mA	25A	**CFC225U**	**CFC425U**
300mA	40A	**CFC240U**	**CFC440U**
300mA	63A	**CFC263U**	**CFC463U**
300mA	80A	**CF280U**	**CF480U**
300mA	100A	**CF284U**	**CF484U**

To open a circuit automatically in the event an earth fault between phase and earth, and/or neutral and earth. A wide range of current ratings and sensitivities are available. Suitable for domestic, commercial and industrial applications.

Technical Data
Complies with BS EN 61008, IEC1008

Sensitivities (Fixed)
10, 30, 100, 300mA & 100 and 300mA time delayed.

Terminal capacities
16-63A Rigid 25mm²
Flexible 16mm²
80&100A Rigid 50mm²
Flexible 35mm²

Features
Positive contact indication is provided by the rectangular flag indicator
Red = Closed
Green = Open
Indication of trip is provided by the oval flag indicator
Yellow = Tripped

All RCCBs have trip free mechanisms and can be padlocked either on or off.

Operating Temperature Range
- 5 to 40ºC class AC
- 25 to 40ºC class A

Operating Voltage
2P 127-230Vac
4P 230-400Vac

Width
2P - 35mm
4P - 70mm

CP284U

Time Delayed AC Sensitive

Sensitivity type AC	Current rating	2 Pole Cat ref.	4 Pole Cat ref.
100mA	100A	**CN284U**	**CN484U**
300mA	100A	**CP284U**	**CP484U**

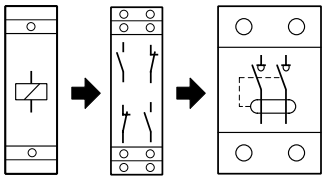
Type A DC Sensitive

Sensitivity type AC	Current rating	2 Pole Cat ref.	4 Pole Cat ref.
10mA	16A	**CCA216U**	**-**
30mA	25A	**CDA225U**	**CDA425U**
30mA	40A	**CDA240U**	**CDA440U**
30mA	63A	**CDA263U**	**CDA463U**

CZN006

Terminal Covers

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



MZ203 to MZ206 | CZ001 | RCCB

Locking kit = MZN175

CZ001

Auxiliary Interface

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

Description	Width (17.5mm)	Cat ref.
2 NO / 2NC 6A AC1 230V	1 Mod	**CZ001**

MZ203

Shunt Trip

Allows remote tripping of the associated device. Operation of the coil is indicated by a flag on the product fascia.

Description	Width (17.5mm)	Cat ref.
230Vac - 400Vac 110V - 130Vdc	1 Mod	**MZ203**
24 - 48Vac 12 - 48Vdc	1 Mod	**MZ204**

MZ206

Under Voltage Release

Allows RCCB to be closed, only when voltage is above 85% of Un. RCCB will automatically trip when voltage falls to between 70-35% of Un (230V). Operation of the release is indicated by a flag on the product facia.

Description	Width (17.5mm)	Cat ref.
230Vac	1 Mod	**MZ206**
48Vac	1 Mod	**MZ205**

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.

Technical Data
Insulated DIN clip
Complies with IEC 61009-1, IEC 61009-2-2, BS EN 61009-1
Sensitivities (fixed)
10mA and 30mA
Breaking capacity: 6kA
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 1pole & solid neutral.

Operating Voltage
230V (AC) +10%/-15% 50Hz

Locking kit = MZN175

ADN120

Sensitivity 30mA (6kA) Type B, AC Sensitive

Current rating	Width (17.5mm)	Cat ref.
6A	1 Mod	**ADN106**
10A	1 Mod	**ADN110**
16A	1 Mod	**ADN116**
20A	1 Mod	**ADN120**
32A	1 Mod	**ADN132**
40A	1 Mod	**ADN140**
45A	1 Mod	**ADN145**
50A	1 Mod	**ADN150**

ADA156U

Sensitivity 30mA (10kA) Type C, DC Sensitive

Current rating	Width (17.5mm)	Cat ref.
6A	1 Mod	**ADA156U**
10A	1 Mod	**ADA160U**
16A	1 Mod	**ADA166U**
20A	1 Mod	**ADA170U**
32A	1 Mod	**ADA182U**

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.

Technical Data
Insulated DIN clip
Complies with IEC 61-009-1, IEC 61009-2-2, BS EN 61009-1
Sensitivities (fixed)
10mA, 30mA & 100mA
Breaking capacity: 10kA
Flying neutral lead: 700mm

Terminal Capacities
25mm² rigid
16mm² 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.

Operating Voltage
230V (AC) +10%/-15% 50Hz

Locking kit = MZN175

ACB125

Sensitivity 10mA (10kA) Type B & C, AC Sensitive

Current rating	Width (17.5mm)	Type B Cat ref.	Type C Cat ref.
6A	1 Mod	**ACB106**	**ACC106**
16A	1 Mod	**ACB116**	**ACC116**
25A	1 Mod	**ACB125**	**ACC125**
32A	1 Mod	**ACB132**	**ACC132**

ADB106

Sensitivity 30mA (10kA) Type B & C, AC Sensitive

Current rating	Width (17.5mm)	Type B Cat ref.	Type C Cat ref.
6A	1 Mod	**ADB106**	**ADC106**
10A	1 Mod	**ADB110**	**ADC110**
16A	1 Mod	**ADB116**	**ADC116**
20A	1 Mod	**ADB120**	**ADC120**
25A	1 Mod	**ADB125**	**ADC125**
32A	1 Mod	**ADB132**	**ADC132**
40A	1 Mod	**ADB140**	**ADC140**
45A	1 Mod	**ADB145**	**ADC145**
50A	1 Mod	**ADB150**	**ADC150**

AEC132

Sensitivity 100mA (10kA) Type C, AC Sensitive

Current rating	Width (17.5mm)	Type C Cat ref.
10A	1 Mod	**AEC110**
16A	1 Mod	**AEC116**
20A	1 Mod	**AEC120**
25A	1 Mod	**AEC125**
32A	1 Mod	**AEC132**

Compact protection devices which provide MCB overcurrent protection and RCCB earth fault protection in a single unit. Complies with BS EN 61009-1.

Technical Data
The units are available with current ratings of 6A, 10A, 16A, 20A, 25A, 32A and 40A.
The device switches both the phase and neutral conductors.
All ratings have 30mA earth fault protection. The units feature indicators which show whether tripping is due to an overcurrent or earth fault.

Breaking capacity
6kA

Operating Voltage
230V (AC) +10%/-15% 50Hz.

Mechanical life
20,000 operations

Connection Capacity
Rigid conductor 25mm^2
Flexible conductor 16mm^2

ADA990U

RCBO Single Pole and Switched Neutral Type B & C 6kA

RCBO tripping current (30mA) with flying 700mm lead for neutral connection.

Note: For use in consumer units and distribution boards only.

Current rating	Width (35mm)	Type B Cat ref.	Type C Cat ref.
6A	2 Mod	**ADA906U**	**ADA956U**
10A	2 Mod	**ADA910U**	**ADA960U**
16A	2 Mod	**ADA916U**	**ADA966U**
20A	2 Mod	**ADA920U**	**ADA970U**
25A	2 Mod	**ADA925U**	**ADA975U**
32A	2 Mod	**ADA932U**	**ADA982U**
40A	2 Mod	**ADA940U**	**ADA990U**

Compact protection devices which provide MCB overcurrent protection and RCCB earth fault protection in a single unit. Complies with BS EN 61009-1.

Technical Data
The units are available with current ratings of 6A, 10A, 16A, 20A, 25A, 32A and 40A.
The device switches both the phase and neutral conductors.
All ratings have 30mA earth fault protection. The units feature indicators which show whether tripping is due to an overcurrent or earth fault.

Breaking capacity:4.5kA

Operating Voltage
230V (AC) +10%/-15% 50Hz

Mechanical life
20,000 operations

Connection Capacity
Rigid conductor 25mm^2
Flexible conductor 16mm^2

ADC816F

RCBO Single Pole and Switched Neutral Type C 4.5kA

All terminal version for cable in cable out applications e.g. local protection, caravan pitches, festive illuminations, street lighting.

Note: Not for use in fixed busbar consumer units or distribution boards.

Current rating	Width (35mm)	Type C Cat ref.
6A	2 Mod	**ADC806F**
10A	2 Mod	**ADC810F**
16A	2 Mod	**ADC816F**
20A	2 Mod	**ADC820F**
25A	2 Mod	**ADC825F**
32A	2 Mod	**ADC832F**

Protection and control of circuits against overloads and short-circuits:

Technical Data
Fuse carriers suitable for fuses which fully comply with the dimensional, power loss, fusing factor, discrimination and time-current characteristic of BS 1361

Complies with BS 1361-1971
- Short-circuit rating:16.5kA (i.e. no further consideration of fault levels is necessary)
- Colour coded ratings.

Connection Capacities
Top: 16 mm² flexible cable & busbar

LB113

BS 1361 Fuse Carriers

Complete with cartridge fuse. For single phase applications

Current rating	Colour	Width (17.5mm)	Cat ref.
5A 230V	White	1 Mod	**LB113**
15A 230V	Blue	1 Mod	**LB115**
20A 230v	Yellow	1 Mod	**LB116**
30A 230V	Red	1 Mod	**LB118**

L15300

BS 1361 HRC Spare Cartridge Fuses

Current rating	Colour	Cat ref.
5A (23 x 6.35 x 4.8mm)	White	**L15300**
15A (26 x 10.32 x 6.4mm)	Blue	**L15500**
20A (26 x 10.32 x 6.4mm)	Yellow	**L15600**
30A (29 x 12.7 x 8mm)	Red	**L15800**
Spare Fuse Holder up to 20A	-	**L14700**

Fuse carrier 32A max.
Protection and control of circuits against overloads and short circuits in three phase circuits.

Suitable for fuses which comply with BS 88-1-1975 and with the standardised performance requirements for industrial fuse links specified in BS 88 Part 2.

Rating voltage:
415 V a.c.
250 V d.c.

- Fusing factor: class Q 1
- Rated breaking capacities:
  80 kA at 415 V a.c.
  40 kA at 250 V d.c.

LS201

BS 88 Fuse Carriers

Supplied without BS 88 fuses

Characteristics	Width (17.5mm)	Cat ref.
32A max.	1 Mod	**LS201**

BS 88 HRC Spare Cartridge Fuses

Characteristics	Cat ref.
2A (29 x 12.7 x 8mm)	**L17100**
4A (29 x 12.7 x 8mm)	**L17200**
6A (29 x 12.7 x 8mm)	**L17300**
8A (29 x 12.7 x 8mm)	**L17400**
10A (29 x 12.7 x 8mm)	**L17500**
16A (29 x 12.7 x 8mm)	**L17600**
20A (29 x 12.7 x 8mm)	**L17700**
25A (29 x 12.7 x 8mm)	**L17800**
32A (29 x 12.7 x 8mm)	**L17900**

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

Technical Data
- Adjustable thermal relay
- AC3 utilisation category
- Connection capacity
  2 conductors
  max size: Flexible 1 to 4mm²
  Rigid 1.5 to 6mm²

Options
Undervoltage release: MZ528N, MZ529N
Auxiliary contacts: MZ520N, MZ527N
Alarm contact: MZ527N

Complies With
IEC 947-1, IEC 947-2 (appropriate parts of)

Note: Please consult us for enclosure selection

MM501N

Motor Starters

Current setting	Standard power ratings of 3 phase motors 50/60Hz (AC3 category) 230V (kW)	400V (kW)	Width (43.75mm)	Cat ref.
0.1 - 0.16A	-	-	-	**MM501N**
0.16 - 0.25A	-	0.06	2 ½ Mod	**MM502N**
0.25 - 0.4A	0.06	0.09	2 ½ Mod	**MM503N**
0.4 - 0.6A	0.09	0.12	2 ½ Mod	**MM504N**
0.6 - 1.0A	0.09	0.12	2 ½ Mod	**MM505N**
1.0 - 1.6A	0.25	0.55	2 ½ Mod	**MM506N**
1.6 - 2.5A	0.55	0.8	2 ½ Mod	**MM507N**
2.5 - 4A	0.8	1.5	2 ½ Mod	**MM508N**
4 - 6A	1.5	2.5	2 ½ Mod	**MM509N**
6 - 10A	2.5	4	2 ½ Mod	**MM510N**
10 - 16A	4	7.5	2 ½ Mod	**MM511N**
16 - 20A	5.5	9	2 ½ Mod	**MM512N**
20 - 25A	7.5	12.5	2 ½ Mod	**MM513N**

MZ520N

Auxiliary Contacts

Act as an indicating device to monitor the ON or OFF position.

Characteristics	Width (8.75mm)	Cat ref.
1C + 1O 2A AC1 - 400V~	½ Mod	**MZ520N**

MZ527N

Alarm Contact

Mounted inside the motor starter

Characteristics	Cat ref.
1C 1A AC1 - 400V~ / 2A AC1 - 230V~	**MZ527N**

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

Technical Data
- Adjustable thermal relay
- AC3 utilisation category
- Connection capacity
  2 conductors
  max size: Flexible 1 to 4mm²
  Rigid 1.5 to 6mm²

Options
Undervoltage release: MZ528N, MZ529N
Auxiliary contacts: MZ520N, MZ527N
Alarm contact: MZ527N

Complies With
IEC 947-1, IEC 947-2 (appropriate parts of)

Note: Please consult us for enclosure selection

MZ528N

Under Voltage Release

To prevent automatic restarting of the controlled device

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

MZ521N

Surface Mounting Enclosure

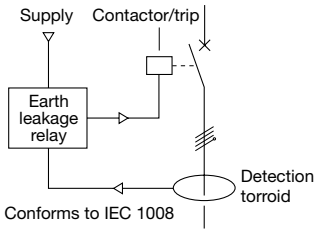
Weatherproof IP55 with a removable window

Dimensions (mm)	Cat ref.
W. 78 x H. 150 x D. 95	**MZ521N**

MZ530N

Emergency Stop Button

Description	Cat ref.
IP65, mounted on surface mounting enclosure MZ521N	**MZ530N**



These units ensure the protection of electrical installations. 30mA versions can provide supplementary protection against direct connection. This range of electronic earth fault relays provides monitoring of earth fault currents. When the fault current rises above the selected level, the output contacts of the product operate.

Depending on the relay selected, it can have either fixed or adjustable sensitivity, a time delay is also available for selectivity purposes. The relays are linked with detection torroids, 14 separate types are available, circular and rectangular in section (4.28).

Common characteristics
- Positive safety: the relay trips in the event of a break in the relay/torroid link.
- Positive reset required after a fault is detected.
- Test button for simulation of a fault.
- Protected against nuisance tripping from transients.
- DC sensitive.
- Output: 1 C/O contact 250V~ 5/6A AC1.
- Visual display of fault by red LED.

Specific device features
- LCD display on HR525 & HR534.
- Adjustment of sensitivity and delay (selectable).
- Extra positive safety contact (1C/O 250V~ 6A AC1).
- Display of fault current before it triggers the relay (5% to 75%).
- Extra output contact (250V 0.1A max.) to enable remote indication if fault currents over 50% of IΔn.
- Remote test and reset (opto-coupled).

Torroids
Circular dia. 35, 70, 105, 140, 210mm
Rectangular 70 x 175, 115 x 305, 150 x 350mm
Connection capacity
Relay - 1.5 to 6mm2
Relay - torroid link
2 wires, 25m max.
Test and remote reset link
3 wires, 20m max.
For enclosure selection, please consult us.

Width
1 Mod - 17.5mm
3 Mod - 52.5mm
4 Mod - 70mm
6 Mod - 105mm

HR500

HR510

HR520

Earth Fault Relay with Separate Detection Torroids

Designation	Characteristics	Width	Cat ref.
Earth fault relay C/O contact 5A AC1	Instant trip, fixed sensitivity IΔn = 30mA	1 Mod	**HR500**
Earth fault relay C/O contact 5A AC1	Instant trip, fixed sensitivity IΔn = 300mA	1 Mod	**HR502**
Earth fault relay C/O contact 6A AC1	Adjustable sensitivity IΔn = 30mA, 100mA, 300mA 500mA, 1A, 3A, 10A Instant trip or time delay 0.1 - 0.3 - 0.4 - 0.5 - 1 - 3 secs	3 Mod	**HR510**
Earth fault relay C/O contact 6A AC1	Adjustable sensitivity IΔn = 30mA, 100mA, 300mA 500mA, 1A, 3A, 10A LED optical scale Instant trip or time delay 0.1 - 0.3 - 0.4 - 0.5 - 1 - 3 secs	3 Mod	**HR520**
Earth fault relay C/O contact 6A AC1	Adjustable sensitivity IΔn = 30mA, 100mA, 300mA 500mA, 1A, 3A, 10A LED optical scale Instant trip or time delay 0.1 - 0.2 - 0.25 - 0.3 - 0.4 - 0.5 secs	3 Mod	**HR522**
Earth fault relay C/O contact 6A AC1	Adjustable sensitivity IΔn = 500mA, 1A, 3A, 5A, 10A, 20A & 30A LED optical scale Instant trip or time delay 0.1 - 0.2 - 0.25 - 0.3 - 0.4 - 0.5 secs	3 Mod	**HR523**
Earth fault relay C/O contact 6A AC1 Trip / reclose input feature	Adjustable sensitivity IΔn = 30mA, 100mA, 300mA, 500mA, 1A, 3A, 5A, 10A & 30A LCD Display Instant trip or time delay 0.02 - 0.1 - 0.3 - 0.4 - 0.5 - 1 - 3 - 5 - 10 secs	3 Mod	**HR525**
Earth fault relay C/O contact 6A AC1 Solid State relay output Trip / reclose input feature	Adjustable sensitivity IΔn = 30mA, 100mA, 300mA, 500mA, 1A, 3A, 5A, 10A & 30A LCD Display Instant trip or time delay 0.02 - 0.1 - 0.3 - 0.4 - 0.5 - 1 - 3 - 5 - 10 secs	3 Mod	**HR534**

Earth Fault Relays with Integral Torroids

Designation	Characteristics	Width	Cat ref.
Earth fault relay with integral torroid adjustable sensitivity 25mm² max. cable size	Adjustable sensitivity IΔn - 30mA, 100mA, 300mA, 500mA, 1A & 3A Instant trip or time delay 0.1 - 0.3 - 0.5 - 0.75 - 1 secs	4 Mod	**HR440**
Earth fault relay with integral torroid adjustable sensitivity 35mm² max. cable size	Adjustable sensitivity IΔn - 30mA, 100mA, 300mA, 500mA, 1A & 3A Instant trip or time delay 0.1 - 0.3 - 0.5 - 0.75 - 1 secs	6 Mod	**HR441**

HR702

Circular Section Torroid

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

HR830

Rectangular Section Torroid

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

HR820

Rectangular Split Torroid

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

SPD's protect electrical and electronic equipment against transients, originating from lightning, switching of transformers, lighting and motors

These transients can cause premature ageing of equipment, downtime, or complete destruction of electronic components and materials.

SPDs are strongly recommended on installations that are exposed to transients, to protect sensitive and expensive electrical equipment such as TV, video, washing machines, Hi-Fi, PC, alarm etc.

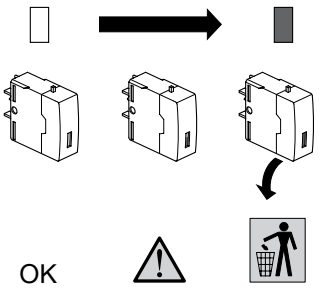
The choice of SPD depends on a number of criteria such as:
- The risk of lightening strikes
- The exposure of the building to transients.
- The sensitivity and value of the electrical equipment that requires protection.
- Earthing system
- Level of protection

The range of SPDs is separated into 3 types of protection:
1. Main protection - class 1
   SPDs with higher discharge current (Imax 10/350), to evacuate as much of the transient overvoltages associated with lightening strikes
2. Main protection - class 2
   With a discharge current (Imax 8/20), to evacuate as much of the transient overvoltage to earth as possible protection level (Up ≤ 1000V).
3. Main protection - class 3
   To cut-down the transient surge as low as possible to protect very sensitive equipment.

Technical Data
Complies with IEC61643-1

Reserve Status Indicator
(R versions)

End of Life Indicator
(D versions)



Auxiliary contact for remote signalling (R versions only)

230V~ 1A
12V ... 10mA

Installation and Connection
The main protection SPDs are installed directly after the main incoming switch or RCCB (type S).

SPDs can be used in any supply system e.g TNCS, TNS, TT.

Options: Replacement cartridges.

Connected in parallel to the equipment to be protected.

Protection is assured in both common and differential modes.

SPDs with Low Let Through Voltage Levels Type 3
To protect very sensitive electronic equipment. This fine protection complements the main protection and can protect 1 or many electronic devices.

Optimal coordination is obtained when cascaded with a main protection device.

Discharge current
Imax. 8kA (8/20 wave)
a green LED on the front face indicates the status of the SPD SP202N, connected in series with the equipment that needs to be protected (with a maximum line current of 25A). Protection is assured in both common and differential modes

Connection Capacity
Terminal blocks L, N & E
- Rigid conductor: 10mm²
- Flexible conductor: 6mm²

Replacement Cartridges
The cartridges replace the cartridge in the main SPN* devices.

They allow simple replacement without the need to cut-off the power supply.
Cartridges are available for all discharge currents (40kA and 15kA) with and without condition indication.

A keying system exists to prevent a line cartridge being interchanged by mistake with a neutral one and visa versa neutral cartridges have a discharge current of 65kA

For technical details see page 4.32-4.36

	TNS	TNC-S	TT
SPA201	✓	✓	✓
SPA400	×	✓	×
SPA401	✓	×	✓
SPN800	×	✓	×
SPN801	✓	×	×
SPN802	×	×	✓
SPN215D	✓	✓	✓
SPN240D	✓	✓	✓
SPN415D	✓	✓	✓
SPN440D	×	✓	×
SP202N	✓	✓	✓

SPN800R

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

Poles	I_{imp} kA L-N	I_{imp} kA N-PE	I_n L-N	In N-PE	Up kV	Single or Three Phase	Width (mm)	Cat ref.	Cat ref. with remote contact
2	12.5	25	-	-	≤1.5	Single	35	**SPA201**	**-**
3	12.5	37.5	-	-	≤1.5	Three	70	**SPA400**	**-**
4	12.5	50	-	-	≤1.5	Three	70	**SPA401**	**-**
3	25	75	-	-	≤1.5	Three	105	**SPN800**	**SPN800R**
4	25	100	-	-	≤1.5	Three	140	**SPN801**	**SPN801R**
4	25	100	-	-	≤1.5	Three	140	**SPN802**	**SPN802R**

SPN080N

Replacement Cartridges (SPN8* range)

Dimensions	Cat ref.
Phase replacement for SPN800, SPN800R, SPN801, SPN801R, SPN802 & SPN802R	**SPN080**
Neutral replacement for SPN801, SPN801R, SPN802, SPN802R	**SPN080N**

SPN415D

SPN040D

Class 2 (with lifetime indicator)

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

Replacement Cartridges

Dimensions	Cat ref.
Phase replacement for SPN140D	**SPN040D**
Phase replacement for SPN215D & SPN415D	**SPN015D**
Phase replacement for SPN215R & SPN 415R	**SPN015R**
Neutral replacement for SPN215D, SPN415D, SPN215R & SPN415R	**SPN040N**

SP202N

Class 3 (fine protection) (with lifetime indicator)

Poles	I_{imp} L-N	I_{imp} N-PE	I_n kA L-N	In kA N-PE	Up kV	Single or Three Phase	Width (mm)	Cat ref.	Cat ref. with remote contact
2	-	-	3	-	≤ 1.5	Single	35	**SP202N**	-

SPV325

PV Applications (DC side) (with lifetime indicator)

Poles	I_{imp} L-N	I_{imp} N-PE	I_n kA L-N	In kA N-PE	Up kV	Single or Three Phase	Width (mm)	Cat ref.	Cat ref. with remote contact
3	-	-	12.5	25	≤ 4	-	52.5	**SPV325**	**-**

Consumer Unit Kit Type 2 SPD with SPN215D (with lifetime indicator)

Consists of: Neutral terminal bar, 3x 20mm neutral link bar 370mm, 300mm & 200mm lengths, 4mm² neutral, live & earth cables, 2 connector busbar, 4 way terminal bar, terminal bar clip, 1x Double Pole SPD's, 32A MCB

Poles	I_{imp} L-N	I_{imp} N-PE	I_n kA L-N	In kA N-PE	Up kV	Single or Three Phase	Width (mm)	Cat ref.	Cat ref. with remote contact
2	-	-	5	15	≤ 1.2	Single	35	**VA02SPD**	**-**

		SPA201		SPA400		SPA401	
Tested to		EN 61643-11 2002-12					
SPD type / class		Type 1 + Type 2 / Class I					
Energy-coordinated protection effect on terminal equipment		Type 1 + Type 2					
Energy-coordinated protection effect on terminalequipment ≤ 5 m		Type 1 + Type 2 + Type 3					
Type of connexion		Parallel connection					
Type of power supply system		TT / TN system		TN-C-S		TT / TN-S system	
Type of protection		common and differential modes		common modes		common and differential modes	
Nominal voltage	U_N	230V/400V ac					
Rated voltage	U_c	255V ac					
Voltage protection level	U_p	≤ 1.5kV					
TOV Voltage	U_T	440V / 5s	1200V / 200ms	440V / 5s		440V / 5s	1200V / 200ms
Rated load current	I(L)	n/a					
	I(L-L)	n/a					
Follow current interrupting rating	I_{fi}	25kA rms	100A rms	25 kA rms		25kA rms	100A rms
Nominal discharge current (8/20)	I_n	12.5kA	25kA	12.5kA (L-PEN)	37.5kA (total)	12.5kA	50kA
Impulse current (10/350)	I_{imp}	12.5kA	25kA	12.5kA (L-PEN)	37.5kA (total)	12.5kA	50kA
Max. rating of overcurrent protection	fuse	160A gL / gG					
	MCCB	n/a		160A			
Short-circuit withstand capability with max. overcurrent protection	fuse	25kA rms					
	MCB	n/a					
Response time	t_A	≤ 100ns					
Operating temperature range		- 40°C ….+ 80°C					
Indication of SPD disconnector		Green/Red flag on L and N		Green/Red flag on L1, L2, L3		Green/Red flag on L1, L2, L3 and N	
Cross sectional area	min	1,5mm² solid / flexible					
	max	35mm² stranded / 25mm² flexible					
Tightening torque for terminals		4 Nm					
Mounting on		35mm DIN rail in accordance with EN 60715					
Enclosure material		grey thermoplastic, UL 94V-0					
Degree of protection		IP20					
Modular width		2		4		4	
Weight		275 g		386 g		480 g	
Approval marking		KEMA					

		SPN800 / SPN800R	SPN801 / SPN801R	SPN802 / SPN802R	
Tested to		EN 61643-11 (VDE0675-6-11) 2002-12	EN 61643-11 (VDE0675-6-11) 2002-12	EN 61643-11 (VDE0675-6-11) 2002-12	
		L1/L2/L3 => PEN	L1/L2/L3/N => PE	L1/L2/L3 => N	N => PE
SPD type / class		Type 1 + Type 2 / I / B			
Type of connexion		Parallel connection			
Type of power supply system		TN-C-S	TN-S - System	TT - System	
Type of protection		Common modes		Common and differential modes	
Nominal voltage	U_N	230V / 400V ac			
Rated voltage	U_c	255V ac			
Voltage protection level	U_p	≤ 1.5kV			255V ac
TOV-voltage	U_T	440V / 5s			1200V / 200ms
Rated load current	I(L)	315A			
	I(L-L)	125A			
Follow current interrupting rating	I_{fi}	50 kA			100kA
Nominal discharge current (8/20)	I_n	75kA	100kA	25kA	100kA
Impulse current (10/350)	I_{imp}	75kA	100kA	25kA	100kA
Residual current	I_{PE}	≤ 100mA			
Max. rating of overcurrent protection	fuse	125A gL / gG serial or 315A parallel			
	MCCB	125A serial or 160A parallel			
Short-circuit withstand capability with max. overcurrent protection	fuse	50kA ac		25kA ac	
	MCCB	50kA ac		25kA ac	
Response time	t_A	< 100ns			
Operating temperature range		- 40°C ….+ 60°C			
Indication of SPD disconnector		Green - red on L1, L2, L3	Green - red on L1, L2, L3, N		
Cross sectional area	min	10mm² solid / flexible			
L1, L2, L3, PE	max	50mm² multi-stranded / 35mm² flexible			
Tightening torque for terminals		7.0 Nm			
Mounting on		35mm DIN rail in accordance with EN 60715			
Enclosure material		grey thermoplastic, UL 94V-0			
Degree of protection		IP20			
Modular width		6		8	
Weight		970 g	1260 g	1272 g	
Approval marking		VDE			

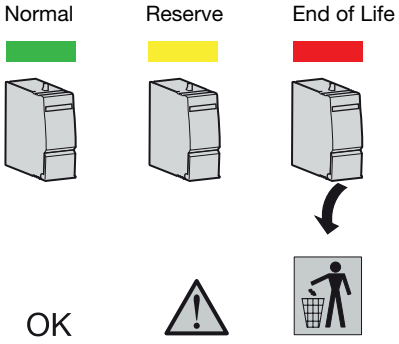
		SPN215D/R	SPN240D/R	SPN415D/R	SPN440D/R
Tested to		EN 61643-11 (VDE0675-6-11) 2002-12			
SPD type		Type 2 according to EN 61643-11			
SPD class		Class II according to IEC 61643-1			
Type of connexion		Parallel connection			
Maximum continuous operationg voltage U_c	Line / Neutal	≤ 255V			
	Neutral/ PE	≤ 275V			
Voltage protection level	U_p	≤ 1kV	≤ 1.2kV	≤ 1kV	≤ 1.2kV
Nominal discharge current (8/20 µs) [(DC+/DC-) --> PE]	I_n	5kA	15kA	5kA	15kA
Max. discharge current (8/20 µs) [(DC+/DC-) --> PE]	I_{max}	15kA	40kA	15kA	40kA
Short-circuit withstand capability with max. overcurrent protection		10kA - 32A	20kA - 32A	10kA - 32A	20kA - 32A
Operating temperature range		- 40°C ….+ 80°C			
Indication of SPD disconnector		Green - Yellow - Red			
Cross sectional area	min	1,5mm² solid / flexible			
	max	35mm² multi-stranded / 25mm² flexible			
Tightening torque for terminals		4.0 Nm			
Mounting on		35mm DIN rail in accordance with EN 60715			
Enclosure material		grey thermoplastic, UL 94V-0			
Degree of protection		IP20			
Modular width (DIN 43880)		2	4	2	4
Auiliary contact. Voltage/ nominal current (only applicable on the R suffix products)		230V/ 0.5A 12Vdc 10mA			

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

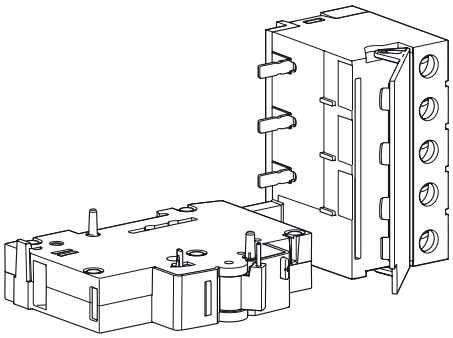
Characteristics		
Tested to		EN 61643-11 (VDE0675-6-11) 2007-08
SPD type / class		T3 / III
Ports		one port
Type of connection		Parallel connection
Type of power supply system		TT / TN system
Nominal voltage	U_N	230V ac
Rated voltage	U_c	255V ac
Voltage protection level (L- N)	U_p	≤ 1.25kV
Voltage protection level (L/N - PE)	U_p	≤ 1.5kV
TOV - Characteristic (L - N)	U_T	335V / 5s
TOV - Characteristic (L/N - PE) (I)	U_T	400V / 5s
TOV - Characteristic (L/N - PE) (II)	U_T	1200V / 200 ms
Rated load current	IL	16 Aeff
Nominal discharge current (8/20)	I_n	3kA
Maximal discharge current (8/20)	I_{max}	5kA
Combination wave (1,2/50 - 8/20) (L - N)	U_{oc}	6 kV
Combination wave (1,2/50 - 8/20) (L/N - PE)	U_{oc}	10 kV
Residual current	IPE	≤ 5µA
Remplacement cartridge		NO
Maximal rating of overcurrent protection	fuse	16 A gL / gG
	MCB	16A B curve
Short-circuit withstand capability with max. overcurrent protection	fuse	6kA eff ac
	MCB	1kA eff ac
Response time	t_A	≤ 25ns
Operating temperature range		- 25°C ….+ 40°C
Indication of SPD disconnector		NO
Remote signalisation contact		Green light off
Cross sectional area	min	1.5mm² solid / flexible
	max	10mm² stranded / 6mm² flexible
Tightening torque for terminals		1.2 Nm
Mounting on		35mm DIN rail in accordance with EN 60715
Enclosure material		Grey thermoplastic, UL 94V-2
Degree of protection		IP20
Installation width		2 modules, DIN 43880

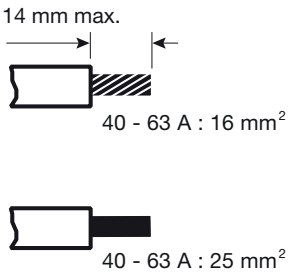
Reserve Indicator Light

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

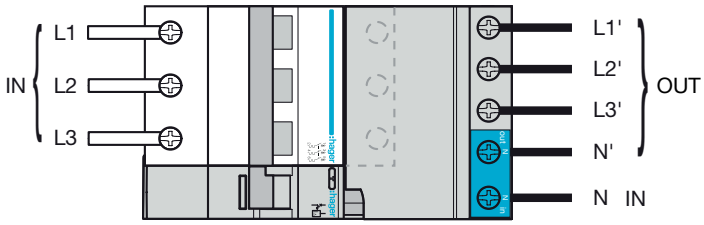


Technical Characteristics

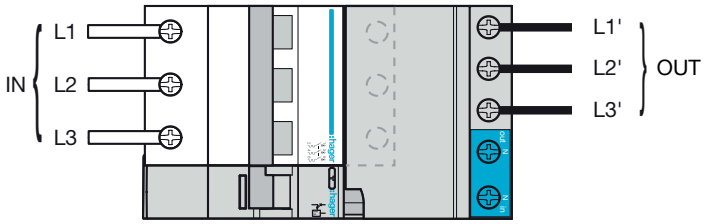




Electrical Connection



3Ph



Moulded case circuit breakers x160
Thermal magnetic trip unit, 2 versions:
- Z version: fixed thermal and fixed magnetic
- U version: adjustable thermal and fixed magnetic

1P, 2P, 3P and 4P
Access to mechanical test button on cover. Lockable cover protects MCCB settings.
Integrated padlocking handle
Ø 4mm,

MCCBs can be mounted on DIN rail with use of accessory.

Connection capacity
95 mm² rigid cables
70 mm² flexible cables
collar terminals
Complies with BS EN 60 947-2.

Moulded case switches comply with BS EN 60 947-3.

For technical details see table page 4.44

HDA125Z

HDA161U

Description	Characteristics	In	Cat. Ref. 1P	3P
MCCBs x160 18kA	breaking capacity Ics : 18 kA (400/415 V AC) fixed thermal 1x In fixed magnetic > 10 x In	16A	**HDA014Z**	**HDA016Z**
		20A	**HDA018Z**	**HDA020Z**
		25A	**HDA023Z**	**HDA025Z**
		32A	**HDA030Z**	**HDA032Z**
		40A	**HDA038Z**	**HDA040Z**
		50A	**HDA048Z**	**HDA050Z**
		63A	**HDA061Z**	**HDA063Z**
		80A	**HDA078Z**	**HDA080Z**
		100A	**HDA098Z**	**HDA100Z**
		125A	**HDA123Z**	**HDA125Z**
		160A	-	**HDA160Z**
	adjustable thermal 0.63 - 0.8 - 1 x In fixed magnetic > 10 x In	25A	-	**HDA025U**
		40A	-	**HDA040U**
		63A	-	**HDA063U**
		80A	-	**HDA080U**
		100A	-	**HDA100U**
		125A	-	**HDA125U**
		160A	-	**HDA160U**
MCCBs x160 25kA	breaking capacity Ics : 20 kA (400/415 V AC) fixed thermal 1x In fixed magnetic > 10 x In	16A	**HHA014Z**	**HHA016Z**
		20A	**HHA018Z**	**HHA020Z**
		25A	**HHA023Z**	**HHA025Z**
		32A	**HHA030Z**	**HHA032Z**
		40A	**HHA038Z**	**HHA040Z**
		50A	**HHA048Z**	**HHA050Z**
		63A	**HHA061Z**	**HHA063Z**
		80A	**HHA078Z**	**HHA080Z**
		100A	**HHA098Z**	**HHA100Z**
		125A	**HHA123Z**	**HHA125Z**
		160A	-	**HHA160Z**
	adjustable thermal 0.63 - 0.8 - 1 x In fixed magnetic > 10 x In	25A	-	**HHA025U**
		40A	-	**HHA040U**
		63A	-	**HHA063U**
		80A	-	**HHA080U**
		100A	-	**HHA100U**
		125A	-	**HHA125U**
		160A	-	**HHA160U**

Add-on blocks for x160 devices
These devices are intended to be fixed on the right side of the devices.

Type A and HI
For pulsating residual current. High Immunity reduces the unexpected tripping when protecting equipment generating disturbances (micro-processing, electronic ballast...)
Fixed version: 300 mA sensitivity and instantaneous tripping

Adjustable version: adjustable sensitivity and time delay.

Test button for electrical functioning check.
Mechanical test button

LED fault indication and auxiliary output for remote indication.

(25-50% $I_{\Delta n}$).

Assembly and disassembly facilitated by the drawer assembly system. The terminal cover is part of the add-on block.

Connection capacity
95 mm² rigid cables
70 mm² flexible cables

Complies with BS EN 60 947-2 annexe B when fitted to an MCCB.

HBA161H

Description	Characteristics	In	Cat. Ref. 3P	4P
Add-on Blocks	$I_{\Delta n}$ 300 mA fixed sensitivity instantaneous tripping	125A	**HBA127H**	**HBA128H**
	sensitivity I adjustable: 0.03 - 0.1 - 0.3 - 1 - 3 - 6A adjustable tripping: • instantaneous • time delay: 0.06 - 0.15 - 0.3 • 0.5 - 1s	125A	**HBA125H**	**HBA126H**
		160A	**HBA160H**	**HBA161H**

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

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

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

Under voltage release
Enables tripping of MCCBs or moulded case 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.

HXA021H HXA024H

Description	Characteristics	Cat ref.
Auxiliary contacts AX AL	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	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	24 V DC	**HXA011H**
	100 - 120 V AC	**HXA013H**
	200 - 240 V AC	**HXA014H**
	380 - 450 V AC	**HXA015H**
Delayed undervoltage releases DUVR	24 V DC	**HXA051H**
	110 - 120 V AC	**HXA053H**
	220 - 240 V AC	**HXA054H**
	380 - 415 V AC	**HXA055H**

HXA014H

HXA031H

HYA015H

HYA021H

HYA023H

Padlock

Description	Cat. Ref. 1P	3P	4P
to mount on MCCB for handle locking for 3 padlock max Ø 8 mm	-	**HXA039H**	-

Extended connections

Description	Cat. Ref. 1P	3P	4P
Set of 4 straight connections	-	-	**HYA013H**
Set of 3 or 4 spreader connections	-	**HYA014H**	**HYA015H**

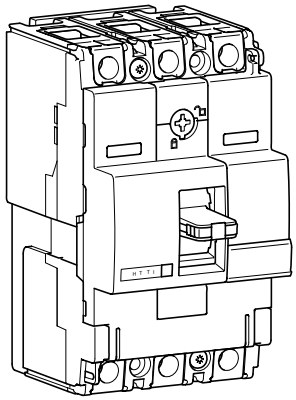
Interphase barriers

Description	Cat. Ref. 1P	3P	4P
Set of 3 height: 50mm	-	-	**HYA019H**
Set of 3 height: 97mm	-	-	**HYB019H**

Terminal Covers

Description	Cat. Ref. 1P	3P	4P
for extended straight connections	**HYA029H**	**HYA021H**	**HYA022H**
for extended spreader connections	-	**HYA023H**	**HYA024H**

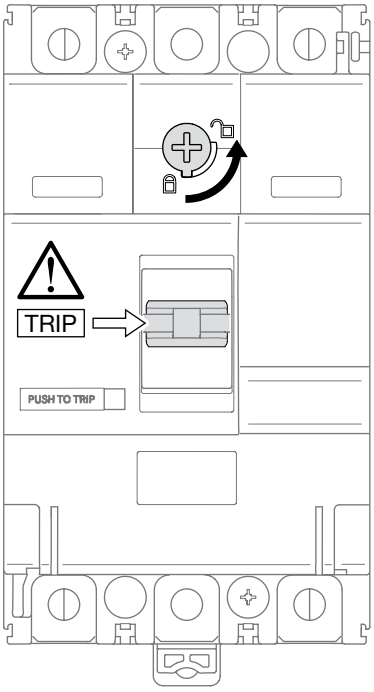
MCCBs



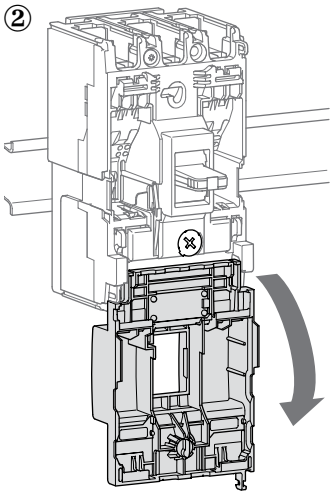
		220/240V AC IEC 60 947-2	380/415V AC IEC 60 947-2
HDA	Icu	25 kA	18 kA
	Ics	25 kA	18 kA
HHA	Icu	35 kA	25 kA
	Ics	25 kA	20 kA
HCA	Icm	-	2.8 kA
	Icw	-	2 kA - 1s

Magnetic and thermal settings

①

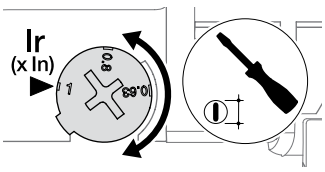


②



For DIN rail mounting, use HYA033H.

③



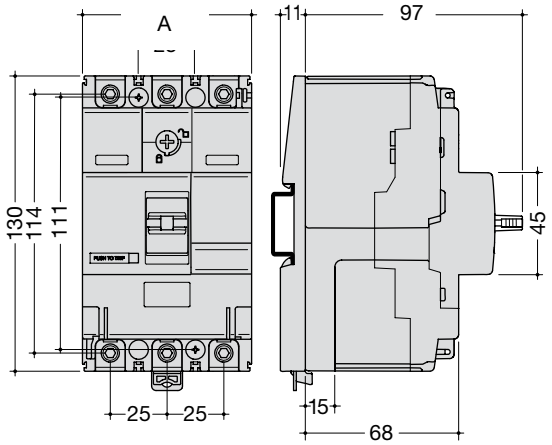
Thermal adjustment from 0.63 to 1 x In

Magnetic adjustment fixed > 10 x In

In	16 - 50 A	63 - 80 A	100 - 125 A	160 A
Imag	600 A	1000 A	1500 A	1600 A

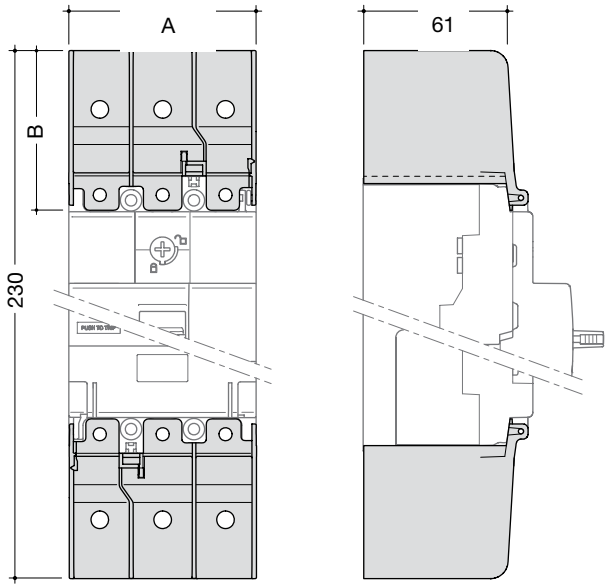
Dimensions

MCCB x160



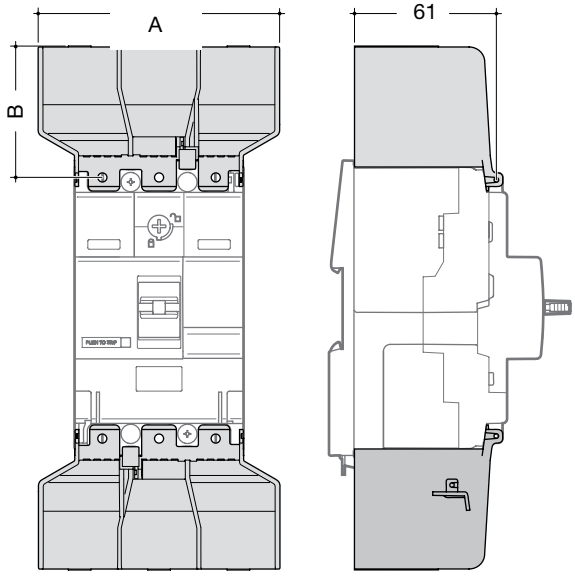
	A (mm)
1P	24.8
2P	49.5
3P	74.5
4P	99.5

Terminal covers for extended straight connections



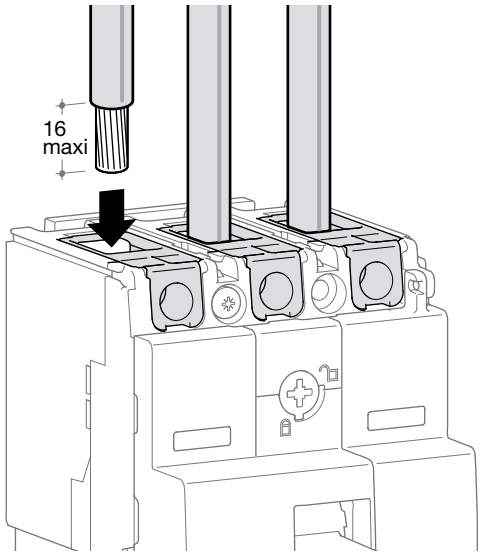
	A (mm)
1P	24.4
2P	49.5
3P	74.5
4P	99.5

Terminal cover for extended spreader connections



	A (mm)
3P	106.5
4P	141.5

Connection with terminals



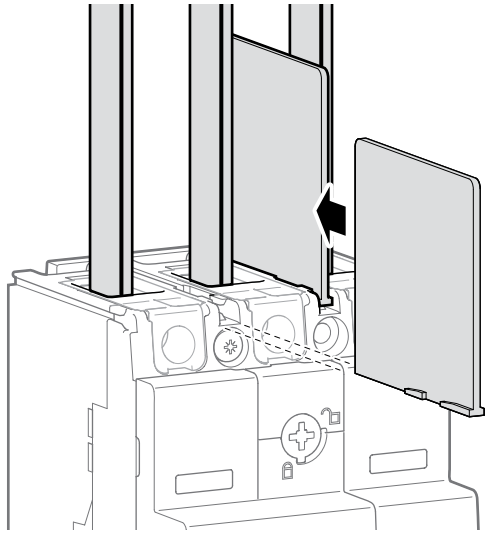
Terminals for copper conductors (standard)

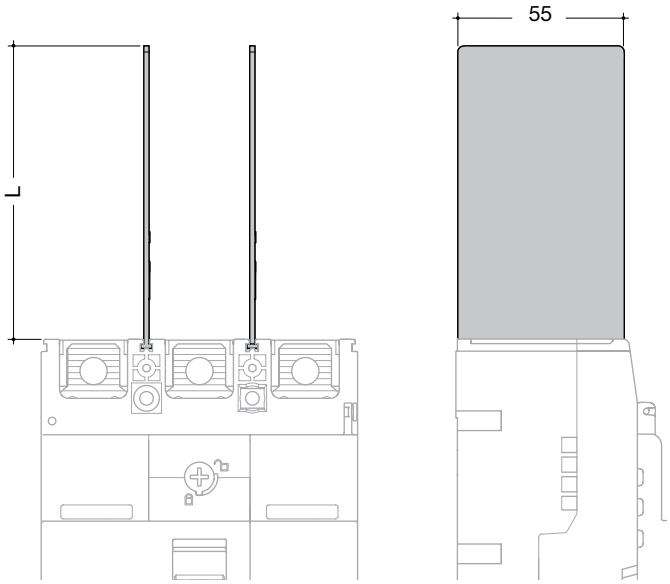
	min. 6 mm²	max. 70 mm²
	min. 6 mm²	max. 95 mm²
4	6 Nm	

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

	min. 35 mm²	max. 70 mm²
5	10 Nm	

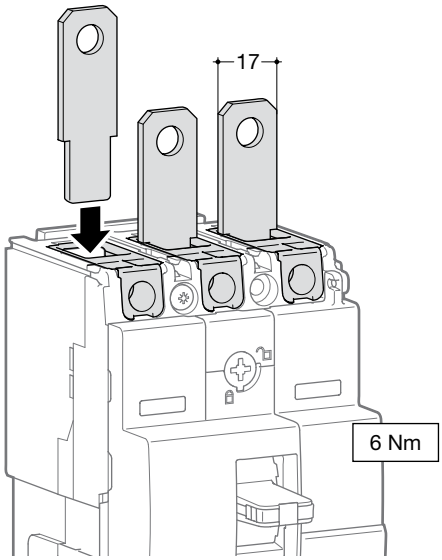
Interphase barriers

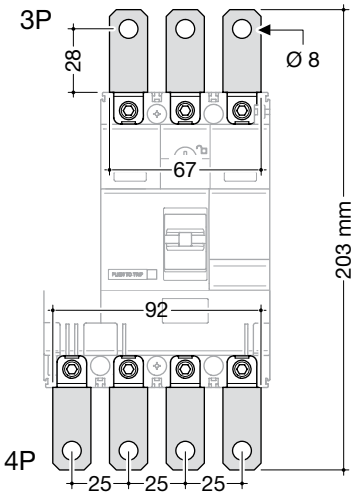




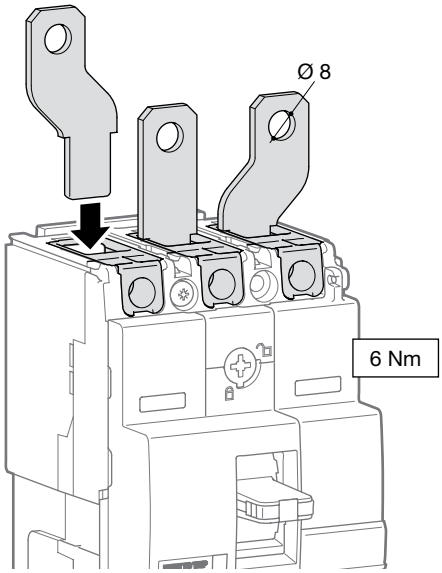
	L (mm)
HYA019H	50
HYB019H	97

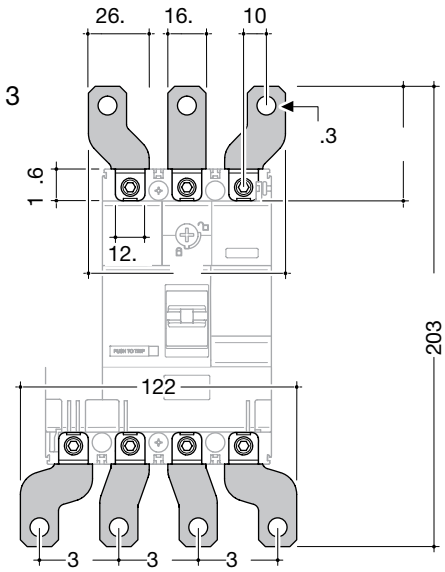
Extended straight connections





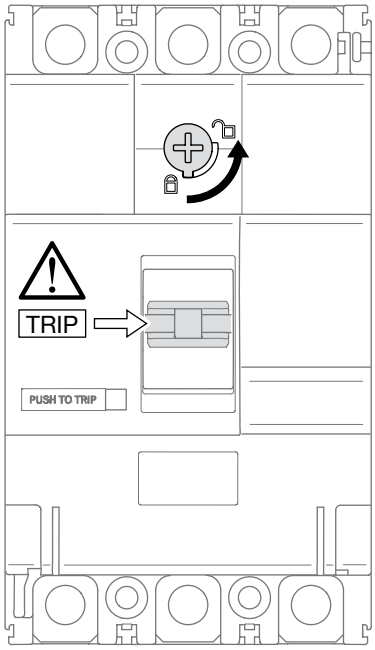
Extended spreader connections

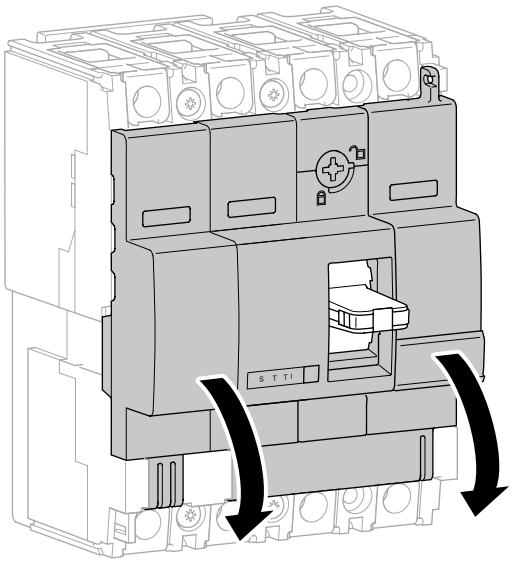




Auxiliaries

Auxiliaries for MCCBs and moulded case switches

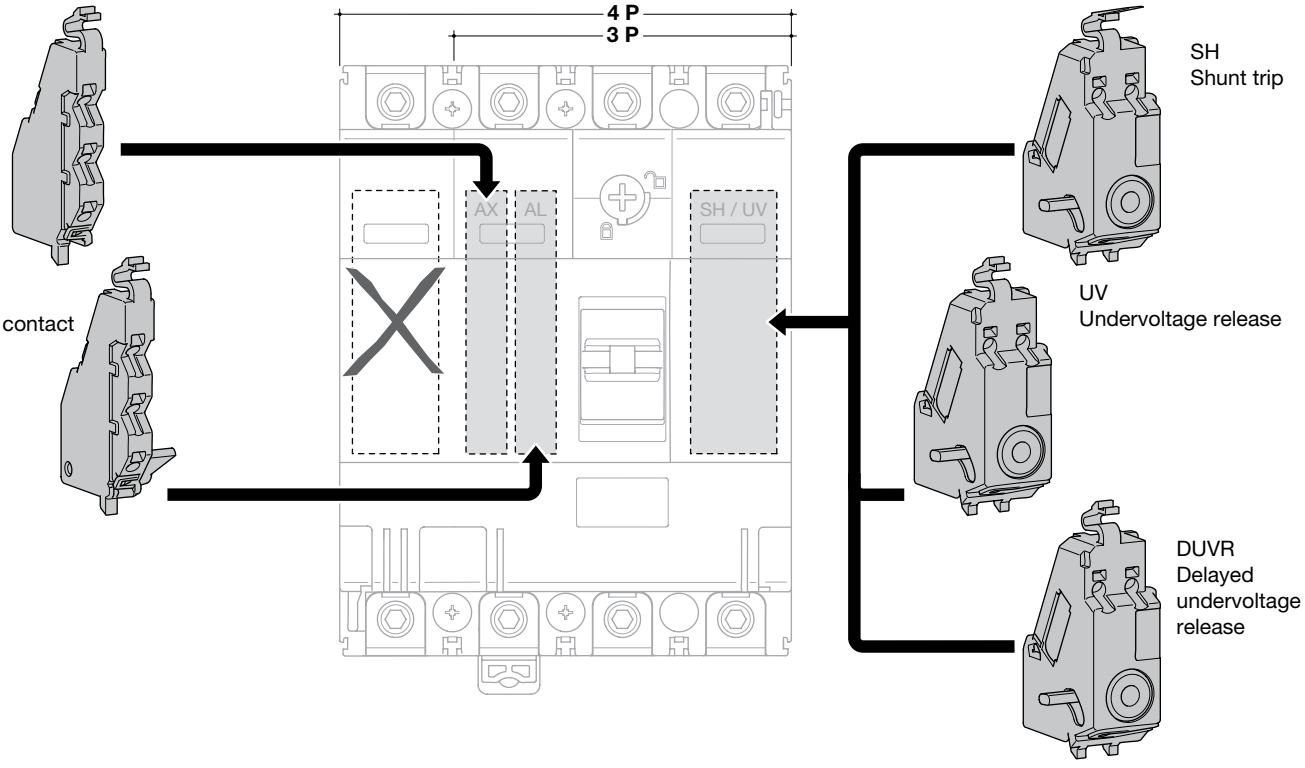




Mounting combination for auxiliaries and releases

AX
Auxiliary contact

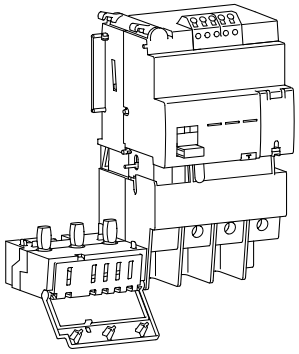
AL
Alarm contact



SH
Shunt trip

UV
Undervoltage release

DUVR
Delayed
undervoltage
release



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

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

Characteristics

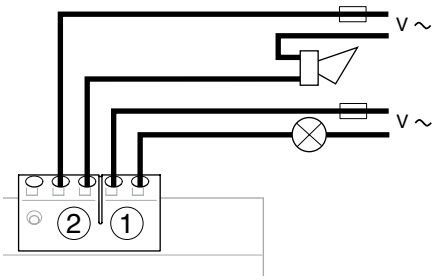
Reset button :
Signals add-on block tripping and must be reset before switching on the installation.

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

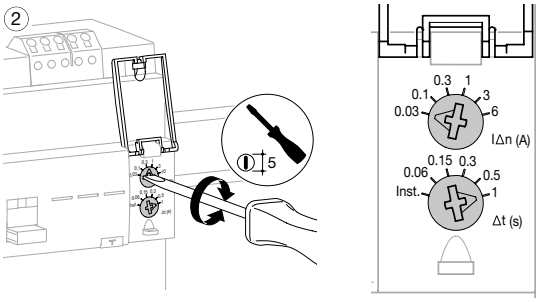
Mechanical test button :
Checks the mechanical operating of the MCCB / Add-on block association.

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

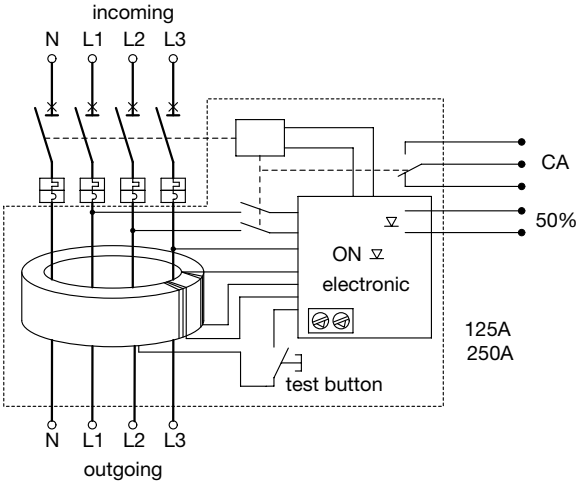
Remote tripping and advanced warning (50% $I_{\Delta n}$) signaling thanks to these contacts:



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



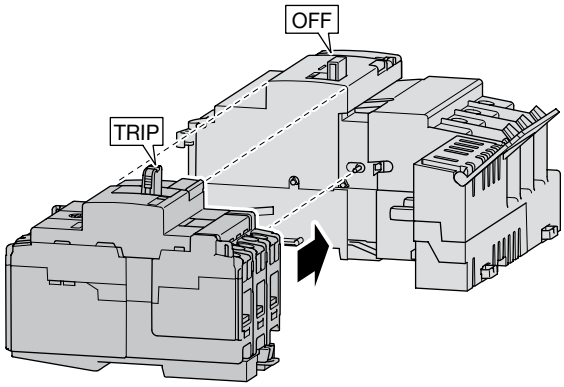
Add-on block operating



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

Add-on block mounting

①



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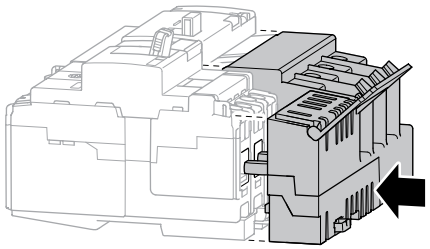

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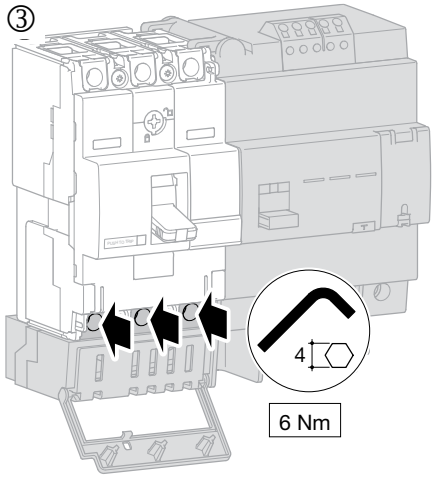

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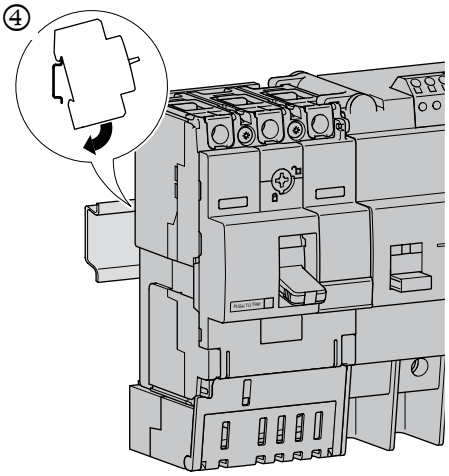
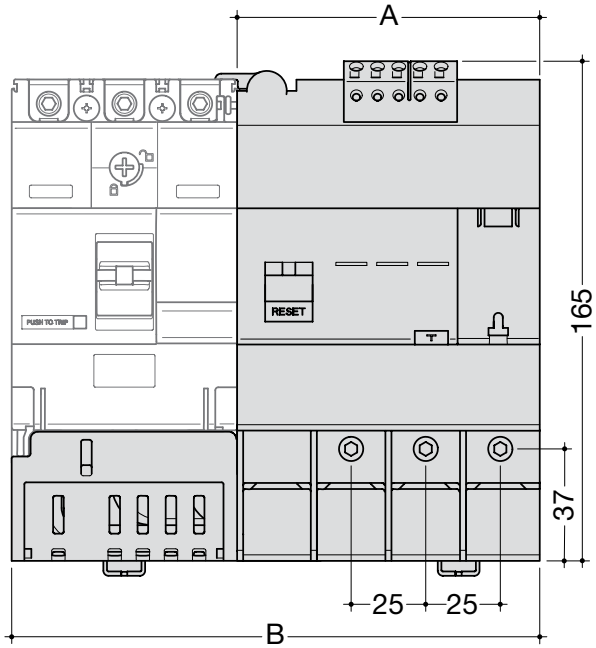


Exclusive drawer assembly system allows quick mounting and makes MCCB and add-on block association a complete monoblock unit.

Reinforced insulation connexion (class II)

System avoids the omission of terminal tightening

Dimensions



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

Moulded case circuit breakers x250,
2 versions of trip unit:
- Z version: fixed, thermal and magnetic
- U version: adjustable thermal and magnetic

3P and 4P
Mechanical test button,
lockable settings,
integrated padlocking handle
Ø 4mm.
Comply with BS EN 60 947-2.

Connection:
Directly on copper cable terminal,
with palm lug max. width: 25 mm
Connection capacity: 185 mm^2 rigid cables

Complies with BS EN 60 947-2.

Moulded Case switches
Allows remote tripping using shunt trip or under voltage release (optional)

Complies with BS EN 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 RCD function check.

Mechanical test button
LED or auxilary output to signal for tripping or advance warning (25 - 50% $I_{\Delta n}$).

Complies with BS EN 60 947-2 annexe B when fitted to an MCCB.

HNB250Z

HNB100U

Description	Characteristics	In	Cat. ref. 3P
MCCBs x250 25kA	breaking capacity Icu : 25 kA (400/415 V AC) Ics: 20kA fixed thermal 1 x In fixed magnetic ≥10 x In	100A	**HHB100Z**
		125A	**HHB125Z**
		160A	**HHB160Z**
		200A	**HHB200Z**
		250A	**HHB250Z**
MCCBs x250 40kA	breaking capacity Icu : 40 kA (400/415 V AC) Ics: 20 kA fixed thermal 1 x In fixed magnetic ≥10 x In	100A	**HNB100Z**
		125A	**HNB125Z**
		160A	**HNB160Z**
		200A	**HNB200Z**
		250A	**HNB250Z**
	adjustable thermal 0.63 - 0.8 - 1x In adjustable magnetic 6 - 8 - 10 - 13 x In (100 - 200A) 5 - 7 - 9 - 11 x In (250A) 3P, 3 trip units 4P, neutral setting: 0 or 100%	100A	**HNB100U**
		125A	**HNB125U**
		160A	**HNB160U**
		200A	**HNB200U**
		250A	**HNB250U**
Moulded case switches x250	capacity suitable for AC 22/23A Icw (1s): 3 kA	250A	**HCB250Z**

Indication contacts
- 1 changeover switch (ON/OFF): indicates the position of the MCCB “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
Tripping of MCCBs
Operating voltage: 0.7 to 1.1 x Un

Under voltage release
Allows the tripping of MCCBs or moulded case 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.

