

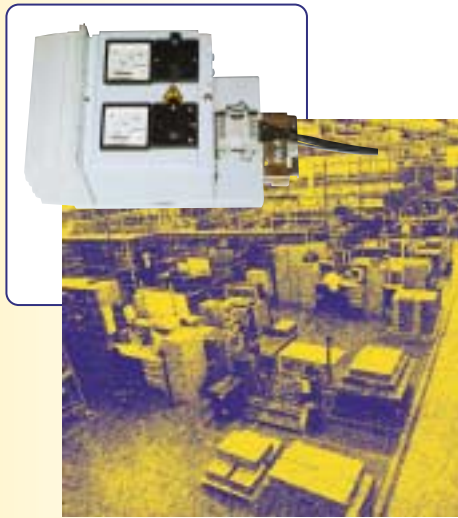
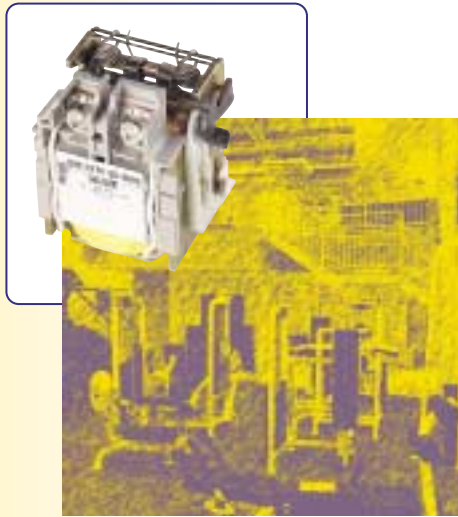


I-Line MCCB panelboards

October 2003



SQUARE D



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Square D – Serving your needs

To help electrical contractors and installers

Square D provide:

- An extensive range of easy to install products.
- Readily available products from our authorised distributors.
- Distributor staff training to help develop familiarity and the ability to promptly resolve queries.
- A team of Sales Engineers to support both distributors and electrical contractors.
- A ready assembled product service for applications requiring either;
 - Non-standard products.
 - Completely assembled products to help reduce site installation time.



Square D – The right connection

The benefits of I-Line MCCB panelboards

- High levels of safety to protect against contact with live parts. Incoming devices are fully shrouded to protect against accidental contact. With the use of blanking plates for unused outgoing ways the busbar is finger safe.
- Simplicity. Boards are supplied complete and ready to install. Simply affix to the wall and fit the required MCCBs and switch-disconnector-fuse units. The board is then ready for cabling.
- Fast installations. Plug-On devices help reduce installation time.
- Flexibility. It is very easy to add or retrospectively change outgoing devices.
- Durability. Boards are constructed from anti-corrosion treated sheet steel.
- Quality. All I-Line busbar systems are ASTA certified and the unique I-Line mounting system ensures devices cannot be incorrectly fitted.
- Proven experience. During the last 30 years Square D panelboards have been used extensively across industry and commerce.



I-Line MCCB panelboards – the range



Size 1 – 250A and 400A

- Plug-On main circuit breakers up to 250A and 400A respectively.
- Plug-On main lugs rating 225A.
- Switch-disconnector-fuse incomer (optional).
- Outgoing branch circuit breaker from 16 to 250A (range CD/N/H & SF) single, double and triple pole.
- Switch-disconnector-fuse outgoing units 32-160A triple pole.



Size 2 – 630A

- Plug-On main circuit breaker up to 630A.
- Main lugs rating 630A.
- Outgoing branch circuit breaker from 16 to 250A (range CD/N/H & SF) single, double and triple pole.



Size 3 – 800A

- Plug-On main circuit breaker up to 800A.
- Main lugs rating 800A.
- Outgoing branch circuit breaker from 16 to 630A (range CD/N/H, SF, SL & SM) single, double and triple pole.
- Switch-disconnector-fuse outgoing units 32-160A triple pole.



Size 4 – 1200A & 2000A

- Factory fitted main circuit breaker, 1200 or 2000A.
- Outgoing branch circuit breaker from 16 to 1250A (range CD/N/H, SF, SL, SM & SN) single, double and triple pole.
- Instrumentation fitted as standard.

Easy to install Plug-On MCCB's

Plug-On MCCB's

Plug-On breaker connections are designed so that under short circuit conditions, the magnetic forces developed push the jaws together, gripping the busbar more firmly. There are no wiring connections to be made to the busbars as the connectors form an integral part of the circuit breakers.

All MCCB's plug onto the busbar stack. Modular I-Line construction lets you mount branch breakers anywhere to save valuable space.

Busbar assembly

Moulded polyester glass insulators separate and continuously support each busbar. High strength insulated bolts clamp the vertical busbar assembly securely together.

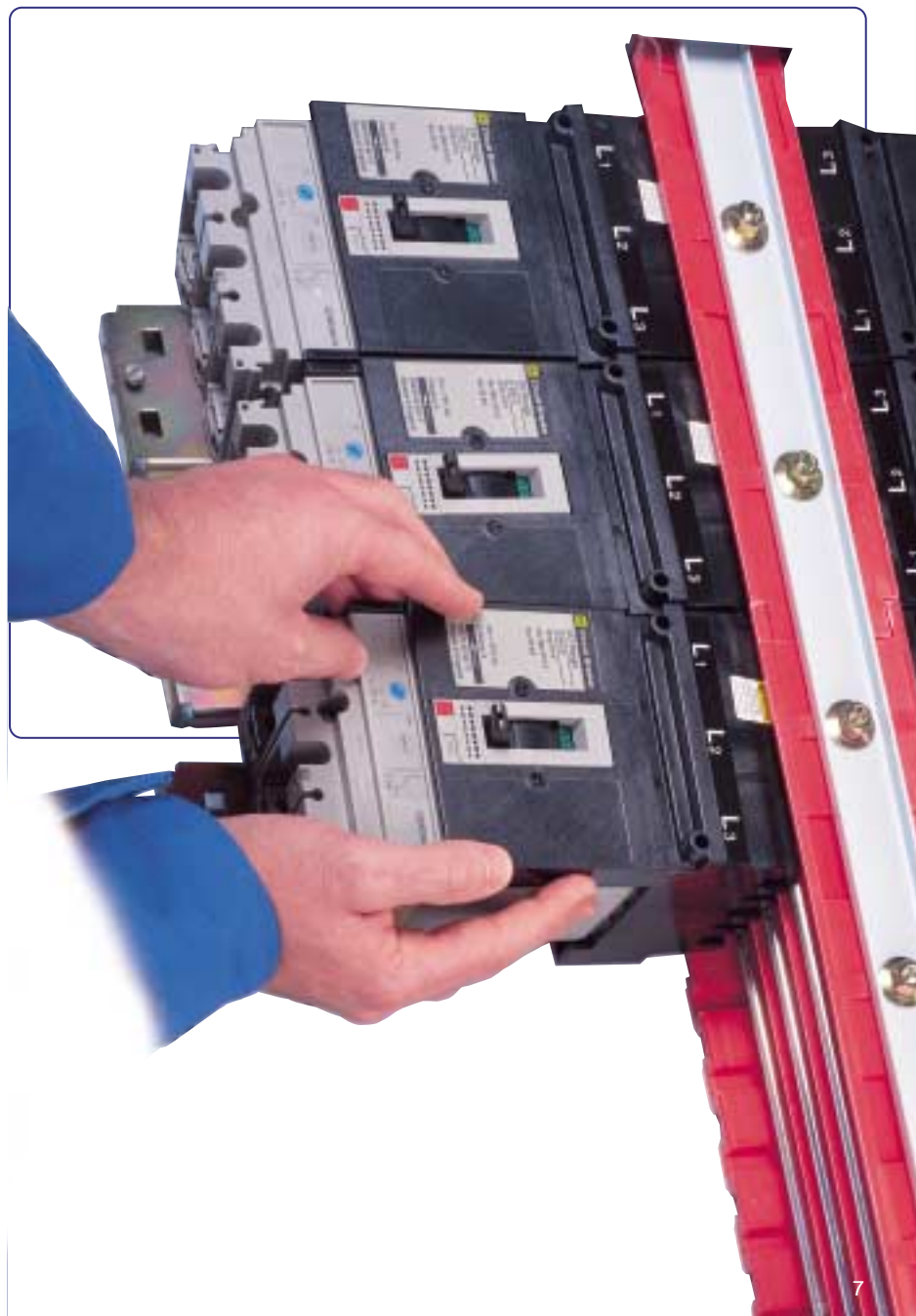
Breakers on the left-hand side of bus structure are completely independent of position or frame size of those on right-hand side.

