



Commercial Distribution

Solutions for commercial & industrial premises





The specialist for electrical installations

Since 1955 we have been the specialist for electrical installations in the residential and commercial sectors. Providing everything from one source: systems and solutions with high quality, tried and tested reliability and ease of installation included as standard.

As an independent family-owned and run company Hager Group is one of the industry's leading innovators. With 11,650 employees globally, our components and solutions are produced in 28 different locations to support our customers projects in more than 125 countries around the world.

In the UK we have a well-established research and development team combined with global resource to meet the needs of the market. This is backed up by the UK factory having ISO 9001:2008 and an on-site ASTA recognised

laboratory to BS EN ISO/IEC 17025:2005, which ensures that products and solutions meet all of the relevant British standards. The UK site also has OHSAS 18001:2007, ISO 14001 and the Investors in People Bronze Award.

Working out solutions in close consultation with customers we have the vision 'to add value to peoples' lives and their buildings through smart, eco-efficient and energy saving solutions and services'.

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 9001:2008 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 9001:2008.

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 numerous 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:

Technical Service Centre

Call our Technical Services Centre for all your national sales enquiries.

01952 675600

estimation@hager.co.uk

Technical Service Centre Faxline

01952 675557



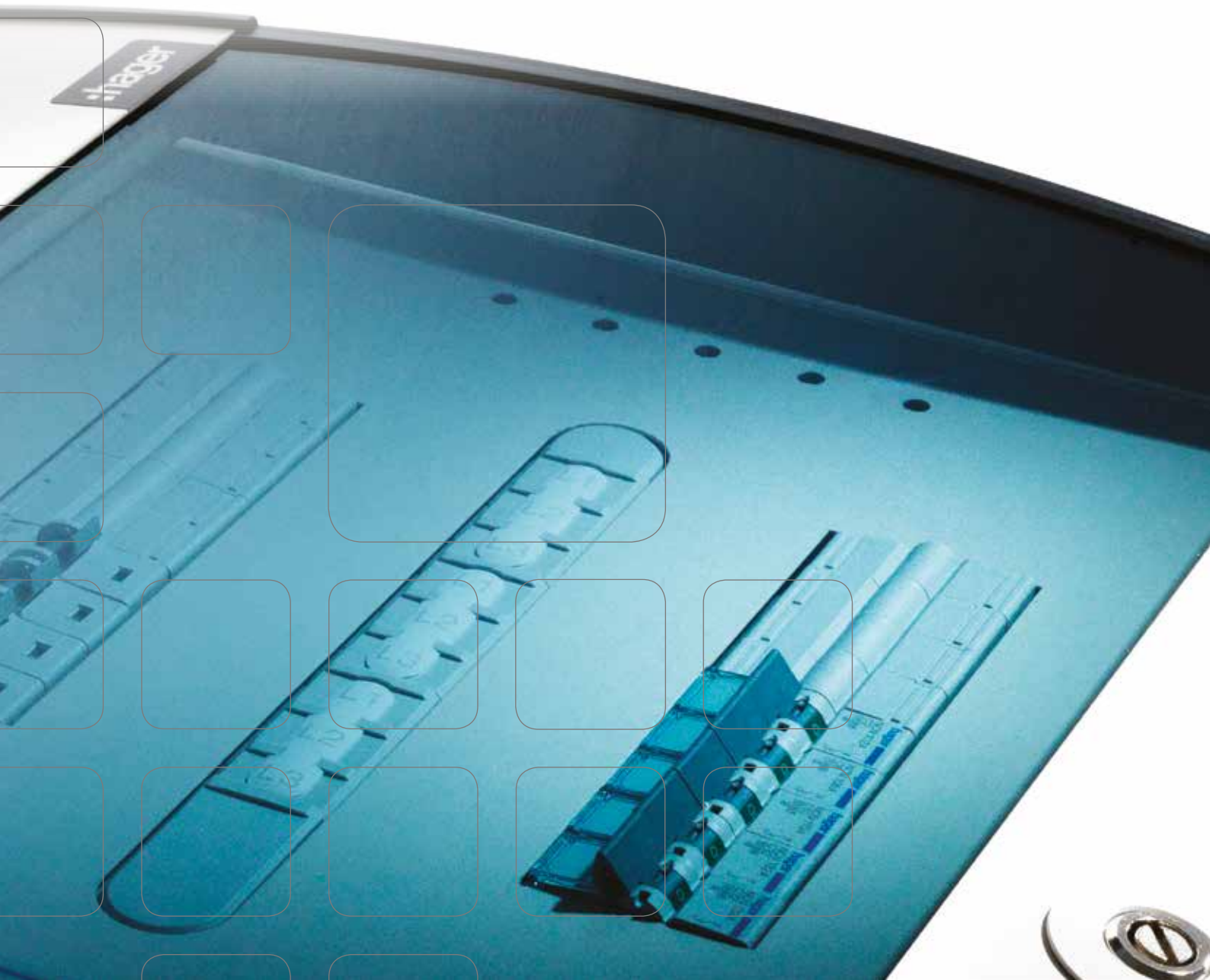
Engineered solutions

Commercial Distribution

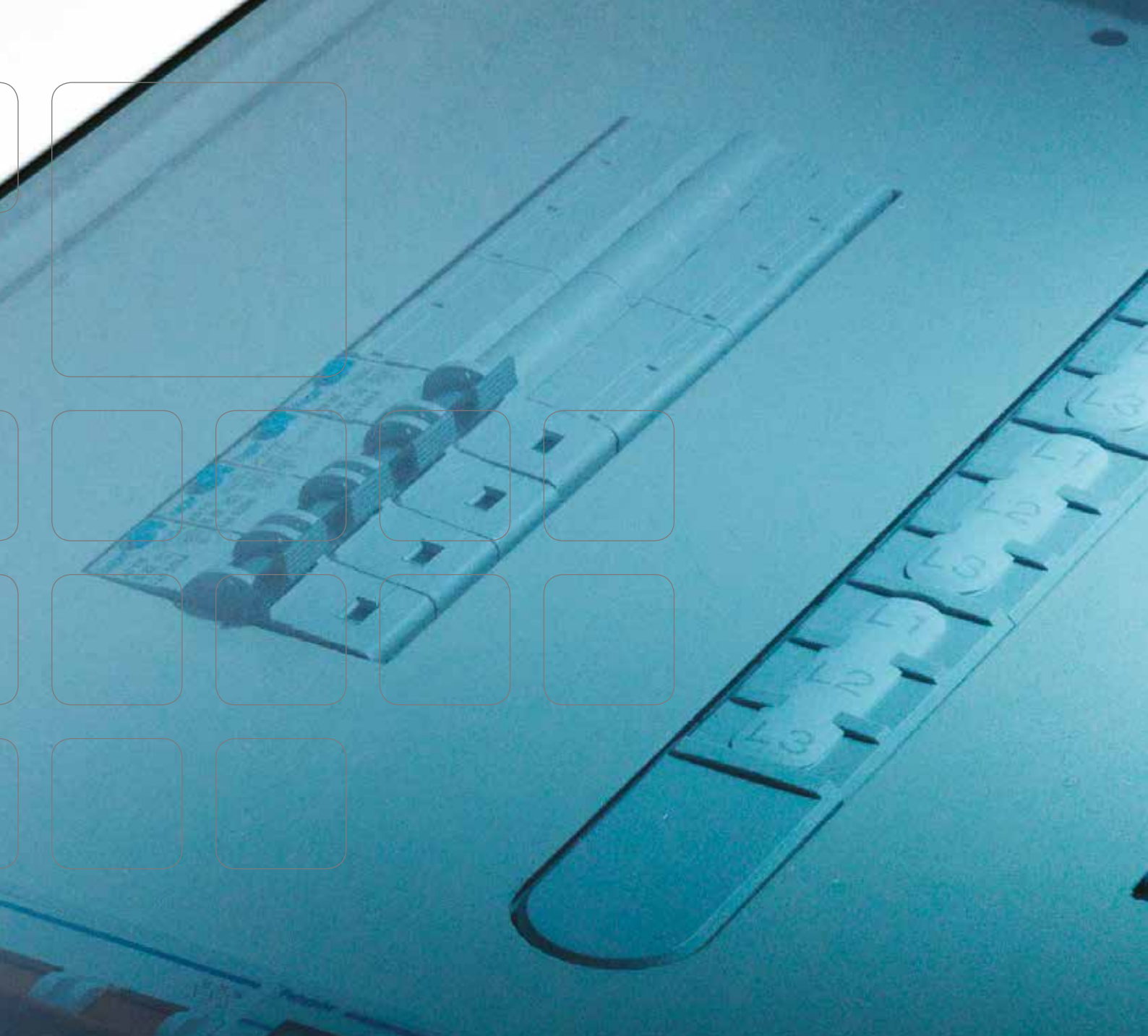
The complete service offering

Our range of commercial electrical distribution assemblies cover A & B boards through to panelboards and metering solutions.

To support this range, we also offer enclosed fuse combination switches, enclosed switch disconnectors and enclosed MCCBs.



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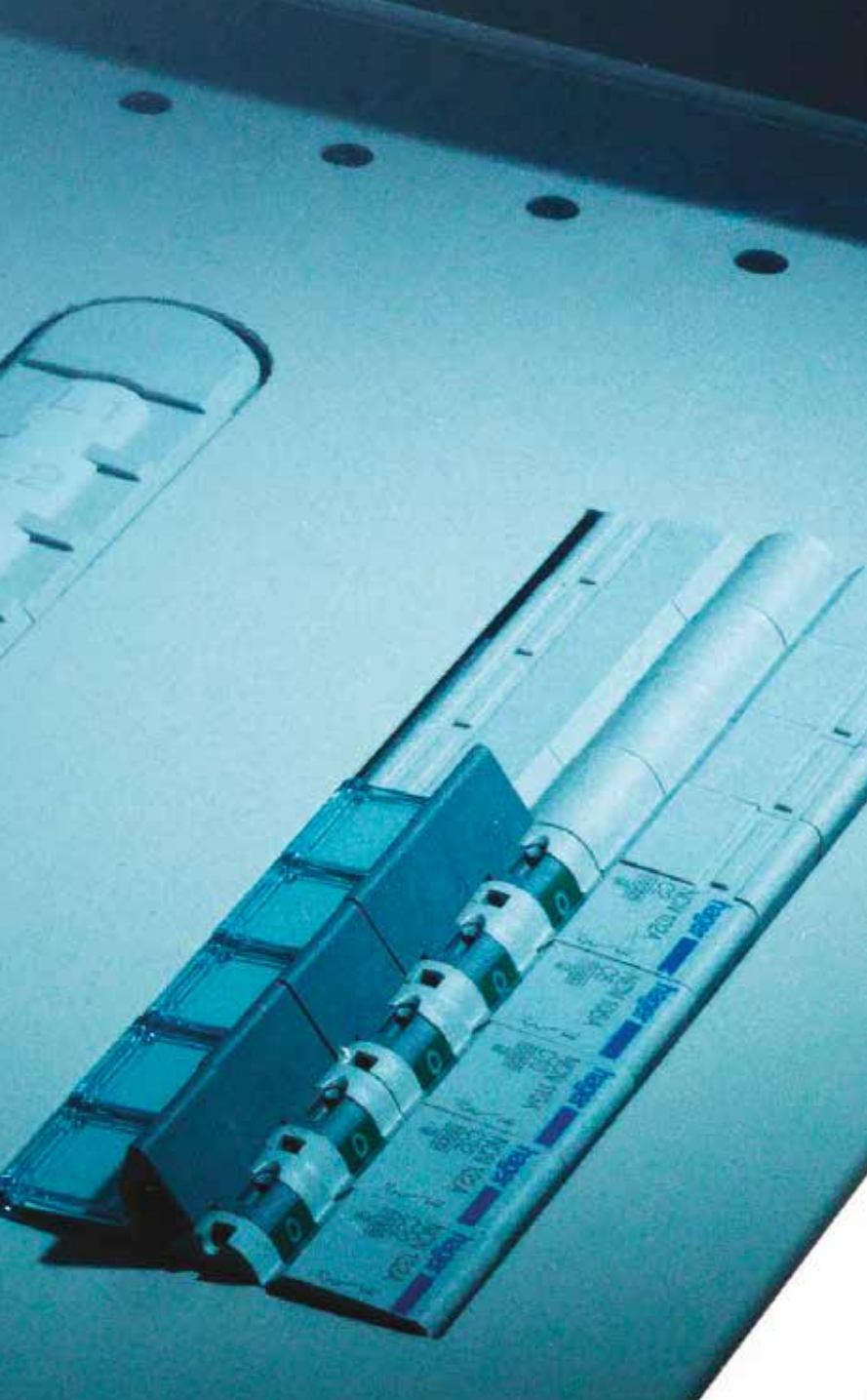


Invicta 3

Type B Distribution Boards

Our Invicta 3 Type B Boards have been developed as the solution for commercial installations.

The whole nature of electrical sub and final distribution for commercial installations has changed in recent years, with demands for more outgoing ways, more RCD protection, more metering and more control devices.



Full of features

1

Simple cable entry

The unique patented trunking and cable entry facility means there is no need to use paxolin. Cable protection is built into the endplate cable entry.

2

Ease of metering

Metering can be installed next to the incoming device. Power and lighting and power, lighting and services metered boards are also available.

3

The neutral bars

Transparent IP2X neutral cover allows for ease of cable installation. Screws fully turned down for easy and fast cabling.



The benefits:



Clear labelling

Ease of line identification L1, L2, L3 mouldings show through when front cover is fitted.



Glazed door

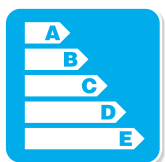
The Invicta 3 distribution board is arguably the best looking board on the market. Its glazed door allows a visual check of the devices without the need to open the door.

Electrical distribution is at the heart of a buildings services. Distribution boards must enable designs that meet the demands of the client, the need for more metering and the demands for energy efficient solutions through control devices or building management systems.

Invicta 3 is the perfect solution for these needs. Our range of Type B boards makes it easier for you to design and install electrical distribution systems that meet the needs of today and the future.

Metered Power & Lighting Boards

A compact solution to meet modern demands



Energy Saving

Installing and monitoring meters leads to savings of 5-10% of the energy being metered. For example, a meter that identifies pumps being left on for 24hrs, seven days a week, may save 60% of energy passing through if the pump is only used when required.



Building Regulations

The Building Regulations 2010 & approved document L2 recognise the valuable role of metering and include requirements of sub-metering in buildings other than dwellings.



Choice

There are many options to monitor energy consumption. Direct metering, measurement and estimation should all be considered.



Communication

Metering helps building occupiers to understand how energy is being used and lets them see the patterns of where and when energy is consumed. Useful trends can be shown from the data produced.



Control & Performance

Metering provides feedback to designers, manufacturers, government and the supply side industry on performance achieved, helping them to improve global energy performance by setting better targets.

Part L2 Explained

Metering energy use in new non-dwelling buildings

Guidance on metering energy use in new non-domestic buildings is provided in the approved documents L2A (Building Regulations) and the Non-Domestic Building Services Compliance Guide.

These are intended to provide guidance for some of the more common building situations. However, there may well be alternative ways of achieving compliance with the requirements.

Thus there is no obligation to adopt any particular solution contained in an Approved Document if you prefer to meet the relevant requirement in some other way.

As the building regulations are non-prescriptive, the approved documents are published to offer methods of compliance.

Meeting the requirements

There is a greater demand for off-the-shelf solutions that make the selection and installation of the distribution boards quick and easy.

The requirements for monitoring the energy metering are not always known.

- With a combined Pulsed/Modbus output meter, it can't be easier when selecting the right meter for your next job.
- This dual output enables straightforward integration to a network/building management system.

Optimised size (height & width) to meet your buildings design

- The Hager power and lighting board range is optimised for size between the two offers, maximising cable space with the deepest base (165.5mm) and a width that does not compromise room for cables

Need for an extended range to suit more applications

- With a wide range containing options to suit most applications and the only 12+12 configuration in vertical stack variant. There is a power and lighting board for every application.

The complete product from one reference

- With a pre-installed incomer and metering this our meter power & lighting and power, lighting and service board allow you to simply install the board and fit your outgoing circuit protection without the need to identify all of the component parts prior to ordering and removes the need for on-site assembly.



Invicta 3 Type B Boards

Meeting the needs of the 17th Edition

Invicta 3 Type B boards have been designed for safe and simple installation, with features to benefit both installer and end user.

Take a look below to see all of the features we have designed in and how this is going to make installing a distribution board so much easier.



The advantages for you:

- Flush coupling to trunking and a smooth entry for cables to meet the requirements of the regulations thanks to the cable entry end plate.
- The earth and neutral bars are positioned and designed for simpler installation.
- The neutral bars have transparent IP2X shrouding to make cabling easier.
- The metering kits fit directly into the main board saving space and the expense of buying additional extension boxes.
- Glazed door for great aesthetics and meeting the regulations.

Technical data:

- Complies with BS EN 60439-3.
- 125 Amp and 250 Amp rating, 230 / 400 V AC.
- 4, 6, 8, 12, 16, 18 & 24 triple pole outgoing ways.
- IP3X.
- Obround protected cable entry points.
- Top and bottom removable gland plates.

Quick tips

1



Top tap off

100A top tap off allows for board extensions or MCB up to 100A with connection kit.

2



Shrouded neutral bar

Clear shrouded neutral bar to IP2X allows the contractor to install cables without removing the shroud. Ensures safe and easy installation.

3



Trunking entry

Unique trunking entry obround system top and bottom enables quick fitting to trunking and without the extra cost in time and materials.

4



Clear labelling

L1, L2, L3 on moulding are visible with and without the front cover fitted, which show through the cover for ease of line identification.

6



Metering

Metering is integral within the main board, meaning there is no need for additional extension boxes saving time and money.



Aesthetics

Strong board aesthetics ideal for commercial offices, health care and education projects where boards may be sited in public areas.



Choice

Two choices of boards - 125A and 250A.



JK106BG

Invicta 3 (125A Incoming 63A Outgoing)

Surface mounted steel enclosures, IP3X rated available with plain, glazed and Amendment 3 door options.

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

Supplied without incoming and outgoing devices. A Hager incomer kit must be used.

For Amendment 3 door kit see page 20.

Incoming cable sizes
125A & 100A 50mm²
63A 25mm²

¹ A JK101SE is required to provide additional incoming cable space, see page 18.

² Full metal cover & door to comply with BS EN 61439-3 including annex ZB.

For dimensions see page 45.

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



JKD1416PM

125A Metered Boards

Boards are supplied with a meter that offers a pulsed & modbus output.

Provided with meter and 125A incomer pre-fitted, housed in a 250A enclosure. Each individual

pan is fully rated at 125A.

For dimensions see page 48.

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



JK106BD

IP65 Distribution Boards

Suitable for three phase applications where a high IP rating is required. Available with either a steel (mild steel, powder coated) or GRP enclosure.