HXA021H

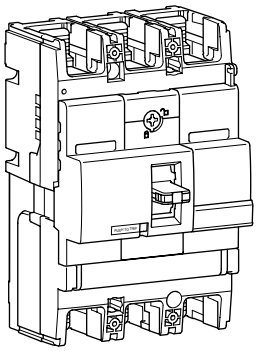
HXA024H

Description	Characteristics	Cat. ref.
Auxiliary contacts AX AL	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	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	24 V DC	**HXA011H**
	100 - 120 V AC	**HXA013H**
	200 - 240 V AC	**HXA014H**
	380 - 450 V AC	**HXA015H**
Delayed undervoltage releases DUVR	24 V DC	**HXA051H**
	110 - 120 V AC	**HXA053H**
	200 - 240 V AC	**HXA054H**
	380 - 415 V AC	**HXA055H**
Padlocks	to mount on MCCBs for handle locking for 3 padlocks max Ø 8 mm	**HXA039H**

HXA014H

	Description	Characteristics	Cat ref. 3P	4P
HYB022H	**Extended connections**	set of 4 pieces for straight connections	**HYB010H**	**HYB010H**
		spreader connections	**HYB011H**	**HYB012H**
HYB022H	**Interphase barriers**	set of 3, height: 97 mm	**HYB019H**	**HYB019H**
HYB024H	**Terminal covers**	for extended straight connections	**HYB021H**	**HYB022H**
		for extended spreader connections	**HYB023H**	**HYB024H**

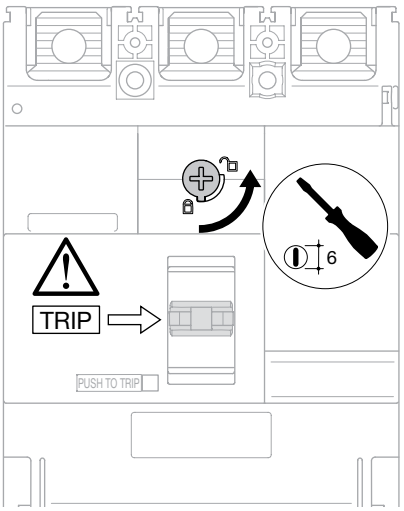
MCCBs



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

Magnetic and thermal settings

①



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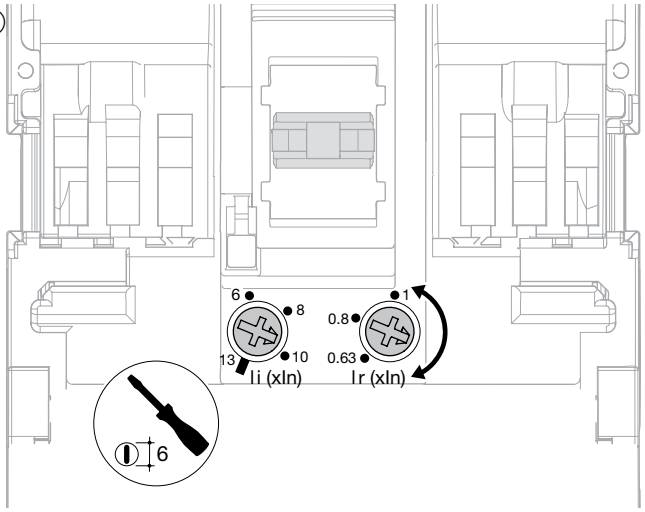
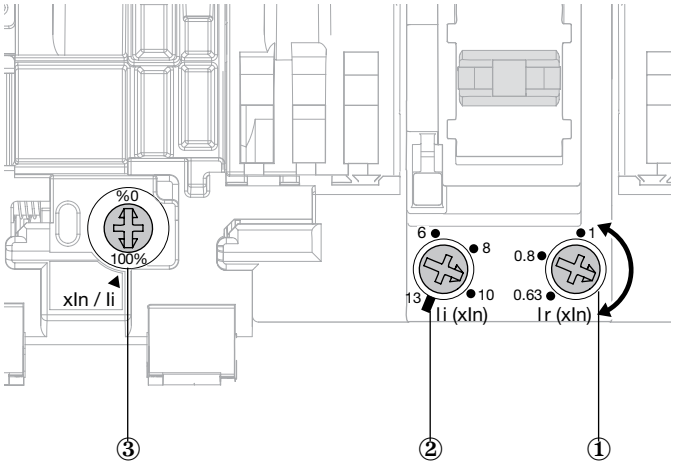


Thermal adjustment from 0.63 to 1 x In

Magnetic adjustment from 6 to 13 x In (100 - 200A)
from 5 to 11 x In (250A)

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

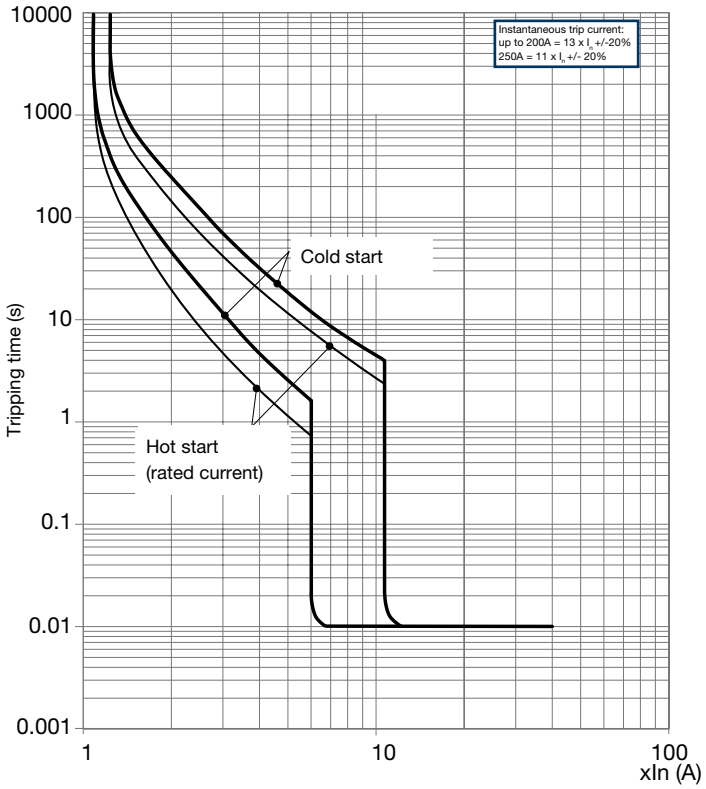


Frame			x160				x250		
Product			Switch	MCCB			Switch	MCCB	
Reference			HCA	HDA	HHA	HNA	HCB	HHB	HNB
Number of poles		[No.]	3-4	1-2-3-4	1-2-3-4	3-4	3-4		
Electrical characteristics									
Rated current	In	[A]	160				250		
Current rated range		[A]	125-160	16-125 (1P), 16-160 (2, 3, 4P)			250	100-250	
Rated service voltage, (AC)	Ue	[V]	220-440				220-440		
Frequency	f	[Hz]	50/60				50/60		
Rated insulation voltage	Ui	[V]	690				800		
Rated impulse withstand voltage	Uimp	[kV]	8				8		
Rated ultimate short-circuit breaking capacity, (Icu)									
(AC) 50-60 Hz 220/230 V	Icu	[kA]	-	25	35	85	-	35	85
(AC) 50-60 Hz 380/415 V	**Icu**	**[kA]**	**-**	**18**	**25**	**40**	**-**	**25**	**40**
(AC) 50-60 Hz 480/500/525 V	Icu	[kA]	-	6	7.5	12.5	-	-	10
(AC) 50-60 Hz 660/690 V	Icu	[kA]	-	-	-	6	-	-	4
(DC) 250 V - 2 poles in series	Icu	[kA]	-	12.5	20	25	-	25	25
Rated service short-circuit breaking capacity, (Ics)									
(AC) 50-60 Hz 220/230 V	Ics	[kA]	-	25	25	40	-	25	40
(AC) 50-60 Hz 380/415 V	**Ics**	**[kA]**	**-**	**18**	**20**	**20**	**-**	**20**	**20**
(AC) 50-60 Hz 480/500/525 V	Ics	[kA]	-	3	4	7.5		-	7.5
(AC) 50-60 Hz 660/690 V	Ics	[kA]	-	-	-	3	-	-	2
(DC) 250 V - 2 poles in series	Ics	[kA]	-	7	10	13	-	13	13
Rated short-circuit making capacity	Icm	[kA]	2.8	-	-	-	6	-	-
Rated short-time withstand current for 1s	Icw	[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 In 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 In			-	0.63 to 1 x In	
Magnetic adjustment value			-	-			-	6-8-10-13 x In (200A) 5-7-9-11 In (250A)	
Releases: LSI (electronic)			-	-			-	-	
Long delay			-	-			-	-	
Short delay			-	-			-	-	
Time delay			-	-			-	-	
Terminations									
Standard terminal type			cage				lugs		
Maximum terminal capacity			95 mm²				185 mm² (cage)		
Terminal width		mm	-				25		
Terminal shields			ok				ok		
Cage terminal			integrated				ok		
Extended connections			ok				ok		
Rear connections			no				ok		
Dimensions									
Height		mm	130				165		
Width	1P	mm	-	25		-	-		
	2P	mm	-	50		-	-		
	3P	mm	75				105		
	4P	mm	100				140		
Depth		mm	68				68		
Weight	1P	kg	-	0.29		-	-		
	2P	kg	-	0.48		-	-		
	3P	kg	0.715				1.3		
	4P	kg	0.95				1.6		

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

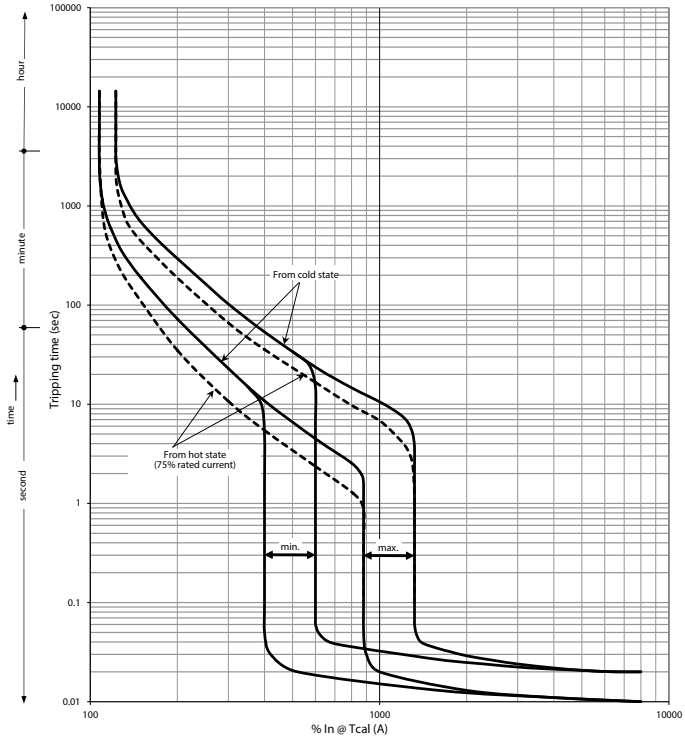
Tripping curve

MCCB x250



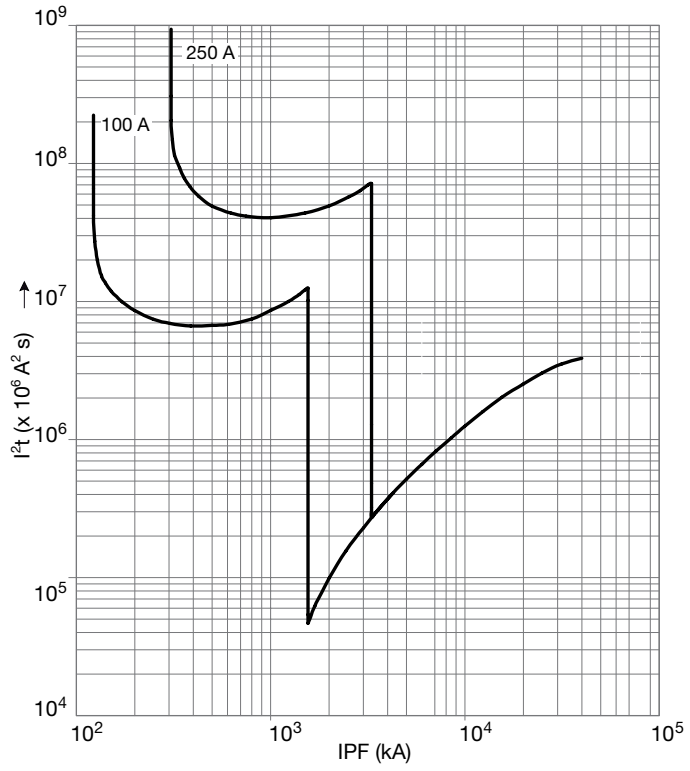
Tripping curve

MCCB h250 TM



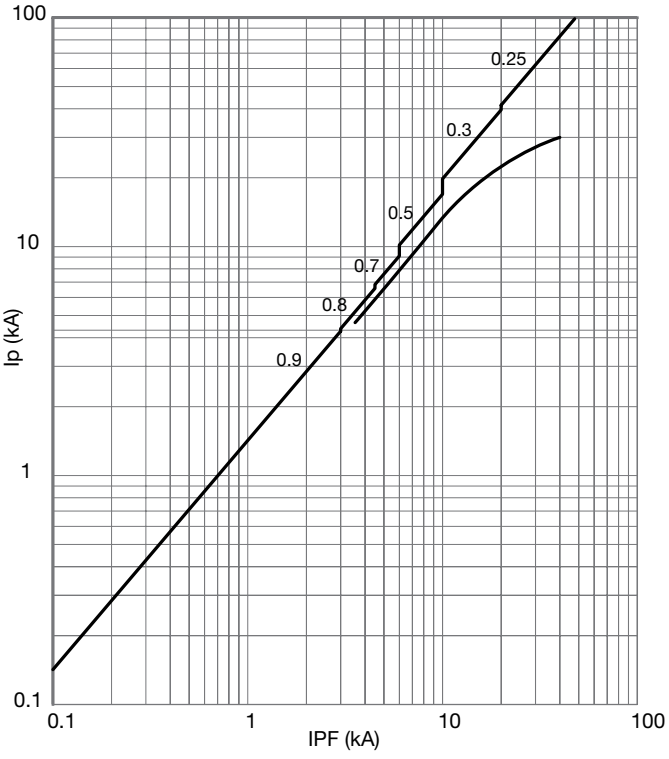
Thermal constraint curve at 400V (Let-through energy)

MCCB x250



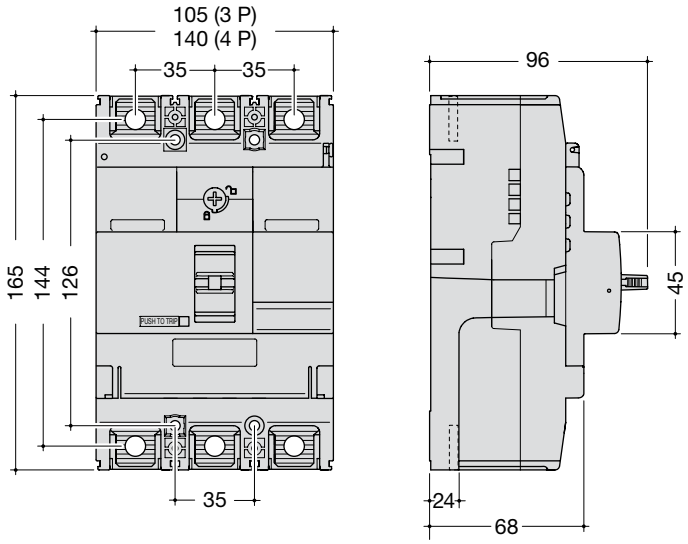
Current limiting curve at 400V (Let-through peak current)

MCCB x250

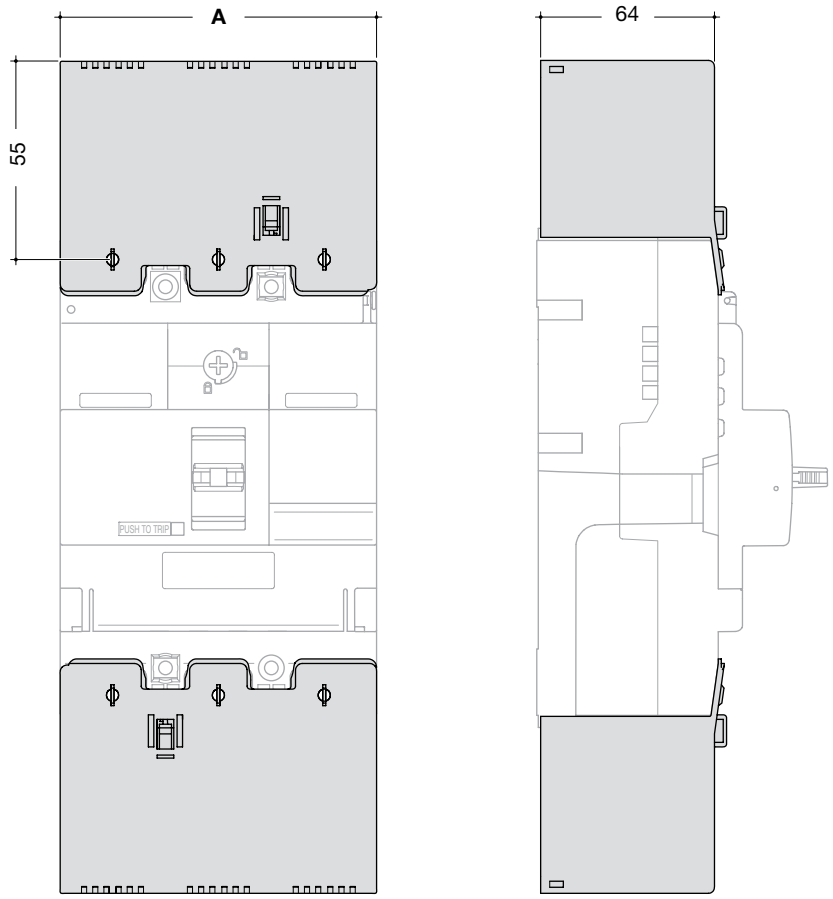


Dimensions

MCCB x250



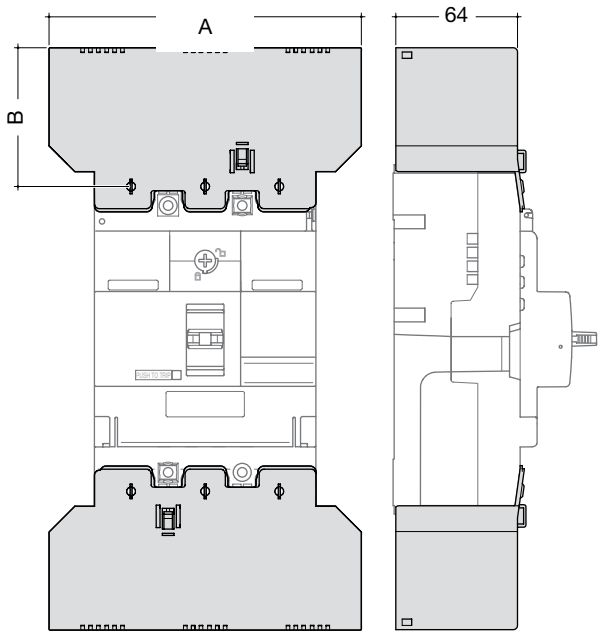
Terminal covers for extended straight connections



	A (mm)
3P	105
4P	140

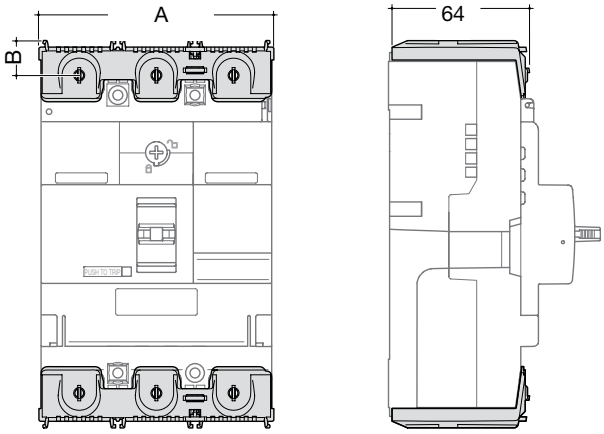
Accessories

Terminal cover for extended spreader connections



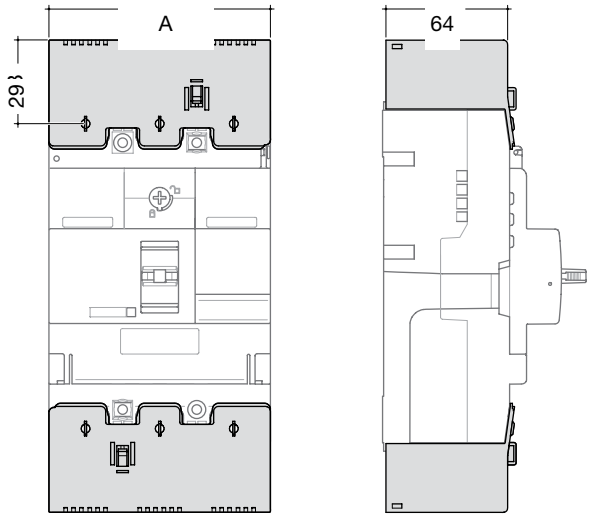
	A (mm)	**B** (mm)	**C** (mm)
3P	147.5	54.5	64
4P	196	54.5	64

Terminal cover for rear connections



	A (mm)
3P	105
4P	140

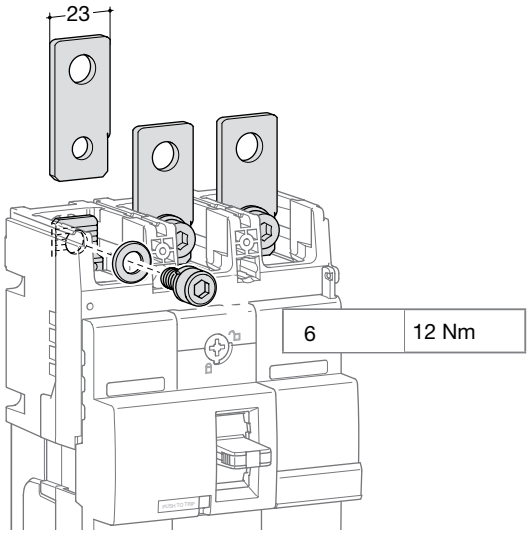
Terminal covers for collar terminals

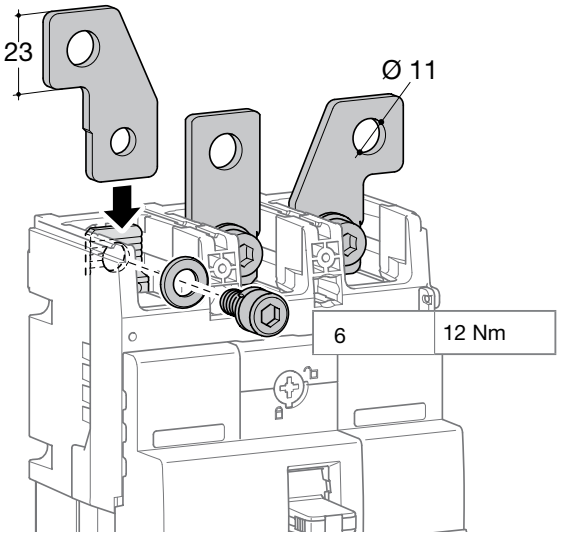


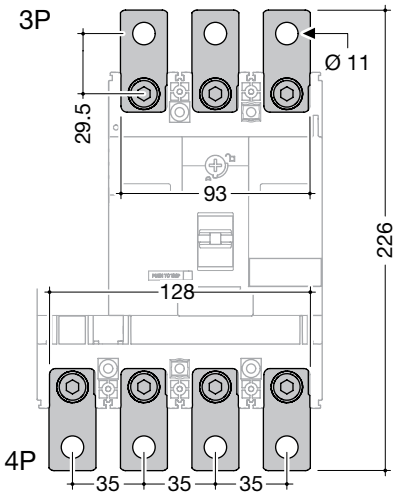
	A (mm)
3P	105
4P	140

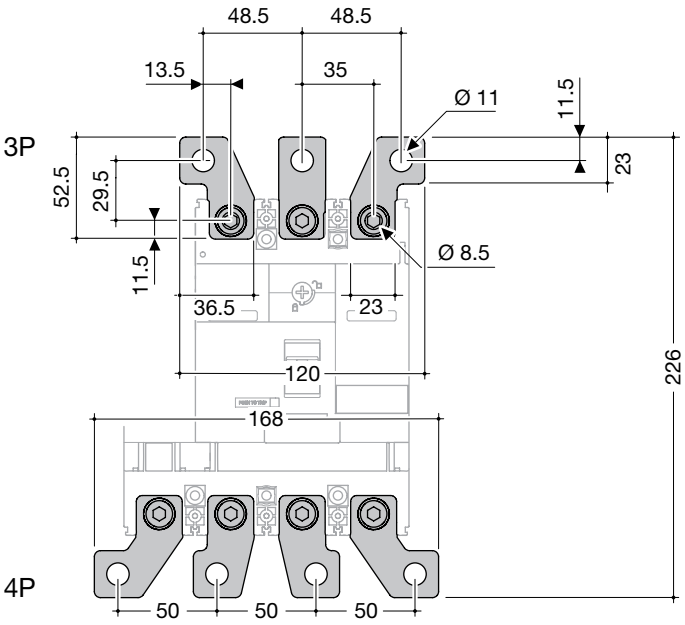
Connection

Extended straight and spreader connections

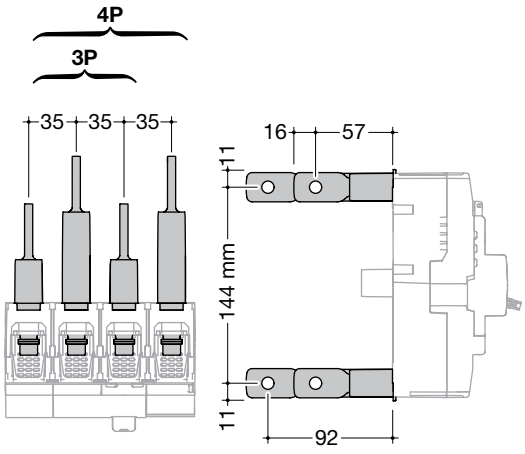


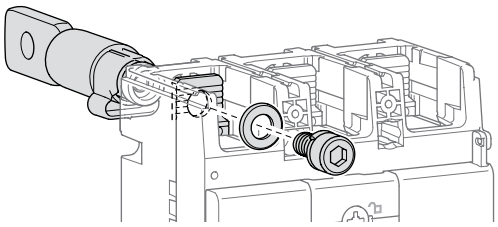


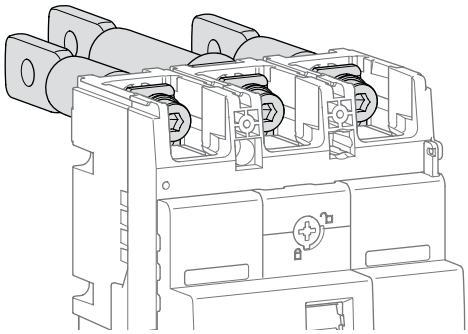




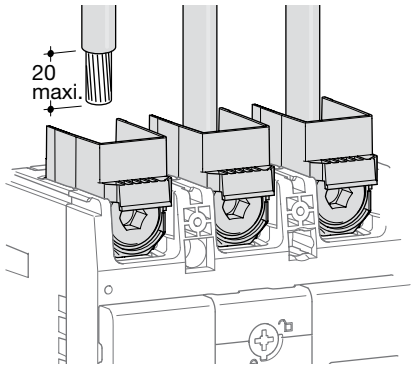
Rear connections





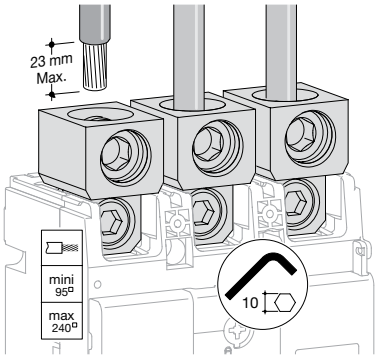


Connection by collar



Terminals for aluminium / copper conductors (accessory)
HYB001H, HYB002H

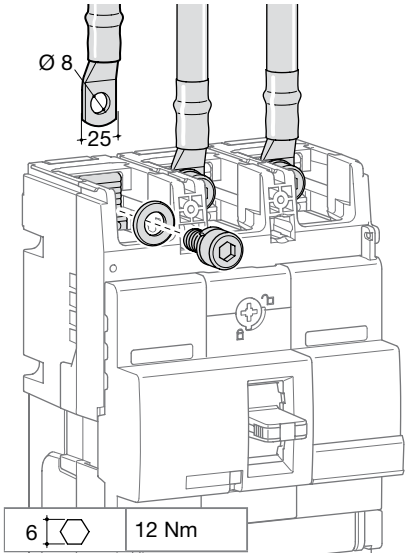
	min. 35 mm²	max. 150 mm²
	min. 35 mm²	max. 185 mm²
8	35 mm² to 50 mm² = 25 Nm 60 mm² to 185 mm² = 25 Nm	

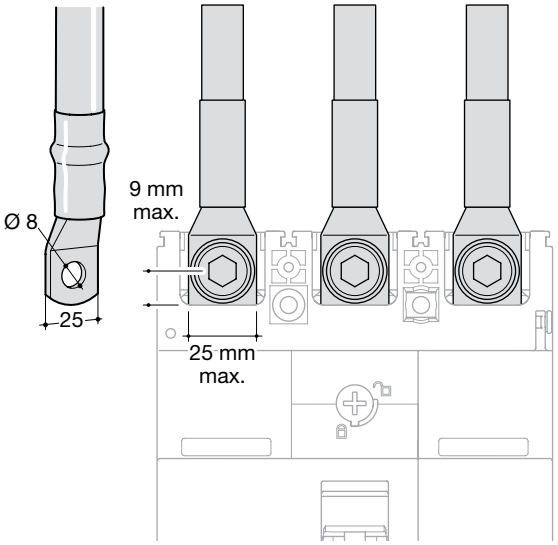


Terminals for aluminium / copper conductors (accessory)
HYB005H, HYB006H

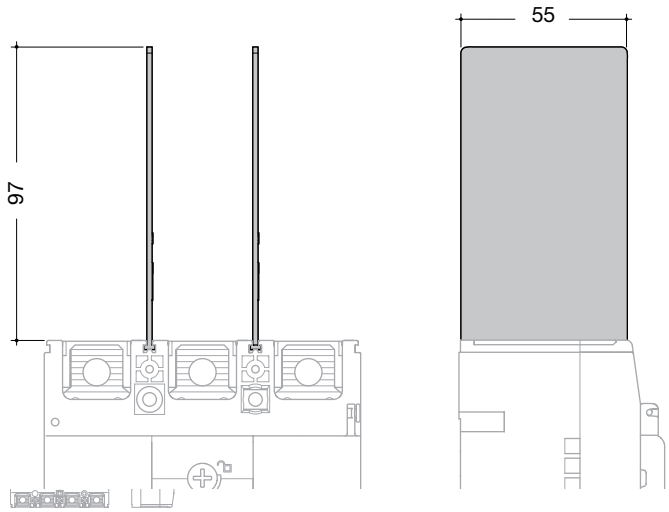
	min. 95 mm²	max. 240 mm²
10	95 mm² to 240 mm² = 25 Nm	

Connection with end lugs



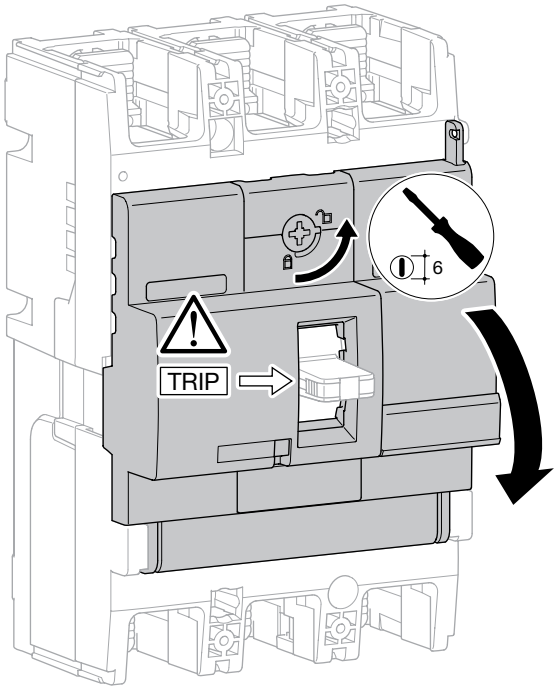


Interphase barriers

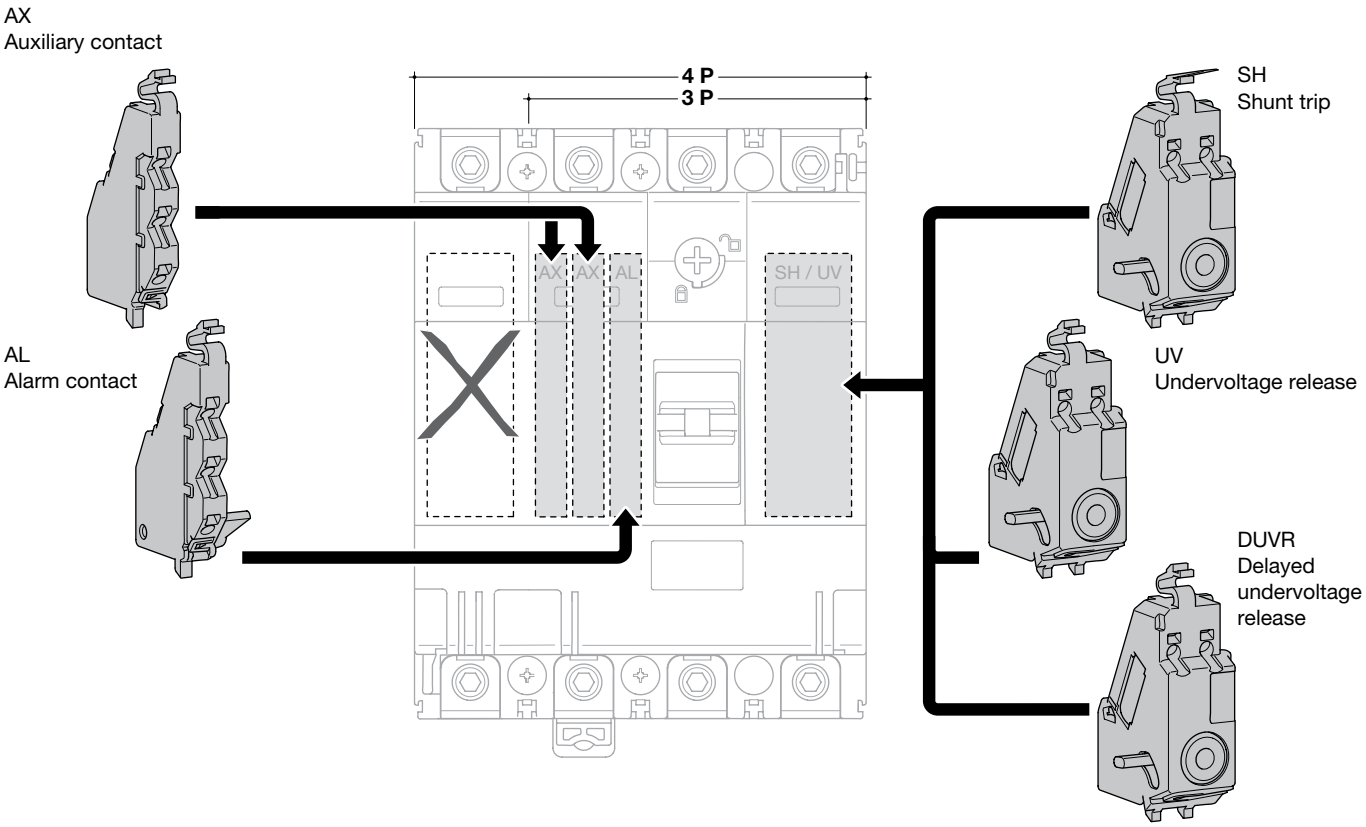


Auxiliaries

Auxiliaries for MCCBs and moulded case switches



Mounting combination for auxiliaries and releases



Modular devices

Simple energy saving solutions

Time based switches such as time switches and programmers provide selectable on-off periods during the day, week and year or a combination of all to control various electrical loads.

Simple and effective energy savings can be achieved by setting these devices so that the various loads are only switched on when they are actually needed, thereby saving unnecessary usage of energy.

Switch Disconnector	5.2
2 Way / Centre-Off Changeover	5.3
Relays	5.4
Contactors	5.7
Time Switches	5.10
Light Sensitive Switch	5.14
Emergency Lighting Module	5.15
Staircase Time Lag Switches	5.16
Delay Timers	5.17
Pushbuttons Impulse & Latching	5.18
Indicator Lights	5.19
Transformers, Bells & Buzzers	5.20
Thermostats	5.21
Voltmeters & Ammeters	5.23
Current Transformers	5.24
Selector Switches for Voltmeters & Ammeters	5.25
kWh Meters	5.26
Dimmers	5.30

For use as a switch disconnector in all types of circuits. Complies with BS EN 60947-3 all ratings.

In: 25 -32A
Shrouded cable clamps
Connection capacity:
16mm² rigid conductor
10mm² flexible conductor

In 40 - 63A
Shrouded cable clamps
Connection capacity:
25mm² rigid conductor
16mm² flexible conductor

In 80 - 125A
Shrouded cable clamps
Connection capacity:
50mm² rigid conductor
35mm² flexible conductor

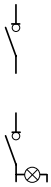
On position “I” in red & Off position “0” in green giving positve contact indication

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 525mm
4 Mod = 70mm

For technical details see page 5.31.
For accessories see page 5.5.

SBN125

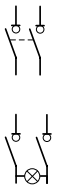
Single Pole Switch Disconnector



Characteristics	Width	Cat ref.
1x 25A 250V	1 Mod	**SBN125**
1x 25A 250V Indicator Light	1 Mod	**SBB125**
1x 32A 250V	1 Mod	**SBN132**
1x 32A 250V Indicator Light	1 Mod	**SBB132**
1x 40A 250V	1 Mod	**SBN140**
1x 63A 250V	1 Mod	**SBN163**
1x 80A 250V	1 Mod	**SBN180**
1x 100A 250V	1 Mod	**SBN190**

SBN225

Double Pole Switch Disconnector



Characteristics	Width	Cat ref.
2x 25A 250V	1 Mod	**SBN225**
2x 25A 250V Indicator Light	1 Mod	**SBB225**
2x 32A 400V	1 Mod	**SBN232**
2x 32A 250V Indicator Light	1 Mod	**SBB232**
2x 40A 400V ac	2 Mod	**SBN240**
2x 63A 400V ac	2 Mod	**SBN263**
2x 80A 400V ac	2 Mod	**SBN280**
2x 100A 400V ac	2 Mod	**SBN290**

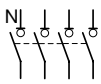
SBN325

Triple Pole Switch Disconnector

Characteristics	Width	Cat ref.
3x 25A 400V ac	2 Mod	**SBN325**
3x 32A 400V ac	2 Mod	**SBN332**
3x 40A 400V ac	3 Mod	**SBN340**
3x 63A 400V ac	3 Mod	**SBN363**
3x 80A 400V ac	3 Mod	**SBN380**
3x 100A 400V ac	3 Mod	**SBN390**
3x 125A400V ac	3 Mod	**SBN399**
3x 125A 400V ac red toggle	3 Mod	**SBR399**

SBN425

Four Pole Switch Disconnector



Characteristics	Width	Cat ref.
Switch 4x 25A 400V neutral left	2 Mod	**SBN425**
Switch 4x 32A 400V neutral left	2 Mod	**SBN432**
Switch 4x 40A 400V neutral left	4 Mod	**SBN440**
Switch 4x 63A 400V neutral left	4 Mod	**SBN463**
Switch 4x 80A 400V neutral left	4 Mod	**SBN480**
Switch 4x 100A 400V neutral left	4 Mod	**SBN490**
Switch 4x 125A 400V neutral left	4 Mod	**SBN499**

SFH125

2 Way Single Pole

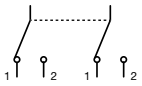
Characteristics	Width	Cat ref.
1 x 25A 1P 250V ac	1 Mod	**SFH125**

SFM125

1 NO x 1 NC Double Pole

Characteristics	Width	Cat ref.
2 x 25A NO/NC 1P 250V ac	1 Mod	**SFM125**

2 Way Double Pole



Characteristics	Width	Cat ref.
2 x 25A 2P 250V ac	2 Mod	**SFH225**

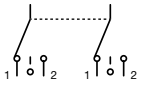
SFT125

Centre-Off Changeover Single Pole

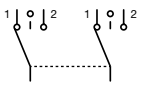
Characteristics	Width	Cat ref.
1 x 25A 1P 250V ac	1 Mod	**SFT125**

SFT225

Centre-Off Changeover Double Pole



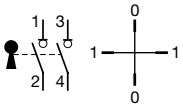
SFT225 / 240



SF263

Characteristics	Width	Cat ref.
2 x 25A 2P 250V ac~	2 Mod	**SFT225**
2 x 40A 2P 400V ac	2 Mod	**SFT240**
2 x 63A 2P 400V ac	2 Mod	**SF263**

Lockable Rotary Switch On/Off (4 Positions)



Characteristics	Width	Cat ref.
10A 400V ac	3 Mod	**SK606**

Description
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

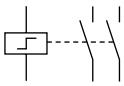
EPN510

Latching Relay 1 NO

Coil	Power circuit AC1	Width	Cat ref.
230V 50Hz	16A - 250V~	1 Mod	**EPN510**
24V 50Hz	16A - 25V~	1 Mod	**EPN513**

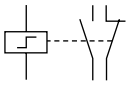
EPN520

Latching Relay 2 NO



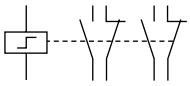
Coil	Power circuit AC1	Width	Cat ref.
230V 50Hz	16A - 250V~	1 Mod	**EPN520**
24V 50Hz	16A - 250V~	1 Mod	**EPN524**
12V 50Hz	16A - 250V~	1 Mod	**EPN521**

Latching Relay 1 NC + 1NO



Coil	Power circuit AC1	Width	Cat ref.
230V 50Hz	16A - 250V~	1 Mod	**EPN515**
24V 50Hz	16A - 250V~	1 Mod	**EPN518**
12V 50Hz	16A - 250V~	1 Mod	**EPN519**

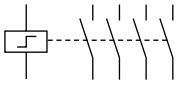
Latching Relay 2 NC + 2 NO



Coil	Power circiut AC1	Width	Cat ref.
230V 50Hz	16A - 250V~	2 Mod	**EPN525**
24V 50Hz	16A - 250V~	2 Mod	**EPN528**
12V 50Hz	16A - 250V~	2 Mod	**EPN529**

EPN540

Latching Relay 4 NO



Coil	Power circuit AC1	Width	Cat ref.
230V 50Hz	16A - 400V~	2 Mod	**EPN540**
24V 50Hz	16A - 400V~	2 Mod	**EPN541**

Auxiliary Contacts

Description	Power circiut	Width (8.75mm)	Cat ref.
Auxiliary Contact	2A - 250V~	½ Mod	**EPN051**
Auxliary Contacts for Centralised Control	110-230V~	½ Mod	**EPN050**

Description
To provide control of low power circuits max 16A; associated with push buttons, switches, time switches etc for remote control applications.

The relays will accept an auxiliary contact for remote signalling applications (ESC080). For the command of ELV circuits use interface relays EN145 and EN146.

For the command of high power circuits (20, 40 & 63 Amps) use contactors as shown on page 5.7 - 5.9.

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

ERD218

Relays 1 NC + 1 NO

Coil AC Voltage	Power circuit AC1	Width (17.5mm)	Cat ref.
230V 50Hz	16A - 250V~	1 Mod	**ERC218**
24V 50Hz	16A - 250V~	1 Mod	**ERD218**
8/12V 50Hz	16A - 250V~	1 Mod	**ERL218**

ERC418

Relays 2 NC + 2 NO

Coil AC Voltage	Power circuit AC1	Width (in 17.5mm)	Cat ref.
230V 50Hz	16A - 250V~	2 Mod	**ERC418**
24V 50Hz	16A - 250V~	2 Mod	**ERD418**
8/12V 50Hz	16A - 250V~	1 Mod	**ERL418**

ESC001

ESC002

ESC080

Auxiliaries and Accessories

Can be used with SPN* modular switch range and relays

Description	Power circuit AC1	Width	Cat ref.
Sealable Terminal Cover for 1 Module Contactors	-	-	**ESC001**
Sealable Terminal Cover for 2 Module Contactors	-	-	**ESC002**
Sealable Terminal Cover for 3 Module Contactors	-	-	**ESC003**
1NO + 1NC Auxiliary Contact	6A - 250V~	½ Mod	**ESC080**

Description
To interface between low voltage and extra low voltage circuits to ensure galvanic isolation to 4kV.

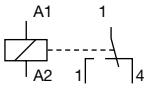
Application
Interface between fire alarm, burglar alarm and other ELV systems and main distribution circuits.

Connection
Flexible 4mm²
Rigid 6mm²

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

EN145

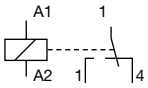
Interface Relay ELV/LV 1 Way



Characteristics	Width	Cat ref.
Coil Voltage: 10 to 26V ac/dc Output: 1 Changeover Contact Max. 5A 230V~ Min. 10mA 12V dc	1 Mod	**EN145**

EN146

Interface Relay LV/ELV 1 Way



Characteristics	Width	Cat ref.
Coil Voltage: 230V~ 50Hz Output: 1 Changeover Contact Max. 5A 230V~ Min. 10mA 12V dc	1 Mod	**EN146**

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

Technical Data
The choice of contactor depends upon a number of parameters, e.g.
- The nature of the supply.
- The power it is switching.
- The characteristics of the load.
- The control voltage required.
- Number of operations

All contactor ratings are for AC1 loads only – if the load differs from AC1 the contactor may need de-rating (see technical characteristics on page 5.35).

The use of LZ060 (heat dissipation inserts) between all contactors installed or between contactors and adjacent devices is required.

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

Auxiliary
All contactors will accept auxiliary, ESC080 contact.

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

ESC225

ESC425

Standard Contactors

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

LZ060

Auxiliaries and Accessories

Description	Power circuit AC1	Width	Cat ref.
Heat Dissipation Insert	-	½ Mod	**LZ060**
NO+NC Auxiliary Contact	2A - 25V~	½ Mod	**ESC080**

Description
For the remote switching and control of power circuits where noise may be a concern i.e hotel bedrooms etc. (25A-63A AC1).

Technical Data
The choice of contactor depends upon a number of parameters, e.g.
- The nature of the supply.
- The power it is switching.
- The characteristics of the load.
- The control voltage required.
- Number of operations

All contactor ratings are for AC1 loads only – if the load differs from AC1 the contactor may need de-rating (see technical characteristics on page 5.35).

The use of LZ060 (heat dissipation inserts) between all contactors installed or between contactors and adjacent devices is required.

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

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

ESC225S

ESC463S

Low Noise Contactors

Description	Coil AC voltage	Power circuit AC1	Width	Cat ref.
25A 2NO	230V 50Hz	25A - 400V~	1 Mod	**ESC225S**
40A 2NO	230V 50Hz	40A - 400V~	3 Mod	**ESC240S**
63A 2NO	230V 50Hz	63A - 400V~	3 Mod	**ESC263S**
25A 3NO	230V 50Hz	25A - 400V~	2 Mod	**ESC325S**
40A 3NO	230V 50Hz	40A - 400V~	3 Mod	**ESC340S**
25A 3NO + 1NC	230V 50Hz	25A - 400V~	2 Mod	**ESC428S**
25A 4NO	230V 50Hz	25A - 400V~	2 Mod	**ESC425S**
40A 4NO	230V 50Hz	40A - 400V~	3 Mod	**ESC440S**
63A 4NO	230V 50Hz	63A - 400V~	3 Mod	**ESC463S**
25A 4NC	230V 50Hz	25A - 400V~	2 Mod	**ESC426S**

ESC003

ESC080

Auxiliaries and Accessories

Description	Power circuit AC1	Width	Cat ref.
Heat Dissipation Insert	-	½ Mod	**LZ060**
Sealable Terminal Cover for 1 Module Contactors	-	-	**ESC001**
Sealable Terminal Cover for 2 Module Contactors	-	-	**ESC002**
Sealable Terminal Cover for 3 Module Contactors	-	-	**ESC003**
1NO + 1NC Auxiliary Contact	6A - 250V~	½ Mod	**ESC080**

Description
Manual override facility allows temporary override, with automatic return at next coil energisation. Permanent off can also be selected. ET201 low noise version.

Technical Data
The choice of contactor depends upon a number of parameters, e.g.
- The nature of the supply.
- The power it is switching.
- The characteristics of the load.
- The control voltage required.
- Number of operations

All contactors ratings are for AC1 loads only – if the load differs from AC1 the contactor may need de-rating (see technical characteristics on page 5.35).

The use of LZ060 (heat dissipation inserts) between all contactors installed or between contactors and adjacent devices is recommended.

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

Auxiliary
All contactors will accept auxiliary, ESC080 contact.

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

ETC225S

2 NO

Coil AC voltage	Power circuit AC1	Width	Cat ref.
230V 50 Hz	25A - 250V~	1 Mod	**ETC225S** [1]
230V 50 Hz	25A - 250V~	1 Mod	**ETC225**

[1] Hum free device

ETC340

3 NO

Coil AC voltage	Power circuit AC1	Width	Cat ref.
230V 50 Hz	20A - 400V~	2 Mod	**ETC325**
230V 50 Hz	40A - 400V~	3 Mod	**ETC340**

ETC425

4 NO

Coil AC voltage	Power circuit AC1	Width	Cat ref.
230V 50 Hz	20A - 400V~	2 Mod	**ETC425**
230V 50 Hz	40A - 400V~	3 Mod	**ETC440**

Auxiliary for 25A Contactors

Power circuit AC1	Width	Cat ref.
2A - 250V~	½ Mod	**ESC080**

Accessories

Description	Width	Cat ref.
Heat Dissipation Insert	½ Mod	**LZ060**

	Electromechanical Time Clocks		Digital Time Clocks			
	1 Channel		1 Channel		2 Channels	4 Channels
	1 Modules	3 Modules	1 Modules	2 Modules	2 Modules	4 Modules
	EH010 EH011	EH110 EH111 EH171	EG071 EG010	EG103 EG103V EG103E	EG203 EG203E	EG493E
Programming Cycle	Electromechanical		Digital			
	1 Channel 1 Module	3 Modules	1 Channel 1 Modules	2 Modules	2 Channels 2 Modules	4 Channels 4 Modules
24 Hours	EH010 EH011	EH110 EH111	EG010			
7 Days		EH171	EG071	EG103 EG103V EG103E	EG203 EG203E	
Annual						EG493E

Electromechanical Time Switches

Description
Electromechanical time switches 1 and 2 channel.
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

For 3 module products:
- Automatic
- Permanent ON
- Permanent OFF

Minimum Switching Time
- 15 min for daily dial
- 2h for weekly dial

Connection
Protected tunnel terminals.
1-4mm^2

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

EH010

1 Channel Time Switches without Supply Failure Reserve

Quartz: Without supply failure reserve.

Characteristics	Voltage supply	Width	Cat ref.
Daily Dial, 1 Changeover contact, 16A 250V~ AC1	230V~ 50Hz	1 Mod	**EH010**
Daily Dial, 1 NO Contact, 16A 250V~ AC1	230V~ 50Hz	3 Mod	**EH110**

1 Channel Time Switches with Supply Failure Reserve

Quartz: With supply failure reserve 200 hours after being connected for 120 hours.

Characteristics	Voltage supply	Width	Cat ref.
Daily Dial, 1 Changeover contact, 16A 250V~ AC1	230V~ 50/60Hz	1 Mod	**EH011**
Daily Dial, 1 NO Contact, 16A 250V~ AC1	230V~ 50/60Hz	3 Mod	**EH111**
Weekly Dial, 1 NO Contact, 16A 250V~ AC1	230V~ 50/60Hz	3 Mod	**EH171**

For the control of lighting, heating, household appliances, shop windows, signage etc., to improve comfort and to save energy.

EG103 and EG203
(Basic Version) Product set at current time and date when delivered. Automatic change of Summer / Winter time.

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
- Possibility of locking the keyboard with EG004
- Programming without the need to be energised

EG103E/V and EG203E
(Evolution Versions)
Same characteristics as EG103 and EG203 plus more:
- Holidays mode: forcing ON or OFF between two dates
- Presence simulation - random switching
- Backlit screen
- Impulse programming capability (1s to 30 min)

Connection
EG010 / EG 071 : 0.5 to 4mm²
EG 103 and EG 203/E :
1 to 6mm² Flexible
1.5 to 10mm² Rigid

Operating Voltage
230~ 50/60 Hz
(except EG103V
- 12/24V AC/DC)

EG071

1 Channel Digital Time Switch

Not compatible with program key

Characteristics	Width	Cat ref.
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, Output: 1 changeover contact, µ16A - 250V~ AC 1, Capacity 20 program steps, 3 year reserve	1 Mod	**EG071**

EG103

1 Channel Digital Time Switch

Characteristics	Width	Cat ref.
Weekly Cycle (Basic Version), Output: 1 changeover contact 16A - 250V~ AC 1, Delivered with key EG005	2 Mod	**EG103**
Weekly Cycle (Evolution Version), Output: 1 changeover contact 16A - 250V~ AC 1, Delivered with key EG005	2 Mod	**EG103E**
Weekly Cycle (Evolution Version), Output: 1 changeover contact 16A - 250V~ AC 1, Operating Voltage 12/24V AC/DC, Delivered with key EG005	2 Mod	**EG103V**

2 Channel Digital Time Switch

Characteristics	Width	Cat ref.
Weekly Cycle (Basic Version), Output: 2 changeover contact 16A - 250V~ AC 1, Delivered with key EG005	2 Mod	**EG203**
Weekly Cycle (Evolution Version), Output: 2 changeover contact 16A - 250V~ AC 1, Delivered with key EG005	2 Mod	**EG203E**

PC Interface and Software Tool

Interface between PC and key interface module with software on CD

Connection	Pack qty.	Cat ref.
RS232	1	**EG003**
USB	1	**EG003U**

Accessories

Description	Pack qty.	Cat ref.
Locking key (yellow colour) to prevent unauthorised re-programming of all EG time clocks (except EG010, EG071)	1	**EG004**
Spare programming key (grey colour) for timers EG103, EG103V, EG203, EG103E, EG203E	1	**EG005**
DIN Rail storage module for EG004 or EG005	1	**EG006**

Description
The hager range is composed of two astrological time switches EE180/EE181.

The range offers the following features:
- Programming of the lighting interruption
- Automatic change of winter / summer time
- Astro program and expert program with individual Astro program steps
- Programming for day or group of days (same concept as our existing clocks with key)
- Weekly programming
- Permanent override
- Temporary overrides
- Programming of holiday period
- Programming via the PC software and the associated interface (EG003)

For technical information see page 5.42

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

EE180

1 Channel Astrological Time Switch

Characteristics	Width	Cat ref.
Weekly Cycle, 230V~, 50Hz Changeover Contact 16A AC1, Operating reserve lithium battery 5 years, Delivered with key EG005	2 Mod	**EE180**

EE181

2 Channel Astrological Time Switch

Characteristics	Width	Cat ref.
Weekly Cycle, 230V~, 50Hz 2 Changeover Contact 16A AC1, Operating reserve lithium battery 5 years, Delivered with key EG005	2 Mod	**EE181**

4 Channel Digital Time Switch 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
- Bell
- Alarm

Functions
- Summer/winter time pre-programmed
- Delivered with time set
- External input for override (permanent, temporary, timed)
- Easy programming with words in display
- The output can be defined as ON/OFF, impulse or cycle
- 4 different cycles can be defined
- Calculates automatically all dates linked with easter.
- Holidays program
- 10 specific weekly programs
- Random mode
- Input for external mode
- Hour counter on each output
- Keyboard locking with PIN code

Connection
Quick connect terminals
Capacity: 0.75 to 2.5mm²

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

EG493E

Description	Cat ref.
4 Channel Yearly Time Switch	**EG493E**

EG003

PC Interface and Software Tool

Interface between PC and key interface module with software on CD

Connection	Cat ref.
RS232	**EG003**
USB	**EG003U**

EG005

Accessories

Description	Cat ref.
Programming key for EG493E	**EG005**

Light Sensitive Switch

Description
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.

Front cover sealability

Applications
Street lighting, display lighting, illuminated signs etc.

Connection
Protected cable clamps
Capacity:
Rigid: 1.5 to 10mm^2
Flexible: 1 to 6mm^2
On board LED shows status of changeover contact.

Technical Data
4 position override switch allowing:
- Auto: normal operating mode
- On: permanently switched on
- Off: permanently switched off
- Test: setting mode for easy adjustment.

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

EEN100

Light Sensitive Switch

2 sensitivity ranges: 5 to 50 lux, 50 to 2000 lux
Delivered with a separate surface photo-electric cell EE003
Must be used in conjunction with a suitably rated contactor (page 5.7 - 5.8) where load conditions demand

Characteristics	Width	Cat ref.
Voltage rating: 230V~ 50/60Hz Outputs: 1 changeover AC 1 contact 16A AC1 - 230V~ Maximum distance: 50m between photocell and controller	3 Mod	**EEN100**

Light Sensitive Programmer

Description
To control the lighting installation in relation to time and ambient light.

It is a weekly programmer associated with a light sensitive switch.

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.

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

EE171

Light Sensitive Programmer

2 sensitivity ranges: 5 to 50 lux, 50 to 2000 lux
Delivered with a separate surface photo-electric cell EE003
Must be used in conjunction with a suitably rated contactor (page 5.7 - 5.8) where load conditions demand

Characteristics	Width	Cat ref.
Voltage rating: 230V~ 50/60Hz Outputs: 1 changeover AC 1 contact 16A AC1 - 230V~ Maximum distance: 50m between photocell and controller	3 Mod	**EE171**

EE003

Replacement Photo Electric Cell

Mounting	For Cat ref.	Pack qty.	Cat ref.
Flush	EEN100, EE171	1	**EE002**
Surface	EEN100, EE171	1	**EE003**

Application
For both residential and commercial applications

Installed in a consumer unit or distribution board, the lamp can be configured to light automatically in the event of power failure.

It can also be withdrawn from it's base, thereby acting as a mini torch with an operating duration of 1 hour 30 mins

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

EE960

Emergency Lighting Module

Description	Width	Cat ref.
Emergency Lighting Module	3 Mod	**EE960**

	Areas of use			
	Residential	**Communal / Landlords Areas**	**Commercial**	**Industrial**
Communal Stairwells and Landlord Areas		EMN001 & EMN005		
External Lighting	EMN001 & EMN005			
Landlords Areas / Bathrooms	EZN002 EZN006			
Heating Overrides			EZN001 EZN006	
Shop Windows / Signage			EZN005 EZN006	
Timer Function	EZN004 EZN006			
Door Closing Mechanisms	EZN004 EZN006			
Alarm Bell			EZN004 + EZN006 EZN006	
Variation of Alarm Frequency			EZN005 EZN006	

Timers Switches

Description
To provide 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.

EMN005 incorporates a pre-warning of switch OFF to improve the safety for users and a double delay function: 30 sec. to 10 min, or 1 hour by pressing the push-button more than 3 seconds.

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

EMN001

Basic Staircase Time Lag Switches

Adjustable time delay setting 30 sec. to 10 minutes

Characteristics	Width	Cat ref.
Supply voltage 230V~ 50/60Hz 16A - 250V AC1 2300W incandescent halogen and flurescent	1 Mod	**EMN001**

EMN005

Multifunction Staircase Time Lag Switches

Basic staircase time lag switch
Pre-warning mode
Double delay mode 30 sec. to 10 min or 1 hour
Double delay with pre-warning mode

Characteristics	Width	Cat ref.
Supply voltage 230V~ 50/60Hz µ16A - 250V AC1 2300W incandescent halogen and flurescent	1 Mod	**EMN005**

Description
To provide all types of automatic control i.e. lighting, ventilation, watering, machine pre-heating, automatic door and visual audible indication, cycle control etc. with automatic switch off after preset time.

Applications
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.

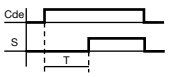
Technical Data
Voltage range:
12 to 48V DC
12 to 230V AC
Adjustable: Time delay from 0.1s to 10hrs.
Complies with BS EN 60669-2-1

Terminal Capacity
6mm² max flexible
1.5 - 10mm² rigid

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

EZN001

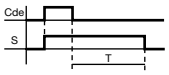
Delay On



Characteristics	Width	Cat ref.
1 changeover contact 10A / 230V~ AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN001**

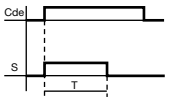
EZN002

Delay Off



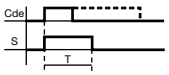
Characteristics	Width	Cat ref.
1 changeover contact 10A / 230V~ AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN002**

Adjustable Time On



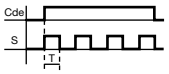
Characteristics	Width	Cat ref.
1 changeover contact 10A / 230V~ AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN003**

Timer



Characteristics	Width	Cat ref.
1 changeover contact 10A / 230V~ AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN004**

Symmetrical Flasher



Characteristics	Width	Cat ref.
1 changeover contact 10A / 230V~ AC1 Time delay T:0.1s to 10hr	1 Mod	**EZN005**

EZN006

Multifunction

Characteristics	Functions	Width	Cat ref.
1 changeover contact 10A / 230V~ AC1 Time delay T:0.1s to 10hr	Delay On, Delay Off, Adjustable Time On, Adjustable Time Off, Timer, Symmetrical Flasher (On, Off)	1 Mod	**EZN006**

Description
Pushbuttons to actuate loads either directly or via contactors etc.

Technical Data
Modular pushbuttons
- Without light
  With grey button, red/green optional
- With light
  With red, green button

Light Technology
LED

Connection
Cage terminals

Terminal Capacity
10mm² rigid conductor.
6mm² flexible conductor.

BS EN 60947-5-1

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

SVN311

Pushbuttons (Impulse)

16A - 250V~
Without indicator light

Characteristics	Width	Cat ref.
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**

SVN411

Pushbuttons (Impulse)

16A - 250V~
With indicator light

Characteristics	Width	Cat ref.
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**

SVN312

Pushbuttons (Latching)

16A - 250V~
Without indicator light

Characteristics	Width	Cat ref.
Contacts: 1 NO	1 Mod	**SVN312**
Contacts: 2 NO	1 Mod	**SVN332**
Contacts: 1 NC	1 Mod	**SVN322**
Contacts: 2 NC	1 Mod	**SVN342**
Contacts: 1 NO + 1 NC	1 Mod	**SVN352**

SVN413

Pushbuttons (Latching)

16A - 250V~
With indicator light

Characteristics	Width	Cat ref.
Contacts: 1 NO : Green	1 Mod	**SVN413**
Contacts: 2 NO : Green	1 Mod	**SVN433**

Modular Indicator Lights
Available with red, green, amber, blue, colourless lens

Light Technology
LED

Options
DIN rail mountable

Connection
Cage terminals

Capacity
10mm² rigid conductor
6mm² flexible conductor

BS EN 62094-1

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

SVN122

Indicator Lights (230V~)

Indicator Colour	Width	Cat ref.
Green	1 Mod	**SVN121**
Red	1 Mod	**SVN122**
Orange	1 Mod	**SVN123**
Blue	1 Mod	**SVN124**
Clear	1 Mod	**SVN125**
Red & Green (Double Indicator)	1 Mod	**SVN126**
Red (Triple Indicator)	1 Mod	**SVN127**

Indicator Lights (12/48V)

Indicator Colour	Width	Cat ref.
Green	1 Mod	**SVN131**
Red	1 Mod	**SVN132**

Description
Provide separated extra low voltage 8, 12, 24V~.

Technical Data
Secondary voltages:
8V, 12V, 24V~
Bell transformers are short-circuit protected.
Bells/buzzers:
Max. continuous duty ≤ 30 minutes.
Cable capacities: 6mm²

Output
Bells: 85 dBA
Buzzers: 78 dBA

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.

