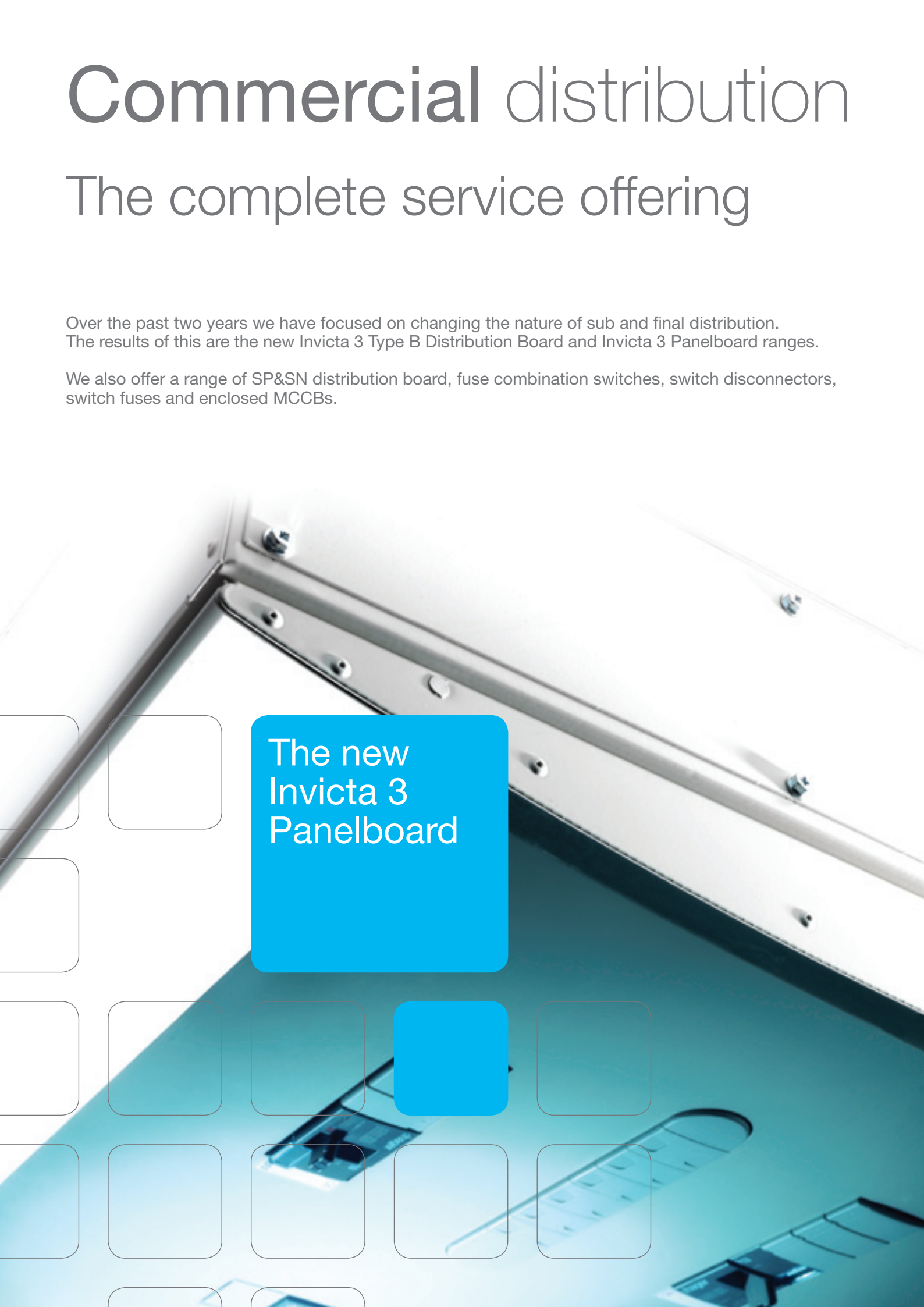


Commercial distribution

The complete service offering

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

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



The new
Invicta 3
Panelboard

A Boards, SP&SN Distribution Boards	3.2
Invicta 3 Type B Distribution Boards	3.6
Invicta 3 Panelboards	3.30
Fuse Combination Switches 20 - 800A	3.46
Switch Disconnectors 20 - 800A	3.48
IP65 Switch Disconnectors 10 - 80A	3.49
Switch Fuses	3.50

SP&N distribution boards

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

The range has the following features:

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

Construction

Manufactured from 1.25mm CR4 cold reduced mild steel, phosphate pretreated and powder coated to 00A01 BS 4800.

Complies with BS EN 60439-3.

For dimensions see page 3.4.

100A Switch Disconnecter Incomer



JK104

Description	Cat ref.
4 Switch Disconnecter Controlled Ways	JK104
6 Switch Disconnecter Controlled Ways	JK106
10 Switch Disconnecter Controlled Ways	JK110
14 Switch Disconnecter Controlled Ways	JK114
20 Switch Disconnecter Controlled Ways	JK120
28 Switch Disconnecter Controlled Ways	JK128

63A 30mA RCCB Incomer

Description	Cat ref.
4 RCCB Controlled Ways	JK404H
6 RCCB Controlled Ways	JK406H
10 RCCB Controlled Ways	JK410H
14 RCCB Controlled Ways	JK414H
20 RCCB Controlled Ways	JK420H

100A 30mA RCCB Incomer

Description	Cat ref.
4 RCCB Controlled Ways	JK304H
6 RCCB Controlled Ways	JK306H
10 RCCB Controlled Ways	JK310H
14 RCCB Controlled Ways	JK314H
20 RCCB Controlled Ways	JK320H
28 RCCB Controlled Ways	JK328H

Split Load with 100A Switch Disconnecter and 63A 30mA RCCB



JK706C

Description	Cat ref.
6 Configurable Switch Disconnecter or RCCB Controlled Ways	JK706C
10 Configurable Switch Disconnecter or RCCB Controlled Ways	JK710C
14 Configurable Switch Disconnecter or RCCB Controlled Ways	JK714C

Split Load with 100A Switch Disconnecter and 100A 30mA RCCB

Description	Cat ref.
28 Total Ways, 14 Switch Disconnecter and 14 RCCB Controlled Ways	JK527H

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:

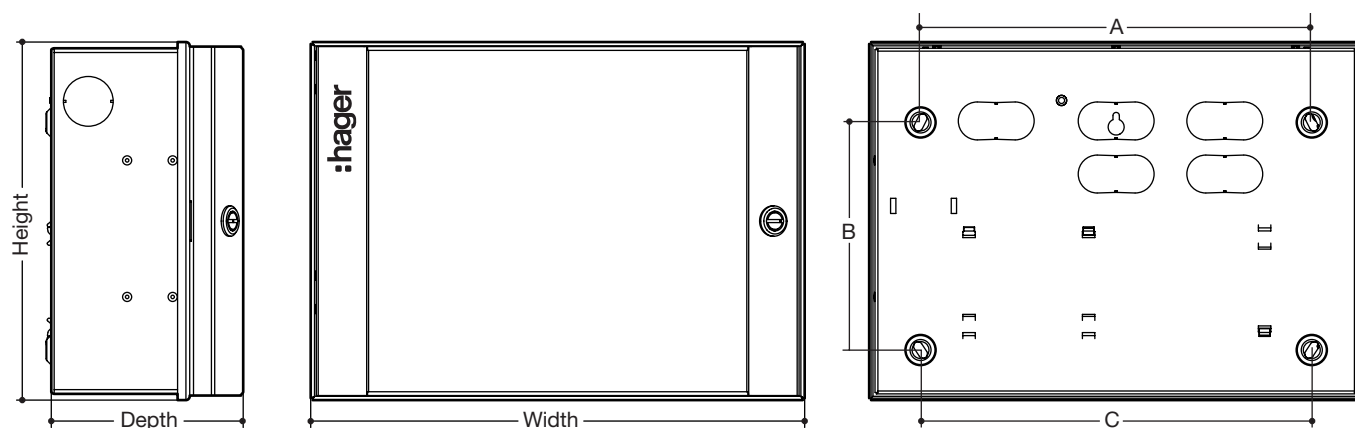
- Ample wiring space
- Full complement of earth and neutral bars fitted as standard
- Significant knockout provision
- Plain or glazed doors
- Optional key lock

Complies with BS EN 62208.

For dimensions see page 3.4.

DIN Rail Enclosures

Description	Cat ref. Plain door	Cat ref. Glazed door
1 Row 8 Modules with Knockouts	JK008	JK008G
1 Row 12 Modules with Knockouts	JK012	JK012G
1 Row 16 Modules with Knockouts	JK016	JK016G
1 Row 22 Modules with Knockouts	JK022	JK022G
2 row 24 Modules (2 x 12) with Knockouts	JK024	JK024G
2 row 32 Modules (2 x 16) with Knockouts	JK032	JK032G
2 row 44 Modules (2 x 22) with Knockouts	JK044	JK044G
3 row 66 Modules (3 x 22) with Knockouts	JK066	JK066G



A Boards

Modules	Dimensions			Fixing Centres			Knockout Size	N° of Knockouts				
	Width	Height	Depth	A	B	C		Top	Bottom	Left	Right	Back
8	254	236	130	108	165	163	ø 21	3	3	-	-	-
							ø 33	1	-	-	1	-
							ø 25	1	1	1	1	-
							25 x 50	-	-	-	-	3
12	326	236	130	180	165	235	ø 21	6	6	-	-	-
							ø 33	1	1	1	1	-
							ø 25	1	1	-	-	-
							25 x 50	-	-	-	-	5
16	398	236	130	252	165	307	ø 21	8	8	-	-	-
							ø 33	1	1	1	1	-
							ø 25	1	1	-	-	-
							25 x 50	-	-	-	-	7
22	505	236	130	323	165	378	ø 21	11	11	-	-	-
							ø 33	1	1	1	1	-
							ø 25	1	1	-	-	-
							25 x 50	-	-	-	-	9
2 x 12	326	472	130	235	395	535	ø 21	6	6	-	-	-
							ø 33	1	1	2	2	-
							ø 25	1	1	-	-	-
							25 x 50	-	-	-	-	6
2 x 16	398	472	130	307	395	307	ø 21	8	8	-	-	-
							ø 33	1	1	2	2	-
							ø 25	1	1	-	-	-
							25 x 50	-	-	-	-	8
2 x 22	505	472	130	378	395	378	ø 21	11	11	-	-	-
							ø 33	1	1	2	2	-
							ø 25	1	1	-	-	-
							25 x 50	-	-	-	-	10
3 x 22	505	708	130	378	632	378	ø 21	11	11	-	-	-
							ø 33	1	1	3	3	-
							ø 25	1	1	-	-	-
							25 x 50	-	-	-	-	15



Welcome to Hager on-line

hager.co.uk, provides you with detailed information on our energy distribution, building automation, wiring accessory and security product ranges.

Not only do you benefit from instant access to our complete list of product part numbers, descriptions and product dimensions, our website also presents product features and benefits with close-up photography and explanations, making sure you know exactly what to expect from our years of product development and innovation.