Supplied without incoming and outgoing devices. A Hager incomer kit must be used.

³ Not suitable for outdoor use.

Available up to 125A direct connection with outgoing distribution, rated for MCBs from 0.5A to 63A.

Complies with BS EN 61439-3

Number of Ways	Cat ref. Steel	Cat ref. GRP
4 Way IP65 Metal 125A TPN Board 800 x 600 x 300	JK104BD ³	JK104BF
6 Way IP65 Metal 125A TPN Board 800 x 600 x 300	JK106BD ³	JK106BF
8 Way IP65 Metal 125A TPN Board 800 x 600 x 300	JK108BD ³	JK108BF
12 Way IP65 Metal 125A TPN Board 950 x 600 x 300	JK112BD ³	JK112BF
16 Way IP65 Metal 125A TPN Board 950 x 600 x 300	JK116BD ³	JK116BF

MCBs & RCBOs for Invicta 3 Type B Distribution Boards

Cat ref.		0.5A	1A	2A	3A	4A	6A	10A
B Curve	Single Pole	-	-	-	-	-	NBN106A	NBN110A
	Triple Pole	-	-	-	-	-	NBN306A	NBN310A
C Curve	Single Pole	NCN100A	NCN101A	NCN102A	NCN103A	NCN104A	NCN106A	NCN110A
	Triple Pole	NCN300A	NCN301A	NCN302A	NCN303A	NCN304A	NCN306A	NCN310A
D Curve	Single Pole	NDN100A	NDN101A	NDN102A	NDN103A	NDN104A	NDN106A	NDN110A
	Triple Pole	NDN300A	NDN301A	NDN302A	NDN303A	NDN304A	NDN306A	NDN310A
RCBO (B)	Single Pole	-	-	-	-	-	ADB106	ADB110
RCBO (C)	Single Pole	-	-	-	-	-	ADC106	ADC110



JK11003S

125A Incomer Kits

These incomer kits will only fit the 125A board(s)

⁴ A 300 / 450mm space is required below the board for fitting.

⁵ Fits within distribution board

Description	Max cable capacity solid	Cat ref.
3 Pole 100A Switch Disconnect Incomer Kit ⁵	50mm ²	JK11003S
4 Pole 100A Switch Disconnect Incomer Kit ⁵	50mm ²	JK11004S
3 Pole 125A Switch Disconnect Incomer Kit ⁵	50mm ²	JK11253S
4 Pole 125A Switch Disconnect Incomer Kit ⁵	50mm ²	JK11254S
4 Pole 63A Contactor Incomer Kit includes Switch Disconnect (fits below distribution board, 300mm high)	50mm ²	JK10634C ⁴
4 Pole 100A Contactor Incomer Kit includes Switch Disconnect (fits below distribution board, 450mm high)	M8 Lug	JK11004C ⁴
125A Direct Connection Kit ⁵	50mm ²	JK11254D
4 Pole 63A 30mA RCCB Incomer Kit ⁵	25mm ²	JK10634RH
4 Pole 100A 30mA RCCB Incomer Kit ⁵	50mm ²	JK11004RH
4 Pole 100A 300mA RCCB Incomer Kit ⁵	50mm ²	JK11004RL
4 Pole 100A 300mA Time Delayed RCCB Incomer Kit ⁵	50mm ²	JK11004RLD
4 Pole 100A 100mA RCCB Incomer Kit ⁵	50mm ²	JK11004RM
4 Pole 100A 100mA Time Delayed RCCB Incomer Kit ⁵	50mm ²	JK11004RMD
125A 4 pole Changeover Incomer Kit	50mm ²	JK11254CO ⁴



JKD125PM (distribution boards not included*)

125A Meter Incomer Kits (note: these meter incomers will only fit the 125A board(s))

Each fully assembled meter pack contains:
1 x 125A incoming switch to accept up to 50mm² cable, lug connection, a single meter for dual, and two meters on the triple, CT blocks plus all

necessary connections and 125A direct connection kits for each required TP&N board (note: these meter incomer kits will only fit the 125A board(s)).

For meter incomer kit dimensions see page 50.

*Distribution boards supplied separately to be assembled on site.

Description	Max cable capacity solid	Cat ref.
Dual kWh Meter Pack 125A Incomer Pulsed & Modbus	50mm ²	JKD125PM
Triple kWh Meter Pack 125A Incomer Pulsed & Modbus	50mm ²	JKD125TPM



JK140PM

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

This kit fits 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 Service Centre on 01952 675 689.

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.
Multifunction Meter Pack 125A Pulsed & Modbus Pluggable Output	JK140PM

16A	20A	25A	32A	40A	45A	50A	63A
NBN116A	NBN120A	NBN125A	NBN132A	NBN140A	-	NBN150A	NBN163A
NBN316A	NBN320A	NBN325A	NBN332A	NBN340A	-	NBN350A	NBN363A
NCN116A	NCN120A	NCN125A	NCN132A	NCN140A	-	NCN150A	NCN163A
NCN316A	NCN320A	NCN325A	NCN332A	NCN340A	-	NCN350A	NCN363A
NDN116A	NDN120A	NDN125A	NDN132A	NDN140A	-	NDN150A	NDN163A
NDN316A	NDN320A	NDN325A	NDN332A	NDN340A	-	NDN350A	NDN363A
ADB116	ADB120	ADB125	ADB132	ADB140	ADB145	-	-
ADC116	ADC120	ADC125	ADC132	ADC140	-	-	-

Invicta 3 Type B Distribution Boards 250A Incoming 63A Outgoing



JK208BG

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

Surface mounted steel enclosures. Enclosure IP: IP3X
Enclosures are available with plain, glazed & Amendment 3 door options.

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

Supplied without incoming and outgoing devices. A Hager incoming kit must be used.

¹ Full metal cover & door to comply with BS EN 61439-3 including annex ZB.

Complies with BS EN 61439-3
For dimensions see page 45.

Description	Cat ref. Plain door	Cat ref. Glazed door	Cat ref. AMD 3 Compliant
8 Triple Pole Ways 250A TP&N Board	JK208B	JK208BG	JK208BA3 ¹
12 Triple Pole Ways 250A TP&N Board	JK212B	JK212BG	JK212BA3 ¹
16 Triple Pole Ways 250A TP&N Board	JK216B	JK216BG	JK216BA3 ¹
18 Triple Pole Ways 250A TP&N Board	JK218B	JK218BG	JK218BA3 ¹
24 Triple Pole Ways 250A TP&N Board	JK224B	JK224BG	JK224BA3 ¹



JKD2884PM

250A Metered Boards

Boards are supplied with meters that offer a pulsed & modbus output.

Provided with the 200A incomer pre-fitted with ample cable space.

For technical characteristics and dimensions see page 48.

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

MCBs & RCBOs for Invicta 3 Type B Distribution Boards

Cat ref.		0.5A	1A	2A	3A	4A	6A	10A
B Curve	Single Pole	-	-	-	-	-	NBN106A	NBN110A
	Triple Pole	-	-	-	-	-	NBN306A	NBN310A
C Curve	Single Pole	NCN100A	NCN101A	NCN102A	NCN103A	NCN104A	NCN106A	NCN110A
	Triple Pole	NCN300A	NCN301A	NCN302A	NCN303A	NCN304A	NCN306A	NCN310A
D Curve	Single Pole	NDN100A	NDN101A	NDN102A	NDN103A	NDN104A	NDN106A	NDN110A
	Triple Pole	NDN300A	NDN301A	NDN302A	NDN303A	NDN304A	NDN306A	NDN310A
RCBO (B)	Single Pole	-	-	-	-	-	ADB106	ADB110
RCBO (C)	Single Pole	-	-	-	-	-	ADC106	ADC110

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

² A 450mm space is required below the board for fitting

³ Fits within distribution board

Description	Max cable capacity solid	Cat ref.
3 Pole 250A MCCB Incomer Kit ³	M8 Lug	JK22503M
4 Pole 250A MCCB Incomer Kit ³	M8 Lug	JK22504M
3 Pole 250A Switch Disconnect Incomer Kit ³	M8 Lug	JK22503S
4 Pole 250A Switch Disconnect Incomer Kit ³	M8 Lug	JK22504MCS
4 Pole 250A Direct Connection Kit ³	M8 Lug	JK22504D
4 Pole 160A Contactor Incomer Kit includes Switch Disconnect (fits below distribution board, 450mm high)	M8 Lug	JK21604C ²
3 Pole 125A MCCB Incomer Kit ³	M8 Lug	JK21253M
4 Pole 125A MCCB Incomer Kit ³	M8 Lug	JK21254M



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

Each meter pack contains:
1 x Incoming 250A switch to accept up to 120mm² cable with lug connection, a single meter for dual, and two meters on the triple, CT blocks plus all

necessary connections and 250A direct connection kits for each required TP&N board (note: these meter incomer kits will only fit the 250A board(s)).

For meter incomer kit dimensions see page 50.

*Distribution boards supplied separately to be assembled on site.

Description	Max cable capacity solid	Cat ref.
Dual kWh Meter Pack 250A Incomer Pulsed	M8 Lug	JKD250PM
Triple kWh Meter Pack 250A Incomer Pulsed & Modbus	M8 Lug	JKD250TPM

JKD250PM (distribution boards are not included*)



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.
Multifunction Meter Pack 250A Pulsed & Modbus Pluggable Output	JK240PM

JK240PM

16A	20A	25A	32A	40A	45A	50A	63A
NBN116A	NBN120A	NBN125A	NBN132A	NBN140A	-	NBN150A	NBN163A
NBN316A	NBN320A	NBN325A	NBN332A	NBN340A	-	NBN350A	NBN363A
NCN116A	NCN120A	NCN125A	NCN132A	NCN140A	-	NCN150A	NCN163A
NCN316A	NCN320A	NCN325A	NCN332A	NCN340A	-	NCN350A	NCN363A
NDN116A	NDN120A	NDN125A	NDN132A	NDN140A	-	NDN150A	NDN163A
NDN316A	NDN320A	NDN325A	NDN332A	NDN340A	-	NDN350A	NDN363A
ADB116	ADB120	ADB125	ADB132	ADB140	ADB145	-	-
ADC116	ADC120	ADC125	ADC132	ADC140	-	-	



JK116EG

DIN Extension Boxes for 125A Primary Boards

Extension boxes have plain or glazed doors and a DIN rail chassis for mounting modular devices.

Complies with BS EN 62208.

Full width enclosure provided with 16 modular ways per row.

For dimensions see page 46.

Description	Cat ref. Plain door	Cat ref. Glazed door
125A 16 Way 1 Row DIN Extension Box	JK116E	JK116EG
125A 32 Way 2 Row DIN Extension Box	JK132E	JK132EG
125A 16 Way 1 Row DIN Extension Box (Amendment 3)	JK116EA3	-



JK216E

DIN Extension Boxes & Door Kits for 250A Primary Boards

Description	Cat ref. Plain door	Cat ref. Glazed door
250A 16 Way 1 Row DIN Extension Box	JK216E	JK216EG
250A 32 Way 2 Row DIN Extension Box	JK232E	JK232EG
250A 16 Way 1 Row DIN Extension Box (Amendment 3)	JK216EA3	-
250A 32 Way 2 Row DIN Extension Box (Amendment 3)	JK232EA3	-
125A 16 Mod DIN Plain Spare Door Kit (Amendment 3)	JK116EA3-DK	-
125A 32 Mod DIN Plain Spare Door Kit (Amendment 3)	JK132EA3-DK	-
250A 16 Mod DIN Plain Spare Door Kit (Amendment 3)	JK216EA3-DK	-
250A 32 Mod DIN Plain Spare Door Kit (Amendment 3)	JK232EA3-DK	-



JK101SE

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

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

For dimensions see page 46.

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



JK101DK



JK104BDFG

Side DIN Boxes for 125A Primary Boards

Side extension boxes allow for the installation of DIN rail mounted modular devices.

Complies with BS EN 62208.

They can be horizontally or vertically attached to distribution boards.

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

For dimensions see page 45.

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



JK104BSF

Side Extension Boxes for 125A Primary Boards

Side extension boxes allow cable ways to be fitted on site.

Can be used with Invicta 3 Panelboards JN & JF.

Complies with BS EN 62208.

These are available in either half or full distribution board width.

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

For dimensions see page 47.

	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 JK116B Full Width	JK116BSF

Side Extension Boxes for 250A Primary Boards

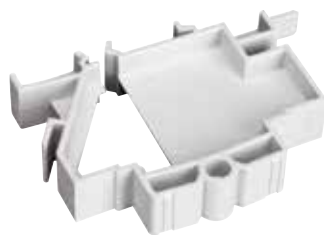
	Cat ref. Plain door
8 Way Side Extension Box for JK208B Full Width	JK208BSF
12 Way Side Extension Box for JK212B Full Width	JK212BSF
16 Way Side Extension Box for JK216B Full Width	JK216BSF
18 Way Side Extension Box for JK218B Full Width	JK218BSF
24 Way Side Extension Box for JK224B Full Width	JK224BSF

Half Width Side Extension Boxes for 125/250A Primary Boards (Doors are not available.)

	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



JK104BSH



JK01B



JK222PK

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

Description	125A Accessories Cat ref.	250A Accessories Cat ref.
Door Locking Kit	JK222PK	JK222PK
Spare Label Pack - All sizes (one pack)	JKLABELPACK	JKLABELPACK
Single Phasing Kit	JK125BSP	JK250BSP
Single Pole Busbar Blank	JK01B	JK01B
JK1/2 Horizontal or Vertical Mechanical Connection Kit	JK100HK	JK100HK
Brass Gland Plate - 2.0mm	JK1PLATEB	JK2PLATEB
100A Top Tap Off Kit	JK100TAP	JK100TAP
Triple pole earth bar kit high integrity - 2 x 15 connections	JK030BEB	JK030BEB
Document clip	JK01DC	JK01DC
Neutral connecting block 100A	KRN190	KRN190
JK1/2 Neutral Clear Shroud	JK1/NEUTRALSHROUD	JK1/NEUTRALSHROUD
JK1/2 Busbar Stack Top Shroud	JK1/2TOPSHROUD	JK1/2TOPSHROUD
JK1/2 Main Incomer Shroud	JK1/INCOMSHROUD	JK2/INCOMSHROUD
Spare Gland Plate including Drill Markings - 1.2mm	JK1PLATEM	JK2PLATEM



JK106BA3-DK

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

Description	125A Cat ref.	250A Cat Ref.
4 Way TPN Plain Spare Door Kit A3	JK104BA3-DK	-
6 Way TPN Plain Spare Door Kit A3	JK106BA3-DK	-
8 Way TPN Plain Spare Door Kit A3	JK108BA3-DK	JK208BA3-DK
12 Way TPN Plain Spare Door Kit A3	JK112BA3-DK	JK212BA3-DK
16 Way TPN Plain Spare Door Kit A3	JK116BA3-DK	JK216BA3-DK
18 Way TPN Plain Spare Door Kit A3	JK118BA3-DK	JK218BA3-DK
24 Way TPN Plain Spare Door Kit A3	JK124BA3-DK	JK224BA3-DK



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.	1" 4" trunking not suitable for JKD Power & Lighting Boards	
Description	100mm 4" Cat ref.	150mm 6" Cat ref.
Trunking Kit for Invicta 3 TP&N	JK04TK ¹	JK06TK
Spare Trunking Channel	JK04TC ¹	JK06TC
Spare Lid	JK04TL ¹	JK06TL
Spare End Cap	JK04TE ¹	JK06TE
Spare Connecting Bracket	JK04TJ ¹	JK06TJ
Spare Trunking Lid Joining Bracket	JK04TP ¹	JK06TP



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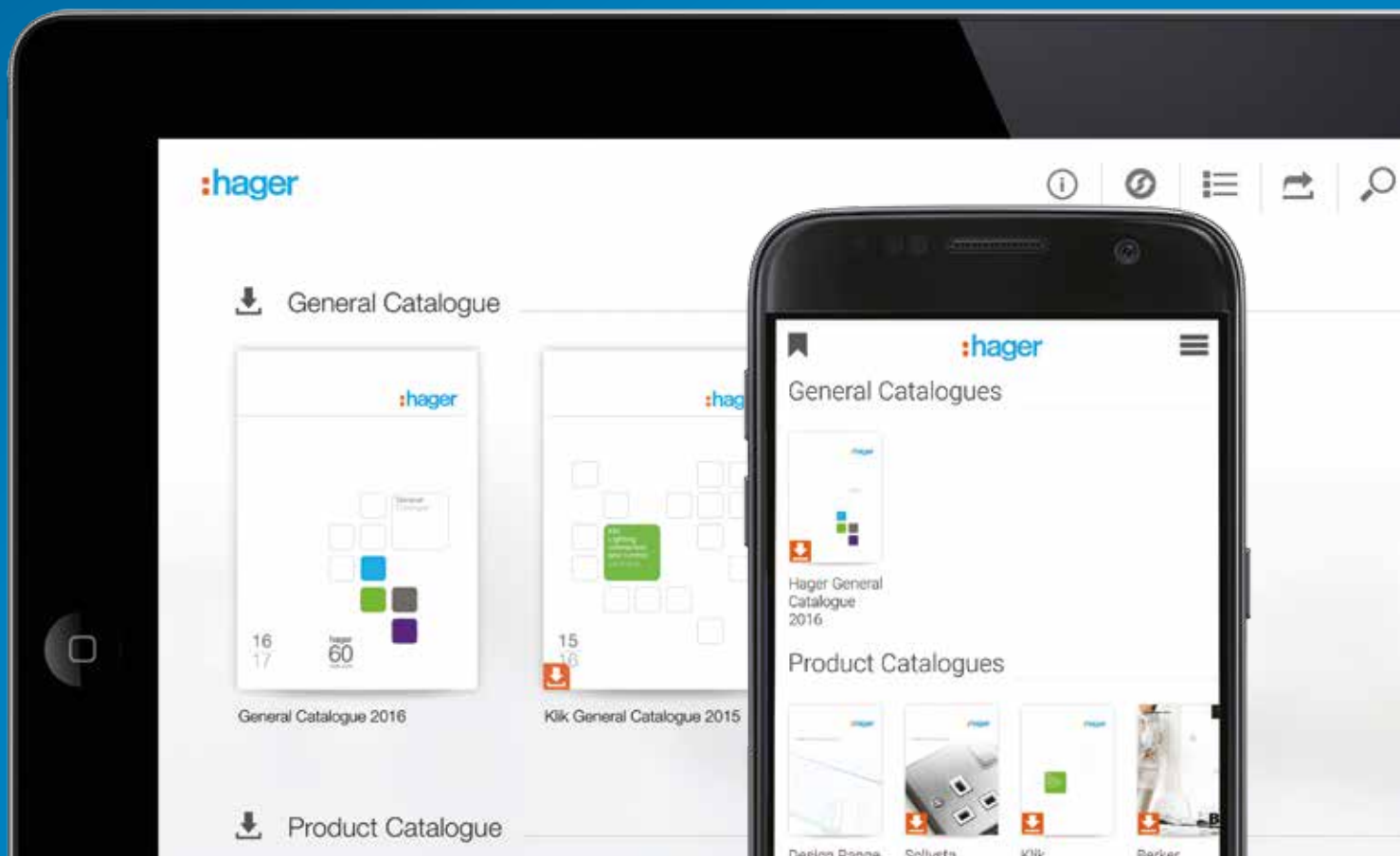
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Invicta 3

Easy fit Panelboards

Invicta 3 Panelboards are incredibly easy to install, the pan assembly, door and front cover can all be removed to make the product lighter when fixing to the wall. Keyhole slots and a central fifth keyhole fixing point make fitting and levelling the board even simpler. In addition both the top and bottom gland plates are removable, so that the installer can prepare cable entries away from the board for convenience and to help prevent ingress of swarf and dust.