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

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm
6 Mod = 95mm

ST313

Safety Transformers

Characteristics	Width	Cat ref.
230V/12-24V~ 50Hz, 25VA 50/60 Hz	4 Mod	**ST312**
230V/12-24V~ 50Hz, 16VA 50/60 Hz	4 Mod	**ST313**
230V/12-24V~ 50Hz, 40VA 50/60 Hz	4 Mod	**ST314**
230V/12-24V~ 50Hz, 63VA 50/60 Hz	6 Mod	**ST315**

ST301

Bell Transformers

Characteristics	Width	Cat ref.
230V/8V~ 50/60 Hz, 8-12V, 4VA	2 Mod	**ST301**
230V/8-12V~ 50/60 Hz, 8-12V, 8VA	2 Mod	**ST303**
230V/8-12V~ 50/60 Hz, 8-12V, 16VA	3 Mod	**ST305**

Bells

Characteristics	Width	Cat ref.
8/12V~, 5VA - 0.33A	1 Mod	**SU212**
230V~, 6.5VA - 0.03A	1 Mod	**SU213**

Buzzers

Characteristics	Width	Cat ref.
8/12V~, 4VA - 0.33A	1 Mod	**SU214**
230V~, 6.5VA - 0.03A	1 Mod	**SU215**

Description
Electronic thermostats for any application requiring temperature control (from cold room to steam room).

Applications
EK081 fixed ambient probe for night temperature regulation.
EK083 used as floor probe to limit floor temperature.
EK083 used to control hot water temperature (with its collar) in case of probe disconnection.

3 working modes are possible (selected by wiring):
1. Permanent off
2. Permanent on
3. Cyclic operation 1 minute in every 4.

Output status is displayed by an LED.

EK187
Electronic Thermostat Suitable for Heating Control
Two adjustable temperature levels are selected by external signals (operation by time switch or digital programmer).

Additionally there is an adjustable low level temperature for frost protection etc. In the event of probe disconnection the heating system is switched on one minute in every four.

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

Multi-range Thermostats

Delivered without probe. Compatible with EK081 or EK083 probes

Characteristics	Width	Cat ref.
Voltage rating: 230V~ - 50/60 Hz Output: 1 changeover contact, 2A AC1 - 230V~ 4 ranges: -30 to 0°C, 0 to +30°C, 30 to +60°C, 60 to +90°C To associate with contactors (page 5.7 - 5.9)	3 Mod	**EK186**

EK187

Multi-order Thermostats

Delivered without probe. Compatible with EK081 or EK082 probes

Characteristics	Width	Cat ref.
Accuracy ±0.2°C, Voltage rating: 230V~ - 50/60 Hz Output: 1 changeover contact, 2A AC1 - 230V~ Temperature Level 1 (Comfort) Adjustable 5 - 30°C Temperature Level 2 (Night setting) Adjustable 2 - 8°C less than Level 1 setting Temperature level 3 (Frost setting) Adjustable 5 - 30°C To associate with contactors (page 5.7 - 5.9)	3 Mod	**EK187**

EK082

Fixed Ambient Probe

Can be associated with	Cat ref.
EK186, EK187 thermostats EG502 programmable thermostat	**EK081**

EK082

Adjustable Ambient Probe

This probe is equipped with a potentiometer for the correction of the set temperature (±3°C)

Can be associated with	Cat ref.
EK187 thermostats EG502 programmable thermostat	**EK082**

EK083

Universal Probe (Removable Collar)

Can be associated with	Cat ref.
EK186 thermostats EG502 programmable thermostat	**EK083**

Programmable Thermostat Description
To save energy by managing the heating system according to the periods of occupation.
It is a weekly programmer associated with a 3 setting thermostat:
- "Comfort",
- "Reduced",
- "Anti-frost"

Connection: Protected Cable Clamps
Capacity: 1.5 to 10 mm^2 rigid
Capacity: 1 to 6 mm^2 flexible

Thermostatic Function
- Adjustable comfort and reduced temperature
- Fixed anti-frost temperature
- Display of state of output,
- Display of selected mode,
- Push button selection of working mode:
- Automatic cycle comfort T° / reduced T°
- Permanent comfort temperature
- Permanent reduced temperature
- Permanent anti-frost temperature.

Probes
EG502 can be associated with:
- EK081 fixed ambient probe,
- EK082 adjustable ambient probe
- EK083 universal probe (see page 5.21)

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

EG502

Programmable Thermostat

Delivered without probe. Compatible with EK081, EK082t or EK083 probes

Characteristics	Width	Cat ref.
Voltage rating: 230V; 50 Hz Output: 1 changeover contact, 2A – 250V; AC1 2 Temperature settings "comfort" and "reduced" adjustable + 8°C to + 28°C, Anti-frost temperature setting + 8°C (constant)	4 Mod	**EG502**

Analogue Voltmeters
For domestic and commercial installations

- Single phase: direct connection
- Three phase: use of a voltmeter selector switch SK602 (see page 5.25).

Frequency
50 Hz

Connection Capacity
Rigid conductor 10mm²
Flexible conductor 6mm²

Analogue Ammeters
For domestic and commercial installations.

Indirect reading via current transformers: 50-100-150-250-400A

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

SM050

Voltmeter

Consumption	Accuracy	Width	Cat ref.
2.5VA	2%	4 Mod	**SM500**

SM050

Ammeters

Connection via a current transformer (CT) (page 5.24)

Scale	Accuracy	Width	Cat ref.
0 - 50A	2%	4 Mod	**SM050**
0 - 100A	2%	4 Mod	**SM100**
0 - 150A	2%	4 Mod	**SM150**
0 - 250A	2%	4 Mod	**SM250**
0 - 400A	2%	4 Mod	**SM400**

Digital Voltmeters & Ammeters

Digital Voltmeters
SM501
For domestic and commercial installations

- Three phase: use of a voltmeter selector switch SK602

Digital Ammeters
SM151, SM401, SM601: reading via a current transformer (see below)

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

SM501

Digital Voltmeter

Voltage rating: 220/230V; 50/60Hz
Accuracy: ± 1%
Consumption: 4 VA

Scale	Width	Cat ref.
0 - 500V	4 Mod	**SM501**

SM401

Digital Ammeters

Voltage rating: 220/230V; 50/60Hz
Accuracy: ± 1%
Consumption: 4 VA

Description	Scale	Width	Cat ref.
Reading via CT 150/5A (SR150)	Scale: 0 - 150A	4 Mod	**SM151**
Reading via CT 400/5A (SR400)	Scale: 0 - 400A	4 Mod	**SM401**
Reading via CT 600/5A (SR600)	Scale: 0 - 600A	4 Mod	**SM601**

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.

Can be mounted on copper bar or on cable. Can be mounted on DIN rail.

	H	W	D
SR051 SR101	65	44	59.5
SR150 SR250	84	56	60
SR300 SR400 SR600	107	77	64

For complete list of dimensions see page 5.54

SR300

Current Transformers (C.T)

Ratio	Cat ref.
50/5	**SR051**
100/5	**SR101**
150/5	**SR150**
200/5	**SR200**
250/5	**SR250**
300/5	**SR300**
400/5	**SR400**
600/5	**SR600**

Description
For use with Voltmeters and Ammeters.

Applications
Complies with IEC 947-3
BS EN 60947-3

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

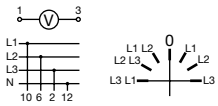
Isolating voltage 500VAC
Nominal current 10-20A

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

SK602

Voltmeter Selector

3 Ph&N
3 Readings between phases
3 Readings between phase & neutral
Null position (no reading)

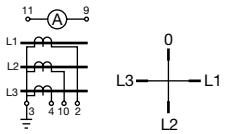


Characteristics	Width	Cat ref.
20A 400Vac	3 Mod	**SK602**

SK603

Ammeter Selector

4 Positions
Use in 3 Ph&N
Reading by phase
Null position (no reading)
Should be used with Current Transformer (see page 5.24)

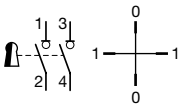


Characteristics	Width	Cat ref.
20A 400Vac	3 Mod	**SK603**

SK606

Lockable Rotary Switch

On / Off (4 Positions)



Characteristics	Width	Cat ref.
10A 400Vac	3 Mod	**SK606**

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

MID approval for sub billing on EC154M.

Characteristics
- Fully compliant with the European standard EN 50470-3
- Class B
- Accuracy 1%
- Energy readout: 7 digits
- Backlit display
- Indication of instantaneous power consumption
- Total / partial counter (expected MID references)
- Pulsed output
- Unlimited saving of measurements
- LED flashes according to consumption
- Option: tariff 1/ tariff 2

- Three phase energy meters are adapted to all kind of networks
- Display indication in case of incorrect wiring

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

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

EC050

Single Phase kWh Meters

Voltage 230V~ 50Hz
Direct connection
In = 320mA - 32A

Characteristics	Width	Cat ref.
Total counter, non resettable counter	1 Mod	**EC050**
Total counter, non resettable counter, pulsed output 1 pulse = 100Wh	1 Mod	**EC051**

EC150

Single Phase kWh Meters - Direct 63A

Voltage 230V~ 50/60Hz
Starting current = 40mA
Base current = 10A
Max current = 63A
Max cable size = 16mm

Characteristics	Width	Cat ref.
Energy meter with pulsed output and total / partial counter	3 Mod	**EC150**
Energy meter with pulsed output - total / partial counter and 2 tariffs	3 Mod	**EC152**
Energy meter with pulsed output - with MID approval	3 Mod	**EC154M**

EC154M

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

MID approval for sub billing on EC364M.

Characteristics
- Fully compliant with the European standard EN 50470-3
- Class B
- Accuracy 1%
- Energy readout: 7 digits
- Backlit display
- Indication of instantaneous power consumption
- Total / partial counter (expected MID references)
- Pulsed output
- Unlimited saving of measurements
- LED flashes according to consumption
- Option: tariff 1/ tariff 2

- Three phase energy meters are adapted to all kind of networks
- Display indication in case of incorrect wiring

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm
7 Mod = 122.5mm

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

EC350

Three Phase kWh Meters - Direct 63A

Voltage 230/400V~ 50/60Hz
Starting current = 40mA
Base current = 10A
Max current = 63A
Max cable size = 16mm

Characteristics	Width	Cat ref.
Energy meter with pulsed output and total / partial counter	4 Mod	**EC350**
Energy meter with pulsed output - total / partial counter and 2 tariffs	4 Mod	**EC352**

EC364M

Three Phase kWh Meters - Direct 100A

Voltage 230/400V~ 50/60Hz
Starting current = 80mA
Base current = 20A
Max current = 100A
Max cable size = 35mm

Characteristics	Width	Cat ref.
Energy meter with pulsed output and total / partial counter	7 Mod	**EC360**
Energy meter with pulsed output - total / partial counter and 2 tariffs	7 Mod	**EC362**
Energy meter with pulsed output - with MID approval	7 Mod	**EC364M**
Energy meter with bidirectional counter	7 Mod	**EC365B**
Energy meter with KNX output	7 Mod	**TE360**

EC370

Three Phase kWh Meters - Connection via Current Transformers

To be connected to CT with 5A on the secondary

Voltage 230/400V~ 50/60Hz
Starting current = 10mA
Max current on CT secondary = 6A

Characteristics	Width	Cat ref.
Energy meter with pulsed output and total / partial counter	4 Mod	**EC370**
Energy meter with pulsed output - total / partial counter and 2 tariffs	4 Mod	**EC372**
Energy meter with KNX output	4 Mod	**TE370**

Modular multifunction meters dedicated to monitoring and reporting of the electrical networks (balanced or unbalanced – 1,2,3 or 4 wires) The meters are connected through a CT to the network and measure all the parameters (TRMS).

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

Multifunction meter SM101C
It allows communication via pulses output and/or RS485 Jbus/Modbus.

Features
- LCD display
- 4M DIN Rail mounting
- Wiring test

Standards
- IEC 61557-12
- IEC 62053-22 (class 0.5s)
- IEC 62053-23 (class 2)

Connection solid & stranded
4mm² (power)
2.5mm² (communication)

SM101E

SM101C

Multifunction Meter

Technical Characteristics	Width	Cat ref.
Multifunction Meter	4 Mod	**SM101E**
Multifunction Meter with Communication Pulsed output, RS485 Jbus/Modbus communication	4 Mod	**SM101C**

Description
To measure the total operating time of any circuit/load non resettable

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

1 Mod = 17.5mm
2 Mod = 35mm
3 Mod = 52.5mm
4 Mod = 70mm

EC100

Hours Counter

Voltage	Width	Cat ref.
230V - 50Hz	2 Mod	**EC100**

Description
Hager dimmers control the lighting level of all types of lighting source: incandescent, LV halogen, ELV halogen with electronic or ferromagnetic transformer, LED ELV 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

Common characteristics
- Universal dimmers with automatic load recognition
- Softstart (progressive start) to increase the working life of lamps
- Memorisation of last dimming level
- Protection against overheating

For technical details see page 5.57

1 Mod = 17.5mm
2 Mod = 35mm

EVN011

Universal Dimmers 300W

- Compatible with dimmable CFL and LED
- 3 modes for load learning: auto, advanced, expert (comfort version)
- Can replace a latching relay, with lighting level function
- Push button (phase or neutral).
- Very low consumption.

Characteristics		Width	Cat ref.
Standard version		1	**EVN011**
Comfort version	• Expert mode • Scene by 2 short double presses on the PB (progressive switch-off, night light, 100%, no function)	1	**EVN012**

EVN004

Universal Dimmers 500W

- Compatible CFL and LED
- 3 modes for load learning: auto, advanced, expert (comfort version)
- Very low consumption

Characteristics		Width	Cat ref.
Standard version		2	**EVN002**
Comfort version	• Expert mode • 100% via 2 short preses on the dim input PB • One scene PB (scene, time-delayed scene, progressive switch-off, night light) • Multi-voltage dim PB	2	**EVN004**

Electrical Characteristics									
Family		SB							
Number of poles		1P - 2P - 3P - 4P							
Frame size		Frame size 1			Frame size 2		Frame size 3		
Thermal current Ith (40°C)		16A	25A	32A	40A	63A	80A	100A	125A
Operational frequency		50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Rated insulation voltage (Ui)		500 V	500 V	500 V	500 V	500 V	500 V	500 V	500 V
Rated impulse withstand voltage Uimp		3 KV	3 KV	3 KV	6 KV	6 KV	6 KV	6 KV	6 KV
Protection degree		2	2	2	3	3	3	3	3
Working temperature		-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C
Storage temperature		-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C
Operational Currents I_e									
Rated voltage	Load duty category								
400V AC	AC 21A	16A	25A	32A	40A	63A	80A	100A	125A
400V AC	AC 22B	16A	25A	32A	40A	63A	80A	100A	125A
400V AC	AC 22A	16A	25A	32A	40A	63A	80A	100A	125A
400V AC	AC 23A	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA
Short circuit characteristic									
Rated short time withstand current 1s Icw (rms)	IEC 60947-3	480A / 1sec			945A / 1 sec		1500A / 1sec		
Prospective short circuit current (rms)	EN 60669	3kA	3kA	3kA	6kA	6kA	n/a	n/a	n/a
Associated fuse links (gG)		16A	25A	32A	40A	63A	n/a	n/a	n/a
Mechanical characteristic									
Rigid cable section		16 mm²	16 mm²	16 mm²	25 mm²	25 mm²	50 mm²	50 mm²	50 mm²
flexible cable section		10 mm²	10 mm²	10 mm²	16 mm²	16 mm²	35 mm²	35 mm²	35 mm²
Tightening torque		1.8 Nm	1.8 Nm	1.8 Nm	2.8 Nm	2.8 Nm	3.6 Nm	3.6 Nm	3.6 Nm
IP protection degree		20	20	20	20	20	20	20	20
Mechanical endurance (number of cycle)		100,000	100,000	100,000	30,000	30,000	20,000	20,000	20,000
Electrical endurance @ AC22 (number of cyles)		25,000	25,000	25,000	5,000	5,000	2,500	2,500	2,500
Overall dimension									
Width (mm)	1P	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
	2P	17.5	17.5	17.5	35	35	35	35	35
	3P	35	35	35	52.5	52.5	52.5	52.5	52.5
	4P	35	35	35	70	70	70	70	70
Height (mm)		83	83	83	83	83	83	83	83
Depth (mm)		72	72	72	72	72	72	72	72

Electrical Characteristics								
Family		SF						
Modular size		1 module			2 module			4 module
Reference		SFH125	SFM125	SFT125	SFH225	SFT225	SFT240	SF263
Thermal current Ith (40°C)		25A	25A	25A	25A	25A	40A	63A
Operational frequency		50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Rated operation voltage in AC		230V						
Rated insulation voltage (Ui)		440V	440V	440V	440V	440V	440V	500V
Rated impulse withstand voltage Uimp		4 KV	4 KV	3 KV	6 KV	6 KV	6 KV	4 KV
Protection degree		2	2	2	3	2	2	2
Working temperature		-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C
Storage temperature		-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C	-40 to 80°C
Operational Currents I_e								
Rated voltage	Load duty category							
400V AC	AC 22A	25A	25A	25A	25A	25A	40A	63A
400V AC	AC 22B	25A	25A	25A	25A	25A	40A	63A
Short circuit characteristic								
Rated short time withstand current 1s Icw (rms)	IEC 60947-3	375A / 1sec					600A / 1sec	4.5kA cond.
Prospective short circuit current (rms)	EN 60669	3kA	3kA	3kA	6kA	6kA	n/a	n/a
Mechanical characteristic								
Rigid cable section		35 mm²	35 mm²	35mm²	25 mm²	25 mm²	25 mm²	25 mm²
flexible cable section		10 mm²	10 mm²	10 mm²	16 mm²	16 mm²	16 mm²	16 mm²
Tightening torque		1.8 Nm	1.8 Nm	1.8 Nm	1.8 Nm	1.8 Nm	1.8 Nm	1.8 Nm
IP protection degree		20	20	20	20	20	20	20
Mechanical endurance (number of cycle)		200,000	200,000	200,000	200,000	200,000	200,000	100,000
Electrical endurance @ AC22 (number of cyles)		25,000	25,000	25,000	5,000	5,000	2,500	5,000
Overall dimension								
Width (mm)		17.5	17.5	17.5	35	35	35	71.5
Height (mm)		83	83	83	83	83	83	90
Depth (mm)		68	68	68	68	68	70	68

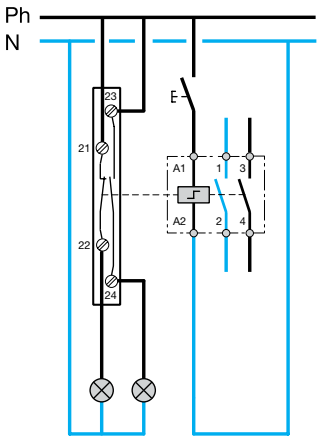
Technical Characteristics

	EPN510 EPN515 EPN520	EPN513 EPN518 EPN524	EPN519	EPN525 EPN540	EPN528 EPN541	EPN529
Voltage	230V	24V	12V	230V	24V	12V
Start Consumption	24VA	24VA	24VA	48VA	47VA	TBC
Contact Rating AC1	-	-	16A 250V~[1]	-	-	-
Electrical Endurace AC1 - 16A	150,000 Operations					
Mechanical Endurance	500,000 Operations					
Current in Open Position	8 mA					
Max Duration of Voltage Supply to Coil	1h					
Min Duration of Current Supply to Coil	0.1s					
Working Temperature	-5 to +40°C					
Storage Temperature	-40 to +80°C					
Connections						
Coil: Flexible Rigid	0.5 to 4mm² 1 to 6mm²					
Power: Flexible Rigid	1 to 6mm² 1.5 to 10mm²					

[1] 400~ for EPN540 and EPN541.

Auxiliary Contacts (EPN051)

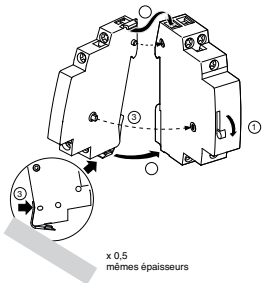
The range of latching relays have been designed for use with an auxiliary contact. The devices simply clip on the side of the relay.

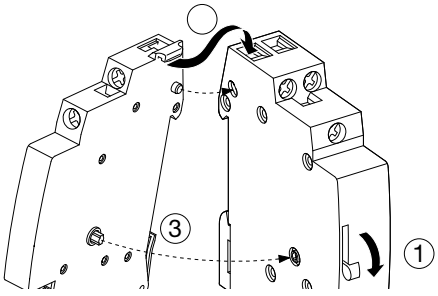


Technical Characteristics

	EPN	EPN051
Voltage	[1] 100 to 230V	-
Contact Rating	-	2A / 250V
Imin / 230V	-	15mA
Connection		
Flexible	6mm²	
Rigid	10mm²	

[1] Voltage dependant on associated relay





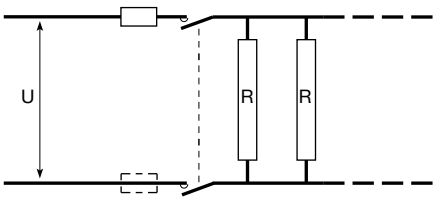
Heating
The choice of the contactor depends on the mechanical endurance (number of operations) and on the electrical heating load i.e. resistive elements, infra-red element, convectors.

Choice of Contactors
The choice of contactor is dependant upon many parameters i.e. operating voltage, size of contacts, number of operations, ambient temperature, type of load supplied etc.

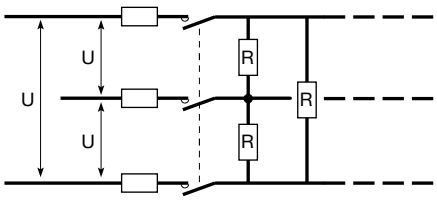
Type of Load
Loads are categorised into various AC ratings, (AC1, AC2, AC3 etc.) and the higher the AC rating the more inductive the load becomes. All Hager contactor ratings are given at AC1, therefore they must be de-rated if used on other types of AC load.

Heat Dissipation Inserts
The ambient temperature around a contactor can affect its life expectancy, therefore, we strongly recommend that heat dissipation inserts (LZ060) are fitted between all contactors and adjacent devices.

Single Phase

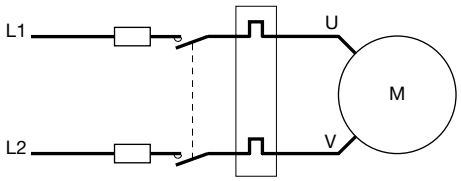


Three Phase

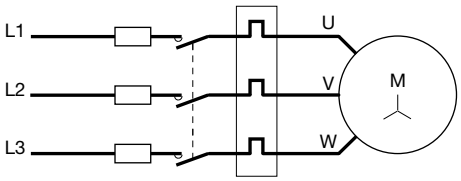


		Number of operations				
		100,000	**150,000**	**200,000**	**500,000**	**1,000,000**
Max. load in kW 230V	**16A**	3	2.5	1.9	0.85	0.7
	25A	4.6	4	3	1.35	1
	40A	7.3	6.3	4.7	2.2	1.6
	63A	11.6	10	7.5	3.5	2.5
Max. load in kW 400V	**16A**	8.9	8	5.8	2.8	2
	25A	13.8	12	8.6	4.3	3
	40A	22	18.5	14.385	6.3	5
	63A	35	30	22.6	10.2	7.6

Motors
Single Phase 230V (AC3 or AC7b)



Three Phase 400V (AC3 or AC7b)



			Choice of Contactor According to control diagram	
	Single Phase with Capacitor 230V	**Three Phase (AC3 or AC7) 400V**	**2 Wires**	**3 Wires**
Maximum load in kW	0.88		2 pole 25A	
	2.6		2 pole 40A	
		2.6		3 pole 25A
		7.8		3 pole 40A
		10		3 pole 63A

Requirements of Use
Influence of Working Temperature
Derating factor between 40°C and 50°C : 0.9
Example: Heating with convector
The maximum load of ESC225 is 4.6kW for 50,000 operations and for a temperature <40°C.
between 40°C and 50°C, the load is 4.6 x 0.9 i.e. 4.14kW

Close Fitting
It is necessary to put a heat dissipation insert (reference LZ060) between each contactor.

Description			Modular contact						Auxiliary contact
Standard conformity			EN 61095						
Approvals			NF - VDE- IMQ - KEMA - RMC / CCC						
			Relay	Contactor	Relay	Contactor	Contactor	Contactor	Contactor
Number of modules			1		2		3		½
Thermal current Ith (40°C)			16A	25A	16A	25A	40A	63A	6A
Rated frequency			50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Rated insulation voltage (Ui)			250V	250V	440V	440V	440V	440V	250V
Rated impulse withstand voltage (Uimp)			4kV	4kV	4kV	4kV	4kV	4kV	4kV
Protection Degree			2	2	2	2	2	2	2
Rated Operating currents and power ratings in AC									
AC-1 / AC-7a	Rated operational currents Ie		16A	16A	16A	25A	40A	63A	-
	Rated operational power	230V	3kW	4.6kW	3kW	4.6kW	7.3kW	11.6kW	-
		400V	-	-	8.9kW	13.8kW	22kW	35kW	-
AC-3 / AC-7b	Rated operational currents Ie		5.5A	8.5A	5.5A	8.5A	25A	32A	-
	Rated operational power	230V	570W	880W	570W	880W	2.6kW	3.3kW	-
		400V	-	-	1.7kW	2.6kW	7.8kW	10kW	-
AC-12	Rated operational currents Ie @ 230V		-	-	-	-	-	-	6A
AC-15	Rated operational currents Ie @ 230V		-	-	-	-	-	-	2A
Mechanical and Electrical Endurances									
Mechanical endurance		Number of operations	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Electrical endurance @ Ie AC7a (AC12 for aux contact)		Number of operations	60,000	60,000	60,000	60,000	60,000	60,000	60,000
MCB Protected short-circuit withstand									
Prospected short-circuit current		rms	1kA	3kA	1kA	3kA	3kA	3kA	1kA
Associated protection			MCB C16-6kA	MCB C25-6kA	MCB C16-6kA	MCB C25-6kA	MCB C40-10kA	MCB C63-10kA	6A 10x38 gG Fuse
Power dissipation									
Power dissipation per current path			1W	1.5W	1W	1.5W	3.2W	5W	0.4W
Magnetic system for Eco and standard contactor									
Pick-up			2.2W	2.2W	2.8W	2.8W	5W	5W	-
Coil consumption			2.2W	2.2W	2.8W	2.8W	5W	5W	-
Closing delay			25ms	25ms	25ms	25ms	25ms	25ms	-
Opering delay			15ms	15ms	15ms	15ms	20ms	20ms	-
Connection									
Main contact cable section		Rigid	1...10mm²	1...10mm²	1...10mm²	1...10mm²	4...25mm²	4...25mm²	1...6mm²
		Flexible	1...6mm²	1...6mm²	1...6mm²	1...6mm²	4...16mm²	4...16mm²	1...6mm²
Main contact connection screw		Type	M3.4	M3.4	M3.4	M3.4	M5	M5	M3.4
		Posidrive	PZ2	PZ2	PZ2	PZ2	PZ2	PZ2	PZ2
		Max. tight. torque	1.2Nm	1.2Nm	1.2Nm	1.2Nm	2Nm	2Nm	1.2Nm
Coil connection cable section		Rigid	1...10mm²	1...10mm²	1...10mm²	1...10mm²	1...10mm²	1...10mm²	-
		Flexible	1...6mm²	1...6mm²	1...6mm²	1...6mm²	1...6mm²	1...6mm²	-
Coil connection screw		Type	M3.5	M3.5	M3.5	M3.5	M4	M4	-
		Posidrive	PZ2	PZ2	PZ2	PZ2	PZ2	PZ2	-
		Max. tight. torque	1.2Nm	1.2Nm	1.2Nm	1.2Nm	1.5Nm	1.5Nm	-
Working temperature									
			-10°C to +50°C						
Storage temperature									
			-40°C to +80°C						

Contactor Selection
The table below indicates the number of lamps that can be connected to each pole of the contactor on 230V 50Hz circuits.

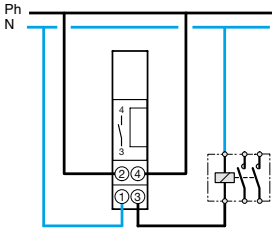
	Light power	Capacitor Value	1 & 2 Module 16A	1 & 2 Module 25A	3 & 4 Module 40A	3 & 4 Module 63A
Incandescent lamps						
Tungsten and Halogen Lamps	40W		45	60	105	160
	60W		30	48	85	125
	75W		25	38	70	100
	100W		20	30	50	75
	150W		13	20	35	50
	200W		10	15	25	38
	300W		7	10	18	25
	500W		4	6	10	15
	1000W		2	3	6	8
Fluorescent tubes						
Energy saving lamp *Compact fluo lamp With external electronic ballast*	5W		210	330	660	700
	7W		150	222	456	495
	9W		126	195	375	407
	11W		105	161	325	357
	15W		75	123	247	290
	18W		65	105	215	247
	20W		57	92	190	220
	23W		52	80	164	192
	26W		50	75	150	170
Energy saving lamp Compact fluo *With integrated electronic ballast Substitute to incandescent lamps*	5W		160	230	470	705
	7W		120	222	330	510
	9W		94	195	265	395
	11W		80	161	220	305
	15W		65	123	126	225
	18W		48	105	138	187
	20W		50	92	110	160
	23W		43	80	98	142
	26W		34	75	84	125
Single - non compensated	15W		22	30	70	100
	18W		22	30	70	100
	20W		22	30	70	100
	36W		20	28	60	90
	40W		20	28	60	90
	42W		19	25	55	83
	58W		13	17	35	56
	65W		13	17	35	56
	80W		10	15	30	48
	115W		7	10	20	32
	140W		6	8	16	26
Single parallel compensation	15W	5 µF	15	20	40	60
	18W	5 µF	15	20	40	60
	20W	5 µF	15	20	40	60
	36W	5 µF	15	20	40	60
	40W	5 µF	15	20	40	60
	42W	5 µF	15	20	40	60
	58W	7 µF	11	17	30	43
	65W	7 µF	10	15	30	43
	80W	7 µF	10	15	30	43
	115W	18 µF	5	9	14	20
Duo series - non compensated (number of double fitting	2 x 18W		20	30	50	75
	2 x 20W		20	30	50	75
	2 x 36W		11	16	26	42
	2 x 40W		9	14	40	64
	2 x 42W		9	14	40	64
	2 x 58W		7	10	27	42
	2 x 65W		7	10	27	42
	2 x 80W		5	8	22	34
	2 x 115W		4	6	16	25
Duo series - series compensated (number of double fitting	2 x 18W	3.5 µF	30	46	80	123
	2 x 20W	3.5 µF	30	46	80	123
	2 x 36W	4.5 µF	16	24	44	68
	2 x 40W	4.5 µF	14	22	39	61

	Light power	Capacitor Value	1 & 2 Module 16A	1 & 2 Module 25A	3 & 4 Module 40A	3 & 4 Module 63A
Fluorescent tubes						
Duo series - series compensated (number of double fitting	2 x 42W	4.5 µF	14	22	39	61
	2 x 58W	7 µF	10	16	27	42
	2 x 65W	7 µF	10	16	27	42
	2 x 80W	9 µF	9	13	22	34
	2 x 115W	18 µF	6	10	16	25
Single electronic ballast	18W		74	111	222	333
	36W		38	58	117	176
	58W		25	37	74	111
Double - electronic ballast (number of double fitting)	2 x 18W		36	56	111	166
	2 x 36W		20	30	60	90
	2 x 58W		12	19	38	57
Discharge lamps						
High pressure mercury vapour lamps (uncompensated)	50W		15	20	34	53
	80W		10	15	27	40
	125W		8	10	20	28
	250W		4	6	10	15
	400W		2	4	6	10
	700W		1	2	4	5
High pressure mercury vapour lamps (parallel compensation)	50W	7 µF	11	15	28	43
	80W	8 µF	9	13	25	38
	125W	10 µF	9	10	20	30
	250W	18 µF	4	6	11	17
	400W	25 µF	3	4	8	12
	700W	40 µF	2	2	5	7
	1000W	60 µF	0	1	3	5
Low pressure sodium-vapour lamps (uncompensated)	18W		18	34	57	90
	35W		4	10	15	25
	55W		5	9	13	22
	90W		3	6	9	20
	135W		2	4	6	10
	180W		2	4	6	10
Low pressure sodium-vapour lamps (parallel compensation)	18W	5 µF	14	21	40	60
	35W	20 µF	6	10	15	23
	55W	20 µF	5	7	11	16
	90W	26 µF	3	5	8	11
	135W	40 µF	2	3	5	7
	180W	45 µF	2	3	5	7
High pressure sodium-vapour lamps (uncompensated)	35W		15	22	40	60
	50W		12	17	28	42
	70W		8	12	20	32
	110W		6	9	17	25
	150W		4	7	13	18
	250W		2	4	8	11
	400W		1	2	5	8
	1000W		1	1	2	3
High pressure sodium-vapour lamps (parallel compensation)	35W	6 µF	11	18	30	50
	50W	8 µF	9	11	24	32
	70W	12 µF	6	8	17	25
	110W	12 µF	5	6	16	24
	150W	20 µF	6	7	13	20
	250W	32 µF	5	6	9	14
	400W	45 µF	3	4	8	10
	1000W	100 µF	1	2	4	6
Halogen metal vapour lamp (uncompensated)	35W		27	40	68	106
	70W		16	24	42	64
	150W		8	12	20	32
	250W		5	8	14	21
	400W		3	5	8	13
	1000W		1	2	4	5
Halogen metal vapour lamp (parallel compensation)	35W	6 µF	12	18	31	50
	70W	12 µF	6	9	16	25
	150W	20 µF	4	6	10	15
	250W	32 µF	3	4	7	10
	400W	35 µF	2	3	5	7
	1000W	60 µF	1	1	2	3

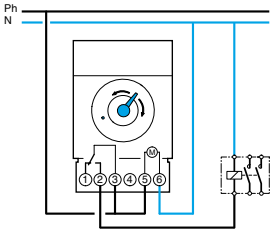
Technical Specifications

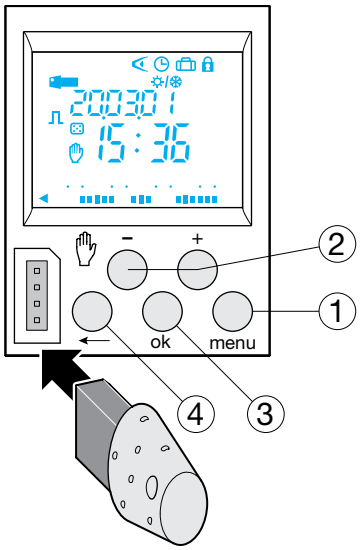
	EH011	EH010	EH111	EH110	EH171	EG103	EG103E	EG103V	EG203	EG203E	EG493E
Version	Daily	Daily	Daily	Daily	Weekly	Weekly	Weekly	Weekly	Weekly	Weekly	Weekly & Annual
Voltage Supply	230V 50/60Hz	230V 50Hz	230V 50/60Hz	230V 50Hz	230V 50/60Hz	230V AC 50/60Hz	230V AC 50/60Hz	230V AC 50/60Hz	230V AC 50/60Hz	230V AC 50/60Hz	230V AC 50/60Hz
Consumption	0.5VA	0.5VA	0.5VA	0.5VA	0.5VA	6VA	6VA	0.8VA	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 Changeover Contact	1 Volt Free Changeover Contact	1 Volt Free Changeover Contact	2 Volt Free Changeover Contacts	2 Volt Free Changeover Contacts	2 Volt Free Changeover Contacts 2 NO Contact
Switching Capacity											
AC 1	16A / 250V	16A / 250V	16A / 250V	16A / 250V	16A / 250V	16A AC 1 / 250V 4A DC 1 / 12V	16A AC 1 / 250V 4A DC 1 / 12V	16A AC 1 / 250V 4A DC 1 / 12V	16A AC 1 / 250V 4A DC 1 / 12V	16A AC 1 / 250V 4A DC 1 / 12V	10A AC 1 / 250V
Inductive Load cos 0.6	4A / 250V	4A / 250V	4A / 250V	4A / 250V	2.5A / 250V	10A / 250V	10A / 250V	10A / 250V	10A / 250V	10A / 250V	10A / 250V
Incandescent Lamp	900W	900W	900W	900W	900W	2300W	2300W	2300W	2300W	2300W	1500W
Halogen Lighting 230V	-	-	-	-	-	2300W	2300W	2300W	2300W	2300W	1500W
Compensated Fluorescent Tubes (max 45µF)	-	-	-	-	-	400W	400W	400W	400W	400W	400W
Non Compensated Fluorescent Tubes Compensated in Series	-	-	-	-	-	1000W	1000W	1000W	1000W	1000W	800W
Compact Fluorescent Tubes	-	-	-	-	-	500W	500W	500W	500W	500W	400W
Minimum Current AC 1	-	-	-	-	-	100mA / 250V	100mA / 250V	-	100mA / 250V	100mA / 250V	100mA / 250V
Minimum Current DC 1	-	-	-	-	-	-	-	100mA / 12V	-	-	-
Galvanic Insulation Between Power Supply and Output	-	-	-	-	-	< 4 kV	< 4 kV	< 4 kV	< 4 kV	< 4 kV	< 4 kV
Characteristics											
Technology	Quartz	Quartz	Quartz	Quartz	Quartz	-	-	-	-	-	-
Dial	24hrs	24hrs	24hrs	24hrs	7 days	-	-	-	-	-	-
Minimum Switching	5min	5min	5min	5min	2h	-	-	-	-	-	-
Programming Capacity	-	-	-	-	-	56 Steps	56 Steps	56 Steps	56 Steps	56 Steps	300 Steps
Minimum Time Between 2 Steps	-	-	-	-	-	1min	1min	1min	1min	1min	1min
Working Accuracy	1sec per day	1sec per day	1sec per day	1sec per day	1sec per day	±1.5sec / 24h	±1.5sec / 24h	±1.5sec / 24h	±1.5sec / 24h	±1.5sec / 24h	±0.2sec / 24h
Supply Failure Reserve	200hrs	No	200hrs	No	200hrs	5 years lithium battery	5 years lithium battery	5 years lithium battery	5 years lithium battery	5 years lithium battery	5 Years Lithium Battery
Reached in	120h	120h	120h	120h	120h	-	-	-	-	-	-
Manual Switch Type	On Auto On	Off Auto On	Off Auto On	Off Auto On	Off Auto On	-	-	-	-	-	-
Protection Degree	-	-	-	-	-	IP20	IP20	IP20	IP20	IP20	IP20
Environment											
Working Temperature	-10°C to +45°C	-10°C to +45°C	-10°C to +45°C	-10°C to +45°C	-10°C to +45°C	-5°C to +45°C	-5°C to +45°C	-5°C to +45°C	-5°C to +45°C	-5°C to +45°C	-10°C to +45°C
Storage Temperature	-100°C to +50°C	-100°C to +50°C	-100°C to +50°C	-100°C to +50°C	-100°C to +50°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Connection											
Flexible	0.5 to 4mm²	0.5 to 4mm²	0.5 to 4mm²	0.5 to 4mm²	0.5 to 4mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1.5 to 10mm²	1 to 4mm²
Rigid	-	-	-	-	-	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²	1 to 6mm²	1.5 to 6mm²

EH010 / EH011
230 VM ±10% 50/60Hz



EH110 / EH111 / EH171
230 VM ±10% 50/60Hz





Keys

1.	Menu	Selection of operating mode
	Auto	Mode of running according to the program selected
	Prog	New for programming mode
	Prog	To modify an existing program
		Checking of the program
		Modification of time, date and selection of the winter/ summer time change mode.
		Holidays
2.	+ / -	Navigation or setting of values
		In auto, mode, selection of overrides, waivers or random operation
3.	OK	To validate flashing information on display
4.		To return to the previous step

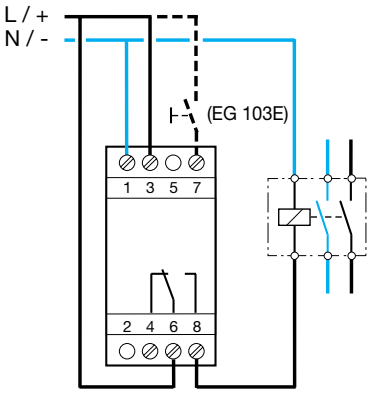
You may return into auto mode at any moment using menu.
If no action is taken for 1 min, the switch returns to auto mode.

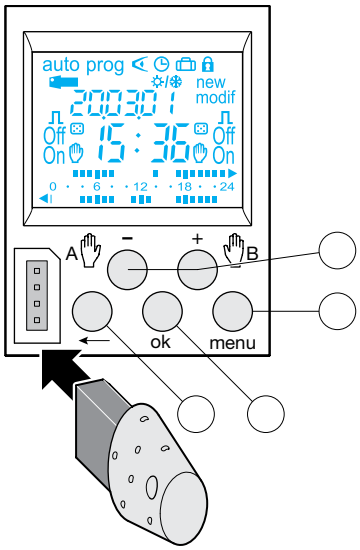
Major Characteristics

- Product delivered with current time and date set
- Automatic change of winter / summer time ☼/❄
- Programming key
  - For permanent waivers
  - For program copy or save
- Programming for day or group of days
- 56 program steps On, Off
- Impulses ⎍ (1 sec to 30 min)*
- Permanent overrides On or Off (✋ permanent light on)
- Temporary overrides On or Off (✋ flashing)
- Holiday mode 💼 : overrides On or Off between two dates*
- Simulation of presence ⚄ *
- Display bar graph of daily profile
- Keyboard locking possible 🔒
- Programmable with power off
- Back lit display*

* Evolution models E or V only

Connection Diagram





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
A	✋	In auto, mode, selection of overrides, waiver or random operation.
B	✋	
3.	OK	To validate flashing information on display
4.	←	To return to the previous step

You may return into auto mode at any moment using menu.
If no action is taken for 1 min, the switch returns to auto mode.

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
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- 56 program steps On, Off
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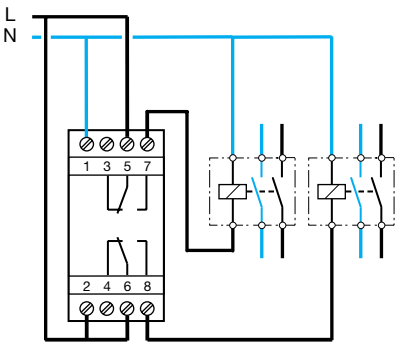
- Simulation of presence ⚄ *
- Display bar graph of daily profile
- Keyboard locking possible 🔒
- Programmable with power off
- Back lit display*

* evolution models E only

Connection Diagram



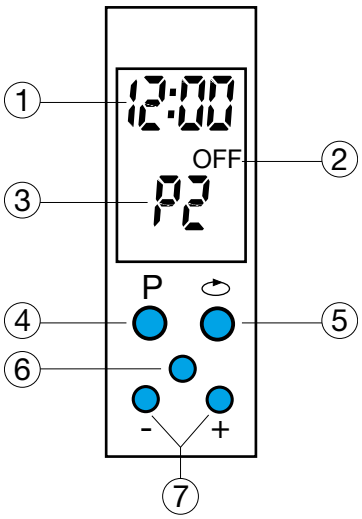
Technical Characteristics

Electrical Characteristics	
Voltage Supply	230V ±10% 50/60Hz
Consumption	1VA
Output	1 Changeover contact 16A - 250V AC 1 3A - 250V cosw = 0.6 1000W Incandescent lighting
Functional Characteristics	
Number of programs	5 Adjustable Pre-recorded Programs
Accuracy	±6min per year
Supply Failure Reserve	Total of 3 years
Environment	
Working Temperature	-10°C to +50°C
Storage Temperature	-10°C to +60°C
Cable Capacity	1 to 4mm²
Main Characteristics	Easy to program: 5 programs are pre-recorded. The user just has to select the program which corresponds to its use and modify time switches if necessary.

The 5 pre-registered programs are as follows

P	Prog
P0	OFF
P1	ON
P2	6.00 — 23.00
P3	6.00 — 8.00 — 17.00 — 23.00
P4	6.00 — 8.00 — 11.00 — 13.00 — 17.00 — 23.00

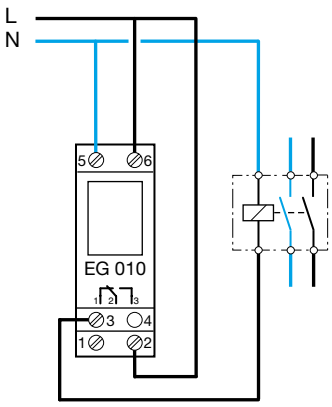
Product Presentation



Display
1. Time
2. Circuit Status
3. Program Selection

Buttons
4. P to select the program to apply
5. Reset
6. ↻ to scroll program steps
7. + and - : to input time

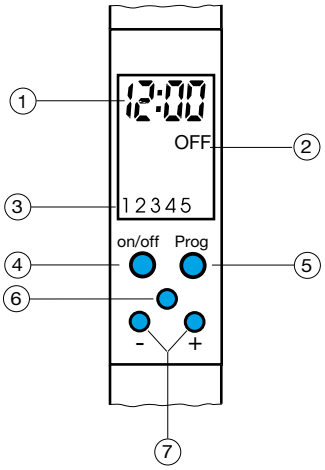
Electrical Connection



Technical Characteristics

Electrical Characteristics	
Voltage Supply	230V ±10% 50/60Hz
Consumption	1VA
Output	1 Changeover contact 16A - 250V AC 1 3A - 250V cosw = 0.6 1000W Incandescent lighting
Functional Characteristics	
Number of programs	20 Program Steps (each program step can be applied to one of several days)
Accuracy	±6min per year
Supply Failure Reserve	Total of 3 years
Environment	
Working Temperature	-10°C to +50°C
Storage Temperature	-10°C to +60°C
Cable Capacity	1 to 4mm²

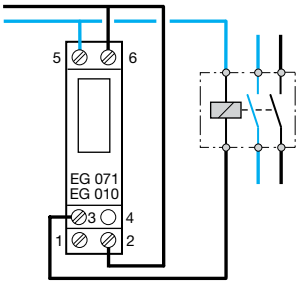
Product Presentation



Display
1. Time
2. Circuit Status
3. Days of the week

Buttons
4. ON / OFF : to select the circuit status
5. Reset
6. Prog: to program the device and scroll program steps
7. To input time and day

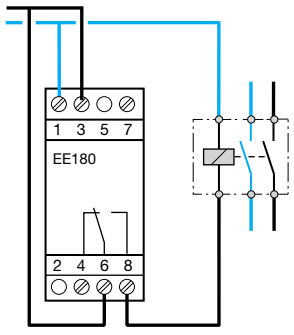
Electrical Connection



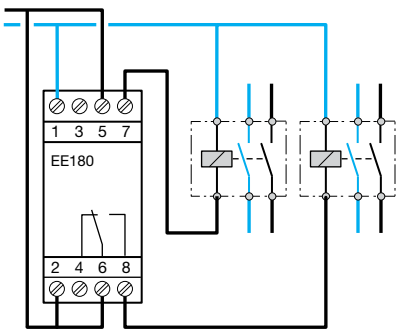
Technical Characteristics

	EE180 (1 Channel)	EE181 (2 Channel)
Width in 17.5mm Modules	2	2
Supply Voltage	230V AC (+10 % / -15%, 50/60Hz	
Number of Outputs	1	2
Characterisitics of Relay	Change over contact 16A C 1 250V /10A cos phi = 0.6	
Incandescent	2300W	
230V Halogen	2300W	
Standards	CE + CTICK and CEI 60-669	
Connection		
Flexible	1 to 6mm²	
Rigid	1.5 to 10mm²	
Environment		
Storage Temperature	-20°C to +60°C	
Working Temperature	-10°C to +55°C	
IP	IP20	
Functional Characteristics		
Display LCD	Without backlight screen	
Operating reserve	Lithium battery 5 years	
Precision	+/- 1.5s/day	
Programming Key	Yes	
Automatic change of winter / summer time	Yes	
Functions available in free programming	Weekly programming / permanent override / temporary override	
Astro Functions		
Astro mode	Yes	Independent programming for each channel
Programming of the lighting interrution	Yes (if channel Astro)	
Temporary override	15 / 30 / 60min	
Maintained ON	Adjustment common to the 2 channels	
Anticipation ON	Adjustment common to the 2 channels	

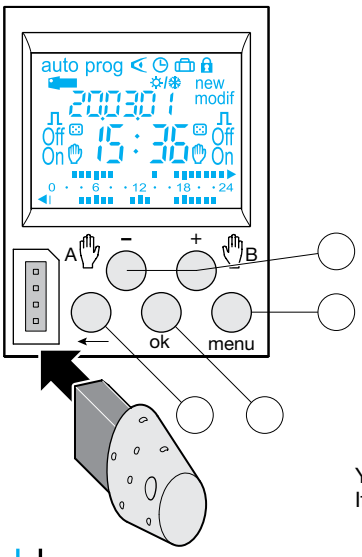
Electrical Connection
EE180 : 1 Channel



EE181 : 2 Channels



Product Presentation



Keys

1. Menu — Selection of operating mode
   - Auto — Mode of running according to the program selected
   - Prog — New for programming mode
   - Prog — To modify an existing program
   - Checking of the program
   - Modification of time, date and selection of the winter/ summer time change mode
   - Astro — Astronomical mode
   - ☆ — Indicated that the channel is in astronomical mode
2. \+ / - — Navigation or setting of values
   - A — In auto, mode, selection of overrides, waiver or random operation
   - B
3. OK — To validate flashing information on display
4. ← — To return to the previous step

You may return into auto mode at any moment using menu.
If no action is taken for 1 min, the switch returns to auto mode.

Delay Timers
Delay timer devices are used to control a variety of processes where the requirement is for switching circuits on, off or delaying the on or off switching for a pre-set period of time. Typical device types are...

- Delay on - intended to delay the starting or switching of a circuit for a set period of time following the command signal e.g. to delay the starting of motor loads where a large number of motors are to be started by the same switch to reduce the effects of the starting currents.
- Delay off - intended to delay the stopping or switching off of a circuit for a set period of time following the removal of the command signal e.g. to overrun an extractor following the switching off of a process that creates fumes.
- Adjustable time on - intended to switch on for a set period, the command signal must remain on throughout the set period e.g. to switch on two sets of heaters with one set (the boost) switching off after the set period.
- Impulse timer - intended to switch on for a set period, the command signal length is not important e.g. to boost a time clock controlled circuit such as a water storage heater.
- Symmetrical timer - intended to toggle a circuit on and off in regular time patterns e.g. to run an extractor intermittently.

Multifunction Timer - 6 Individual Functions
A = Timer.
B = Delay off (output relay opens either at end of command or after set time period - which ever is shorter).
C = Delay off.
D = Delay on.
E = Delay on (output relay closes either at end of command or after set time period - which ever is shorter).
F = Symmetrical timer.

On selection - contact permanently closed
Off selection - contact permanently open

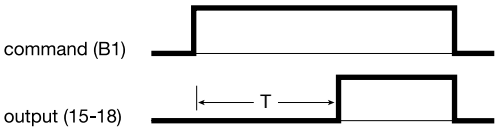
Output relay open - with no command

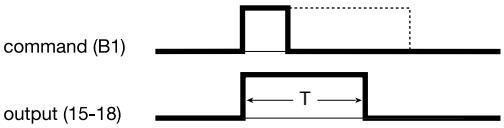
Output relay open - with command signal running

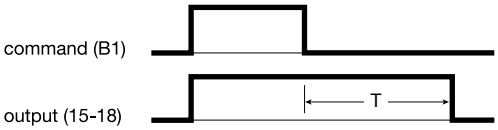
Output relay closed - with command signal running

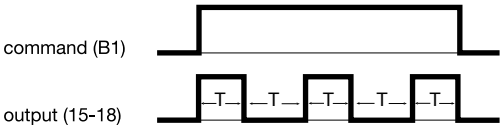
Output relay close - with command signal removed

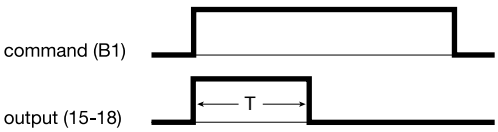
Output relay closed (EZN005)









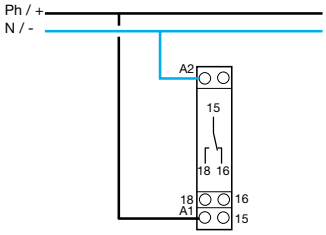


Technical Specifications

	EZN001, EZN002, EZN003, EZN004, EZN005, EZN006t
Electrical Characteristics	
Supply Voltage	24-28 Vdc 12-48 Vdc (+10%) Terminals A1 & A2 12-230 Vac (+10%) Terminals A3 & A2
Output	1 Volt Free C/O Contact
Life Expectancy	
Max Load AC 1	8A / 230V~ 50,000 Cycles
Incandescent	450W~ 500,000 Cycles
Fluorescent Non Comp.	600W~ 50,000 Cycles
Inductive Load 0.6pf	5A / 230V~ 100,000 Cyles
Min Power	
AC	100mA at 230V
DC	100mA at 12V
Galvanic Isolation	2kV
Standard / Norm	BS EN 60669-2-1
Functional Characteristics	
Timer Range	0.1s - 10 hours
Min. Command Period	
AC	50ms
DC	30ms
Operating Temperature	
Working	-20ºC to +50ºC
Storage	-40ºC to +50ºC
Connection Capacity	
Flexible	1 to 6mm^2
Rigid	1.5 to 10mm^2

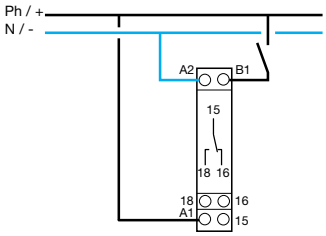
Functional characteristics EZN001, EZN003, EZN005, EZ006 (functions D,E,F)

CD : Command.
O : Output.
T : Time delay.



EZN002, EZN004, EZN006 (functions A,B,C)

indicator light (for versions with NO contact).
ON
OFF



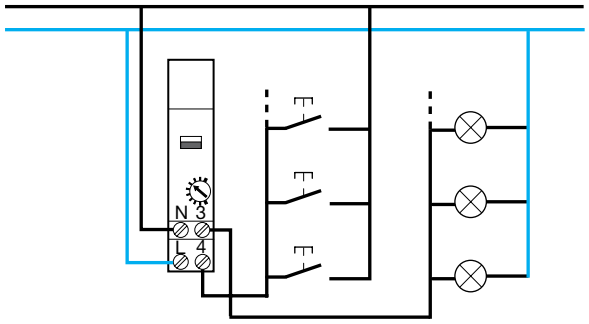
Time Delay Breackers	1 sec to 1 hour	0.1 min to 10 hour	0.1 sec to 10 mins	0.2 mins to 20 hours
Ranges	1 sec to 10 secs	0.1 min to 1 min	0.1 secs to 1 sec	0.2 min to 2 min
	0.1 min to 1 min	1 min to 10 min	1 second to 10 secs	2 min to 20 min
	1 min to 10 min	0.1 hour to 1 hour	0.1 min to 1 min	0.2 hour to 2 hour
	0.1 hour to 1 hour	1 hour to 10 hour	1 min to 10 mins	2 hour to 20 hour

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.

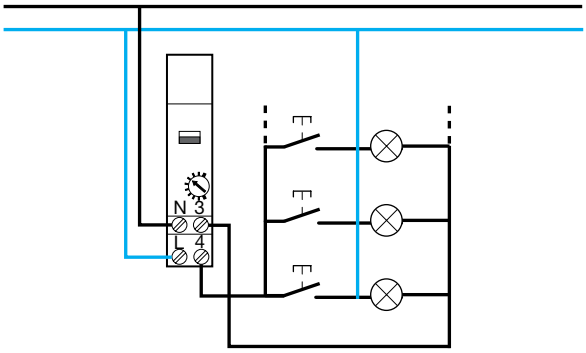
Technical Specification

	EMN001	EMN002
Electrical Characteristics		
Supply voltage	230V +10 -15% 50/60Hz	230V +10 -15%50/60Hz
Consumption	1VA	0.5W Permanent 8W Max.
Size	1	-
Breaking Capacity		
AC1	16A 230V AC	4A 230V~
Incandescent	2300W	1000W
Halogen 230V	2300W	1000W
Ferro Magnetic Transformer	1600W	-
Parallel Compensated	Capacitor 112µF	-
Fluorescent Lamps	1000W	
Series Compensated	3600W	-
Electronic Transformer	2300W	-
Compact Fluorescent Lamps with Electronic Ballast with Conventional Ballast	60 x 7W or 40 x 11W or 32 x 15W or 20 x 23W 23000W	- -
Functional Characteristics		
Time Delay	30s to 10min	24s
Retrigger	Yes	-
Max. Current in Rest Position	100mA	-
Automatic 3/4 Recognition	Yes	-
Local Command	Automatic / Override On	-
Environment		
Working Temperature	-10 to +55°C	-15 to +55°C
Storage Temperature	-20 to +60°C	-25 to +70°C
Connection		
Flexible	1 to 6mm²	1 to 6mm²
Rigid	1.5 to 10mm²	1.5 to 10mm²
Connection EM001/EM002	-	2 wires 1.5

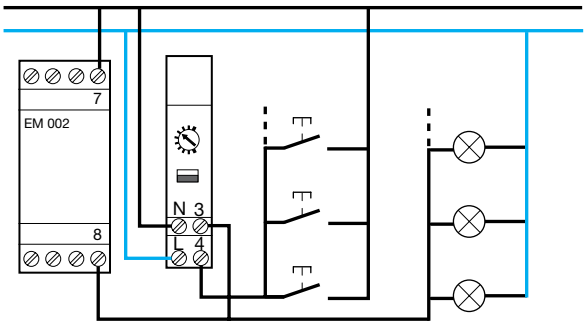
Wiring Diagrams
4-Wire



3-Wire



Combination EM002 with EMN001



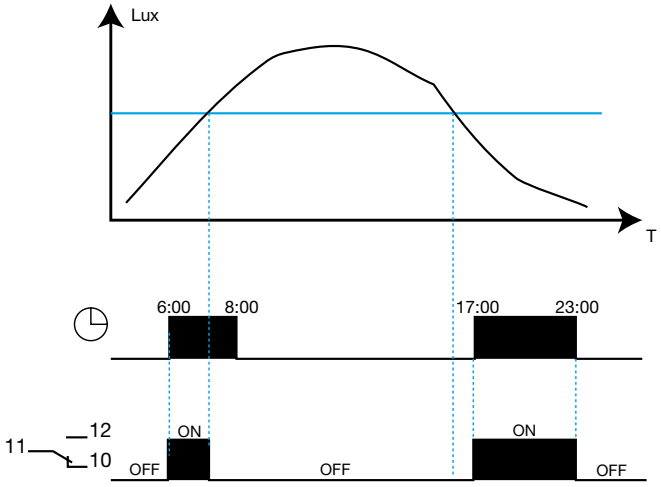
Light Sensitive Switches
Using light sensitive switches can prevent the unnecessary use of lighting circuits where sufficient daylight exists. The benefit of modular devices is the facility to set the ambient lighting level at which the device will operate, and as the device is fitted at the distribution point prevent unauthorised tampering. The remote photocell unit can be mounted up to a distance of 50 metres from the device. Two devices are available the standard EEN100 light sensitive switch and an enhanced programmable version the EE171 that also allows time clock control.

Principle of Operation
Both devices control lighting systems according to natural illumination;
- The user sets the working level:
- The photo cell measures the external light level

The output of the EEN100 is:
- ON, when the measured level is lower than the pre-set light level
- OFF, when the measured level is higher than the pre-set light level

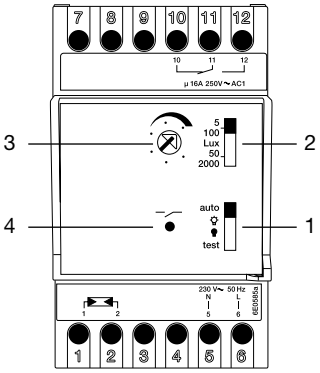
The output of the EE171 during the programmed ON time period is:
- ON, when the measured level is lower than the pre-set light level
- OFF, when the measured level is higher than the pre-set light level

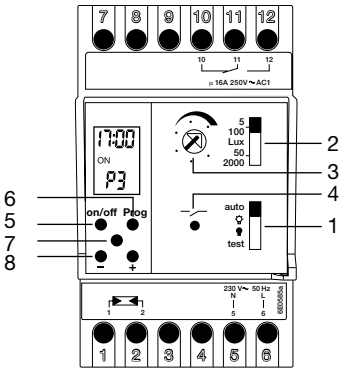
The output of the EE171 during the programmed off time period is:
- OFF, regardless of the lighting level



The light sensitive switches include a built in time delay which avoids unnecessary switching due to temporary factors such as car headlight beams etc...

Description



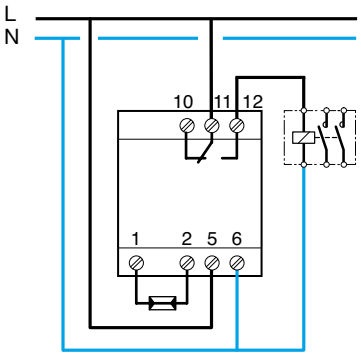


The programmable light sensitive switch EE171 has two main functions:
- Light sensitive switch comprising

1 Override selector switch to allow permanent ON or OFF, auto or test mode
2 Lighting range selector
3 Potentiometer to set light level
4 Indicator to show output switching status

- A programmer to establish the automatic operating cycle

The programmer comprises 4 keys:
5 **ON / OFF** to choose whether the circuit is on or off.
6 **Prog** to set the program and scroll program steps
7 **Reset**
8 **+** and **-** to change settings



Mounting the Cell
To ensure correct operation of the light sensitive switch, the cell must not be influenced by artificial light or direct solar radiation and should be sheltered from dust and humidity. In case of disconnection of the link between the cell and the light sensitive switch, the output of the device will be switched on. Make sure the light sensitive switch is unplugged before connecting the cell.

	EE002	EE003
Type	Flush Mounting	Surface Mounting
Dimensions (mm)	89 x 48 x 32	25 x 25 x 20 Hole 25mm
Connection	Cable 1m 2 x 0.75mm^2	0.75 to 4mm^2
Protection Class	IP54	IP54
Working & Storage Temperature	-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

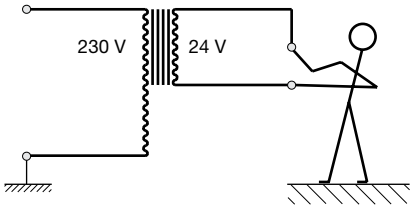
* EE171 only

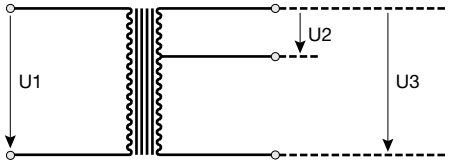
Safety Transformers
These transformers are designed to ensure personal safety, their primary winding are electrically separated from their secondary windings and they are intended to feed separated extra low voltage circuits U ≤ 50V. A thermal overload, in the primary windings, ensures that if a short circuit or an overload occurs in the output it will not damage the device.

Bell Transformers
Bell transformers are similar to safety transformers but the secondary voltages do not exceed 24 volts, they are also similarly protected against short circuits and overloads, by thermal protection in the primary winding.

Compliance with the Standards
The bell and safety transformers conform with BS EN 61558.
Where transformers are to be used in a common enclosure with other devices heat dissipation inserts LZ060 should be used.

Recommendation of Use
- To link only one secondary (never link both simultaneously)
- Do not connect (in series or in parallel) secondaries of different transformers





Technical Specification

		ST301	ST303	ST305	ST312	ST313	ST314	ST315
Nominal Power		4VA	8VA	16VA	25VA	16VA	40VA	63VA
Designation		Bell	Bell	Bell	Safety	Safety	Safety	Safety
Primary Voltage		230 Volts	230 Volts	230 Volts	230 Volts	230 Volts	230 Volts	230 Volts
Secondary Voltage	U2	8 Volts	8 Volts	8 Volts	12 Volts	12 Volts	12 Volts	12 Volts
		In = 0.5A	In =1A	In = 2A	In = 2.08A	In = 1.33A	In = 3.33A	In = 5.25A
	U3	12 Volts	12 Volts	12 Volts	24 Volts	24 Volts	24 Volts	24 Volts
		In = 0.33A	In = 0.67A	In = 1.33A	In = 1.04A	In = 0.67A	In = 1.67A	In = 2.63A
No Load	U2	12 Volts	15 Volts	12 Volts	14 Volts	16 Volts	14 Volts	14 Volts
Secondary Voltage	U3	18 Volts	22 Volts	19 Volts	29 Volts	30 Volts	27Volts	27 Volts
Galvanic Insulation		4kV	4kV	4kV	4kV	4kV	4kV	4kV
Max Functional Temperature		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

Electrical Characteristics	
Voltage Supply	230V +10 -15% 50/60Hz
Consumption	1.5VA
Output	1 Changeover Contact 2A 230V AC1
Functional Characteristics	
4 Temperature Ranges	-30 to 0°C 0 to +30°C +30 to +60°C +60°C to +90°C (Varying accuracy)
Environment	
Working Temperature	-10 to +50°C
Storage Temperature	-20 to +70°C
Connection Capacity	
Flexible	1 to 6mm²
Rigid	1.5 to 10mm²
Probe	Maximum Distance 50m

Main Characteristics

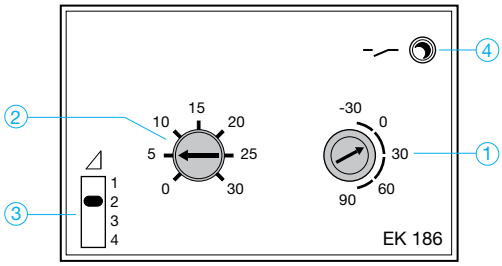
Multiple Applications
A single device to solve all your problems of regulation or temperature control, from cold room to incubator.