If you're an electrician operating in the UK, we invite you to join our ever growing electrician's directory, www.your-electrician.com. It's free to join and will enhance your online presence. Visit our website for more information.

Supporting our customers and product ranges further, a dedicated "service" section is available, from which you have access to literature downloads, price lists, videos, City & Guilds training programmes, hager stockists and the latest hager news.

At hager, we are aware your time is important, so why not let hager news come to you? Simply register your details at www.hager.co.uk and choose to receive our informative eNewsletter, you will be among the first to know about new hager products, services and promotions.

Visit www.hager.co.uk and begin benefiting today!

Invicta 3 Type B Distribution Boards

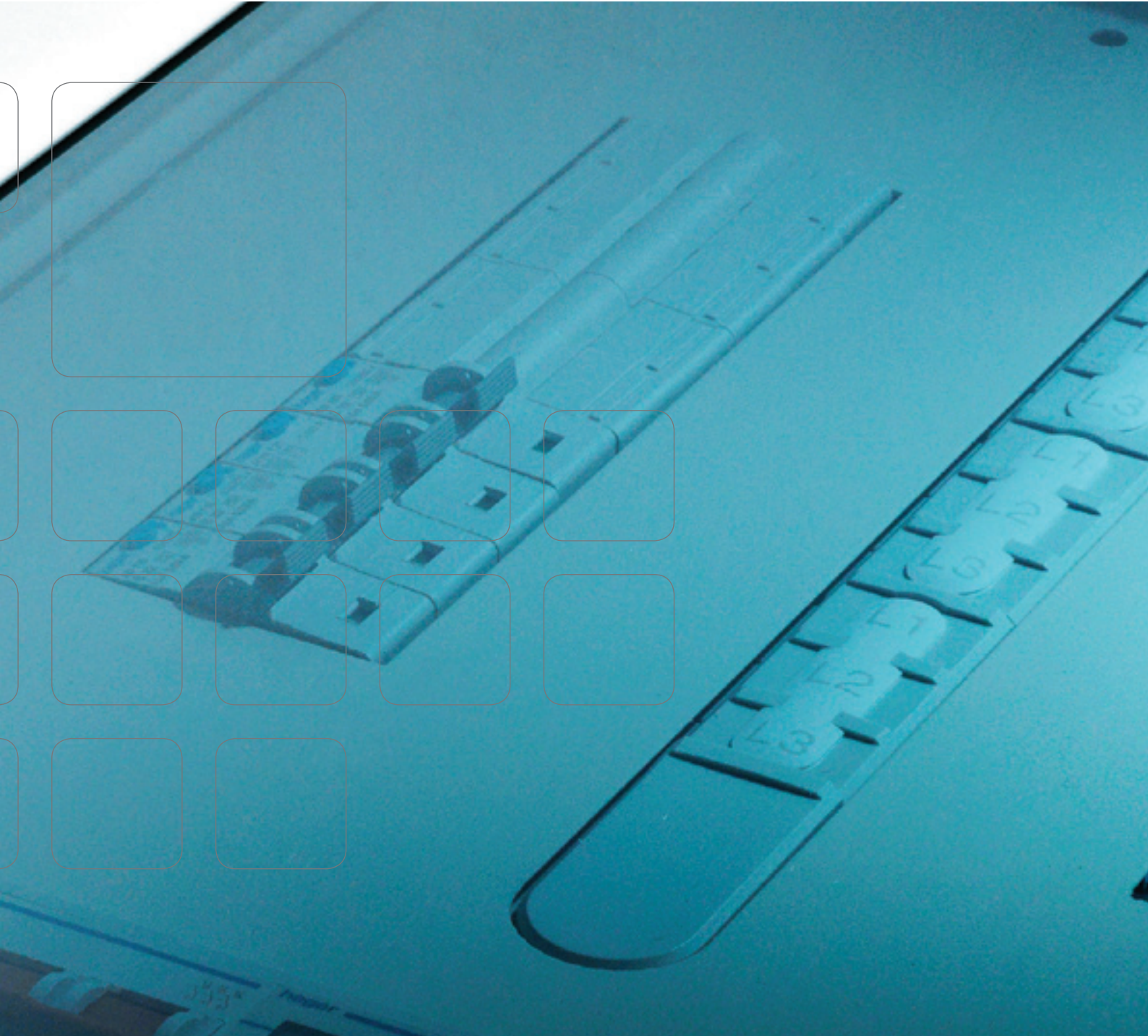
125A and 250A boards with multiple incomer choices

We have developed the new Invicta 3 type B distribution board as a solution for modern commercial installations. The Invicta 3 range includes both 125A and 250A boards with multiple incomer choices.

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



125A Incoming 63A Outgoing Distribution Boards	3.12
125A Meter Packs	3.13
125A Dual Metered Boards & Data Logger	3.14
125A Dual Meter Incomer Kits	3.15
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125A & 250A DIN Extension Boxes	3.18
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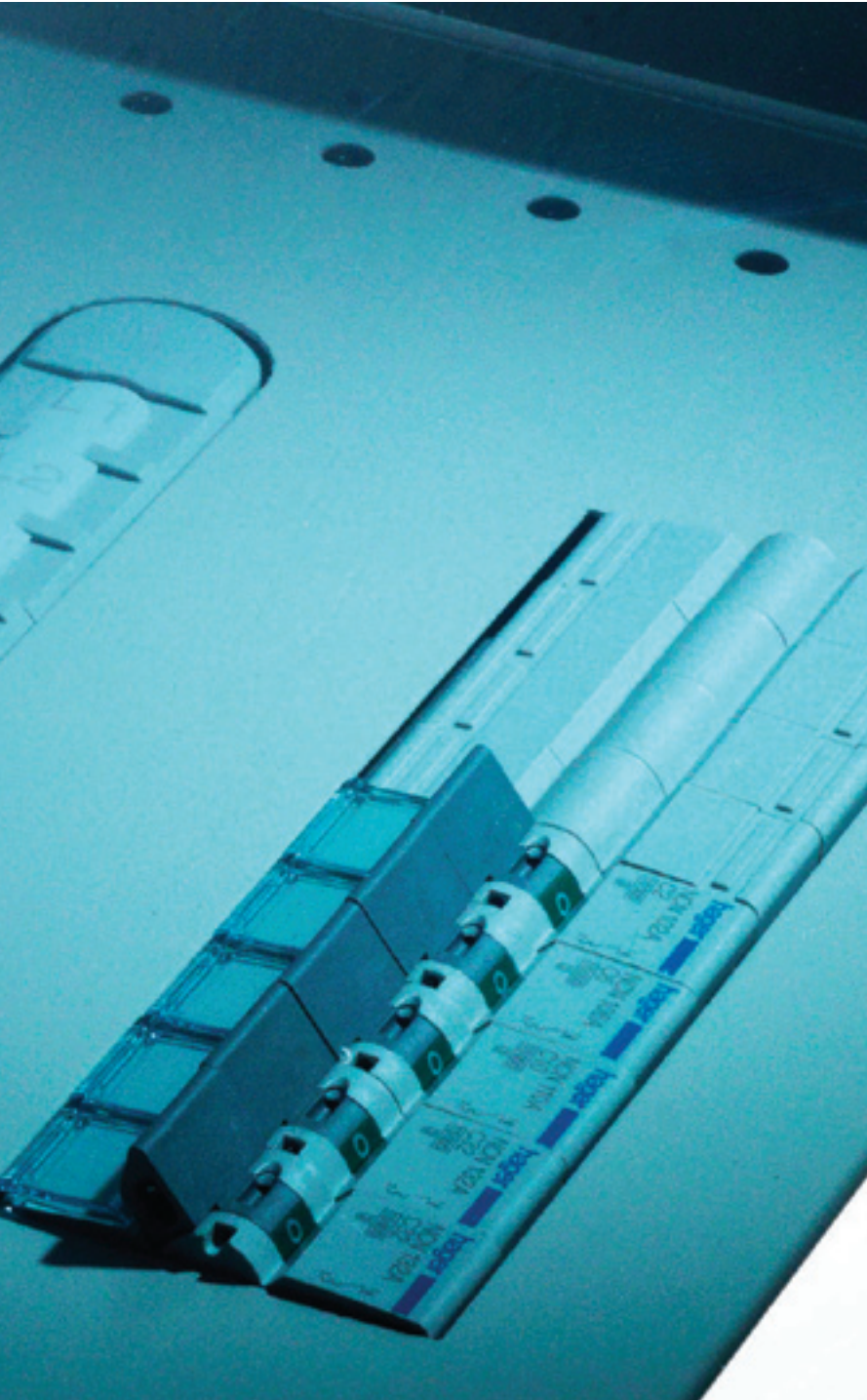


Invicta 3

Type B Distribution Boards

At Hager we have developed the new Invicta 3 type B boards as a solution for modern commercial installations.

The whole nature of electrical sub and final distribution for commercial installations has changed in the last few years. Typically there is a demand 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

You can install a meter next to the incoming device in the 125A board. Dual 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 plus:



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. Modern distribution boards must enable designs that meet the demands of the 17th Edition, the need for more metering and the demands for energy efficient solutions through control devices or building management systems.