1

Glazed door

The glazed door allows devices to be viewed without opening the door.

2

Key hole fixing point

The key hole fixing points aid the installer when fitting the board to the wall, the central 5th triangle makes levelling easier.

3

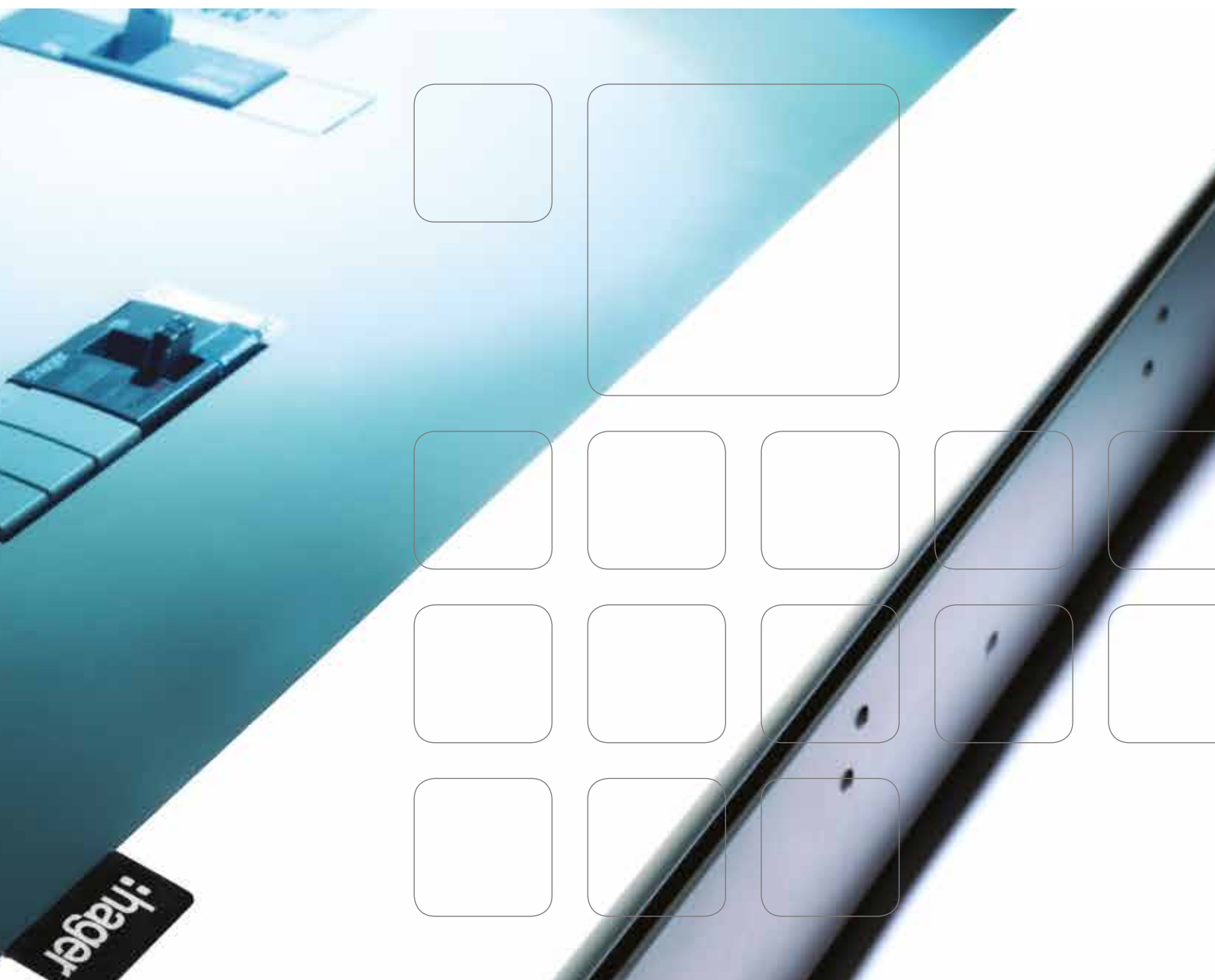
Pre-wired meter packs

Installer only has to fit the packs into the board. All internal wiring is included.



The Invicta 3 panelboard range is the most aesthetically pleasing available on the market. The glazed door, which is important not only aesthetically, but also because an ordinary person as defined by the 17th edition can view the board while it is still locked.

A wide range of accessories make the panelboards easy to adapt for onsite build and tailored solutions. These accessories include extension boxes, meter packs, DIN rail boxes and key locks.



Invicta 3 Panelboards

Our Invicta 3 Panelboards have been designed to make installation a breeze, take a look below for a brief overview of all of the features.



The advantages for you:

- Flush coupling to trunking and a smooth entry for cables to meet the requirements of the regulations thanks to the cable entry end plate.
- The earth and neutral bars are positioned and designed for simpler installation.
- The metering kits fit directly into the main board saving space and saving you the expense of buying an extension box.
- Glazed door for great aesthetics and meeting the regulations.

Technical data:

- 250A, 400A, 630A & 800A rating.
- IP3X.
- Removable gland plates.

Quick tips

1



Twin earth and neutral bars

Allows easy identification of earth & neutral conductors with corresponding line conductors.

5



Removable pan assembly

To lighten the product when fixing to the wall, pan assemblies can also be purchased as a separate part for fitting into cubicle switchboards.

2



Generous cable space

Sufficient space for cable bending radii at the top, bottom and sides.

6



The perfect match

The Invicta 3 panelboards have been designed to suite perfectly with the Invicta 3 Type B distribution boards.

3



Removable gland plates

The top and bottom removable gland plates allows the installer to prepare cable entries away from the board preventing ingress of swarf etc.

7



Plain and Glazed Doors

The glazed door allows devices to be viewed without opening the door.

4



Pre-wired meter packs

Installer only has to fit the packs into the board. All internal wiring is included.

8



Accessories

Key lock, cable extension boxes, meter packs, DIN rail boxes. Invicta 3 panel boards are adaptable for contractor on site build and tailored solutions.

Invicta 3 Panelboard System (250A Rated)

250A Incoming 125A Outgoing



Specification

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

Construction

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

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

Cable Capacity Incomers

3 and 4 pole incomers.
Cable capacity 150mm²
max lug width 25mm.
Direct connection kit.
M8 bolt.

Outgoers

1 & 3 pole MCCB 70mm² flexible.
1 & 3 pole MCCB 95mm² solid.

Busbar Ratings

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

Options

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

Each JN board is available with
side cable entries to enable
the fitting of the JN meter
enclosures. Just add a 'CE'
suffix. e.g. JN204BCE

Outgoing MCCBs

Adjustable thermal options on TP

Form 3B type 2 is achieved using
the outgoing terminal shield.

For accessories see page 27.

For dimensions see page 53.



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 side entry Plain door	Cat ref side entry Plain door	Cat ref side entry Glazed door	Cat ref side entry Glazed door
4 Way	JN204B	JN204BCE	JN204BG	JN204BGCE
6 Way	JN206B	JN206BCE	JN206BG	JN206BGCE
8 Way	JN208B	JN208BCE	JN208BG	JN208BGCE
12 Way	JN212B	JN212BCE	JN212BG	JN212BGCE
16 Way	JN216B	JN216BCE	JN216BG	JN212GBCE

Incomer Kits (For other options contact our Technical Service Centre on 01952 675689)

Description	Max cable capacity solid	Cat ref.
3 Pole 250A MCCB Incomer Kit (Adj. Thermal 0.63, 0.8, 1) 40kA (Magnetic 5, 7, 9, 11 x I _n)	M8 Lug	JN223BM
4 Pole 250A MCCB Incomer Kit (Adj. Thermal 0.63, 0.8, 1) 40kA (Magnetic 5, 7, 9, 11 x I _n)	M8 Lug	JN224BM
3 Pole 250A Non-Auto MCCB Incomer Kit	M8 Lug	JN223BS
4 Pole 250A Non-Auto MCCB Incomer Kit	M8 Lug	JN224BS
250A Direct Connection Kit	M8 Lug	JN224BD



JN11004SM

Side Meter Enclosure (blanking plates not included)

Suitable for board type	Spaces for Meters	Cat ref.	Cat ref. pre- cut side cable entries
4 Way JN Board	2 x DIN 96 Cut-Outs	JN9502SM	JN9502SMCE
6/8 Way JN Board	4 x DIN 96 Cut-Outs	JN11004SM	JN11004SMCE
12 Way JN Board	6 x DIN 96 Cut-Outs	JN12506SM	JN12506SMCE
16 Way JN Board	8 x DIN 96 Cut-Outs	JN15508SM	JN15508SMCE

Top/Bottom Meter Enclosure

Description	Spaces for Meters	Cat ref.
300mm Enclosure	3 x DIN 96 Cut-Outs	JN3003TM
450mm Enclosure	6 x DIN 96 Cut-Outs	JN4506TM
Blanking Plate		JF96BP

Corner Filler Enclosures

Description	Cat ref.
300mm Corner Filler Side Enclosure JN	JN300CF
450mm Corner Filler Side Enclosure JN	JN450CF



JN3003TM



JN201BE

DIN Extension Boxes

Supplied with DIN Rail and without gland plate (JN2PLATE)

DIN Extensions Boxes have plain or glazed doors and DIN rail chassis.

JK2 side extension boxes can be used with this range see page 19.

For dimensions see page 53.

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

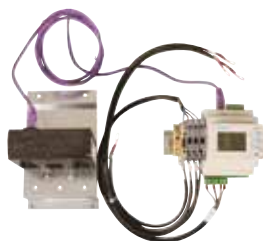
Cable Spreader Boxes & Door Kits

Supplied without gland plates (JN2PLATE)

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 53.

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



JN201PM

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.
Multifunction Meter Pack 250A Pulsed & Modbus Pluggable Output	JN201PM



JN001BP

Accessories

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

Outgoing Devices

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

Invicta 3 Panelboard System (400A Rated) 400A Incoming 125A Outgoing



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.
Form 3B type 2 is achieved using
the outgoing terminal shield.

Construction

Enclosures manufactured from
1.2/1.5mm DC01M cold reduced
mild steel, phosphate pretreated
and powder coated to 00A01
BS4800.

Cable Capacity Incomers

3 and 4 pole incomers.
Cable capacity 240mm²
M12 bolt.
Direct connection kit.
M10 hexagonal bolt.

Cable Capacity Outgoers

1 & 3 pole MCCB 70mm² flexible.
1 & 3 pole MCCB 95mm² solid.

Busbar Ratings

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

Options

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

Outgoing MCCBs

Adjustable thermal options on TP

Form 3B type 2 is achieved using
the outgoing terminal shield.

For accessories see page 29.
For dimensions see page 54.



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

For other options contact our
Technical Service Centre on
01952 675689

Description	Max cable capacity solid	Cat ref.
3 Pole 400A MCCB Incomer Kit 50kA Electronic LSI MCCB, I_r adjustable 0.4 – 1.0 x I_n	M12 Lug	JF443BM
4 Pole 400A MCCB Incomer Kit 50kA Electronic LSI MCCB, I_r adjustable 0.4 – 1.0 x I_n	M12 Lug	JF444BM
3 Pole 400A Switch Disconnect (Non-Auto MCCB) Incomer Kit	M12 Lug	JF443BS
4 Pole 400A Switch Disconnect (Non-Auto MCCB) Incomer Kit	M12 Lug	JF444BS
400A Direct Connection Kit	M10 Lug	JF444BD

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 - 1 x I_n Mag 10 x I_n	25kA Adjustable Thermal 0.63 - 0.8 - 1 x 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



JF801E

DIN Extension Boxes (to fit JF4 & JF8 boards)

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

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

Supplied with DIN Rail and without gland plate (JFPLATE)

For dimensions see page 54.

Description

1 Row 34 Mod (300mm Height)
2 Row 68 Mod (450mm Height)

Cat ref.

Plain door

Glazed door

JF801E

JF801EG

JF803E

JF803EG



JF805E

Cable Spreader Boxes & Door Kits (to fit JF4 & JF8 boards)

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

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

Supplied without gland plate (JFPLATE)

For dimensions see page 54.

Description

Small (300mm Height) (Door not included)
Large (450mm Height) (Door not included)
Small Cable Spreader Box Door Kit
Large Cable Spreader Box Door Kit

Cat ref.

JF805E

JF806E

JF805DK

JF806DK

Meter Pack 400A

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

Description

Multifunction Meter Pack 400A Pulsed & Modbus Pluggable Output
--

Cat ref.

JF403PM



JN001BP

Accessories

Description

Locking Kit for Incoming Device (All Ratings)
Allen Key Set
Gland Plate for Invicta 3 400A Range
Key lock with one key
x125 Frame 1 pole blank (3x blanks required per triple pole)
Outgoer Locking Kit (fits to toggle for up to 3 padlocks max ø 8mm ²)
Terminal cover x160 1P long
Terminal cover x160 3P long

Cat ref.

HXD039H

JF296A

JFPLATE

JK222PK

JN001BP

HXA039H

HYA029H

HYA012H



HXD039H

Invicta 3 Panelboard System (630A / 800A Rated) 630A / 800A Incoming 125 / 250A Outgoing



Specification

Complies with BS EN 61439-2.
Enclosure degree of protection:
IP3X
Internal separation.
Form 3A.
8, 12, 18 TP outgoing ways.
Form 3B type 2 is achieved using
the outgoing terminal shield.

Construction

Enclosure manufactured from
1.2/1.5mm 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.

Incomers

Switch Disconnecter 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 -150mm²
flexible.

Incomers cable capacity
400A – 2 x 240mm²
630A – 2 x 240mm² / 2 x 300mm²

For dimensions see page 54.



JF608B

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

¹ Max allowed incomer of 630A
on this panelboard

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



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

² Max allowed incomer of 630A
on this panelboard

Description	Cat ref. Plain door	Cat ref. Glazed door
6 Way (2 x 250A ¹ + 4 x 125A ²)	JF60204B ²	JF60204BG ²
8 Way (2 x 250A ¹ + 6 x 125A ²)	JF80206B	JF80206BG
8 Way (4 x 250A ¹ + 4 x 125A ²)	JF80404B	JF80404BG
12 Way (2 x 250A ¹ + 10 x 125A ²)	JF80210B	JF80210BG
12 Way (4 x 250A ¹ + 8 x 125A ²)	JF80408B	JF80408BG
18 Way (4 x 250A ¹ + 14 x 125A ²)	JF80414B	JF80414BG
18 Way (6 x 250A ¹ + 12 x 125A ²)	JF80612B	JF80612BG

Incomer Kits

³ A 300mm cable spreader
box (JF805E) is required for all
incomer kits (see page 31).

⁴ Select the required 800A
rated panelboard 50kA(e.g.
JF80206BG) and add the suffix
800LBS e.g. JF80206BG800LBS

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

Invicta 3 Panelboard System (630A / 800A Rated) DIN Extension Boxes, Cable Spreader Boxes



JF801E

DIN Extension Boxes (to fit JF4 & JF8 boards)

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

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

Supplied with DIN Rail and without gland plate JFPLATE.

For dimensions see page 54.

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 Boxes & Door Kits (to fit JF4 & JF8 boards)

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

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

Supplied without gland plate JFPLATE.

For dimensions see page 54.

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

Meter Pack 800A

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

For Meter Enclosures see page 34.

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

Outgoing Devices Thermal Magnetic

1 MCCBs x250 40kA - Triple Pole

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

2 MCCBs - 125A 18kA Single Pole

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

2 MCCBs - 125A 25kA Triple Pole Adjustable Thermal

Rating.	18kA Adjustable Thermal 0.63 - 0.8 - 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

Invicta 3 Panelboard system (800A Rated)

800A Incoming 125 / 250A Outgoing



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.

Specification

Complies with BS EN 61439-2
Enclosures degree of protection: IP3X
Internal Separation: Form 3A
Form 3B type 2 is achieved using the outgoing terminal shield.

Construction

The enclosure is manufactured from 1.2/1.5mm 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"

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.

Incomers Cable capacity
400A – 2 x 240mm²
630A – 2 x 240mm² / 2 x 300mm²
Lug connection bar width 44mm
2 x M12 holes

For dimensions see page 55.

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



JHF80408B

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

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

Description	Cat ref. Plain door	Cat ref. Glazed door
8 Way (2 x 250A ① + 6 x 125A ②)	JHF80206B	JHF80206BG
8 Way (4 x 250A ① + 4 x 125A ②)	JHF80404B	JHF80404BG
12 Way (2 x 250A ① + 10 x 125A ②)	JHF80210B	JHF80210BG
12 Way (4 x 250A ① + 8 x 125A ②)	JHF80408B	JHF80408BG
18 Way (4 x 250A ① + 14 x 125A ②)	JHF80414B	JHF80414BG
18 Way (6 x 250A ① + 12 x 125A ②)	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

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



JN001BP



JF801E

DIN Extension Boxes (to fit JF4 & JF8 boards)

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

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

Supplied with DIN Rail and without gland plate JFPLATE.

For dimensions see page 54.

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)

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

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

Supplied without gland plate JFPLATE.

For dimensions see page 54.

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

Meter Pack 800A

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

For Meter Enclosures see page 34.

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

Outgoing Devices

1 MCCBs x250 40kA - Triple Pole

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

2 MCCBs - 125A 18kA Single Pole

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

2 MCCBs - 125A 25kA Triple Pole Adjustable Thermal

Rating.	18kA Adjustable Thermal 0.63 - 0.8 - 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

Meter Enclosures for JF Panelboards and Plug-in Meters & Accessories

When selecting outgoing metering, the panelboard metering system is easily configured by selecting a side, top or combination that matches the panelboard (e.g. for the JF406 board, you can select a JF12504SM side mounted meter

enclosure that can house 4 JKM01 panel mounted meters). When using both side and top/bottom meter enclosures, corner filler enclosures are available.

For help choosing your metering solution see the Method Chart on page 55.