Single, double and three pole devices can be fitted in any combination without loss of outgoing ways.

Circuit breaker Plug-On connectors shrouded and braced in moulded protective insulator.

Circuit breaker mounting bracket, a permanent part of each circuit breaker, securely supports and aligns load end of circuit breaker.

Insulating shroud keys into slots in base insulator. Aligns and supports line end of circuit breaker.





Size 1 250A panelboard

Size 1 250/400A panelboards

- Single sided to give best possible space utilisation
- Incomers can be mounted at top or bottom of the panelboard
- Ample cabling space
- Plated copper 50kA for 1s busbars
- Dead front IP4X construction
- Hinged lift off cable way cover
- MCCB separation to form 3b Type 2 BSEN 60439-1
- Fully rated earth and neutral bars
- Simple ordering
- Removable top and bottom gland plates

Step 1 Select panelboard required



Size 1 400A panelboard

	250A	400A	Modules
4 triple pole outgoing ways	-	MP40041	12
6 triple pole outgoing ways	MP25061	-	18
7 triple pole outgoing ways	-	MP40071	21
12 triple pole outgoing ways	MP250121	MP400121	36

Step 2 Select incoming device

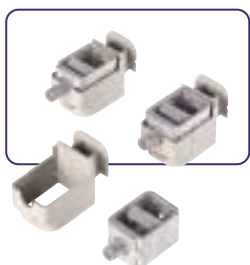
250A	
250A 36kA triple pole MCCB	CNAE34250
250A 50kA triple pole MCCB	CHAE34250
100A automatic switch disconnecter (isolator)	CNAE34000S10
160A automatic switch disconnecter (isolator)	CNAE34000S15
250A automatic switch disconnecter (isolator)	CNAE34000S25
225A plug on lug unit	SL225
400A	
400A 36kA triple pole MCCB	SLA3400
400A automatic switch disconnecter (isolator)	SLA3000M
400A automatic switch-disconnector-fuse	MFS400

Step 3 Select outgoing devices



I-Line Plug-On MCCB

16/100A	Single pole (1 module)			Double pole (2 modules)		
	L1	L2	L3	L1/L2	L2/L3	L3/L1
16A 25kA MCCB	SFA1016A	SFA1016B	SFA1016C	SFA2016AB	SFA2016BC	SFA2016AC
20A 25kA MCCB	SFA1020A	SFA1020B	SFA1020C	SFA2020AB	SFA2020BC	SFA2020AC
32A 25kA MCCB	SFA1032A	SFA1032B	SFA1032C	SFA2032AB	SFA2032BC	SFA2032AC
40A 25kA MCCB	SFA1040A	SFA1040B	SFA1040C	SFA2040AB	SFA2040BC	SFA2040AC
50A 25kA MCCB	SFA1050A	SFA1050B	SFA1050C	SFA2050AB	SFA2050BC	SFA2050AC
63A 25kA MCCB	SFA1063A	SFA1063B	SFA1063C	SFA2063AB	SFA2063BC	SFA2063AC
80A 25kA MCCB	SFA1080A	SFA1080B	SFA1080C	SFA2080AB	SFA2080BC	SFA2080AC
100A 25kA MCCB	SFA1100A	SFA1100B	SFA1100C	SFA2100AB	SFA2100BC	SFA2100AC



Additional tunnel terminals

16/250A (3 modules)	25kA	36kA	50kA	Additional tunnel terminals	
16A triple pole MCCB	CDAE34016	CNAE34016	CHAE34016	W29242	1.5-95mm ²
25A triple pole MCCB	CDAE34025	CNAE34025	CHAE34025	W29242	1.5-95mm ²
32A triple pole MCCB	CDAE34032	CNAE34032	CHAE34032	W29242	1.5-95mm ²
40A triple pole MCCB	CDAE34040	CNAE34040	CHAE34040	W29242	1.5-95mm ²
50A triple pole MCCB	CDAE34050	CNAE34050	CHAE34050	W29242	1.5-95mm ²
63A triple pole MCCB	CDAE34063	CNAE34063	CHAE34063	W29242	1.5-95mm ²
80A triple pole MCCB	CDAE34080	CNAE34080	CHAE34080	W29242	1.5-95mm ²
100A triple pole MCCB	CDAE34100	CNAE34100	CHAE34100	W29242	1.5-95mm ²
125A triple pole MCCB	-	CNAE34125	CHAE34125	W29242	1.5-95mm ²
160A triple pole MCCB	-	CNAE34160	CHAE34160	W29242	1.5-95mm ²
200A triple pole MCCB	-	CNAE34200	CHAE34200	W29259	95-185mm ²
250A triple pole MCCB	-	CNAE34250	CHAE34250	W29259	95-185mm ²
160A triple pole electronic MCCB		CNAE34160E20		W29242	1.5-95mm ²
250A triple pole electronic MCCB		CNAE34250E20		W29259	95-185mm ²

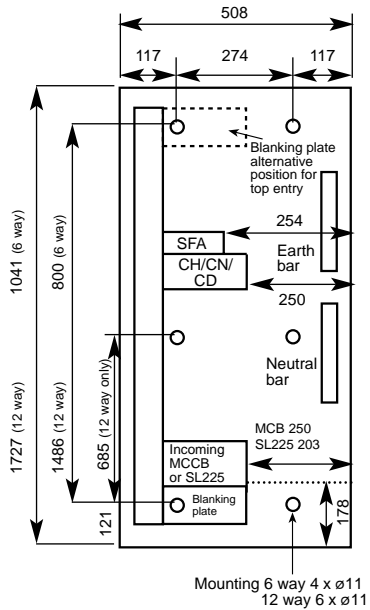
Step 3 Select outgoing devices (cont.)