Varying Accuracy
The accuracy can be adapted according to the application. e.g.: low for ambient temperature regulation, high for incubator regulation.

Safety Feature for Probe Failure
To protect the installation in case of disconnection from the probe. various connections can be made so the thermostat will be:
- Permanent OFF
- Permanent ON
- Cyclical operation: output ON 1 minute in every 4

Display
State of output.

Product Presentation



1. Selection of the range
2. Adjustment of the temperature setting
3. Selection of temperature range
4. Display of state of output

Working Principle
the EK186 regulates the temperature according to all or nothing principle, it can be associated with different probes, according to the application the accuracy is a function of the temperature range and is selected by a slide switch.

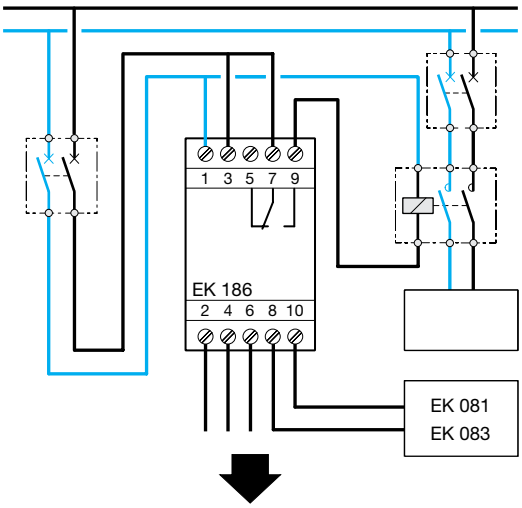
Position on Slide Switch	Temperature range °C -30 to 0	0 to 30	30 to 60	60 to 90
1	**± 2.15**	± 2.54	± 2.98	± 3.43
2	± 0.15	**± 0.18**	± 0.21	± 0.24
3	± 0.38	± 0.45	**± 0.53**	± 0.61
4	± 1.23	± 1.45	± 1.70	**± 1.96**

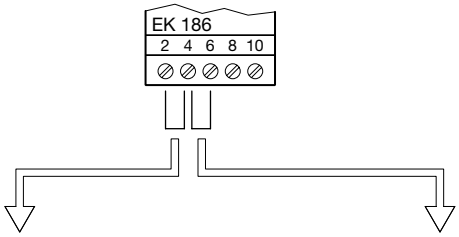
Bold - Preferential accuracies for each temperature range.

Example of Choice of Accuracy
- Regulation of ambient temperature
  Range: 0 to +30°C
  Accuracy: ± 0.18°C = 2

- Control of hot water outgoing circuit
  Range: 30 to +60°C
  Accuracy: ± 0.53°C = 3

Electrical Connection



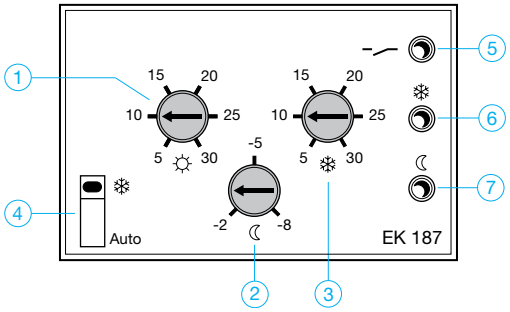


Caution
When the temperature ranges 30 to 60°C and 60 to 90°C are selected and the temperature measured by the probe is below 30°C, the safety feature for probe failure must be “permanent on”, until the measured temperature reaches the minimum temperature corresponding to the range (i.e. 30°C for the range 30°C to 60°C and 60°C for the range 60°C to 90°C).

Technical Specifications

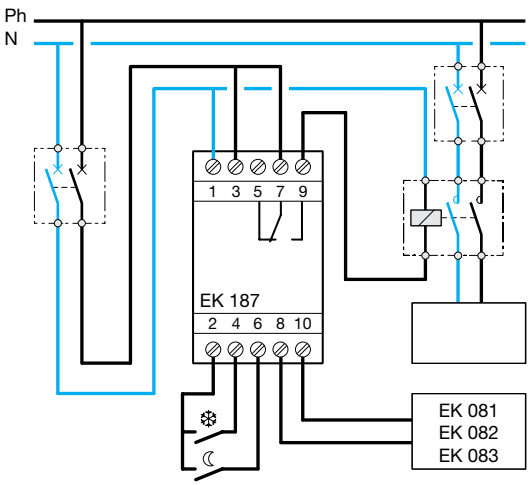
Electrical Characteristics	
Voltage Supply	230V +10 -15% 50/60Hz
Consumption	1.5VA
Output	1 Changeover Contact 2A 230V AC1
Functional Characteristics	
3 Temperature Ranges Controllable by External Setting	Comfort: Adjustable from +5 to +30°C Reduced: Decrease 2 to 8°C in Comparison with Comfort Setting Dispensation: Adjustable from +5 to +30°C Accuracy ±0.2°C
Environment	
Working Temperature	-10 to +50°C
Storage Temperature	-20 to +70°C
Connection Capacity	
Flexible	1 to 6mm²
Rigid	1.5 to 10mm²
Probe	Maximum Distance 50m

Product Presentation



1. Reference setting: comfort TO
2. Decrease in comparison with reference setting: reduced to TO
3. Dispensation setting
4. Dispensation setting override
5. Display of state of output i.e. contact position
6. Pilot light indicating the regulation in comparison with a dispensation setting
7. Pilot light indicating the regulation in comparison with a reduced setting

Electrical Connection



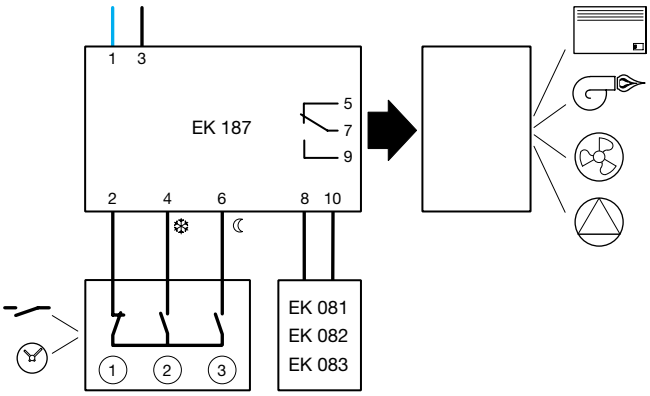
Main Characteristics

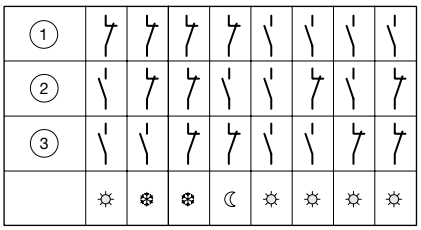
- **Temperature settings controllable by external setting** when associating a digital time switch, it is possible to regulate the heating in relation with a program established by the user.
- **2 wires link** between the probe and the unit, enables the easy replacement of the ambient thermostats of an existing installation.
- **Safety feature for "probe failure"** in case of probe disconnection, the output will be switched 1 minute in every 4; so that in case of disconnection during winter, it will protect the installation from frost.
- **Display** of state of the output and of the setting.

Working Principle

EK187 adjusts the temperature under the "all or nothing" principle it is associated to an ambient probe and thus works in closed loop the temperature settings are selected by external settings (contacts free of potential).

EK187 is thus generally associated to a time switch or a digital time switch in the case of absence of external signal, EK187 regulates the heating in comparison with the reference setting, a switch enables the override of the dispensation setting.

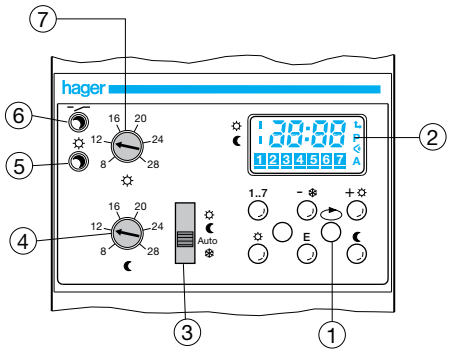




Technical Specifications

Electrical Characteristics	
Voltage Supply	230V +10 -15% 50Hz
Consumption	4VA
Output	1 Changeover Contact 2A 230V AC1
Functional Characteristics	
Adjustment of Temperature Setting	Comfort and Reduced Temp From +8 to +28°C Fixed Anti-Frost Temperature Setting +8°C Fixed Accuracy: ±0.2°C
Cycle	Weekly Cycle
Programming Capacity	24 Steps
Program Setting	1 Minute Increments
Accuracy	±5 min/Annum
Supply Failure Reserve	24hours loss of time setting only, program still in memory
Environment	
Working Temperature	-5 to +45°C
Storage Temperature	-20 to +60°C
Connection Capacity	
Flexible	1 to 6mm²
Rigid	1.5 to 10mm²
Probe	Maximum Distance 50m

Product Presentation



1. Programming of automatic cycle “comfort temperature”, “reduced temperature”, the principle of programming is similar to EG100.
2. LCD screen
3. Facility for permanent override of “comfort temperature”, “reduced temperature”, or “anti-frost”
4. Adjustment of the reduced temperature setting
5. Display of setting (comfort or reduced)
6. Display of state of output
7. Adjustment of the comfort temperature setting

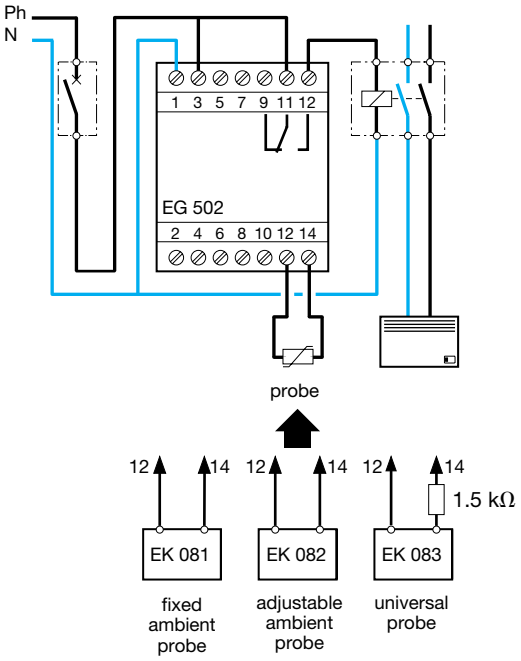
Main Characteristics

- **Simplified summer/winter time setting**
  Summer/winter time setting is obtained by pressing two separate keys
- **No loss of program in event of unlimited power failure**
  Loss of time setting only, program still in memory
- **Override**
  • Permanent: “comfort, reduced, anti-frost” temperature setting:
  • With automatic return to: “comfort and reduced” temperature setting:
- **2 wires link**
  Between the probe and the unit, this enables the easy replacement of the ambient thermostats in an existing installation
- **Display Mode**
  Allows program to be checked without risk of alteration
- **Groups of days**
  Days can be grouped in order to save program steps (so, a common setting for several days counts only as 1 program step)

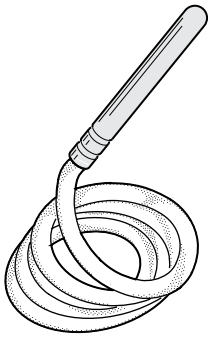
Working Principle

The programmable thermostat regulates the heating thanks to 2 temperature settings: “comfort” and “reduced”, according to a program established by the user; in cases of long absence, it is possible to maintain an anti-frost temperature.

Electrical Connection



EK083 Universal Probe

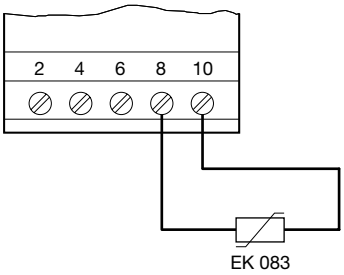


- To associate with EK186 thermostat
- To associate with EK187 thermostat and EK618 time programmable thermostat (for those applications insert in series with the probe a resistance of 1500Ω)

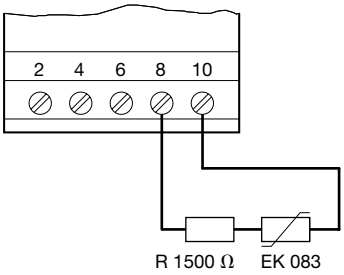
EK083: 10 kOhms at 25ºC
cable length: 4m

Environment
- Working temperature: –30 to +90ºC
- Storage temperature: –30 to +100ºC

Electrical Connection
- Associated with EK186

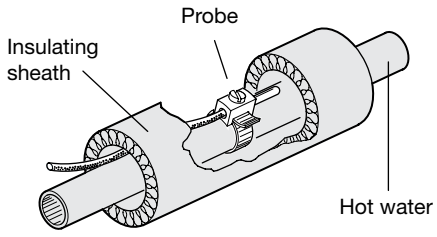


- Associated with EK187 - EK618

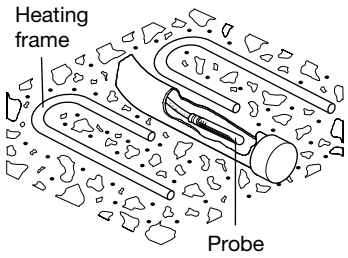


Examples of Applications

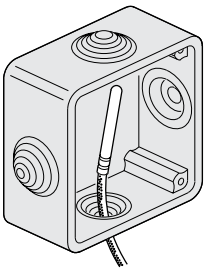
Use with the clamp collar
- For the control of hot water



Use with the clamp collar
- Protected by a sheath for the control of floor temperature



- Used as an external probe in a weatherproof box.



Resistance of Probes According to Temperature

Temperature ºC	EK083 R (KΩ)	EK081* R (KΩ)	EK081** EK082 R (KΩ)
+90	0.91	On a wall	-
+80	1.25	1.25	2.83
+70	1.75	1.75	3.33
+50	3.60	3.60	5.18
+30	8.06	8.06	9.64
+25	10	10	11.58
+20	12.49	12.49	14.07
+15	15.71	15.71	17.28
+10	19.90	19.90	21.48
+5	25.39	25.39	26.98
+0	32.65	32.65	34.23

Temperature ºC	EK083 R (KΩ)	EK081* R (KΩ)	EK081** EK082 R (KΩ)
-5		42.31	-
-10	55.29	-	-
-15	72.89	-	-
-20	96.97	-	-
-25	130.24	-	-
-30	176.68	-	-

Face value at 25ºC
Note: *Association with EK186
**Association with EK187 and EK618

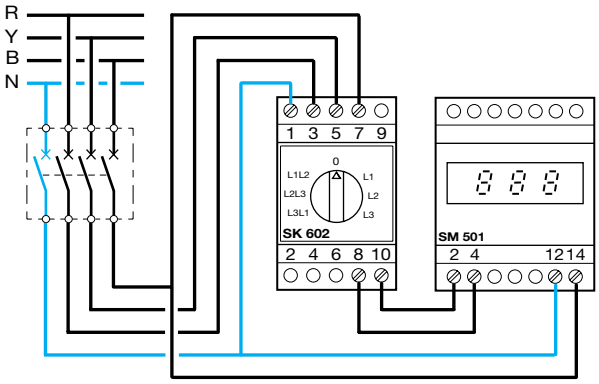
Technical Specification
- Working voltage : 230 V~ 50/60 Hz - resolution : 1 unit
- Update of the display: 3 / seconds
- Input impedance > 1 MV for the voltmeter SM501
- Isolating resistance : 10 MV
- Maximum voltage: 660 V - number of digits : 3

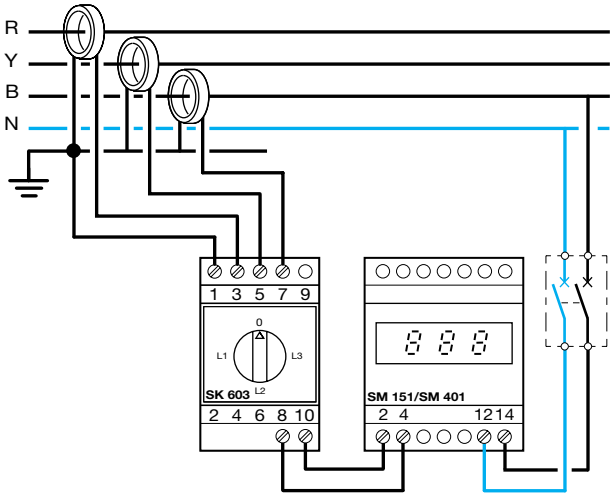
Connection
- Flexible: 6mm²
- Rigid: 10mm²

Environment
- Working temperature: -10 to +55 °C
- Storage temperature : -40 to +70 °C

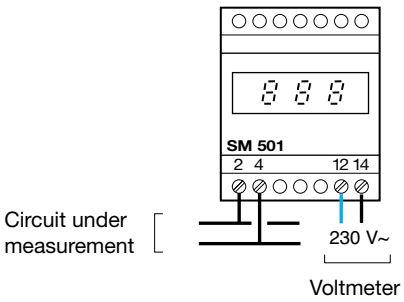
Cat ref.	Product	Range	Consump.	Accuracy %	Ref Temp °C	Accuracy Variation °C	Maximum Continuous	Momentary Maximum	Frequency Hz	Isolating Voltage
SM501	Voltmeter	500V	≤4.5 VA	±1	23 ± 1°C	± 0.03% / °C	1.2 Un	2 Un / 5 sec.	45-65	2kV/50Hz - 1 min
SM151 SM401	Ammeter with CT	0-150A 0-400A	≤1 VA	±1	23 ± 1°C	± 0.03% / °C	2 In	10 In / 5 sec.	45-65	2kV/50Hz - 1 min

Electrical Connection

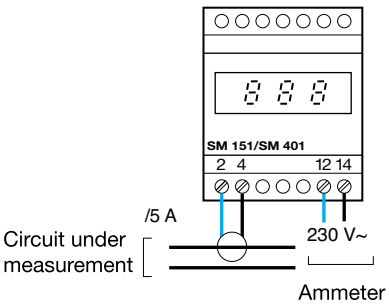




Electrical Connection
SM501



SM151, SM401

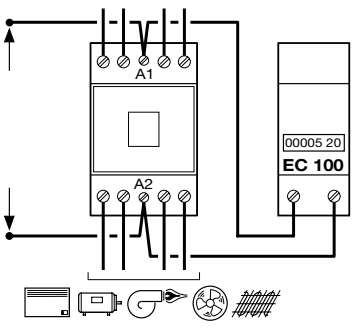


Hours Counter
Technical Specifications

Electrical Characteristics
- Working voltage: 230V~

Electrical Connection
- Connection in parallel on the command of the receiver (contactor coil)

Electrical Connection



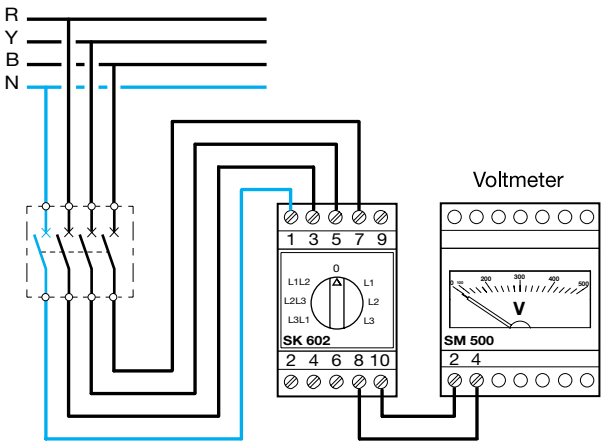
Technical Specification

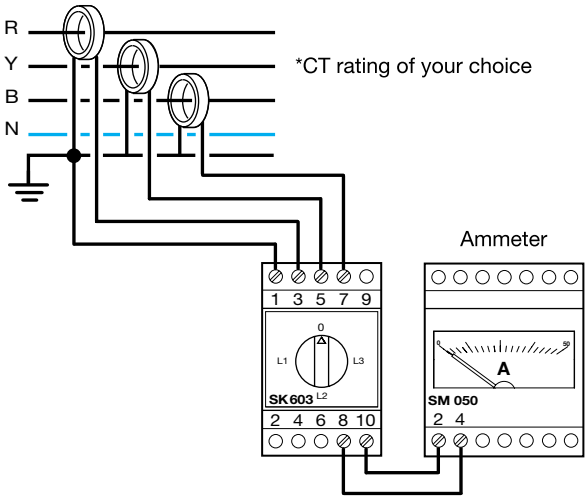
Environment
- Working Temperature: -25 to +50 °C
- Storage Temperature: -40 to +80 °C

Connection
- Flexible: 1 to 6mm²
- Rigid: 1.5 to 10mm²

Cat ref.	Product	Range	Consump.	Accuracy %	Ref Temp °C	Accuracy Variation °C	Maximum Continuous	Momentary Maximum	Frequency Hz	Isolating Voltage
SM500	Voltmeter	500V	≤3 VA	1.5	23 ± 2°C	± 0.03% / °C	1.2 Un	2Un / 5 sec	45 - 65	2kV/50H z-1min
SM050	Ammeter with CT	0-50A	≤1.1 VA	1.5	23 ± 2°C	± 0.03% / °C	1.2 Un	10Un / 5 sec	45 - 65	2kV/50H z-1min
SM100		0-100A								
SM150		0-150A								
SM250		0-250A								
SM400		0-400A								

Electrical Connection





Current Transformers (CT)

Technical Specification
- Secondary current: 0 - 5 A
- Frequency: 50/60 Hz
- Maximum permanent overload: 1,2 In

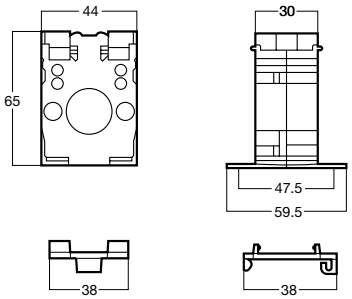
- Working Temperature: -25 to +50 °C
- Storage Temperature: -40 to +80 °C

Accuracy Class / VA

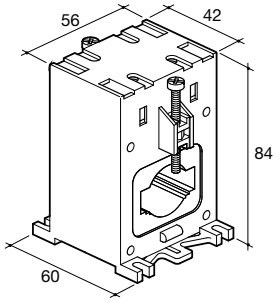
Cat ref.	Rating	Accuracy 0.5	1	3
SR051	50A	-	1.25	1.5
SR101	100A	2	2.5	3.5
SR150	150A	-	-	1.5
SR200	200A	-	2	3
SR250	250A	-	2	3
SR300	300A	4	8	12
SR400	400A	8	12	15
SR600	600A	12	15	15

Range of CT's

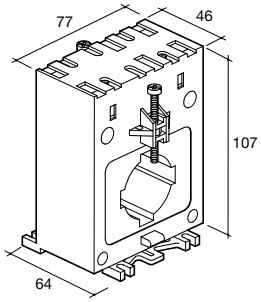
SR051, SR101, for cable B 21
max busbar 20 x 5mm



SR 150, SR 200, SR 250, for cable B 23 max
busbar 30 x 10 max



SR 300, SR 400, SR600, for cable B 35 max
maximum busbar 40 x 10 max



	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									
Metrological Data													
Connection	Direct			Direct		Direct					Via current transformer		
Display	Digital display 6+1 digits			Digital display 7 digits									
Accuracy	Accuracy 1% Class B according to EN 50470-3												
I max	63A			63A		100A					6A on CT secondary		
I Starting	40mA			40mA		80mA					10mA on CT secondary		
Base current	10A			10A		20A					5A		
Metrological LED													
	1000 blinking per kWh					500 blinking per kWh					1000 blinking per kWh		
Pulsed Ouput													
	1 pulse = 100Wh / 100ms / 27V DC max (excepted on KNX meters)												
Tariff													
	1	2	2	1	2	1	2	2	1	2	1	2	2
Mechanical Characteristics													
Width	3 Modules			4 Modules		7 Modules					4 Modules		
Protection degree	IP20 IP51 (front part)												
Temperature	Storage temperature: -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		

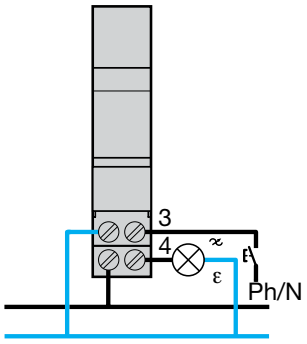
	SM101E	SM101C
Current (TRMS)		
I (1st CT)	5A...9999A	
I (2nd CT)	5A	
In	Calculated	
Minimum measuring current (2nd CT)	5mA	
Input consumption	<0.6VA per phase	
Permanent overload (2nd CT)	6A	
Accuracy	±0.2%	
THD		±1%
Update period	1s	
Voltage (TRMS)		
U	50Vac...520Vac (Ph-Ph) 28Vac...300Vac (Ph-N)	
Input consumption	<0.1VA per phase	
Permanent overload (2nd CT)	760Vac	
Accuracy	±0.2%	
THD		±1%
Update period	1s	
Power		
Accuracy (P,Q)	±0.5%	
Accuracy (S)	±1%	
Accuracy (PF)	±0.02%	
Update period	1s	
Energy		
Accuracy (Ea)		Class 0.5s
Accuracy (Er)		Class 2
Update period		1s
Frequency		
F	45Hz...65Hz	
Accuracy	±0.1%	
Update period	1s	
Supply		
Voltage	200Vac...277Vac ±15%	
Frequency	50/60Hz	
Consumption	<5VA	
Environment		
Protection degree	IP51 (front panel) IP20 (case)	
Operating temperature	-10°C to +55°C	
Storage temperature	-20°C to +70°C	
Insulation category	III (300Vac Ph-Ph)	
Degree of pollution	PD2	
Communication		
Metrological LED	N/A	0.1Wh/pulse
Pulse output	N/A	30Vdc/27mA Max
Communication	N/A	RS485 2/3 wires half duplex Jbus/Modbus 2,400bds...38,400bds Parity (no,odd,even) 1 or 2 Stop bytes
Connection		
Network	1BL 2BL 3BL/3NBL 4BL/4NBL	
Current/Voltage input	4mm² (solid or stranded)	
Others	2.5mm² (solid or stranded)	
Max torque	0.6Nm	
Shape		
Weight	205g	215g
Size	4M, 73mm x 90mm x 67mm	

Technical characteristics

	EVN011	EVN012	EVN002	EVN004
Supply voltage	230 V +/- 10 %			
Frequency	50/60 Hz			
Load consumption	0.2 W			
Load control type	Direct			
Remote power	300W		500W	
Compatible Load Types				
Incandescent 230 V	300W	500W		
Halogen 230 V	300W	500W		
ELV halogen with transformer	300VA	500VA		
Dimmable fluocompact	60W	100W		
Dimmable LED 230 V	60W	100W		
I max. authorized for PB light	5mA		-	5mA
Max. PB-dimmers distance or 1-10 V control	50m			
Dim PB and ON/OFF on module	No		Yes	
Number of preset lighting levels	-			1
Preset lighting levels control entry	-			1
Max. power dissipation	2.1W		4,5W	
IP Rating	IP20			
Operating temperature	- 10°C to + 45°C			
Storage temperature	- 25°C to + 70°C			
Rigid connection	1.5 to 6 mm^2			
Flexible connection	1 to 6mm^2			

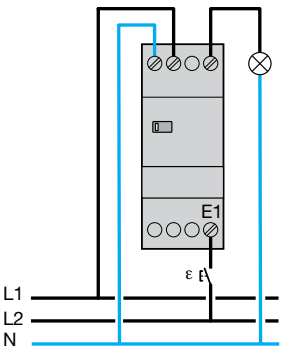
Wiring diagrams

EVN011 - EVN012

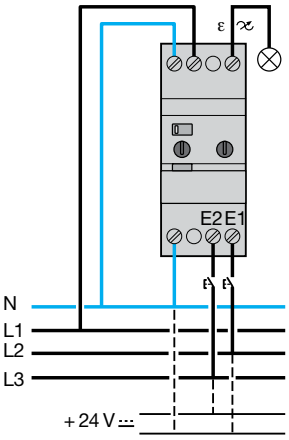


Use the same phase for control and supply.

EVN002



EVN004



Do not forget to connect the 2 neutral points.

tebis.KNX

Building automation

tebis.KNX uses the technology of the installation bus for the control of lighting, heating and roller-shutters or other similar loads and is ideal for commercial & residential applications, giving the advance control and flexibility often required.

tebis.KNX offers the technology to realise true energy savings through automation. Maximum energy savings are achieved where the system controls digital lighting and heating. In addition, by using daylight linking PIR devices to dim lighting in response to natural light availability, energy savings will be maximised. This alone has been proven to cut energy consumption by up to 70%.

System Components and Accessories	6.2
Input Products	6.4
Room Controllers	6.5
Time Switches	6.6
Light Sensitive Switches	6.7
Presence Detectors	6.8
Automation Products	6.9
Output Products	6.10
Lighting and Heating	6.10
Shutters and Blinds	6.12
KNX Temperature Control Actuator	6.13
Radio Frequency Products 2 or 4 Inputs (for Flush Mounting)	6.15
Push-Buttons and Remote Controls	6.16
Input/Output Products for Combination System	6.17
Output Products for Lighting or Shutter Control	6.18

The tebis system enables the installer and user to control the electrical installation in a simple and comfortable way (lighting, blinds, heating, etc.)

The tebis offer includes radio and twisted pair products, which are suitable for use in new installations and renovation. Products comply to the KNX standard.

The products below are the components needed to perform, configure or extend an existing tebis.KNX installation.

TX100GB Configurator
This tool is used for programming of the entire system whether it is wire, radio or both. The dialogue and download with the wire products is carried out via the media coupler.

Other functions :
- Tests the links and commands
- Measurement of radio environment interference level
- Copy of the system data on a USB flash drive or creation of project documentation with additional software.

USB flash drive; Delivered with TX100GB, TX101GB kit.

For technical details see page 6.20.

TX101GB

TX101B Configurator Kit

Kit includes:
- TX100GB configurator
- TR 130B media coupler with 230V power cable
- USB Flash Drive Storage
- 4 rechargeable batteries Ni-Mh 1.2 V 1550 mA/h
- 230 V / 9 V 1 A mini charger

Description	Dimensions (mm)	Config.	Cat ref.
Frequency: 868.3 MHz TX100GB: 217 x 75 x 36	Box: 345 x 291 x 65	TX	**TX101GB**

TX100GB

TX100GB Configurator

Includes:
- USB Flash Drive Storage
- 4 rechargable batteries Ni-Mh 1.2V
- 230V / 9V 1A mini charger

Description	Dimensions (mm)	Config.	Cat ref.
TX100GB Configurator	217 x 75 x 36	TX	**TX100GB**

TA008

Line Coupler

Allows you to carry out the extension of a wire/bus line.

Description	Characteristics	Width (35mm)	Config.	Cat ref.
Necessary in case of systems with more than 64 wire products	Supply: bus 30V DC Connectsby two TG008 bus connectors	2 Mod	TX/ETS	**TA008**

TR131B

TX Media Coupler

Allows transmission of messages of twisted pair products towards radio products and vice versa.
Size: 111 x 51 x 18mm

Characteristics	Colour	Cat ref.
Frequency: 868.3 MHz Bi-directional product	White	**TR131A**
Frequency: 868.3 MHz Bi-directional product	Silver	**TR131B**

TH101

USB to KNX Interface Module

For connecting a computer to the KNX bus, via a USB connection. This is for the purpose of programming tebis.KNX devices. In addition, it can also be used for the bus connection of visualisation equipment, computer monitoring and centralised control.

Description	Width	Cat ref.
USB Interface (model B USB slot)	2 Mod	**TH101**

TR140B

Radio Repeater

Amplifies the KNX radio signal. Usage: if distance is important or environment is unfavourable.
Note: all the KNX bidirectional radio products can be configured in receiver by TX100GB.

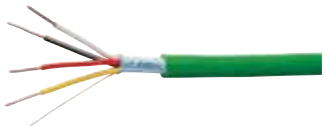
Description	Characteristics	Config.	Cat ref.
To be used in case of poor communication, amplifies the radio message	Supply: 230V~ Frequency: 868.3 MHz Bi-directional product Size: 111 x 51 x 18	TX	**TR140B**

TXA111

Power Supply Modules

Supplies 30V SELV DC power supply from the bus which serves directly as remote supply for most of the wire products (see page 6.26).

Description	Characteristics	Width	Cat ref.
Supplies the 30V power supply of the system for an installation carrying up to 64 TX products	Supply: 230V~ 50Hz, 15VA Output Voltage: 30V DC, 320mA Resistant to short circuits	4 Mod	**TXA111**
Supplies the 30V power supply of the system for an installation carrying up to 64 TX products	Supply: 230V~ 50Hz, 24VA Output Voltage: 30V DC, 640mA Resistant to short circuits	4 Mod	**TXA112**


TG018

Bus Cable

Bus cable (ST) Y 2 x 2 x 0,8mm with length of 100 and 500m (4KV test voltage).

Description	Length	Cat ref.
Insulated 4kV, to install with LV conductors	100m	**TG018**
Insulated 4kV, to install with LV conductors	500m	**TG019**

TG008

Bus Connector

Allows connections of bus to of TX products by plugging.

Description	Pack qty.	Cat ref.
4 links per connector (connection capacity 0.6 to 0.9mm^2 rigid)	50 pieces	**TG008**

Input interfaces which manage the information flow to control and manage the electrical equipment of the installation.

They send via the bus, orders to the tebis system output products.

Input Modules
For managing the ON/OFF contacts (potential free or 230V) coming from traditional control devices (PB, switch, thermostat, clock, etc.)

A single connection to the bus ensures supply of the products and information exchange, considerably reducing cabling.

For technical details see page 6.27.

TXB302

Input Modules for Flush Mounting

These modules are placed behind standard electrical fittings (push button or switch) in fixed box with a minimum of 40mm depth. Allow the volt free contact link. All the commands are of the SELV type.

Description	Supply	Dimensions h x w x d (mm)	Configuration	Cat ref.
2 Inputs for Volt Free Contacts	Bus 30V DC	35 x 38 x 12	TX/ETS	**TXB302**
4 Inputs for Volt Free Contacts	Bus 30V DC	35 x 38 x 12	TX/ETS	**TXB304**

TXB344

Four Input Modules with Four LED Output terminals

Four inputs for volt free contacts, four outputs for state indication by LED.

Functions:
- ON/OFF control
- Up/Down control (with alarm function)
- Dimming control
- Override control
- Time delay function
- Scene call

Features
- Power supply: 30V DC
- Output voltage: 2V DC
- Output current: 0.85mA

Description	Dimensions h x w x d (mm)	Configuration	Cat ref.
Flush Mount 2 Channels with 2 LED Output Terminals	35 x 38 x 12	TX/ETS	**TXB322**
Flush Mount 4 Channels with 4 LED Output Terminals	35 x 38 x 12	TX/ETS	**TXB344**

TXA306

230V Input Modules

Allows 230V switching products to be interfaced with a tebis system.

Description	Supply	Width	Config.	Cat ref.
4 x 230V Inputs	Bus 30V DC	2 Mod	TX/ETS	**TXA304**
6 x Volt free - 230V	Bus 30V DC	6 Mod	TX/ETS	**TXA306**

The room controller is a versatile device that groups 4 push buttons and an LCD display for information.

4 Pushbuttons
The four sides of the product act as a push button (touch sensitive keys) for ON/OFF controls, Up/Down, Scene selection, etc All the 4 keys are freely and independently programmable.

Visual symbols can be selected on the display for clear identification of the function / control associated with each key.

Display
This device can indicate the state of other input devices such as pushbuttons that are connected to the bus.
Examples: On/Off state, lighting signal delivered by a light sensitive switch, outside-inside temperature, alarm, etc.

The data can be displayed by symbols that can be selected from an in-built library or by plain text.

Display Arrangement
It includes:
- Central part allows 4 separate lines of text to be displayed
- 4 external zones corresponding to the four keys to identify the control associated with each key.

Other Functions
- Ambient temperature measurement,
- Display of hour and date,
- Alarm clock function (4 alarm tones)
- Back-lit display - activated by pushing any button or alarm clock deactivated automatically after adjustable time delay.

Assembly and Installation
assembled with a standard flush mounting box of. Programming is achieved by using the configuration device TX100GB via media coupler or by ETS software.

For technical details see page 6.28.

TX450A

Room Controller

Functions:
- ON/OFF control
- Up/Down control
- Dimming control
- Scenario selection
- Heating control
- Timing functions
- Switching functions with AND/OR logic
- Display of parameter status

Colour	Dimensions h x w (mm)	Supply	Cat ref.
White	80 x 80	Bus 30V DC	**TX450A**
Silver	80 x 80	Bus 30V DC	**TX450B**

TX460B

Room Controller with Temperature Regulator

Functions:
- ON/OFF control
- Up/Down control
- Dimming control
- Scenario selection
- Heating control
- Timing functions
- Switching functions with AND/OR logic
- Display of parameter status

Modes of operation:
- Comfort
- Standby
- Night
- Frost / Heat
- PID Automatic

Colour	Dimensions h x w (mm)	Supply	Cat ref.
White	80 x 80	Bus 30V DC	**TX460A**
Silver	80 x 80	Bus 30V DC	**TX460B**

Control commands are transmitted directly onto the bus without the need for output controls. Wiring is simplified as power supply is taken direct from the bus. Time switches are used in control of lighting, heating, shutters movement, domestic appliances, sockets, etc. in order to improve comfort and saving energy.

Functions
- 7 day programmer, 56 steps of program, minimum setting step of 1 minute
- Possible to program impulses (1s to 30min)
- Automatic change of schedule for summer/winter

Programming Key EG005
For programming the time switch
- Copy or saving the program
- Making circuit On or Off temporarily (blinking)
- Permanent priority settings On or Off (manual)

Sofware
- For programming from PC or on the product not connected in the system
- 5 years functioning reserve with lithium battery
- Bar graph display of day profile

Other Functions
- Impulse programming (1s to 30min)
- Presence simulation
- Back light screen
- Holiday mode - priority setting On or Off between two dates
- Possible to lock keyboard and programming by EG004 key

TXA023
- Can be synchronized on radio via signal DCF77 with help of EG001 antenna.
- Via bus, master timer can set time and date of TXA023

Installation
Programming is carried out by configuration device TX100GB via media coupler or by ETS.

For technical details see page 6.29.

TXA022

Time Switches

2 channel 7 day Function - ON/OFF, Up/Down, heating control scene selection, master or slave clock function. Product setting on current hour and day.

Description	Supply	Width	Cat ref.
Weekly Time Switch	Bus 30V DC	2 Mod	**TXA022**
Weekly Time Swtich with DCF Capability	Bus 30V DC	2 Mod	**TXA023**
Antenna for TXA023	-	-	**EG001**

EG004

Accessories

Description	Cat ref.
Locking Key (to stop unauthorised changing of the program)	**EG004**
Blank Programming Key (to save program from switch or software)	**EG005**
USB Adaptor and Interface Software (for transferring the program from the PC to the key)	**EG003U**
Storage Key Module (holds 3 keys)	**EG006**

EG006

Light sensitive switches are used for automatic control of indoor and outdoor lighting or for the control of blinds, or curtains or shutters according to ambient lighting.

Energy Saving
Maximises natural light resulting in energy savings.

Principal Applications
• Residential building - outdoor lighting
• Commercial and industrial sector - classrooms, offices, windows, car parking, etc.

Comfort
Light sensitive switch will avoid excessive light or will limit overheating of the premises by appropriately managing shutter or blind operation.

Assembly
Light measurement is carried out with the help of a photo resistive cell connected to the product.

The cell has two versions:
• Flush mounted ref. EE002
• Surface ref. EE003

Note: Switch and cell are required.

Installation
Programming is carried out by configuration device TX100GB via media coupler or by ETS.

For technical details see page 6.30.

TX025

Light Sensitive Switch

Control of indoor or outdoor lighting circuits (ON, OFF, Dimming) as well as the blinds, curtains or shutters according to the ambient light.

Measures ambient light via cell EE002 or E003 and transmits control command when preset level is reached. The information of the cell connected on TX025 can be shared via Bus with several other TX025. This makes several levels of regulation possible.

Description	Supply	Width	Cat ref.
2 Sensitivity Ranges: 2 to 200 lux, 200 to 20000 lux. Modes: Auto / Manual / Test. Potentiometer for level setting LED for set point crossing indication. Max. distance between cell and TX025: 100m (delivered without cell).	Bus 30V DC	2 Mod	**TX025**

EE002

EE003

Photo Resistive Cells for TX025

Description	Cat ref.
Flush Mounted Cell has 1m, 2 x 0.75mm^2 Cable	**EE002**
Surface Mounted Cell has 4m, 2 x 0.75mm^2 Cable	**EE003**

Used for automatic lighting control or heating of the premises based on occupancy and lighting level.
Principal applications - Offices, corridors, conference rooms, classrooms, etc

Functions - ON/OFF control, Up/Down control, heating control, scene selection, time delay and priority setting, setting dimming levels, Master/slave function.

The bi-directional detector head can be oriented at 90° to adapt the zone of detection depending on the configuration of the room.
A large area of detection - with the help of two integrated sensors, these products are able to detect movements in a large area and detect presence (person working in office) in a smaller area.
Products delivered with BCU (coupling unit to the bus)

2 Versions of Detectors
- 2 channel detector with On/Off control AND
- 1 channel lighting regulator detector (for maintaining constant light)

Installation
Programming is carried out by configuration device TX100GB via media coupler/ETS.

For technical details see page 6.31.

TX510

2 Channel Presence Detector 360°

Channel 1: Switching based on presence and lux level. Switching takes place when presence is detected and the lux level is below the set point. Lux level settings - 5, 100, 200, 300, 500, 800, On permanent, Delay off time - 1min to 30min Application - switching off lighting, blinds, curtains or shutters.

Channel 2: Switching based on presence only. Uses both delay on and delay off for switching. Delay off 30 sec > 10 mins - Delay on = 30 secs Delay off 10 mins ≤ 60 mins - Delay on = 5 - 60 mins

Application: heating, ventilation, etc.

Description	Dimensions dia. x depth (mm)	Supply	Cat ref.
Light intensity from 5 to 1200 lux Time delay for lighting Time delay for presence Area covered - 13x7m at 2.5m height	110 x 31	Bus 30V DC	**TX510**

TX511

1 Channel Presence Detector 360°

Associated with tebis dimmers, it is possible to maintain light intensity in a room at a constant level as long as there is presence in the room irrespective of changes in the natural lighting.

3 Operating Modes
- Mode 1 - Dimming inactive (only presence info used)
- Mode 2 - Dimming active as per light setting on product potentiometer
- Mode 3 - Dimming active.Lighting instruction can be changed by long push on communicating PB of presence detector

Description	Dimensions dia. x depth (mm)	Supply	Cat ref.
Light intensity from 5 to 1200 Lux Time delay for lighting Area covered - 13 x 7m at a height of 2.5m	110 x 31	Bus 30V DC	**TX511**

TCC510S

1 Channel Presence Detector 360°

Occupancy sensors TCC510S are presence detectors designed to detect low amplitude movements (movements from body or arms). Detection is by means of the pyroelectric IR sensor located under detection lens.

The occupancy sensor measures the brightness in the room on a continuous basis and compares it to the level preset on the potentiometer (or by means of the remote control EE807) by ETS parameter.
These products are part of the tebis installation system.

Configuration
- E-mode TX100 V.2.6.0 or >: detailed description in User's Instructions supplied with the configurer.
- S-mode ETS : Application software STCC510S. Database and description available from manufacturer.

Lux and time delay settings via EEK001 or potentiometers located on the device

Description	Dimensions dia. x depth (mm)	Supply	Cat ref.
Light intensity from 5 to 1200 Lux Time delay for lighting Area covered - 13 x 7m at a height of 2.5m	110 x 31	Bus 30V DC	**TCC510S**

Automation products provide commands in form of contacts. Input information such as rain, wind, sunrise, sunset, indoor and outdoor temperature, as well as commands from remote telephone interface are received and forwarded to input modules for controlling the outputs in the tebis system.

Wind detector - helps in protecting blinds and shutters in the event of strong wind by creating a closing command.

Weather station - it includes a sensor block and a modular unit for interpretation. It is a complete system with input sensor, processing and weather data transmission.
It also integrates a weekly programmer equipped with DCF77 antenna.

TG050

Wind Detector

Helps protect blinds in the event of strong wind. Consists of an anenometer and electronic box. Use with the tebis system - contact of anenometer can be connected to input module TXA304 and TXA306. (For further details see page 6.26).

Description	Dimensions dia. x depth (mm)	Supply	Cat ref.
Level of detection adjustable from 5 to 55km/h (Factory preset to 25km/h)	110 x 31	230V AC 50 Hz	**TG050**

TH020B

Telephone Gateway
3 Inputs, 3 Outputs

- Remote control : 3 relay outputs
- Status indication : for each output
- User friendly voice guide in English
- Remote alarm detection and sending of voice messages to 3 programmed telephone numbers
- Recording of your own messages
- Voice messages for room temperature indication possibility to use together with an answering machine on the same telephone line
- Personal secret code to limit access to the device
- Timed switch-off of the relay output (from 1 second up to 59h 59min 59sec)

Description	Width (mm)	Supply	Cat ref.
Analog telephone line (PSTN) 48VDC 3 relay output 5A-250V AC1 1 temperature measurement CTN 10 kOhm 2 alarm inputs : 1 input 0-30VAC/DC 5mA min 1 input 0-230V AC 5mA min Power shutdown detection	5 Mod	230VM ±15% 50/60 Hz	**TH020B**

Environment
Working temperature : 0/+50°C
Storage temperaure : -20/+70°C
IP 30, IK03

Connection
Flexible 2 x 2.5mm^2 max
Rigid : 2 x 2.5mm^2 max

These products serve as output interfaces for the tebis system. They ensure the control of the electrical devices by taking commands transmitted by the input products.

Lighting output products allow control of all types of devices by On/Off control or dimming. Without modifying the wiring, it is possible to achieve:
- On, Off or dimming controls in individual and grouped or general controls
- Functions such as time delays, priority settings, scene selection or multi-applications.

All the output modules are equipped with output status display and with a manual override setting on front of the product.

For control of:
- Lighting
- Heating
- Power outlets
- Any load controlled by a simple contact

Note: Refer to technical information for de-rating for alternative load types.

For technical details see page 6.32.

TXA204C

TXA206D

TXA207C

Lighting and Heating

Functions:
- ON / OFF & ON / OFF Override
- LED indication of each output state
- High end timer function
- Full quick connect connections
- Full symmetrical top down cross through connections
- Large front labelling
- Local on device hand override, permanent or time limited

Description	Nº of Volt-Free Contacts	Supply (twisted pair)	Width (mm)	Cat ref.
16A AC1	4	Bus 30V DC	4 Mod	**TXA204C**
4A AC1	6	Bus 30V DC	4 Mod	**TXA206A**
10A AC1	6	Bus 30V DC	4 Mod	**TXA206B**
16A AC1	6	Bus 30V DC	4 Mod	**TXA206C**
16A AC1 / 1500W - 140µF adapted for parallel compensated fluorescent tubes	6	Bus 30V DC	4 Mod	**TXA206D**
16A AC1	10	Bus 30V DC	6 Mod	**TXA207C**

Dimmers
TXA210N, TXA210ANN, TXA213N, TXA215
Universal dimmer with automatic load recognition.
Min/Max level local setting.
Manual mode that allows dimming even when the bus is disconnected.

Easy mode: (TX100GB)
Implementation of the channel dimming actuator scene.

S-mode: (ETS software)
Easy channels features
32 light scenes with a related scene speed.
Fixing of output state when bus is disconnected.
Enhanced override modes (forced).

TXA210N Universal dimmer 1 channel 600W
TXA210ANN Universal dimmer 1 channel 300W
TXA213N Universal dimmer 3 channels 300W

3 modes possible :
- 3 channels 3 x 300W
- 2 channels 600W / 300W
- 1 channel 900W

TXA215 Universal dimmer 1 channel 1000W
Dimmer with LCD display
Local setting of the dimming parameters (min/max, soft ON, soft OFF, dimming speed) and light scenes.
8 light scenes that can be activated locally.

For technical details see page 6.33 - 6.34.

TXA210N

1 Channel Universal Dimmer 600W

Description	Width	Cat ref.
600W Incandescent / Halogen 600VA ELV Halogen associated with electronic or ferromagnetic transformer 120W LED /dimmable compact fluorescent	4 Mod	**TXA210N**

TXA210AN

1 Channel Universal Dimmer 300W

Description	Width	Cat ref.
300W Incandescent / Halogen 300VA ELV Halogen associated with electronic or ferromagnetic transformer 60W LED /dimmable compact fluorescent	4 Mod	**TXA210AN**

TXA213N

3 Channel Universal Dimmer 300W

3 channel dimmer that can be used as 3 x 300W, 600W/300W or 900W, selector on device

Description	Width	Cat ref.
300W Incandescent / Halogen 300VA ELV associated with electronic or ferromagnetic transformer 60W LED /dimmable compact fluorescent	6 Mod	**TXA213N**

TXA215

1 Channel Universal Dimmer 1000W

LCD display used to indicate the dimming level and to set the dimming parameters min, max, diming speed, soft on, soft off, scenes

Description	Width	Cat ref.
1000W Incandescent / Halogen 1000VA ELV Halogen associated with electronic or ferromagnetic transformer	6 Mod	**TXA215**

TX211

Output Modules for Variable Lighting (Dimmer Control)

For lighting loads requiring 1/10V dimming signal. Functions include ON/OFF and variation in lighting/ dimmer control.

Description	Width	Cat ref.
3 Outputs 1/10V	4 Mod	**TX211**

These products serve as output interfaces for the tebis system. They ensure opening and closing control of shutters, roller shutters, curtains, blinds, flaps etc. They interpret commands such as Up, Down, priority setting for Up or Down and Wind detection commands transmitted by input modules. All the output modules are equipped with output status display and with a manual override setting on the front.

Note:
- Shutter output modules will open and close KNX/EIB compatible acutators
- Blind output modules will open, close and incline the slats of KNX/EIB compatible actuators

For technical details see page 6.36.

TXA223

TXA224

Output Device for Shutters or Blinds

For control of roller-shutter curtains or venetian-blinds motors, KNX/EIB

Functions:
- UP/DOWN
- Blind inclination and STOP
- UP/DOWN/STOP manual override
- LED indication of each output state
- Wind security functions
- Blocking
- Priority
- Scenes
- After bus failure position

Description	Width	Cat ref.
4 Shutter Outputs 230V	4 Mod	**TXA223**
4 Shutters or Blind Outputs 230V	4 Mod	**TXA224**
4 Shutter Outputs 24V DC	4 Mod	**TXA225**
4 Shutter or Blind Outputs 24V DC	4 Mod	**TXA226**

Thermostat TX320
Continuous room temperature regulator, featuring real-time temperature measurement, capable of sending an adjustment value to a servo or actuator, so to achieve the desired room temperature. It can control both heating device and air-conditioners.

Heating ouput, 6 channels
This device is designed for installation into a hot water circulation system, to control a 24V valve servo, e.g.: floor heating facilities. Output switching utilises a Triac so that noiseless switching can be achieved.

Valve Control Servo
This servo has a bus connection, which can be directly installed onto the universal valve of the radiating heaters. The corresponding valve servo and motorized device is controlled via the room temperature controller.

For technical details see page 6.35.

TX320

Thermostat

Features:
- Power supply: 30V DC
- Measuring range: 0ºC to 40ºC
- 3 external contact points used for measuring input terminals, such as window magnetic contact points

Function:
- Heating / Cooling
- 2 step heating - Primary and Supplementary
- Work mode: Comfort, Standby, Night time, Frost / Overheat protection
- Switch, Light dimming, Blinds control

Description	Dimensions h x w x d (mm)	Cat ref.
Thermostat	27 x 84 x 80	**TX320**
Floor temperature sensor for TX320	-	**EK087**
Outside temperature sensor for TX320	-	**EK088**

TX206H

Heating Valve Controller (6 Channels)

Features:
- Power supply: 230V power socket
- System voltage of 30V DC
- 6 channel for 24V heating valves (max 13 valves/channel)
- 6 channel output

Function:
- Adjusting value in %
- Override service
- Summer operation

Description	Dimensions h x w x d (mm)	Cat ref.
Heating valve controller (6 channel)	70 x 755 x 302	**TX206H**

TX502

Valve Control Servo with Room Temperature Regulator

Features:
- Power supply: 30V DC
- Property: 5 LED used to display servo locations
- Interface: 1m, 6-core cable is included

Function:
- Automatic regulating apparatus and temperature collection apparatus
- Work mode: Comfort, Standby, Night time, Frost
- Orientated start up
- Forced service
- Summer operation

Description	Dimensions h x w x d (mm)	Cat ref.
Valve control servo with room temperature regulator	70 x 755 x 302	**TX502**

RF input modules of EIB/KNX are used as interfaces for volt free contact and switches or conventional pushbuttons. Using these modules it is possible to control the electrical devices connected in the network by transmitting an RF signal. They can control RF output modules as well as TP wired products with the help of the media coupler TR131B. These products are particularly useful for renovating or extending existing installations.

2 or 4 inputs - 230V or Battery Operated
These input modules are available in following versions
- 2 or 4 input module version - flush mounted
- With power supply of 230V AC or with battery.

Operating temperature : 0°C to 45°C

Installation
Link allocation is to be done by configuration device TX100GB. These products can also communicate with TP wired products with the help of media coupler TR131B.

General Characteristics of the Radio System
Frequency - 868.3 MHz
Range - variable according to the environment - up to 30m indoor, 100m in free air. Noise measurement is possible by TX100GB.

RF System
- Maximum number of RF products = 256
- Maximum number of RF input translations by the media coupler to twisted pair output products = 63

For technical details see page 6.37.

TR304A

RF Input Modules (Battery Operated)

Frequency: 868.3 MHz
Power supply: Lithium battery CR1/2 AA 3.0V (Life 5 Years)
Transmission indicated by LED, for one way transmission

Functions:
- ON/OFF, dimming
- Up/Down + alarm - priority setting
- Scenarios

Description	Dimensions dia. x depth (mm)	Cat ref.
2 KNX Input Modules For 2 Volt Free Contacts	50 x 16mm	**TR302A**
4 KNX Input Modules For 4 Volt Free Contacts	50 x 16mm	**TR304A**

TR304B

RF Input Modules (230V)

Frequency: 868.3 MHz
Power supply: 230V AC 50Hz
Transmission indicated by LED, for one way transmission

Functions:
- ON/OFF, dimming
- Up/Down + alarm - priority setting
- Scenarios

Description	Dimensions dia. x depth (mm)	Cat ref.
2 KNX Input Modules For 2 Volt Free Contacts	52 x 30mm	**TR302B**
4 KNX Input Modules For 4 Volt Free Contacts	52 x 30mm	**TR304B**

Radio push-buttons and remote controls enable easy addition of control points without wiring work. They are suitable for all situations : new systems, renovations or post installation. These products are included in tebis system. They control both radio output modules as well as twisted pair products via TR131B.

Radio Push-Buttons
These are unidirectional radio emitters in the KNX standard. They exist in 2, 4 or 6 ways in surface mounting boxes of white or silver colour.

Solar Radio Push-Button
Does not require replacement batteries.

Radio Remote Control
These are portable radio emitters of EIB/KNX standard. The remote controls are available in 4, 8 and 24 ways.

Putting Into Service
Allocation of the links is carried out by TX100GB configurator. These products also communicate with twisted pair products via the TR131B bus radio / twisted pair

General characteristics of the radio system
- Frequency : 868.3 MHz
- Range : it is variable according to the environment : up to 30m inside, up to 100m in free air.

Working temperature : 0°C to +45°C

A measurement of the signal interference is possible by TX100GB

RF system
- Maximum number of RF products = 256
- Maximum number of RF input translations by the media coupler to twisted pair output products = 63

For technical details see page 6.38.

TD210

Push-Buttons with and without Label Holders Radio KNX

Power supply: C2430 3.0V Battery Cells (Life 3 Years)
Unidirectional products: Emitter
Transmission indicated by LED

Functions:
- Start/Stop, Dimming
- Up/Down + Alarm
- Override
- Scenarios

Description	Colour	Dimensions (mm)	Cat ref. without labels	Cat ref. with labels
2 Way Push-Button Keys	White	80.5 x 80.5 x 12	**TD100**	**TD110**
2 Way Push-Button Keys	Silver	80.5 x 80.5 x 12	**TD101**	**TD111**
4 Way Push-Button Keys	White	80.5 x 80.5 x 12	**TD200**	**TD210**
4 Way Push-Button Keys	Silver	80.5 x 80.5 x 12	**TD201**	**TD211**
6 Way Push-Button Keys	White	80.5 x 80.5 x 12	**TD300**	**TD310**
6 Way Push-Button Keys	Silver	80.5 x 80.5 x 12	**TD301**	**TD311**

TD251

KNX Solar Push-Button

Description	Colour	Dimensions (mm)	Cat ref. without labels
4 Way Push-Button Keys	White	80.5 x 80.5 x 12	**TD250**
4 Way Push-Button Keys	Silver	80.5 x 80.5 x 12	**TD251**

TU404

KNX Radio Remote Controls

Power supply: CR 2430 3V Lithium Battery Cell (life 3 years)
Unidirectional products: Emitter
Transmission indicated by LED

Functions:
- Start/Stop, Dimming
- Up/Down + Alarm
- Override
- Scenarios

Description	No of Keys	Cat ref.
2 Channel Remote Control	2	**TU402**
4 Channel Remote Control	4	**TU404**
6 Way Remote Control	6	**TU406**
18 Way Remote Control	6 + 1	**TU418**

The RF EIB/KNX input/output modules are used as an interface between volt free contacts of switches or conventional pushbuttons at input level and electrical devices at output level for direct control. These products are able to communicate with other RF or TP wired products (via media coupler TR131B). They are particularly useful for renovating or extending existing installations.

1 Input + 1 Output 10A
For creating simple lighting functions for integrating in a group, general controls or other scenario functions by simple programming.

2 Inputs + 1 Output Shutter/ Blind
For creating shutter control function for integrating in a group, general control or other scenario functions by simple programming.

Installation
Link allocation is carried out by configuration device TX100GB. These products also communicate with TP wired products with the help of media coupler TR131B.

General Characteristics of RF System
Frequency - 868.3 MHz
Range - variable according to the environment - up to 30m indoor, 100m in free air.
Noise measurement is possible with the TX100GB.

RF System
- Maximum number of RF products = 256
- Maximum number of RF input translations by the media coupler to twisted pair output products = 63

TR501

1 Input + 1 Output 10A

Product supplied with input/output module pre-configured for control of the connected output.
Power supply: 250V AC 50Hz

Functions of Input:
- ON/OFF, Dimming
- Priority Setting
- Scenarios

Functions of Output:
- ON/OFF Control
- Time Delay
- 8 Scenes
- Priority Setting

Description	Dimensions dia. x depth (mm)	Cat ref.
Bidirectional Product for Transmitting and Receiving 1 Volt Free Input for Push-Button Switch 1 Output 10A AC1 230V AC For manual control by TX100GB Output status display by LED	56 x 30	**TR501**

TR521

2 Inputs + 1 Output Shutter/Blind

Product supplied with input/output module pre-configured for control of the connected output.
Power supply: 250V AC 50Hz

Functions of Input:
- Up/Down by brief push > 400ms

Output for Shutter Motor:
- Scenarios

Functions of Output:
- Up/Down Control
- Inclination of Flaps
- Alarm Security for Wind, Rain
- Time Delay
- 8 Scenes
- Priority Setting

Description	Dimensions dia. x depth (mm)	Cat ref.
Bidirectional Product for Transmitting and Receiving 2 Inputs Volt Free Contacts 1 Output 6A AC1 230V AC Output status display by LED	52 x 27	**TR521**

RF KNX output modules take commands transmitted by input modules. They interface between commands and electrical equipment.
These bidirectional products are able to communicate with all other RF or TP wired products (via media coupler TR131B). They are particularly useful for renovation or for equipment already installed.

1 RF Output 16A
This flush mounted module helps control circuits of lighting, VMC, heating, solenoid valves, etc.

Expansion
All RF output products can be integrated by simple programming, in zone group control, general or centralised controls and in scenarios functions.

Installation
Link allocation is carried out by configuration device TX100GB.
These products can also communicate with TP wired products via media coupler bus/ radio TR131B.
General characteristics of the radio system

Frequency - 868.3 MHz
Range - variable according to the environment - up to 30m indoor, 100m in free air.
Noise measurement is possible with the TX100GB.

RF System
- Maximum number of RF KNX products - 256

For technical details see page 6.39 - 6.40.

TR210

1 Flush Mounted Dimming Output 200W

For remote control of dimmable lighting.
Power Supply: 230V
Frequency: 868.3MHz

Functions of Output:
- ON/OFF control
- Dimming 0-100%
- LED Indication of each
- 8 Scenes

Description	Dimensions dia. x depth (mm)	Cat ref.
Max. load with incandescent lamps 200W - 45°C Max. load with 230V halogen lamps 200W - 45°C Max. load with halogen ELV lamps via ferromagnetic transformer 200VA - 45°C Max. load with halogen ELV lamps via electronic transformer 200VA - 45°C Bidirectional product	52 x 30	**TR210**

TR221

Output Device for Shutter/Blinds

For the control of shutters, blinds or blinds with bidirectional flaps.
Power Supply: 230V AC 50Hz

Functions of Output:
- Up/Down control
- Inclination of flaps
- Alarm security wind, rain
- Time delay
- 8 Scenes
- Priority setting

Description	Dimensions dia. x depth (mm)	Cat ref.
Two way product for transmitting and receiving Output for 1 motor Push-button switch 6A AC1 230V AC Manual control by TX100GB Output status display by LED	52 x 27	**TR221**

Features
The tebis.KNX domovea visualisation and control system connects the tebis.KNX bus system with the IP world.

This is provided by the energy efficient domovea server with modular design, which is housed within the distribution boar.

All data on the server can be accessed from any connected Windows® compatible client, whether it be a conventional PC, laptop or wallmounted touch panel. The same functionality can be used as a software solution, without any hardware. Internet access is ensured via the Hager Portal.

Advantages
- Server in modular form or as a software solution
- Able to be updated via USB interfaces
- Intuitive user interface for display and control of:
  - Lighting
  - Blinds and roller shutters
  - Heating control
  - Graphic display of energy consumption
  - Connection of IP cameras
  - Integrated logic and sequence module
  - Worldwide access via the domovea Internet portal (www.domovea.com)
  - iPhone & Android App for local or remote use.

TJA451

domovea system package

Consists of TJA450 domovea server with remote access & TGA200 power supply

Description	Cat Ref.
Domovea system package for installation of domovea in a KNX/IP environment	**TJA451**

TJA450

domovea server including software

- Power supply: 24 V DC
- Connections: KNX connectors, 3x USB 2.0, Type A Jack & RJ45 Connection
- Quickconnect
- Configuration software and client on supplied USB memory stick

Description	Width	Cat Ref.
domovea server including software	6 Mod	**TJA450**

TGA200

Power supply

Description	Width	Cat Ref.
Power supply 230V AC, 50 Hz - Output voltage 24V DC Output current 1A 4 PLE	4 Mod	**TGA200**

domovea Apps

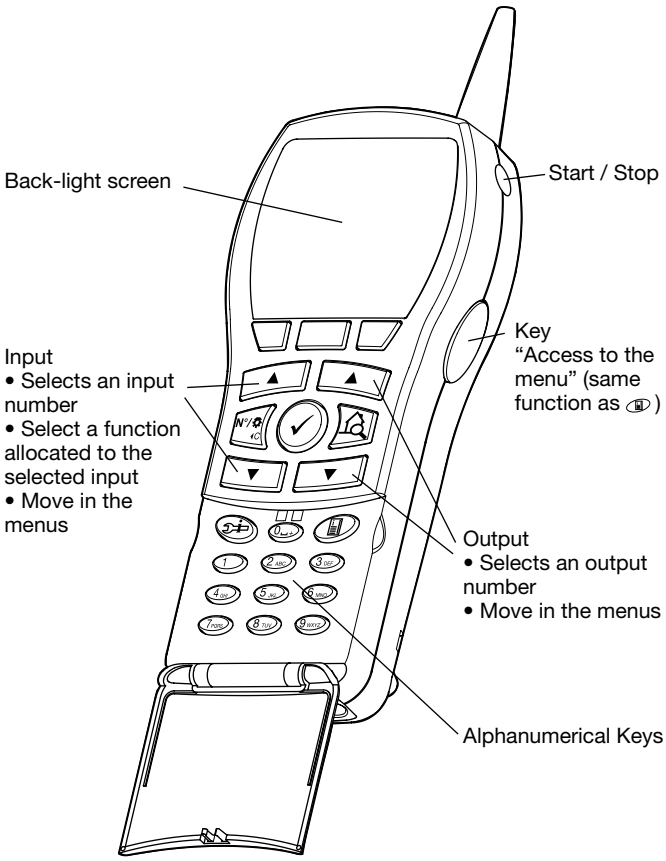
Apps can be downloaded from either the Apple App Store or Google Play Store

Description	Cat Ref.
iPhone	Download on the App Store
iPad	Download on the App Store
Android	ANDROID APP ON Google play

TX100GB configurator

The TX100GB portable configurator is the tool which programs the desired functions and displays the links between all the products being found in an installation : wire products and/or unidirectional or bi-directional radio system. If the system contains wire products, it is necessary to use the media coupler TR131B. A USB flash drive inserted in TX100GB backs-up all the data relating to a system.