Please contact us for any non-standard requirements or assembly.

For dimensions see page 56.



JF12504SM



JF450CF



JF4508TM

Side meter enclosures (Blanking plates not included)

Suitable for board type:	Spaces for Meters	Cat ref.
6/8 Way JF Board	4 x Din 96 Cut-Outs	JF12504SM
12 Way JF Board	6 x Din 96 Cut-Outs	JF14006SM
16 Way JF Board	8 x Din 96 Cut-Outs	JF15508SM
18 Way JF Board	9 x Din 96 Cut-Outs	JF17009SM
Blanking Plate DIN 96		JF96BP

Top/Bottom Meter Enclosures

Description	Spaces for Meters	Cat ref.
300mm Enclosure	4 x DIN 96 Cut-Outs	JF3004TM
450mm Enclosure	8 x DIN 96 Cut-Outs	JF4508TM
Blanking Plate DIN 96		JF96BP

Corner Filler Enclosures

Description	Cat ref.
300mm Corner Filler Side Enclosure	JF300CF
450mm Corner Filler Side Enclosure	JF450CF



ECM01

JKM01

Panel & DIN Rail Meters

No cables supplied with these meters

For meter supply cable see JF130VMF

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



JFA03

Converter

Description	Cat ref.
Standard CT to plug in adapter	JFA03



JFS03

3 Phase CT Splitter Box

This 3 Phase CT Splitter Box allows the separate monitoring of each phase of a three phase

current transformer on individual energy meters.

Description	Cat ref.
3 Phase CT Splitter Box	JFS03



JF1260CT

Plug-In CTs

No leads supplied with these CTs (RJ45 connection cable)

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



PGMF500

Meter Voltage Supply Cable - PVC - 1mm

Description	Cat ref.
1m - Voltage Supply Cable with Fuse Carrier (For JF Meter Enclosures)	JF130VMF
1m - Voltage Supply Cable with Fuse Carrier (For JN Meter Enclosures)	JN130VMF
0.30m - Hi Flex Voltage Supply Cable	PGMF300
0.50m - Hi Flex Voltage Supply Cable	PGMF500
1.00m - Hi Flex Voltage Supply Cable	PGMF1000
1.30m - Hi Flex Voltage Supply Cable	PGMF1300
2.00m - Hi Flex Voltage Supply Cable	PGMF2000
3.00m - Hi Flex Voltage Supply Cable	PGMF3000



PGMFT500

Meter to Meter Supply Cable - PVC - 1mm

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



PGRJ1000

RJ45 Connection Cable

Description	Cat ref.
0.30m - RJ45 Connector Cable 67 7003	PGRJ300
0.50m - RJ45 Connector Cable 67 L7005 LSZH	PGRJ500
1.00m - RJ45 Connector Cable 67 L7005 LSZH	PGRJ1000
1.50m - RJ45 Connector Cable 67 L7005 LSZH	PGRJ1500
2.00m - RJ45 Connector Cable 67 L7005 LSZH	PGRJ2000
3.00m - RJ45 Connector Cable 67 L7005 LSZH	PGRJ3000



PG9522FEMALE

Supply Voltage Connector Plugs

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

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



JFT03

CT Output and RJ45 Lead Tester

Description	Cat ref.
CT Output and RJ45 Lead Tester	JFT03



JK104

100A Switch Disconnecter Incomer

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

Cable Sizes

100A 50mm²
63A 25mm²

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 16mm² cable
- Accepts most consumer unit accessories
- Suitable for cable entry/exit on all sides and back

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

Complies with BS EN 61439-3 Annex ZB.

For dimensions see page 70.



JK404H

Description

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

63A 30mA RCCB Incomer

Description

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

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 Disconnecter and 63A 30mA RCCB

Description

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 Disconnecter and 100A 30mA RCCB

Description

Description	Cat ref.
28 Way Split Load 14+14 100A Switch 100A 30mA RCCB	JK527H



JK008

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 70.

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



JK114AG

Invicta 3 SP&N distribution boards

Boards are available with 14 & 29 outgoing ways. The range comes with a 100A 2P switch disconnector to accept 50mm² cable.

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 16mm² cable
- Accepts most consumer unit accessories
- Suitable for cable entry/exit on all sides and back

Enclosures are available with plain or glazed doors.

Complies with BS EN 61439-3 Annex ZB.

For dimensions see page 70.

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

Description

The Hager range of fuse combination switches provides individual protection and control of 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 padlockable in the off position.

All versions will accept standard BS 88 fuse links and can be converted to switch disconnector by fitting copper links.

Utilisation category

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

Product features

Complies with:
BS EN 60947-3
IP31.

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

Cable Capacity

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

For dimensions see page 71.

For technical information see page 72.



JFD206U



JFG416U

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

20A Fuse Combination Switch TP&N	JFB302U	-
32A Fuse Combination Switch TP&N	JFB303U	-
63A Fuse Combination Switch TP&N	JFD306U	-
100A Fuse Combination Switch TP&N	JFE310U	JZA701
125A Fuse Combination Switch TP&N	JFG312U	JZA701
160A Fuse Combination Switch TP&N	JFG316U	JZA701
200A Fuse Combination Switch TP&N	JFG320U	JZA701
250A Fuse Combination Switch TP&N	JFG325U	JZA701
315A Fuse Combination Switch TP&N	JFH331U	JZA702
400A Fuse Combination Switch TP&N	JFH340U	JZA702
630A Fuse Combination Switch TP&N	JFI363U	JZA703
800A Fuse Combination Switch TP&N	JFI380U	JZA703

Fuse Combination Switches Triple Pole and Switched Neutral

20A Fuse Combination Switch TP&SN	JFB402U	-
32A Fuse Combination Switch TP&SN	JFB403U	-
63A Fuse Combination Switch TP&SN	JFD406U	-
100A Fuse Combination Switch TP&SN	JFE410U	JZA701
125A Fuse Combination Switch TP&SN	JFG412U	JZA701
160A Fuse Combination Switch TP&SN	JFG416U	JZA701
200A Fuse Combination Switch TP&SN	JFG420U	JZA701
250A Fuse Combination Switch TP&SN	JFG425U	JZA701
315A Fuse Combination Switch TP&SN	JFH431U	JZA702
400A Fuse Combination Switch TP&SN	JFH440U	JZA702
630A Fuse Combination Switch TP&SN	JFI463U	JZA703
800A Fuse Combination Switch TP&SN	JFI480U	JZA703

Copper Links

For conversion to isolating switches

63A	JC60L
100A	JC10L
125 / 200A	JC20L
315 / 400A	JC40L
630A	JC63L

Amendment 3 compliant
switch fuses have a full metal
construction to comply with
BS EN 61439-3

For dimensions see page 73.



IU44-11

Switch Fuses

Description	Cat ref.	Cat ref. Amendment 3
4 Module Metal Unit 1 x 100A Isolator, AC22A Connection capacity: 50mm ² rigid conductor, 35mm ² flexible conductor, 1 x 63A Fuse	IU4-16	IU4-16-D
4 Module Metal Unit 1 x 100A Isolator, AC22A Connection capacity: 50mm ² rigid conductor, 35mm ² flexible conductor, 1 x 80A Fuse	IU44-18	IU44-18-D
4 Module Metal Unit 1 x 100A Isolator, AC22A Connection capacity: 50mm ² rigid conductor, 35mm ² flexible conductor, 1 x 100A Fuse	IU44-11	IU44-11-D

Switch Disconnectors 20-800A TP&N, TP&SN

Description

The Hager range of switch disconnector has been designed to provide individual protection and control of 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 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 74.



JAB402B

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

Switch Disconnectors TP&SN

20A	JAB402B	-
32A	JAB403B	-
63A	JAB406B	-
100A	JAB410B	-
125A	JAC412B	-
160A	JAC416	JZA700
200A	JAE420	JZA701
250A	JAE425	JZA701
315A	JAG431	JZA701
400A	JAG440	JZA701
630A	JAH463	JZA702
800A	JAH480	JZA702

Description

The Hager range of switch disconnectors suites with the existing commercial offer, 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 73.



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 used in applications such as photovoltaic installations where they isolate the incoming side of the inverter.

They are supplied in grey with a black handle so that it is easy to distinguish them from the yellow/red 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 devices are mounted in IP31 enclosures, with removable cable entry plates located on the top and bottom.

Both three pole devices are equipped with a fully rated neutral links.

Non-Auto MCCB

Triple pole 125A-250A-400A-630A

Four pole 125A-250A-400A-630A

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, 6A

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

For Enclosed MCCB technical details and dimensions see page 76.



JG38BR



JG41BM



JG45BM

Enclosed MCCBs Single Pole and Neutral (63-125A)

Description	I _{cu}	Cat ref.
63A Single Pole Enclosed MCCB	18kA	JG25BM
100A Single Pole Enclosed MCCB	18kA	JG28BM
125A Single Pole Enclosed MCCB	18kA	JG31BM

Enclosed MCCBs Triple Pole and Neutral (63-125A)

63A 3-Pole Enclosed MCCB (40A-50A 63A)	18kA	JG26BM
100A 3-Pole Enclosed MCCB (63A-80A-100A)	18kA	JG29BM
125A 3-Pole Enclosed MCCB (80A-100-125A)	18kA	JG32BM
125A 3-Pole Enclosed MCCB	Non-Auto	JG34BS

Enclosed MCCBs Triple Pole and Neutral (160-250A)

160A 3-Pole Enclosed MCCB (Adjustable)	25kA	JG36BM
250A 3-Pole Enclosed MCCB (Adjustable)	25kA	JG40BM
250A 3-Pole Enclosed MCCB	Non-Auto	JG42BS

Enclosed MCCBs Triple Pole and Neutral (400-630A)

400A 3-Pole Enclosed MCCB (Adjustable)	50kA	JG44BM
400A 3-Pole Enclosed MCCB	Non-Auto	JG46BS
630A 3-Pole Enclosed MCCB (Adjustable)	50kA	JG48BM
630A 3-Pole Enclosed MCCB	Non-Auto	JG50BS

Enclosed MCCBs Four Pole (63-125A)

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

Enclosed MCCBs Four Pole (160-250A)

160A 4-Pole Enclosed MCCB (Adjustable)	25kA	JG37BM
160A 4-Pole Enclosed MCCB RCCB Add On	25kA	JG37BR
200A 4-Pole Enclosed MCCB RCCB Add On	25kA	JG38BR
250A 4-Pole Enclosed MCCB (Adjustable)	25kA	JG41BM
250A 4-Pole Enclosed MCCB	Non-Auto	JG43BS

Enclosed MCCBs Four Pole (400-630A)

400A 4-Pole Enclosed MCCB (Adjustable)	50kA	JG45BM
375A 4-Pole Enclosed MCCB RCCB Add On	50kA	JG45BR
400A 4-Pole Enclosed Non-Auto MCCB	Non-Auto	JG47BS
630A 4-Pole Enclosed MCCB (Adjustable)	50kA	JG49BM
630A 4-Pole Enclosed Non-Auto MCCB	Non-Auto	JG51BS

Surge Protection Devices

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 lightning 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 (I_{max} 10/350), to evacuate as much of the transient overvoltages associated with lightning strikes
2. Main protection - class 2
With a discharge current (I_{max} 8/20), to evacuate as much of the transient overvoltage to earth as possible protection level ($U_p \leq 1000V$).

3. Main protection - class 3
To cut-down the transient surge as low as possible to protect very sensitive equipment.

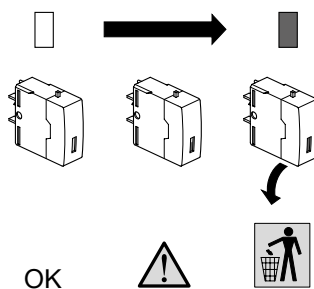
Technical Data

Complies with IEC61643-1

Reserve Status Indicator (R versions)



End of Life Indicator (D versions)



OK  
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

I_{max} 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 66.

	TNS	TNC-S	TT
SPA201	✓	✓	✓
SPA401	✓	✓	✓
SPN801	✓	✓	x
SPN802	x	x	✓
SPN215D	✓	✓	✓
SPN415D	✓	✓	✓
SPN440D	✓	✓	✓
SP202N	✓	✓	✓



SPN801R



SPN080

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	I_n N-PE	U_p kV	Single or Three Phase	Width (mm)	Cat ref.	Cat ref. with remote contact
2	12.5	25	-	-	≤ 1.5	Single	35	SPA201	-
4	12.5	50	-	-	≤ 1.5	Three	70	SPA401	-
4	25	100	-	-	≤ 1.5	Three	140	SPN801	SPN801R
4	25	100	-	-	≤ 1.5	Three	140	SPN802	SPN802R

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



SP202N



SPV325

Class 2 (with lifetime indicator)

Poles	I_{imp} L-N	I_{imp} N-PE	I_n kA L-N	I_n kA N-PE	U_p kV	Single or Three Phase	Width (mm)	Cat ref.	Cat ref. with remote contact
1	-	-	5	15	≤ 1.2	Single	17.5	SPN115D	SPN115R
2	-	-	5	15	≤ 1.2	Single	35	SPN215D	SPN215R
2	-	-	15	40	≤ 1.2	Single	35	SPN240D	SPN240R
4	-	-	5	15	≤ 1.5	Three	70	SPN415D	SPN415R
4	-	-	15	40	≤ 1.5	Three	70	SPN440D	SPN440R

Replacement Cartridges

Dimensions	Cat ref.
Phase replacement for SPN215D & SPN415D	SPN015D
Phase replacement for SPN215R & SPN 415R	SPN015R
Phase replacement for SPN240D & SPN440D	SPN040D
Phase replacement for SPN240R & SPN44R	SPN040R
Neutral replacement for SPN215D, SPN415D, SPN215R & SPN415R	SPN040N

Class 3 (fine protection) (with lifetime indicator)

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

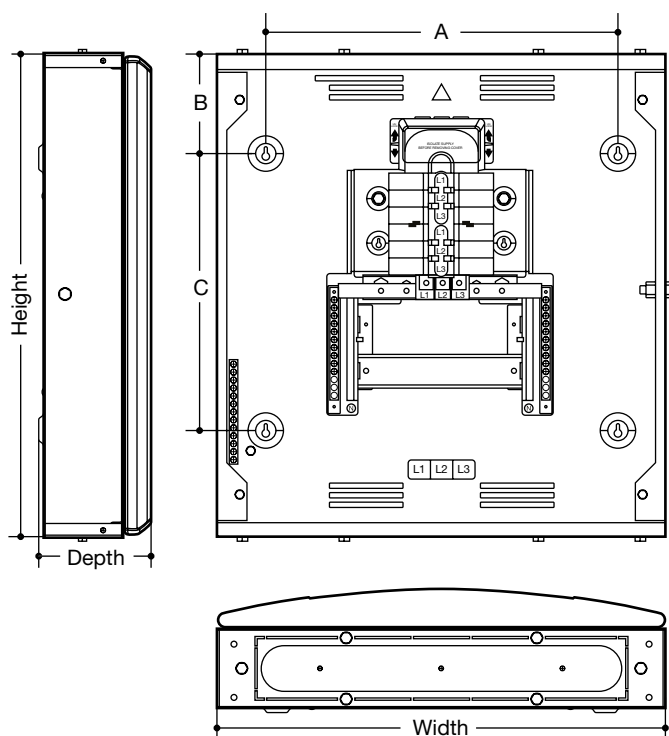
PV Applications (DC side) (with lifetime indicator)

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

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

Torque Settings

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



125A Primary Boards

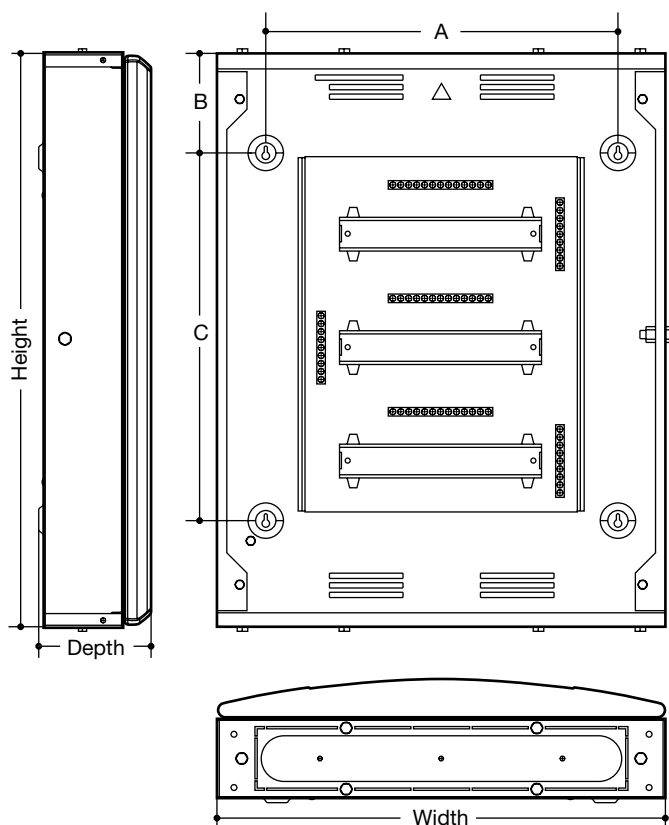
	Dimensions (mm)			Fixing Centres (mm)		
	Height	Width	Depth	A	B	C
JK104B/BG/A3	500	465	132.5	365	100	300
JK106B/BG/A3	550	465	132.5	365	100	350
JK108B/BG/A3	625	465	132.5	365	100	425
JK112B/BG/A3	850	465	132.5	365	100	650
JK116B/BG/A3	950	465	132.5	365	100	750
JK118B/BG/A3	1100	465	132.5	365	100	900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