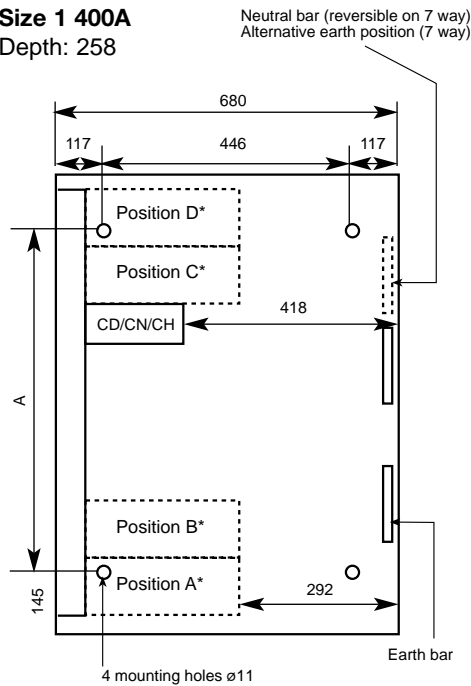
32/160A Switch-disconnector-fuse devices 50kA					Fuse link fitted	BS88 fuse links accepted
32A	Triple pole	PF32	3 modules	AA032	A1, A2	
63A	Triple pole	PF63	4 modules	BA063	A2, A3	
100A	Triple pole	PF100	5 modules	CEO100	A2, A3, A4 (max dia 32mm)	
160A	Triple pole	PF160	5 modules	DEO160	A2, A3, A4	

Dimensions (mm)

Size 1 250A
Depth: 184

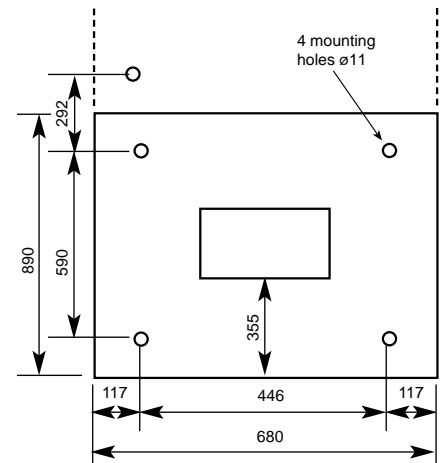


Size 1 400A
Depth: 258



* Alternative positions for main incoming MCCB's.

MFS400



Step 4 Select accessories

Panelboard	MP25061	MP250121	MP40041	MP40071	MP400121
Blanking plates for all unused ways					
Single pole	HNM1BL	HNM1BL	HNM1BL	HNM1BL	HNM1BL
Triple pole	HNM4BL	HNM4BL	HNM4BL	HNM4BL	HNM4BL
Blanking plates for every mccb way when one or more PF devices fitted					
Single pole			HNF1BL	HNF1BL	HNF1BL
Triple pole			HNF4BL	HNF4BL	HNF4BL
Trim, required when 250A incomer fitted					
			TKA4	TKA7	TKA12
Side extension box					
508mm wide	EXMS20411	EXMS20681			
550mm wide			EXMS827	EXMS1170	EXMS1742
Top / bottom extension box					
	EXS91	EXS91	EXS151	EXS151	EXS151
Corner unit, to complete enclosure when top/bottom and side extension are both fitted					
			MSIL636	MSIL636	MSIL636
MCCB Incomer padlocking device					
250A	W29370	W29370	W29370	W29370	W29370
400A			HPALM	HPALM	HPALM
Door lock					
2 Spare keys	KQK	KQK	KQK	KQK	KQK
	KQK33	KQK33	KQK33	KQK33	KQK33
Plug-on metering kit for incoming supply - occupies 4 modules					
Analogue, voltmeter & ammeter	MP250INS	MP250INS	MP400INS	MP400INS	MP400INS
Digital, multi function meter	MP250kW	MP250kW	MP400kW	MP400kW	MP400kW
Weight in kg					
	46	76	44	74	100
Overall dimensions H x W x D					
	1041x508x184	1727x508x184	827x680x258	1170x680x258	1742x680x258
Fixing centres: vertical dimension (A)					
	800	1486	533	876	1448

For MCCB accessories and descriptions of the above see page 19

Connections

1, 2 pole	16-32A	2.5-25mm ²
	40-100A	2.5-50mm ²
3 pole	16-100A	M6 bolt
	125-250A	M8 bolt
	400A	50-300mm ²
SW-disconnector	400A	M12 bolt

Earth and neutral bars

Earth bonding connection M6 bolt	
Earth bar connection holes	14x6.5ø, 2x8.5ø, 3x10.5ø, 3x3.9ø
Main neutral connection	M8 bolt
Neutral bar connection holes	10x6.5ø, 2x8.5ø, 3x3.9ø

Size 2 630A panelboards



Size 2 6 way panel

- Dead front IP4X construction
- Door lock fitted as standard
- Ample cabling space
- Plated copper busbars 50kA for 1s
- Removable neutral link
- Hinged lift off cable way covers
- MCCB separation to form 3b Type 2 BSEN 60439-1
- Fully rated earth and neutral bars
- Removable top and bottom gland plates
- Simple ordering

Step 1 Select panelboard required

	MCCB incomer order separately	Main lug incomer supplied fitted	Modules LH+RH
6 triple pole outgoing ways	MP63062	ML63062	9+9
10 triple pole outgoing ways	MP630102	ML630102	15+15
14 triple pole outgoing ways	MP630142	ML630142	21+21
18 triple pole outgoing ways	MP630182	ML630182	27+27

Step 2 Select incoming device (MP only)

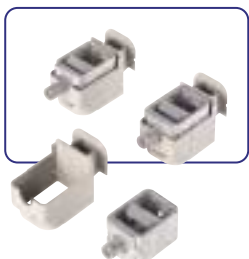
400A	
400A 36kA triple pole MCCB	SLA3400
400A automatic switch disconnecter (isolator)	SLA3000M
630A	
630A 50kA triple pole MCCB	SMA3630
630A automatic switch disconnecter (isolator)	SMA30006M

Step 3 Select outgoing devices



I-Line Plug-On MCCB

16/100A	Single pole (1 module)			Double pole (2 modules)		
	L ₁	L ₂	L ₃	L ₁ /L ₂	L ₂ /L ₃	L ₃ /L ₁
16A 25kA MCCB	SFA1016A	SFA1016B	SFA1016C	SFA2016AB	SFA2016BC	SFA2016AC
20A 25kA MCCB	SFA1020A	SFA1020B	SFA1020C	SFA2020AB	SFA2020BC	SFA2020AC
32A 25kA MCCB	SFA1032A	SFA1032B	SFA1032C	SFA2032AB	SFA2032BC	SFA2032AC
40A 25kA MCCB	SFA1040A	SFA1040B	SFA1040C	SFA2040AB	SFA2040BC	SFA2040AC
50A 25kA MCCB	SFA1050A	SFA1050B	SFA1050C	SFA2050AB	SFA2050BC	SFA2050AC
63A 25kA MCCB	SFA1063A	SFA1063B	SFA1063C	SFA2063AB	SFA2063BC	SFA2063AC
80A 25kA MCCB	SFA1080A	SFA1080B	SFA1080C	SFA2080AB	SFA2080BC	SFA2080AC
100A 25kA MCCB	SFA1100A	SFA1100B	SFA1100C	SFA2100AB	SFA2100BC	SFA2100AC