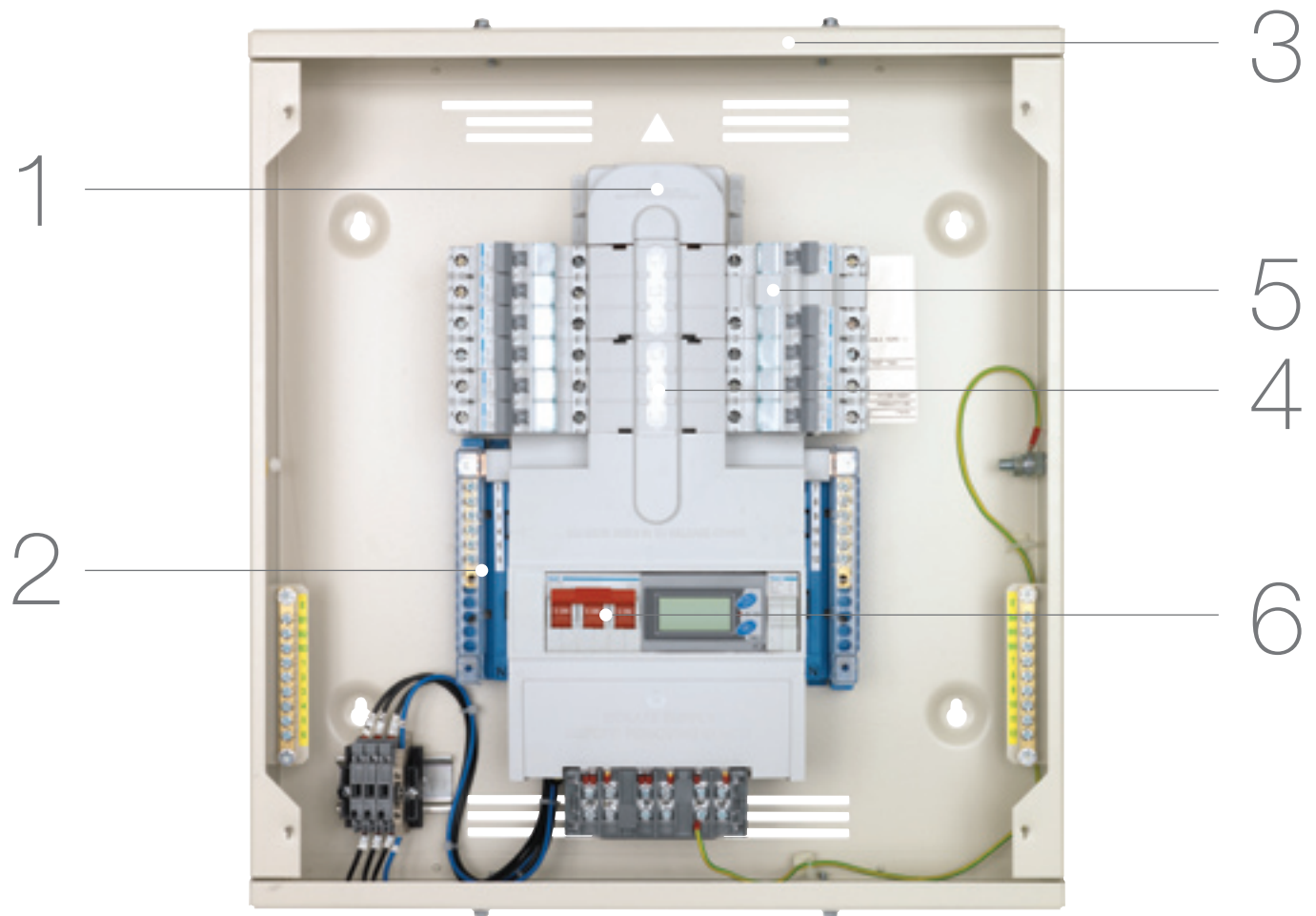
We decided that it was time to design a board that meets these growing needs. Our new range of type B boards makes it easier for you to design and install electrical distribution systems that meet the needs of today and the future.

Invicta 3 Type B Distribution Boards

Meeting the needs of the 17th Edition

The new Invicta 3 range of type B boards has been produced to meet with the new IEE Wiring Regulations.

Take a look below to see all of the new 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 new 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 saving you the expense of buying an extension box.
- 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.

5



Single Pole Blank

New single pole blank design is easy to fit to both three phase boards and on a full DIN rail (single phase and DIN rail extension boxes).

6



Metering

Metering is integral with the main board - no need for an additional extension box 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.

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

Enclosure degree of protection:
IP3X

Enclosures are available with
plain or glazed doors.

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

Supplied without incoming and
outgoing devices.

A hager incoming kit must be
used.

Complies with BS EN 60439-3.

For dimensions see page 3.25.

Invicta 3 (125A Incoming 63A Outgoing)



JK106BG

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

¹ If additional cable space is required when fitting a meter pack
a 300mm JK101SE can be used, see page 3.19.

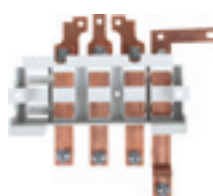


JK11003S

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

Description	Cat ref.
3 Pole 100A Switch Disconnecter Incomer Kit (fits within distribution board)	JK11003S
4 Pole 100A Switch Disconnecter Incomer Kit (fits within distribution board)	JK11004S
3 Pole 125A Switch Disconnecter Incomer Kit (fits within distribution board)	JK11253S
4 Pole 63A Contactor Incomer Kit includes Switch Disconnecter (fits below distribution board, 350mm high)	JK10634C ²
4 Pole 100A Contactor Incomer Kit includes Switch Disconnecter (fits below distribution board, 450mm high)	JK11004C ²
125A Direct Connection Kit (fits within distribution board)	JK11254D
4 Pole 63A 30mA RCCB Incomer Kit (fits within distribution board)	JK10634RH
4 Pole 100A 30mA RCCB Incomer Kit (fits within distribution board)	JK11004RH
4 Pole 100A 300mA RCCB Incomer Kit (fits within distribution board)	JK11004RL
4 Pole 100A 300mA Time Delayed RCCB Incomer Kit (fits within distribution board)	JK11004RLD
4 Pole 100A 100mA RCCB Incomer Kit (fits within distribution board)	JK11004RM
4 Pole 100A 100mA Time Delayed RCCB Incomer Kit (fits within distribution board)	JK11004RMD

² A 350 / 450mm space is required below the board for fitting, see page 3.26 for dimensions.



JK11254D

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

For a full list of protection devices
see section 4.

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

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

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

For sub billing metering applications please contact our Technical Support Helpline 0870 607 6677.

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).



JK142BA

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

					RCBO Single Pole Sensitivity 30mA (10kA) Type B		RCBO Single Pole Sensitivity 30mA (10kA) Type C	
25A	32A	40A	50A	63A	Current rating	Cat ref.	Current rating	Cat ref.
NBN125A	NBN132A	NBN140A	NBN150A	NBN163A	6A	ADB106	6A	ADC106
NBN325A	NBN332A	NBN340A	NBN350A	NBN363A	10A	ADB110	10A	ADC110
NCN125A	NCN132A	NCN140A	NCN150A	NCN163A	16A	ADB116	16A	ADC116
NCN325A	NCN332A	NCN340A	NCN350A	NCN363A	20A	ADB120	20A	ADC120
NDN125A	NDN132A	NDN140A	NDN150A	NDN163A	25A	ADB125	25A	ADC125
NDN325A	NDN332A	NDN340A	NDN350A	NDN363A	32A	ADB132	32A	ADC132
					40A	ADB140	40A	ADC140
					45A	ADB145	45A	ADC145
					50A	ADB150	50A	ADC150

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

The metered boards are supplied with meters that offer a pulsed output. For modbus output please contact our Technical Support Helpline 0870 607 6677.

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

For metered board dimensions see page 3.30.

For dual meter incomer kit dimensions see page 3.28.



JKD1812B

125A Dual Metered Boards

Description

Cat ref.
Glazed door

Composite Split Lighting / Power Metered Board 4 / 16

JKD1416B

Composite Split Lighting / Power Metered Board 8 / 12

JKD1812B

Data Logger

Description

Cat ref.

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

JK107DL

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

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

Each fully assembled* 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), Off Set Incoming Links, Neutral Connection Block and Extension Box with Glazed Doors, (incomer fitted).

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

* distribution boards supplied separately to be assembled on site.



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

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

Enclosure degree of protection:
IP3X

Enclosures are available with
plain or glazed doors.

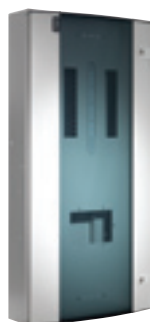
Fully shrouded copper busbar,
rated 25kA short circuit
conditional current.

Supplied without incoming and
outgoing devices.

A hager incoming kit must be
used.

Complies with BS EN 60439-3.

For dimensions see page 3.25.



JK206BG

Invicta 3 (250A Incoming 63A Outgoing)

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

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

Description	Cat ref.
3 Pole 250A MCCB Incomer Kit (fits within distribution board)	JK22503M
4 Pole 250A MCCB Incomer Kit (fits within distribution board)	JK22504M
3 Pole 250A Switch Disconnecter Incomer Kit (fits within distribution board)	JK22503S
4 Pole 250A Switch Disconnecter Incomer Kit (fits within distribution board)	JK22504S
4 Pole 250A Direct Connection Kit (fits within distribution board)	JK22504D
4 Pole 160A Contactor Incomer Kit includes Switch Disconnecter (fits below distribution board, 450mm high) ¹	JK21604C ¹
3 Pole 125A MCCB Incomer Kit (fits within distribution board)	JK21253M
4 Pole 125A MCCB Incomer Kit (fits within distribution board)	JK21254M

¹ A 450mm space is required below the board for fitting, see page 3.26 for dimensions

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

For a full list of protection devices
see section 4.

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

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).



JK242BA

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

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

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), Off Set Incoming Links, Neutral Connection Block and Extension Box with Glazed Doors, (incomer fitted).



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

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

					RCBO Single Pole Sensitivity 30mA (10kA) Type B		RCBO Single Pole Sensitivity 30mA (10kA) Type C	
25A	32A	40A	50A	63A	Current rating	Cat ref.	Current rating	Cat ref.
NBN125A	NBN132A	NBN140A	NBN150A	NBN163A	6A	ADB106	6A	ADC106
NBN325A	NBN332A	NBN340A	NBN350A	NBN363A	10A	ADB110	10A	ADC110
NCN125A	NCN132A	NCN140A	NCN150A	NCN163A	16A	ADB116	16A	ADC116
NCN325A	NCN332A	NCN340A	NCN350A	NCN363A	20A	ADB120	20A	ADC120
NDN125A	NDN132A	NDN140A	NDN150A	NDN163A	25A	ADB125	25A	ADC125
NDN325A	NDN332A	NDN340A	NDN350A	NDN363A	32A	ADB132	32A	ADC132
					40A	ADB140	40A	ADC140
					45A	ADB145	45A	ADC145
					50A	ADB150	50A	ADC150

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

Complies with BS EN 62208.

Full width enclosure provided with 16 modular ways per row.

For dimensions see page 3.26.

DIN Extension Boxes for 125A Primary Boards



JK116EG

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

DIN Extension Boxes for 250A Primary Boards



JK216E

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

Three Phase kWh Meters - Direct 63A

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

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

Three Phase kWh Meters - Connection via Current Transformers

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

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

Three Phase kWh Meters - Direct 100A

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

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

Current Transformers

Cat ref.	Ratio	Cat ref.	Ratio
SR051	50/5	SR250	250/5
SR101	100/5	SR300	300/5
SR150	150/5	SR400	400/5
SR200	200/5	SR600	600/5

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

Full width enclosure provided with 16 modular ways per row.

For dimensions see page 3.26.

Complies with BS EN 62208

Cable Spreader Boxes for 125A & 250A Primary Boards



JK101SE

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

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

Optional Door Kits for Cable Spreader Boxes (above)



JK101DK

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

Low Noise Contactors

Cat ref.	Type	Coil AC Voltage	Power circuit AC1
ESN220B	20A 2NO	230V 50Hz	20A - 400V~
ESN240B	40A 2NO	230V 50Hz	40A - 400V~
ESN263B	63A 2NO	230V 50Hz	63A - 400V~
ESN320B	25A 3NO	230V 50Hz	25A - 400V~
ESN340B	40A 3NO	230V 50Hz	40A - 400V~
ESN444B	25A 3NO + 1NC	230V 50Hz	25A - 400V~
ESN420B	25A 4NO	230V 50Hz	25A - 400V~
ESN440B	25A 4NO	230V 50Hz	40A - 400V~
ESN463B	63A 4NO	230V 50Hz	63A - 400V~
ESN430B	25A 4NC	230V 50Hz	25A - 400V~

Digital Time Switches

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

Surge Protection Devices

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

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

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

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

For dimensions see page 3.25.