250A Primary Boards

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

Contactor Incomers

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

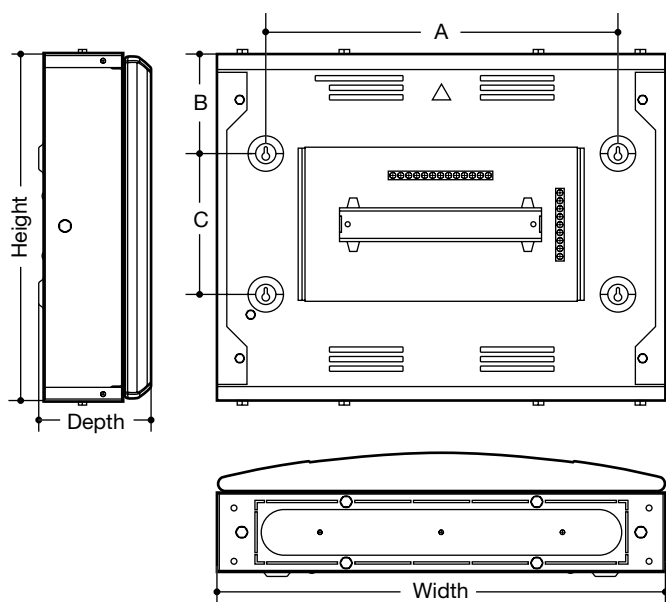


125A Side DIN Boxes

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

250A Side DIN Boxes

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

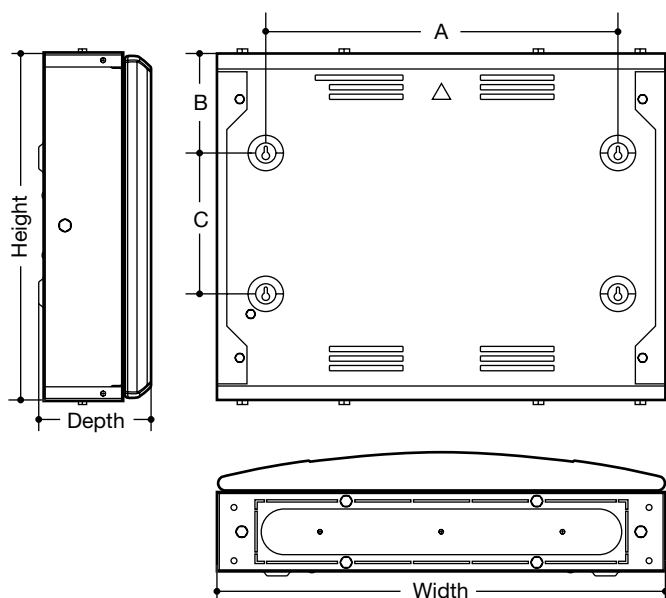


125A DIN Extension Boxes

	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

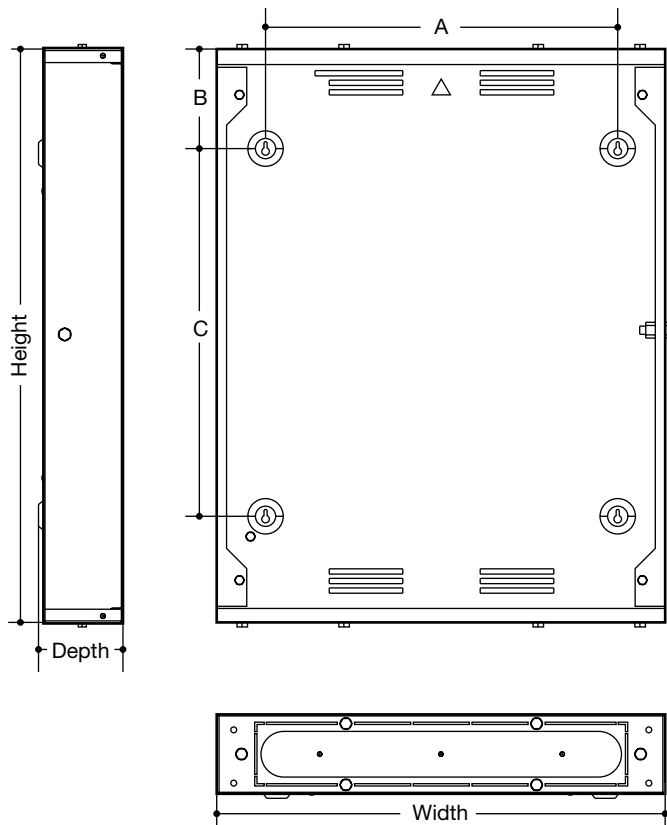


125A Cable Spreader Boxes

	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

Interface Characteristics	Dual Power & Lighting Boards	Triple Power, Lighting & Services Board
Rated & operational voltage (U_n / U_e)	415V a.c. 50Hz	415V a.c. 50Hz
Rated insulation voltage (U_i)	690V a.c. 50Hz	690V a.c. 50Hz
Rated impulse withstand voltage (U_{imp})	4kV	4kV
Rated current of the Assembly (I_{nA})	125A	200A
Rated current of pan assembly	Lower Pan (I_n) = 125A (RDF=1) Upper Pan (I_n) = 125A (RDF=1)	Lower Pan (I_n) = 125A (RDF=1) Middle Pan (I_n) = 125A (RDF=1) Upper Pan (I_n) = 125A (RDF=1)
Rated current of an Outgoing Circuit (I_{nC})	MCB 0.5A - 63A (marked rated current on device) RCBO 6A - 45A (marked rated current on device)	MCB 0.5A - 63A (marked rated current on device) RCBO 6A - 45A (marked rated current on device)
Rated conditional short-circuit current of the assembly (I_{cc})	10kA ¹ with equipment and arrangements specified in Hager's technical documentation/catalogue	10kA ¹ with equipment and arrangements specified in Hager's technical documentation/catalogue
Protection against electric shock	Equipment shall be installed in an electrical system conforming to IEC 60364 / BS 7671	Equipment shall be installed in an electrical system conforming to IEC 60364 / BS 7671
Rated Diversity Factor (RDF) / Values of assumed loading	10 way to 24 way = 0.5 Note: RDF only applies to continuously and simultaneously loaded circuits.	10 way to 24 way = 0.5 Note: RDF only applies to continuously and simultaneously loaded circuits.
Rated frequency (fn)	50 Hz	50 Hz
Pollution degree	2	2
Types of system earthing for which the assembly is designed	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671
Intended locations	Indoor use only	Indoor use only
Stationary Assembly		
Degree of protection	IP3XD with Door Closed IP2XC with Door Open	IP3XD with Door Closed IP2XC with Door Open
Intended use	Distribution boards intended to be operated by ordinary persons (DBO)	Distribution boards intended to be operated by ordinary persons (DBO)
Electromagnetic compatibility (EMC) classification	EMC Environment B	EMC Environment B
External design	Wall-mounted, surface type, enclosed assembly.	Wall-mounted, surface type, enclosed assembly.
Mechanical impact protection	IK05	IK05
The type of construction	Fixed parts	IK05
DBO Type	Type B DBO	Type B DBO
Incoming Line Terminal	70mm ² (switch disconnecter)	70mm ² (switch disconnecter)
Incoming Neutral Terminal	50mm ² Cage	50mm ² Cage
Enclosure Earth Stud	M6	M6
Standards	BS EN 61439-3	BS EN 61439-3

Meter Characteristics

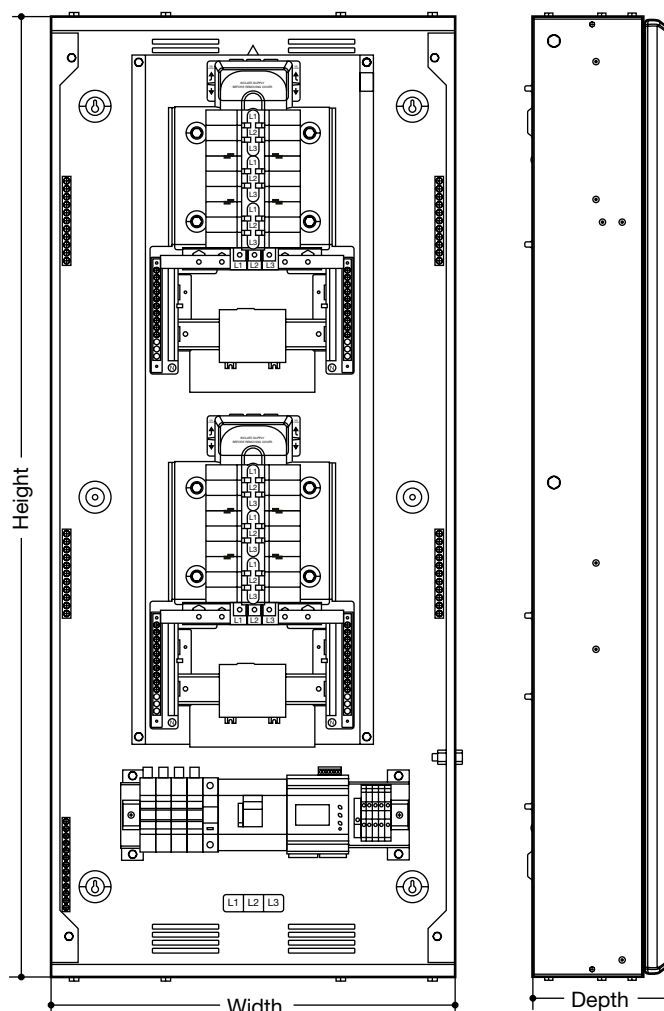
Supply	60 to 300V AC, 50/60Hz (±5%)
Serial Communication	
Interface Standard and Protocol	RS485 and MODBUS RTU
Input (CT)	
Pluggable RJ45	Input 1/ Input 2
Output	
Pulse Output:	Voltage Range : 24V DC max
Current Capacity :	100mA max
Pulse Duration :	Selectable Between 0.1 to 2.0sec
Pulse Weight :	Selectable between 0.01 to 9.99kWh
Accuracy of meter	
Measurement	Accuracy
Voltage VL-N	0.5% of full range
Voltage VL-L	0.5% of full range
Current A	0.5% of full range
Frequency For L-N Voltage >20V For L-L Voltage >35V"	0.1% of full range
Active power	1.0% of full range
Apparent Power	1.0% of full range
Reactive Power	1.0% of full range
Power Factor	±0.01% of full Range
Active Energy	1.0% of full range
Reactive Energy	1.0% of full range
Max/Min Active Power	1.0% of full range
Max/Min Reactive Power	1.0% of full range
Max Apparent Power	1.0% of full range
Power Consumption	Less than 8VA
CT Primary 1 and Primary 2	5A to 10,000A (programmable for any value)

Dual Power & Lighting Boards

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

Triple Power, Lighting & Services Board

	Dimensions (mm)		
	Height	Width	Depth
JKD2884PM	1850	465	165.5



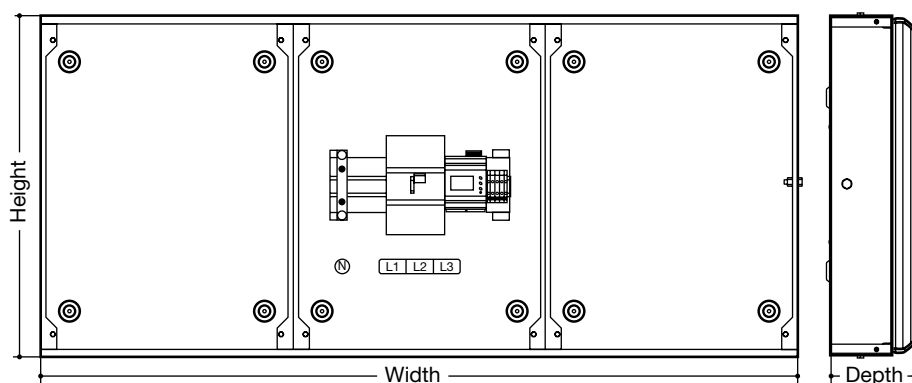
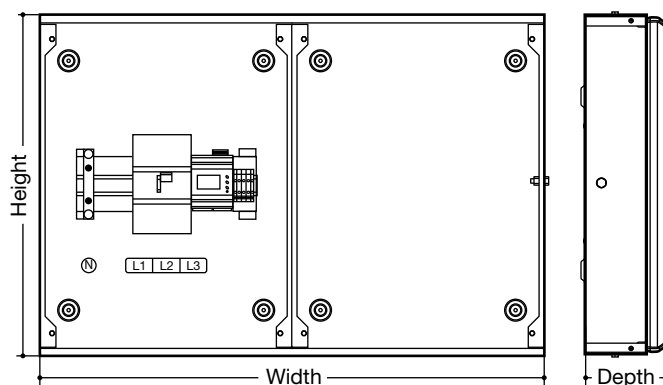
Interface Characteristics	JKD125PM	JDK125TPM	JKD250PM	JKD250TPM
Rated & operational voltage (U_n / U_e)	415V a.c. 50Hz	415V a.c. 50Hz	415V a.c. 50Hz	415V a.c. 50Hz
Rated insulation voltage (U_i)	690V a.c. 50Hz	690V a.c. 50Hz	690V a.c. 50Hz	690V a.c. 50Hz
Rated impulse withstand voltage (U_{imp})	4kV	4kV	4kV	4kV
Rated current of the Assembly (I_{nA})	125A Right Side Pan Assembly (I_n) 125A Left Side Pan Assembly (I_n) 125A	125A Right Side Pan Assembly (I_n) 125A Middle Pan Assembly (I_n) 125A Left Side Pan Assembly (I_n) 125A	250A Right Side Pan Assembly (I_n) 250A Left Side Pan Assembly (I_n) 250A	250A Right Side Pan Assembly (I_n) 200A Middle Pan Assembly (I_n) 200A Left Side Pan Assembly (I_n) 200A
Rated conditional short-circuit current of the assembly (I_{cc})	10kA ¹ with equipment and arrangements specified in Hager's technical documentation/catalogue	10kA ¹ with equipment and arrangements specified in Hager's technical documentation/catalogue	10kA ¹ with equipment and arrangements specified in Hager's technical documentation/catalogue	10kA ¹ with equipment and arrangements specified in Hager's technical documentation / catalogue.
Protection against electric shock	Equipment shall be installed in an electrical system conforming to IEC 60364 / BS 7671	Equipment shall be installed in an electrical system conforming to IEC 60364 / BS 7671	Equipment shall be installed in an electrical system conforming to IEC 60364 / BS 7671	Equipment shall be installed in an electrical system conforming to IEC 60364 / BS 7671
Rated frequency (fn)	50 Hz	50 Hz	50 Hz	50 Hz
Pollution degree	2	2	2	2
Types of system earthing for which the ASSEMBLY is designed	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671
Intended locations	Indoor use only	Indoor use only	Indoor use only	Indoor use only
Degree of protection	IP3XD with Door Closed IP2XC with Door Open	IP3XD with Door Closed IP2XC with Door Open	IP3XD with Door Closed IP2XC with Door Open	IP3XD with Door Closed / IP2XC with Door Open
Intended use	Distribution boards intended to be operated by ordinary persons (DBO)	Distribution boards intended to be operated by ordinary persons (DBO)	Distribution boards intended to be operated by ordinary persons (DBO)	Distribution boards intended to be operated by ordinary persons (DBO)
Electromagnetic compatibility (EMC) classification	EMC Environment B	EMC Environment B	EMC Environment B	EMC Environment B
External design	Wall-mounted, surface type, enclosed assembly.	Wall-mounted, surface type, enclosed assembly.	Wall-mounted, surface type, enclosed assembly.	Wall-mounted, surface type, enclosed assembly.
Mechanical impact protection	IK05	IK05	IK05	IK05
The type of construction	Fixed parts	Fixed parts	Fixed parts	Fixed parts
Incoming Line Terminal	Dependant upon incomer	Dependant upon incomer	Dependant upon incomer	Dependant upon incomer
Incoming Neutral Terminal	50mm ² Cage	50mm ² Cage	50mm ² Cage	50mm ² Cage
Enclosure Earth Stud	M8	M8	M8	M8

Meter Characteristics

Supply	60 to 300V AC, 50/60Hz (±5%)
Serial Communication	
Interface Standard and Protocol	RS485 and MODBUS RTU
Input (CT)	
Pluggable RJ45	Input 1/ Input 2
Output	
Pulse Output:	Voltage Range : 24V DC max
Current Capacity :	100mA max
Pulse Duration :	Selectable Between 0.1 to 2.0sec
Pulse Weight :	Selectable between 0.01 to 9.99kWh
Accuracy of meter	
Measurement	Accuracy
Voltage VL-N	0.5% of full range
Voltage VL-L	0.5% of full range
Current A	0.5% of full range
Frequency For L-N Voltage >20V For L-L Voltage >35V"	0.1% of full range
Active power	1.0% of full range
Apparent Power	1.0% of full range
Reactive Power	1.0% of full range
Power Factor	±0.01% of full Range
Active Energy	1.0% of full range
Reactive Energy	1.0% of full range
Max/Min Active Power	1.0% of full range
Max/Min Reactive Power	1.0% of full range
Max Apparent Power	1.0% of full range
Power Consumption	Less than 8VA
CT Primary 1 and Primary 2	5A to 10,000A (programmable for any value)

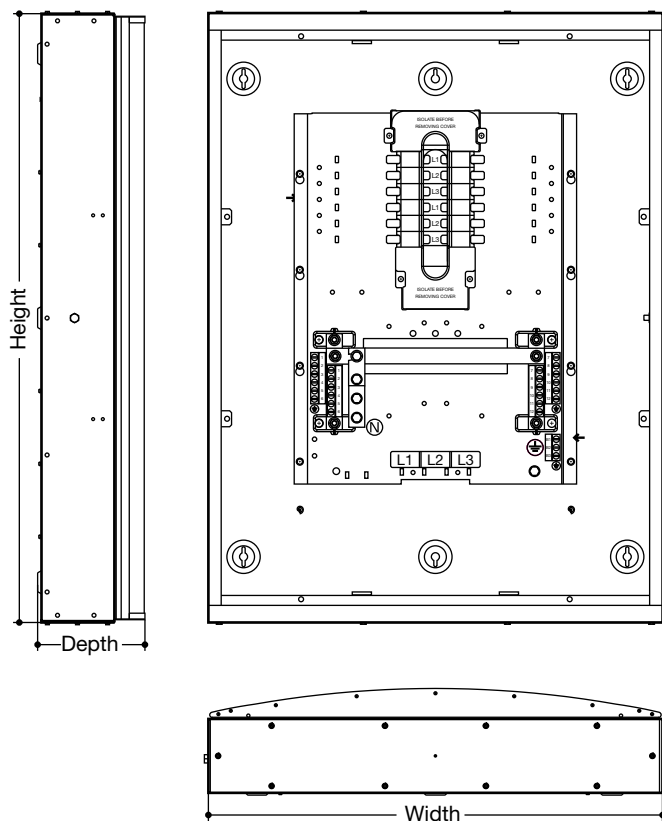
Dual & Triple Meter Incomers

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



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 BS 4800 00A01			
Cable entry	Via Gland Plates			
Terminal Connection capacity				
Incoming earth terminal	M8	M10	M10	M10
Incoming neutral terminal	M8	M12	M12	M12
Outgoing earth terminals	Up to 50mm²	Up to 50mm²	Up to 50mm²	Up to 50mm²
Outgoing neutral terminals	Up to 50mm²	Up to 50mm²	16A - 125A: Up to 50mm² 100A - 250A: M8 Stud	16A - 125A: Up to 50mm² 100A - 250A: M8 Stud
Enclosure earth stud	M8	M10	M10	M10
Installation				
Mounting	Surface (Wall)			