Additional tunnel terminals

16/250A (3 modules)	25kA	36kA	50kA	Additional tunnel terminals	
16A triple pole MCCB	CDAE34016	CNAE34016	CHAE34016	W29242	1.5-95mm ²
25A triple pole MCCB	CDAE34025	CNAE34025	CHAE34025	W29242	1.5-95mm ²
32A triple pole MCCB	CDAE34032	CNAE34032	CHAE34032	W29242	1.5-95mm ²
40A triple pole MCCB	CDAE34040	CNAE34040	CHAE34040	W29242	1.5-95mm ²
50A triple pole MCCB	CDAE34050	CNAE34050	CHAE34050	W29242	1.5-95mm ²
63A triple pole MCCB	CDAE34063	CNAE34063	CHAE34063	W29242	1.5-95mm ²
80A triple pole MCCB	CDAE34080	CNAE34080	CHAE34080	W29242	1.5-95mm ²
100A triple pole MCCB	CDAE34100	CNAE34100	CHAE34100	W29242	1.5-95mm ²
125A triple pole MCCB	-	CNAE34125	CHAE34125	W29242	1.5-95mm ²
160A triple pole MCCB	-	CNAE34160	CHAE34160	W29242	1.5-95mm ²
200A triple pole MCCB	-	CNAE34200	CHAE34200	W29259	95-185mm ²
250A triple pole MCCB	-	CNAE34250	CHAE34250	W29259	95-185mm ²
160A triple pole electronic MCCB		CNAE34160E20		W29242	1.5-95mm ²
250A triple pole electronic MCCB		CNAE34250E20		W29259	95-185mm ²

Step 4 Select accessories

Panelboard	M*63062	M*630102	M*630142	M*630182
Blanking plates for all unused ways				
Single pole	HNM1BL	HNM1BL	HNM1BL	HNM1BL
Triple pole	HNM4BL	HNM4BL	HNM4BL	HNM4BL
Side extension box				
550mm wide	EXMS53	EXMS62	EXMS71	EXMS80
Top / bottom extension box				
	EXS29	EXS29	EXS29	EXS29
Corner unit, to complete enclosure when top/bottom and side extension are both fitted				
	MSIL636	MSIL636	MSIL636	MSIL636
Door lock				
2 Spare keys	KQK33	KQK33	KQK33	KQK33
Integral metering kit for incoming supply				
Analogue, voltmeter & ammeter				
400A	400INSKN	400INSKN	400INSKN	400INSKN
630A	600INSKN	600INSKN	600INSKN	600INSKN
Digital, multi function meter				
400A	400kW	400kW	400kW	400kW
630A	630kW	630kW	630kW	630kW
Weight in kg				
	112	128	145	164
Overall dimensions H x W x D				
	1350x1100x258	1579x1100x258	1807x1100x258	2036x1100x258

For MCCB accessories and descriptions of the above see page 19

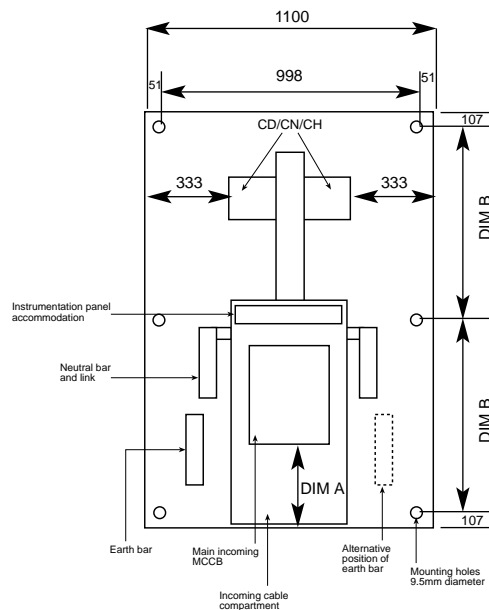
Dimensions (mm)

Size 2 630A

Depth: 258

Module ways	Fixing centres DIM B	Height
6	566	1350
10	681	1579
14	795	1807
18	909	2036

	DIM A
SLA	330
SMA	295
Lugs	568



MCCB connections

1, 2 pole	16 - 32A	2.5 - 25mm ²
	40 - 100A	2.5 - 50mm ²
3 pole	16 - 100A	M6 bolt
	125 - 250A	M8 bolt
SLA	250 - 400A	50 - 300mm ² (1)
SMA	300 - 630A	3 x 95 - 240mm ² (2)
Main lugs (ML)		240 - 500mm ²

(1) Requires 3/8" hexagon key

(2) Requires 1/4" hexagon key

Earth and neutral bars

Earth bonding connection	M10 bolt
Earth bar connection holes	
6way & 10way boards	10 x 7.1ø, 3 x 3.7ø
14way & 18way boards	20 x 7.1ø, 1 x 11.5ø, 6 x 3.7ø
Main neutral connection	M12 bolt
Neutral bar connection holes	14 x 8ø, 10 x 6ø, 8 x 3.9ø,



Size 3 6 way panelboard

Size 3 800A panelboards

- Dead front IP4X construction
- Door lock fitted as standard
- Ample cabling space
- Plated copper busbars 50kA for 1s
- Removable neutral link
- Hinged lift off cable way covers
- MCCB separation to form 3b Type 2 BSEN 60439-1
- Fully rated earth and neutral bars
- Removable top and bottom gland plates
- Simple ordering

Step 1 Select panelboard required

	MCCB incomer order separately	Main lug incomer supplied fitted	Modules LH+RH (1)
6 triple pole outgoing ways	MP80063	ML80063	9+9
10 triple pole outgoing ways	MP800103	ML800103	15+15
14 triple pole outgoing ways	MP800143	ML800143	21+21
18 triple pole outgoing ways	MP800183	ML800183	27+27

Notes: (1) Only left hand (LH) side of board accepts SLA or SMA.

Step 2 Select incoming device (MP only)

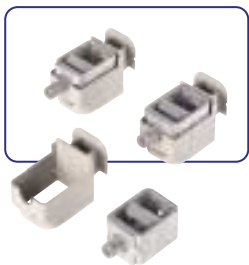
800A	
800A 50kA triple pole MCCB	SMA3800
800A automatic switch disconnecter (isolator)	SMA3000M



I-Line Plug-On MCCB

Step 3 Select outgoing devices

	Single pole (1 module)			Double pole (2 modules)		
	L1	L2	L3	L1/L2	L2/L3	L3/L1
16A 25kA MCCB	SFA1016A	SFA1016B	SFA1016C	SFA2016AB	SFA2016BC	SFA2016AC
20A 25kA MCCB	SFA1020A	SFA1020B	SFA1020C	SFA2020AB	SFA2020BC	SFA2020AC
32A 25kA MCCB	SFA1032A	SFA1032B	SFA1032C	SFA2032AB	SFA2032BC	SFA2032AC
40A 25kA MCCB	SFA1040A	SFA1040B	SFA1040C	SFA2040AB	SFA2040BC	SFA2040AC
50A 25kA MCCB	SFA1050A	SFA1050B	SFA1050C	SFA2050AB	SFA2050BC	SFA2050AC
63A 25kA MCCB	SFA1063A	SFA1063B	SFA1063C	SFA2063AB	SFA2063BC	SFA2063AC
80A 25kA MCCB	SFA1080A	SFA1080B	SFA1080C	SFA2080AB	SFA2080BC	SFA2080AC
100A 25kA MCCB	SFA1100A	SFA1100B	SFA1100C	SFA2100AB	SFA2100BC	SFA2100AC