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



JK104BDFG

Side DIN Boxes for 125A Primary Boards

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



JK208BDFG

Side DIN Boxes for 250A Primary Boards

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

Three Phase kWh Meters - Direct 63A

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

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

Three Phase kWh Meters - Connection via Current Transformers

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

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

Three Phase kWh Meters - Direct 100A

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

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

Current Transformers

Cat ref.	Ratio	Cat ref.	Ratio
SR051	50/5	SR250	250/5
SR101	100/5	SR300	300/5
SR150	150/5	SR400	400/5
SR200	200/5	SR600	600/5

Invicta 3 Type B Distribution Boards 125A & 250A Side Extension Boxes



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

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

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

Can be used with Invicta 3 Panelboards JN & JF.

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

For dimensions see page 3.27.



JK104BSF

Side Extension Boxes for 125A Primary Boards

Description	Cat ref. Plain door
4 Way Side Extension Box for JK104B Full Width	JK104BSF
6 Way Side Extension Box for JK106B Full Width	JK106BSF
8 Way Side Extension Box for JK108B Full Width	JK108BSF
12 Way Side Extension Box for JK112B Full Width	JK112BSF
16 Way Side Extension Box for JK116B Full Width	JK116BSF

Side Extension Boxes for 250A Primary Boards

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



JK104BSH

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

Doors are not available.

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

Low Noise Contactors

Cat ref.	Type	Coil AC Voltage	Power circuit AC1
ESN220B	20A 2NO	230V 50Hz	20A - 400V~
ESN240B	40A 2NO	230V 50Hz	40A - 400V~
ESN263B	63A 2NO	230V 50Hz	63A - 400V~
ESN320B	25A 3NO	230V 50Hz	25A - 400V~
ESN340B	40A 3NO	230V 50Hz	40A - 400V~
ESN444B	25A 3NO + 1NC	230V 50Hz	25A - 400V~
ESN420B	25A 4NO	230V 50Hz	25A - 400V~
ESN440B	25A 4NO	230V 50Hz	40A - 400V~
ESN463B	63A 4NO	230V 50Hz	63A - 400V~
ESN430B	25A 4NC	230V 50Hz	25A - 400V~

Digital Time Switches

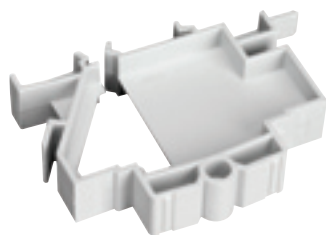
Cat ref.	Description
EG010	1 Channel Time Switch (Daily Cycle)
EG071	1 Channel Time Switch (Weekly Cycle)
EG103	1 Channel Time Switch (Weekly Cycle - Basic Version)
EG203	2 Channel Time Switch (Weekly Cycle - Basic Version)
EG103E	1 Channel Time Switch (Weekly Cycle - Evolution Version)
EG203E	2 Channel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

Surge Protection Devices

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

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

Invicta 3 125A & 250A Accessories



JK01B



JK222PK

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
Touch Up Paint	JF95A	JF95A
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

Invicta 3 125A & 250A Spares

Description	125A Spares Cat ref.	250A Spares Cat ref.
JK1/2 Neutral Clear Shroud	JK1/NEUTRALSHROUD	JK1/NEUTRALSHROUD
JK1/2 Busbar Stack Top Shroud	JK1/2TOPSHROUD	JK1/2TOPSHROUD
JK1/2 Main Incomer Shroud	JK1/INCOMERSHROUD	JK2/INCOMERSHROUD
Spare Gland Plate including Drill Markings - 1.2mm	JK1PLATEM	JK2PLATEM

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

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

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

Complies with BS EN 60439-3.

IP65 Distribution Boards - Metal

Rated at 125A max



JK106BD

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

IP65 Distribution Boards - Insulated

Rated at 125A max



JK106BF

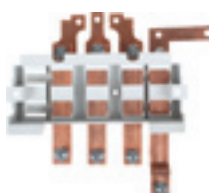
Ways	Dimensions (mm) (HxWxD)	Cat ref.
4	800 x 600 x 300	JK104BF
6	800 x 600 x 300	JK106BF
8	800 x 600 x 300	JK108BF
12	1150 x 850 x 300	JK112BF
16	1150 x 850 x 300	JK116BF

125A Incomer Kits



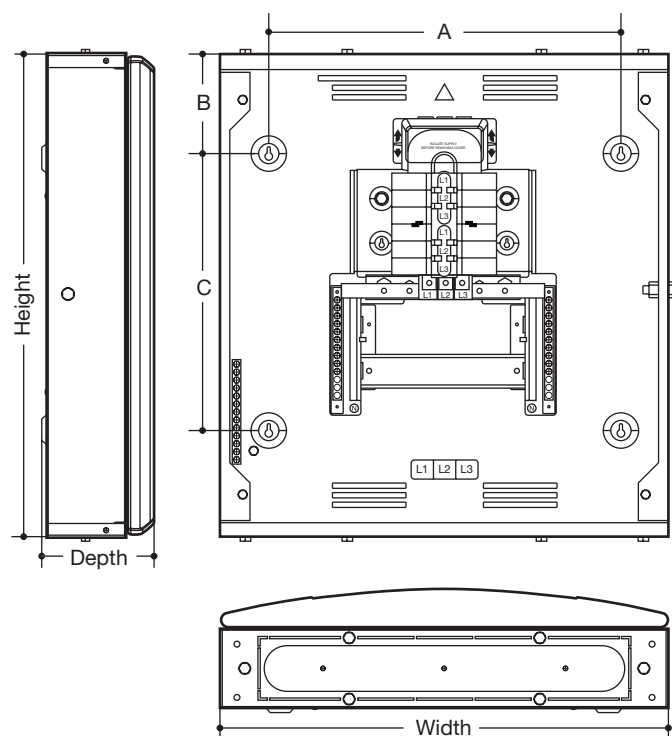
JK11003S

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



JK11254D

Characteristics	JK1**	JK2**
Standards	Designed, manufactured and tested to BS EN 60439-3	Designed, manufactured and tested to BS EN 60439-3
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 Triple pole outgoing ways	8, 12, 16, 18, 24 Triple pole way outgoing ways
Outgoing Protection	Type B MCB (0.5A to 63A, 1P & 3P) Type C, D MCB, (0.5A to 63A, 1P & 3P) 1Mod and 2Mod RCBO (6A to 50A Type B & C, 30mA & 10mA)	Type B MCB (0.5A to 63A, 1P & 3P) Type C, D MCB, (0.5A to 63A, 1P & 3P) 1Mod and 2Mod RCBO (6A to 50A Type B & C, 30mA & 10mA)
Voltage Rating in AC	230 / 400V	230 / 400V
IP Protection	IP3X to BS EN 60529	IP3X to BS EN 60529
Enclosure Body Type	Steel	Steel
Enclosure Paint Type	Powder coat Grey white RAL 9002	Powder coat Grey white RAL 9002
Cable Entry	Obround protected cable entry points	Obround protected cable entry points
Terminal Connection Capacity		
Incoming Earth Terminal	M8 stud	M8 stud
Incoming Neutral Terminal	50mm ² cage or M5 stud	50mm ² cage or M5 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	4 x key hole fixing holes plus central top key hole for one fixing hanging / levelling
Gland Plate	Top and bottom removable	Top and bottom removable
Integrated Locking System	Coin lock as standard, key lock as accessory	Coin lock as standard, key lock as accessory



125A Primary Boards

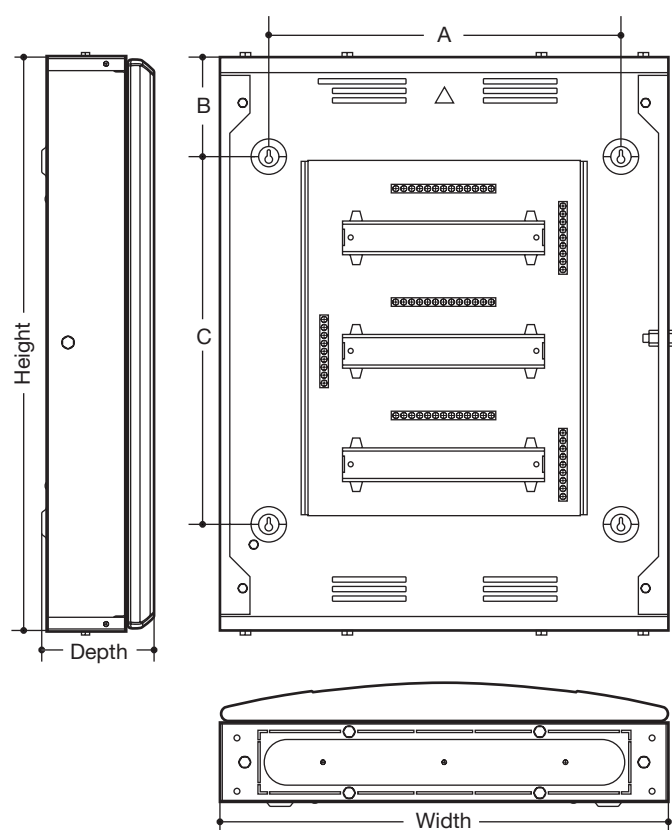
	Dimensions (mm)			Fixing Centres (mm)		
	Height	Width	Depth	A	B	C
JK104B/BG	500	465	132.5	365	100	300
JK106B/BG	550	465	132.5	365	100	350
JK108B/BG	625	465	132.5	365	100	425
JK112B/BG	850	465	132.5	365	100	650
JK116B/BG	950	465	132.5	365	100	750
JK118B/BG	1100	465	132.5	365	100	900
JK124B/BG	1250	465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

250A Primary Boards

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

Contactor Incomers

	Dimensions (mm)		
	Height	Width	Depth
JK10634C	350	465	165.5
JK11004C	450	465	234.5
JK21604C	450	465	234.5