Description of the keys



Description of the keys:

Screenkeys
Function of each key is indicated on the screen above them, the function changes depending on the screen

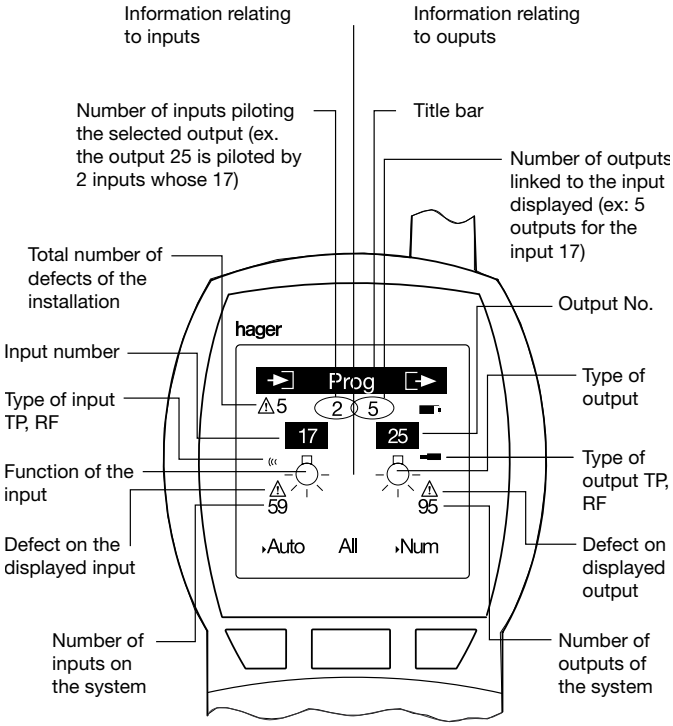
- Validates the operation in progress
- Selects the menu
- Validates the entry

- Change the function of the keys on the left (selection of either an input number or a function) return to the previous menu

- Activates the selected output
- Starts the numbering of the outputs of the installation

- Access to the help screens for installation

- Access to menus



Description of the symbols:

- Battery charge level
- Output
- Input
- Radio product
- Wire product
- Preparation of a link
- Link established
- Delete a link

Sound

- A single “beep” indicates a successful operation
- A double “beep” indicates an unseccessful operation

Expert Tip

There are 2 ways to select a channel :

• Selection of an input by acting on the appliance that control it : push-button, switch or remote control. Selection of an output by acting on the manual control of the output product.

• Selection of the inputs or outputs with TX100GB by their numbers with the help of keys

Radio system
The TR radio system (to KNX standard) exists in input products, output products and products with combined input/output. They communicate between themselves by using the 868 MHz radio frequency. The products are classified into 2 categories :
- The unidirectional input products : they are only emitters and have only information sent.
- The bidirectional products : they are both emitters and receivers and can thus send and receive information.

These latter ones can also be configured as radio repeaters by TX100GB to increase globally the reliability of the transmission.

Supply of radio system is done, in the following way :
- By 230V mains
- By a battery cell

In an installation containing only radio system, the configuration is done only with TX100GB configuration tool; the media coupler is not used.

The products with combined input/output are pre-programmed; for example for a 2 input products and 1 output or control of roller shutters, the basic functions as for example up/down are preregistered. Only modification of functions, as for example to carry a centralized control, need the use of TX100GB.

Radio range (indicative data) :
- in open field : 100m
- Inside a building : up to 30m

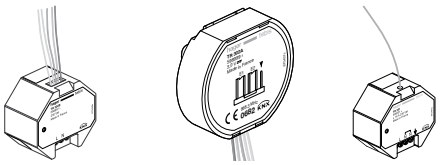
A pure radio system can contain **up to 250 TR products.**

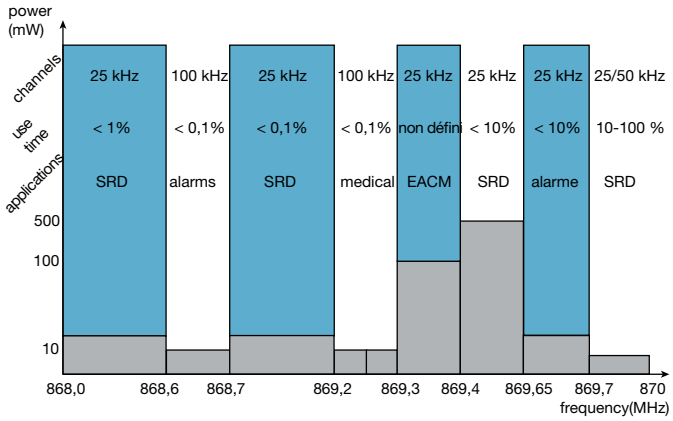
The MHz 868 : a dedicated frequency
The frequency used is 868 MHz. This frequency is harmonized at the European level. There are 2 levels emission power :
- Repeater products : 25mW maximum
- Battery cell products : 10mW maximum

As comparison, a portable telephone emits with a power of around 2000 mW.

It is to be noted that the regulator authorities have specially attributed the band of 868 MHz to building automation and home automation : the occupation or “duty cycle” rate is predefined and thus avoids the saturation problems of the band. The 868 MHz is outside ISM bands and cannot be thus saturated by permanent emissions (headphones for example).

Topology 2 :
tebis radio system

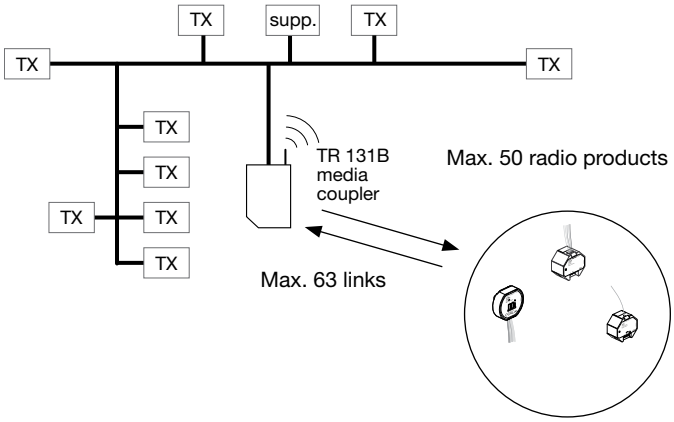




Combined system : Wire + Radio
The combined system needs to put in place a TR130B media coupler to transmit the messages of wire products to the radio system and vice versa.
For systems which contain both wire and radio products, the information given above for topics 1 and 2 remain valid. But you must take into account the following limitations :
- Maximum of 63 products of 250 possible radio systems can communicate with TP wire products.
- Maximum 50 links can be established from the wire part to the radio part.
- 1024 channels are available and distributed in 512 channels of inputs and 512 channels of outputs.

Example :
6 output products = 6 channels
4 input products = 4 channels
2 input radio products = 2 channels

Topology 3 :
Mixed tebis system containing both twisted pair and radio products



Topology and architecture of a system
Each installation consists of input and output products which can be wire or radio.
For wire products, a TXA111 bus supply must be installed.
Media and communication support :
- Wire products : use of the bus cable (2 x 2 x 0,8mm)
- Radio system : the link is done by 868 MHz reserved radio frequency

Topology 1 : Wire installation
Each tebis product can exchange Information with all other tebis products connected to the bus cable. Supply of bus is done in continuous 30V DC SELV.

The right side outline gives the maximum lengths of the bus cable with a TXA111 supply.

The following values must not be exceeded :
- Total maximum length : 1000m
- Maximum distance between twisted pair 2 products : 700m
- Maximum distance between supply and a product : 350m

The above data define an EIB line. Each EIB line needs a supply and can have up to 64 communicating products.

Role of the TA008 line coupler
The line coupler “expand” and put back into form the signals on the bus cable and allow to extend the system. Thanks to the coupler the primary line can be extended up to 3 times.

Maximum limit of an “extended” line:
The diagram on the right shows the maximum limits of the system with 4 supplies and 3 line couplers. The lengths of different elementary lines remain the same but at the end, the following
- Total maximum length : 4 x 1000 m
- Maximum distance between 2 products on the same line : 700 m
- Maximum distance between supply of an elementary line and any product of the same elementary line : 350 m

You can thus install at the maximum 4 x 64 = 256 TX products

Role of the TR131B
In the configuration phase of the installation, the TR131B is the interface between the TX products, connected among themselves by the bus cable and TX100GB radio configuration tool.

After putting into service, the TR131B can be withdrawn and reused to configure other systems.

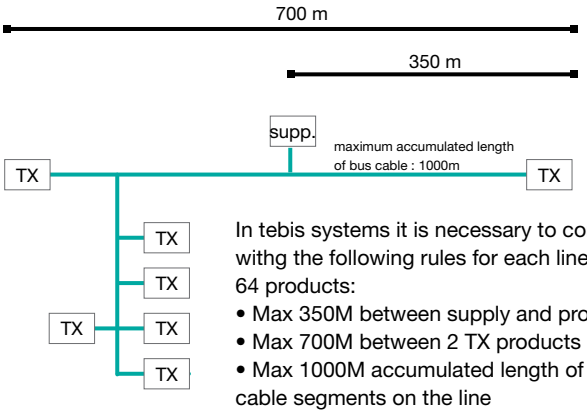
Nevertheless in case of modification of the system or for maintenance needs it will be necessary to reinstall again the media coupler, that is why, **we recommend leaving TR131B in the system.**

Several system architectures can be found :

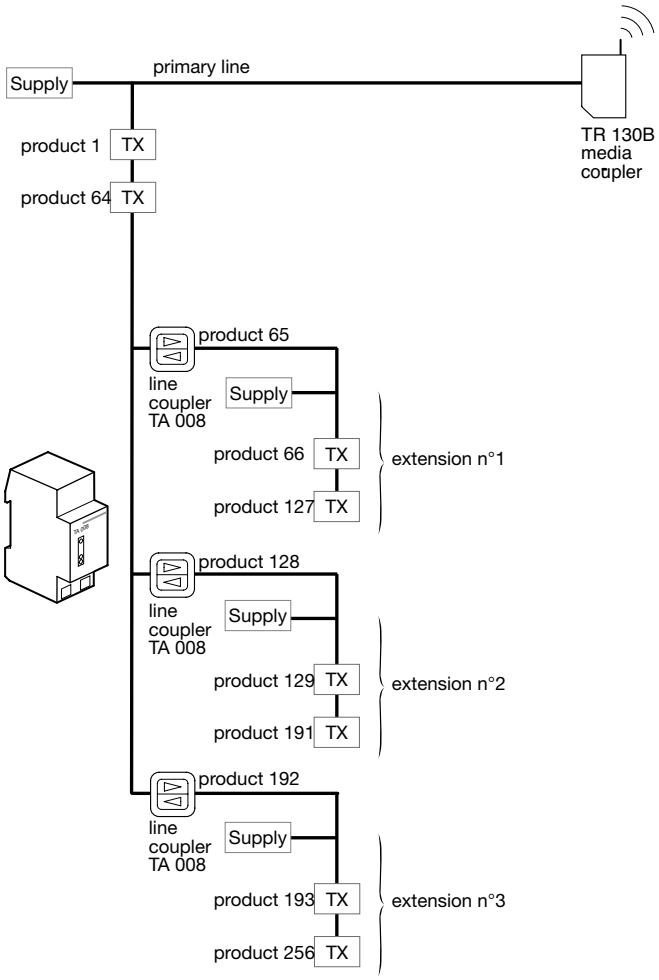
1. fully wire systems
2. fully radio systems
3. combined wire and radio systems

The topologies corresponding to these 3 types of systems are described below :

tebis Wire System
Extension of a tebis system using wire products



In tebis systems it is necessary to comply withg the following rules for each line of the 64 products:
- Max 350M between supply and products
- Max 700M between 2 TX products
- Max 1000M accumulated length of all bus cable segments on the line



You can extend a line and install more than 64 products by using line couplers and additional supplies (maximum 3).

Note: Power supplies do not count as product, but line couplers do.

Description of the system
tebis is a flexible and functional electrical installation for lighting control, roller shutters and adjustment of the temperature room by room. From the implementation point of view, the main difference in relation to a conventional system is the separation of the control and power.

The controlled loads, for example lighting, roller shutters, controlled sockets, are to the output products, themselves connected to connected upstream protection devices. It is no longer necessary to connect from various 230V switch wires from switches, push buttons, to the controlled loads.

The input products implement the orders of the user (pushbuttons, detectors,....) they are interconnected by a unique bus cable distributed star-shaped or in a continuous loop, or by radio frequencies.

tebis therefore carries out, the functions required by simple programming and creation of links between input and output products.

The cabling phase of a tebis system is independent from the programming phase of the functions.

The designing of a system is simplified by allowing a flexible adaptation to customer demands.

Composition of the system
Each installation consists of input products and output products which are interconnected either:
- By bus cable : called also wire link (or cable pair) or twisted pair
- By radio : called also RF link (or radio frequency), in 868 MHz

Several system types may be implemented:
- Completely “bus” wire systems with TX products
- Completely radio systems with TR-TU-TD products
- Combined systems, combined twisted pair and radio products

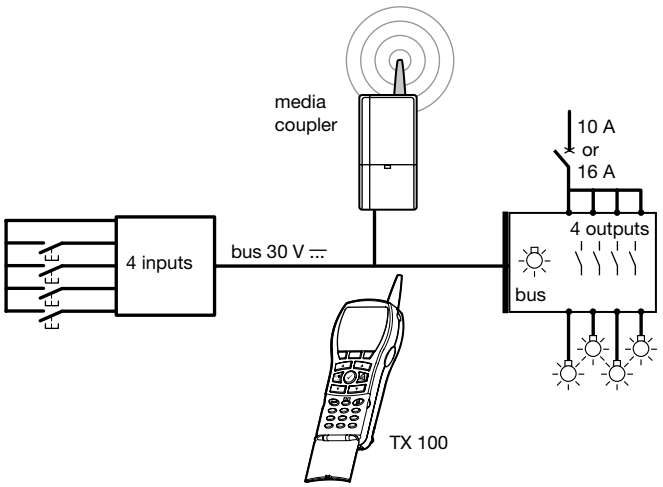
Configuration and commissioning
For configuration, the TX100GB radio configuration tool and TR131B media coupler are used. The configuration information of the system is safeguarded in a standard USB flash drive, placed in TX100GB.

The configuration can be done very easily with the TX100GB portable radio tool : room by room, product by product or function by function.

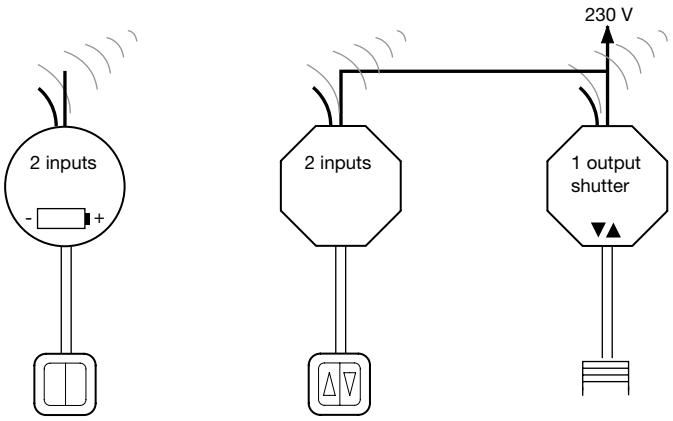
System products are used in the following manner for the system type implemented:

Wire system principles
The bus products are supplied by safety very low voltage bus.
The configuration needs TX100GB configurator and TR131B media coupler.

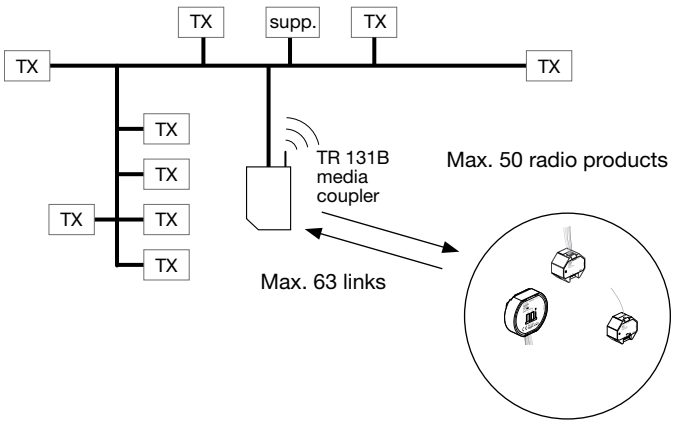
After configuration the media coupler can be removed and used for another project but needs to be reinstalled if later modifications are required.



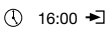
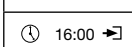
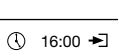
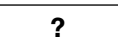
Radio system principles
The radio products are powered by the mains or a battery .
The configuration is carried out directly with TX100GB and the radio products (without media coupler).



Combined system (bus+radio) principles
The configuration is carried out with TX100GB and TR130B media coupler. In this case, it is necessary to leave the media coupler in place to ensure communication between wire and radio.



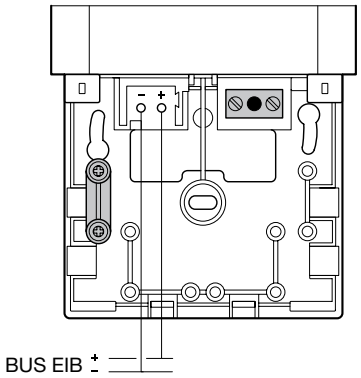
Symbol and Function

Applications	Symbols	Control Type	Control Product
Lighting		Switching on only	Automatic contact or push button, or TX512, TXA023, TX025
		Switching off only	Automatic contact or push button, or TX512, TXA023, TX025
		Switch type ON/OFF	Automatic contact or push button, or TX512, TXA023, TX025
		Remote break type ON/OFF	Push button
		Remote break type ON/OFF for unidirectional products	RF Push button
		Increase the dimming level	Push button
		Decrease the dimming level	Push button
		Dimming on push button	Push button or detector, TX511, TXA023
		Priority setting STOP	Automatic switch or contact, or TX510, TXA023, TX025
		Priority setting START	Automatic switch or contact, or TX510, TXA023, TX025
		Timed start - delay before ON	Automatic switch or contact, or TX510, TXA023, TX025
		Timed stop - delay before OFF	Automatic switch or contact, or TX510, TXA023, TX025
		Lighting level 25%, 50%, 75% or 100%	TX510, TXA023, Tx025
Blinds/ Roller Shutters		Push button type UP	Push button
		Push button type DOWN	Push button
		Push button type UP-DOWN	Push button
		Switch type UP-DOWN function	Automatic switch or contact, or TX510, TXA023, TX025
		Swtich type UP function	Automatic switch or contact, or TX510, TXA023, TX025
		Switch type DOWN function	Automatic switch or contact, or TX510, TXA023, TX025
		Override UP	Automatic switch or contact, or TX510, TXA023, TX025
		Override DOWN	Automatic switch or contact, or TX510, TXA023, TX025
		Wind safety	TG050 air safety detector
Heating		Comfort	Temp. regulator, TX510 automatic push button or contact
		Eco	Temp. regulator, TX510 automatic push button or contact
		Comfort / Eco	Temp. regulator, TX510, TXA023 automatic contact
		Frost free or without frost	Temp. regulator or automatic contact TX510, TXA023
		Stop override	Automatic switch or contact or TXA023
		Comfort override	Automatic switch or contact or TXA023, TX510
		Eco override	Automatic switch or contact or TXA023, TX510
		Timed comfort	Push button or detector TX510-TX511
		Timed eco	Push button
TXA023 Clocks		Master clock	Diffusion TXA023 of the hour on the bus for synchronizing the slave clocks
		Slave clock	TXA023 synchronization on the hour emitted by the master clock
TX025 Photo electric switch		Master photocell switch	TX025 light sensitive switch (master) spreads on the bus the light intensity measured by the cell
		Slave photocell switch	TX025 light sensitive switch reads the light intensity measured by the cell and broadcasted by the master light sensitive switch
TX450A TX450B Ambient controllers		Display zone on the room controller (1 to 4)	Each zone (1 to 4) can display information (temperature hours, date) as well as states or measurements (lighting, heating, physical measurements or functions)
		Logical function	Creation of logical functions for displaying information on the system
All Applications	?	No function	
		Scenario 1 to 8	Push button

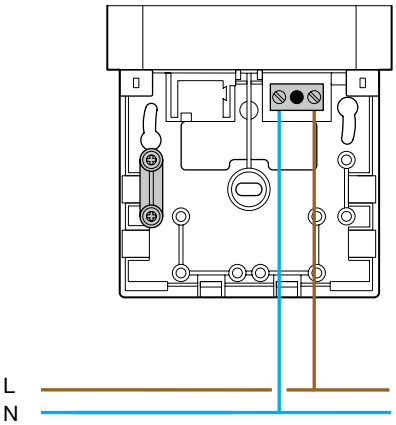
Technical Characteristics

	TX100GB	TR131B	TX140B
Supply	4 batteries or LR6 battery cells	bus: 30V/DC	4 outputs (230V, 50Hz phases)
Batteries	Ni-Mh 1.2V 1950mAh	-	-
Battery cells	1.5V alkaline	-	-
Working autonomy	AA 230V / 9V 1A charger type	-	-
Consumption	0.5A (per appliance)	-	-
Loss of Max. power	2W (per appliance)	-	-
Functioning autonomy	8 hours	-	-
Max recharge time	3h 30 mins	-	-
Broadcast frequency	868.3 Mhz	868.3 Mhz	868.3 Mhz
Broadcast power	Max. 10mW	Max. 25mW	Max. 25mW
Safeguard	USB flash drive	-	-
Working temperature	0°C to +45°C	0°C to +45°C	0°C to +45°C
Storage termperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Ingress protection	IP 20	IP30	IP40
Weight	340 g		
Size	75 x 169 x 34.9mm	203 x 77 x 26.5mm	203 x 77 x26.5 mm
Antenna	52mm	52mm	52mm

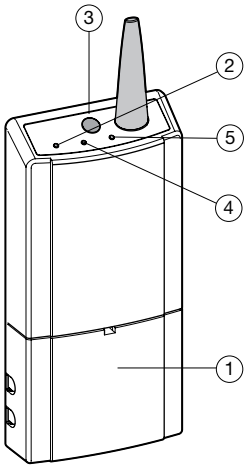
Electrical connection
TR131B



TR140B



Introduction of TR131B
Media coupler



① Cover

② Pairing button : pairing with TX100GB (to be activated when synchronising with TX100GB : Select the coupler by pressing on its pairing button for a period of 4 up to 10 seconds)

③ Physical addressing light

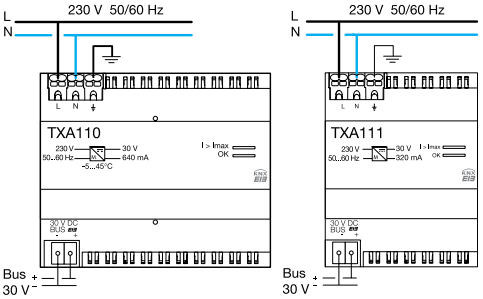
④ EIB / KNX communication light bus/radio

TXA112, TXA111 Supply Modules

Functioning principle
This module is the supply source of the bus.
The output voltage is of the ELV 29V type.

	TXA112	TXA111
Power voltage	230 V 50/60Hz	230V 50/60Hz
Output voltage	29 V 640 mA	29 V 320mA
Absorbed power	24 VA	15 VA
Connection:	Push fit	Push fit
Flexible	1.5mm²	0.75 to 2.5mm²
Rigid	2.5mm²	0.75 to 4mm²
Size	4 Modules	4 Modules
Working temperature	-5°C to +45°C	
Storage temperature	-20°C to +70°C	

Electrical Connection TXA112, TXA111



TG050 Wind Safety Detector

Composition of the products:
- An anemometer and its fixing support,
- Weatherproof interface box,
- The fixing screws of the box (piercing Δ 6 mm).

Electrical characteristics:
- Supply voltage : 230V 50 Hz,
- Contact type (wind safety) : 230V 4A (protection by slowed 4A fuse)

Functional characteristics:
- Wind speed threshold adjusting : up to 55km/h per potentiometer factory setted 25km/h)
- Reaction time at the threshold excess : 3 seconds (5 seconds max.)
- Wind blocking time : 10 minutes (fixed)

Environment:
- Class II insulation
- IP65 protection index
- Working temperature : -25°C to + 50°C.

Connection:
Capacity : 0.5 to 2.5mm²

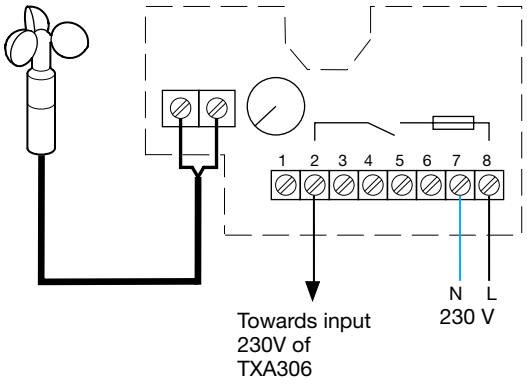
Overall size:
- Size of weatherproof box (overall) : 80 x 100 x 52mm
- Centre distance from fixing : 90mm

Working Principle
To exploit the wind safety function with the tebis.KNX system, it will be necessary to link the contact of the anemometer to an input of the TXA306 module and programme the wind safety link with the configurator. The TG050 wind safety detector is used as protection device for blinds against gusty winds.

If the speed of the wind measured by the anemometer exceeds for 3 consecutive seconds a threshold adjusted by potentiometer, the total assembly of the blinds is launched instantaneously and the blinds are maintained in high position for 10 minutes at the minimum.
(other controls become inactive)

If the speed of the wind has weakened sufficiently after 10 minutes, the wind safety is deactivated; the control of the blinds is authorized again.

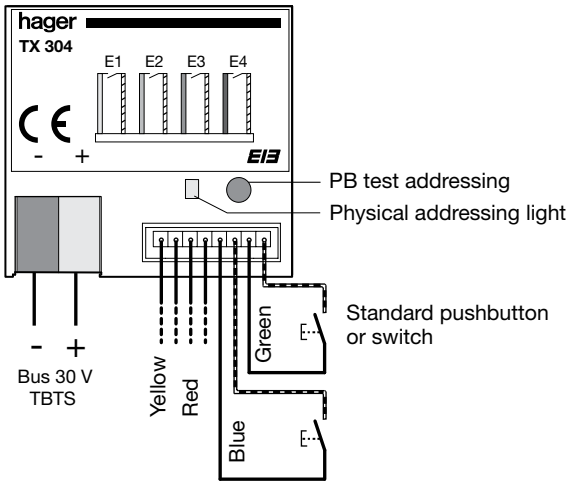
Electrical connection



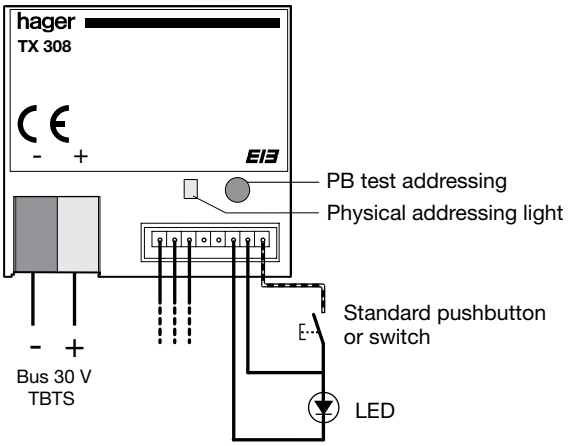
Technical Specification

	TXB302	TXB304	TXB322/344	TXA304	TXA306
Size	35 x 38 x 12mm			2 Modules	6 Modules
Supply	30V by TX111				
Inputs	2 for potential free contacts	4 for potential free contacts		4 inputs 230V	6 inputs
Outputs	-		2/4 outputs 5V DC Imax 850µA	-	
Voltage Delivered	5V DC impulse supplied by the product			230V AC (-15/+10%)	
Distance between contacts and the products	Slide in separable connector with 200mm length being able to be lengthened up to 5m.			30m Max	100m Max
Link to EIB bus	Red and black terminal TG008				
Links to Inputs	Separable connector of 200mm length			Through terminals: • Flexible: 1 to 6mm² • Rigid: 1.5 to 10mm²	
Temperature					
Working	-25°C to +55°C				
Storage	-5°C to +45°C				

4 Input Module Flush Mounted : TXB304

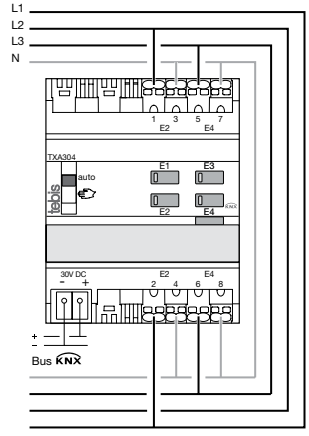


4 Input Module / 4 LED Outputs Flush Mounted : TXB308

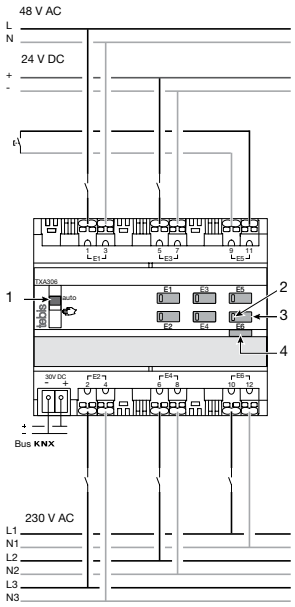


230V 4 Input Modules : TXA304

TXA304



230V 6 Input Module : TXA306



Technical Specification

	TX450A	TX450B
Colour	White	Silver
Supply	30V DC bus EIB TX111	
Consumption	150mW	
Assembly	Surface mounting	
Accessories included	BCU	
Configuration	With TX100GB or with ETS software and the application: TL450A	
Working Temperature	0ºC to +45ºC	
Size	80 x 80mm	

Function

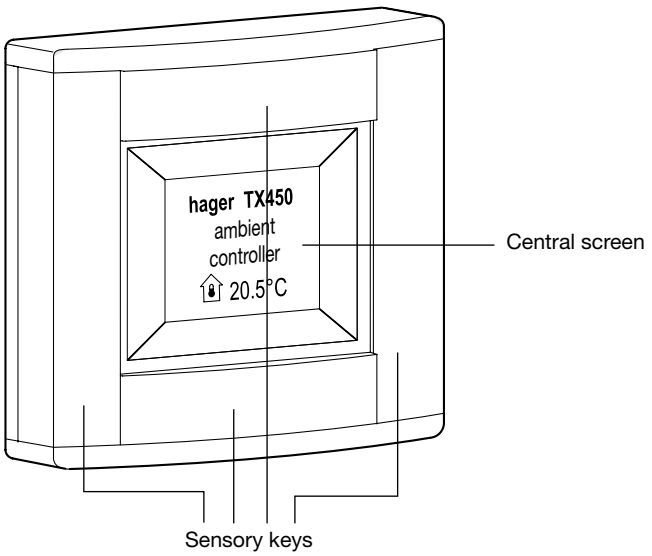
The room controller is a control and display wall appliance for the tebis system.
Available in 2 colours (white or silver)
It combines several functions in a single product
Through its 4 sensory keys, it allows :

- The control of lighting, roller shutters, heating etc.
- The control of functions developed as scenarios

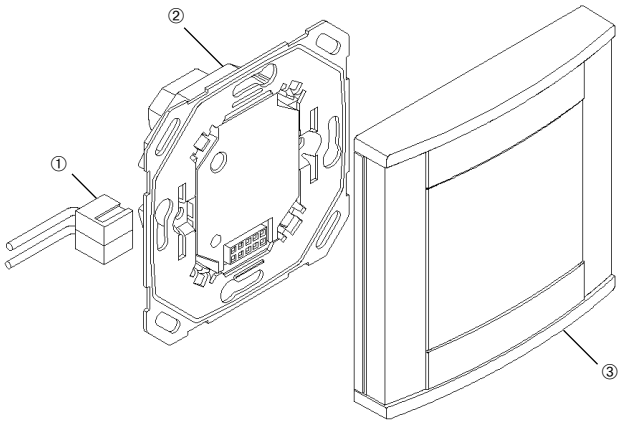
The central screen:

- Display of information on the state of equipment
- Display of the hour , date, ambient temperature...

This different information is parametered through the **"Adjustments"** and **"Configuration"** mode included in the product.



Electrial Connection



- Connect the BCU ② to EIB bus by EIB connector
- Screw the assembly plate with BCU on anchoring box ①
- Clip the front face ③ to the BCU.

Technical Specifications

Electrical characteristics
- Supply : 30 V DC bus EIB
- TX 022 : consumption : max. 9,5 mA
- TX 023 : consumption : max. 10 mA

Working characteristics
- Programming capacity : 56 steps
  to be distributed over the two channels
- Minimum time between 2 steps : 1 minute
- Start precision : 5 1.5 sec / 24h
- Start reserve : lithium battery cell (battery life 5 years)
- The product is placed in home position (display switched off) after 1 minute of voltage absence. It returns to Auto mode immediately on return of the voltage or on pressing on a key.
- Protection index : IP 20

Environment
- Working temperature: -5 to +45 °C
- Storage temperature : -20 to +70 °C

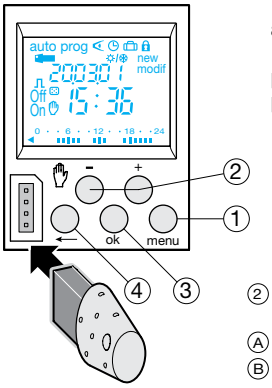
Connection with Cage Terminals
- Flexible : 1 to 6mm^2
- Rigid : 1.5 to 10mm^2

Reset
- Of the programme: it can be fully reset by simultaneous press on the following 3 keys: menu, ok and. The time and date are maintained.
- Total : by simultaneous press on the keys +, -, menus, ok and All the product content is deleted. After a total reset, it is necessary to reset the clock switch to hour and day.

Main Characteristics
- Product delivered set to current hour and day
- Automatic changing of summer / winter time
- Programming key
  for permanent exemptions
  for copying or safeguard of the programme
- Programming by day or group of days
- 56 step of program On, Off, 1 sec to 30 mn or dimming
- Permanent manual On or Off (fixed),
- Temporary manual On or Off that can be parametered by configuration tools
- Temporary exemptions On or Off (flashing),
- Vacation mode: forcing On or Off between two dates
- Presence simulation

Bar chart displaying daily profile
- Possibility of locking the key
- Programmable off-voltage
- DCF sycnhronization (TXA023 ONLY)
- Possible display of date and hour on the bus

Product presentation



①	menu	: selection of the functioning mode
	auto	: functioning as per the programme established
	prog	: new for programming
	prog	: modification to modify or delete a programme existing step
②		: display of the programme
		: modification of hour, date and choice of the summer/winter time changing mode ☼ / ❁
		: adjustment of vacation
②	+ et -	: navigation or adjustment of values
Ⓐ		: in Auto mode, selection of vmanual, exemptions or unpredictable functioning
Ⓑ		
	OK	: validate the flashing info
③		: come back to the previous step
④	←	

You can go to Auto mode at any time with the menu key. If no action is done for 1 min, the switch returns to Auto mode.

TX 025 Twilight Switch

Function
This product is intended for automatic control of lighting, of shutters and blinds according to the measured light intensity. When set lux level is reached, the order of control is transmitted via the Bus to output modules.

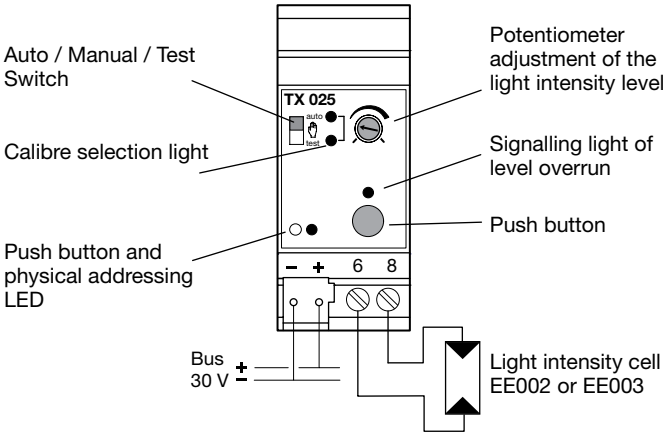
Electrical characteristics
Supply
30 V SELV Bus
- Time delay at the initialisation : 30s
- Adjustment range : 2-200 and 200-2000 lux
- ON / OFF in Manu mode

Environment
- Working temperature : 0 °C to +45 °C
- Storage : -20 °C to +70 °C

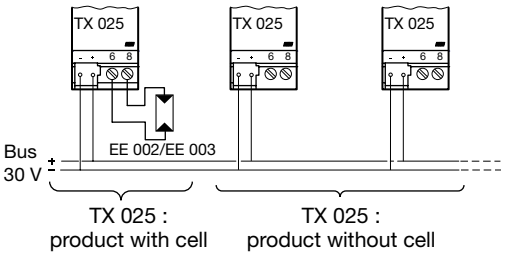
Connection
Capacity :
- Flexible : 1^2 to 6^2
- Rigid : 1.5^2 to 10^2

Probe
Use double insulated cable for wiring of the EE003 surface mounted cell or for lengthening the cable of the EE002 flush mounted cell.
Max. distance : 100m

Overall Size
- Size : 2 Modules



Several TX Channels



It is possible to adjust a level by photocell switch. The light intensity measurement is carried out by a unique probe connected to a TX025 which retransmits the value of light intensity to other TX025 on the system via the EIB Bus.

Technical Specification

	TX510	TX511
Type	Presence detector EIB/KNX TOR	Presence detector EIB/KNX light regulator
Supply	30V bus EIB, 12mA	
Channel 1/Channel 2	ON/OFF switching	-
Channel 1	-	ON/OFF Switching
Light intensity	-	Communication with light intensity level
	-	Adjustment to light intensity level
Light	OFF: Auto ON: Movement	
Consumption	< 0.2W	
Working Temperature	0°C to +45°C	
Storage Temperature	-10°C to +60°C	
Protection Index	IP41	
Connection	By TG008 connector	
Size	110 x 44mm	

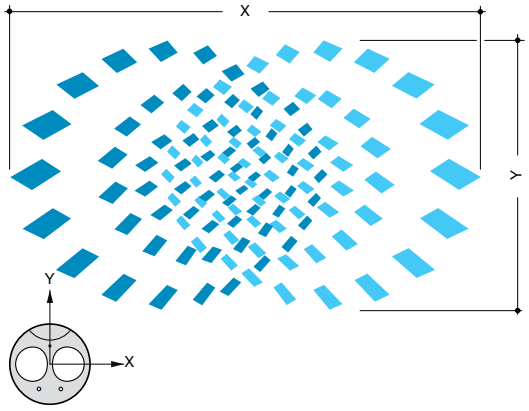
Function

- Lighting time delay adjusted by potentiometer : 1 to 30min.
- Period of presence adjusted by potentiometer : 30s to 60min.
- Brightness range : 5 to 1200 lux
- System height : 2.5m to 3.5m

Adjustment of Light Intensity Level

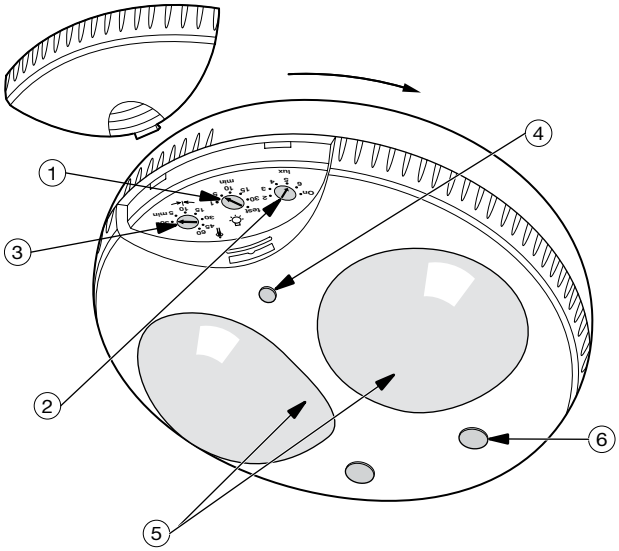
Position	Light Intensity in Lux	Equivalent in a Building
1	5	-
2	100	Circulation
3	200	Circulation. WC
4	300	Work plan
5	500	Office
6	800	Class room laboratory
ON	Measurement of light intensity inactive	-

Position (1...6) do not take into account the environment (office, furniture).

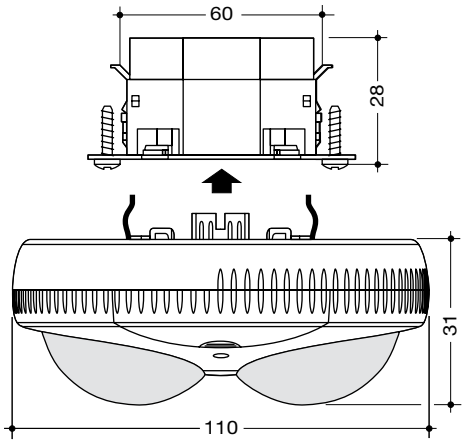


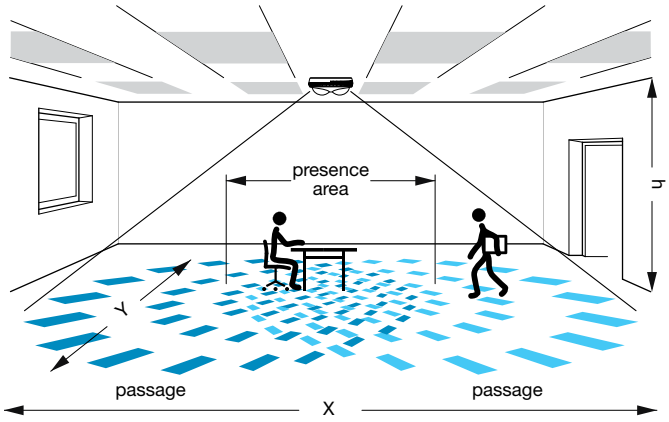
H	2.5m	3m	3.5m
X	13	15.5	18
Y	7	8	9

Presentation



① Potentiometer adjusting of the lighting time delay
② Potentiometer adjusting of the light intensity level
③ Potentiometer adjusting of the presence output (TX510 only)
④ VI signalling light
⑤ Detection lens
⑥ Sensor for light intensity measurement





The output modules TXA 204C, TXA 206A/B/C et TXA 207C have 4, 6 or 10 independent outputs (free of potential) to carry out the following controls :

- ON/OFF
- Time delays ON or OFF of 1 second to 12 hours
- Priority settings start or stop
- Sophisticated time lag switch 1 sec. to 24 hours

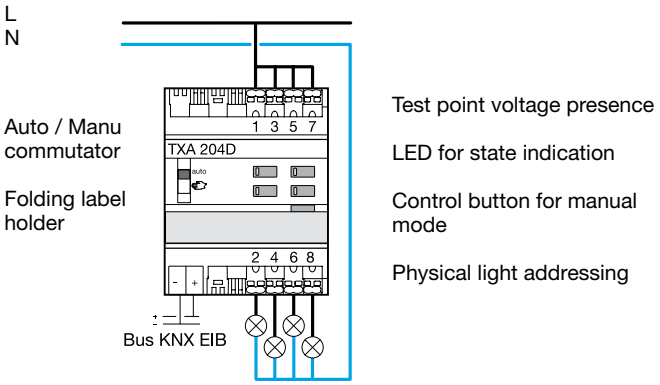
In “Auto” mode, the start and stop orders come from the input modules of tebis.

In “Manual” mode ✋, these controls are accessible by the push-buttons in front of the module (priority setting).
These products are configured with tool TX100GB or by ETS Software* *additional functions : heating application with TXA 204C and TXA 206A/B/C/D.

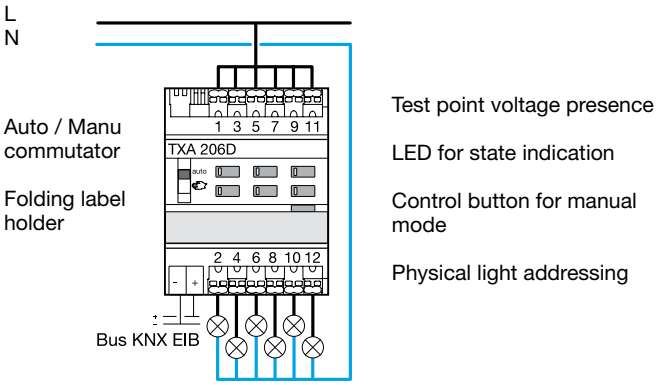
	TXA206A	TXA206B TXA206C	TXA204C	TXA206D	TXA207C
No of outputs, In	6 outputs, 4A	6 outputs, 10A	4 or 6 outputs, 16A capacitive loads	6 outputs, 16A	10 outputs, 16A
Breaking Capacity :					
• Incandescent and halogen 230 V	800W	1200W	2300W	2300W	2300W
• Halogen ELV ferromagnetic transformer	800VA	1200VA	1600VA	1600VA	1600VA
• Halogen ELV electronic transformer	800VA	1000VA	1200VA	1200VA	1200VA
• Non compensated fluorescent tubes	800W	1000W	1200W	1200W	1200W
• Parallel compensated fluorescent tubes				1500W with 200µf	
• Fluorescent tubes for electronic ballast	12 x 36W	15 x 36W	20 x 36W	20 x 36W	20 x 30W
• Compact fluorescent lamps	6 x 23W	12 x 23W	18 x 23W	18 x 23W	18 x 23W
Supply of the module	Bus 30V DC	Bus 30V DC	Bus 30V DC	Bus 30V DC	Bus 30V DC
Maximum dissipation	1W	5W	12W	12W	15W
Working temperature	0°C to +45°C	0°C to +45°C	0°C to +45°C	0°C to +45°C	0°C to +45°C
Storage temperature	-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
Degree of protection	IP30	IP30	IP30	IP30	IP30
Width of the module	4 Modules	4 Modules	4 Modules	4 Modules	6 Modules
Connection	0.75 to 2.5mm²	0.75 to 2.5mm²	0.75 to 2.5mm²	0.75 to 2.5mm²	0.75 to 2.5mm²

Electrical Connection

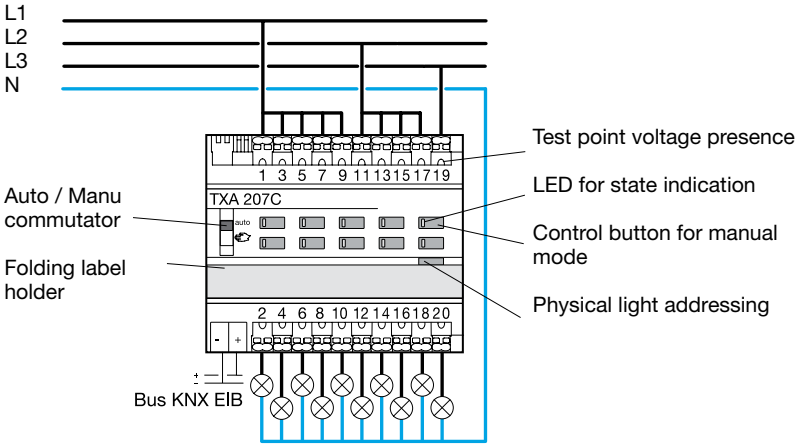
TXA204C 4 Outputs



TXA206A/B/C/D 6 Outputs



TXA204C 4 Outputs



Note: Each output has a volt-free contact whose terminals are laid in a crossing way upstream/downstream and labelled by a contact number C1, C2.

The outputs contacts of the modules can be used in a single-phase or three-phase installation.

Technical Characteristics

Dimmers
The tebis dimming offer includes:
- Dimmers with direct output 300, 600 or 1000 W
- Units with 1 or 3 outputs

Dimmers with Direct Output
Completely renewed, this extended range integrates the new design and the quick connect system.
It includes the following products:
- TXA213N : 3 outputs 300 W
- TXA210N : 1 output 600 W
- TXA215 : 1 output 1000 W
- TXA210AN : 1 output 300W

These products allow the direct connection of the incandescent, fluorescent, ELV halogen or LED loads. They adapt automatically with the type of connected load and have an integrated overheating and overload protection.

Other Advantages
- Manual control even when bus is disconnected.
- Mini/maxi level local setting
- Memorizing up to 8 different scene levels of lighting.
- Call of present level by priority setting

Dimmers 1-10 V : TX211
The module TX211 is provided for control by output:
- Up to 30 dimmers EV 100 or EV 102,
- Up to 25 electronic ballasts at 20mA
- Possibility to memorize up to 3 different scene lighting levels.

In manual mode, the push-buttons situated on the product allow the priority setting of the outputs when there is supply voltage on the bus.

Dimming Principles
Only one push-button is needed to select a dimming circuit according to following principle :
- 1 brief press = start or stop
- 1 long press = increase or decrease

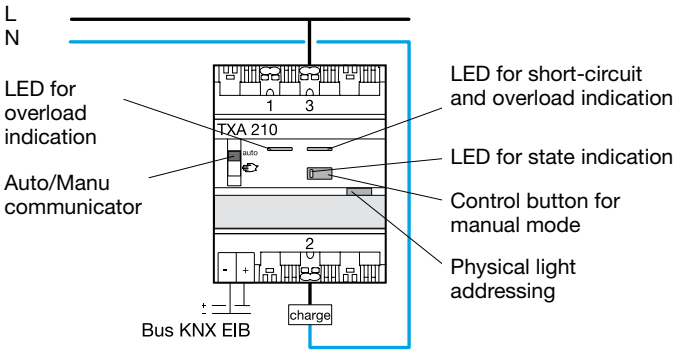
At each switching on, the dimmer restores the last stored level, except when scenes are called.
The dimming control is also possible with 2 push-buttons:
- 1 push-button for start or increase by short or long press
- 1 push-button for stop or decrease by short or long press

Technical Characteristics

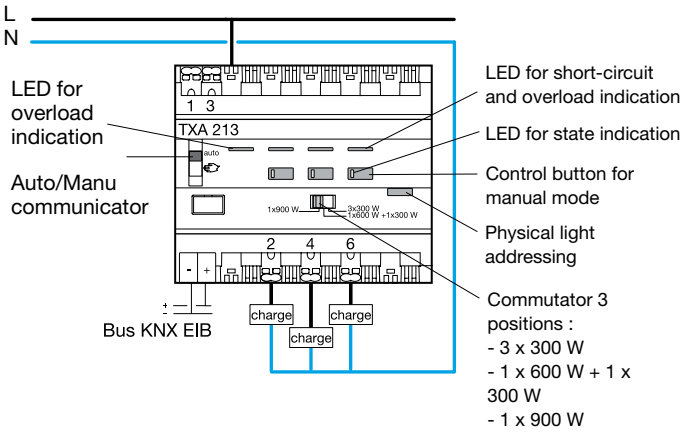
	TXA210AN	TXA210N	TXA213N	TXA215	TXA211
Number of outputs	1 Output 300W	1 Output 600W	1 to 3 Output according to selector	1 Output 1000W	3 Outputs 1-10V
Dimming range in 230V or in ELV ferromagnetic or electronic transformer	25 to 600W / 600VA		20 to 300W / 300VA 20 to 600W / 600VA 20 to 900W / 900VA	20 to 1000W / VA	Output 1-10V : Current max. 50mA + contact TOR 16A AC1
LED	up to 60W	up to 120W	up to 60W up to 120W up to 180W		
Supply	30V DC + 230V - 50/60Hz				
Max dissipation of the product	4W	7.5W	9W	10W	9W
Working temperature	0 to +45°C				-20 to +70°C
Storage temperature	-20 to +60°C				
Degree of protection	IP30				
Width of module	4		6		4
Connection	0.75 to 2.5mm^2 with flexible or rigid wire quick connect terminal				Flexible: 1 to 6mm^2 Rigid: 1.5 to 10mm^2

Electrical Connection

TXA210N/TXA215 : 1 Output 600W / 1000W



TXA213N : Single phase 1-3 outputs



Functions and setting available on TXA215

- Display of the dimming level
- Dimming rise time from 0 to 100% adjustable from 1s to 60s (4s by default)
- Dimming start and stop time adjustable from 0s to 30min
- Setting of minimum dimming threshold : 1% per default
- Setting of maximum dimming threshold : 100% per default
- Setting of reached transition time for call of scenario of 0s to 9h59min

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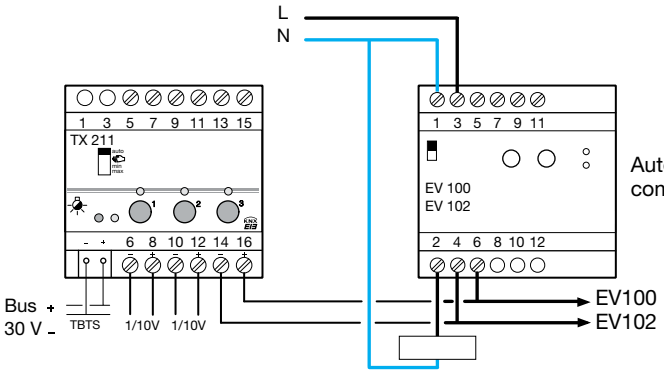
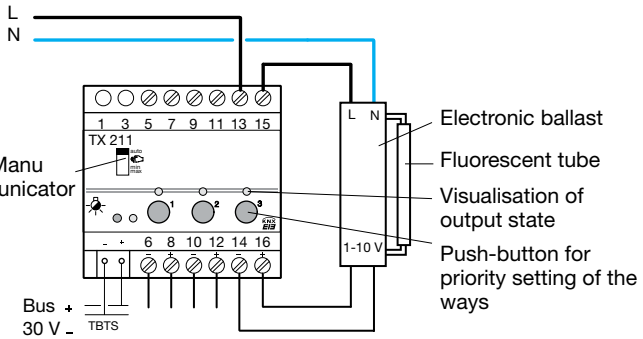
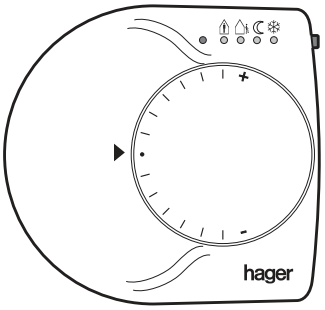
Plot dimmers TX211





Thermostat

Product Ref.	TX320
Dimensions	80 x 84 x 28mm
Detection Range	0º to +40ºC
Temperature Grade	
Comfort mode	10ºC to 28ºC (parameter adjustable)
Standby	0.5k to 4k comfort temperature
Night time mode	3k to 8k comfort temperature
Frost preventing mode	3º to -10ºC
Bus Connection	Integrated bus coupler
Ambient Temperature	
Storage	-25ºC - +60ºC
Operation	0º to +50ºC
Extra Input End	Bus input end



Select switch for operation mode / display button
Comfort mode
Standby mode
Night time mode
Frost preventing mode

Red / Blue diode
Red = Heating
Blue = Cooling

Off = Already reached preset temperature
Dial to set temperature

Heating Valve Controller

Product Ref.	TX206H
Dimensions	75 x 75 x 306mm
Main Voltage	230V 50/60Hz (Secondary, 24V)
Power Consumption	3W
Voltage of Output Terminal	24V AC
Number of Outputs	6
Valve Number of each Output	Max 4 (for each driver, max 13)
After getting connected, server driving Auto makes interlock	10 min.
Protection Type	IP20
Connection	Plug-in connecting terminal
• Flexible	1 - 1.5mm^2
• Passive	0.5 - 1.5mm^2
Ambient Temperature	
• Storage	-25 to +60ºC
• Operation	0ºC to 50ºC

Notes of Functions
- When network voltage is in function, operation LED will flash.
- When operation is failure (safety, failure), safety IED will flash. Professionals shall be invited for inspection.
- If the actuator connects the voltage onto startup, function LED will flash.

Product Ref.	TX501	TX502
Dimensions	82 x 50 x 65mm	
Main Voltage	Bus 30V DC (Secondary 24V)	
Valve End Impressing	Auto	
Regulating Force	> 120N	
Max Regulating Travel	6mm (linear motion)	
Operating Time	<20s/mm	
Travel Display	5 LED	Simultaneous press of button
Display of Rating	5 LED	
Accessory Valve Adaptor	Danfross, RA, Heimeier, MNG, Schlösser, Honeywell, Baukmann, Dumer, Reich, Landis+Gyr, Overtop, Herb, Onda	
Input End	Two input ends in binary system	
Protection Grade	III	
Protection Type	IP21	IP20
Connection	6 pole line (1m): Blk/Red: EIB bus Yellow/Green: Window contact White/ Brown: display alarm	
Ambient Temperature		
• Storage	-25ºC to +60ºC	
• Operation	0 to +50ºC	

Output module 4 shutters, blinds or curtains TXA 223, TXA 224, TXA 225 and TXA 226.

The whole range of the products blinds and shutters is divided into two applicatons:
- TXA223 and TXA225 modules manage the controls up, down and stop. They are used to control roller shutters, awning blinds, etc.
- TXA224 and TXA226 modules manage the controls up, down, stop, as well as the inclination of slats.

The TXA 225 and TXA 226 products are used for direct current motor control. The controls UP and DOWN are obtained by polarity reversal.

In “Auto” mode, the movement orders come from the input modules of the tebis system.

In “Menu” mode, these controls are accessible by the push-buttons in front of the module (priority setting).

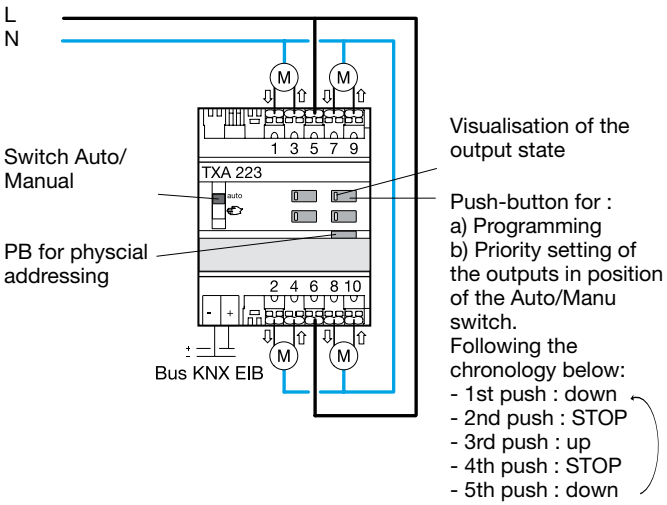
Technical Characteristics

References	TXA223, TXA224	TXA225, TXA226
Number of outputs	4	4
Breaking capacity	6A AC1 250VM	6A DC1 24V ⎓
Supply of module	Bus 30V DC	
Time setting between 2 controls of opposite direction	600ms	
Max. dissipation of prodict	2W	
Working temperature	0 to +45°C	
Storage temperature	-20 to +70°C	
Degree of protection	IP30	
Width in modules	4	
Connection flexible or rigid	0.75 to 2.5mm² quick connect terminals	

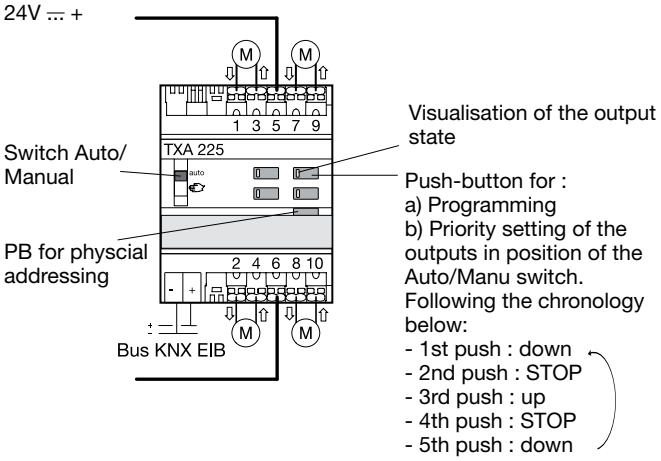
Note: Connecting of motors
- Alternative current motors (never connect any motors in parallel).
- Continuous current motors (two motors powered in DC can be connected in parallel on condition to meet the nominal current of the TX225 or TX226 modules).

Electrical Connection

TXA223 / TXA224



TXA225 / TXA226

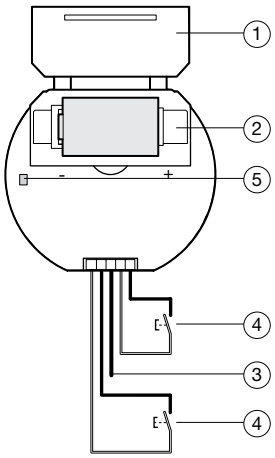


Technical Characteristics

	TR302A / TR304A	TR302B / TR304B
Supply	CR 1/2AA (3.0V) Battery	230V M 50Hz ± 15%
Input	2/4 inputs potential free contracts	2/4 inputs potential free contacts
Contact current	30µA	30µA
Input current	19mA	19mA
Life of battery	5 years	-
Emisson frequency	868.3 Mhz	868.3 Mhz
Emission range		
• Inside a building	max. 30m	max. 30m
• Open area	max. 100m	max. 100m
Working temperature	0°C to +45°C	0°C to +45°C
Storage temperature	-20°C to +70°C	-20°C to +70°C
Protection index	IP30	IP20
Size	45 x 51 x 16mm	48 x 53 x 27mm
Connection	Slide-in connector with 200mm length	Slide-in connector with 200mm length

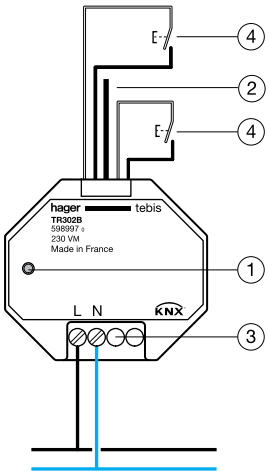
Product presentation

2 Input modules : TR302A (Battery Cell)



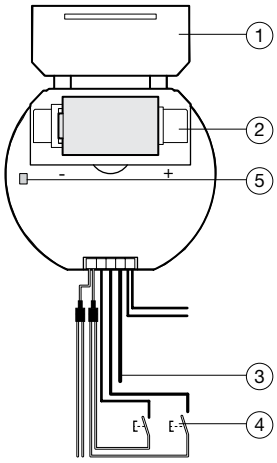
① Battery cover
② Battery
③ Radio antenna
④ Traditional button
⑤ Command received light

2 Input modules : TR302B (230VM)



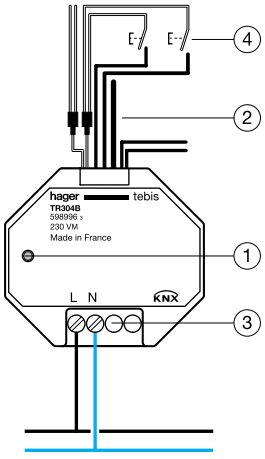
① Command received light
② Radio antenna
③ Supply limits
L : Line 230 V
N : Neutral
④ Traditional button

4 Input modules : TR304A (battery cell)



① Battery cover
② Battery
③ Radio antenna
④ Traditional button
⑤ Command received light

4 Input modules : TR304B (230VM)



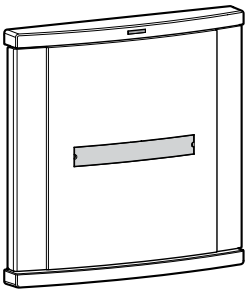
① Command received light
② Radio antenna
③ Supply limits
L : Line 230 V
N : Neutral
④ Traditional button

TD Push Button (KNX Radio)

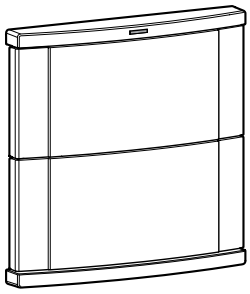
These are unidirectional or standard EIB / KNX emitters. The radio extra flat push buttons are offered in 2 colours (white and silver) and in 2, 4 or 6 ways version (keys with left / right horizontal direction). All products are with the label folder, and with a radio emission LED. The allocation of the ways is carried out with the TX100GB configurator.

Technical Characteristics

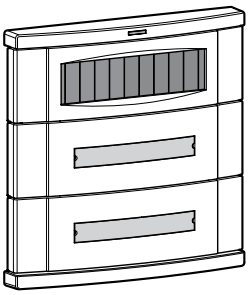
	KNX Radio Push Button
Supply	CR2430 (3V) battery cell
Life of the battery	3 years
Emission range	
• Inside a building	Max. 30m
• Open area	Max. 100m
Emission frequency	868.3MHz
Working temperature	0°C to +45°C
Storage temperature	-20°C to +70°C
Protection index	IP30
Size	80.5 x 80.5 x 12mm



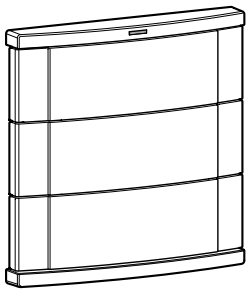
TD1**



TD2**



TD25***



TD3***

How to Choose RF Push-Buttons

Number of Commands	**1 Key**	**2 Ways**	**2 Keys**	**4 Ways**	**3 Keys**	**6 Ways**	**2 Keys 4 Ways**	**+ Solar**
Colour	White	Silver	White	Silver	White	Silver	White	Silver
With label holder	TD110	TD111	TD210	TD211	TD310	TD311	TD250	TD251
Without label holder	TD100	TD101	TD200	TD201	TD300	TD301	-	-
Supply	2 Cr 2430 (3V) battery - 3 years							

Radio Remote Controls

These are unidirectional emitters in standard EIB/KNX.
The allocation of the keys is carried out with TX100GB configuration.