Additional tunnel terminals

16/250A 3 modules	25kA	36kA	50kA	Additional tunnel terminals	
16A triple pole MCCB	CDAE34016	CNAE34016	CHAE34016	W29242	1.5-95mm ²
25A triple pole MCCB	CDAE34025	CNAE34025	CHAE34025	W29242	1.5-95mm ²
32A triple pole MCCB	CDAE34032	CNAE34032	CHAE34032	W29242	1.5-95mm ²
40A triple pole MCCB	CDAE34040	CNAE34040	CHAE34040	W29242	1.5-95mm ²
50A triple pole MCCB	CDAE34050	CNAE34050	CHAE34050	W29242	1.5-95mm ²
63A triple pole MCCB	CDAE34063	CNAE34063	CHAE34063	W29242	1.5-95mm ²
80A triple pole MCCB	CDAE34080	CNAE34080	CHAE34080	W29242	1.5-95mm ²
100A triple pole MCCB	CDAE34100	CNAE34100	CHAE34100	W29242	1.5-95mm ²
125A triple pole MCCB	-	CNAE34125	CHAE34125	W29242	1.5-95mm ²
160A triple pole MCCB	-	CNAE34160	CHAE34160	W29242	1.5-95mm ²
200A triple pole MCCB	-	CNAE34200	CHAE34200	W29259	95-185mm ²
250A triple pole MCCB	-	CNAE34250	CHAE34250	W29259	95-185mm ²
160A triple pole electronic MCCB	-	CNAE34160E20	-	W29242	1.5-95mm ²
250A triple pole electronic MCCB	-	CNAE34250E20	-	W29259	95-185mm ²

Note: Extension blanking plate EKW1BL or EKW4BL must be fitted on devices 250A and below when fitted on left hand side

300/630A*	36kA 4 modules	50kA 6 modules
300A triple pole MCCB	SLA3300	SMA3300
350A triple pole MCCB	SLA3350	SMA3350
400A triple pole MCCB	SLA3400	SMA3400
450A triple pole MCCB	-	SMA3450
500A triple pole MCCB	-	SMA3500
630A triple pole MCCB	-	SMA3630

* Restricted to LHS of panelboard only



Step 3 Select outgoing devices (cont.)

32/160A Switch-disconnector-fuse devices 50kA*

				Fuse link fitted	BS88 fuse links accepted
32A	Triple pole	PF32	3 modules	AA032	A1, A2
63A	Triple pole	PF63	4 modules	BA063	A2, A3
100A	Triple pole	PF100	5 modules	CEO100	A2, A3, A4 (max dia 32mm)
160A	Triple pole	PF160	5 modules	DEO160	A2, A3, A4

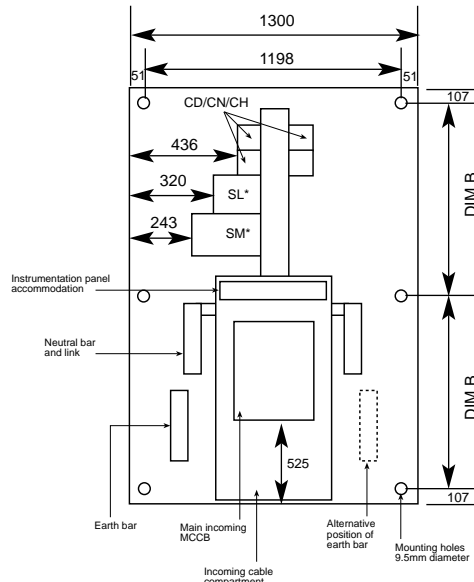
* Restricted to LHS of panelboard only

Dimensions (mm)

Size 3 800A

Depth: 258

Module ways	Fixing centres B	Height
6	681	1579
10	795	1807
14	909	2036
18	1024	2265



Step 4 Select accessories

Panelboard	M*80063	M*800103	M*800143	M*800183
Blanking plates for all unused ways				
Single pole	HNM1BL	HNM1BL	HNM1BL	HNM1BL
Triple pole	HNM4BL	HNM4BL	HNM4BL	HNM4BL
Extension blanking plates				
Single pole	EKW1BL	EKW1BL	EKW1BL	EKW1BL
Triple pole	EKW4BL	EKW4BL	EKW4BL	EKW4BL
Side extension box				
550mm wide	EXMS62	EXMS71	EXMS80	EXMS89
Top / bottom extension box				
	EXS39	EXS39	EXS39	EXS39
Corner unit, to complete enclosure when top/bottom and side extension are both fitted				
	MSIL636	MSIL636	MSIL636	MSIL636
Plinth				
	PLN312	PLN312	PLN312	PLN312
Door lock				
2 Spare keys	KQK33	KQK33	KQK33	KQK33
Integral metering kit for incoming supply				
Analogue, voltmeter & ammeter	800INSKN	800INSKN	800INSKN	800INSKN
Digital, multi function meter	800kW	800kW	800kW	800kW
Weight in kg				
Overall dimensions H x W x D	1579x1300x258	1807x1300x258	2036x1300x258	2265x1300x258
Plinth dimensions H x W x D	360x1220x258	360x1220x258	360x1220x258	360x1220x258

For MCCB accessories and descriptions of the above see page 19

MCCB connections

1, 2 pole	16 - 32A	2.5 - 25mm ²
	40 - 100A	2.5 - 50mm ²
3 pole	16 - 100A	M6 bolt
	125 - 250A	M8 bolt
SLA	250 - 400A	50 - 300mm ² (1)
SMA	300 - 800A	3 x 95 - 240mm ² (2)
Main lugs (ML)		3 x 95 - 240mm ²

(1) Requires 3/8" hexagon key

(2) Requires 1/4" hexagon key

Earth and neutral bars

Earth bonding connection	M10 bolt
Earth bar connection holes	
6way & 10way boards	10x7.1ø, 3x3.7ø,
14way & 18way boards	20x7.1ø, 1x11.5ø, 6x3.7ø
Main neutral connection	M12 bolt
Neutral bar connection holes	14x8ø, 10x6ø, 8x3.9ø



Size 4 1200A panelboard

Size 4 1200 - 2000A panelboards

- Dead front IP4X construction
- Ample cabling space
- Plated copper busbars 50kA for 1s
- Removable neutral link
- Removable cable way covers
- MCCB separation to form 3b Type 2 BSEN 60439-1
- Fully rated earth and neutral bars
- Metering as standard
- Floor standing
- Simple ordering

Step 1 Select panelboard required

	MCCB incomer supplied fitted	Modules LH+RH (1)
1200A 12 triple pole outgoing ways	PA1200M124MP	20+20
2000A 12 triple pole outgoing ways	PA2000M124MP	20+20

Note: (1) Only left hand (LH) side of board accepts **SL**, **SM** and **SN** devices.

Step 2 Select outgoing devices

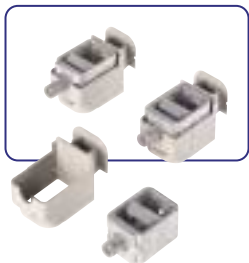
16/100A	Single pole (1 module)			Double pole (2 modules)		
	L ₁	L ₂	L ₃	L ₁ /L ₂	L ₂ /L ₃	L ₃ /L ₁
16A 25kA MCCB	SFA1016A	SFA1016B	SFA1016C	SFA2016AB	SFA2016BC	SFA2016AC
20A 25kA MCCB	SFA1020A	SFA1020B	SFA1020C	SFA2020AB	SFA2020BC	SFA2020AC
32A 25kA MCCB	SFA1032A	SFA1032B	SFA1032C	SFA2032AB	SFA2032BC	SFA2032AC
40A 25kA MCCB	SFA1040A	SFA1040B	SFA1040C	SFA2040AB	SFA2040BC	SFA2040AC
50A 25kA MCCB	SFA1050A	SFA1050B	SFA1050C	SFA2050AB	SFA2050BC	SFA2050AC
63A 25kA MCCB	SFA1063A	SFA1063B	SFA1063C	SFA2063AB	SFA2063BC	SFA2063AC
80A 25kA MCCB	SFA1080A	SFA1080B	SFA1080C	SFA2080AB	SFA2080BC	SFA2080AC
100A 25kA MCCB	SFA1100A	SFA1100B	SFA1100C	SFA2100AB	SFA2100BC	SFA2100AC