Invicta 3 Panelboard System (250A Rated) Dimensions



Primary Boards

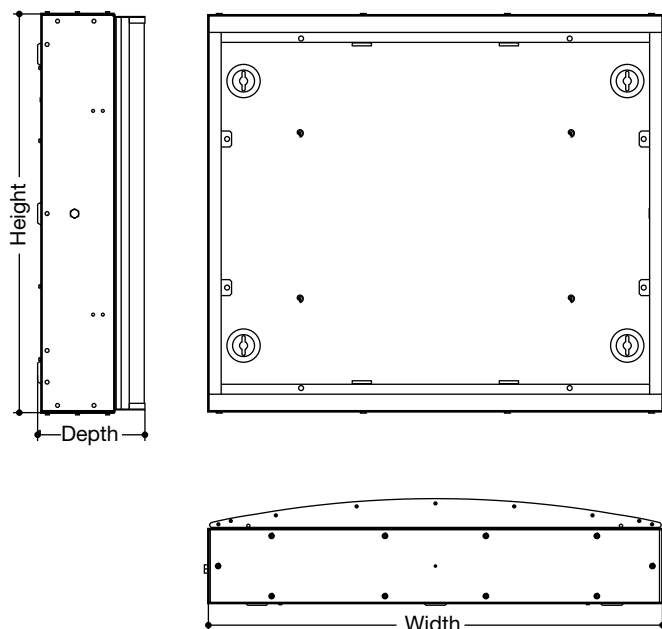
	Dimensions (mm)		
	Height	Width	Depth
JN204B/G	950	710	160
JN206B/G	1100	710	160
JN208B/G	1100	710	160
JN212B/G	1250	710	160
JN216B/G	1550	710	160

Terminals

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

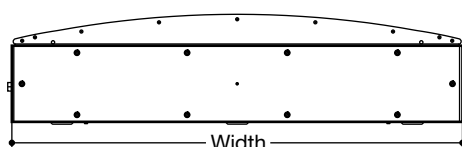
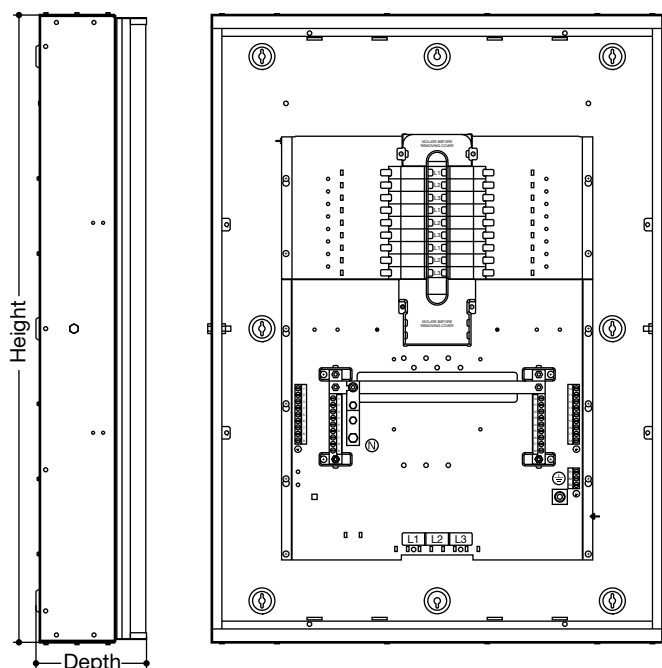
Cables outgoing ways:
25 - 50mm² CSA Flex
25 - 70mm² CSA Solid

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



Extension Boxes

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



Primary Boards

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

Terminals

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

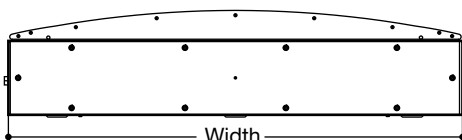
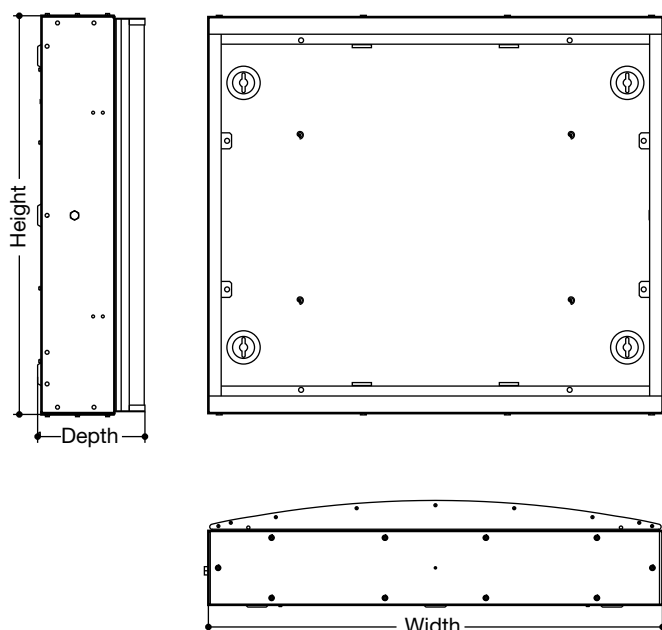
Cables outgoing ways:
25 - 50mm² CSA Flex
25 - 70mm² CSA Solid

MCCB Connections 400A M10
630A M12

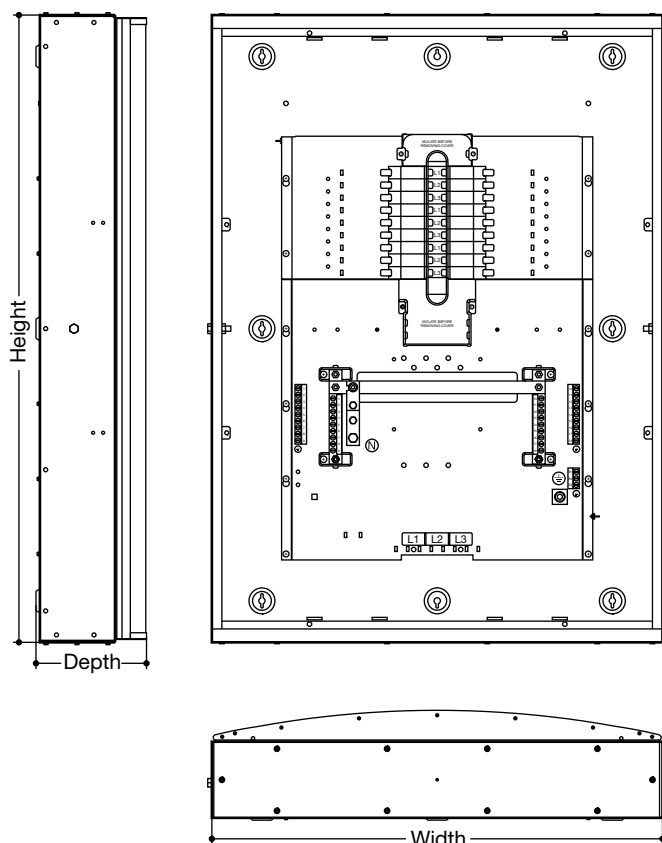
Earth 400A M10
630A M10

Extension Boxes

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



Invicta 3 Panelboard System (800A Rated) Dimensions & Metering Method Chart



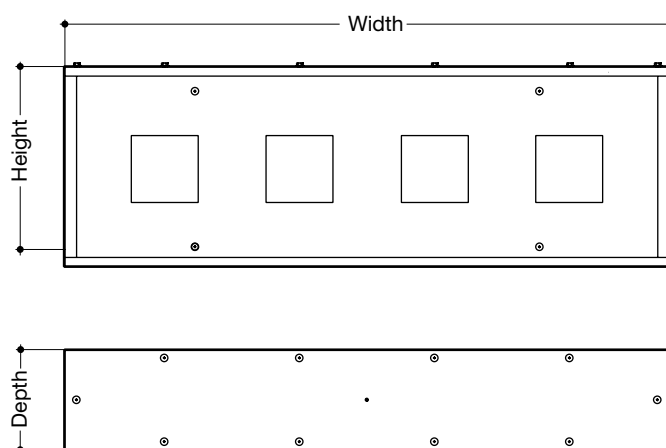
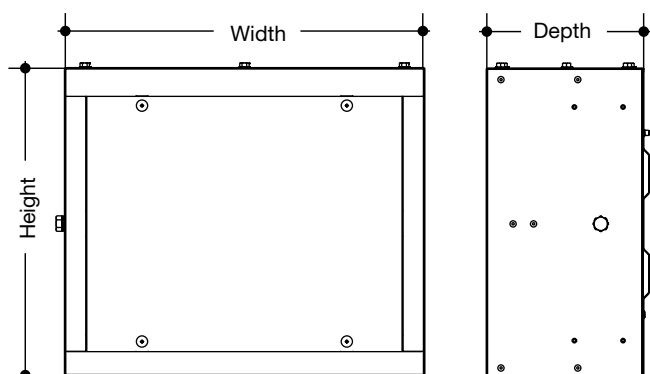
Primary Boards

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

Invicta 3 Panelboard Metering Method Chart

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

Step	Selection method	Catalogue page	Order code	Qty
1	Select panelboard eg. 6 way with glazed door, (JN206BG) Note add suffix CE	250A Page 26. 400A Page 28. 630A/800A Page 30. 800A Page 32.	JN206BGCE	1
2	Identify quantity of meters required eg. 4 metered ways modbus (ECM01)	Page 34.	ECM01	4
3	Select position for meter enclosure (Top or side) eg. Top - 450mm enclosure 6xDIN 96 Cut- Outs or Side - 6/8 Way JN Board 4xDIN 96 Cut-Outs	For JN Page 26. For JF Page 34.	JN4506TM JN11004SM	1 1
4	Number of blanking plates required eg. Top - 450mm enclosure 6xDIN 96 Cut- Outs or Side - 6/8 Way JN Board 4xDIN 96 Cut-Outs	Page 34.	JF96BP	2 0
5	Meter voltage supply including fuses. (1st meter only includes incoming) e.g. JN130VMF	Page 35.	JN130VMF	1
6	Supply cable for remaining meters (Link meter to meter) e.g. PGMFT150	Page 35.	PGMFT150	3
7	Identify which CT's are required eg. 60 Amp Qty 1 eg. 100 Amp Qty 2 eg. 125A Qty 1	Page 35.	JF1260CT JF12100CT JF12125CT	1 2 1

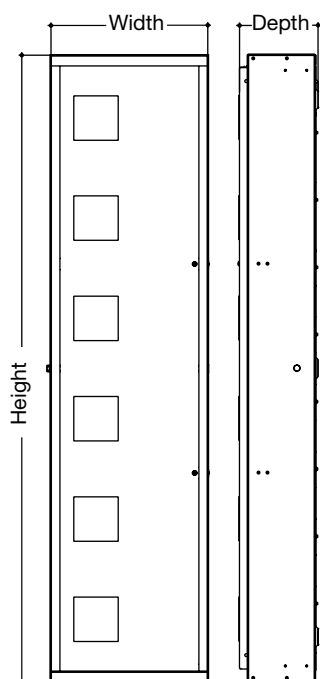


Corner Filler Enclosures

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

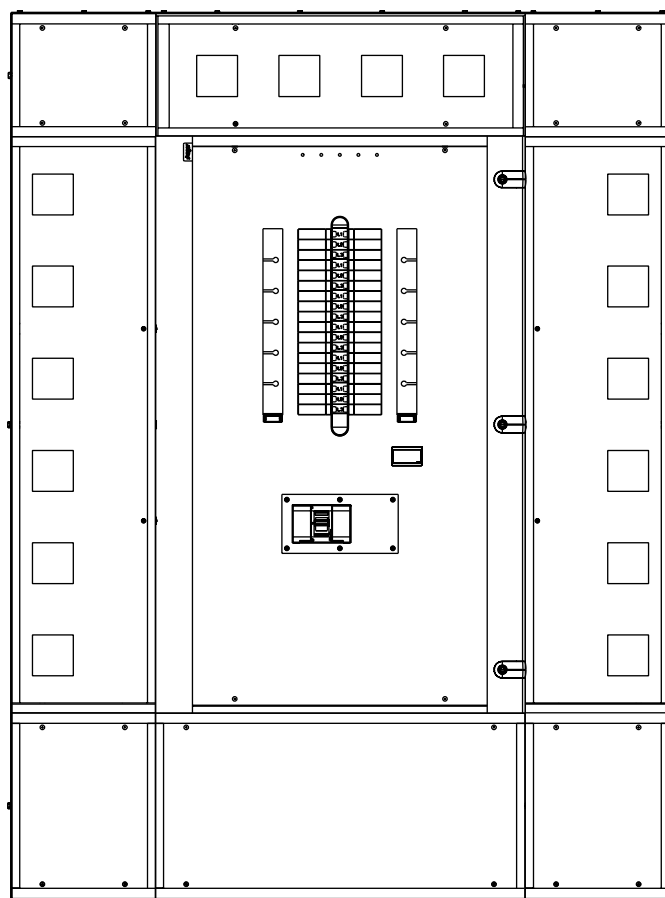
Top/Bottom Enclosures

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



Side Enclosures

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

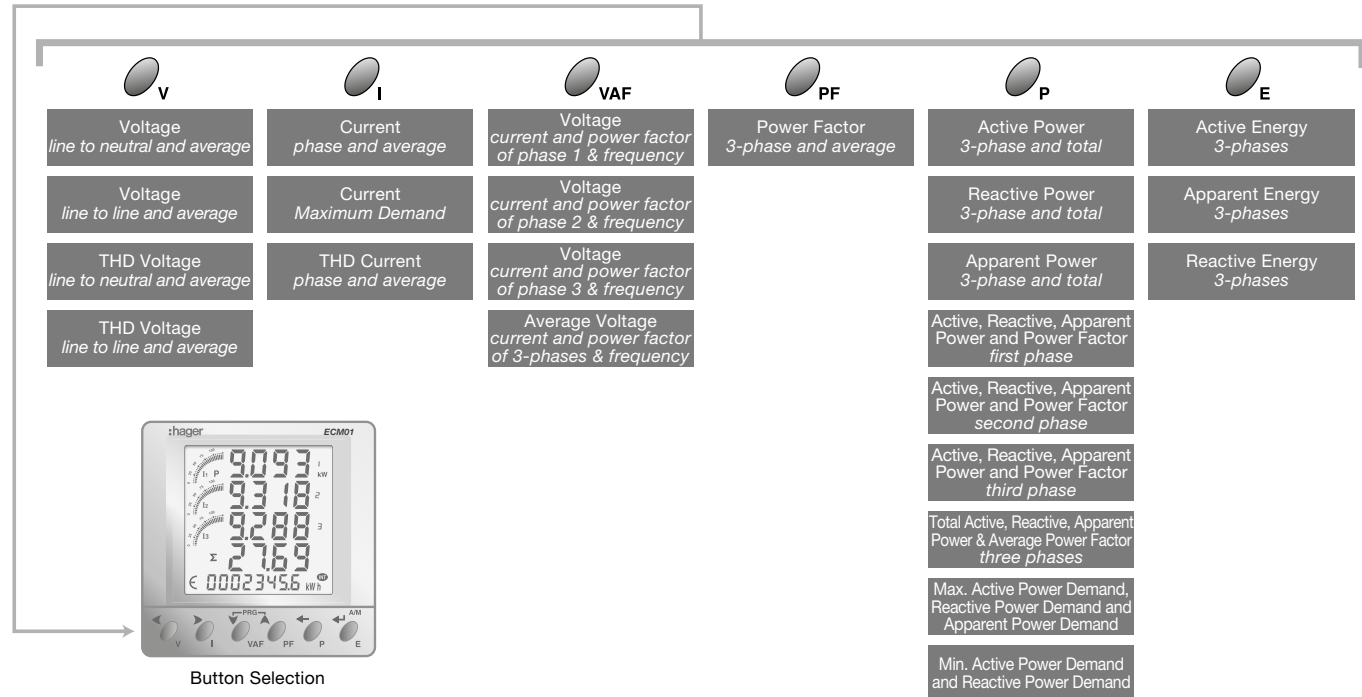


Multifunction Power Meter - Single CT Connection DIN 96 - LCD Display - ECM01

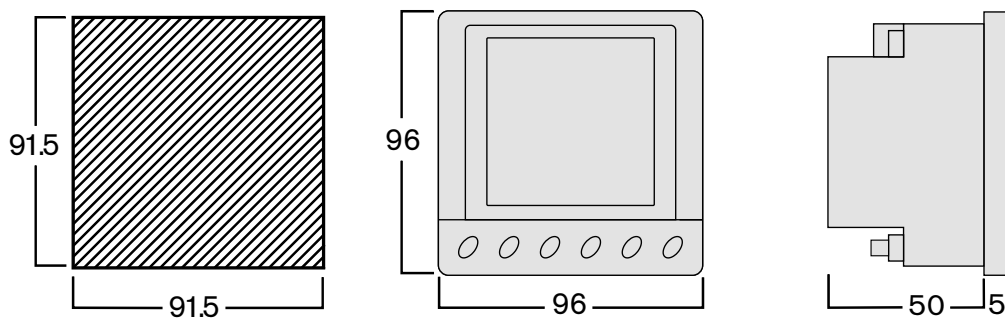
:hager

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

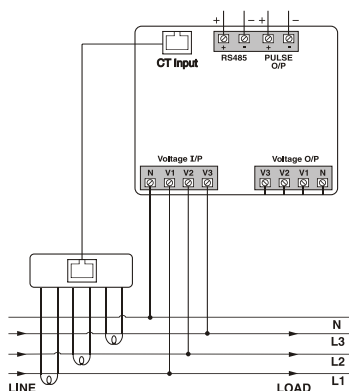
Function Diagram



Dimensions Diagram (mm)



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

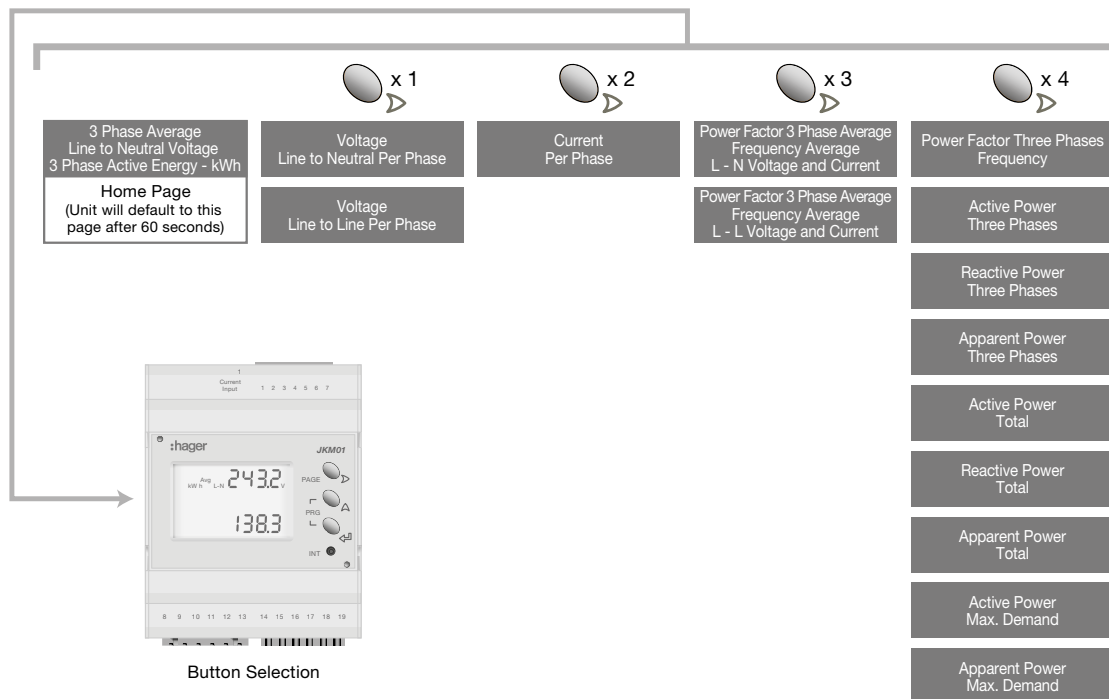


Multifunction Power Meter - Single CT Connection DIN Rail Mounting - LCD Display - JKM01