Technical Characteristics

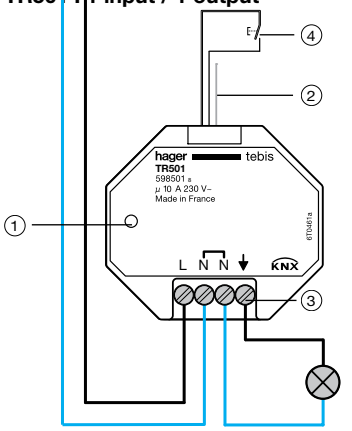
	TU402/404/406/418
Supply	CR2430
Life of the battery	3 years
Emission range	
• Inside a building	Max. 30m
• Open area	Max. 100m
Emission frequency	868.3 Mhz
Working temperature	0°C to +45°C
Storage temperature	-20°C to +70°C
Protection index	IP30
Size	111 x 51 x 18mm

Technical Characteristics

	TR501	TR270F	TR271F
Supply	230V 50Hz ± 15%		
Inputs	1 potential free contact		
Ouputs			
• Incandescence	1500W	2300W	300W 35°C
• 230V halogen	1500W	2300W	
• Ferromagnetic ELV halogen	800VA	1600VA	200VA 35°C
• Electronic ELV halogen	800VA	1200VA	
• Parallel compensated fluor; tubes	11 x 36W	20 x 36W	
	Max. 47µf	Max. 120µf	
Connection Through Cage Termainal:			
• Flexible	0.5 to 2.5mm²		
• Rigid	0.5 to 2.5mm²		
Emmision frequency	868.3 MHz		
Emission range			
• Inside a building	Max. 30m		
• Open area	Max. 100m		
Working temperature	0°C to +45°C		
Storage temperature	-20°C to +70°C		
Degree of Protection	IP30		
Size		54 x 98 x 80mm	

L
N

TR501 : 1 input / 1 output



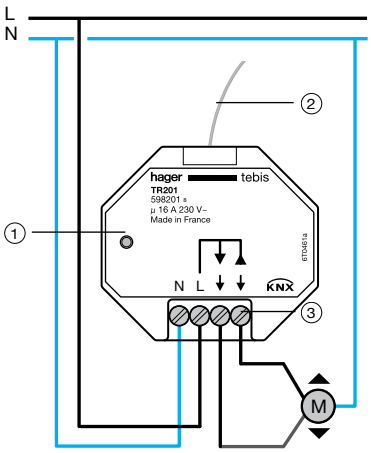
① - Display of output state
② - Radio antenna
③ - Supply limits :
L = Line 230 V
N = Neutral
↓ = Output
④ - Input contacts

Technical Characteristics

	TR221	TR521
Supply	230V 50Hz ± 15%	230V 50Hz ± 15%
Input		2 inputs, potential free
Output	1 shutter ouput, 6A 230V AC1	1 shutter output, 6A 230V AC1
Maxi. power loss	2W	2W
Min. time between revertive pulsing	600ms	600ms
Radio frequency	868.3 MHz	868.3 MHz
Emission range		
• Inside a building	Max. 30m	
• Open area	Max. 100m	
Working temperature	0°C to +45°C	0°C to +45°C
Storage temperature	-20°C to +70°C	-20°C to +70°C
Degree of Protection	IP30	IP30
Size	48 x 53 x 30mm	48 x 53 x 30mm
Connection Through Cage Terminal		
• Flexible	0.5 to 2.5mm²	0.5 to 2.5mm²
• Rigid	0.5 to 2.5mm²	0.5 to 2.5mm²

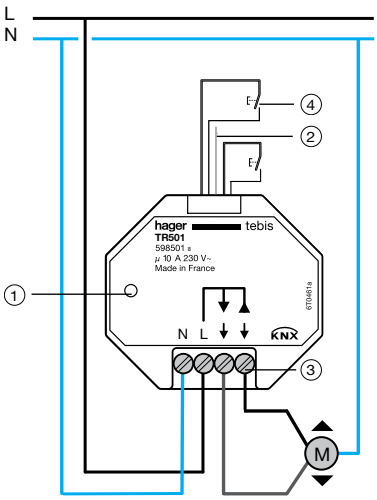
Rolling shutters / blinds

TR221 : 1 output



① - Display of output state
② - Radio antenna
③ - Supply limits :
L = Line 230 V
N = Neutral
▼= Down
▲= Up

TR521 : 2 inputs / 1 output



① - Display of output state
② - Radio antenna
③ - Supply limits :
L = Line 230 V
N = Neutral
▼= Down
▲= Up
④ - Input contacts

unique
neutral loop terminal..
..on wall switches

Why loop neutrals at the ceiling rose when you can now safely loop at the switch?

- Reduce time spent working at height
- Terminals are easily accessible
- No need for a separate connector block
- Can reduce cable runs
- Shallowest profile to the back box
- Compliant with the 17th edition

hager

@hageruk hageruktv

sollysta

White moulded, decorative, grid & IP66 wiring accessories

Sollysta has common features across all ranges; unique neutral loop terminal, shallow depth, moulded cable lead ins, captive and backed off terminal screws, wire end stops, in line terminals and a three pin shutter mechanism on the sockets for additional safety.

The range covers flat plate and raised plate in polished steel, brushed steel, polished brass, and black nickel with insert colour options of white or black for the most discerning room designers and architects.

sollysta White Moulded	7.2
sollysta Decorative	7.18
sollysta Grid	7.46
sollysta IP66	7.50

sollysta

White moulded

The range of sollysta wiring accessories is the easiest in the market to install with the shallowest back projection for more cabling space. Behind the faceplate the terminals face in the same direction with lead ins for wiring, backed off screws held captive to prevent loss, wire end stops and clear white labelling off a dark grey background.

The wall switches are the market's first neutral loop terminal contained within the accessory. This allows contractors to complete the loop connection in the switch instead of in the ceiling rose. Not only does this reduce cabling and the uncomfortable time spent working at ceiling level, but it also meets the needs of BS7671 since the connections are readily accessible for inspection.

Wall Switches	7.4
Controls	7.4
Isolator Switches	7.5
Socket Outlets	7.5
20A Double Pole Switches	7.6
50A Double Pole Switches	7.6
45A Cooker Control Units	7.7
Fused Connection Units	7.7
Outlet Plates	7.8
Shaver Socket	7.9
Telephone & Data	7.10
TV & Satelite	7.10
Euro frontplates & Modules	7.11
Ceiling Switches	7.12
Fan Isolator Switches	7.12
Power Isolator Switches	7.13
Hotel Keycard Switch	7.13
Patress Boxes	7.14
Part M Wiring Accessories	7.15
Accessories	7.16

- 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 derate for fluorescent loads.
- Two way switches can be wired either 1 way or 2 way.
- 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 7.54.
- For multigang switches use of a 25mm mounting box will provide increased wiring space.
- Supplied with M3.5 x 20mm long fixing screws.

N LOOP loop terminal

WMPS11

1 & 2 Way Wall Switches, Push Switches and Intermediate Switch

Description	Cat ref.
10AX 1 Gang 1 Way Wall Switch	**WMPS11**
10AX 1 Gang 2 Way Wall Switch	**WMPS12**
10AX 2 Gang 2 Way Wall Switch	**WMPS22**
10AX 3 Gang 2 Way Wall Switch	**WMPS32**
10AX 4 Gang 2 Way Wall Switch	**WMPS42**
10AX 1 Gang 2 Way Wall Switch Wide Rocker	**WMPS12W**
10AX 2 Gang 2 Way Wall Switch Wide Rocker	**WMPS22W**
Intermediate Switch	**WMPS16**
Intermediate Switch Wide Rocker	**WMPS16W**
Push Switch	**WMPS12R**
Push Switch with Bell Symbol	**WMPS12RB**
Push Switch Wide Rocker	**WMPS12RW**

Controls

Switch Dimmer
- Stylish flush buttons give easy press action.
- Quick press for ON/OFF.
- Hold button down to dim or brighten light level.
- Leading edge.
- Soft start feature prolongs lamp life.
- Suitable for dimming mains and dimmable transformer extra low voltage lamps.
- Complies with BS EN 60669-2-1 (including BS EN 55015).
- Automatic switch off in the case of transformer instability protects the dimmer and the transformer.
- Supplied with M3.5 x 30mm long fixing screws.

Rotary Push Button Dimmer
- Quick press for ON/OFF.
- Rotary dimming control.
- 1 or 2 way switching.
- Supplied with M3.5 x 30mm long fixing screws.
- Suitable for resistive loads e.g. incandescent loads.
- Suitable for mains halogen lamps without the need for derating.
- Not suitable for fluorescent, LED or inductive loads.
- Complies with BS EN 60669-2-1 (excluding clause 26 EMC requirements).

WMDS1

WMDR1/400R

Switch Dimmer

Description	Cat ref.
1 Gang Dimmer 400W	**WMDS1**
2 Gang Dimmer 250W	**WMDS2**
3 Gang Dimmer 250W	**WMDS3**
4 Gang Dimmer 250W	**WMDS4**

Rotary Push Button Dimmer

Description	Cat ref.
1 Gang Dimmer 400W	**WMDR1/400R**
2 Gang Dimmer 250W	**WMDR2/250R**

- Complies with BS EN 60669-2-4
- Rated conditional short circuit current (Inc) 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 7.54.
- Supplied with M3.5 x 20mm long fixing screws.

WMPS3PIF

1 Gang 3 Pole Isolator Switches

Description	Cat ref.
3 Pole Isolator Switch	**WMPS3PI**
3 Pole Isolator Switch with Fan Symbol	**WMPS3PIF**

Socket Outlets

- Unique patented 3 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: 5 x 2.5mm² conductors switched; 4 x 2.5mm² unswitched (for other sized conductors see terminal capacities on page 7.53).
- For mounting boxes see selection chart on page 7.54.
- Supplied with M3.5 x 30mm long fixing screws.

WMSS82O

13A Switched Sockets

Description	Cat ref.
1 Gang Double Pole Switched Socket	**WMSS81**
2 Gang Double Pole Switched Socket Dual Earth	**WMSS82**
2 Gang Double Pole Switched Socket Dual Earth Outboard Rockers	**WMSS82O**
1 Gang Double Pole Switched Socket with LED Indicator	**WMSS81N**
2 Gang Double Pole Switched Socket Dual Earth with LED Indicator	**WMSS82N**
2 Gang Double Pole Switched Socket Dual Earth Outboard Rockers with LED Indicator	**WMSS82ON**

WMS51

5A / 13A Unswitched Socket

Description	Cat ref.
5A 1 Gang Unswitched Socket	**WMS51**
13A 1 Gang Unswitched Socket	**WMS81**
13A 2 Gang Unswitched Socket Dual Earth	**WMS82**

- Complies with BS EN 60669-2-4 a.c. only.
- Cable clamp accommodates up to 1.5mm² flexible cord.
- Single screw fast fix cable clamp.
- Available with LED indicator in rocker.
- All terminal screws upward facing for ease of installation.
- Clearly printed and engraved terminal marking.
- Capacity of each terminal 2 x 6.0mm² conductors.
- For mounting boxes see selection chart on page 7.54.
- Supplied with M3.5 x 30mm long fixing screws.

WMDP85N

20A Double Pole Switches

Description	Cat ref.
20A Double Pole Switch	**WMDP84**
20A Double Pole Switch with Flex Outlet	**WMDP84FO**
20A Double Pole Switch with LED Indicator	**WMDP84N**
20A Double Pole Switch with LED Indicator & Flex Outlet	**WMDP84FON**
20A Double Pole Switch with LED Indicator marked Waterheater	**WMDP85N**
20A Double Pole Switch with LED Indicator & Flex Outlet marked Waterheater	**WMDP85FON**

50A Double Pole Switches

- Complies with BS EN 60669-2-4.
- Rated conditional short circuit current (Inc) 1500A tested with Hager MTN150 6kA B curve MCB.
- 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 7.54.
- Supplied with M3.5 x 30mm long fixing screws.

WMDP50N

50A Double Pole Switches

Description	Cat ref.
50A Double Pole Switch 1 Gang with LED Indicator	**WMDP50N**
50A Double Pole Switch 2 Gang Vertical with LED Indicator	**WMDP50VN**

- Complies with BS 4177.
- Switch and socket are double pole.
- Twin earth as standard.
- Available with optional LED indication.
- Main switch is suitable for isolation.
- All terminals are upward facing for ease of installation.
- Clearly printed terminal marking.
- Capacity of terminals 2 x 6.0mm², 1 x 16.0mm².
- For mounting boxes see selection chart on page 7.54.
- Supplied with M3.5 x 30mm long fixing screws.

WMCC50

WMCC50N

45A Cooker Control Unit

Description	Cat ref.
45A Cooker Control Unit	**WMCC50**
45A Cooker Control Unit with LED Indicator	**WMCC50N**

Fused Connection Units

- Complies with BS 1363-4.
- Cable clamp accommodates up to 1.5mm² flexible cord.
- Single screw fast fix cable clamp.
- Available with LED light indicator in rocker.
- All terminal screws upward facing for ease of installation.
- Clearly printed terminal markings.
- Capacity of each terminal 2 x 6.0 mm² conductors.
- For mounting boxes see selection chart on page 7.54.
- Supplied with M3.5 x 30mm long fixing screws.

WMSSU83

13A Switched & Unswitched FCU

Description	Cat ref.
13A FCU Switched	**WMSSU83**
13A FCU Switched with Flex Outlet	**WMSSU83FO**
13A FCU Switched with LED Indicator	**WMSSU83N**
13A FCU Switched with LED Indicator and Flex Outlet	**WMSSU83FON**
13A FCU Unswitched	**WMSU83**
13A FCU Unswitched with Flex Outlet	**WMSU83FO**

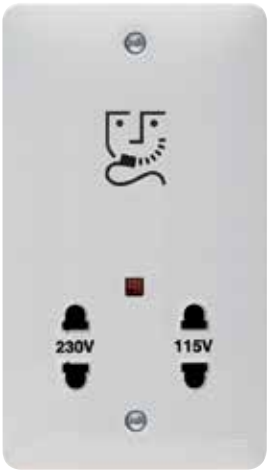
- Complies with BS 5733.
- Terminal capacity:
  20A 2 x 6.0mm^2
  45A 2 x 10.0mm^2 conductors
- 20A plate features 2 separate terminals for each of Line, Neutral and Earth so flexible and fixed wiring do not occupy the same terminal.
- Single screw fast fix cable clamp.
- Supplied with M3.5 x 30mm long 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.
- Supplied with M3.5 x 20mm long fixing screws.

WMP2FO

Outlet Plates

Description	Cat ref.
Flex Outlet Plate 20A	**WMP2FO**
Cooker Cable Outlet with Terminals 45A	**WMP50FO**

- Complies with BS EN 61558-2-5
- Capacity of each terminal 2 x 2.5mm^2 conductors.
- Designed for use in bathrooms and shower rooms and incorporates a double wound transformer for an earth free supply.
- Input 230V a.c. output dual voltage 230V a.c. and 115V a.c. outlets.
- Rating 20VA on either voltage.
- Primary circuit protected by a self resetting thermal overload device.
- Insertion of shaver plug automatically switches on the transformer.
- Supplied with M3.5 x 30mm long fixing screws.



WMSO100

Shaver Socket

Description	Cat ref.
115/230 Volt Shaver Socket	**WMSO100**

- BT sockets comply with BS EN 6312-2.
- Supplied with fitted cable tie.
- Quick connection with insulation displacement terminals.
- RJ11 has tool less quick connect terminals.
- Clearly printed terminal marking.
- Supplied with M3.5 x 20mm long fixing screws.

WMBTM

Telephone and Data

Description	Cat ref.
BT Master Telephone Outlet	**WMBTM**
BT Secondary Telephone Outlet	**WMBTS**
RJ11 Socket	**WMRJ11**
RJ45 Socket	**WMRJ45**
IDC Tools (bag of 10)	**IDCTOOL**

TV & Satellite

- 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.

WMTVM

WMQX

TV and Satellite

Description	Cat ref.
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**

- Carrier plates facilitate installation of industry standard modular data outlets.
- Easy to configure for all applications.
- Easy installation of module to plate.
- Robust retention of modules in operation.
- Quick release of modules for maintenance.
- Please note: these are industry standard units and are not colour matched to sollysta plates.

WMP4EU

Euro Style Accommodation Plates

Description	Cat ref.
1 Module	**WMP1EU**
2 Modules	**WMP2EU**
4 Modules	**WMP4EU**

WMMBTM

WMMQXB

WMMUSB

Euro Style Modules

Description	Module width	Cat ref.
BT Telephone Master Euromodule White	■	**WMMBTM**
BT Telephone Master Euromodule Black	■	**WMMBTMB**
BT Telephone Secondary Euromodule White	■	**WMMBTS**
BT Telephone Secondary Euromodule Black	■	**WMMBTSB**
RJ11 - Modem Euromodule White	■	**WMMRJ11**
RJ11 - Modem Euromodule Black	■	**WMMRJ11B**
RJ45 - Cat 6 UTP Euromodule White	■	**WMMRJ45**
RJ45 - Cat 6 UTP Euromodule Black	■	**WMMRJ45B**
Phono Plugs - Red/Black - Gold Plated Euromodule	■	**WMMPP**
Speaker Terminal Posts - Gold Plated Euromodule	■	**WMMSP**
Single IEC Female Non Isolated Euromodule White	■	**WMMTVF**
Single IEC Female Non Isolated Euromodule Black	■	**WMMTVFB**
Single IEC Male Non Isolated Euromodule White	■	**WMMTVM**
Single IEC Male Non Isolated Euromodule Black	■	**WMMTVMB**
Single Satellite F Connector Euromodule White	■	**WMMSAT**
Single Satellite F Connector Euromodule Black	■	**WMMSATB**
Single Blank Euromodule White	■	**WMMB**
Single Blank Euromodule Black	■	**WMMBB**
USB Euromodule with 2 USB Sockets White	■	**WMMUSB**
USB Euromodule with 2 USB Sockets Black	■	**WMMUSBB**
Diplexer - TV & FM Radio Euromodule White	■■	**WMMDX**
Diplexer - TV & FM Radio Euromodule Black	■■	**WMMDXB**
Triplexer - TV, Satellite & FM Radio Euromodule White	■■	**WMMTX**
Triplexer - TV, Satellite & FM Radio Euromodule Black	■■	**WMMTXB**
Quadplexer - TV, Satellite, FM Radio & Return Euromodule White	■■	**WMMQX**
Quadplexer - TV, Satellite, FM Radio & Return Euromodule Black	■■	**WMMQXB**

WMP1

Blank Plates

Description	Cat ref.
Single Blank Plate	**WMP1**
Twin Blank Plate	**WMP2**

- Complies with BS EN 60669-1.
- 'X' rated - no need to derate 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 1.5mm^2 conductors.

WMCS11

Light Switches

Description	Cat ref.
6A Ceiling Switch 1 Way	**WMCS11**
6A Ceiling Switch 2 Way	**WMCS12**

Fan Isolator Switches

- Complies with BS EN 60669-2-4
- Rated conditional short circuit current (Inc) 1500A tested with Hager MTN110 6kA B Curve MCB.
- Terminal capacity: 3 x 1.5mm^2
- Supplied with M3.5 x 30mm long fixing screws.

WMCS3PIF

Fan Isolator Switches

Description	Cat ref.
10A 3 Pole Ceiling Switch marked Fan & Isolator	**WMCS3PIF**
10A 3 Pole Ceiling Switch marked Isolator	**WMCS3PI**
10A 3 Pole Ceiling Switch marked Fan	**WMCS3PF**

- Complies with BS EN 60669-2-4.
- Rated conditional short circuit current (Inc) 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 16mm^2 conductors

WMCS50N

Power Isolator Switch

Description	Cat ref.
50A 2 Pole Isolating Ceiling Switch with LED Indicator	**WMCS50N**

Hotel Key Card Switch

Includes indicator light to aid locating. Light is switched off when the card is inserted.

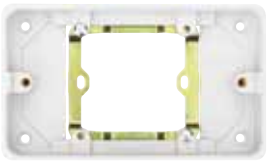
- Complies with BS EN 60669-1
- Supplied with M3.5 x 25mm long fixing screws
- Material: Polycarbonate

XH9001

Hotel Key Card Switch

Description	Pack Qty.	Cat ref.
Key tag switch with key card (time delay 60s)	5	**XH9001**

- Complies with BS EN 60670-1.
- Depth quoted is internal depth.
- Colour and footprint match all sollysta wall accessories.



WMPB2/20

Pattress Box

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**
Twin Converter Frame	**WMPB2/20**
Single 14mm Deep Spacer for Base Flex Outlet	**WMPB1/BFO**

- 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

Red Face Plates & Red Rockers

- 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

WMSS82OG

Part M Wiring Accessories

Description	Cat ref.
10AX 1 Gang 2 Way Wall Switch Wide Rocker with Grey Face Plate	**WMPS12WG**
10AX 2 Gang 2 Way Wall Switch Wide Rocker with Grey Face Plate	**WMPS22WG**
Intermediate Switch Wide Rocker with Grey Face Plate	**WMPS16WG**
Push Switch Wide Rocker with Grey Face Plate	**WMPS12RWG**
Push Switch Wide Rocker with Grey Face Plate marked ‘Fan Boost’	**WMPS12RWG/FB**
20A 1 Gang Double Pole Switch with LED Indicator	**WMDP84NG**
50A 2 Gang Double Pole Switch with LED Indicator	**WMDP50NG**
50A 2 Gang Double Pole Switch with LED Indicator marked ‘Cooker’	**WMDP50NG/CK**
13A Switched Fuse Connection Unit with LED Indicator	**WMSSU83NG**
13A Switched Fuse Connection Unit with LED Indicator marked ‘Extract Hood’	**WMSSU83NG/EH**
13A Switched Fuse Connection Unit with LED Indicator marked ‘Panel Heater’	**WMSSU83NG/PH**
13A 1 Gang Double Pole Switched Socket with Grey Face Plate	**WMSS81G**
13A 2 Gang Double Pole Switched Socket Outboard Rockers Grey Face Plate	**WMSS82OG**

Part M Euro Style Accommodation Plates

Description	Cat ref.
1 Module	**WMP1EUG**
2 Modules	**WMP2EUG**
4 Modules	**WMP4EUG**

WMSS81R

Switches and Sockets with Red Face Plates & Red Rockers

Description	Cat ref.
13A 1 Gang Double Pole Switched Socket with Red Rocker	**WMSS81R**
13A 2 Gang Double Pole Switched Socket with Red Rockers	**WMSS82R**
13A 2 Gang Double Pole Switched Socket with Red Outboard Rockers	**WMSS82OR**
13A 1 Gang Double Pole Switched Socket with Red Face Plate and Rocker	**WMSS81RR**
13A 2 Gang Double Pole Switched Socket with Red Face Plate and Rockers	**WMSS82RR**
13A 1 Gang Double Pole Switched Socket with Red Face Plate and Outboard Rocker	**WMSS82ORR**
13A 2 Gang DP Switched Socket Red Rockers marked “CLEANERS SUPPLY”	**WMSS82R/CS**
13A 2 Gang DP Switched Socket Red Rockers marked “EMERGENCY SUPPLY”	**WMSS82R/ES**
13A 2 Gang DP Switched Socket Red Rockers marked “DO NOT SWITCH OFF”	**WMSS82R/DNS**
13A 2 Gang DP Switched Socket Red Rockers marked “UPS PROTECTED”	**WMSS82R/UPS**

WMSU83R/FA

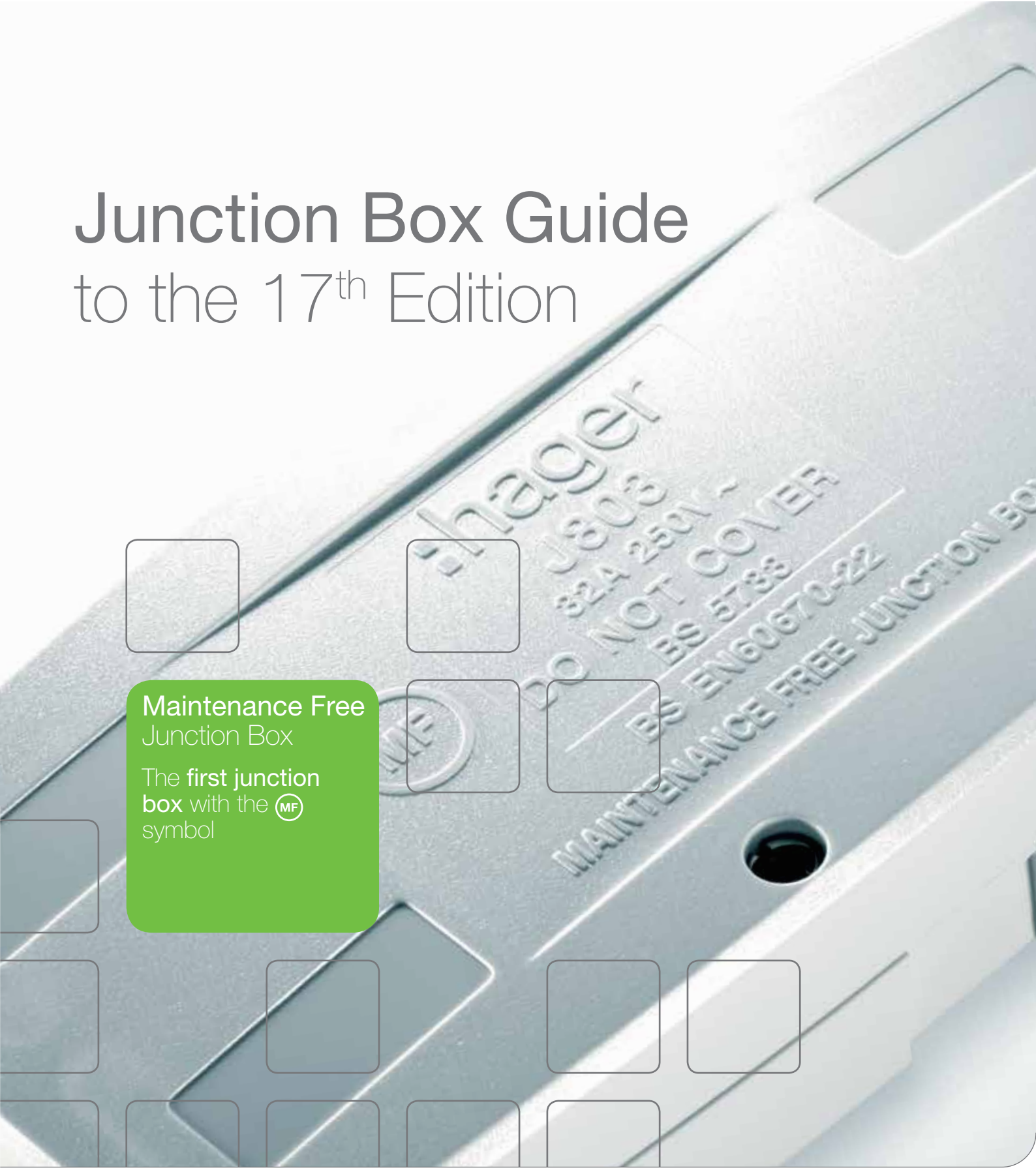
Fused Conneciton Units with Red Face Plates & Red Rockers

Description	Cat ref.
13A Fused Connection Unit Red Face	**WMSU83R**
13A Fused Connection Unit Switched Red Rocker	**WMSSU83R**
13A Fused Connection Unit Switched Red Face Plate and Rocker	
13A Fused Connection Unit with Red Face marked “FIRE ALARM”	**WMSU83R/FA**

Accessories

Description	Cat ref.
Single Spare Pull Cord	**PULLCORD**
Pack of 100 Push Fit Screw Covers	**SCREWCOVER**
IDC Tools (bag of 10)	**IDCTOOL**

Junction Box Guide
to the 17th Edition



Maintenance Free
Junction Box

The **first junction box** with the MF symbol

Junction boxes are an integral part of virtually every electrical installation. Unfortunately these connections often do not comply with the Wiring Regulations due to incorrect product selection.

The Junction Box Guide to the 17th Edition can help you to make the right choice. Download your copy from **www.hager.co.uk**

hager

sollysta

Decorative & grid

The decorative range maintains all the installation features of the white moulded range; shallow depth, neutral loop terminal, cable lead ins, captive terminal screws, backed off terminal screws, wire end stops, in line terminals and the three pin shutter mechanism on the sockets for additional safety and many more benefits for the c ontractor.

Wall Switches	7.20
Controls	7.22
Fan Isolator Switches	7.24
Sockets	7.26
20A Double Pole Switches	7.28
50A Double Pole Switches	7.30
45A Cooker Control Unit	7.32
13A Switched & Unswitched Fused Connection Unit	7.34
Shaver Socket	7.36
Telephone & Data	7.38
TV & Satellite	7.40
Euro Frontplates & Modules	7.42
Lounge Plate	7.42
Blank Plates	7.44
Grid Plates	7.46
Grid Switches & Accessories	7.48

- 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 derate for fluorescent loads.
- Two way switches can be wired either 1 way or 2 way.
- 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 7.54.
- For multigang switches use of a 25mm mounting box will provide increased wiring space.
- Supplied with M3.5 x 20mm long fixing screws.

N LOOP loop terminal

WFPS22PSW

WFPS22WBSW

WFPS12PBW

WRPS12BNB

Plate Finish	Polished Steel	
Insert Colour	White	Black
Raised Plate		
10AX 1 Gang 2 Way	**WRPS12PSW**	**WRPS12PSB**
10AX 2 Gang 2 Way	**WRPS22PSW**	**WRPS22PSB**
10AX 3 Gang 2 Way	**WRPS32PSW**	**WRPS32PSB**
10AX 4 Gang 2 Way	**WRPS42PSW**	**WRPS42PSB**
10AX 1 Gang 2 Way Wide Rocker	**WRPS12WPSW**	**WRPS12WPSB**
10AX 2 Gang 2 Way Wide Rocker	**WRPS22WPSW**	**WRPS22WPSB**
Intermediate Switch	**WRPS16PSW**	**WRPS16PSB**
Flat Plate		
10AX 1 Gang 2 Way	**WFPS12PSW**	**WFPS12PSB**
10AX 2 Gang 2 Way	**WFPS22PSW**	**WFPS22PSB**
10AX 3 Gang 2 Way	**WFPS32PSW**	**WFPS32PSB**
10AX 4 Gang 2 Way	**WFPS42PSW**	**WFPS42PSB**
10AX 1 Gang 2 Way Wide Rocker	**WFPS12WPSW**	**WFPS12WPSB**
10AX 2 Gang 2 Way Wide Rocker	**WFPS22WPSW**	**WFPS22WPSB**
Intermediate Switch	**WFPS16PSW**	**WFPS16PSB**

	Brushed Steel		Polished Brass		Black Nickel
	White	Black	White	Black	Black
	WRPS12BSW	**WRPS12BSB**	**WRPS12PBW**	**WRPS12PBB**	**WRPS12BNB**
	WRPS22BSW	**WRPS22BSB**	**WRPS22PBW**	**WRPS22PBB**	**WRPS22BNB**
	WRPS32BSW	**WRPS32BSB**	**WRPS32PBW**	**WRPS32PBB**	**WRPS32BNB**
	WRPS42BSW	**WRPS42BSB**	**WRPS42PBW**	**WRPS42PBB**	**WRPS42BNB**
	WRPS12WBSW	**WRPS12WBSB**	**WRPS12WPBW**	**WRPS12WPBB**	**WRPS12WBNB**
	WRPS22WBSW	**WRPS22WBSB**	**WRPS22WPBW**	**WRPS22WPBB**	**WRPS22WBNB**
	WRPS16BSW	**WRPS16BSB**	**WRPS16PBW**	**WRPS16PBB**	**WRPS16BNB**
	WFPS12BSW	**WFPS12BSB**	**WFPS12PBW**	**WFPS12PBB**	**WFPS12BNB**
	WFPS22BSW	**WFPS22BSB**	**WFPS22PBW**	**WFPS22PBB**	**WFPS22BNB**
	WFPS32BSW	**WFPS32BSB**	**WFPS32PBW**	**WFPS32PBB**	**WFPS32BNB**
	WFPS42BSW	**WFPS42BSB**	**WFPS42PBW**	**WFPS42PBB**	**WFPS42BNB**
	WFPS12WBSW	**WFPS12WBSB**	**WFPS12WPBW**	**WFPS12WPBB**	**WFPS12WBNB**
	WFPS22WBSW	**WFPS22WBSB**	**WFPS22WPBW**	**WFPS22WPBB**	**WFPS22WBNB**
	WFPS16BSW	**WFPS16BSB**	**WFPS16PBW**	**WFPS16PBB**	**WFPS16BNB**

- Stylish flush buttons give easy press action.
- Quick press for ON/OFF.
- Hold button down to dim or brighten light level.
- Leading edge.
- Soft start feature prolongs lamp life.
- Suitable for dimming mains and dimmable transformer extra low voltage lamps.
- Automatic switch off in the case of transformer instability protects the dimmer and the transformer.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

WFDS1PS

WFDS2BS

WFDS1PB

WRDS2BN

Plate Finish	Polished Steel
Raised Plate	
1 Gang DImmer 400W	**WRDS1PS**
2 Gang Dimmer 250W	**WRDS2PS**
3 Gang Dimmer 250W	**WRDS3PS**
4 Gang Dimmer 250W	**WRDS4PS**
Flat Plate	
1 Gang Dimmer 400W	**WFDS1PS**
2 Gang Dimmer 250W	**WFDS2PS**
3 Gang Dimmer 250W	**WFDS3PS**
4 Gang Dimmer 250W	**WFDS4PS**

	Brushed Steel	Polished Brass	Black Nickel
	WRDS1BS	**WRDS1PB**	**WRDS1BN**
	WRDS2BS	**WRDS2PB**	**WRDS2BN**
	WRDS3BS	**WRDS3PB**	**WRDS3BN**
	WRDS4BS	**WRDS4PB**	**WRDS4BN**
	WFDS1BS	**WFDS1PB**	**WFDS1BN**
	WFDS2BS	**WFDS2PB**	**WFDS2BN**
	WFDS3BS	**WFDS3PB**	**WFDS3BN**
	WFDS4BS	**WFDS4PB**	**WFDS4BN**

- Complies with BS EN 60669-2-4.
- Rated conditional short circuit current (Inc) 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 7.54.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

WFPS3PIBSW

	Plate Finish	Polished Steel	
	Insert Colour	White	Black
Raised Plate			
3 Pole Fan Isolator Switch		**WRPS3PIPSW**	**WRPS3PIPSB**
Flat Plate			
3 Pole Fan Isolator Switch		**WFPS3PIPSW**	**WFPS3PIPSB**

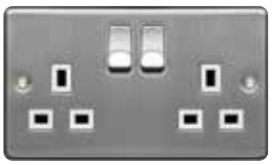
	Brushed Steel		Polished Brass		Black Nickel
	White	Black	White	Black	Black
	WRPS3PIBSW	**WRPS3PIBSB**	**WRPS3PIPBW**	**WRPS3PIPBB**	**WRPS3PIBNB**
	WFPS3PIBSW	**WFPS3PIBSB**	**WFPS3PIPBW**	**WFPS3PIPBB**	**WFPS3PIBNB**

- Unique patented 3 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 terminal screws grouped in-line and upward facing for ease of installation.
- Clear printed and engraved terminal markings.
- Capacity of each terminal: 5 x 2.5mm^2 conductors switched; 4 x 2.5mm^2 unswitched (for other sized conductors see terminal capacities on page 7.53).
- For mounting boxes see selection chart on page 7.54.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

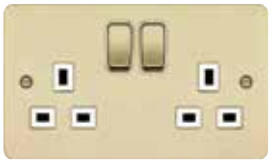
WFSS81BSW

WRSS81PBW

WRSS81BNB



WRSS82BSW



WFSS82PBW

	Plate Finish	Polished Steel	
	Insert Colour	White	Black
Raised Plate			
1 Gang Double Pole Switched Socket		**WRSS81PSW**	**WRSS81PSB**
2 Gang Double Pole Switched Socket Dual Earth		**WRSS82PSW**	**WRSS82PSB**
5A 1 Gang Unswitched Socket		**WRS51PSW**	**WRS51PSB**
Flat Plate			
1 Gang Double Pole Switched Socket		**WFSS81PSW**	**WFSS81PSB**
2 Gang Double Pole Switched Socket Dual Earth		**WFSS82PSW**	**WFSS82PSB**
5A 1 Gang Unswitched Socket		**WFS51PSW**	**WFS51PSB**

	Brushed Steel		Polished Brass		Black Nickel
	White	Black	White	Black	Black
	WRSS81BSW	**WRSS81BSB**	**WRSS81PBW**	**WRSS81PBB**	**WRSS81BNB**
	WRSS82BSW	**WRSS82BSB**	**WRSS82PBW**	**WRSS82PBB**	**WRSS82BNB**
	WRS51BSW	**WRS51BSB**	**WRS51PBW**	**WRS51PBB**	**WRS51BNB**
	WFSS81BSW	**WFSS81BSB**	**WFSS81PBW**	**WFSS81PBB**	**WFSS81BNB**
	WFSS82BSW	**WFSS82BSB**	**WFSS82PBW**	**WFSS82PBB**	**WFSS82BNB**
	WFS51BSW	**WFS51BSB**	**WFS51PBW**	**WFS51PBB**	**WFS51BNB**

- Complies with BS EN 60699-2-4 a.c. only.
- Cable clamp accommodates up to 1.5mm² flexible cord.
- Single screw fast fix cable clamp.
- All terminal screws upward facing for ease of installation.
- Clearly printed and engraved terminal marking.
- Capacity of each terminal 2 x 6.0mm² conductors.
- For mounting boxes see selection chart on page 7.54.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

WFDP84FOPSW

WFDP84BSW

WRDP84PBW

Plate Finish	Polished Steel	
Insert Colour	White	Black
Raised Plate		
20A Double Pole Switch	**WRDP84PSW**	**WRDP84PSB**
20A Double Pole Switch with Flex Outlet	**WRDP84FOPSW**	**WRDP84FOPSB**
20A Double Pole Switch with LED Indicator	**WRDP84NPSW**	**WRDP84NPSB**
Flat Plate		
20A Double Pole Switch	**WFDP84PSW**	**WFDP84PSB**
20A Double Pole Switch with Flex Outlet	**WFDP84FOPSW**	**WFDP84FOPSB**
20A Double Pole Switch with LED Indicator	**WFDP84NPSW**	**WFDP84NPSB**

	Brushed Steel		Polished Brass		Black Nickel
	White	Black	White	Black	Black
	WRDP84BSW	**WRDP84BSB**	**WRDP84PBW**	**WRDP84PBB**	**WRDP84BNB**
	WRDP84FOBSW	**WRDP84FOBSB**	**WRDP84FOPBW**	**WRDP84FOPBB**	**WRDP84FOBNB**
	WRDP84NBSW	**WRDP84NBSB**	**WRDP84NPBW**	**WRDP84NPBB**	**WRDP84NBNB**
	WFDP84BSW	**WFDP84BSB**	**WFDP84PBW**	**WFDP84PBB**	**WFDP84BNB**
	WFDP84FOBSW	**WFDP84FOBSB**	**WFDP84FOPBW**	**WFDP84FOPBB**	**WFDP84FOBNB**
	WFDP84NBSW	**WFDP84NBSB**	**WFDP84NPBW**	**WFDP84NPBB**	**WFDP84NBNB**

- Complies with BS EN 60669-2-4.
- Rated conditional short circuit current (Inc) 1500A tested with Hager MTN150 6kA B curve MCB.
- 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 7.54.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

WFDP50NBSW

WRDP50NPSB

WRDP50NPBB

WRDP50NBNB

	Plate Finish	Polished Steel	
	Insert Colour	White	Black
Raised Plate			
50A Double Pole Switch 1 Gang with LED Indicator		**WRDP50NPSW**	**WRDP50NPSB**
Flat Plate			
50A Double Pole Switch 1 Gang with LED Indicator		**WFDP50NPSW**	**WFDP50NPSB**

	Brushed Steel		Polished Brass		Black Nickel
	White	Black	White	Black	Black
	WRDP50NBSW	**WRDP50NBSB**	**WRDP50NPBW**	**WRDP50NPBB**	**WRDP50NBNB**
	WFDP50NBSW	**WFDP50NBSB**	**WFDP50NPBW**	**WFDP50NPBB**	**WFDP50NBNB**

- Complies with BS 4177.
- Switch and socket are double pole.
- Twin earth as standard.
- Main switch is suitable for isolation.
- All terminals are upward facing for ease of installation.
- Clearly printed terminal marking.
- Capacity of terminals 2 x 6.0mm^2, 1 x 16.0mm^2.
- For mounting boxes see selection chart on page 7.54.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

WFCC50NPSW

WRCC50NPSB

Plate Finish	Polished Steel	
Insert Colour	White	Black
Raised Plate		
45A Cooker Control Unit	**WRCC50NPSW**	**WRCC50NPSB**
Flat Plate		
45A Cooker Control Unit	**WFCC50NPSW**	**WFCC50NPSB**

	Brushed Steel		Polished Brass		Black Nickel
	White	Black	White	Black	Black
	WRCC50NBSW	**WRCC50NBSB**	**WRCC50NPBW**	**WRCC50NPBB**	**WRCC50NBNB**
	WFCC50NBSW	**WFCC50NBSB**	**WFCC50NPBW**	**WFCC50NPBB**	**WFCC50NBNB**

- Complies with BS 1363-4.
- Cable clamp accommodates up to 1.5mm² flexible cord.
- Single screw fast fix cable clamp.
- All terminal screws upward facing for ease of installation.
- Clearly printed terminal markings.
- Capacity of each terminal 2 x 6.0 mm² conductors.
- For mounting boxes see selection chart on page 7.54.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

WFSU83BSW

WRSSU83FOBSW

Plate Finish	Polished Steel	
Insert Colour	White	Black
Raised Plate		
13A FCU Switched	**WRSSU83PSW**	**WRSSU83PSB**
13A FCU Switched with Flex Outlet	**WRSSU83FOPSW**	**WRSSU83FOPSB**
13A FCU Unswitched	**WRSU83PSW**	**WRSU83PSB**
Flat Plate		
13A FCU Switched	**WFSSU83PSW**	**WFSSU83PSB**
13A FCU Switched with Flex Outlet	**WFSSU83FOPSW**	**WFSSU83FOPSB**
13A FCU Unswitched	**WFSU83PSW**	**WFSU83PSB**

	Brushed Steel		Polished Brass		Black Nickel
	White	Black	White	Black	Black
	WRSSU83BSW	**WRSSU83BSB**	**WRSSU83PBW**	**WRSSU83PBB**	**WRSSU83BNB**
	WRSSU83FOBSW	**WRSSU83FOBSB**	**WRSSU83FOPBW**	**WRSSU83FOPBB**	**WRSSU83FOBNB**
	WRSU83BSW	**WRSU83BSB**	**WRSU83PBW**	**WRSU83PBB**	**WRSU83BNB**
	WFSSU83BSW	**WFSSU83BSB**	**WFSSU83PBW**	**WFSSU83PBB**	**WFSSU83BNB**
	WFSSU83FOBSW	**WFSSU83FOBSB**	**WFSSU83FOPBW**	**WFSSU83FOPBB**	**WFSSU83FOBNB**
	WFSU83BSW	**WFSU83BSB**	**WFSU83PBW**	**WFSU83PBB**	**WFSU83BNB**

- Complies with BS EN 61558-2-5
- Capacity of each terminal 2 x 2.5mm^2 conductors.
- Designed for use in bathrooms and shower rooms and incorporates a double wound transformer for an earth free supply.
- Input 230V a.c. output dual voltage 230V a.c. and 115V a.c. outlets.
- Rating 20VA on either voltage.
- Primary circuit protected by a self resetting thermal overload device.
- Insertion of shaver plug automatically switches on the transformer.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

WRSO100PSW

WFSO100PSW

	Plate Finish	Polished Steel	
	Insert Colour	White	Black
Raised Plate			
115/230V Shaver Socket		**WRSO100PSW**	**WRSO100PSB**
Flat Plate			
115/230V Shaver Socket		**WFSO100PSW**	**WFSO100PSB**

	Brushed Steel		Polished Brass		Black Nickel
	White	Black	White	Black	Black
	WRSO100BSW	**WRSO100BSB**	**WRSO100PBW**	**WRSO100PBB**	**WRSO100BNB**
	WFSO100BSW	**WFSO100BSB**	**WFSO100PBW**	**WFSO100PBB**	**WFSO100BNB**

- BT sockets comply with BS EN 6312-2.
- Supplied with fitted cable tie.
- Quick connection with insulation displacement terminals.
- RJ11 has tool-less quick connect 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.

WFBTMPSW

WRBTMBSW

WRBTMPBW

	Plate Finish	Polished Steel	
	Insert Colour	White	Black
Raised Plate			
BT Master Telephone Outlet		**WRBTMPSW**	**WRBTMPSB**
BT Secondary Telephone Outlet		**WRBTSPSW**	**WRBTSPSB**
RJ45 Socket		**WRRJ45PSW**	**WRRJ45PSB**
Flat Plate			
BT Master Telephone Outlet		**WFBTMPSW**	**WFBTMPSB**
BT Secondary Telephone Outlet		**WFBTSPSW**	**WFBTSPSB**
RJ45 Socket		**WFRJ45PSW**	**WFRJ45PSB**

	Brushed Steel		Polished Brass		Black Nickel
	White	Black	White	Black	Black
	WRBTMBSW	**WRBTMBSB**	**WRBTMPBW**	**WRBTMPBB**	**WRBTMBNB**
	WRBTSBSW	**WRBTSBSB**	**WRBTSPBW**	**WRBTSPBB**	**WRBTSBNB**
	WRRJ45BSW	**WRRJ45BSB**	**WRRJ45PBW**	**WRRJ45PBB**	**WRRJ45BNB**
	WFBTMBSW	**WFBTMBSB**	**WFBTMPBW**	**WFBTMPBB**	**WFBTMBNB**
	WFBTSBSW	**WFBTSBSB**	**WFBTSPBW**	**WFBTSPBB**	**WFBTSBNB**
	WFRJ45BSW	**WFRJ45BSB**	**WFRJ45PBW**	**WFRJ45PBB**	**WFRJ45BNB**

- 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.

WFTVFBSW

WFDXBSW

WFDXPBW

WFTXPSW

	Plate Finish	Polished Steel	
	Insert Colour	White	Black
Raised Plate			
Single F Type Satellite Outlet Screened		**WRSATPSW**	**WRSATPSB**
Single CO-AX TV Outlet Female		**WRTVFPSW**	**WRTVFPSB**
Double TV & FM/DAB CO-AX Socket Outlet		**WRDXPSW**	**WRDXPSB**
Triplexer TV, FM/DAB & Satellite Outlet		**WRTXPSW**	**WRTXPSB**
Quadplexer TV, FM/DAB, Satellite 1 & Satellite 2 Outlet		**WRQXPSW**	**WRQXPSB**
Flat Plate			
Single F Type Satellite Outlet Screened		**WFSATPSW**	**WFSATPSB**
Single CO-AX TV Outlet Female		**WFTVFPSW**	**WFTVFPSB**
Double TV & FM/DAB CO-AX Socket Outlet		**WFDXPSW**	**WFDXPSB**
Triplexer TV, FM/DAB & Satellite Outlet		**WFTXPSW**	**WFTXPSB**
Quadplexer TV, FM/DAB, Satellite 1 & Satellite 2 Outlet		**WFQXPSW**	**WFQXPSB**

	Brushed Steel		Polished Brass		Black Nickel
	White	Black	White	Black	Black
	WRSATBSW	**WRSATBSB**	**WRSATPBW**	**WRSATPBB**	**WRSATBNB**
	WRTVFBSW	**WRTVFBSB**	**WRTVFPBW**	**WRTVFPBB**	**WRTVFBNB**
	WRDXBSW	**WRDXBSB**	**WRDXPBW**	**WRDXPBB**	**WRDXBNB**
	WRTXBSW	**WRTXBSB**	**WRTXPBW**	**WRTXPBB**	**WRTXBNB**
	WRQXBSW	**WRQXBSB**	**WRQXPBW**	**WRQXPBB**	**WRQXBNB**
	WFSATBSW	**WFSATBSB**	**WFSATPBW**	**WFSATPBB**	**WFSATBNB**
	WFTVFBSW	**WFTVFBSB**	**WFTVFPBW**	**WFTVFPBB**	**WFTVFBNB**
	WFDXBSW	**WFDXBSB**	**WFDXPBW**	**WFDXPBB**	**WFDXBNB**
	WFTXBSW	**WFTXBSB**	**WFTXPBW**	**WFTXPBB**	**WFTXBNB**
	WFQXBSW	**WFQXBSB**	**WFQXPBW**	**WFQXPBB**	**WFQXBNB**

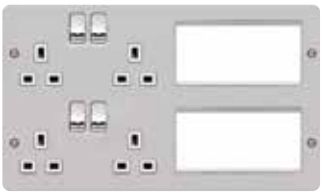
- Carrier plates facilitate installation of industry standard modular data outlets.
- Easy to configure for all applications.
- Easy installation of module to plate.
- Robust retention of modules in operation.
- Quick release of modules for maintenance.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

WFP1EUPSW

WRP1EUPBW

Plate Finish	Polished Steel	
Insert Colour	White	Black
Raised Plate		
1 Module	**WRP1EUPSW**	**WRP1EUPSB**
2 Modules	**WRP2EUPSW**	**WRP2EUPSB**
4 Modules	**WRP4EUPSW**	**WRP4EUPSB**
Flat Plate		
1 Module	**WFP1EUPSW**	**WFP1EUPSB**
2 Modules	**WFP2EUPSW**	**WFP2EUPSB**
4 Modules	**WFP4EUPSW**	**WFP4EUPSB**

sollysta - Decorative
Lounge Plate



WFTVLPPSW

WFTVLPBSW

Plate Finish	Polished Steel
Insert Colour	White
Flat Plate	
Lounge Plate for TV, Power & Data	**WFTVLPPSW**
Back Box	
Lounge Plate Back Box	**WFTVBOX**

	Brushed Steel		Polished Brass		Black Nickel
	White	Black	White	Black	Black
	WRP1EUBSW	**WRP1EUBSB**	**WRP1EUPBW**	**WRP1EUPBB**	**WRP1EUBNB**
	WRP2EUBSW	**WRP2EUBSB**	**WRP2EUPBW**	**WRP2EUPBB**	**WRP2EUBNB**
	WRP4EUBSW	**WRP4EUBSB**	**WRP4EUPBW**	**WRP4EUPBB**	**WRP4EUBNB**
	WFP1EUBSW	**WFP1EUBSB**	**WFP1EUPBW**	**WFP1EUPBB**	**WFP1EUBNB**
	WFP2EUBSW	**WFP2EUBSB**	**WFP2EUPBW**	**WFP2EUPBB**	**WFP2EUBNB**
	WFP4EUBSW	**WFP4EUBSB**	**WFP4EUPBW**	**WFP4EUPBB**	**WFP4EUBNB**

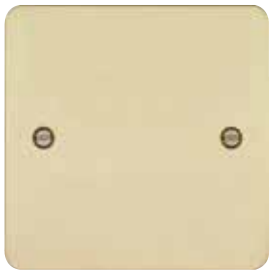
	Brushed Steel	White
	White	White
	WFTVLPBSW	**WFTVLPWW**

- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

WRP2PS

WFP1BS

WRP1PS



WFP1PB

WRP1BN

Plate Finish	Polished Steel
Raised Plate	
Single Blank Plate	**WRP1PS**
Twin Blank Plate	**WRP2PS**
Flat Plate	
Single Blank Plate	**WFP1PS**
Twin Blank Plate	**WFP2PS**

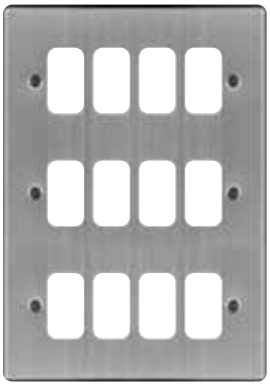
	Brushed Steel	Polished Brass	Black Nickel
	WRP1BS	**WRP1PB**	**WRP1BN**
	WRP2BS	**WRP2PB**	**WRP2BN**
	WFP1BS	**WFP1PB**	**WFP1BN**
	WFP2BS	**WFP2PB**	**WFP2BN**

sollysta - Decorative Grid Plates

WMGP3

Plate Finish	White Moulded
Raised Plate	
1 Gang Grid Plate	**WMGP1**
2 Gang Grid Plate	**WMGP2**
3 Gang Grid Plate	**WMGP3**
4 Gang Grid Plate	**WMGP4**
6 Gang (2 X 3) Grid Plate	**WMGP6**
8 Gang (2 X 4) Grid Plate	**WMGP8**

WFGP1PS



WRGP12BS

Plate Finish	Polished Steel
Raised Plate	
1 Gang Grid Plate	**WRGP1PS**
2 Gang Grid Plate	**WRGP2PS**
3 Gang Grid Plate	**WRGP3PS**
4 Gang Grid Plate	**WRGP4PS**
6 Gang (2 X 3) Grid Plate	**WRGP6PS**
8 Gang (2 X 4) Grid Plate	**WRGP8PS**
12 Gang (3 X 4) Grid Plate	**WRGP12PS**
Flat Plate	
1 Gang Grid Plate	**WFGP1PS**
2 Gang Grid Plate	**WFGP2PS**
3 Gang Grid Plate	**WFGP3PS**
4 Gang Grid Plate	**WFGP4PS**
6 Gang (2 X 3) Grid Plate	**WFGP6PS**
8 Gang (2 X 4) Grid Plate	**WFGP8PS**
12 Gang (3 X 4) Grid Plate	**WFGP12PS**

sollysta - Decorative Grid Frames

WMGF34

Frame Size	1 Gang Frame
Frames for White Moulded and Decorative Raised Plate ranges	**WMGF1**
Frames for Decorative Flat Plate ranges	**WFGF1**

	Brushed Steel	Polished Brass	Black Nickel
	WRGP1BS	**WRGP1PB**	**WRGP1BN**
	WRGP2BS	**WRGP2PB**	**WRGP2BN**
	WRGP3BS	**WRGP3PB**	**WRGP3BN**
	WRGP4BS	**WRGP4PB**	**WRGP4BN**
	WRGP6BS	**WRGP6PB**	**WRGP6BN**
	WRGP8BS	**WRGP8PB**	**WRGP8BN**
	WRGP12BS	**WRGP12PB**	**WRGP12BN**
	WFGP1BS	**WFGP1PB**	**WFGP1BN**
	WFGP2BS	**WFGP2PB**	**WFGP2BN**
	WFGP3BS	**WFGP3PB**	**WFGP3BN**
	WFGP4BS	**WFGP4PB**	**WFGP4BN**
	WFGP6BS	**WFGP6PB**	**WFGP6BN**
	WFGP8BS	**WFGP8PB**	**WFGP8BN**
	WFGP12BS	**WFGP12PB**	**WFGP12BN**

	2 Gang Frame	3 / 4 Gang Frame
	WMGF2	**WMGF34**
	WFGF2	**WFGF34**

- 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.
- WR references supplied with M3.5 x 30mm long fixing screws.
- WF references supplied with M3.5 x 20mm long fixing screws.

For further details on our printed options see page 7.55

WMGFU13BSW

WMGFU13

WMGKS

WMGSDP2/HB

Plate Finish	White Moulded	
Insert Colour	White	
20AX 2 Way Single Pole Switch	**WMGS12**	
20A Intermediate Switch	**WMGS16**	
20A 2 Way Retractive Switch	**WMGS22R**	
20A 1 Way Double Pole Switch	**WMGSDP2**	
20A Double Pole Key Switch	**WMGKS**	
13A Fuse Carrier	**WMGFU13**	
Blank Module	**WMGB1**	
Grid Dimmer Switch Leading Edge	**WMGSD1L**	
Grid Dimmer Switch Trailing Edge	**WMGSD1T**	

	Standard	
Rocker Colour	White	Black
20A 1 Way Double Pole Switch	**WMGSDP2**	**WMGSDP2B**
20A 1 Way Double Pole Marked ‘Cooker Hood’	**WMGSDP2/CHD**	**WMGSDP2B/CHD**
20A 1 Way Double Pole Marked ‘Dishwasher’	**WMGSDP2/DW**	**WMGSDP2B/DW**
20A 1 Way Double Pole Marked ‘Extract Fan’	**WMGSDP2/EF**	**WMGSDP2B/EF**
20A 1 Way Double Pole Marked ‘Fridge Freezer’	**WMGSDP2/FF**	**WMGSDP2B/FF**
20A 1 Way Double Pole Marked ‘Freezer’	**WMGSDP2/FRE**	**WMGSDP2B/FRE**
20A 1 Way Double Pole Marked ‘Fridge’	**WMGSDP2/FRI**	**WMGSDP2B/FRI**
20A 1 Way Double Pole Marked ‘Hob’	**WMGSDP2/HB**	**WMGSDP2B/HB**
20A 1 Way Double Pole Marked ‘Heating’	**WMGSDP2/HTG**	**WMGSDP2B/HTG**
20A 1 Way Double Pole Marked ‘Microwave’	**WMGSDP2/MW**	**WMGSDP2B/MW**
20A 1 Way Double Pole Marked ‘Tumble Dryer’	**WMGSDP2/TD**	**WMGSDP2B/TD**
20A 1 Way Double Pole Marked ‘Waste Disposal’	**WMGSDP2/WD**	**WMGSDP2B/WD**
20A 1 Way Double Pole Marked ‘Washing Machine’	**WMGSDP2/WM**	**WMGSDP2B/WM**
20A 1 Way Double Pole Marked ‘Outside Socket’	**WMGSDP2/OS**	**WMGSDP2B/OS**
20A 1 Way Double Pole Switch Marked ‘Oven’	**WMGSDP2/OV**	**WMGSDP2B/OV**
20A 1 Way Double Pole Switch Marked ‘Wine Cooler’	**WMGSDP2/WC**	**WMGSDP2B/WC**
20A 1 Way Double Pole Switch Marked ‘Hot Water’	**WMGSDP2/HW**	**WMGSDP2B/HW**
20A 1 Way Double Pole Switch Marked ‘Coffee Maker’	**WMGSDP2/CM**	**WMGSDP2B/CM**
20A 1 Way Double Pole Switch Marked ‘Hot Drawer’	**WMGSDP2/HD**	**WMGSDP2B/HD**
20A 1 Way Double Pole Switch Marked ‘Fan Boost’	**WMGSDP2/FB**	**WMGSDP2B/FB**
20A Double Pole Key Switch Marked ‘EM LTG TEST’	**WMGKS/EL**	**WMGKSB/EL**

	Polished Steel		Brushed Steel		Polished Brass		Black Nickel
	White	Black	White	Black	White	Black	Black
	WMGS12PSW	**WMGS12PSB**	**WMGS12BSW**	**WMGS12BSB**	**WMGS12PBW**	**WMGS12PBB**	**WMGS12BNB**
	WMGS16PSW	**WMGS16PSB**	**WMGS16BSW**	**WMGS16BSB**	**WMGS16PBW**	**WMGS16PBB**	**WMGS16BNB**
	WMGS22RPSW	**WMGS22RPSB**	**WMGS22RBSW**	**WMGS22RBSB**	**WMGS22RPBW**	**WMGS22RPBB**	**WMGS22RBNB**
	WMGSDP2PSW	**WMGSDP2PSB**	**WMGSDP2BSW**	**WMGSDP2BSB**	**WMGSDP2PBW**	**WMGSDP2PBB**	**WMGSDP2BNB**
	-	-	-	-	-	-	-
	WMGFU13PSW	**WMGFU13PSB**	**WMGFU13BSW**	**WMGFU13BSB**	**WMGFU13PBW**	**WMGFU13PBB**	**WMGFU13BNB**
	WMGB1PSW	**WMGB1PSB**	**WMGB1BSW**	**WMGB1BSB**	**WMGB1PBW**	**WMGB1PBB**	**WMGB1BNB**
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-

	With LED Indicator	
	White	Black
	WMGSDP2N	**WMGSDP2NB**
	WMGSDP2N/CHD	**WMGSDP2NB/CHD**
	WMGSDP2N/DW	**WMGSDP2NB/DW**
	WMGSDP2N/EF	**WMGSDP2NB/EF**
	WMGSDP2N/FF	**WMGSDP2NB/FF**
	WMGSDP2N/FRE	**WMGSDP2NB/FRE**
	WMGSDP2N/FRI	**WMGSDP2NB/FRI**
	WMGSDP2N/HB	**WMGSDP2NB/HB**
	WMGSDP2N/HTG	**WMGSDP2NB/HTG**
	WMGSDP2N/MW	**WMGSDP2NB/MW**
	WMGSDP2N/TD	**WMGSDP2NB/TD**
	WMGSDP2N/WD	**WMGSDP2NB/WD**
	WMGSDP2N/WM	**WMGSDP2NB/WM**
	WMGSDP2N/OS	**WMGSDP2NB/OS**
	WMGSDP2N/OV	-
	-	-
	-	-
	-	-
	-	-
	-	-
	-	-

sollysta
IP66

Manufactured from a tough, durable thermoplastic, the sollysta IP66 range is ideal for indoor and outdoor applications where wiring accessories may be vulnerable to the potentially harmful effects of dust or water ingress. The IP66 rating assures total protection from ingress of dust and protection against powerful water jets.

Wall Switches	7.52
Socket Outlets	7.52
Fused Connection Unit	7.52

- Sockets and switches are from the unique and popular Sollysta White Moulded range.
- IP66 rating conforms to BS EN 60529 : 1992.
- Functional products tested and certified to appropriate British Standards.
- Robust and rugged enclosures designed to withstand the elements.
- Unique double hinge allows lid to fully open through 180 degrees.
- Fixing point for padlock.
- Cable entries:
90 x 90 = 4x20, 1x20 & 1x25
103 x 116.5 = 4x20, 1x20 & 1x25
164 x 116.5 = 6x20, 1x20 & 1x25

WXPPS12

WXPPS22

Wall Switches

Description	Dimensions (mm) h x w	Pack qty.	Cat ref.
10AX 1 Gang 2 Way Switch	90 x 90	1	**WXPPS12**
10AX 2 Gang 2 Way Switch	90 x 90	1	**WXPPS22**
20AX Double Pole 1 Gang 1 Way Switch	90 x 90	1	**WXPDP84**
10A 1 Gang Bell Push Switch	90 x 90	1	**WXPPS12B**

WXPSS82

Socket Outlets

Description	Dimensions (mm) h x w	Pack qty.	Cat ref.
13A 1 Gang Double Pole Unswitched Socket	103 x 116.5	1	**WXPS81**
13A 1 Gang Double Pole Switched Socket	103 x 116.5	1	**WXPSS81**
13A 2 Gang Double Pole Unswitched Socket	103 x 116.5	1	**WXPS82**
13A 2 Gang Double Pole Switched Socket	164 x 116.5	1	**WXPSS82**

WXPSSU83FO

Fused Connection Unit

Description	Dimensions (mm) h x w	Pack qty.	Cat ref.
13A Double Pole Fused Connect Unit with Flex Outlet	103 x 116.5	1	**WXPSSU83FO**

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.co.uk/sollysta

We also offer a bespoke printing service for your individual requirements. Please contact our Technical Support Department on 01952 675689 for further details.