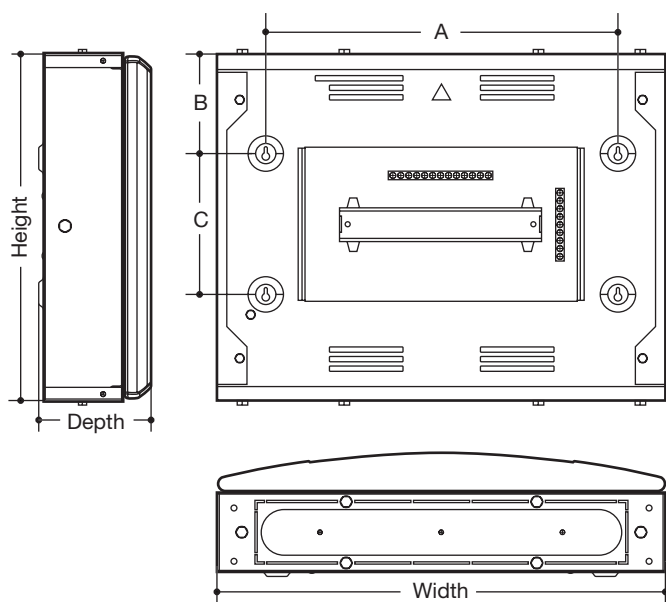


125A Side DIN Boxes

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

250A Side DIN Boxes

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

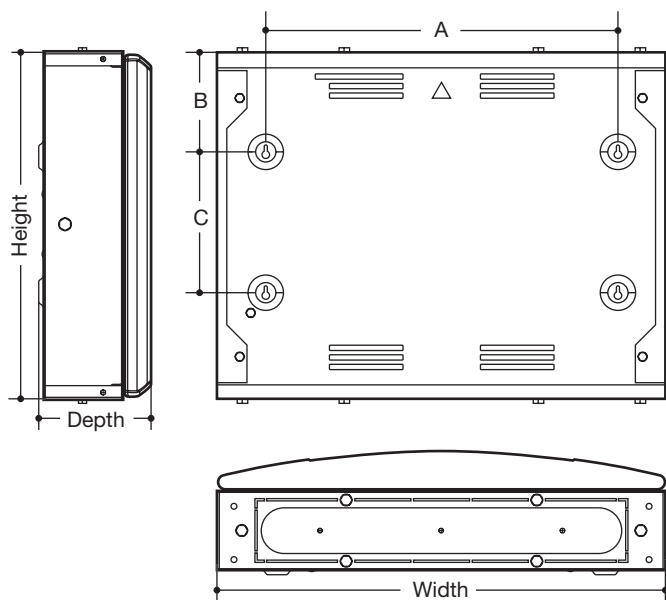


125A DIN Extension Boxes

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

250A DIN Extension Boxes

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

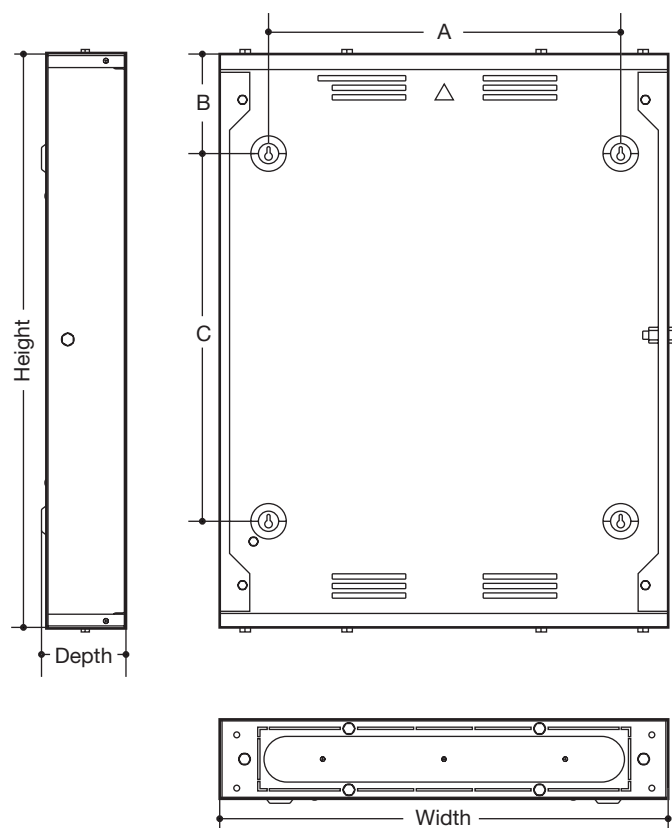


125A Cable Spreader Boxes

	Dimensions (mm)				Fixing Centres (mm)		
	Height	Width	Depth without door	Depth with optional door	A	B	C
JK101SE	300	465	91.5	132.5	365	150	-
JK102LE	450	465	91.5	132.5	365	80	290

250A Cable Spreader Boxes

	Dimensions (mm)				Fixing Centres (mm)		
	Height	Width	Depth without door	Depth with optional door	A	B	C
JK201SE	300	465	124.5	165.5	365	150	-
JK202LE	450	465	124.5	165.5	365	80	290



125A Side Extension Boxes

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

250A Side Extension Boxes

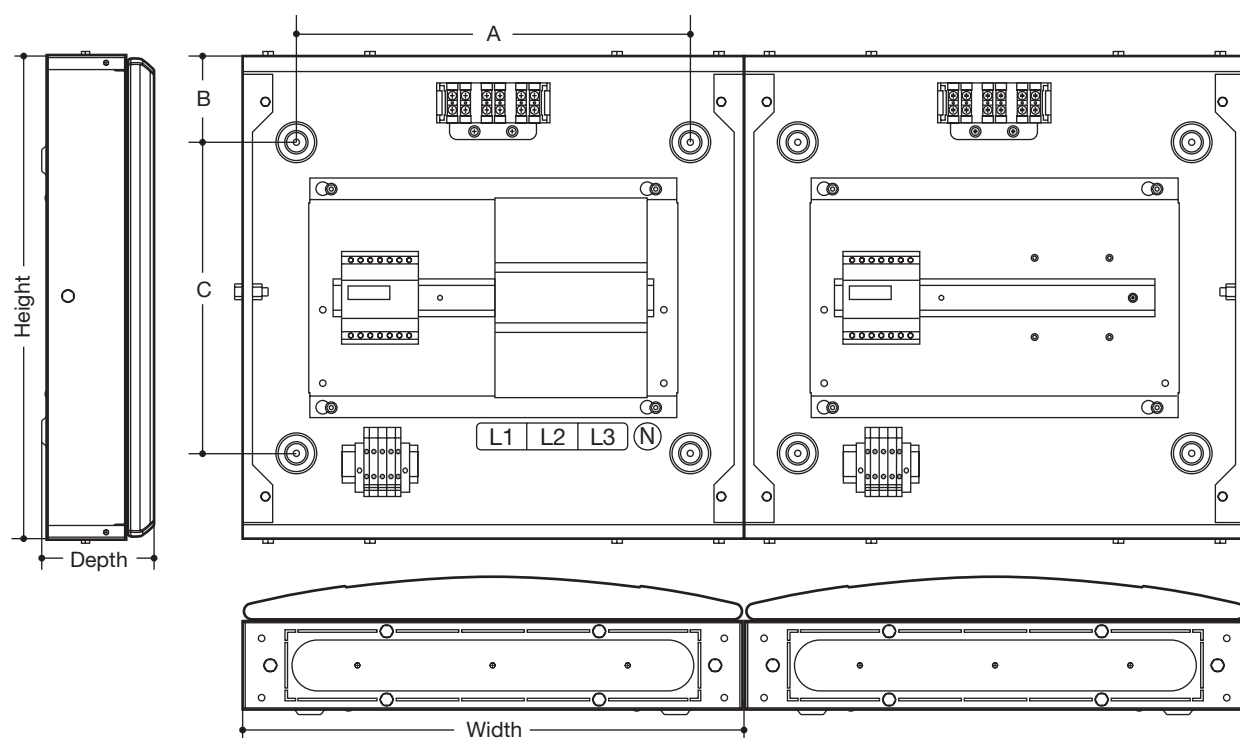
	Dimensions (mm)			Fixing Centres (mm)		
	Height	Width	Depth	A	B	C
JK208BSF	950	465	124.5	365	100	750
JK212BSF	1100	465	124.5	365	100	900
JK216BSF	1250	465	124.5	365	100	1050
JK218BSF	1400	465	124.5	365	100	1200
JK224BSF	1550	465	124.5	365	100	1350

125A Half Width Side Extension Boxes

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

250A Half Width Side Extension Boxes

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



125A Dual Meter Incomer Kits

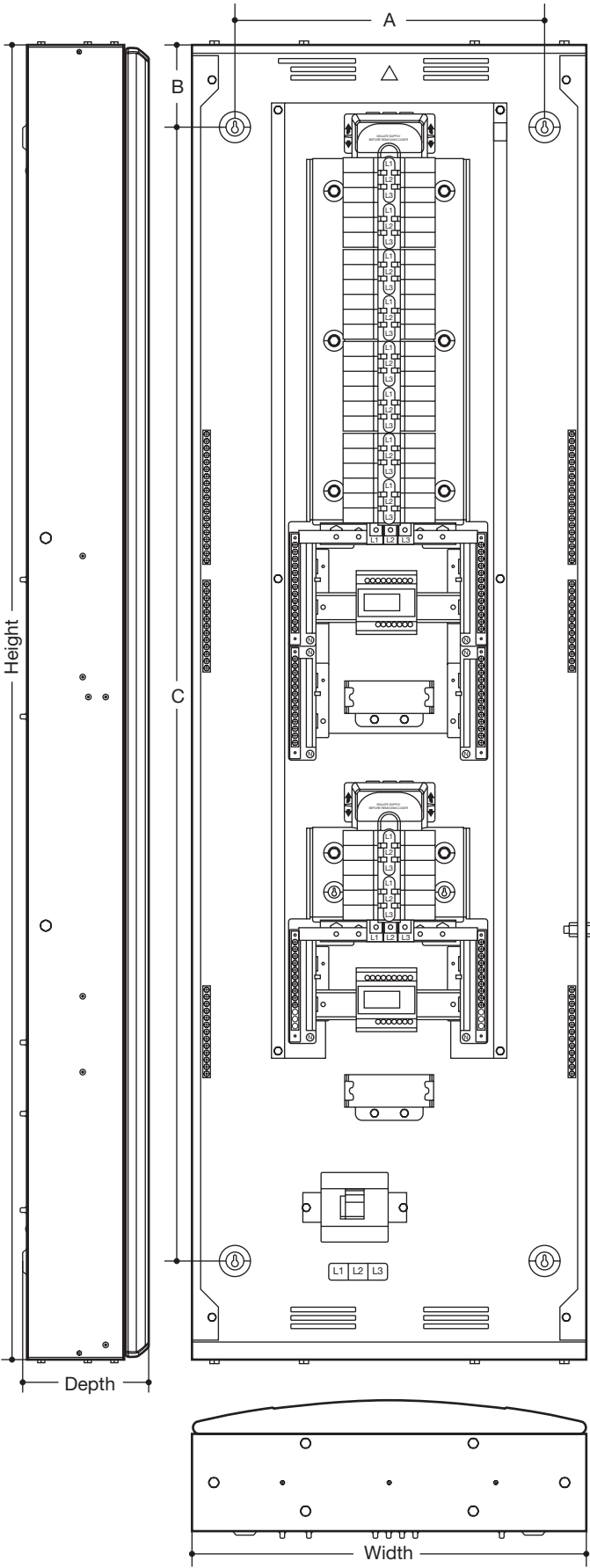
	Dimensions (mm)			Fixing Centres (mm)		
	Height	Width	Depth	A	B	C
JKD125BKWP	450	465	132.5	365	80	290
JKD125BKWM	450	465	132.5	365	80	290
JKD125BMP	450	465	132.5	365	80	290
JKD125BMM	450	465	132.5	365	80	290

250A Dual Meter Incomer Kits

	Dimensions (mm)			Fixing Centres (mm)		
	Height	Width	Depth	A	B	C
JKD250BKWP	625	465	165.5	365	100	425
JKD250BKWM	625	465	165.5	365	100	425
JKD250BMP	625	465	165.5	365	100	425
JKD250BMM	625	465	165.5	365	100	425

125A Rated Metered Boards

	Dimensions (mm)			Fixing Centres (mm)		
	Height	Width	Depth	A	B	C
JKD1416B	1550	465	165.5	365	100	1350
JKD1812B	1550	465	165.5	365	100	1350



Commercial
Distribution

Invicta 3 Panelboards

Helping you to meet Part L2 of the Building Regulations

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

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



250A Incoming 125A Outgoing Panelboards	3.36
250A Rated DIN Extension Boxes, Cable Spreader Boxes & Accessories	3.37
400A Incoming 125A Outgoing Panelboards	3.38
400A Rated DIN Extension Boxes, Cable Spreader Boxes & Accessories	3.39
630A / 800A Incoming 125A / 250 Outgoing Panelboards	3.40
630A / 800A Rated Pan Assemblies	3.41
630A / 800A Rated DIN Extension Boxes, Cable Spreader Boxes	3.42
630A / 800A Rated Accessories	3.43

Invicta 3

Easy fit panelboards

Our Invicta 3 Panelboards are easiest panelboards to fit, 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 keyhole makes levelling easier.