I-Line Plug-On MCCB

16/250A 3 modules	25kA	36kA	50kA	Additional tunnel terminals	
16A triple pole MCCB	CDAE34016	CNAE34016	CHAE34016	W29242	1.5-95mm ²
25A triple pole MCCB	CDAE34025	CNAE34025	CHAE34025	W29242	1.5-95mm ²
32A triple pole MCCB	CDAE34032	CNAE34032	CHAE34032	W29242	1.5-95mm ²
40A triple pole MCCB	CDAE34040	CNAE34040	CHAE34040	W29242	1.5-95mm ²
50A triple pole MCCB	CDAE34050	CNAE34050	CHAE34050	W29242	1.5-95mm ²
63A triple pole MCCB	CDAE34063	CNAE34063	CHAE34063	W29242	1.5-95mm ²
80A triple pole MCCB	CDAE34080	CNAE34080	CHAE34080	W29242	1.5-95mm ²
100A triple pole MCCB	CDAE34100	CNAE34100	CHAE34100	W29242	1.5-95mm ²
125A triple pole MCCB	-	CNAE34125	CHAE34125	W29242	1.5-95mm ²
160A triple pole MCCB	-	CNAE34160	CHAE34160	W29242	1.5-95mm ²
200A triple pole MCCB	-	CNAE34200	CHAE34200	W29259	95-185mm ²
250A triple pole MCCB	-	CNAE34250	CHAE34250	W29259	95-185mm ²
160A triple pole electronic MCCB		CNAE34160E20		W29242	1.5-95mm ²
250A triple pole electronic MCCB		CNAE34250E20		W29259	95-185mm ²

Note: Extension blanking plate **EKW1BL** or **EKW4BL** must be fitted on devices 250A and below when fitted on left hand side



Additional tunnel terminals

300*/1250A	36kA 4 modules	50kA 6 modules	50kA 10 modules
300A triple pole MCCB	SLA3300	SMA3300	
350A triple pole MCCB	SLA3350	SMA3350	
400A triple pole MCCB	SLA3400	SMA3400	
450A triple pole MCCB		SMA3450	
500A triple pole MCCB		SMA3500	
630A triple pole MCCB		SMA3630	
700A triple pole MCCB		SMA3700	
800A triple pole MCCB		SMA3800	
900A triple pole MCCB			SNA3900
1000A triple pole MCCB			SNA31000
1250A triple pole MCCB			SNA31250

* Restricted to LHS of panelboard only

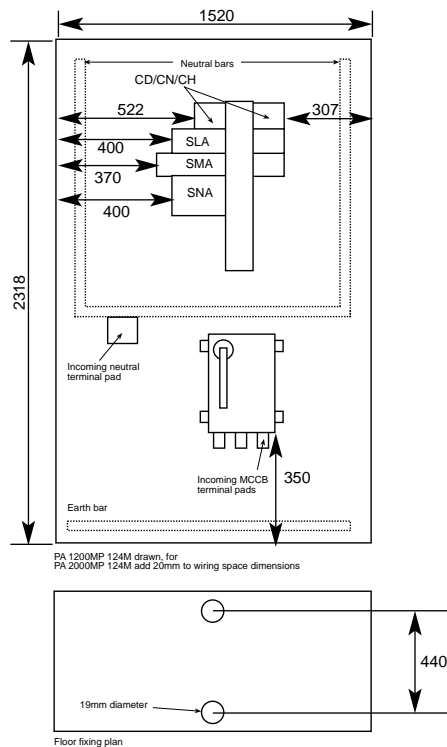
Step 3 Select accessories

Panelboard	PA1200M124MP	PA2000M124MP
Blanking plates for all unused ways		
Single pole	HNM1BL	HNM1BL
Triple pole	HNM4BL	HNM4BL
Extension blanking plates (1)		
Single pole	EKW1BL	EKW1BL
Triple pole	EKW4BL	EKW4BL
Door lock		
2 Spare keys	KQK33	KQK33
Integral metering kit for incoming supply		
Analogue, voltmeter & ammeter	Standard	Standard
Weight in kg	430	430
Overall dimensions H x W x D	2318x1520x560	2318x1520x560

For MCCB accessories and descriptions of the above see page 19

Dimensions (mm)

Size 4 1200 - 2000A
Depth: 560



MCCB connections

1, 2 pole	16 - 32A	2.5 - 25mm ²
	40 - 100A	2.5 - 50mm ²
3 pole	16 - 100A	M6 bolt
	125 - 250A	M8 bolt
SLA	Main lugs	50 - 300mm ² (1)
SMA	Main lugs	3 x 95 - 240mm ² (2)
SNA	Main lugs	4 x 95 - 240mm ² (2)

(1) Requires 3/8" hexagon key

(2) Requires 1/4" hexagon key

Earth and neutral bars

Neutral and earth bars fitted as standard each has a 14mm hole for incoming and provision for crimp lug connections for outgoing circuits.

Panelboard accessories



Blanking plates

Suitable for all sizes of panelboard, blanking plates must be fitted in all unoccupied outgoing ways to maintain appropriate busbar shrouding.

Panelboards are supplied without blanking plates.

1 module way: **HNM1BL** pack quantity 1

3 module way: **HNM4BL** pack quantity 1



Side extension boxes

Supplied with hinged door, side extension boxes may be used to provide additional wiring space or fitting of control equipment or Qwikline II MCB distribution boards.

Side extension boxes can be fitted to either side of the panelboard and may be coupled together to form larger units.



Top/bottom extension boxes

Supplied with a flat front plate the extension box provides additional cable spreading space.

Corner units are available to 'square off' a board when a side and a top/bottom extension box are fitted.



Plinth

Supplied with a removable flat front plate the plinth provides additional floor support to the wall mounting size 3 panelboard.

Available on size 3 only **PLN312**

Door lock

For size 1 panelboard, field installable.
All keys are identical.

Door lock **KQK** supplied with 2 keys.

Panelboard sizes 2, 3 and 4 are supplied with door locks as standard.
Set of 2 spare keys KQK 33



Metering kit - Plug-On

Suitable for all sizes of panelboard the Plug-On metering kit allows individual measurement of any circuit.
The Plug-On metering kit occupies 4 module outgoing ways.

Analogue

Comprises ammeter, voltmeter and selector switches and is supplied complete with current transformers, wiring and full installation instructions.

250A	MP250INS	current transformers 250A/5A class 3
400A	MP400INS	current transformers 400A/5A class 3



Digital

Comprises of multi function meter which displays voltage, current, kilowatts, kilowatt hours, kVARh and power factor, supplied complete with CT's, wiring and instructions.

250A	MP250kW
400A	MP400kW

Metering kit - Integral

Mounts within size 2 and 3 panelboards to provide metering of incoming supply.

Analogue

Comprises ammeter, voltmeter and selector switch and neon indicators supplied complete with current transformers, wiring, fuse and full installation instructions.