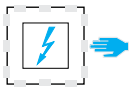
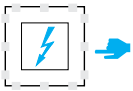
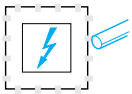
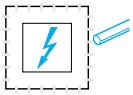
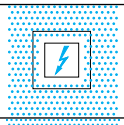
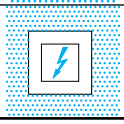
Product Reference	Product Description	Standard Surface Box Reference	Deep Surface Box Reference
WMPS11	10AX 1 Gang 1 Way Wall Switch	WMPB1/20	WMPB1/28
WMPS12	10AX 1 Gang 2 Way Wall Switch	WMPB1/20	WMPB1/28
WMPS12W	10AX 1 Gang 2 Way Wall Switch Wide Rocker	WMPB1/20	WMPB1/28
WMPS22W	10AX 2 Gang 2 Way Wall Switch Wide Rocker	WMPB1/20	WMPB1/28
WMPS22	10AX 2 Gang 2 Way Wall Switch	WMPB1/20	WMPB1/28
WMPS32	10AX 3 Gang 2 Way Wall Switch	WMPB1/20	WMPB1/28
WMPS42	10AX 4 Gang 2 Way Wall Switch	WMPB2/28	WMPB2/28
WMPS16	Intermediate Switch	WMPB1/20	WMPB1/28
WMPS12RB	Push Switch with Bell Symbol	WMPB1/20	WMPB1/28
WMPS12R	Push Switch	WMPB1/20	WMPB1/28
WMDS1	1 Gang Dimmer	WMPB1/28	WMPB1/46
WMDS2	2 Gang Dimmer	WMPB1/28	WMPB1/46
WMDS3	3 Gang Dimmer	WMPB2/28	WMPB2/46
WMWSD4	4 Gang DImmer	WMPB2/28	WMPB2/46
WMPS3PIF	3 Pole Isolator Switch with Fan Symbol	WMPB1/20	WMPB1/28
WMPS3PI	3 Pole Isolator Switch	WMPB1/20	WMPB1/28
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
WMS81	13A 1 Gang Unswitched Socket	WMPB1/28	WMPB1/46
WMS82	13A 2 Gang Unswitched Socket Dual Earth	WMPB2/28	WMPB2/46
WMS51	5A 1 Gang Unswitched Socket	WMPB1/28	WMPB1/46
WMDP84	20A Double Pole Switch	WMPB1/28	WMPB1/46
WMDP84FO	20A Double Pole Switch with Flex Outlet	WMPB1/28	WMPB1/46
WMDP84N	20A Double Pole Switch with LED Indicator	WMPB1/28	WMPB1/46
WMDP84FON	20A Double Pole Switch with LED Indicator & Flex Outlet	WMPB1/28	WMPB1/46
WMDP85N	20A Double Pole Switch with LED Indicator marked Water Heater	WMPB1/28	WMPB1/46
WMDP85FON	20A Double Pole Switch with LED Indicator & Flex Outlet marked Water Heater	WMPB1/28	WMPB1/46
WMP2FO	Flex Outlet Plate 20A	WMPB1/20	WMPB1/28
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
WMSSU83	13A Fused Connection Unit Switched	WMPB1/28	WMPB1/46
WMSSU83FO	13A Fused Connection Unit Switched with Flex Outlet	WMPB1/28	WMPB1/46
WMSSU83N	13A Fused Connection Unit Switched with LED Indicator	WMPB1/28	WMPB1/46
WMSSU83FON	13A Fused Connection Unit Switched with LED Indicator & Flex Outlet	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
WMCC50	50A Cooker Control Unit	WMPB2/46CC	N/A
WMCC50N	50A Cooker Control Unit with LED Indicator	WMPB2/46CC	N/A
WMP50FO	Cooker Cable Outlet with Terminals	WMPB1/46	N/A
WMP1	Single Blank Plate	WMPB1/20	WMPB1/28
WMP2	Twin Blank Plate	WMPB2/28	N/A
WMBTM	BT Master Telephone Outlet	WMPB1/28	WMPB1/46
WMBTS	BT Secondary Telephone Outlet	WMPB1/28	WMPB1/46
WMRJ11	RJ11 Socket	WMPB1/28	WMPB1/46
WMRJ45	RJ45 Socket	WMPB1/28	WMPB1/46
WMSAT	Single F Type Satellite Outlet Screened	WMPB1/28	WMPB1/46
WMTVM	Single CO-AX TV Socket Outlet Male	WMPB1/28	WMPB1/46
WMTVF	Single CO-AX TV Socket Outlet Female	WMPB1/28	WMPB1/46
WMDX	Double TV & FM/DAB CO-AX Socket Outlet	WMPB1/28	WMPB1/46
WMTX	TriplexerTV & FM/DAB & SAT Outlet	WMPB1/28	WMPB1/46
WMQX	Quadplexer TV & FM/DAB & SAT1 & SAT2	WMPB1/28	WMPB1/46

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

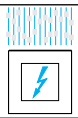
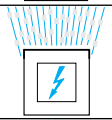
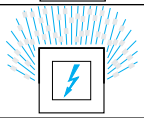
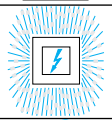
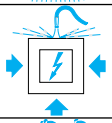
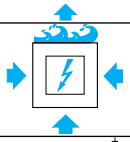
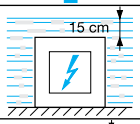
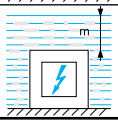
The first character numeral indicates the degree of protection provided by the enclosure against access to hazardous parts by preventing or limiting the ingress of a part of the human body or an object held by a person and ingress of solid foreign objects.

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

The first character numeral:
Protection against foreign objects

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

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

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

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

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

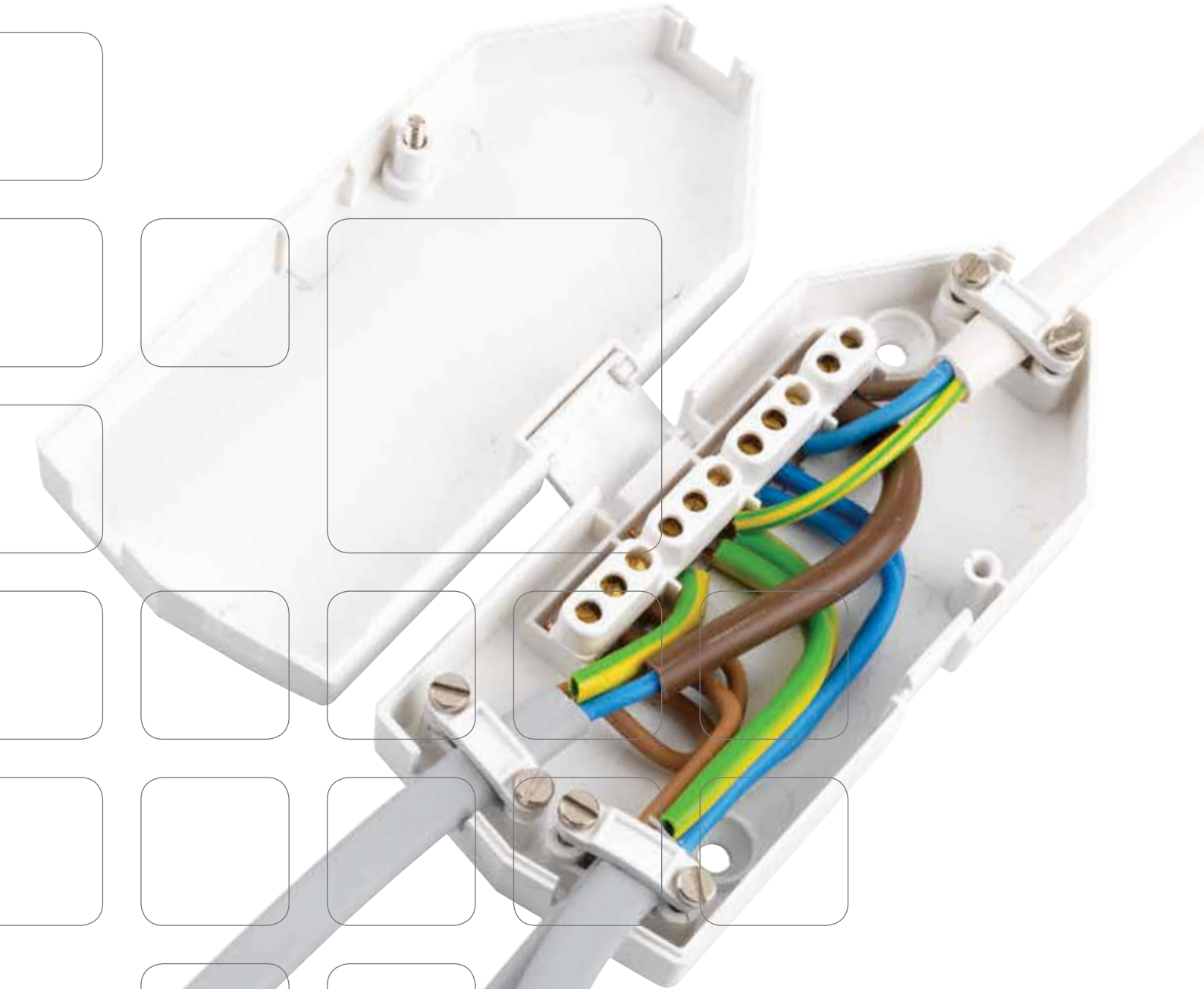
Additional letter (in option)
Specific information on the product

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

Junction Boxes
& Ceiling Accessories

Including the award winning downlighter junction box, maintenance free junction box and traditional junction boxes.

Also includes our safety lampholders and pendants. Designed to make life easier for you. When the lamp is removed from the lamp holder body the power is automatically disconnected at the contacts; ensuring that there is no risk of access to live parts.



Downlighter Junction Box	8.2
Maintenance Free Junction Box	8.2
Traditional Junction Boxes	8.3
Safety Lampholders	8.4
Safety Pendant Sets	8.5
Ceiling Accessories	8.6

- Complies with BS EN 60670-22.
- Fits through a 58mm diameter hole.
- Cable clamps to prevent strain on terminations.
- 3 plate terminal style with captive terminal screws.
- Separate terminals for flexible cords.
- Junction box selection chart see page 8.7.

J501

Downlighter Junction Box

Junction box complete with incoming and outgoing cable clamps. Three plate terminals with separate terminals for flexible cords.

Rating In	Dimensions h x w x d (mm)	Terminal capacity (mm^2)	Pack qty.	Cat Ref.
16 Amp	122 x 53 x 27	3 x 3 x 1.5mm^2 1 x 2 x 1.5mm^2	10	**J501**

Maintenance Free Junction Boxes

- Comply 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.
- Junction box selection chart see page 8.7.

J804

Maintenance Junction Box

Junction box complete with incoming and outgoing cable clamps. Four plate terminals with separate terminals for flexible cords.

Rating In	Dimensions h x w x d (mm)	Terminal capacity (mm^2)	Pack qty.	Cat Ref.
32 Amp - 3 Terminals (Power)	140 x 65 x 30	3 x 4 x (0.5-4.0)	10	**J803**
20 Amp - 4 Terminals (Power)	140 x 65 x 30	4 x 4 x (0.5-4.0)	10	**J804**

- 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 (apart from J701 which has two screws).
- J701 and J701/TB junction / adaptable box will accept 16mm x 16mm and /or 16mm x 25mm mini-trunking.
- Junction box selection chart see page 8.7.

J201

Knockout Slot Terminal Junction Box

Description	Dimensions dia x h (mm)	Fixing centres (mm)	Terminal capacity (mm²)	Pack qty.	Cat ref.
20 Amp, 4 Terminal, Brown	59 x 25	50.8	3 x 1.5	10	**J201**

J601

Selective Entry Slot Terminal Junction Boxes

Description	Dimensions dia x h (mm)	Fixing centres (mm)	Terminal capacity (mm²)	Pack qty.	Cat ref.
20 Amp, 4 Terminal, Brown	79 x 26	50.8	3 x 1.5	10	**J301**
30 Amp, 3 Terminal, Brown	89 x 32	50.8	4 x 2.5	10	**J401**
20 Amp, 6 Terminal, Brown	89 x 26	50.8	3 x 1.5	10	**J601**

J701/TB

Junction / Adaptable Box

Description	Dimensions h x w x d (mm)	Terminal capacity (mm²)	Pack qty.	Cat ref.
No terminals	122 x 156 x 32	-	10	**J701**
With terminal block, cable ties, and related wiring card	122 x 156 x 32	4 x 1.5	10	**J701/TB**

- Complies with BS EN 7895.
- T2 = heat resistance rating (210ºC).
- Automatically disconnect power at the contacts when the lamp is removed.
- 50.8mm fixing centres for non-access versions. Use with mounting blocks MB326E/MT.
- Solid brass plungers and copper plated steel springs maintain plunger pressure throughout their long life.
- Body angle of angled battens set at 30º.
- 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.

SEL212

Bayonet Cap Cord Grip Lampholders

Description	Pack qty.	Cat ref.
Safety Cord Grip Lampholders - Short Skirt	20	**SEL212**
Safety Cord Grip Lampholders - Home Office Shield	20	**SEL214**

SEL354

Straight BC Batten Lampholder

Description	Pack qty.	Cat ref.
Three Terminal - Home Office Shield	20	**SEL354**

SEL96T

Access BC Batten Lampholder

Description	Pack qty.	Cat ref.
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**

- 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.
- 3 separate knockouts accept 1, 2 or 3 x 1.5mm² conductors.
- Optional halo RL602 (see page 8.6).

624SEL212/6

Pendant Sets with Access Ceiling Rose

Description	Pack qty.	Cat ref.
Safety Pendant Set 6" - Short Skirt	10	**624SEL212/6**
Safety Pendant Set 9" - Short Skirt	10	**624SEL212/9**
Safety Pendant Set 12" - Short Skirt	10	**624SEL212/12**
Safety Shield Pendant Set 6"- Home Office Shield	10	**624SEL214/6**

Super Access Terminal Bank Type Ceiling Rose

Description	Dimensions dia x h (mm)	Pack qty.	Cat ref.
3 Terminals	81 diameter x 26 (halo = 108mm diameter)	10	**RL624**

LEL212/6

Low Energy Pendant

Description	Pack qty.	Cat ref.
Low Energy Pendant to accomodate GU10-L1 lamp	1	**LEL212/6**

- Capacity of earth terminal for mounting blocks: 3 x 1.5mm² cables
- Cable knockout entries: **MB326E/MT** - centrally in base. 4 on periphery will accept 16mm x 16mm or 16mm x 25mm mini trunking.

MB326E/MT

Mounting Blocks

Description	Dimensions dia x h (mm)	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**

Lampholder Skirts (Home Office Shield and Shade Ring)

Suitable for use with any lampholder or batten lampholder

Description	Pack qty.	Cat ref.
Short Skirts	50	**HAL70**
Home Office Shield	50	**HAL72**

RL602

Halo

Description	Pack qty.	Cat ref.
Halo (108mm Diameter)	20	**RL602**

YES

YES

NO

Maintenance free terminals required

NO

Cable clamping recommended

Description	Nº of Terminals	Terminal Rating	Reference	Benefits / Considerations
Downlighter Junction Box	3 x 3 x 1.5mm^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**	

klik

The lighting connection system for all lighting designs.

From a conduit based system, to an installation fully pluggable from distribution board up to luminaire.

With the klik connector, luminaires can be plugged in seconds, with absolute safety and without circuit isolation. The secure mechanical and electrical connection gives complete confidence in the systems integrity.

klik.LDS	9.2
klik.system	9.26

klik.LDS

Lighting Distribution System

Today there is pressure on all areas of construction is to reduce costs. The installation speed of klik.LDS makes a significant contribution to both the on-site wiring and on-going maintenance costs, whether from a single outlet PCR or a multi-outlet marshalling box.

Marshalling Boxes	9.4
Occupancy Sensors	9.5
6 Amp Plug-In Ceiling Rose & Cover	9.6
6 Amp 3 Pin Plug	9.7
6 Amp Socket Outlets	9.8
Pre-Wired 6 Amp Plug-In Ceiling Roses & Plugs	9.10
6 Amp Plug-In Ceiling Roses & Covers	9.11
6 Amp Plugs 4 Pin Plug	9.12
6 Amp Socket Outlets	9.13
Pre-Wired 6 Amp Plug-In Ceiling Roses	9.14
Pre-Wired 6 Amp Plugs	9.15
Moulded Mounting Boxes	9.16
IP66 Outdoor Enclosure	9.17

- Complies with BS 5733.
- Main terminal capacity 5 x 4mm$^{2.}$
- Flexible conductor terminal capacity 1 x 1mm$^{2.}$
- Main terminals rated 16 Amps. Each socket outlet rated 6 Amps. Flexible conductor terminals rated at 10 Amps.
- All socket outlets factory connected and tested.
- Aluminium extruded body.
- All plastic 'V0' rated.
- Socket outlets accept either klik lighting (3 pin) plugs, klik AX (4 pin) plugs and klik pre-wired leads.
- Cable entries will accept 20mm or can be drilled out to 25mm.
- Self-retained cover screw.

For mounting methods see page 9.21.
For product standards see page 9.18.

KLDS4

KLDS6

KLDS8

KLDS10

KLDS12

Marshalling Boxes

No of Outlets	Dimensions h x w x d (mm)	Pack qty.	Cat ref.
4	222 x 238 x 73	1	**KLDS4**
6	222 x 288 x 73	1	**KLDS6**
8	222 x 338 x 73	1	**KLDS8**
10	222 x 388 x 73	1	**KLDS10**
12	222 x 438 x 73	1	**KLDS12**

- Presence detection mode: Allows lighting to be controlled ensuring that lighting is only energised when people are in the detection area.
- Absence detection mode: Requires lighting to be activated by a wall switch or remote control to switch lighting on. Lighting then remains on during presence and switches off after time out period from last presence detection. Offers potentially the best energy savings.
- Wall switch override allows lighting state to be changed between states.
- High sensitivity detection will react to small movements, such as somebody working at a desk up to 5m diameter.
- Motion detection will react to larger movements, such as walking up to 7m diameter.
- Integral photocell 5 - 1000 lux. Lux setting can be increased and decreased in increments of 100 lux.
- EEK001 programming tool is easy to use with 2 memory settings to enable repeatability.
- EEK002 remote control comes with a wall mounting bracket for storage and allows room occupant to have control of lighting output.
- Time out adjustment: 2 - 57 mins with remote programmer. 1 min - 1 hour with potentiometer.
- Switching capability - relay Incandescent Halogen - 2300W. Halogen ELV via ferromagnetic or electronic transformer - 1500W. Compact Fluorescent - 23 x 23W. Parallel compensated fluorescent tubes - 1000W Fluorescent via electronic ballast - 1000W.
- Walk test mode.
- Factory presets: Lux = 400 Time = 20 min Test mode for 2 min.
- 3m 1.5mm^2 Low Smoke Zero Halogen.
- Can be flush mounted through a 60mm hole, utilises spring clips to ensure a fast and secure mounting method.
- All parts factory connected and tested.
- Time and photocell can be set by controller EEK001 or potentiometer.

For technical information see pages 9.23 - 9.25.
For product standards see page 9.18

EEK510B

Occupancy Sensors

Description	Pack qty.	Cat ref.
Standard Occupancy Sensor, Pre-Wired 3m	1	**EEK513W**
Standard Occupancy Sensor (without cable)	1	**EEK510B**
Surface Mount Kit	1	**EEK005**

EEK001

Programming Tool & Remote Controller

Description	Pack qty.	Cat ref.
Programming Tool	1	**EEK001**
Remote Control	1	**EEK002**

EEK002

- Complies with BS 6972 and BS 5733:2010.
- PCR2000 comprises of; plug cat. ref. P22, socket cat ref. S27 Cover, cat. ref. A1
- PCR2000 provides loop-in terminal bank wiring within integral surface mounting socket base.
- PCR2000 base terminals accepts 2 x 4mm^2 conductor.
- 6 Amp 250V A.C.
- Sockets have 4 terminations: line, neutral, earth and loop-in.
- Plugs have 3 terminations: line, neutral and earth.
- Static loading - 5kg maximum
- Fixing: 50.8mm Standard Diagonal (BESA).

For wiring diagrams see page 9.19.
For product standards see page 9.18.

PCR2000

6 Amp 3 Pin Ceiling Rose & Cover

Dimensions	Pack qty.	Cat ref.
75mm Diameter x 44mm, 7mm Back Projection	10	**PCR2000**

A1

6 Amp 3 Pin Ceiling Rose Cover

Dimensions	Pack qty.	Cat ref.
White Ceiling Rose Cover 75mm Diameter x 44mm	10	**A1**

- Complies with BS 6972 and BS 5733.
- Suitable for use with any klik lighting or klik.AX socket and klik.LDS.
- P22 plug is supplied in plug-in Ceiling Rose, Cat No. PCR2000.
- Luminaire plugs are designed for incorporation by OEM's.
- Plugs have 3 terminations: live, neutral and earth.
- Static loading when load suspended by flexible cord - 5kg maximum.

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.
For product standards see page 9.18.

P22

6 Amp 3 Pin Plug

Description	Fixing	Pack qty.	Cat ref.
With Cord Grip and Cover, 57mm x 25mm x 25mm	Lead	10	**P22**

- Complies with BS 6972 and BS 5733.
- All suitable for use with any standard klik lighting plug.
- S27 socket is supplied in plug-in ceiling rose, Cat No. PCR2000.
- S27 socket will accept A1 cover.
- 6 Amp 250V A.C.
- S26/TC socket is an S26 architrave socket pre-assembled with a trunking clamp.

For installation information see page 9.20.
For product standards see page 9.18.

S27

Round Socket

Description	Fixing	Pack qty.	Cat ref.
74mm Diameter x 7mm 7mm Back Projection	50.8mm Standard Diagonal (BESA)	10	**S27**

S28

Ultra Flush Round Socket

Description	Fixing	Pack qty.	Cat ref.
86mm Diameter x 1.5mm 10mm Back Projection	60.3mm Standard Vertical	10	**S28**

S20/MOP

3 Socket Module

Description	Fixing	Pack qty.	Cat ref.
54mm x 28mm x 13mm Complete with Panel Mounting Kit	Panel Cut-Out 58mm x 32mm	10	**S20/MOP**

S21

Ultra Flush Socket

Description	Fixing	Pack qty.	Cat ref.
86 x 36 x 1.5mm 10mm Back Projection	60.3mm Standard Vertical	10	**S21**

S26

Architrave Socket

Description	Fixing	Pack qty.	Cat ref.
86 x 33 x 6mm 7mm Back Projection	60.3mm Standard Vertical	10	**S26**

S26/TC

6 Amp Lighting Trunking Socket with Clamp

Dimensions (mm)	Fixing	Pack qty.	Cat ref.
86 x 33 x 6 7mm Back Projection	Via Integral Trunking Clamp	10	**S26/TC**

- Complies with BS 6972 and BS 5733.
- Comprehensive range of pre-wired klik lighting plugs and ceiling roses reduces on-site installation time and cost.
- All leads have crimped ends to eliminate breakage, and minimise on-site cable preparation.
- PVC flexible cord, complies with BS 6500.
- Low smoke zero halogen flexible cord, complies with BS 6500 and BS 7211.

For wiring diagrams see page 9.19.
For product standards see page 9.18.

PCR2000/1.0

Pre-Wired 6 Amp Plug-In Ceiling Roses

Length	Pack qty.	PVC Cat ref.	Low smoke zero halogen Cat ref.
1 Metre 0.75mm² Flexible Cord	10	**PCR2000/1.0**	**PCR2000/LSF/1.0**
2 Metre 0.75mm² Flexible Cord	10	**PCR2000/2.0**	**PCR2000/LSF/2.0**
3 Metre 0.75mm² Flexible Cord	5	**PCR2000/3.0**	**PCR2000/LSF/3.0**
4 Metre 0.75mm² Flexible Cord	5	**PCR2000/4.0**	**PCR2000/LSF/4.0**
2 Metre 1.00mm² Flexible Cord	10	**PCR2000/1.0PVC/2**	**PCR2000/1.0LSF/2**
3 Metre 1.00mm² Flexible Cord	5	**PCR2000/1.0PVC/3**	**PCR2000/1.0LSF/3**
4 Metre 1.00mm² Flexible Cord	5	**PCR2000/1.0PVC/4**	**PCR2000/1.0LSF/4**
5 Metre 1.00mm² Flexible Cord	5	**PCR2000/1.0PVC/5**	**PCR2000/1.0LSF/5**

P22/1.0

Pre-Wired 6 Amp Plugs

Length	Pack qty.	PVC Cat ref.	Low smoke zero halogen Cat ref.
1 Metre 0.75mm² Flexible Cord	10	**P22/1.0**	**P22/LSF/1.0**
2 Metre 0.75mm² Flexible Cord	10	**P22/2.0**	**P22/LSF/2.0**
3 Metre 0.75mm² Flexible Cord	5	**P22/3.0**	**P22/LSF/3.0**
4 Metre 0.75mm² Flexible Cord	5	**P22/4.0**	**P22/LSF/4.0**
2 Metre 1.00mm² Flexible Cord	10	**P22/1.0PVC/2**	**P22/1.0LSF/2**
3 Metre 1.00mm² Flexible Cord	5	**P22/1.0PVC/3**	**P22/1.0LSF/3**
4 Metre 1.00mm² Flexible Cord	5	**P22/1.0PVC/4**	**P22/1.0LSF/4**
5 Metre 1.00mm² Flexible Cord	5	**P22/1.0PVC/5**	**P22/1.0LSF/5**

- Complies with BS 6972 and BS 5733.
- CR64AX comprises of; Plug Cat ref. P64AXR Socket Cat ref. S64AX and Cover Cat. ref. A1.
- **CR64AX/R** Plug Cat ref. P64AXR Socket Cat ref. S64AX and Cover Cat ref. A1/R.
- 6 Amp 250V A.C.
- Sockets have 5 terminations: line, neutral, earth, auxiliary and loop-in.
- Plugs have 4 terminations: line, neutral, earth and auxiliary.
- Static loading when load suspended by flexible cord - 5kg maximum.

For wiring diagrams see page 9.19.
For product standards see page 9.18.

CR64AX

CR64AX/R

6 Amp 4 Pin Ceiling Rose & Cover

Description	Pack qty.	Cat ref.
White Cover with 75mm Diameter x 44mm, 7mm Back Projection	10	**CR64AX**
Red Cover with 75mm Diameter x 44mm, 7mm Back Projection	10	**CR64AX/R**

A1/R

6 Amp 3 Pin Ceiling Rose Cover

Dimensions	Pack qty.	Cat ref.
White Ceiling Rose Cover 75mm Diameter x 44mm	10	**A1**
Red Ceiling Rose Cover 75mm Diameter x 44mm	10	**A1/R**

- Complies with BS 6972 and BS 5733.
- Special purpose 4 pin plug, suitable only for use with klik AX sockets and klik LDS.
- P64AXR plug as supplied in plug-in ceiling rose, Cat. No. CR64AX.
- 6 Amp 250V A.C.
- Plugs have 4 terminations: line, neutral, earth and auxiliary.
- Static loading when load suspended by flexible cord - 5kg maximum when used with S64AX socket.

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.

For product standards see page 9.18.

P64AX/R

6 Amp 4 Pin Plugs

Description	Fixing	Pack qty.	Cat ref.
White with Cord Grip and Cover, 57mm x 25mm x 44mm	Lead	10	**P64AX**
Red with Cord Grip and Cover, 57mm x 25mm x 44mm	Lead	10	**P64AX/R**

- Complies with BS 6972 and BS 5733.
- Sockets suitable for use with any klik lighting or klik AX plug.
- All sockets have 5 terminations: line, neutral, earth, auxiliary and loop-in.
- For special purpose applications eg: emergency lighting.
- S64AX socket is supplied in plug-in ceiling rose, Cat ref. CR64AX.
- S64AX socket will accept A1 A1/R cover.
- S65AX supplied with M3.5 x 25mm fixing screws.

For product standards see page 9.18.

S60AX/MOP

Socket Module

Description	Fixing	Pack qty.	Cat ref.
54mm x 37mm x 13mm Complete with Panel Mounting Kit	Panel Cut-Out 58mm x 59mm	10	**S60AX/MOP**

S64AX

Round Socket

Description	Fixing	Pack qty.	Cat ref.
74mm Diameter x 7mm 7mm Back Projection	50.8mm Standard Diagonal (BESA)	10	**S64AX**

S65AX

Single Gang Square Socket

Description	Fixing	Pack qty.	Cat ref.
86 x 86 x 9mm 5mm Back Projection	60.3mm Standard Horizontal	10	**S65AX**

- Complies with BS 6972 and BS 5733.
- PVC flexible cord: BS 6500.
- Low smoke zero halogen flexible cord: BS 6500 and BS 7211.

For product standards see page 9.18.

CR64AX/1.0

Pre-Wired 6 Amp Plug-In Ceiling Roses

Length	Pack qty.	PVC Cat ref.	Low smoke zero halogen Cat ref.
1 Metre 0.75mm² Flexible Cord	10	**CR64AX/1.0**	**CR64AX/LSF/1.0**
2 Metre 0.75mm² Flexible Cord	10	**CR64AX/2.0**	**CR64AX/LSF/2.0**
3 Metre 0.75mm² Flexible Cord	5	**CR64AX/3.0**	**CR64AX/LSF/3.0**
4 Metre 0.75mm² Flexible Cord	5	**CR64AX/4.0**	**CR64AX/LSF/4.0**
2 Metre 1.00mm² Flexible Cord	10	**CR64AX/1.0PVC/2**	**CR64AX/1.0LSF/2**
3 Metre 1.00mm² Flexible Cord	5	**CR64AX/1.0PVC/3**	**CR64AX/1.0LSF/3**
4 Metre 1.00mm² Flexible Cord	5	**CR64AX/1.0PVC/4**	**CR64AX/1.0LSF/4**
5 Metre 1.00mm² Flexible Cord	5	**CR64AX/1.0PVC/5**	**CR64AX/1.0LSF/5**

- Complies with BS 6972 and BS 5733.
- PVC flexible cord: BS 6500.
- Low smoke zero halogen flexible cord: BS 6500 and BS 7211.

For product standards see page 9.18.

P64AX/1.0

Pre-Wired 6 Amp Plugs - White Plug

Length	Pack qty.	PVC Cat ref.	Low smoke zero halogen Cat ref.
1 Metre 0.75mm² Flexible Cord	10	**P64AX/1.0**	**P64AX/LSF/1.0**
2 Metre 0.75mm² Flexible Cord	10	**P64AX/2.0**	**P64AX/LSF/2.0**
3 Metre 0.75mm² Flexible Cord	5	**P64AX/3.0**	**P64AX/LSF/3.0**
4 Metre 0.75mm² Flexible Cord	5	**P64AX/4.0**	**P64AX/LSF/4.0**
2 Metre 1.00mm² Flexible Cord	10	**P64AX/1.0PVC/2**	**P64AX/1.0LSF/2**
3 Metre 1.00mm² Flexible Cord	5	**P64AX/1.0PVC/3**	**P64AX/1.0LSF/3**
4 Metre 1.00mm² Flexible Cord	5	**P64AX/1.0PVC/4**	**P64AX/1.0LSF/4**
5 Metre 1.00mm² Flexible Cord	5	**P64AX/1.0PVC/5**	**P64AX/1.0LSF/5**

P64AXR/1.0

Pre-Wired 6 Amp Plugs - Red Plug

Length	Pack qty.	PVC Cat ref.	Low smoke zero halogen Cat ref.
1 Metre 0.75mm² Flexible Cord	10	**P64AXR/1.0**	**P64AXR/LSF/1.0**
2 Metre 0.75mm² Flexible Cord	10	**P64AXR/2.0**	**P64AXR/LSF/2.0**
3 Metre 0.75mm² Flexible Cord	5	**P64AXR/3.0**	**P64AXR/LSF/3.0**
4 Metre 0.75mm² Flexible Cord	5	**P64AXR/4.0**	**P64AXR/LSF/4.0**
2 Metre 1.00mm² Flexible Cord	10	**P64AXR/1.0PVC/2**	**P64AXR/1.0LSF/2**
3 Metre 1.00mm² Flexible Cord	5	**P64AXR/1.0PVC/3**	**P64AXR/1.0LSF/3**
4 Metre 1.00mm² Flexible Cord	5	**P64AXR/1.0PVC/4**	**P64AXR/1.0LSF/4**
5 Metre 1.00mm² Flexible Cord	5	**P64AXR/1.0PVC/5**	**P64AXR/1.0LSF/5**

- Complies with BS 5733.
- To complement the range of klik products a selection of moulded mounting boxes is available for either flush or surface mounting.

For product standards see page 9.18.

MB2

Round Surface Box

Dimensions	Fixing	Pack qty.	Cat ref.
85mm Diameter x 31mm	50.8mm Standard Diagonal (BESA)	10	**MB2**

Architrave Flush Box

Dimensions	Fixing	Pack qty.	Cat ref.
80 x 29 x 20mm	60.3mm Standard Vertical	10	**MB3/E**

- This product will provide an alternative to hard wiring external lighting connections.
- Interfaces two AX 6 Amp sockets into a weather-proof enclosure.
- Fast connection during fit out.
- Suitable for use in arduous / wet environments.
- Quick and secure method for lighting connections in arduous areas.
- Complies with BS 5733, BS EN 60529, BS EN 60670-1.

For product standards see page 9.18.

WKAX2

IP66 2 Gang Socket

Optional padlock

Dimensions h x w x d (mm)	Pack qty.	Cat ref.
140 x 155 x 90mm	1	**WKAX2**

Product Description	klik Product identification	BS number	Description
klik Lighting Distribution System	KLDS	BS 5733:2010	General requirements for Electrical Accessories
Occupancy Sensor	EEK*W	IEC 60669-1, IEC 60669-2-1	Switches for household & similar fixed electrical installations Part 2-1 for Electronic switches.
Mounting Boxes	MB	BS 6972:1988	General requirements for Luminaire supporting couplers for domestic, light industrial & commercial use
Mounting Boxes	MP	BS 5733:2010	General requirements for Electrical Accessories
klik Ceiling Roses, Plugs, Outlets & Pre-Wired Leads	S, P, PCR	BS 5733:2010 BS 6972:1988	General requirements for Electrical Accessories General requirements for Luminaire supporting couplers for domestic, light industrial & commercial use
IP66 Outdoor Enclosure	WKAX2	BS 5733:2010 BS EN 60529:1992 BS EN 60670-1:2005	General requirements for Electrical Accessories Degrees of protection provided by enclosures Boxes and enclosures for Electrical Accessories for household and similar
PVC Flexible Cord	PVC	BS 6500:2000	Flexible cords rated to 300/350V for use with appliances & equipment intended for domestic, office & similar environments.
LSF Flexible Cord	LSF	BS 6500:2000 BS 7211:1998	Flexible cords rated to 300/350V for use with appliances & equipment intended for domestic, office & similar environments.

Product Materials
klik plugs and sockets feature solid brass terminals and phosphor bronze contacts for good conductivity. Moulded components are manufactured from high quality thermoplastics.

klik Terminal Capacities

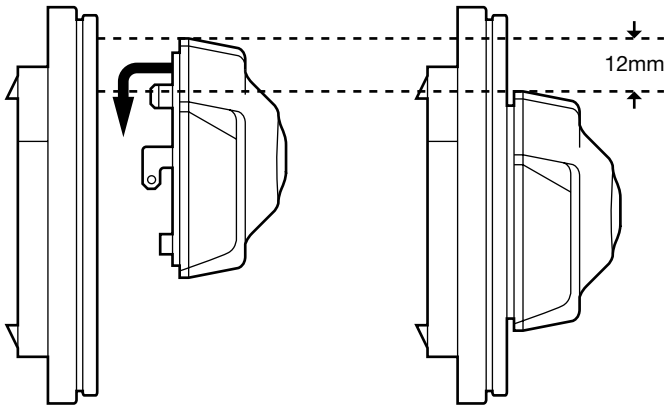
	Number of Conductors				
	0.75mm²	**1.0mm²**	**1.5mm²**	**2.5mm²**	**4.0mm²**
Socket Outlets	-	5	4	3	2
Plugs P22, P64X, P26	1	1	-	-	-

Cables for klik Plugs

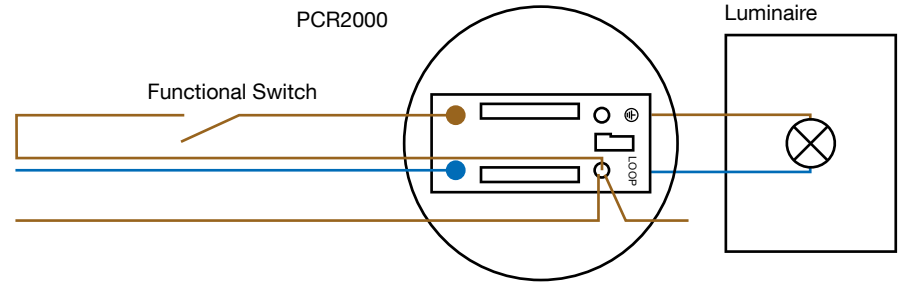
	0.75mm² PVC / LSF 3 Core	**0.75mm² PVC / LSF 4 Core**	**1.0mm² PVC / LSF 3 Core**	**1.0mm² PVC / LSF 4 Core**
P22	Y	-	Y	-
P64AX	Y	Y	Y	Y

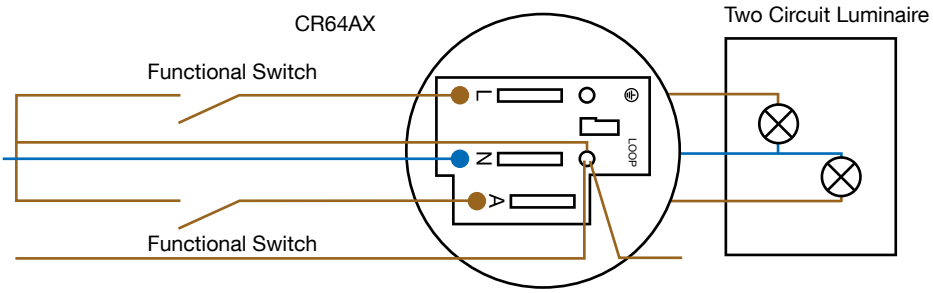
Application Notes
The mating face of each interface module must be mounted 0.1mm minimum proud of its proposed surround. Engaged plug sits centrally on socket but a minimum of 12mm extra clearance should be maintained north of the upper load grip to allow plug travel.

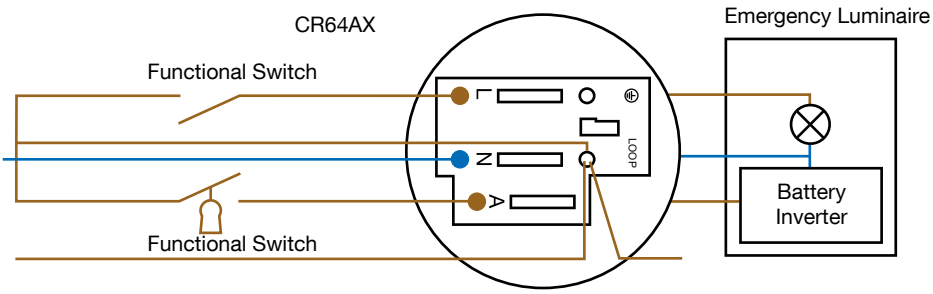
For specific information contact our technical support helpline on: 0870 6076677



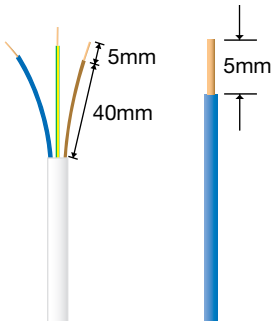
These wiring diagrams are typical examples of the applications shown.

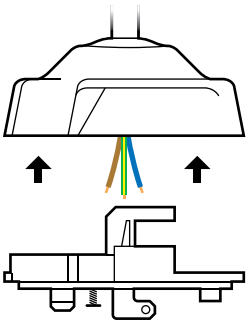


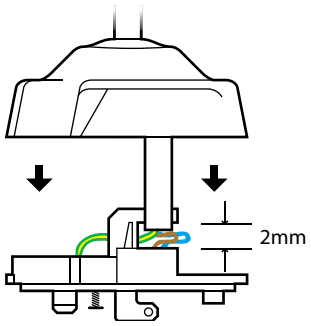


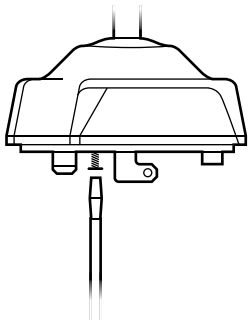


Note: Earth connections omitted for clarity









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.

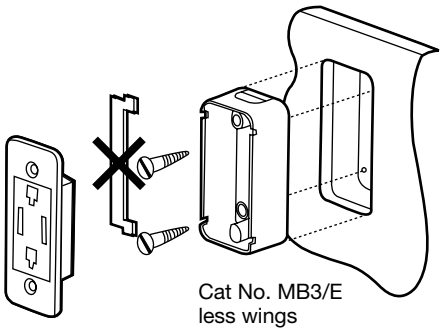
klik Mounting Box Installation

Cable entry through spout in base of box for maximum wiring space.

MB2 knockouts in base and sides. Supplied with M4 x 20mm long fixing screws.

MB3/E is dual purpose box for flush mounting in solid or partition walls. Provided with mounting wings for partition use. Supplied with M3.5 x 20mm long fixing screws. Cable entry in one end.

Flush Mounting for Solid Walls

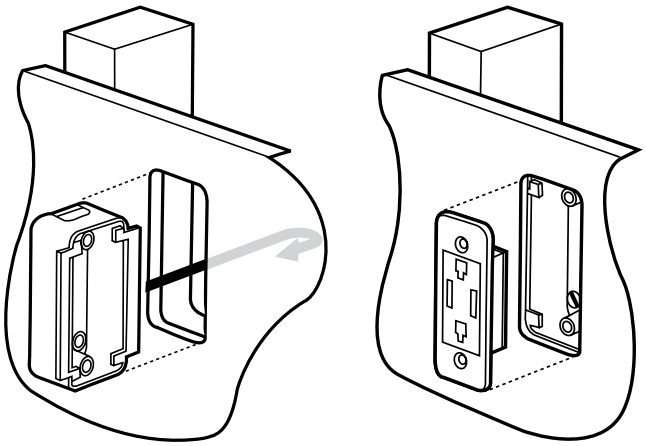


Cat No. MB3/E less wings

Cat No. S21

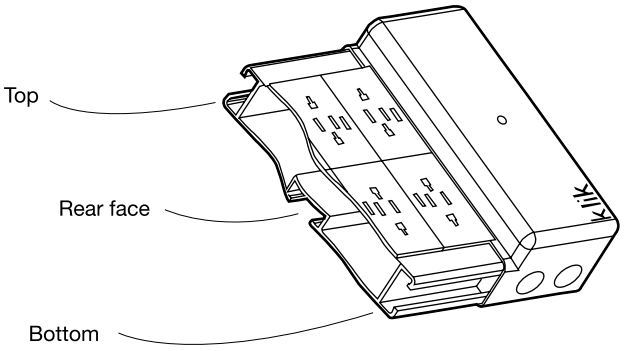
Flush Mountings for Partition Walls

The mounting wings act as a flange, stopping the box from being pulled out of the partition.



Cat No. MB3/E

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

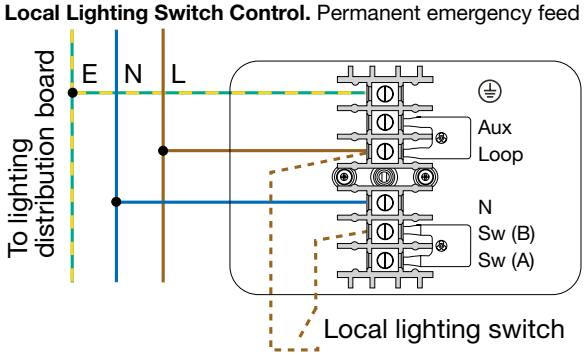


Drop rods on sides

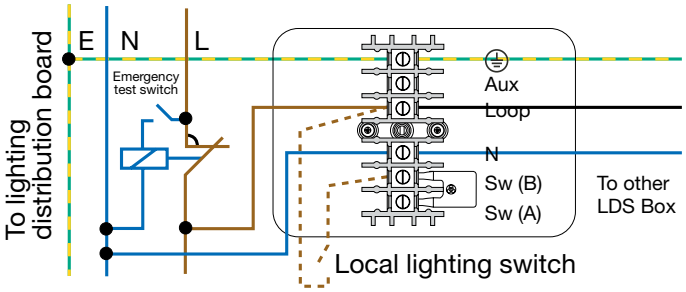
Screw to surface

Drop rods on rear

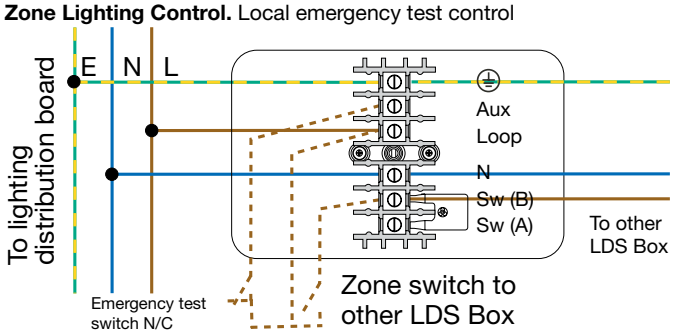
Local Lighting Switch Control. Permanent emergency feed



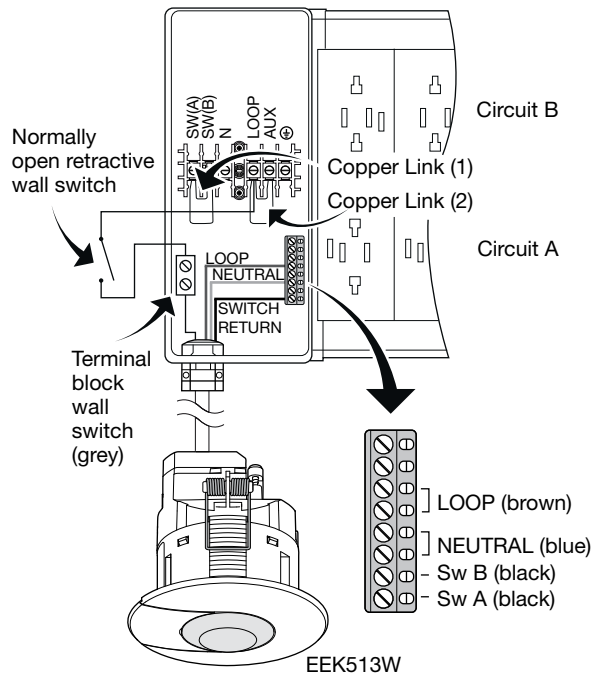
Local Lighting Switch Control. Centralised emergency test via keyswitch



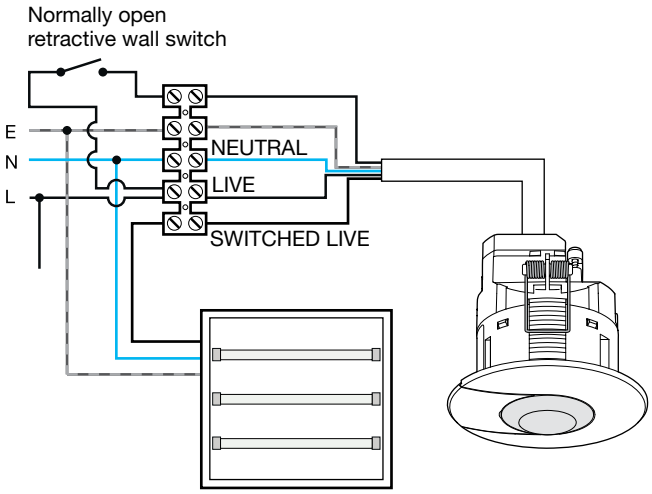
Zone Lighting Control. Local emergency test control



klik.LDS with all ways switched by a single Hager EEK513W occupancy sensor

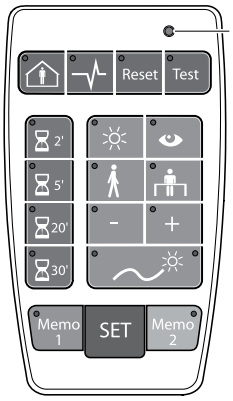


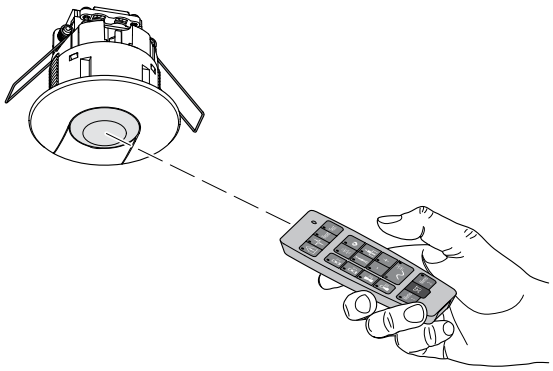
Connected directly to a single luminaire

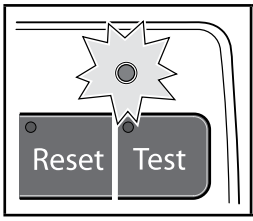


Switch wire to be connected as required.

Description EEK001





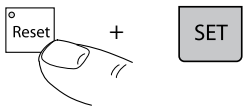


The acknowledgment LED blinks during the sending of the IR message.

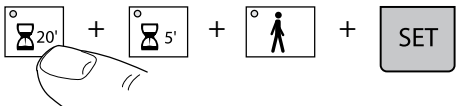
Technical specification
Power supply:1x 3V CR2032
Shelf life of battery: 2½ years
Protection index: IP 30

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.

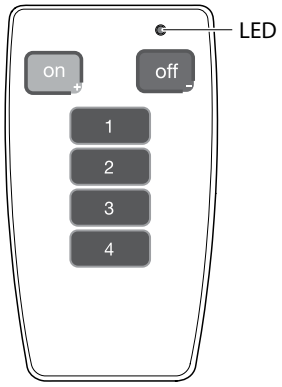


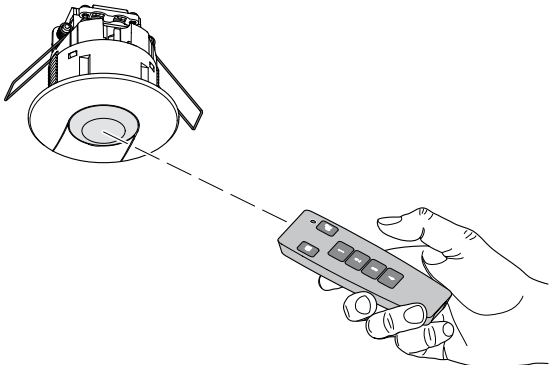
In the case of 2 opposite states the green LED denotes ON and red LED denotes OFF (except Presence / Absence).
When no function is selected all LED's are OFF.

Settings available

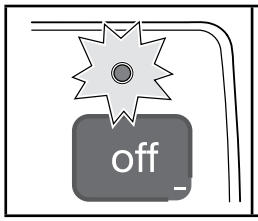
Key	Meaning	Indication	Function
	Presence	Green LED on	Presence on (automation mode)
	Absence	Red LED on	Absence on (semi automatic mode)
	Power Up	Green LED on	The light is automatically switched on for 30 seconds after power up
		Red LED on	During warm up phase, the light output is off
Reset	Reset	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

Description EEK002





Use
The remote control allows the user to set or modify settings on the presence detectors EEK513W and EEK510B.
Each button corresponds to a command.



The acknowledgment LED blinks during the sending of the IR message.

Technical specification
Power supply: 1x 3V CR2032
Shelf life of battery: 3½ years
Protection index: IP 30

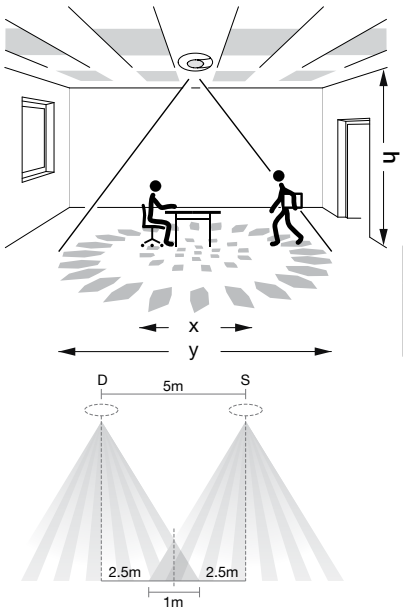
Settings available

Key	Action	Function	Product Type
on +	Short Press (< 5s.)	On	EEK513W / EEK510B
	Long Press (> 5s.)	Dim up	EEK513W / EEK510B
off -	Short Press	Off	EEK513W / EEK510B
	Long Press (> 5s.)	Dim down	EEK513W / EEK510B
1	Short Press	To start scene 1	
	Long Press (> 5s.)	To start scene 1	
2	Short Press	To start scene 2	
	Long Press (> 5s.)	To start scene 2	
3	Short Press	To start scene 3	
	Long Press (> 5s.)	To start scene 3	
4	Short Press	To start scene 4	
	Long Press (> 5s.)	To start scene 4	

Technical Characteristics

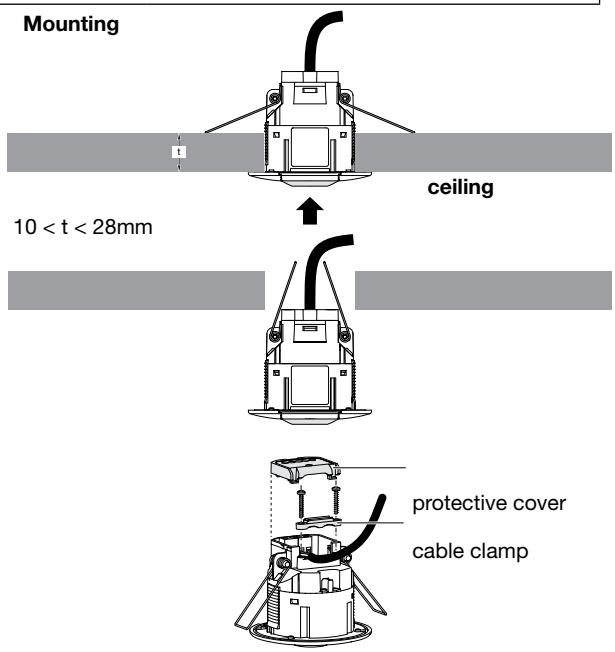
	EEK513P / EEK515P	EEK523P / EEK525P
Detection range	motion area: diameter 7m (product installed at 2½m height) presence area: diameter 5m (product installed at 2½m height)	
Supply voltage	230 V AC + 10% -15%	
Frequency	50/60 Hz	
Local lux threshold setting	5 to 1000 lux	3 modes available
Local time setting	1 min to 1hr	
Commissioning via installer remote control	EEK001 for power up, absence / presence mode, timer active / passive cell	
Control with IR user remote control	EEK002 for ON / OFF override	EEK002 for ON / OFF override and dimming up / down
Output	16A AC1 relay output (cut live): - 2300W incandescent or 230V halogen: > 26000 cycles - 1500W VLV halogen lamps with ferromagnetic or electronic transformer: > 35000 cycles - 1000W / 130 µF parallel compensated fluo tube: > 50000 cycles -23 x 23W fluo-compact with electronic ballast: > 20000 cycles	14V / 50mA (for a DALI bus with 24 ballasts) - No isolation between the mains and the DALI bus
Push button input	phase input for absence / presence detection (semi-automatic / automatic mode) same phase as power supply.	to dim up / down and absence / presence detection (semi-automatic / automatic mode) same phase as power supply.
Terminals	for 1.5mm² rigid / flexible wires	
Power dissipation	300mW	60mW
Isolation class	II	
Protection	IP41 / IK03	
Operating temperature	-10°C to +45°C	
Storage temperature	-20°C to +60°C	
Standards	IEC 60669-1, IEC 60669-2-1	

Detection areas

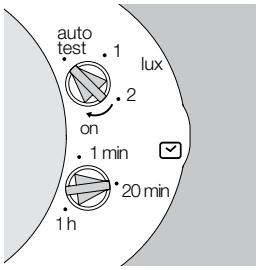


h	2.5m	3m	3.5m
x	5m	5m	5m
y	7m	8m	9m

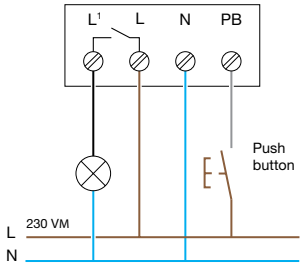
Mounting



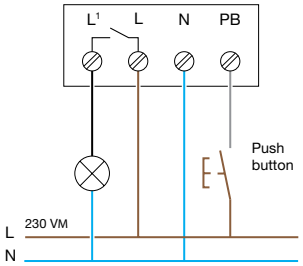
Settings EEK513P/EEK515P EEK523P/EEK525P



Wiring diagram EEK510B (no cable supplied)



EEK513W (Cable supplied connected to OS)



klik.system

Secure connection system

klik.system can be used as a simple stand-alone digital lighting control unit or as part of a more complex building management system for distribution of power & data.

The klik.system range of unique plug & play connectors has been enhanced with a choice of products ideal for electrical contractors who want to add digital lighting control solutions to their offer.

Marshalling Boxes	9.28
Occupancy Sensors	9.29
Luminaire Leads	9.30
Conduit Boxes / Surface Connectors	9.31

klik

The KLMB marshalling box allows the connection and control of multiple luminaires. The LMB utilises a robust extruded aluminium body.

- 7 Pole
- 4, 6, 8, 10, 12 Outlet
- 16A Rated
- BS 5733
- Short circuit tested: 1500A conditional rating

For mounting methods see page 9.36.
For product standards see page 9.32.

KLMB4W

KLMB6W

7 Pin Marshalling Boxes

Description	Rating	Cat ref.
4 Way	16A	**KLMB4W**
6 Way	16A	**KLMB6W**
8 Way	16A	**KLMB8W**
10 Way	16A	**KLMB10W**
12 Way	16A	**KLMB12W**

- All sensors are pluggable directly into the marshalling box giving a significant time saving on installation.
- Presence detection mode: Allows lighting to be controlled ensuring that lighting is only energised when people are in the detection area.
- Absence detection mode: Requires lighting to be activated by a wall switch or remote control to switch lighting on. Lighting then remains on during presence and switches off after time out period from last presence detection. Offers potentially the best energy savings.
- Wall switch override allows lighting state to be changed between states or dimmed up and down on digital fittings.
- High sensitivity detection will react to small movements, such as somebody working at a desk up to 5m diameter
- Motion detection will react to larger movements, such as walking up to 7m diameter.
- Integral photocell 5 - 1000 lux. Lux setting can be increased and decreased in increments of 100 lux.
- EEK001 programming tool is easy to use with 2 memory settings to enable repeatability.
- EEK002 remote control comes with a wall mounting bracket for storage and allows room occupant to have control of lighting output.
- Time out adjustment:
  2 - 57 mins with remote programmer.
  1 min - 1 hour with potentiometer.
- Switching capability - relay
  Incandescent Halogen - 2300W.
  Halogen ELV via ferromagnetic or electronic transformer - 1500W.
  Compact Fluorescent - 23 x 23W.
  Parallel compensated fluorescent tubes - 1000W
  Fluorescent via electronic ballast - 1000W.
- Digital switching capability.
  Up to 24 DSI or DALI ballasts.
- Walk test mode.
- Factory presets:
  Lux = 400
  Time = 20 min
  Test mode for 2 min.
- 3m 1.5mm^2 Low Smoke Zero Halogen for Relay model.
  3m 0.75mm^2 Low Smoke Zero Halogen for Digital model.
- Can be flush mounted through a 60mm hole, utilises spring clips to ensure a fast and secure mounting method.
- All parts factory connected and tested.
- Time and photocell can be set by controller EEK001 or potentiometer.

For technical details see page 9.33- 9.35.
For product standards see page 9.32.

EEK513P

Occupancy Sensors

Description	Cat ref.
Standard Relay Sensor complete with 3m Lead and Plug LS0H	**EEK513P**
Standard Relay Sensor complete with 5m Lead and Plug LS0H	**EEK515P**
Digital Sensor complete with 3m Lead and Plug LS0H	**EEK523P**
Digital Sensor complete with 5m Lead and Plug LS0H	**EEK525P**
Programming Tool	**EEK001**
Remote Control	**EEK002**

TKK513P

KNX Occupancy Sensors
KNX allows the linking of sensors to create notional areas and corridors. Also allowing outputs of sensors to be linked utilising ETS software and associated KNX products.

Description	Cat ref.
KNX Relay Sensor complete with 3m Lead and Plug LS0H	**TKK513P**
KNX Relay Sensor complete with 5m Lead and Plug LS0H	**TKK515P**
KNX Digital Sensor complete with 3m Lead and Plug LS0H	**TKK523P**
KNX Digital Sensor complete with 5m Lead and Plug LS0H	**TKK525P**
KNX Occupncy Sensor (without cable)	**TCC510S**
Programming Tool	**EEK001**
Remote Control	**EEK002**

The marshalling box is connected to the luminaire via a pre-wired plug and lead, all leads are low smoke zero halogen and are factory connected and tested

- 0.75mm² CSA
- 3M and 5M lengths
- Standard, Digital and Emergency Luminaires
- 6A Rated
- BS 5733
- BS EN 61535
- Short circuit tested: 1500A conditional rating
- Cable standard BS6500 & BS7211

For product standards see page 9.32.

KLT/3/0-75W

Luminaire Leads

Description	Cat ref.
Standard Luminaire Lead 3m, 0.75mm², 3 core LS0H	**KLB/3/0-75W**
Standard Luminaire Lead 5m, 0.75mm², 3 core LS0H	**KLB/5/0-75W**
Standard Luminaire + Emergency Lead 3m, 0.75mm², 4 core LS0H	**KLJ/3/0-75W**
Standard Luminaire + Emergency Lead 5m, 0.75mm², 4 core LS0H	**KLJ/5/0-75W**
Digital Luminaire Lead 3m, 0.75mm², 5 core LS0H	**KLP/3/0-75W**
Digital Luminaire Lead 5m, 0.75mm², 5 core LS0H	**KLP/5/0-75W**
Digital Luminaire Lead + Emergency 3m, 0.75mm², 6 core LS0H	**KLT/3/0-75W**
Digital Luminaire Lead + Emergency 5m, 0.75mm², 6 core LS0H	**KLT/5/0-75W**

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.

The connector is available as a stand alone product or complete with a pre-wired lead:

- 7 Pole
- 16A Rated
- Standards: BS 5733
- Short circuit tested: 1500A conditional rating

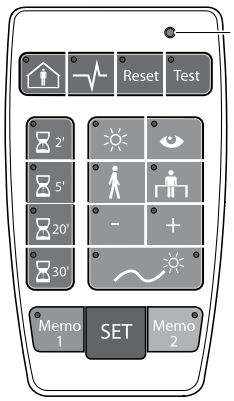
For product standards see page 9.32.

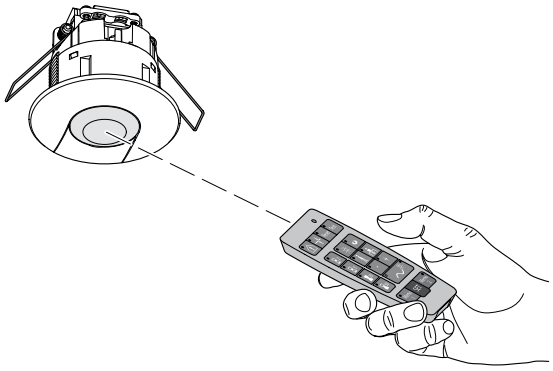
KLPCR/7

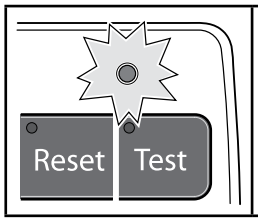
Conduit Box / Surface Connector

Description	Cat ref.
Conduit Box / Surface Connector	**KLPCR/7**

Product Description	klik Product identification	BS number	Description
klik.system 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	General Requirements for Electrical Accessories. Installation couplers intendend for permanent connection in fixed installations.
LS0H Flexible Cord	Supplied with luminaire lead	BS 6500:2000 BS 7211:1998	Flexible cords rated to 300/350V for use with appliances & equipment intended for domestic, office & similar environments.







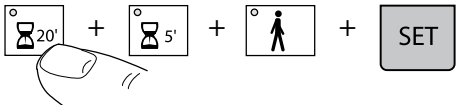
The acknowledgment LED blinks during the sending of the IR message.

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

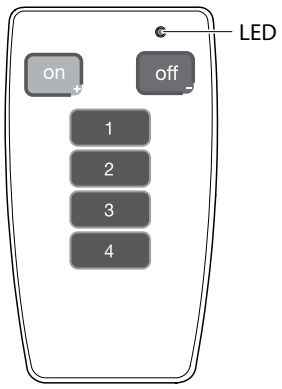
Multiple settings
Define the parameters to be changed and press SET to send.
Example: for 25 minutes and corridor use, press 20', 5' and corridor.

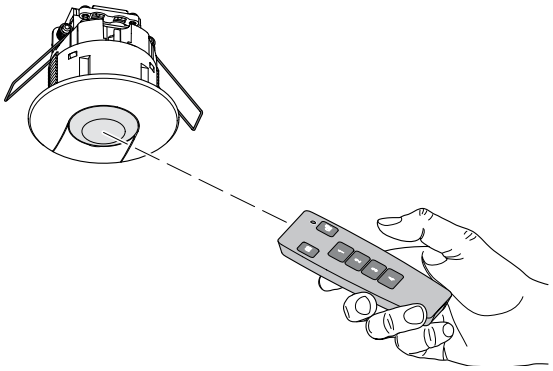


In the case of 2 opposite states the green LED denotes ON and red LED denotes OFF (except Presence / Absence).
When no function is selected all LED's are OFF.