3

Pre-wired meter packs

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



Our Invicta 3 panelboard range is the most aesthetically pleasing available on the market. It is one of the few boards available that has a 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.

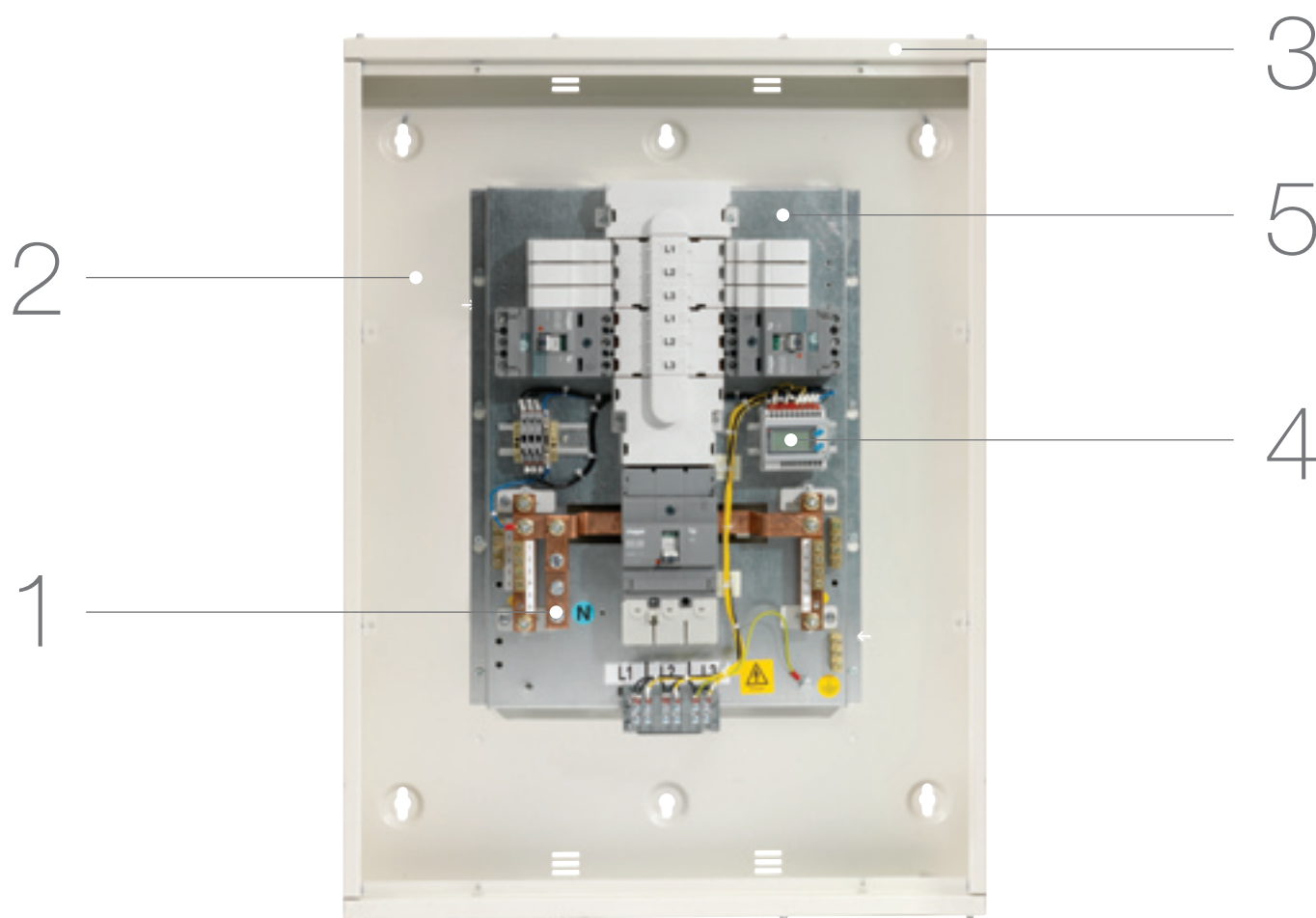
A wide range of accessories make the panelboards easy to adapt for onsite build and tailored solutions. These accessories include key lock, extension boxes, meter packs and DIN rail boxes.



Invicta 3 Panelboards

Meeting the needs for distribution

Take a look below to see all the new features we have designed in and how this is going to make installing a panelboard 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 new 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



Options

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

Construction

Enclosures manufactured from 1.2mm CR4 cold reduced mild steel, phosphate pretreated and powder coated to 00A01 BS4800.

Specification

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

Internal separation Form 3A.

4, 6, 8, 12, 16 Triple Pole outgoing ways.

Cable Capacity Incomers

3 and 4 pole MCCB.
Cable capacity 185mm² max lug width 25mm.
3 and 4 pole non auto MCCB.
Cable capacity 185mm² max lug width 25mm
Direct connection kit.
M8 hexagonal bolt.
(Larger cables can be connected by using extended connections, see page 4.38 MCCB section).

Outgoers

1 & 3 pole MCCB 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.

Outgoing MCCBs

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

Form 3B is achieved using the optional terminal shield (see MCCB accessories on page 4.38).

For accessories see page 3.37.
For dimensions see page 3.44.

new



JN204BG

Invicta 3 Panelboards (250A Incoming 125A Outgoing)

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

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

new

Incomer Kits

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

For RCD incomer option & tailored solutions contact our Technical Support Helpline on 0870 607 6677

new



JN204BPA

250A Rated Pan Assemblies

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

Outgoing Devices

MCCBs - Single Pole

Rating.	18kA Fixed Thermal Mag 10 x I _n	25kA Fixed Thermal Mag 10 x I _n
16A	HDA014Z	HHA014Z
20A	HDA018Z	HHA018Z
25A	HDA023Z	HHA023Z
32A	HDA030Z	HHA030Z
40A	HDA038Z	HHA038Z
50A	HDA048Z	HHA048Z
63A	HDA061Z	HHA061Z
80A	HDA078Z	HHA078Z
100A	HDA098Z	HHA098Z
125A	HDA123Z	HHA123Z

MCCBs - Triple Pole Adjustable Thermal

Rating.	18kA Adjustable Thermal 0.63 - 0.8 - 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

For a full list of protection devices see section 4.

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

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

For dimensions see page 3.44.

JK extension boxes can be used with this range see page 3.21.

new



JN201BE

DIN Extension Boxes

Supplied with DIN Rail

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

new



JN205BE

Cable Spreader Box

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

new



JF403BA

Meter Pack

These kits fit into the main panelboard.

Description	Cat ref.
Comprises of a digital multi function meter pulsed output, 3 x control circuit fuse carriers, wiring harness and CTs. The meter pack fits directly into the main board.	JN201BA

new



JN001BP

Accessories

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

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



Options

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

Construction

Enclosures manufactured from 1.5mm CR4 cold reduced mild steel, phosphate pretreated and powder coated to 00A01 BS4800.

Specification

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

Cable Capacity Incomers

3 and 4 pole MCCB.
Cable capacity 240mm²
max lug width 35mm.
3 and 4 pole non auto MCCB.

Cable capacity 240mm².
Max lug width 35mm on extended connections fitted to incomer.
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)

Outgoing MCCBs

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

For dimensions see page 3.45.

new



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

new

Incomer Kits

400A incomers come complete with spreader connections.

Description	Cat ref.
3 Pole 400A MCCB Incomer Kit (Adjustable Thermal 0.63, 0.8, 1 x I _N) 50kA (Magnetic 5, 7, 9, 11 x I _N)	JF443BM
4 Pole 400A MCCB Incomer Kit (Adjustable Thermal 0.63, 0.8, 1 x I _N) 50kA (Magnetic 5, 7, 9, 11 x I _N)	JF444BM
3 Pole 400A Switch Disconnect (Non-Auto MCCB) Incomer Kit	JF443BS
4 Pole 400A Switch Disconnect (Non-Auto MCCB) Incomer Kit	JF444BS
400A Direct Connection Kit	JF444BD

For RCD incomer option contact our technical support helpline on 0870 607 6677

new

400A Rated Pan Assemblies

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

Outgoing Devices

MCCBs - Single Pole

Rating.	18kA Fixed Thermal Mag 10 x I _N	25kA Fixed Thermal Mag 10 x I _N
16A	HDA014Z	HHA014Z
20A	HDA018Z	HHA018Z
25A	HDA023Z	HHA023Z
32A	HDA030Z	HHA030Z
40A	HDA038Z	HHA038Z
50A	HDA048Z	HHA048Z
63A	HDA061Z	HHA061Z
80A	HDA078Z	HHA078Z
100A	HDA098Z	HHA098Z
125A	HDA123Z	HHA123Z

MCCBs - Triple Pole Adjustable Thermal

Rating.	18kA Adjustable Thermal 0.63 - 0.8 - 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

For a full list of protection devices see section 4.

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

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

For dimensions see page 3.45.

For a h3 MCCBs see page 4.30 onwards.

new



JF801E

DIN Extension Boxes (to fit JF4 & JF8 boards)

Supplied with DIN Rail.

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

new

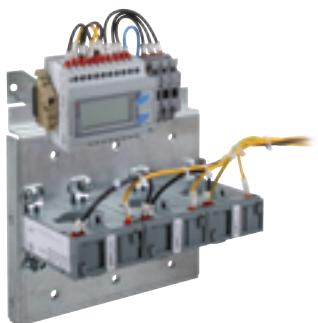


JF805E

Cable Spreader Box (to fit JF4 & JF8 boards)

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

new



JF403BA

JF4 Meter Pack

These kits fit into the main distribution board.
Please consult Hager if meter pack is used with 630A direct connection kit.