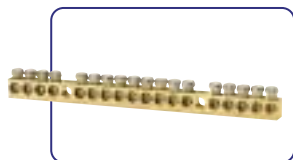
400A	400INSKN	current transformers 400A/5A class 3
630A	600INSKN	current transformers 600A/5A class 3
800A	800INSKN	current transformers 800A/5A class 3

Digital

Comprises of multi function meter which displays voltage, current, kilowatts, kilowatt hours, kVARh and power factor, supplied complete with CT's, wiring and instructions.

400A	400kW
630A	630kW
800A	800kW

Panelboard accessories



NE1816

Termination bars

Solid brass terminal bars provide tunnel terminals. Main neutral and earth bars are pre-drilled to accept the termination bars indicated. Bars suitable for size 1, 2 and 3.

	No. of ways	Conductor size
NE916	9	25
NE1816	18	25
NE950	9	50
NE7150	7	150
NE13150	13	150



W29370

MCCB locking devices

Provide facilities for padlocking MCCB's.

Frame	Order Ref	Facility	Padlocks
SFA	HPAFK	On/Off	1
C 3 pole	W29370	Off	3
SLA/SMA	HPALM	Off	1
SLA/SMA	HPAXLM*	Off	1
SNA	HPANE	Off	1

* Use with handle extension



Extension blanking plates

To shroud left hand side of busbar stack on size 3 and 4 boards only, when fitted with CD, CN, CH and SF frame circuit breakers and HNM blanking plates.

1 module way	EKW1BL	Pack quantity 1
3 module way	EKW4BL	Pack quantity 1

MCCB accessories

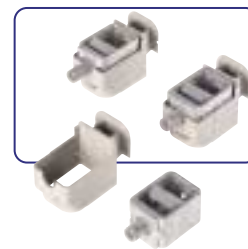
Cable clamp terminals

Triple pole CD, CN and CH MCCB's are supplied with bolt connections.

Field fitted terminals.

16- 160A	W29242	1.5 - 95mm ²
200- 250A	W29259	10 - 185mm ²

Supplied in sets of 3



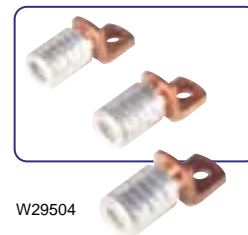
Crimp cable lugs

Special lugs for fitting oversize cables to CD, CN and CH MCCB's

W29252	120mm ²	Copper
W29253	150mm ²	Copper
W29254	185mm ²	Copper
W29504	150mm ²	Aluminium
W29506	185mm ²	Aluminium

Supplied in sets of 3

Required for oversized cables only



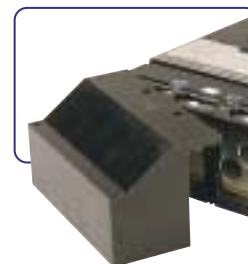
W29504

Terminal shields

CD, CN and CH short (15mm)	W29321
CD, CN and CH long (80mm)	W29323
SLA	LCA1
SMA	MCA1
SFA single pole	FTS

Use short terminal shields with tunnel terminals.

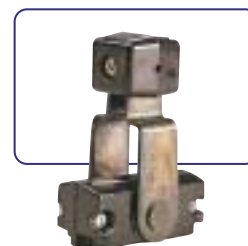
Use long terminal shields with crimp terminals.



Handle extension

For use in providing extra leverage when operating larger frame I-Line MCCB's.

SLA frame	AHEXLI
SM, SNA frame	MAHEX

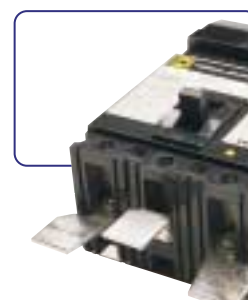


Terminal extension pads

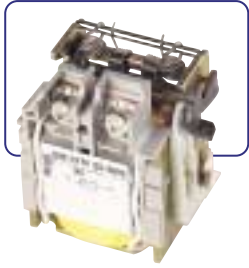
3 plated copper pads to which crimp type lugs may be fastened (unshrouded).

SLA frame	LATK3
SMA frame	MATK3

The pads require an air gap of 25mm between them and adjacent MCCB's the use of an HNM1BL either side of the MCCB will provide the necessary spacing.



MCCB accessories (cont)



Shunt trip (ST)

Energisation of shunt trip coil will initiate MCCB tripping.

CD, CN and CH	Connection terminals accept wires up to 1.5mm ²
SL, SM, SN	Supplied with 1mm ² flying leads

Field installable.

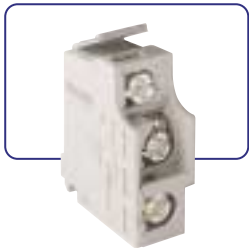


Under voltage release (UVR)

The coil must be energised before the MCCB can be switched on.

CD, CN and CH	Connection terminals accept wires up to 1.5mm ²
SL, SM, SN	Supplied with 1mm ² flying leads

Field installable.



Auxiliary switches (aux)

Change over contacts indicate MCCB contact position.
For CD, CN and CH may be used as an alarm switch.

CD, CN and CH	Connection terminals accept wires up to 1.5mm ²
SL, SM, SN	Supplied with 1mm ² flying leads

Field installable.

Order references	CD-CN-CH	SLA	SMA	SNA	SPA
Shunt trip 110/130V 50Hz	W29386				
Shunt trip 200/240V 50Hz	W29387				
Shunt trip 120/240V 50Hz		LA11021	MA11021	NA11021	PA11021
Shunt trip 277/480V 50Hz		LA11037	MA11037	NA11037	PA11086
Shunt trip 24V dc	W29390	LA11027	MA11027	NA11027	PA11027
Under voltage release 110/130V 50Hz	W29406	LA11121	MA11121	NA11121	PA11101
Under voltage release 200/240V 50Hz	W29407	LA11124	MA11124	NA11124	PA11104
Under voltage release 24V dc	W29410	LA11127	MA11127	NA11127	
Auxiliary switch 1 change over contact	W29450	LA11212	MA11212	NA11212	PA11212
Auxiliary switch 2 change over contact	W29450 x 2	LA11352	MA11352		PA11352

Lug unit

To sub-feed power from, or into the busbar stack. Current rating of plug-on lug must be equal to or greater than the incoming protective device.

Order reference	Rating	Modules	Terminal capacity mm ²
SL100	100A	3	50
SL225	225A	3	185
SL400	400A	4	300
SL800	800A	6	3 x 240

Circuit breaker application data

Three Phase Circuit breaker ratings for infrequent start motor loads

Circuit breakers are not generally intended to provide close current protection for motors. Normally they are used in conjunction with a recognised motor over current protective device. Under these conditions the circuit breaker will protect the cable to the motor whilst the motors own protective device will protect the motor itself.

The comparison between full load current and kW rating, is based upon an average efficiency and power factor for each motor rating at 400Vac.