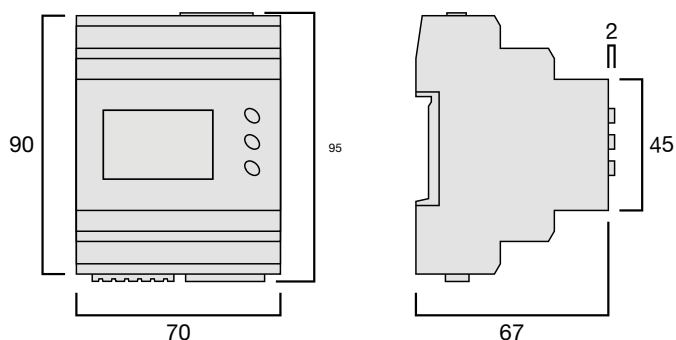
:hager

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

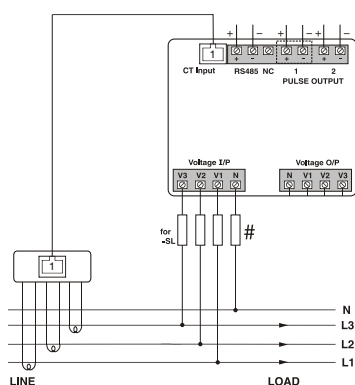
Function Diagram



Dimension Diagrams (mm)



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

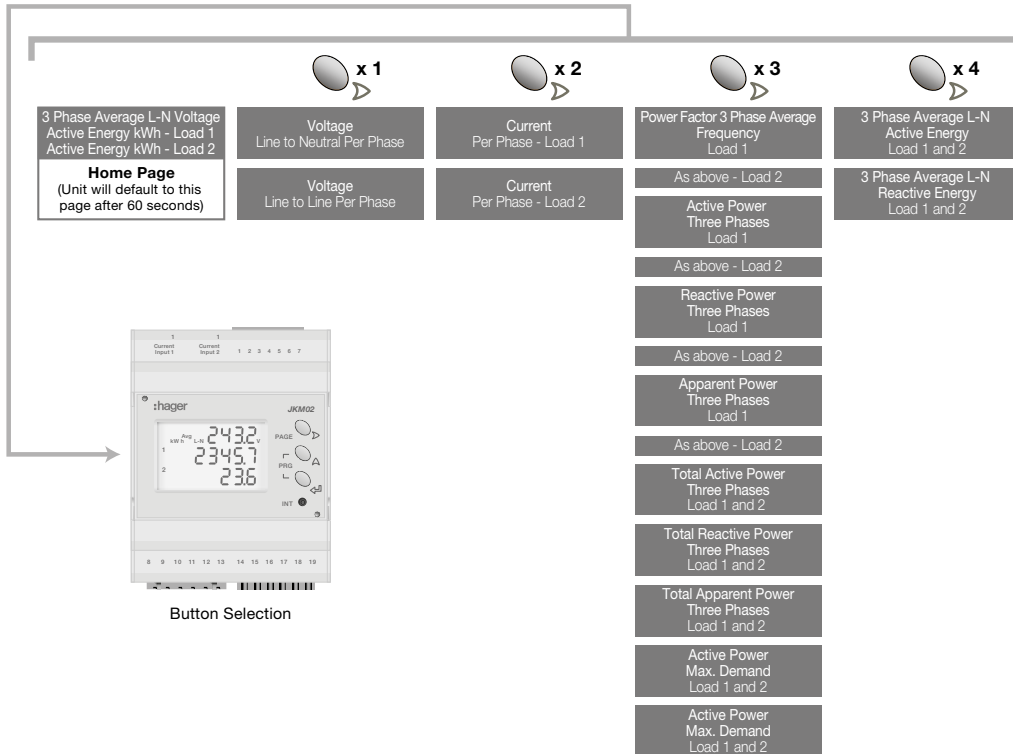


Multifunction Power Meter - Dual CT Connection Panel Mounting - LCD Display - JKM02

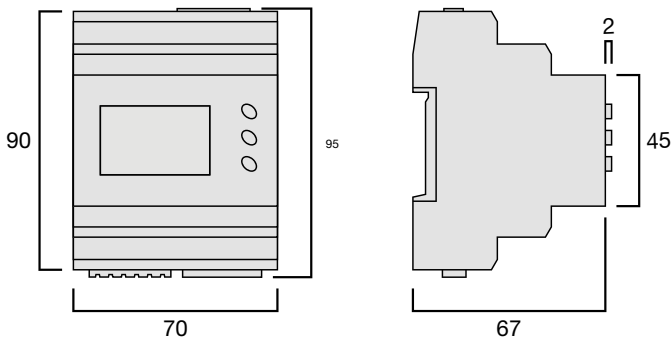
:hager

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

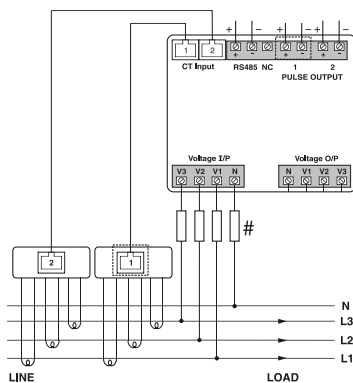
Function Diagram



Dimension Diagrams (mm)



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



- Connect up to 3 standard or split core CT's (1A or 5A secondaries)
- Integrated protection circuitry

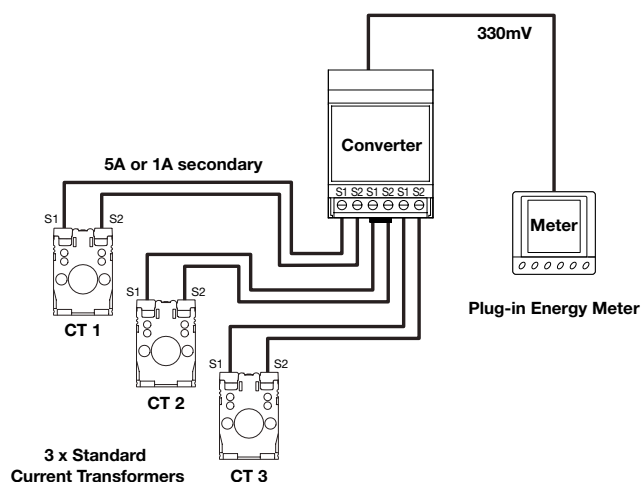
Standard CT to plug-in Adaptor

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

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

Important Note

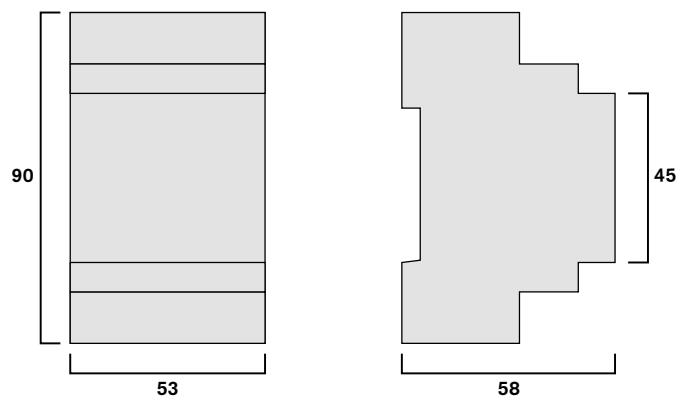
This converter does not provide electrical isolation. Current transformer secondaries may not be earthed and should be wired as shown.



Technical Specification

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

Dimension Diagrams (mm)



- Accuracy Class 1
- Aperture: 3 @ 15.5 x 30mm
- Primary Current: 60 to 160A
- 25mm hole centres
- Housing Material Self extinguishing Nylon IEC185 classification VO according to UL-94
- Reference standard EN60044-8
- Weight : 500g

Description

This is a 75mm wide three phase measuring current transformer designed for use with Hager x160 MCCBs and the plug-in multifunction power meters. This current transformer has three 15.5 x 30mm holes and is available with primary currents from 60 to 160A. (x160 frame MCCBs)

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

Accessories

DIN rail mounting clip.

Installation

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

Fixing

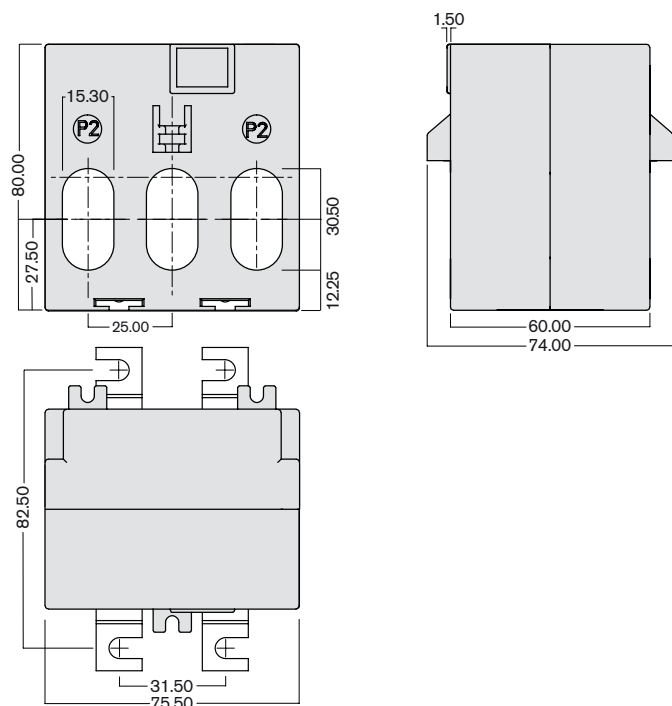
Busbar mounting and fixing feet included.



Current Transformer Ratios

Primary Current	Output	
60	330	060
100	330	100
125	330	125
160	330	160
330mV Secondary		

Dimensions (mm)



- Accuracy Class 1
- Aperture: 3 @ 21 x 25mm
- Primary Current: 60 to 250A
- 35mm hole centres
- Housing Material Self extinguishing Nylon IEC185 classification VO according to UL-94
- Reference standard EN60044-8
- Weight : 550g

Description

This is a 105mm wide three phase measuring current transformer designed for use with Hager x250 MCCBs and the plug-in multifunction power meters. This current transformer has three 21 x 25mm holes and is available with primary currents from 60 to 250A. (x250, h250 frame MCCBs)

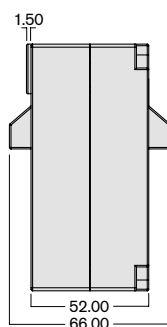
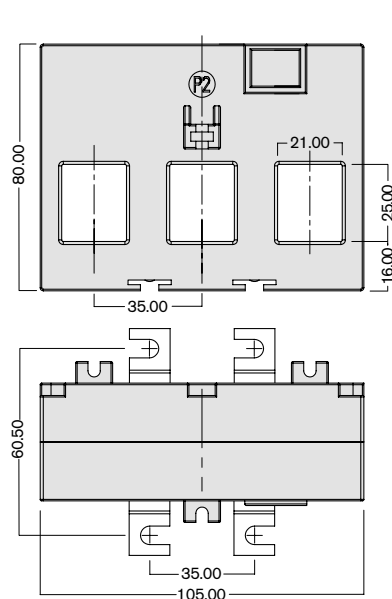
Internal safety circuitry is provided which limits the output voltage to a safe level, allowing the transformer secondary to be left disconnected under load.

Fixing

Busbar mounting and fixing feet included.



Dimensions (mm)



Accessories

DIN rail mounting clip.

Installation

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

Current Transformer Ratios

Primary Current	Output	
60	330	060
100	330	100
125	330	125
160	330	160
200	330	200
250	330	250
330mV Secondary		

- Accuracy Class 1
- Aperture: 3 @ 31 x 31mm
- Primary Current: 250 to 630A
- 45mm hole centres
- Housing Material Self extinguishing Nylon IEC185 classification VO according to UL-94
- Reference standard EN60044-8
- Weight : 680g

Description

This is a 140mm wide three phase measuring current transformer designed for use with the plug-in multifunction power meters. This current transformer has three 31 x 31mm holes and is available with primary currents from 250 to 630A. (h630 frame)
Internal safety circuitry is provided which limits the output voltage to a safe level, allowing the transformer secondary to be left disconnected under load.

Fixing

Busbar mounting and fixing feet included.



Accessories

DIN rail mounting clip.

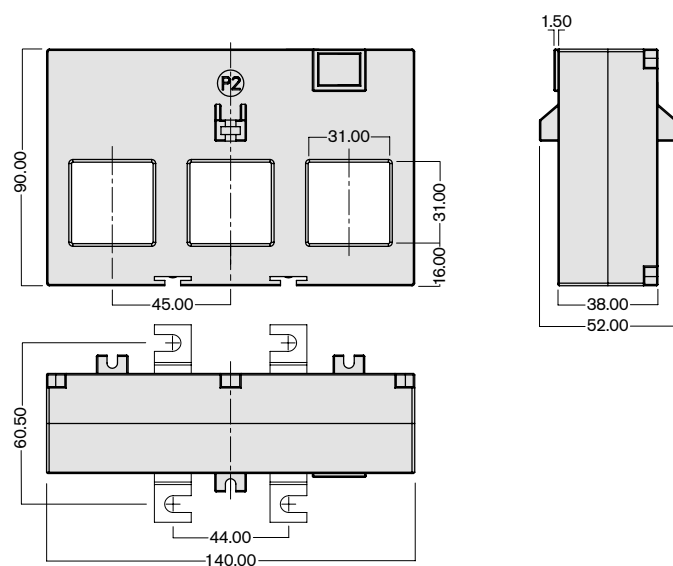
Installation

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

Current Transformer Ratios

Primary Current	Output	
250	330	250
400	330	400
630	330	630
330mV Secondary		

Dimensions (mm)



- Accuracy Class 1
- Aperture: 3 @ 54 x 50mm
- Primary Current: 800
- 70mm hole centres
- Housing Material Self extinguishing Nylon IEC185 classification VO according to UL-94
- Reference standard EN60044-8
- Weight : 1200g

Description

This is a 215mm wide three phase measuring current transformer designed for use with the plug-in multifunction power meters. This current transformer has three 54 x 50mm holes and is available with primary currents from 800.

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

Fixing

Busbar mounting and fixing feet included.



Accessories

DIN rail mounting clip.

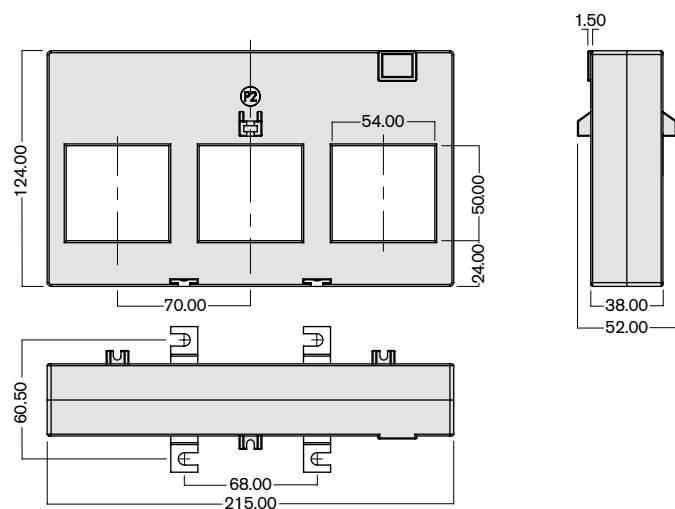
Installation

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

Current Transformer Ratios

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

Dimensions (mm)



CT Output and RJ45 Lead Tester

This device makes it possible to test the RJ45 patch lead used to connect the current transformer to the meter. It also enables a standard electricians multimeter to measure the individual secondary outputs of the current transformer.

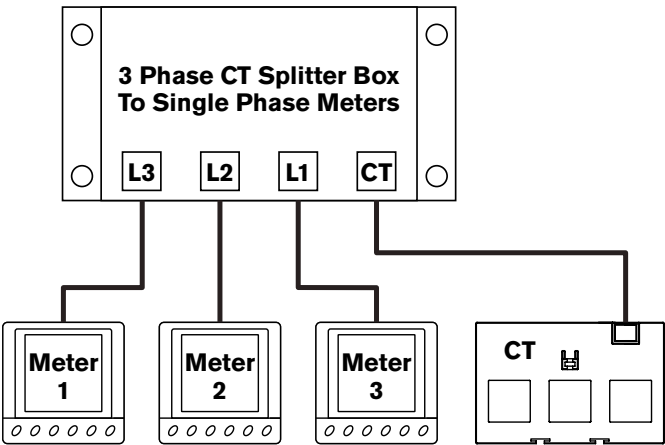
To test the RJ45 patch lead, simply disconnect the lead from the meter and current transformer. Plug one end into socket 1 and the other end into socket 2 on the test box. Press the test button - the Green LED will light to indicate the lead is OK or the Red LED will light to indicate a faulty lead. When the lead is proven to be OK you can then check the individual secondary outputs of the current transformer. To measure the secondary output plug one end of the RJ45 patch lead into the current transformer and the other end into socket 2 on the test box. You can now use a standard multimeter to test the secondaries using the test points on the front of the test box. The output measured for each phase should be between 0 and 330mVac.

Model Reference: JFT03

3 Phase CT Splitter Box

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

Model Reference: JFS03



Meter Voltage Supply Cable

Our high quality Meter Voltage Supply Cables are fitted with a plug at one end and insulated bootlace ferrules at the other and provide power to the plug-in meter from your mains supply. Two type of cable material are available:- LSZH (Low Smoke Zero Halogen).