Description	Cat ref.
Comprises of a digital multi function meter pulsed output, 3 x control circuit fuse carriers, wiring harness and CTs. The meter pack fits directly into the main board.	JF403BA

new



HXD039H

Accessories

Description	Cat ref.
Locking Kit for Incoming Device (All Ratings)	HXD039H
Touch Up Paint 30ml	JF95A
Allen Key Set	JF296A
End Plate for Invicta 3 400A Range	JFPLATE
Key lock with one key	JK222PK
x125 Frame 1 pole blank (3x blanks required per triple pole)	JN001BP
Outgoer Locking Kit (fits to toggle for up to 3 padlocks max ø 8mm ²)	HXA039H

For other accessories see MCCB pages 4.42-4.43 & 4.45-4.46.

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



Construction

Enclosure manufactured from 1.5mm CR4 cold reduced mild steel, phosphate pretreated and powder coated to 00A01 BS4800.

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

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

Specification

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

Incomers

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

Busbar Ratings

Busbar rated current: 800A
Busbar rated short-time with-stand current 25kA conditional 630A switch disconnecter incomer.
Busbar rated short time withstand current 35kA for 1x direct connection.

Outgoing MCCBs

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

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

For dimensions see page 3.45.

new



JF608B

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

Max 125A Outgoing Devices

¹ Max incomer rating 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

¹ Max allowed incomer of 630A on this panelboard

new



JF60204B

Invicta 3 Panelboards

These boards will accept a range of MCCB frame sizes:

- 125A frame: 16-125A SP/TP
- 250A frame: 80-250A TP only

² Max incomer rating 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

² Max allowed incomer of 630A on this panelboard

new

Incomer Kits

Description	Cat ref.
4 Pole 400A Switch Disconnecter Incomer	JF844BSW ³
4 Pole 630A Switch Disconnecter Incomer	JF864BSW ³
4 Pole 800A Switch Disconnecter *Select the required 800A rated panelboard (e.g. JF80206BG) and add the suffix 800LBS e.g. JF80206BG800LBS	*800LBS
800A Direct Connection Kit	JF884BD ³
3 Pole 400A MCCB Incomer Kit (Adjustable Thermal 0.63, 0.8 - 1 x I _n) 50kA (Magnetic 5, 7, 9, 11 x I _n)	JF843BM
4 Pole 400A MCCB Incomer Kit (Adjustable Thermal 0.63, 0.8 - 1 x I _n) 50kA (Magnetic 5, 7, 9, 11 x I _n)	JF844BM
3 Pole 630A MCCB Incomer Kit (Adjustable Thermal 0.4 - 1 x I _n) 50kA (Magnetic 2.5 - 8 x I _n)	JF863BM
4 Pole 630A MCCB Incomer Kit (Adjustable Thermal 0.4 - 1 x I _n) 50kA (Magnetic 2.5 - 8 x I _n)	JF864BM

³ A 300mm cable spreader box recommended (see page 3.42).

new

630A / 800A Rated Pan Assemblies

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

* These pan assemblies are rated at 630A

Commercial
Distribution

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

For a full list of protection devices
see section 4.

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

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

For dimensions see page 3.45.

For a h3 MCCBs see page 4.30 onwards.

DIN Extension Boxes (to fit JF4 & JF8 boards)

Supplied with DIN Rail

new



JF801E

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

Cable Spreader Box (to fit JF4 & JF8 boards)

new



JF805E

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

JF8 Meter Pack

These kits fit into the main panelboard.

Please consult Hager if meter pack is used with 800A direct connection kit JF884BD.

new



JF803BA

Description	Cat ref.
Comprises of a digital multi function meter pulsed output, 3 x control circuit fuse carriers, wiring harness and CTs. The meter pack fits directly into the main board.	JF803BA

new



HXD039H

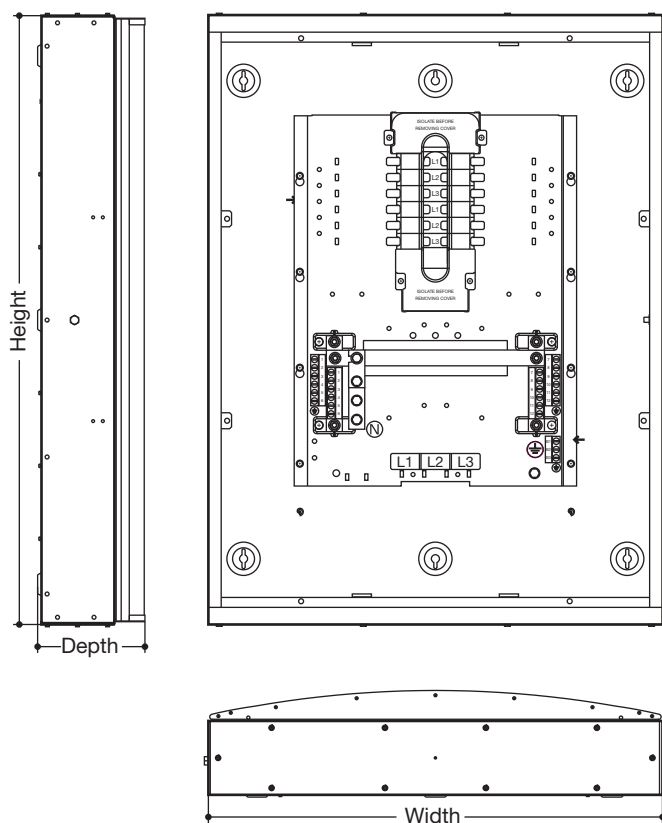


JN001BP

Accessories

Description	Cat ref.
Locking Kit for Incoming Device (All Ratings)	HXD039H
Touch Up Paint 30ml	JF95A
Allen Key Set	JF296A
End Plate for Invicta 3 800A Range	JFPLATE
Key lock with one key	JK222PK
x125 Frame 1 pole blank (3x blanks required per triple pole)	JN001BP
x250 Frame 3 pole blank (1x blank required per triple pole)	JF003BP
Outgoer Locking Kit (fits to toggle for up to 3 padlocks max ø 8mm ²)	HXA039H

For other accessories see MCCB pages 4.42-4.43 & 4.45-4.46.



Primary Boards

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

Terminals

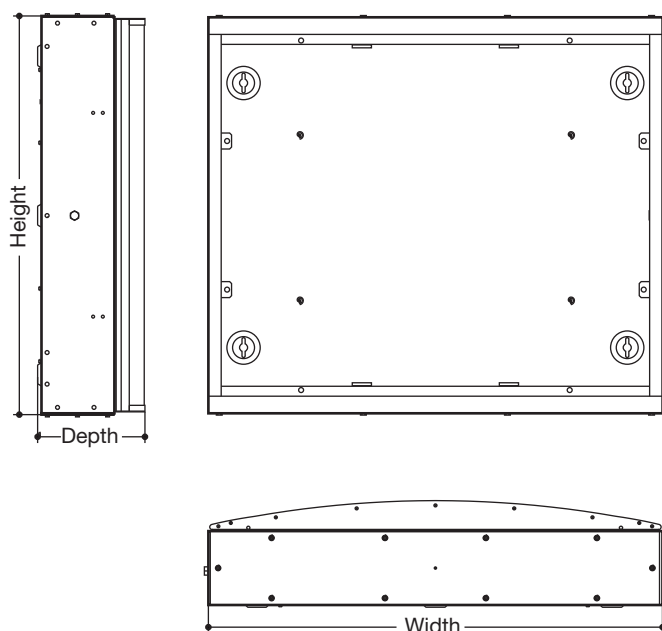
Neutral	Earth	Bond
2 x 6 x 50mm	2 x 6 x 50mm	1 x 3 x 50mm
2 x 9 x 50mm	2 x 9 x 50mm	1 x 3 x 50mm
2 x 12 x 50mm	2 x 12 x 50mm	1 x 3 x 50mm
2 x 18 x 50mm	2 x 18 x 50mm	1 x 3 x 50mm
2 x 24 x 50mm	2 x 24 x 50mm	1 x 3 x 50mm

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

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

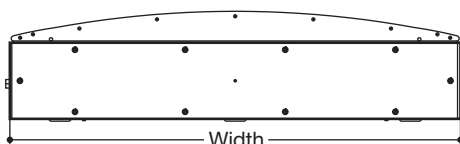
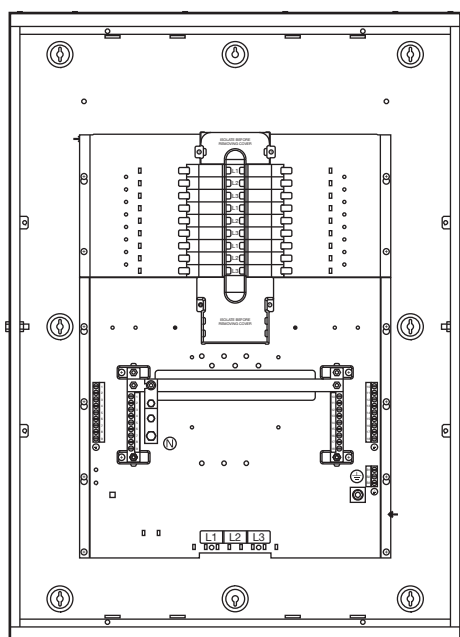
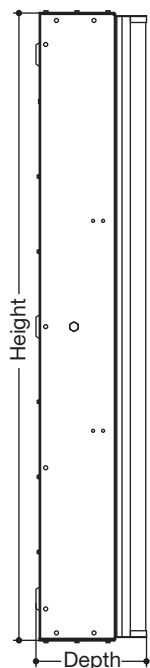
Extension Boxes

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



Invicta 3 Panelboard System (400A, 630A & 800A Rated) Dimensions

:hager



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	1400	900	220
JF80210B/G	1700	900	220
JF80408B/G	1700	900	220
JF80414B/G	1700	900	220
JF80612B/G	1700	900	220

Terminals

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

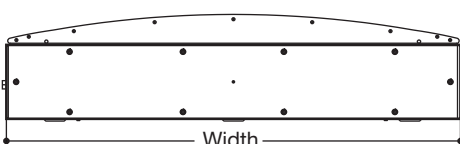
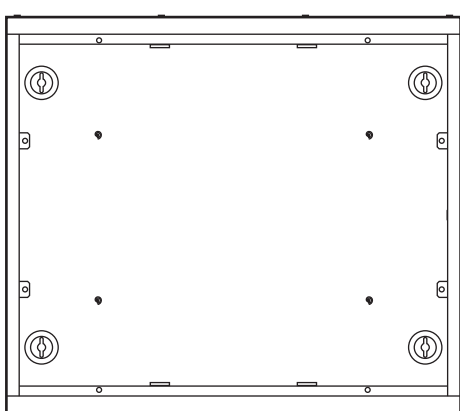
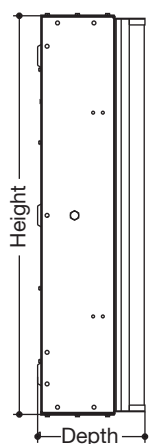
Cables outgoing ways:
25 - 50mm² CSA Flex
25 - 70mm² CSA Solid

MCCB Connections 400A M10
 630A M12

Earth 400A M10
 630A M12

Extension Boxes

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



Description

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

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

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

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

Utilisation category

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

Product features

Complies with:
BS EN 60947-3
IP31.