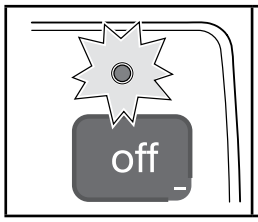
Settings available

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 EEK513P/EEK515P and EEK523P and EEK525P
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

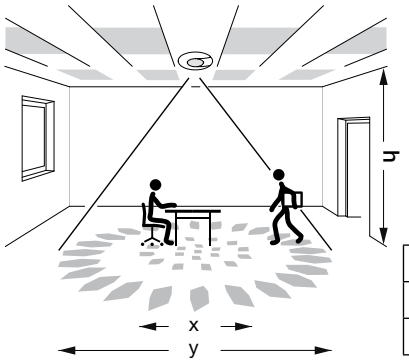
Settings available

Key	Action	Function	Product Type
on +	Short Press (< 5s.)	On	EEK513P / EEK515P EEK523P / EEK525P
	Long Press (> 5s.)	Dim up	EEK523P / EEK525P
off -	Short Press	Off	EEK513P / EEK515P EEK523P / EEK525P
	Long Press (> 5s.)	Dim down	EEK523P / EEK525P
1	Short Press	To start scene 1	EEK523P / EEK525P
	Long Press (> 5s.)	To start scene 1	
2	Short Press	To start scene 2	
	Long Press (> 5s.)	To start scene 2	
3	Short Press	To start scene 3	
	Long Press (> 5s.)	To start scene 3	
4	Short Press	To start scene 4	
	Long Press (> 5s.)	To start scene 4	

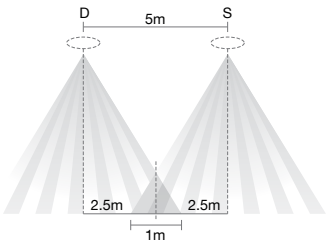
Technical Characteristics

	EEK513P / EEK515P	EEK523P / EEK525P
Detection range	motion area: diameter 7m (product installed at 2½m height) presence area: diameter 5m (product installed at 2½m height)	
Supply voltage	230 V AC + 10% -15%	
Frequency	50/60 Hz	
Local lux threshold setting	5 to 1000 lux	3 modes available
Local time setting	1 min to 1hr	
Commissioning via installer remote control	EEK001 for power up, absence / presence mode, timer active / passive cell	
Control with IR user remote control	EEK002 for ON / OFF override	EEK002 for ON / OFF override and dimming up / down
Output	16A AC1 relay output (cut live): - 2300W incandescent or 230V halogen: > 26000 cycles - 1500W VLV halogen lamps with ferromagnetic or electronic transformer: > 35000 cycles - 1000W / 130 µF parallel compensated fluo tube: > 50000 cycles -23 x 23W fluo-compact with electronic ballast: > 20000 cycles	14V / 50mA (for a DALI bus with 24 ballasts) - No isolation between the mains and the DALI bus
Push button input	phase input for absence / presence detection (semi-automatic / automatic mode) same phase as power supply.	to dim up / down and absence / presence detection (semi-automatic / automatic mode) same phase as power supply.
Terminals	for 1.5mm² rigid / flexable wires	
Power dissipation	300mW	60mW
Isolation class	II	
Protection	IP41 / IK03	
Operating temperature	-10ºC to +45ºC	
Storage temperature	-20ºC to +60ºC	
Standards	IEC 60669-1, IEC 60669-2-1	

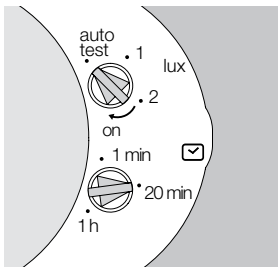
Detection areas



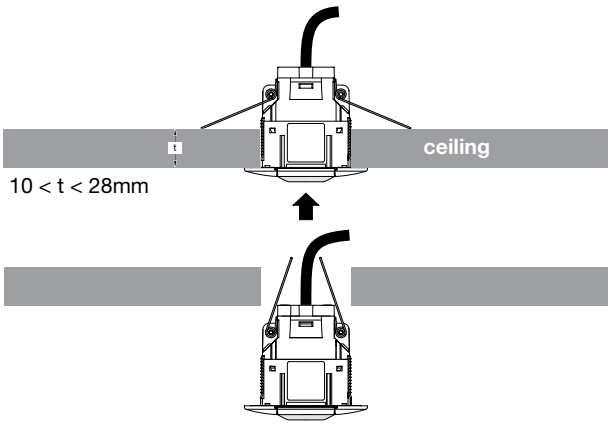
h	2.5m	3m	3.5m
x	5m	5m	5m
y	7m	8m	9m

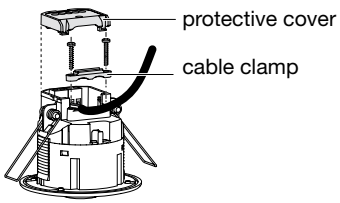


Settings EEK513P/EEK515P
EEK523P/EEK525P



Mounting





Connection
Pluggable directly into marshalling box.

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 to top via channel nut

Drop rods to top via channel nut

Screw or nail gun to surface via clip in attachment (attachment connects to top or rear extrusion).

Screw direct to surface

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logisty

Radio doorphones

The doorphone is an essential part of your homes security. It allows you to identify visitors regardless of where you are in your property.

Thanks to our new radio transmission protocol Optwin, the radio doorphone is quickly and easily installed. It is the ideal retrofit solution for property renovation and extensions.

LCP01U

Kits

Description	Cat ref.
1 Dwelling, 1 Button Call Station	**LCP01U**
1 Dwelling, Keypad Call Station	**LCP02U**
2 Dwelling, 2 Button Call Station	**LCP03U**
2 Dwelling, Keypad Call Station	**LCP04U**

LDG01

Add-ons

Description	Cat ref.
230V Radio Receiver Unit	**LDG01X**
12-24V Radio Receiver Unit	**LDG02X**

MHF04X

Call Stations

Description	Cat ref.
1 & 2 Button Translucent Outdoor Call Station and Proximity Tag Reader	**MHF01X**
1 & 2 Button Translucent Outdoor Call Station with Coded Keypad and Proximity Tag Reader	**MHF02X**

LB601

Individual Components & Accessories

Description	Cat ref.
1 Button Outdoor Armoured Call Station	**LB601**
2 Button Outdoor Armoured Call Station	**LB602**
1 Button Outdoor Armoured Call Station with Coded Keypad and Proximity Tag Reader	**LB721**
2 Button Outdoor Armoured Call Station with Coded Keypad and Proximity Tag Reader	**LB722**
Rechargeable Portable Handset with Base	**LCA01U**
Radio Controller	**LCB01X**
Positions Contact	**CP500**
Battery Li Ion 3.6V 200mAh	**MTU01X**
Handset Cradle	**LCH01X**
Proximity Tag	**TAGIL**

#

624SEL212/6 8.5
624SEL212/9 8.5
624SEL212/12 8.5
624SEL214/6 8.5

A

A1 9.6, 9.11
A1/R 9.11
ACB106 4.20
ACB116 4.20
ACB125 4.20
ACB132 4.20
ACC106 4.20
ACC116 4.20
ACC125 4.20
ACC132 4.20
ADA156U 4.19
ADA160U 4.19
ADA166U 4.19
ADA170U 4.19
ADA182U 4.19
ADA906U 4.21
ADA910U 4.21
ADA916U 4.21
ADA920U 4.21
ADA925U 4.21
ADA932U 4.21
ADA940U 4.21
ADA956U 4.21
ADA960U 4.21
ADA970U 4.21
ADA975U 4.21
ADA982U 4.21
ADA990U 4.21
ADB106 4.20
ADB110 4.20
ADB116 4.20
ADB120 4.20
ADB125 4.20
ADB132 4.20
ADB140 4.20
ADB145 4.20
ADB150 4.20
ADC106 4.20
ADC110 4.20
ADC116 4.20
ADC120 4.20
ADC125 4.20
ADC132 4.20
ADC140 4.20
ADC145 4.20
ADC150 4.20
ADC806F 4.22
ADC810F 4.22
ADC816F 4.22
ADC820F 4.22
ADC825F 4.22
ADC832F 4.22
ADN106 4.19
ADN110 4.19
ADN116 4.19
ADN120 4.19
ADN132 4.19
ADN140 4.19
ADN145 4.19
ADN150 4.19
AEC110 4.20
AEC116 4.20
AEC120 4.20
AEC125 4.20
AEC132 4.20

B

BD163T 4.7
BD264 4.6
BD464 4.6
BDC280E 4.13
BDC380E 4.13
BDC480E 4.13
BE163T 4.7
BE264 4.6
BE464 4.6
BF163T 4.7
BF264 4.6
BF464 4.6
BFC480E 4.13
BN264 4.6
BN464 4.6
BP264 4.6
BP464 4.6
BTC280E 4.13
BTC380E 4.13
BTC480E 4.13

C

CCA216U 4.17
CCC216U 4.16
CD280U 4.16
CD284U 2.7, 4.16
CD480U 4.16
CD484U 4.16
CDA225U 4.17
CDA240U 4.17
CDA263U 4.17
CDA425U 4.17
CDA440U 4.17
CDA463U 4.17
CDC225U 4.16
CDC240U 4.16
CDC263U 2.7, 4.16
CDC425U 4.16
CDC440U 4.16
CDC463U 4.16
CE280U 4.16
CE284U 4.16
CE480U 4.16
CE484U 4.16
CEC225U 4.16
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CFC240U 4.16
CFC263U 4.16
CFC425U 4.16
CFC440U 4.16
CFC463U 4.16
CN284U 4.17
CN484U 4.17
CP284U 4.17
CP484U 4.17
CP500 10.3
CR64AX 9.11
CR64AX/1.0 9.14
CR64AX/1.0LSF/2 9.14
CR64AX/1.0LSF/3 9.14
CR64AX/1.0LSF/4 9.14
CR64AX/1.0LSF/5 9.14
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CR64AX/4.0 9.14
CR64AX/LSF/1.0 9.14
CR64AX/LSF/2.0 9.14
CR64AX/LSF/3.0 9.14
CR64AX/LSF/4.0 9.14
CR64AX/R 9.11
CZ001 4.18
CZ007 4.17
CZ008 4.17
CZN005 4.17
CZN006 4.17

E

EC050 5.26
EC051 5.26
EC100 5.29
EC150 5.26
EC152 5.26
EC154M 5.26
EC350 5.27
EC352 5.27
EC360 5.27
EC362 5.27
EC364M 5.27
EC365B 5.27
EC370 5.27
EC372 5.27
EE002 5.14, 6.7
EE003 5.14, 6.7
EE100 5.14
EE171 5.14
EE180 5.12
EE181 5.12
EE960 5.15
EEK001 9.5, 9.29
EEK002 9.5, 9.29
EEK005 9.5
EEK510B 9.5
EEK513P 9.29
EEK513W 9.5
EEK515P 9.29
EEK523P 9.29
EEK525P 9.29
EG001 6.6
EG003 5.11, 5.13
EG003U 5.11, 5.13, 6.6
EG004 5.11, 6.6
EG005 5.11, 5.13, 6.6
EG006 5.11, 6.6
EG010 5.11
EG071 5.11
EG103 5.11
EG103E 5.11
EG103V 5.11
EG203 5.11
EG203E 5.11
EG493E 5.13
EG502 5.22
EH010 5.10
EH011 5.10
EH110 5.10
EH111 5.10
EH171 5.10
EK081 5.21
EK082 5.21
EK083 5.21
EK087 6.13
EK088 6.13
EK186 5.21
EK187 5.21
EMN001 5.16
EMN005 5.16
EN145 5.6
EN146 5.6
EPN050 5.4
EPN051 5.4
EPN510 5.4
EPN513 5.4
EPN515 5.4
EPN518 5.4
EPN519 5.4
EPN520 5.4
EPN521 5.4
EPN524 5.4
EPN525 5.4
EPN528 5.4
EPN529 5.4
EPN540 5.4
EPN541 5.4
ERC218 5.5
ERC225 5.7
ERC326 5.7
ERC418 5.5
ERD218 5.5
ERD225 5.7
ERD418 5.5
ERL218 5.5
ERL418 5.5
ESC001 5.5, 5.8
ESC002 5.5, 5.8
ESC003 5.5, 5.8
ESC080 5.5, 5.7, 5.8, 5.9
ESC125 5.7
ESC225 5.7
ESC225S 5.8
ESC226 5.7
ESC240 5.7
ESC240S 5.8
ESC263 5.7
ESC263S 5.8
ESC325 5.7
ESC325S 5.8
ESC340 5.7
ESC340S 5.8
ESC425 5.7
ESC425S 5.8
ESC426 5.7
ESC426S 5.8
ESC428S 5.8
ESC440 5.7
ESC440S 5.8
ESC441 5.7
ESC443 5.7
ESC463 5.7
ESC463S 5.8
ESC464 5.7
ESC465 5.7
ESC466 5.7
ESD225 5.7
ESD227 5.7
ESD240 5.7
ESD425 5.7
ETC225 5.9
ETC225S 5.9
ETC325 5.9
ETC340 5.9
ETC425 5.9
ETC440 5.9
EVN002 5.30
EVN004 5.30
EVN011 5.30
EVN012 5.30
EZN001 5.17
EZN002 5.17
EZN003 5.17
EZN004 5.17
EZN005 5.17
EZN006 5.17

F

FL02Z 2.10
FL03Z 2.10
FL04Z 2.10
FL05Z 2.10
FL06Z 2.10
FL41G 2.10
FL80Z 2.8
FL81Z 2.9
FL85Z 2.8
FL94Z 2.8
FL95Z 2.8

FL96Z 2.8, 2.9
FL97Z 2.9
FL98Z 2.9
FL102A 2.8
FL104A 2.8
FL105A 2.8
FL110A 2.8
FL112A 2.8
FL117A 2.8
FL118A 2.8
FL120A 2.8
FL124A 2.8
FL126A 2.8
FL128A 2.8
FL154A 2.8
FL155A 2.8
FL160A 2.8
FL162A 2.8
FL167A 2.8
FL168A 2.8
FL170A 2.8
FL174A 2.8
FL176A 2.8
FL178A 2.8
FL201B 2.9
FL204B 2.9
FL209B 2.9
FL213B 2.9
FL216B 2.9
FL221B 2.9
FL229B 2.9
FL254B 2.9
FL259B 2.9
FL263B 2.9
FL266B 2.9
FL271B 2.9
FL279B 2.9
FL327B 2.9
FL402A 2.10
FL404A 2.10
FL407A 2.10
FL408A 2.10
FL412A 2.10
FL413A 2.10
FL415A 2.10
FL416A 2.10
FL417A 2.10
FL522E 2.10
FL527B 2.9
FL672E 2.9
FL672Z 2.8
FL863Z 2.9
FL874A 2.8
FL980A 2.10
FL981A 2.10
FL992A 2.10
FL993A 2.10
FL994A 2.10
FL996A 2.10
FL997A 2.10
FL998A 2.10

G

GD24H 1.14
GD102E 2.2
GD104E 2.2
GD106E 2.2
GD108E 2.2
GD110E 2.2
GP102P 2.3
GP102T 2.3
GP104P 2.3
GP104T 2.3
GP106P 2.3
GP106T 2.3
GP108P 2.3
GP108T 2.3
GP110P 2.3
GP110T 2.3
GZ04E 2.3
GZ04N 2.3
GZ07E 2.3
GZ07N 2.3
GZ104S 2.3
GZ106S 2.3
GZ108S 2.3
GZ110S 2.3

H

HAL70 8.6
HAL72 8.6
HBA125H 4.39
HBA126H 4.39
HBA127H 4.39
HBA128H 4.39
HBA160H 4.39
HBA161H 4.39
HCB250Z 4.50
HDA014Z 4.38
HDA016Z 4.38
HDA018Z 4.38
HDA020Z 4.38
HDA023Z 4.38
HDA025U 4.38
HDA025Z 4.38
HDA030Z 4.38
HDA032Z 4.38
HDA038Z 4.38
HDA040U 4.38
HDA040Z 4.38
HDA048Z 4.38
HDA050Z 4.38
HDA061Z 4.38
HDA063U 4.38
HDA063Z 4.38
HDA078Z 4.38
HDA080U 4.38
HDA098Z 4.38
HDA100U 4.38
HDA100Z 4.38
HDA123Z 4.38
HDA125U 4.38
HDA125Z 4.38
HDA160U 4.38
HDA160Z 4.38
HHA014Z 4.38
HHA016Z 4.38
HHA018Z 4.38
HHA020Z 4.38
HHA023Z 4.38
HHA025U 4.38
HHA025Z 4.38
HHA030Z 4.38
HHA032Z 4.38
HHA038Z 4.38
HHA040U 4.38
HHA040Z 4.38
HHA048Z 4.38
HHA050Z 4.38
HHA061Z 4.38
HHA063U 4.38
HHA063Z 4.38
HHA078Z 4.38
HHA080U 4.38
HHA080Z 4.38
HHA098Z 4.38
HHA100U 4.38
HHA100Z 4.38
HHA123Z 4.38
HHA125U 4.38
HHA125Z 4.38
HHA160U 4.38
HHA160Z 4.38
HHB100Z 4.50
HHB125Z 4.50
HHB160Z 4.50
HHB200Z 4.50
HHB250Z 4.50
HMC180T 4.10
HMC190T 4.10
HMC199T 4.10
HMC280T 4.10
HMC290T 4.10
HMC299T 4.10
HMC380T 4.10
HMC390T 4.10
HMC399T 4.10
HMC480T 4.10
HMC490T 4.10
HMC499T 4.10
HMD180T 4.11
HMD190T 4.11
HMD199T 4.11
HMD280T 4.11
HMD290T 4.11
HMD299T 4.11
HMD380T 4.11
HMD390T 4.11
HMD399T 4.11
HMD480T 4.11
HMD490T 4.11
HMD499T 4.11
HMF180T 4.9
HMF190T 4.9
HMF199T 4.9
HMF280T 4.9
HMF290T 4.9
HMF299T 4.9
HMF380T 4.9
HMF390T 4.9
HMF399T 4.9
HMF480T 4.9
HMF490T 4.9
HMF499T 4.9
HNB100U 4.50
HNB100Z 4.50
HNB125U 4.50
HNB125Z 4.50
HNB160U 4.50
HNB160Z 4.50
HNB200U 4.50
HNB200Z 4.50
HNB250U 4.50
HNB250Z 4.50
HR440 4.28
HR441 4.28
HR500 4.27
HR502 4.27
HR510 4.27
HR520 4.27
HR522 4.27
HR523 4.27
HR525 4.27
HR534 4.27
HR700 4.29
HR701 4.29
HR702 4.29
HR703 4.29
HR704 4.29
HR705 4.29
HR820 4.29
HR821 4.29
HR822 4.29
HR823 4.29
HR824 4.29
HR830 4.29
HR831 4.29
HR832 4.29
HXA001H 4.40, 4.51
HXA002H 4.40, 4.51
HXA003H 4.40, 4.51
HXA004H 4.40, 4.51
HXA005H 4.40, 4.51
HXA011H 4.40, 4.51
HXA013H 4.40, 4.51
HXA014H 4.40, 4.51
HXA015H 4.40, 4.51
HXA021H 4.40, 4.51
HXA024H 4.40, 4.51
HXA025H 4.40, 4.51
HXA026H 4.40, 4.51
HXA039H 3.29, 3.31, 3.36, 4.51
HXA051H 4.40, 4.51
HXA053H 4.40, 4.51
HXA054H 4.40, 4.51
HXA055H 4.40, 4.51
HXD039H 3.31, 3.36
HYA013H 4.41
HYA014H 4.41
HYA015H 4.41
HYA019H 4.41
HYA021H 4.41
HYA022H 4.41
HYA023H 4.41
HYA024H 4.41
HYA029H 4.41
HYB010H 4.52
HYB011H 4.52
HYB012H 4.52
HYB019H 4.41, 4.52
HYB021H 4.52
HYB022H 4.52
HYB023H 4.52
HYB024H 4.52

I

IDCTOOL 7.10, 7.16
IKL1 2.7
IU2 2.7
IU2/D 2.7
IU2/GD 2.7
IU3 2.7
IU3/D 2.7
IU4 2.7
IU4-16 3.46
IU4/D 2.7
IU41 2.7
IU42 2.7
IU42/D 2.7
IU44 2.7
IU44-11 3.46
IU44-18 3.46
IU44/D 2.7
IU44/GD 2.7
IU45 2.7

J

J201 8.3
J301 8.3
J401 8.3
J501 8.2
J601 8.3
J701 8.3
J701/TB 8.3
J803 8.2
J804 8.2
JAB302 3.44
JAB303 3.44
JAB306 3.44
JAB310 3.44
JAB402B 3.44
JAB403B 3.44
JAB406B 3.44
JAB410B 3.44
JAC312 3.44
JAC316 3.44
JAC412B 3.44
JAC416 3.44
JAE320 3.44
JAE325 3.44
JAE420 3.44
JAE425 3.44
JAG331 3.44
JAG340 3.44
JAG431 3.44
JAG440 3.44
JAH363 3.44
JAH380 3.44
JAH463 3.44
JAH480 3.44

JC10L 3.43
JC20L 3.43
JC40L 3.43
JC60L 3.43
JC63L 3.43
JF003BP 3.36
JF95A 3.29
JF296A 3.29, 3.31, 3.36
JF403BA 3.31
JF403MJ 3.31
JF406B 3.30
JF406BG 3.30
JF406BPA 3.30
JF408B 3.30
JF408BG 3.30
JF408BPA 3.30
JF412B 3.30
JF412BG 3.30
JF412BPA 3.30
JF416B 3.30
JF416BG 3.30
JF416BPA 3.30
JF418B 3.30
JF418BG 3.30
JF418BPA 3.30
JF443BM 3.30
JF443BS 3.30
JF444BD 3.30
JF444BM 3.30
JF444BS 3.30
JF608B 3.32
JF608BG 3.32
JF608BPA 3.33
JF801E 3.31, 3.34
JF801EG 3.31, 3.34
JF803BA 3.34
JF803E 3.31, 3.34
JF803EG 3.31, 3.34
JF803MJ 3.34
JF805DK 3.31, 3.34
JF805E 3.31, 3.34
JF806DK 3.31, 3.34
JF806E 3.31, 3.34
JF812B 3.32
JF812BG 3.32
JF812BPA 3.33
JF818B 3.32
JF818BG 3.32
JF818BPA 3.33
JF843BM 3.32
JF844BM 3.32
JF844BSW 3.32
JF863BM 3.32
JF864BM 3.32
JF864BSW 3.32
JF884BD 3.32
JF60204B 3.32
JF60204BG 3.32
JF60204BPA 3.33
JF80206B 3.32
JF80206BG 3.32
JF80206BPA 3.33
JF80210B 3.32
JF80210BG 3.32
JF80210BPA 3.33
JF80404B 3.32
JF80404BG 3.32
JF80404BPA 3.33
JF80408B 3.32
JF80408BG 3.32
JF80408BPA 3.33
JF80414B 3.32
JF80414BG 3.32
JF80414BPA 3.33
JF80612B 3.32
JF80612BG 3.32
JF80612BPA 3.33
JFB202U 3.42
JFB203U 3.42
JFB302U 3.42
JFB303U 3.42
JFB402U 3.43
JFB403U 3.43
JFD206U 3.42
JFD306U 3.42
JFD406U 3.43
JFE210U 3.42
JFE310U 3.42
JFE410U 3.43
JFG312U 3.42
JFG316U 3.42
JFG320U 3.42
JFG325U 3.42
JFG412U 3.43
JFG416U 3.43
JFG420U 3.43
JFG425U 3.43
JFH331U 3.42
JFH340U 3.42
JFH431U 3.43
JFH440U 3.43
JFI363U 3.42
JFI380U 3.42
JFI463U 3.43
JFI480U 3.43
JFPLATE 3.31, 3.36
JG00S 3.45
JG01S 3.45
JG02S 3.45
JG03S 3.45
JG04S 3.45
JG05S 3.45
JG10A 3.45
JG20A 3.45
JG25BM 3.46
JG26BM 3.46
JG27BM 3.46
JG27BR 3.46
JG28BM 3.46
JG29BM 3.46
JG30BM 3.46
JG30BR 3.46
JG31BM 3.46
JG32BM 3.46
JG33BM 3.46
JG34BS 3.46
JG35BS 3.46
JG416DC 3.45
JG425DC 3.45
JG440DC 3.45
JHF812B 3.35
JHF812BG 3.35
JHF818B 3.35
JHF818BG 3.35
JHF883BM 3.35
JHF884BM 3.35
JHF80206B 3.35
JHF80206BG 3.35
JHF80210B 3.35
JHF80210BG 3.35
JHF80404B 3.35
JHF80404BG 3.35
JHF80408B 3.35
JHF80408BG 3.35
JHF80414B 3.35
JHF80414BG 3.35
JHF80612B 3.35
JHF80612BG 3.35
JK1/2TOPSHROUD 3.18
JK01B 1.13, 3.18, 4.14
JK01DC 3.18
JK1/INCOMSHROUD 3.18
JK1/NEUTRALSHROUD 3.18
JK1PLATEB 3.18
JK1PLATEM 3.18
JK2/INCOMSHROUD 3.18
JK2PLATEB 3.18
JK2PLATEM 3.18
JK04TC 3.18
JK04TE 3.18
JK04TJ 3.18
JK04TK 3.18
JK04TL 3.18
JK04TP 3.18
JK06TC 3.18
JK06TE 3.18
JK06TJ 3.18
JK06TK 3.18
JK06TL 3.18
JK06TP 3.18
JK008 3.3
JK012 3.3
JK016 3.3
JK022 3.3
JK024 3.3
JK030BEB 3.18
JK032 3.3
JK044 3.3
JK066 3.3
JK100HK 3.18
JK100TAP 3.18
JK101BSH 3.17
JK101DK 3.15
JK101SE 3.15
JK102DK 3.15
JK102LE 3.15
JK104 3.2
JK104B 3.8
JK104BD 3.19
JK104BDFG 3.16
JK104BF 3.19
JK104BG 3.8
JK104BSF 3.17
JK104BSH 3.17
JK106 3.2
JK106B 3.8
JK106BD 3.19
JK106BDFG 3.16
JK106BF 3.19
JK106BG 3.8
JK106BSF 3.17
JK106BSH 3.17
JK107DL 3.10
JK108B 3.8
JK108BD 3.19
JK108BDFG 3.16
JK108BF 3.19
JK108BG 3.8
JK108BSF 3.17
JK108BSH 3.17
JK110 3.2
JK112B 3.8
JK112BD 3.19
JK112BDFG 3.16
JK112BF 3.19
JK112BG 3.8
JK112BSF 3.17
JK112BSH 3.17
JK114 3.2
JK114A 3.4
JK114AG 3.4
JK116B 3.8
JK116BD 3.19
JK116BDFG 3.16
JK116BF 3.19
JK116BG 3.8
JK116BSF 3.17
JK116BSH 3.17
JK116E 3.14
JK116EG 3.14
JK118B 3.8
JK118BG 3.8
JK120 3.2
JK124B 3.8
JK124BG 3.8
JK125BSP 3.18
JK128 3.2
JK129A 3.4
JK129AG 3.4
JK132E 3.14
JK132EG 3.14
JK140MJ 3.9
JK140MP 3.9
JK142BA 3.9
JK201BSH 3.17
JK201SE 3.15
JK202LE 3.15
JK208B 3.12
JK208BDFG 3.16
JK208BG 3.12
JK208BSF 3.17
JK208BSH 3.17
JK212B 3.12
JK212BDFG 3.16
JK212BG 3.12
JK212BSF 3.17
JK212BSH 3.17
JK216B 3.12
JK216BDFG 3.16
JK216BG 3.12
JK216BSF 3.17
JK216BSH 3.17
JK216E 3.14
JK216EG 3.14
JK218B 3.12
JK218BDFG 3.16
JK218BG 3.12
JK218BSF 3.17
JK218BSH 3.17
JK222PK 3.18, 3.29, 3.31, 3.36
JK224B 3.12
JK224BDFG 3.16
JK224BG 3.12
JK224BSF 3.17
JK224BSH 3.17
JK232E 3.14
JK232EG 3.14
JK240MJ 3.13
JK240MP 3.13
JK242BA 3.13
JK250BSP 3.18
JK304H 3.2
JK306H 3.2
JK310H 3.2
JK314H 3.2
JK320H 3.2
JK328H 3.2
JK404H 3.2
JK406H 3.2
JK410H 3.2
JK414H 3.2
JK420H 3.2
JK527H 3.3
JK706C 3.3
JK710C 3.3
JK714C 3.3
JK10634C 3.8
JK10634RH 3.8, 3.19
JK11003S 3.8, 3.19
JK11004C 3.8
JK11004RH 3.8, 3.19
JK11004RL 3.8, 3.19
JK11004RLD 3.8, 3.19
JK11004RM 3.8, 3.19
JK11004RMD 3.8, 3.19
JK11004S 3.8, 3.19
JK11253S 3.8, 3.19
JK11254CO 3.8
JK11254D 3.8, 3.19
JK11254S 3.8
JK21253M 3.12
JK21254M 3.12
JK21604C 3.12
JK22503M 3.12
JK22503S 3.12
JK22504D 3.12
JK22504M 3.12
JK22504MCS 3.12
JKD125BKWP 3.11
JKD125BMM 3.11
JKD125BMP 3.11
JKD146B 3.10
JKD146BM 3.10
JKD168B 3.10

JKD168BM 3.10
JKD250BKWP 3.13
JKD250BMM 3.13
JKD250BMP 3.13
JKD1416B 3.10
JKD1416BM 3.10
JKD1812B 3.10
JKD1812BM 3.10
JKLABELPACK 3.18
JN001BP 3.29, 3.31, 3.36
JN2PLATE 3.29
JN201BE 3.29
JN201BEG 3.29
JN201MJ 3.29
JN201NS 3.29
JN203BE 3.29
JN203BEG 3.29
JN204B 3.28
JN204BG 3.28
JN204BPA 3.28
JN205BE 3.29
JN205DK 3.29
JN206B 3.28
JN206BE 3.29
JN206BG 3.28
JN206BPA 3.28
JN206DK 3.29
JN208B 3.28
JN208BG 3.28
JN208BPA 3.28
JN212B 3.28
JN212BG 3.28
JN212BPA 3.28
JN216B 3.28
JN216BG 3.28
JN216BPA 3.28
JN223BM 3.28
JN223BS 3.28
JN224BD 3.28
JN224BM 3.28
JN224BS 3.28
JP015 2.5
JZA700 3.44
JZA701 3.42, 3.43, 3.44
JZA702 3.42, 3.43, 3.44
JZA703 3.42, 3.43

K

K037 2.12
K140 2.11
K142 2.11
K143 2.11
K144 2.11
K145 2.11
K148 2.11
K151 2.11
K156 2.11
K158 2.11
K159 2.11
K160F 2.11
K171UK 2.13
KB163N 2.13
KB163P 2.13
KB263C 2.13
KB280B 2.13
KB363C 2.13
KB380B 2.13
KB463C 2.13
KB480B 2.13
KD190B 2.14
KDN263B 2.14
KDN363B 2.14
KDN463B 2.14
KE01B 2.14
KE01R 2.14
KE02B 2.14
KE02R 2.14
KE03B 2.14
KE03R 2.14
KE04B 2.14
KE06R 2.14
KE07B 2.14
KF50SB 2.13
KF81A 2.13
KF82A 2.13
KF83D 2.13
KF84A 2.13
KLB/3/0-75W 9.30
KLB/5/0-75W 9.30
KLDS4 9.4
KLDS6 9.4
KLDS8 9.4
KLDS10 9.4
KLDS12 9.4
KLJ/3/0-75W 9.30
KLJ/5/0-75W 9.30
KLMB4W 9.28
KLMB6W 9.28
KLMB8W 9.28
KLMB10W 9.28
KLMB12W 9.28
KLP/3/0-75W 9.30
KLP/5/0-75W 9.30
KLPCR/7 9.31
KLT/3/0-75W 9.30
KLT/5/0-75W 9.30
KM04L 2.11
KM07E 2.11
KM07L 2.11
KM07N 2.11
KM10D 2.11
KM10E 2.11
KM10F 2.11
KM10N 2.11
KM11B 2.11
KM11E 2.11
KM11L 2.11
KM11N 2.11
KM13E 2.11
KM13N 2.11
KM14N 2.13
KM17E 2.11
KM17N 2.11
KM25E 2.11
KM25N 2.11
KN06E 2.6
KN06N 2.6
KN10E 2.6
KN10N 2.6
KN14E 2.6
KN14N 2.6
KN18E 2.6
KN18N 2.6
KN22E 2.6
KN22N 2.6
KN26E 2.6
KN26N 2.6
KN99E 2.6
KN99N 2.6
KRN190 1.13, 2.7
KRN199 2.7
KWB01 2.12
KWE01G 2.12
KWE03G 2.12
KWE04G 2.12
KXA02E 2.12
KXA02LH 2.12
KXA02NH 2.12
KXA04LH 2.12
KXA04NH 2.12
KXA06LH 2.12
KXA06NH 2.12
KXA10E 2.12
KXA10L 2.12
KXA10N 2.12
KXA16E 2.12
KXA16L 2.12
KXA16N 2.12
KXA35L 2.12
KXA35N 2.12
KXB04E 2.12
KXB06E 2.12
KXB35E 2.12
KXB70E 2.12
KXB70LH 2.12
KXB70NH 2.12
KZ012 2.11
KZ013 2.11
KZ014 2.11
KZ021 2.13
KZ023A 2.13
KZ024 2.13
KZ059 2.14
KZ060 2.11

L

L12401 4.15
L12501 4.15
L12601 4.15
L12701 4.15
L12801 4.15
L14700 4.23
L15300 4.23
L15500 4.23
L15600 4.23
L15800 4.23
L17100 4.24
L17200 4.24
L17300 4.24
L17400 4.24
L17500 4.24
L17600 4.24
L17700 4.24
L17800 4.24
L17900 4.24
LB113 4.23
LB115 4.23
LB116 4.23
LB118 4.23
LB601 10.3
LB602 10.3
LB721 10.3
LB722 10.3
LCA01U 10.3
LCB01X 10.3
LCH01X 10.3
LCP01U 10.2
LCP02U 10.2
LCP03U 10.2
LCP04U 10.2
LDG01X 10.2
LDG02X 10.2
LEL212/6 8.5
LF138 4.15
LF139 4.15
LF140 4.15
LF141 4.15
LF142 4.15
LS201 4.24
LZ060 5.7, 5.8, 5.9

M

MB2 8.6, 9.16
MB3/E 9.16
MB326E/MT 8.6
MHF01X 10.2
MHF02X 10.2
MLN706A 4.14
MLN710A 4.14
MLN716A 4.14
MLN720A 4.14
MLN732A 4.14
MLN740A 4.14
MM501N 4.25
MM502N 4.25
MM503N 4.25
MM504N 4.25
MM505N 4.25
MM506N 4.25
MM507N 4.25
MM508N 4.25
MM509N 4.25
MM510N 4.25
MM511N 4.25
MM512N 4.25
MM513N 4.25
MTN106 4.2
MTN110 4.2
MTN116 4.2
MTN120 4.2
MTN125 4.2
MTN132 4.2
MTN140 4.2
MTN150 4.2
MTN163 4.2
MTU01X 10.3
MZ201 4.5
MZ202 4.5
MZ203 4.5, 4.18
MZ204 4.5, 4.18
MZ205 4.5, 4.18
MZ206 4.5, 4.18
MZ520N 4.25
MZ521N 4.26
MZ527N 4.25
MZ528N 4.26
MZ529N 4.26
MZ530N 4.26
MZN130 4.12
MZN131 4.12

N

NBN106A 4.3
NBN110A 4.3
NBN116A 4.3
NBN120A 4.3
NBN125A 4.3
NBN132A 4.3
NBN140A 4.3
NBN150A 4.3
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NCN325A 4.4
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NCN363A 4.4
NCN400A 4.4
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NCN404A 4.4
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NCN440A 4.4
NCN450A 4.4
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NDN102A 4.3
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NDN116A 4.3
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NDN416A 4.4
NDN420A 4.4
NDN425A 4.4
NDN432A 4.4
NDN440A 4.4
NDN450A 4.4
NDN463A 4.4

P

P22 9.7
P22/1.0 9.10
P22/1.0LSF/2 9.10
P22/1.0LSF/3 9.10
P22/1.0LSF/4 9.10
P22/1.0LSF/5 9.10
P22/1.0PVC/2 9.10
P22/1.0PVC/3 9.10
P22/1.0PVC/4 9.10
P22/1.0PVC/5 9.10
P22/2.0 9.10
P22/3.0 9.10
P22/4.0 9.10
P22/LSF/1.0 9.10
P22/LSF/2.0 9.10
P22/LSF/3.0 9.10
P22/LSF/4.0 9.10
P031F 2.5
P032F 2.5
P64AX 9.12
P64AX/1.0 9.15
P64AX/1.0LSF/2 9.15
P64AX/1.0LSF/3 9.15
P64AX/1.0LSF/4 9.15
P64AX/1.0LSF/5 9.15
P64AX/1.0PVC/2 9.15
P64AX/1.0PVC/3 9.15
P64AX/1.0PVC/4 9.15
P64AX/1.0PVC/5 9.15
P64AX/2.0 9.15
P64AX/3.0 9.15
P64AX/4.0 9.15
P64AX/LSF/1.0 9.15
P64AX/LSF/2.0 9.15
P64AX/LSF/3.0 9.15
P64AX/LSF/4.0 9.15
P64AX/R 9.12
P64AXR/1.0 9.15
P64AXR/1.0LSF/2 9.15
P64AXR/1.0LSF/3 9.15
P64AXR/1.0LSF/4 9.15
P64AXR/1.0LSF/5 9.15
P64AXR/1.0PVC/2 9.15
P64AXR/1.0PVC/3 9.15
P64AXR/1.0PVC/4 9.15
P64AXR/1.0PVC/5 9.15
P64AXR/2.0 9.15
P64AXR/3.0 9.15
P64AXR/4.0 9.15
P64AXR/LSF/1.0 9.15
P64AXR/LSF/2.0 9.15
P64AXR/LSF/3.0 9.15
P64AXR/LSF/4.0 9.15
PCR2000 9.6
PCR2000/1.0 9.10
PCR2000/1.0LSF/2 9.10
PCR2000/1.0LSF/3 9.10
PCR2000/1.0LSF/4 9.10
PCR2000/1.0LSF/5 9.10
PCR2000/1.0PVC/2 9.10
PCR2000/1.0PVC/3 9.10
PCR2000/1.0PVC/4 9.10
PCR2000/1.0PVC/5 9.10
PCR2000/2.0 9.10
PCR2000/3.0 9.10
PCR2000/4.0 9.10
PCR2000/LSF/1.0 9.10
PCR2000/LSF/2.0 9.10
PCR2000/LSF/3.0 9.10
PCR2000/LSF/4.0 9.10
PULLCORD 7.16

R

RL602 8.6
RL624 8.5

S

S20/MOP 9.8
S21 9.9
S26 9.9
S26/TC 9.9
S27 9.8
S28 9.8
S60AX/MOP 9.13
S64AX 9.13
S65AX 9.13
SBB125 5.2
SBB132 5.2
SBB225 5.2
SBB232 5.2
SBN125 5.2
SBN132 5.2
SBN140 5.2
SBN163 5.2
SBN180 5.2
SBN190 5.2
SBN225 5.2
SBN232 5.2
SBN240 5.2
SBN263 5.2
SBN280 5.2
SBN290 2.7, 5.2
SBN325 5.2
SBN332 5.2
SBN340 5.2
SBN363 5.2
SBN380 5.2
SBN390 5.2
SBN399 5.2
SBN425 5.2
SBN432 5.2
SBN440 5.2
SBN463 5.2
SBN480 5.2
SBN490 5.2
SBN499 5.2
SBR399 5.2
SCREWCOVER 7.16
SEL96T 8.4
SEL106T 8.4
SEL212 8.4
SEL214 8.4
SEL354 8.4
SF263 5.3
SFH125 5.3
SFH225 5.3
SFM125 5.3
SFT125 5.3
SFT225 5.3
SFT240 5.3
SK602 5.25
SK603 5.25
SK606 5.3, 5.25
SM050 5.23
SM100 5.23
SM101C 5.28
SM101E 5.28
SM150 5.23
SM151 5.23
SM250 5.23
SM400 5.23
SM401 5.23
SM500 5.23
SM501 5.23
SM601 5.23
SP202N 4.31
SPA201 4.30
SPA400 4.30
SPA401 4.30
SPN015D 4.31
SPN015R 4.31
SPN040D 4.31
SPN040N 4.31
SPN080 4.30
SPN080N 4.30
SPN215D 4.31
SPN215R 4.31
SPN240D 4.31
SPN240R 4.31
SPN415D 4.31
SPN415R 4.31
SPN440D 4.31
SPN440R 4.31
SPN800 4.30
SPN800R 4.30
SPN801 4.30
SPN801R 4.30
SPN802 4.30
SPN802R 4.30
SPV325 4.31
SR051 5.24
SR101 5.24
SR150 5.24
SR200 5.24
SR250 5.24
SR300 5.24
SR400 5.24
SR600 5.24
ST301 5.20
ST303 5.20
ST305 5.20
ST312 5.20
ST313 5.20
ST314 5.20
ST315 5.20
SU212 5.20
SU213 5.20
SU214 5.20
SU215 5.20
SVN121 5.19
SVN122 5.19
SVN123 5.19
SVN124 5.19
SVN125 5.19
SVN126 5.19
SVN127 5.19
SVN131 5.19
SVN132 5.19
SVN311 5.18
SVN312 5.18
SVN321 5.18
SVN322 5.18
SVN331 5.18
SVN332 5.18
SVN341 5.18
SVN342 5.18
SVN351 5.18
SVN352 5.18
SVN371 5.18
SVN391 5.18
SVN411 5.18
SVN413 5.18
SVN422 5.18
SVN432 5.18
SVN433 5.18
SVN441 5.18
SVN452 5.18

T

TA008 6.2
TAGIL 10.3
TCC510S 6.8, 9.29
TD100 6.16
TD101 6.16
TD110 6.16
TD111 6.16
TD200 6.16
TD201 6.16
TD210 6.16
TD211 6.16
TD250 6.16
TD251 6.16
TD300 6.16
TD301 6.16
TD310 6.16
TD311 6.16
TE360 5.27
TE370 5.27
TG008 6.3
TG018 6.3
TG019 6.3
TG050 6.9
TG051 6.9
TGA200 6.19
TH020B 6.9
TH101 6.3
TJA450 6.19
TJA451 6.19
TKK513P 9.29
TKK515P 9.29
TKK523P 9.29
TKK525P 9.29
TR131A 6.3
TR131B 6.3
TR140B 6.3
TR201 6.18
TR210 6.18
TR221 6.18
TR302A 6.15
TR302B 6.15
TR304A 6.15
TR304B 6.15
TR501 6.17
TR521 6.17
TU402 6.16
TU404 6.16
TU406 6.16
TU418 6.16
TX025 6.7
TX100GB 6.2
TX101GB 6.2
TX206H 6.13
TX211 6.11
TX320 6.13
TX450A 6.5
TX450B 6.5
TX460A 6.5
TX460B 6.5
TX502 6.14
TX510 6.8
TX511 6.8
TXA022 6.6
TXA023 6.6
TXA111 6.3
TXA112 6.3
TXA204C 6.10
TXA206A 6.10
TXA206B 6.10
TXA206C 6.10
TXA206D 6.10
TXA207C 6.10
TXA210AN 6.11
TXA210N 6.11
TXA213N 6.11
TXA215 6.11
TXA223 6.12
TXA224 6.12
TXA225 6.12
TXA226 6.12
TXA304 6.4
TXA306 6.4
TXB302 6.4
TXB304 6.4
TXB322 6.4
TXB344 6.4

V

VA02SPD 1.13, 4.31
VAB08 1.13
VAB12 1.13
VAB14N 1.13
VAB16 1.13
VAB21 1.13
VAC00 1.13
VAF3S 1.13
VAF3SG 1.13
VAF4S 1.13
VAF4SG 1.13
VAF5S 1.13
VAF5SG 1.13
VAF6S 1.13
VAF6SG 1.13
VAK0D 1.13
VAK0S 1.13
VAK0T 1.13
VAL00 1.13
VAM00 1.13
VAN00 1.13
VAP00 1.13
VAR3S 1.13
VAR4S 1.13
VAR5S 1.13
VAR6S 1.13
VAS02 1.13
VAT00 1.13
VAT02 1.13
VAT03 1.13
VAT04 1.13
VAT05 1.13
VAT06 1.13
VAT07 1.13
VAT08 1.13
VAT09 1.13
VAT10 1.13
VAT11 1.13
VAT12 1.13
VAT13 1.13
VAT14 1.13
VAT15 1.13
VAT16 1.13
VAT17 1.13
VAT18 1.13
VAT19 1.13
VAT20 1.13
VAT21 1.13
VAT22 1.13
VAT23 1.13
VAT24 1.13
VB18B 2.5
VB18R 2.5
VB36B 2.5
VB36R 2.5
VB54B 2.5
VB54R 2.5
VC02SW 2.7
VC008 1.2
VC008G 1.2
VC012 1.2
VC012G 1.2
VC016 1.2
VC016G 1.2
VC022 1.2
VC022G 1.2
VC104 1.3
VC104G 1.3
VC106 1.3
VC106G 1.3
VC108 1.3
VC108G 1.3
VC110 1.3
VC110G 1.3
VC112 1.3
VC112G 1.3
VC114 1.3
VC114G 1.3
VC116 1.3
VC116G 1.3
VC120 1.3
VC120G 1.3
VC201 1.3
VC202 1.3
VC204 1.3
VC206 1.3
VC206G 1.3
VC304H 1.4
VC308H 1.4
VC314H 1.4
VC402H 1.4
VC403H 1.4
VC404H 1.4
VC406H 1.4
VC408H 1.4
VC710C1 1.6
VC710C1G 1.6
VC710CU 1.7
VC710CUG 1.7
VC712C1 1.6
VC712C1G 1.6
VC712TG 1.5
VC714C1 1.6
VC714C1G 1.6
VC716C1 1.6
VC716C1G 1.6
VC716CU 1.7
VC716CUG 1.7
VC733H1 1.6
VC754R 1.8
VC754RG 1.8
VC755H1 1.6
VC755H1G 1.6
VC766H1 1.6
VC766H1G 1.6
VC776R 1.8
VC816C 1.6
VC816CU 1.7
VC818CU 1.7
VC818CUG 1.7
VC854U 1.7
VC855H 1.6
VC866H 1.6
VC876U 1.7
VC912C 1.10
VC918C 1.10
VC7343U 1.7
VC7563U 1.7
VC8552 1.9
VC8563U 1.7
VC9651 1.10
VE24H 1.14
VE103U 2.4
VE106U 2.4
VE110U 2.4
VE112U 2.4
VE212U 2.4
VE312U 2.4
VF710C1 1.6
VF712C1 1.6
VF714C1 1.6
VF716C1 1.6
VF716CU 1.7
VF812C 1.6
VF814C 1.6
VF816CU 1.7
VH004 1.2
VH008 1.2
VH008G 1.2
VH012 1.2
VH012G 1.2
VH016 1.2
VH016G 1.2
VH022 1.2
VH022G 1.2
VH104 1.3
VH104G 1.3
VH106 1.3
VH106G 1.3
VH108 1.3
VH108G 1.3
VH110 1.3
VH110G 1.3
VH114 1.3
VH114G 1.3
VH116 1.3
VH116G 1.3
VH120 1.3
VH120G 1.3
VH124 1.12
VH124G 1.12
VH129 1.12
VH129G 1.12
VH141 1.12
VH141G 1.12
VH201 1.3
VH202 1.3
VH304H 1.4
VH306H 1.4
VH308H 1.4
VH308NG 1.11
VH318H 1.4
VH404H 1.4
VH406H 1.4
VH408H 1.4
VH712C1 1.6
VH714C1 1.6
VH716CU 1.7
VH726H1 1.12
VH726H1G 1.12
VH738H1 1.12
VH738H1G 1.12
VH754RG 1.8
VH755H1 1.6
VH766H1 1.6
VH816CU 1.7
VH826H 1.12
VH826HG 1.12
VH838H 1.12
VH838HG 1.12
VH854RG 1.8
VH854U 1.7
VH855H 1.6
VH866H 1.6
VH876RG 1.8
VH876U 1.7
VH918C 1.10
VH7343U 1.7
VH8343UG 1.7
VH8552 1.9
VS112 1.11
VS710C 1.11
VS712C 1.11
VS754U 1.11
VS854U 1.11
VU12EP 2.6
VU24EP 2.6
VU36EP 2.6
VU48EP 2.6
VW110G 1.14
VW310G 1.14
VW620G 1.14
VZ302N 2.6
VZ310 2.5
VZ311 2.4
VZ313 2.3
VZ403 2.4, 2.6
VZ405N 2.6
VZ428 2.4, 2.6
VZ703 2.5
VZ706 2.5
VZ707 2.5
VZ708 2.5
VZ709 2.5
VZ744 2.4

W

WFBTMBNB 7.39
WFBTMBSB 7.39
WFBTMBSW 7.39
WFBTMPBB 7.39
WFBTMPBW 7.39
WFBTMPSB 7.39
WFBTMPSW 7.39
WFBTSBNB 7.39
WFBTSBSB 7.39
WFBTSBSW 7.39
WFBTSPBB 7.39
WFBTSPBW 7.39
WFBTSPSB 7.39
WFBTSPSW 7.39
WFCC50NBNB 7.33
WFCC50NBSB 7.33
WFCC50NBSW 7.33
WFCC50NPBB 7.33
WFCC50NPBW 7.33
WFCC50NPSB 7.33
WFCC50NPSW 7.33
WFDP50NBNB 7.31
WFDP50NBSB 7.31
WFDP50NBSW 7.31
WFDP50NPBB 7.31
WFDP50NPBW 7.31
WFDP50NPSB 7.31
WFDP50NPSW 7.31
WFDP84BNB 7.29
WFDP84BSB 7.29
WFDP84BSW 7.29
WFDP84FOBNB 7.29
WFDP84FOBSB 7.29
WFDP84FOBSW 7.29
WFDP84FOPBB 7.29
WFDP84FOPBW 7.29
WFDP84FOPSB 7.29
WFDP84FOPSW 7.29
WFDP84NBNB 7.29
WFDP84NBSB 7.29
WFDP84NBSW 7.29
WFDP84NPBB 7.29
WFDP84NPBW 7.29
WFDP84NPSB 7.29
WFDP84NPSW 7.29
WFDP84PBB 7.29
WFDP84PBW 7.29
WFDP84PSB 7.29
WFDP84PSW 7.29
WFDS1BN 7.23
WFDS1BS 7.23
WFDS1PB 7.23
WFDS1PS 7.23
WFDS2BN 7.23
WFDS2BS 7.23
WFDS2PB 7.23
WFDS2PS 7.23
WFDS3BN 7.23
WFDS3BS 7.23
WFDS3PB 7.23
WFDS3PS 7.23
WFDS4BN 7.23
WFDS4BS 7.23
WFDS4PB 7.23
WFDS4PS 7.23
WFDXBNB 7.41
WFDXBSB 7.41
WFDXBSW 7.41
WFDXPBB 7.41
WFDXPBW 7.41
WFDXPSB 7.41
WFDXPSW 7.41
WFGF1 7.46
WFGF2 7.46
WFGF34 7.46
WFGP1BN 7.47
WFGP1BS 7.47
WFGP1PB 7.47
WFGP1PS 7.47
WFGP2BN 7.47
WFGP2BS 7.47
WFGP2PB 7.47
WFGP2PS 7.47
WFGP3BN 7.47
WFGP3BS 7.47
WFGP3PB 7.47
WFGP3PS 7.47
WFGP4BN 7.47
WFGP4BS 7.47
WFGP4PB 7.47
WFGP4PS 7.47
WFGP6BN 7.47
WFGP6BS 7.47
WFGP6PB 7.47
WFGP6PS 7.47
WFGP8BN 7.47
WFGP8BS 7.47
WFGP8PB 7.47
WFGP8PS 7.47
WFGP12BN 7.47
WFGP12BS 7.47
WFGP12PB 7.47
WFGP12PS 7.47
WFP1BN 7.45
WFP1BS 7.45
WFP1EUBNB 7.43
WFP1EUBSB 7.43
WFP1EUBSW 7.43
WFP1EUPBB 7.43
WFP1EUPBW 7.43
WFP1EUPSB 7.43
WFP1EUPSW 7.43
WFP1PB 7.45
WFP1PS 7.45
WFP2BN 7.45
WFP2BS 7.45
WFP2EUBNB 7.43
WFP2EUBSB 7.43
WFP2EUBSW 7.43
WFP2EUPBB 7.43
WFP2EUPBW 7.43
WFP2EUPSB 7.43
WFP2EUPSW 7.43
WFP2PB 7.45
WFP2PS 7.45
WFP4EUBNB 7.43
WFP4EUBSB 7.43
WFP4EUBSW 7.43
WFP4EUPBB 7.43
WFP4EUPBW 7.43
WFP4EUPSB 7.43
WFP4EUPSW 7.43
WFPS3PIBNB 7.25
WFPS3PIBSB 7.25
WFPS3PIBSW 7.25
WFPS3PIPBB 7.25
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Conditions of Sale

1. In these Terms the following expressions shall have the following meanings:
   1.1 "Buyer" the purchaser of the Goods from the Seller.
   1.2 "Seller" Hager Limited.
   1.3 "Contract" the contract for the sale and purchase of the Goods made pursuant to these Terms.
   1.4 "Delivery" delivery of the Goods in accordance with these Terms.
   1.5 "Delivery Address" the location for Delivery agreed by the Seller and the Buyer (save where it is agreed that the Buyer shall collect the Goods from the Seller's premises).
   1.6 "Delivery Date" the date for Delivery agreed by the Seller and the Buyer.
   1.7 "Force Majeure" any circumstances beyond the reasonable control of the Seller.
   1.8 "Goods" the products which the Seller has agreed to supply to the Buyer pursuant to these Terms.
   1.9 "Loss" all actions claims demands losses (direct, indirect, consequential or otherwise) expenses costs actions and proceedings.
   1.10 "Payment Terms" the terms of payment in respect of the Price (and where relevant any delivery order or handling charges) which unless otherwise agreed by the Buyer and the Seller shall require payment not later than the last day of the month following that in which the Seller notifies the Buyer that the Goods are ready for despatch or have been dispatched.
   1.11 "Price" the price of the Goods as set out in the Seller's current price list at the date of despatch.
   1.12 "Quotation" includes any quotation, estimate, or tender given or made by the Seller.
   1.13 "Terms" the terms and conditions set out herein including any special terms and conditions agreed in writing by the Seller and the Buyer.
   1.14 "Product Lifetime" is the reasonable lifetime of a wiring accessory product in this catalogue and is taken to be 25 years from the date of manufacture.
2. All orders are accepted and all contracts are made subject to the Terms which shall prevail and be effective notwithstanding any variations or additions contained in any order or other document submitted by the Buyer including without limitation any standard conditions of purchase of the Buyer. No modification, of these Terms shall be binding upon the Seller unless made in writing by a duly authorised employee of the Seller.
3. A Quotation does not constitute an offer by the Seller to supply Goods and every acceptance of any Quotation by the Buyer shall be deemed an offer by the Buyer to purchase Goods from the Seller and will not be binding on the Seller until the Seller has given written acknowledgement or acceptance of such order.
4. The Seller reserves the right by giving notice to the Buyer at any time before Delivery to increase the price of the Goods or any installment of the Goods to reflect any increase in their cost of production, delivery, provision or otherwise which is due to Force Majeure, including but not by way of limitation any fluctuations in the cost of raw materials.
5. Unless otherwise agreed by the Buyer and the Seller, the Price shall be for Delivery to the Delivery Address. The Price shall include carriage and transit insurance costs to the Delivery Address. The Price is exclusive of any VAT (which will be applied in accordance with the legislation in force at the tax point date) for which the Buyer will be additionally liable.
6. In addition to the Price, an order charge of £10 shall be payable by the Buyer on orders under the value of £250. 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. The Seller will afford the Buyer a 2.5% discount on the Price if payment is made on or before the due date. Non-compliance with the Seller's terms of payment shall constitute default without reminder. In case of default the Seller may without prejudice to any other of its rights under these Terms charge interest to accrue on a daily basis at the rate of 3% per month from the date upon which payment falls due to the actual date of payment such interest to be paid monthly. Except where insolvency laws provide otherwise the Buyer shall not be entitled to withhold or set off payment for Goods for any reason whatsoever.
9. If the Buyer shall fail to fulfil the Payment Terms in respect of any invoice of the Seller the Seller may demand payment of all outstanding balances from the Buyer whether due or not and/or cancel all outstanding orders and/or decline to make further deliveries except upon receipt of cash or satisfactory securities.
10. In addition to any right or lien to which the Seller may by law be entitled the Seller shall in the event of the Buyer's insolvency or the Buyer failing to render payment for any Goods supplied by the Seller when due be entitled to a general lien on all goods of the Buyer in the Seller's pos session for the unpaid price of any Goods sold and delivered by the Seller under the same or any other contract.
11. In addition and without prejudice to its other rights the Seller may on 14 days notice to the Buyer sell any goods of the Buyer on which the Seller has a lien and shall be deemed the Buyer's age for the purposes of effecting such sale. The Seller may apply the proceeds of sale towards the satisfaction of sums due from the Buyer without prejudice to the Seller's right to recover the balance thereof from the Buyer.
12. Any date or period set out in a Quotation or the Seller's acceptance of order or which is otherwise agreed by the Seller and the Buyer for the delivery of the Goods or any part of them is approxi mate only and time shall not be of the essence of such delivery. If the Seller is prevented from de livering 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 below:

Brand	Product lifetime	10 years	2 years
Hager wiring accessories	✓		
Metalclad ranges		✓	
dimmer switches, shaver units, portable lamps			✓
klik	✓		
occupancy sensors			✓
Tehalit	✓		
Hager			✓

   19.7.2 In all cases defects shall be taken as arising solely from faulty materials and or workmanship and the defective goods must always be returned to Hager Ltd and Hager Ltd must be notified of the defect or suspected defect immediately the same became known to the Buyer.The Guarantee will be invalidated if the product has not been installed or maintained in accordance with the Company's instructions, has not been used appropriately or if any attempt has been made to rectify, dismantle or alter the product in any way.
   19.8 The Seller shall not be liable to repair or replace defective Goods or part thereof if the Goods or part thereof have been subject to any misuse, unauthorised repair replacement modification or alteration.
   19.9 The Seller shall not be liable for any Loss suffered by the Buyer due to the Seller's failure to meet its obligations under the Contract due to Force Majeure.
   19.10 Except in respect of death or personal injury caused by the Seller's negligence, the Seller shall have no liability to the Buyer for any loss of profit, business, contracts, revenues or anticipated savings or for any special indirect or consequential damage or loss of any nature whatsoever and whether caused by the negligence of the Seller or its employees, or agents) which arises out of or in connection with the supply of the Goods and/or their use or resale by the Buyer, except as may otherwise be expressly provided for in these Terms.
   19.11 For the avoidance of doubt nothing herein contained shall be deemed to exclude or restrict the Seller's liability for death or personal injury arising due to the Seller's negligence.
20. The risk in the Goods shall pass to the Buyer immediately upon Delivery.
21. The Buyer shall indemnify the Seller against all Loss (including without limitation the Price in respect of Goods completed, costs incurred by the Seller in respect of partially completed Goods, reasonable cancellation charges incurred by the Seller due to any subcontracts entered into to perform the Contract and estimated profits on the Goods under the Contract on which work by the Seller has not been started) suffered by the Seller which arises as a result of the cancellation of the Contract by the Buyer, the breach by the Buyer of any provision of the Contract or the negligence of the Buyer or any of its representatives.
22. Until payment by the Buyer in full of the Price of the Goods and any other monies due to the Seller in respect of all other products supplied or agreed to be sold by the Seller to the Buyer (including but without limitation any costs of delivery):
   22.1 The property in the Goods shall remain in the Seller and the Buyer shall hold the same as the fiduciary agent of and bailee for the Seller;
   22.2 The Buyer shall store the Goods separately from other products in a manner which makes them readily identifiable as being the property of the Seller and shall keep them protected and insured but shall be entitled to resell or use the Goods in the ordinary course of its business.
23. Until such time as property in the Goods has passed to the Buyer (and provided that the Goods are still in existence and have not been resold) the Seller shall be entitled at any time to require the Buyer to deliver up the Goods to the Seller and if the Buyer fails to do so forthwith the Seller or its agents may enter the premises of the Buyer and take possession of any Goods in which property remains in the Seller and remove and dispose of them as the Seller thinks fit. The Seller shall apply the proceeds of disposal (after deduction of all expenses) in discharge of the amount unpaid by the Buyer.
24. 24.1 Save as may be otherwise agreed in writing between the Seller and the Buyer where Goods are supplied for export from the United Kingdom they shall be charged for and delivered FOB the air or sea port of shipment and the Seller shall not be obliged to give the Buyer the notice specified in Section 32(3) of the Sale of Goods Act 1979.
   24.2 The Buyer shall be responsible for complying with any legislation or regulations governing the importation of the Goods into the country of destination and for the payment of any duties thereon. In particular, if any licence or consent of any government or other authority shall be required for the acquisition, carriage or use of the Goods by the Buyer the Buyer shall obtain the same at its own expense and if necessary produce evidence of the same to the Seller on demand. Failure to do so shall not entitle the Buyer to withhold or delay payment of the Price. Any additional expenses or charges incurred by the Seller resulting from such failure shall be for the Buyer's account.
   24.3 The seller supplies the goods to the buyer on the sole basis that goods are on-sold by the buyer to suitably qualified, professional installers only.
25. If the Buyer:
   25.1 Shall default in or commit any breach of any of its obligations to the Seller under these Terms; or
   25.2 Shall be involved in any legal proceedings in which its solvency is in question; or
   25.3 Being a company shall present a petition or have a petition presented for its winding up or convene a meeting to pass a resolution for voluntary winding up or have a receiver appointed over all or any part of its assets or call a meeting of or enter into any composition or arrangement with its creditors or being an individual shall be presented with a bankruptcy petition; or
   25.4 Shall cease or threaten to cease to trade or if in the opinion of the Seller serious doubts arise as to the Buyer's solvency then in any such case the Seller shall immediately become entitled (without prejudice to its other claims and rights under the Contract) to suspend further performance of the Contract for such time as it shall in its absolute discretion think fit or (whether or not notice of such a suspension shall have been given) to treat the Contract as wrongfully repudiated by the Buyer and forthwith terminate the Contract (either with or without notice to the Buyer) and if the Goods have been delivered but not paid for the Price shall become immediately due and payable notwithstanding any previous agreement to the contrary.
26. All Contracts shall be governed by English Law and the English Courts shall have nonexclusive jurisdiction for the hearing of any dispute between the parties.
27. These Terms supersede all previous Conditions of Sale of the Seller.
28. The Seller shall be entitled to assign or sub-contract all or any of its rights and obligations hereunder. The Buyer shall not be entitled to assign transfer sub-contract or otherwise delegate any of its rights or obligations hereunder.
29. It is a condition of any sale under these terms and conditions that both parties shall abide by the principles of The Electrical Installation Industry Charter adopted by the major electrical industry trade bodies and consequently shall avoid the distribution of counterfeit and/or non-compliant electrical products.

Conditions of Use

The products listed in this publication should be installed by suitably qualified professional personnel in accordance with the company's instructions, requirements of relevant legislation, regulations (including IEE Wiring Regulations) and the accepted practice in the industry.

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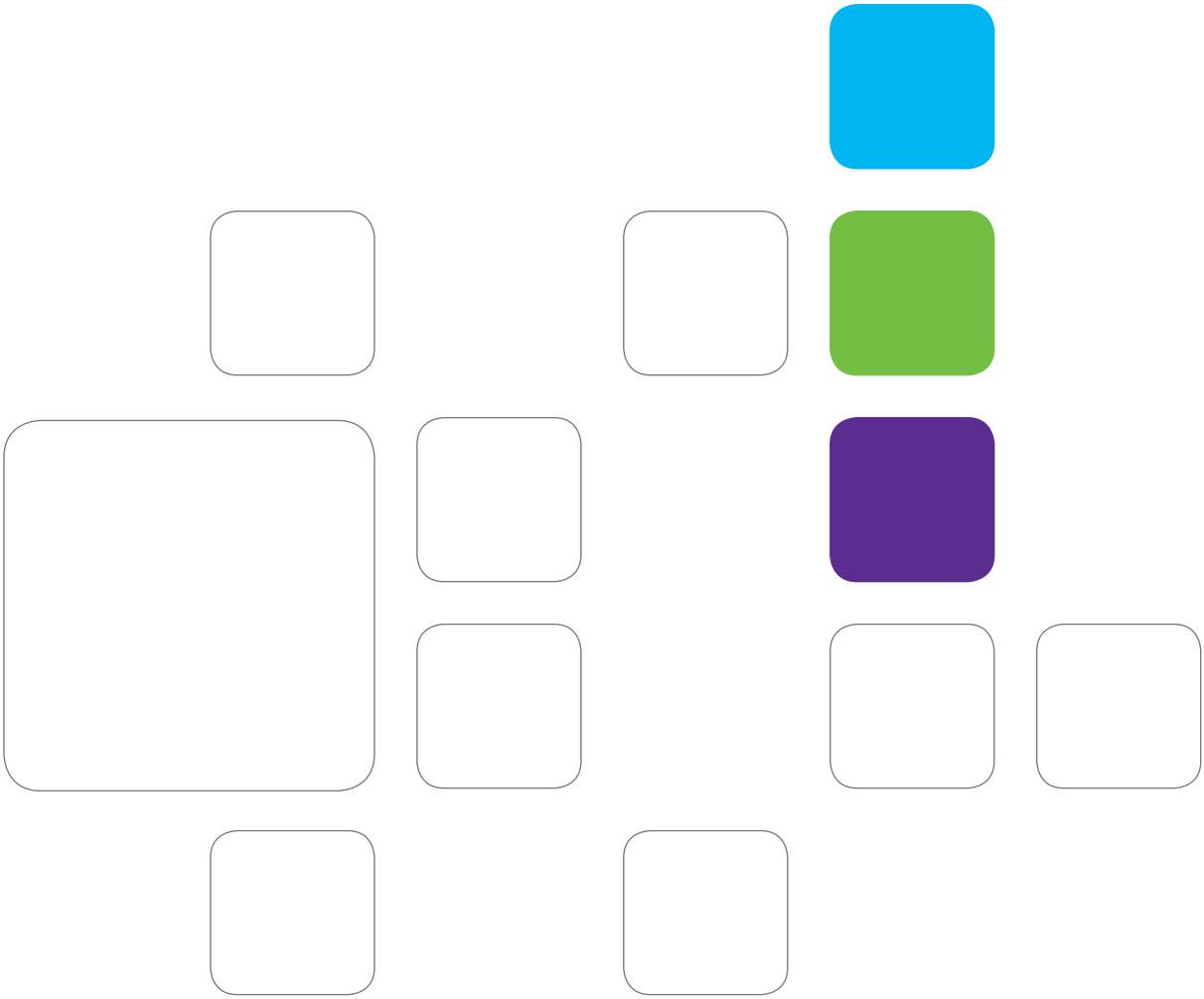

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All information in this catalogue is subject to errors and technical modifications.

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