Meter to Meter Supply Cable

Our high quality Meter to Meter Voltage Supply Cables are fitted with a plug at one end and socket at the other. This allows multiple plug-in meters to be energised from a common supply. Up to 32 meters can be powered in a 'daisy chain' arrangement using this method. Two type of cable material are available:- LSZH (Low Smoke Zero Halogen).

RJ45 Connection Cable

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

How to Order / Model Reference

Part Number	PGRJ	
Cable Length		
0.3m - RJ45 connector cable (300mm)		300
0.5m - RJ45 connector cable (500mm)		500
1.0m - RJ45 connector cable (1000mm)		1000
1.5m - RJ45 connector cable (1500mm)		1500
2.0m - RJ45 connector cable (2000mm)		2000
3.0m - RJ45 connector cable (3000mm)		3000
Other lengths available on request (Max. 15m)		

Part Number	PGMF	
Cable Length		
0.3m - Voltage Supply Cable (300mm)		300
0.5m - Voltage Supply Cable (500mm)		500
1.0m - Voltage Supply Cable (1000mm)		1000
1.3m - Voltage Supply Cable (1300mm)		1300
2.0m - Voltage Supply Cable (2000mm)		2000
3.0m - Voltage Supply Cable (3000mm)		3000
Other lengths available on request (Max. 15m)		

Part Number	PGMFT	
Cable Length		
0.15m - Supply Link Cable (150mm)		150
0.3m - Supply Link Cable (300mm)		300
0.5m - Supply Link Cable (500mm)		500
1.0m - Supply Link Cable (1000mm)		1000
1.3m - Supply Link Cable (1300mm)		1300
2.0m - Supply Link Cable (2000mm)		2000
3.0m - Supply Link Cable (3000mm)		3000
Other lengths available on request (Max. 15m)		

		SPN801 / SPN801R	SPN802 / SPN802R
Tested to		EN 61643-11 (VDE0675-6-11) 2002-12	EN 61643-11 (VDE0675-6-11) 2002-12
		L1/L2/L3/N => PE	L1/L2/L3 => N N => PE
SPD type / class		Type 1 + Type 2 / I / B	
Type of connexion		Parallel connection	
Type of power supply system		TN-S - System	TT - System
Type of protection		Common modes	Common and differential modes
Nominal voltage	U_N	230V / 400V ac	
Rated voltage	U_c	255V ac	
Voltage protection level	U_p	$\leq 1.5kV$	255V ac
TOV-voltage	U_T	440V / 5s	1200V / 200ms
Rated load current	$I(L)$	315A	
	$I(L-L)$	125A	
Follow current interrupting rating	I_{fi}	50 kA	100kA
Nominal discharge current (8/20)	I_n	100kA	25kA 100kA
Impulse current (10/350)	I_{imp}	100kA	25kA 100kA
Residual current	I_{PE}	$\leq 100mA$	
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		$- 40^{\circ}C \dots + 60^{\circ}C$	
Indication of SPD disconnector		Green - red on L1, L2, L3, N	
Cross sectional area	min	10mm ² solid / flexible	
L1, L2, L3, PE	max	50mm ² multi-stranded / 35mm ² 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		1260 g	1272 g
Approval marking		VDE	

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

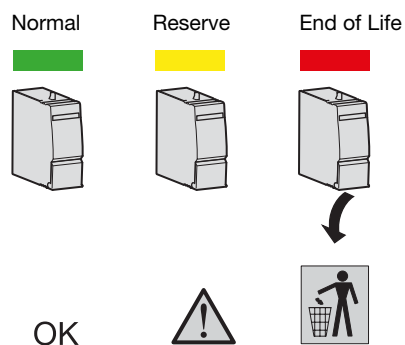
		SPN215D/R	SPN415D/R	SPN440D/R
Tested to		EN 61643-11 (VDE0675-6-11) 2002-12		
SPD type		Type 2 according to EN 61643-11		
SPD class		Class II according to IEC 61643-1		
Type of connexion		Parallel connection		
Maximum continuous operating voltage U_c	Line / Neutral	$\leq 255V$		
	Neutral/ PE	$\leq 275V$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

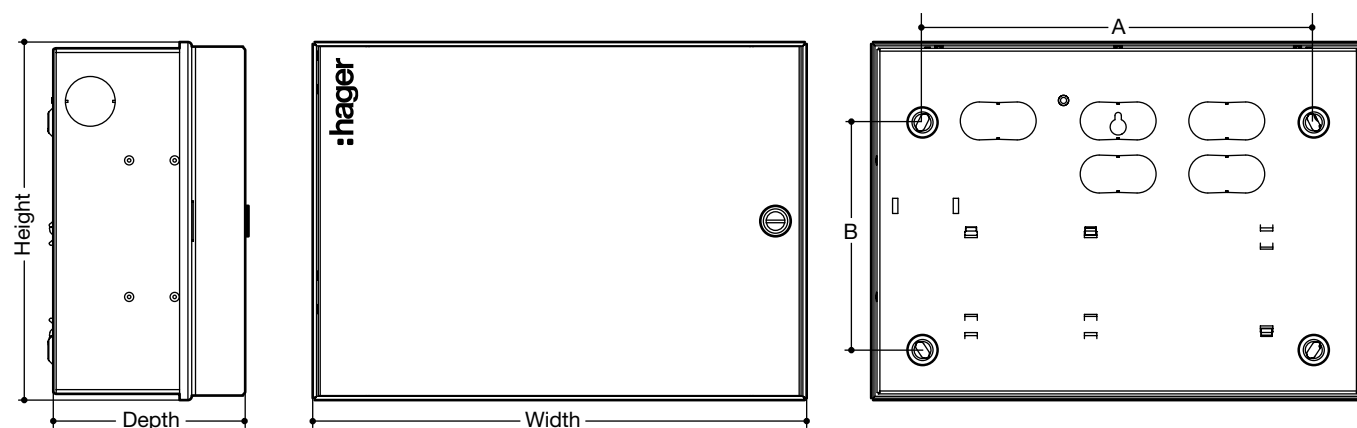
		SPV325
Tested to		EN 61643-11 (VDE0675-6-11) 2002-12
SPD type		Type 2 according to EN 61643-11
SPD class		Class II according to IEC 61643-1
Type of connexion		Parallel connection
Maximum continuous operating voltage	U_{cpv}	$\leq 1000V$
Voltage protection level	U_p	$\leq 4kV$
Voltage protection level for 5kA	U_p	$\leq 3,5kV$
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	$\leq 25ns$
Operating temperature range		- 40°C+ 80°C
Indication of SPD disconnector		green - red
Cross sectional area	min	1.5mm ² solid / flexible
	max	35mm ² multi-stranded / 25mm ² 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	$\leq 1.25\text{kV}$
Voltage protection level (L/N - PE)	U_p	$\leq 1.5\text{kV}$
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	I_L	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	$\leq 5\mu\text{A}$
Replacement 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	$\leq 25\text{ns}$
Operating temperature range		- 25°C+ 40°C
Indication of SPD disconnector		NO
Remote signalisation contact		Green light off
Cross sectional area	min	1.5mm ² solid / flexible
	max	10mm ² stranded / 6mm ² 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.



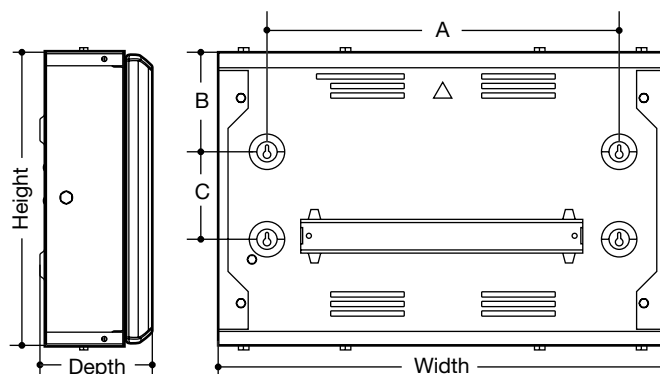


SP&N A Boards

Modules	Dimensions			Fixing Centres		Knockout Size	N° of Knockouts				
	Width	Height	Depth	A	B		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)			Fixing Centres (mm)		
	Height	Width	Depth	A	B	C
JK114A/AG	300	465	107.7	350	35	228
JK129A/AG	450	465	107.7	330	35	378



Fuse Combination Switches

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

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

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

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

Cable Extension Boxes for Fuse Combination Switches

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

Switch Disconnectors

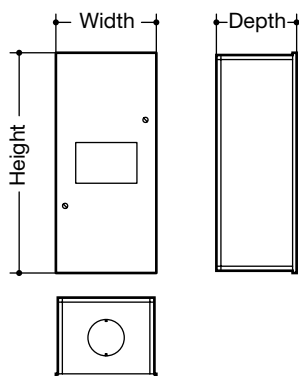
All dimensions are in mm and exclude the handle.

3 Pole	Description	Dimensions (mm)			
		Width	Height	Depth	Handle Depth
JAC316	160A TPN	250	300	150	195
JA320	200A TPN	375	400	200	245
JA325	250A TPN	375	400	200	245
JAG331	315A TPN	375	500	200	245
JAG340	400A TPN	375	500	200	245
JAH363	630A TPN	500	650	300	345
JAH380	800A TPN	500	650	300	345

4 Pole	Description	Dimensions (mm)			
		Width	Height	Depth	Handle Depth
JAB402B	20A TPSN	175	232	65	78
JAB403B	32A TPSN	175	232	65	78
JAB406B	63A TPSN	175	232	65	81
JAB410B	100A TPSN	200	300	80	97
JAC412B	125A TPSN	200	300	80	97
JAC416	160A TPSN	250	300	150	195
JA420	200A TPSN	375	400	200	245
JA425	250A TPSN	375	400	200	245
JAG431	315A TPSN	375	500	200	245
JAG440	400A TPSN	375	500	200	245
JAH463	630A TPSN	500	650	300	345
JAH480	800A TPSN	500	650	300	345

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

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

**Switch Fuses**

	Dimensions (mm)				Connection	Knockouts
	Width	Height	Depth	Depth with Door		
IU4-16	115	187	61.5	-	Earth only	2 x 25mm
IU44-18	125	312	73.5	-	Earth only	None
IU44-11	125	312	73.5	-	Earth only	None
IU4-16-D	125	312	74	96	Earth only	None
IU4-18-D	125	312	74	96	Earth only	None
IU4-11-D	125	312	74	96	Earth only	None

IP65 Enclosed Isolating Switch

All dimensions are in mm and exclude the handle.

Add 27mm to the depth to allow for the handle on 10-25A products.

Add 32mm to the depth to allow for the handle on 40-80A products.

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

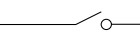
Enclosed thermal current I_{the}	16	25	40	63	80
Rated insulation voltage U_i (V)	690	690	690	690	690
Rated thermal current I_{the} (A)	25	40	63	80	100
Rated operational current					
AC21 400V I_e (A)	25	40	63	80	100
AC22 400V	16	25	40	63	100
AC22 400V cos phi 0.65	16	20	32	63	100
AC23 400V	16	20	32	63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

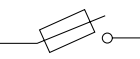
Enclosed thermal current I_{the}	20	32	63	100	125	160	200	250	315	400	630	800
Rated insulation voltage U_i (V)	800	800	800	800	800	800	800	800	800	800	1000	1000
Rated thermal current I_{the} (A)	20	32	63	100	125	160	200	250	315	400	630	800
Rated operational current												
AC21A 500VAC	20	32	63	100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

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

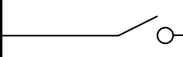
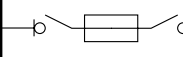
Fuse - Combination Units - BS EN 60947-3

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

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

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

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

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

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

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

Utilisation categories

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

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

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

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

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

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

Motor Power Circuit Protection

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

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

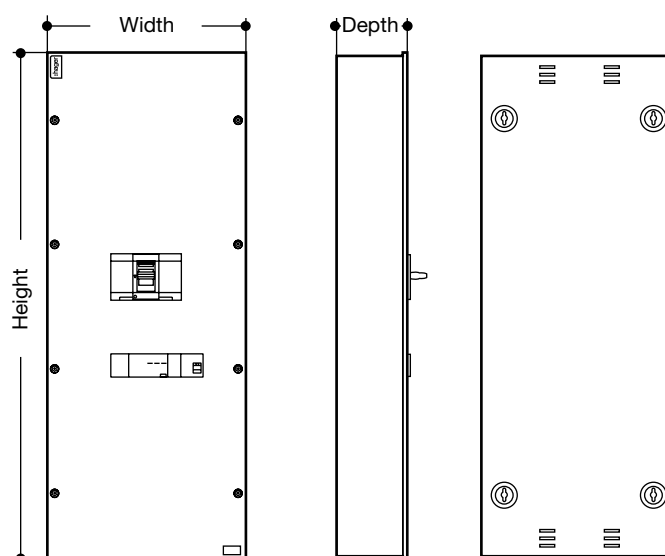
Enclosed MCCBs

Interface Characteristics	JG44BM, JG45BM, JG46BS, JG47BS	JG48BM, JG50BS, JG49BM, JG51BS	JG36BM, JG37BM, JG40BM, JG42BS, JG41BM, JG43BS
Rated & operational voltage (U_n / U_e)	415V a.c. 50Hz	415V a.c. 50Hz	415V a.c. 50Hz
Rated insulation voltage (U_i)	690V a.c. 50Hz	690V a.c. 50Hz	690V a.c. 50Hz
Rated impulse withstand voltage (U_{imp})	6kV	6kV	6kV
Rated current of the Assembly (I_{nA})	400A	630A	JG36BM, JG37BBM -160A JG40BM, JG42BS, JG41BM, JG43BS - 250A
Rated conditional short-circuit current of the assembly (I_{cc})*	50kA	50kA	25kA
Rated peak withstand current (I_{pk})	105kA	105kA	52.5kA
Standards - Enclosed MCCB assembly	BS EN 61439-2	BS EN 61439-2	BS EN 61439-2
Standards - MCCB only	BS EN 60947-2	BS EN 60947-2	BS EN 60947-2
Rated frequency (fn)	50 Hz	50 Hz	50 Hz
Pollution degree	3	3	3
Types of system earthing for which the ASSEMBLY is designed	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671
Intended locations	Indoor use only	Indoor use only	Indoor use only
Stationary assembly external design	Wall mounted	Wall mounted	Wall mounted
Degree of protection	IP3X with cover fitted	IP3X with cover fitted	IP3X with cover fitted
Intended use	Skilled persons only	Skilled persons only	Skilled persons only
Electromagnetic compatibility (EMC) classification	EMC Environment B	EMC Environment B	EMC Environment B
External design	Wall-mounted, surface type, enclosed assembly.	Wall-mounted, surface type, enclosed assembly.	Wall-mounted, surface type, enclosed assembly.
Mechanical impact protection	IK05	IK05	IK05
Form of separation	Form 2a	Form 2a	Form 2a
Connection of functional unit: -Incoming/outgoing circuit protection	F (fixed)	F (fixed)	F (fixed)
Incoming Line Terminal(s)	M10 Bolt	M12 Bolt	M8 Socket Cap Screw
Incoming Neutral Terminal	M10 Bolt	M10 Bolt	JG37BM, JG41BM, JG43BS - M8 Socket Cap Screw JG36BM, JG40BM, JG42BS - M10 Bolt
Enclosure Earth Stud	M10	M12	M8

Enclosed MCCB (63A - 125A)

Characteristics	
Series	JG25BM, JG26BM, JG27BM, JG27BR, JG28BM, JG29BM, JG30BM, JG31BM, JG32BM, JG33BM, JG30BR, JG34BS, JG35BS
MCCB	63A to 125A MCCB
MCCB + RCCB Add on block	63A & 100A
Voltage rating in AC	240 / 415 V
IP Protection	IP3X
Enclosure body type	Steel
Enclosure paint type	Powder coat Grey white BS 4800 00A01
Terminal Connection capacity	
Maximum terminal capacity	95mm ²
Enclosure earth stud	M8
Installation	
Mounting	Wall

	JG37BR, JG38BR	JG45BR
	415V a.c. 50Hz	415V a.c. 50Hz
	690V a.c. 50Hz	690V a.c. 50Hz
	6kV	6kV
	JG37BR - 160A JG38BR - 200A	375A
	25kA	50kA
	52.5kA	105kA
	BS EN 61439-2	BS EN 61439-2
	BS EN 60947-2	BS EN 60947-2
	50 Hz	50 Hz
	3	3
	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671	TNC-S, TN-S and TT when installed in an electrical system conforming to BS 7671
	Indoor use only	Indoor use only
	Wall mounted	Wall mounted
	IP3X with cover fitted	IP3X with cover fitted
	Skilled persons only	Skilled persons only
	EMC Environment B	EMC Environment B
	Wall-mounted, surface type, enclosed assembly.	Wall-mounted, surface type, enclosed assembly.
	IK05	IK05
	Form 2a	Form 2a
	F (fixed)	F (fixed)
	M8 Socket Cap Screw	M10 Bolt
	M8 Socket Cap Screw	M10 Bolt
	M8	M10



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

Torque settings

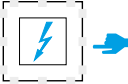
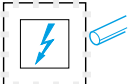
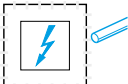
M8	13Nm
M10	22Nm
M12	45-65Nm

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 first character numeral:

Protection against foreign objects

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

Additional letter (in option)

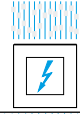
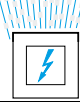
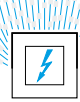
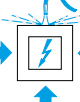
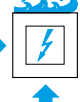
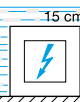
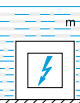
Protection of people against access to hazardous parts

	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 - $\varnothing$ 2.5mm
D	Protected against access to hazardous parts with a tool - $\varnothing$ 1mm

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

The second character numeral:

Protection against ingress of water with harmful effects

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

Additional letter (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

Sustainability at Hager Group:

Nobody knows what tomorrow will bring.

That is why at Hager Group we have chosen to anticipate risks and seize our opportunities proactively. We invest in our employees and their training, in energy efficiency and future technologies, in fair trade relations and we work actively to continuously improve our eco-balance sheet. We may be giving up more profit in the short term, but we are convinced that this is the way to achieve lasting success.

E for ethics:

The way we behave with our employees, our partners and all stakeholders. We want to provide safe and healthy working conditions, equal opportunities and career development to all our employees and promote ethical behaviour.



E for environment:

We act with respect for the planet, to help preserve it. We optimise our resources by avoiding the use of hazardous substances and limiting the amount of harmful emissions and waste.

E for energy:

40% of global energy production is used inside buildings, a significant proportion of it in the form of electricity. Energy management is Hager Group's speciality. We want to create value in a responsible way, shared with our suppliers, customers and other stakeholders. This includes, in particular all the solutions and services we offer our customers for safe, efficient and intelligent use of energy in buildings.



“As a family-owned company, it is in our nature to remain sustainable!”

Daniel Hager

For detailed information about E3, visit
hager.co.uk/e3

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