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

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

Cable Capacity

20A	= 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 3.51.

For technical information see page 3.52.



JFD206

Fuse Combination Switches Single Pole and Switched Neutral

Description	Cat ref.	Cat ref. Cable extension boxes if required
20A Fuse Combination Switch SP&SN	JFB202U	-
32A Fuse Combination Switch SP&SN	JFB203U	-
63A Fuse Combination Switch SP&SN	JFD206U	-
100A Fuse Combination Switch SP&SN	JFE210U	JZA701

Fuse Combination Switches Triple Pole and Neutral

Description	Cat ref.	Cat ref. Cable extension boxes if required
20A Fuse Combination Switch TP&N	JFB302U	-
32A Fuse Combination Switch TP&N	JFB303U	-
63A Fuse Combination Switch TP&N	JFD306U	-
100A Fuse Combination Switch TP&N	JFE310U	JZA701
125A Fuse Combination Switch TP&N	JFG312U	JZA701
160A Fuse Combination Switch TP&N	JFG316U	JZA701
200A Fuse Combination Switch TP&N	JFG320U	JZA701
250A Fuse Combination Switch TP&N	JFG325U	JZA701
315A Fuse Combination Switch TP&N	JFH331U	JZA702
400A Fuse Combination Switch TP&N	JFH340U	JZA702
630A Fuse Combination Switch TP&N	JFI363U	JZA703
800A Fuse Combination Switch TP&N	JFI380U	JZA703



JFG416U

Fuse Combination Switches Triple Pole and Switched Neutral

Description	Cat ref.	Cat ref. Cable extension boxes if required
20A Fuse Combination Switch TP&SN	JFB402U	-
32A Fuse Combination Switch TP&SN	JFB403U	-
63A Fuse Combination Switch TP&SN	JFD406U	-
100A Fuse Combination Switch TP&SN	JFE410U	JZA701
125A Fuse Combination Switch TP&SN	JFG412U	JZA701
160A Fuse Combination Switch TP&SN	JFG416U	JZA701
200A Fuse Combination Switch TP&SN	JFG420U	JZA701
250A Fuse Combination Switch TP&SN	JFG425U	JZA701
315A Fuse Combination Switch TP&SN	JFH431U	JZA702
400A Fuse Combination Switch TP&SN	JFH440U	JZA702
630A Fuse Combination Switch TP&SN	JFI463U	JZA703
800A Fuse Combination Switch TP&SN	JFI480U	JZA703

Commercial
Distribution

Copper Links

For conversion to isolating switches

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

Description

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

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

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

Utilisation category

AC-21
AC-22

Product features

Complies with:
BS EN 60947-3
IP31.

Cable Capacity

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

For technical information see page 3.53.

Switch Disconnectors Triple Pole and Neutral



JAB402

Description	Cat ref.	Cat ref. Cable extension boxes if required
20A Switch Disconnector TP&N	JAB302	-
32A Switch Disconnector TP&N	JAB303	-
63A Switch Disconnector TP&N	JAB306	-
100A Switch Disconnector TP&N	JAB310	-
125A Switch Disconnector TP&N	JAC312	JZA700
160A Switch Disconnector TP&N	JAC316	JZA700
200A Switch Disconnector TP&N	JAE320	JZA701
250A Switch Disconnector TP&N	JAE325	JZA701
315A Switch Disconnector TP&N	JAG331	JZA701
400A Switch Disconnector TP&N	JAG340	JZA701
630A Switch Disconnector TP&N	JAH363	JZA702
800A Switch Disconnector TP&N	JAH380	JZA702

Switch Disconnectors Triple Pole and Switched Neutral



JAG440

Description	Cat ref.	Cat ref. Cable extension boxes if required
20A Switch Disconnector TP&SN	JAB402	-
32A Switch Disconnector TP&SN	JAB403	-
63A Switch Disconnector TP&SN	JAB406	-
100A Switch Disconnector TP&SN	JAB410	-
125A Switch Disconnector TP&SN	JAC412	JZA700
160A Switch Disconnector TP&SN	JAC416	JZA700
200A Switch Disconnector TP&SN	JAE420	JZA701
250A Switch Disconnector TP&SN	JAE425	JZA701
315A Switch Disconnector TP&SN	JAG431	JZA701
400A Switch Disconnector TP&SN	JAG440	JZA701
630A Switch Disconnector TP&SN	JAH463	JZA702
800A Switch Disconnector TP&SN	JAH480	JZA702

Description

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

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

Product features

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

Range:

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

Utilisation category

AC-21
AC-22

Cable Capacity

20 - 40A = 16mm²
63 - 100A = 35mm²

For technical information see page 3.54.



JAB402

IP65 Switch Disconnectors Triple Pole and Neutral

Description	In AC 21	In AC 22	Cat ref.
IP65 Switch Disconnector	20A	10A	JG00S
IP65 Switch Disconnector	25A	16A	JG01S
IP65 Switch Disconnector	40A	25A	JG02S
IP65 Switch Disconnector	63A	40A	JG03S
IP65 Switch Disconnector	80A	63A	JG04S
IP65 Switch Disconnector	100A	80A	JG05S

Auxiliary Changeover Contacts

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



IU44-11

Switch Fuses

For dimensions see page 3.54

Description	Cat. ref.
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
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
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

Accessories

Description	Cat. Ref.
Keylock with 2 keys suitable for all enclosures fitted with door - IU enclosure	IKL1
Keylock with 2 keys suitable for all enclosures fitted with door - JK enclosure	JK222A

For enclosed MCCBs please contact our technical support helpline 0870 607 6677

Fuse Combination Switches

All dimensions are in mm and exclude the handle.
Add 70mm to the depth to allow for the handle (110mm for 630 / 800A)

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

Cable Extension Boxes for Fuse Combination Switches

	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.
Add 70mm to the depth to allow for the handle

	Description	Dimensions (mm)		
		Width	Height	Depth
JAB302	20A TPN	200	250	150
JAB303	32A TPN	200	250	150
JAB306	63A TPN	200	250	150
JAB310	100A TPN	200	250	150
JAC312	125A TPN	250	300	150
JAC316	160A TPN	250	300	150
JAE320	200A TPN	375	400	200
JAE325	250A TPN	375	400	200
JAG331	315A TPN	375	500	200
JAG340	400A TPN	375	500	200
JAH363	630A TPN	500	650	300
JAH380	800A TPN	500	650	300
JAB402	20A TPSN	200	250	150
JAB403	32A TPSN	200	250	150
JAB406	63A TPSN	200	250	150
JAB410	100A TPSN	200	250	150
JAC412	125A TPSN	250	300	150
JAC416	160A TPSN	250	300	150
JAE420	200A TPSN	375	400	200
JAE425	250A TPSN	375	400	200
JAG431	315A TPSN	375	500	200
JAG440	400A TPSN	375	500	200
JAH463	630A TPSN	500	650	300
JAH480	800A TPSN	500	650	300

Cable Extension Boxes for Switch Disconnectors

	Rating	Dimensions (mm)		
		Width	Height	Depth
JZA700	125 / 160A	250	200	200
JZA701	315 / 400A	375	200	300
JZA702	630 / 800A	500	250	300

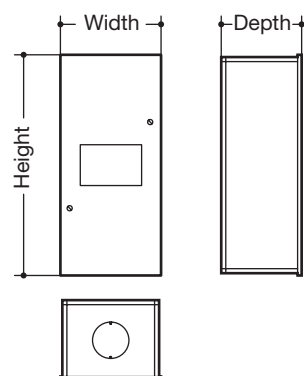
Thermal current I _{th} (40°C)	20A	32A	63A	100A	125A	160A	200A
Fuse size: BS	A1	A1	A2-A3	A4	B1-B2	B1-B2 B1-B2	B1-B3
Rated insulated voltage							
U _i (V)	800	800	800	800	800	800	800
Impulse voltages U _{imp}	8000 8000	8000 8000	8000 8000	8000 8000	8000 8000	12000 12000	-
Operational current I _e (A)	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) BS88	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
Withstand electrical (number of operations)	-	-	-	-	-	-	**
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	C1-C2	C1-C3	
Rated insulated voltage					
U _i (V)	800	800	800	1000 1000	
Impulse voltages U _{imp}					
Operational current I _e (A)	A B	A B	A B	A B	A 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) BS88	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
Withstand electrical (number of operations)	-	-	-	-	**
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

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

Enclosed thermal current I_{the}	315	400	630	800
Rated insulation voltage U_i (V)	800	800	1000	1000
Rated thermal current I_{the} (A)	315	400	630	800
Rated operational current				
AC21A 500VAC	250	250	630	800
AC22A	250	250	500	800
AC21A 690VAC	200	200	500	800
AC22A	125	125	315	800
Overload capacity				
lcw rated short time withstand value (kA/s)	9	9	13	26
R.M.S value (kA)	2	2	5.04	6.4
Peak withstand value (kA)	23	23	45	55
Rated short circuit making capacity (kA)	15.3	15.3	26	54.6
Rated impulse withstand voltage U_{imp} (kV)	8	8	12	12
Mechanical endurance (number of operations)	10,000	5,000	5,000	5,000
Maximum cable size	185	240	2 x 300	2 x 300
Tightening torque (Nm)	20	20	20	-

Table 9

**Switch Fuses**

	Dimensions (mm)			Connection	Knockouts
	Width	Height	Depth		
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

IP65 Enclosed Isolating Switch

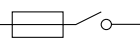
All dimensions are in mm and exclude the handle.
Add 27mm to the depth to allow for the handle on 10-25A products.
Add 32mm to the depth to allow for the handle on 40-80A products.

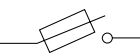
	Description	Dimensions (mm)		
		Width	Height	Depth
JG00S	10A TPN	100	136	74
JG01S	16A TPN	100	136	105
JG02S	25A TPN	100	136	105
JG03S	40A TPN	136	201	105
JG04S	63A TPN	136	201	118
JG05S	80A TPN	136	201	118

Enclosed thermal current I_{the}	16	25	40	63	80 / 100
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 230V	16	25	40	63	100
AC22 400V $\cos \phi$ 0.65	16	20	32	63	100
AC23 230V	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) 5.4	6.6	7.2	8.3	8.7	
Rated short time withstand current (I_{cm}) (kA) 0.9	1	1.1	1.6	1.7	
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

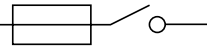
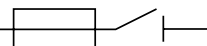
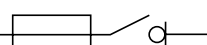
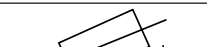
Fuse - Combination Units - BS EN 60947-3

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. These may be used at AC-23 providing they are derated in accordance with Table 9 page 3.53.

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.