The circuit breaker rating used to protect the cable to the motor are based upon :-

D.O.L. starting = Up to 4kW, 7x full load current for 5 seconds
 4.1kW to 18.5kW, 7x full load current for 6 seconds
 19kW to 35kW, 7x full load current for 10 seconds

Assisted starting = Up to 4kW, 4x full load current for 5 seconds
 4.1kW to 18.5kW, 4x full load current for 7 seconds
 19kW to 35kW, 4x full load current for 10 seconds
 36kW to 110kW, 4x full load current for 15 seconds

Order reference also CDLE CNLE	Short time setting (I _m)	Long time setting (I _r)	Thermal setting A	D.O.L. starting motor		Assisted start motor	
				Load current A	Rating at 400Vac kW	Load current A	Rating at 400Vac kW
CDAE34016	Fixed	1	16	8	4	12	6
		0.9	14	7.5	3.6	10	5.3
		0.8	13	7	3	9	5
CDAE34025	Fixed	1	25	11	5	16	8
		0.9	23	10	4.9	14	7
		0.8	20	9	4	13	6
CDAE34032	Fixed	1	32	15	7	20	10
		0.9	29	13	7	18	9
		0.8	26	12	6	16	8
CDAE34040	Fixed	1	40	18	9	26	13
		0.9	36	16	8	23	12
		0.8	32	15	7	20	10
CDAE34050	Fixed	1	50	23	12	32	16
		0.9	45	21	10	29	15
		0.8	40	18	9	26	13
CDAE34063	Fixed	1	63	29	15	40	21
		0.9	57	26	13	36	19
		0.8	50	23	12	32	17
CDAE34080	Fixed	1	80	54	28	60	32
		0.9	72	49	25	54	29
		0.8	64	43	22	48	26
CDAE34100	Fixed	1	100	68	36	75	40
		0.9	90	61	32	68	36
		0.8	80	54	29	60	32

Long time settings I_r = 0.8, 0.9, 1

Short time settings 16 to 100A I_m = fixed

D.O.L. starting = Up to 4kW, 7x full load current for 5 seconds
 4.1kW to 18.5kW, 7x full load current for 6 seconds
 19kW to 35kW, 7x full load current for 10 seconds

Assisted starting = Up to 4kW, 4x full load current for 5 seconds
 4.1kW to 18.5kW, 4x full load current for 7 seconds
 19kW to 35kW, 4x full load current for 10 seconds
 36kW to 110kW, 4x full load current for 15 seconds

Order reference	Short time setting (I _m)	Long time setting (I _r)	Thermal setting A	D.O.L. starting motor		Assisted start motor	
				Load current A	Rating at 400Vac kW	Load current A	Rating at 400Vac kW
CNLE34160E20 CHLE34160E20 CNAE34160E20	10 8 8 8 8 8	1	160	108	58	120	64
		0.9	144	97	52	108	58
		0.8	128	86	46	96	51
		0.7	112	76	40	84	45
		0.6	96	65	35	72	39
		0.5	80	54	29	60	32
CNLE34250E20 CHLE34250E20 CNAE34250E20	10 8 8 8 8 8	1	250	169	90	188	100
		0.9	225	152	81	169	90
		0.8	200	135	72	150	80
		0.7	175	118	63	131	70
		0.6	150	101	54	113	60
		0.5	125	84	45	94	50
DHLE34400	10 8 8 8 8 8	1	400	270	144	300	160
		0.9	360	243	130	270	144
		0.8	320	216	116	240	128
		0.7	280	189	101	210	112
		0.6	240	162	87	180	96
		0.5	200	135	72	150	80
DHLE34630	10 8 8 8 8 8	1	630	425	227	473	253
		0.9	567	383	205	425	227
		0.8	504	340	182	378	202
		0.7	441	298	159	331	177
		0.6	378	255	136	284	152
		0.5	315	213	114	236	126
	8	0.4	252	170	91	189	101

Long time settings I_r = 0.8, 0.85, 0.88, 0.9, 0.93, 0.95, 0.98, 1

I_o = 0.5, 0.63, 0.7, 0.8, 0.9, 1

Short time settings I_m = 2, 3, 4, 5, 6, 7, 8, 10 x long time setting

Technical data

MCCB Ratings

MCCB's	SFA	CD	CN	CH	CN (electronic)	SLA	SM	SN	PA
Standard	BSEN 60947 - 2								
Poles	1, 2	3	3	3	3	3	3	3	3
Ratings in	16 - 100A	16 - 100A	16 - 250A	16 - 250A	160 - 250A	250 - 400A	300 - 800A	630 - 1250A	630 - 2000A
Category	A								
Rated Insulation Voltage Ui	500V						750		
Rated Impulse Voltage Uimp	6KV								
Rated Operational Voltage Ue	415V 50/60HZ								
Ultimate Breaking Capacity Icu	25kA	25kA	36kA	50kA	36kA	36kA	50kA	50kA	50kA
Service Breaking Capacity Ics	50%	75%	75%	75%	75%	50%	50%	50%	75%
Thermal Overload	Fixed	Adjustable 0.8 - 1In			Adj 0.4-1xIn	Fixed			
Magnetic Overload	16 to 160A Fixed			200 to 250A Adj 5-10xIn		Adjustable 5-10xIn			
Connection	Tunnel	Crimp				Tunnel			Crimp

I²t Energy let through

The energy let through by a breaker determines the minimum size of the downstream cable. The cable withstand depends upon the conductor material, the insulation used and the conductor size.

Maximum let through at various prospective fault currents in Ampere² seconds x 10⁶

Frame	Prospective fault current kA							
	Ratings	10	20	25	30	36	40	50
CD	16-100A	0.28	0.42	0.47				
CN	125-250A	0.52	0.7	0.71	0.72	0.73		
CH	16-250A	0.52	0.7	0.71	0.72	0.73	0.74	0.75
SMA	300-800A		8.6	12	15	21	25	36

For PVC insulated copper cable the thermal withstand in A²s x 10⁶ (k = 115)

Cable size mm ²	4	6	10	16	25	35	50
Max thermal stress I ² t	0.212	0.476	1.32	3.4	8.26	16.2	33.1

Panelboards

Standard	BSEN 60439-1 Form 3b Type 2 (with terminal shields fitted)
IP rating	IP4X to BSEN 60529
Short circuit withstand	50kA for 1 second
Busbars	Plated copper fully braced and supported
Neutral bar	Plated copper fully rated pre-drilled
Earth bar	Plated copper fully rated pre-drilled
Enclosure	Corrosion resistant folded sheet steel
Paint	Epoxy powder coated light blue grey

Technical data

Plug-On circuit breakers

Discrimination

Discrimination is the co-ordination of Circuit breakers such that when a fault occurs in a network it is cleared by the breaker immediately upstream of the fault. No breaker further upstream operates. Thus the number of circuits affected by the fault is minimised. In many cases full discrimination is achieved up to the breaking capacity of the breaker disconnecting the fault. This is indicated by "F" in the table below. In other cases discrimination is achieved up to a lesser current as indicated below in amps. When no figure is shown discrimination is not achieved.

Downstream Breaker	Upstream breaker												Electronic breakers					
	I-Line CD/CN/CH breaker with Thermal magnetic trip units												CN/CH		DH		SMAL	SPAF
	16	25	32	40	50	63	80	100	125	160	200	250	160	250	400	630	1000	2000
KQ/SQO=<10	200	300	300	500	500	500	630	800	F	F	F	F	F	F	F	F		
16		300	300	500	500	500	630	800	F	F	F	F	F	F	F	F		
20				500	500	500	630	800	F	F	F	F	F	F	F	F		
25				500	500	500	630	800	F	F	F	F	F	F	F	F		
32							630	800	F	F	F	F	F	F	F	F		
40							630	800	F	F	F	F	F	F	F	F		
50								800	F	F	F	F	F	F	F	F		
63								800	F	F	F	F	F	F	F	F		
16 CD				500	500	500	630	800	2000	2000	F	F	2000	F	F	F		
25						500	630	800	2000	2000	F	F	2000	F	F	F		
32							630	800	2000	2000	F	F	2000	F	F	F		
40							630	800	2000	2000	F	F	2000	F	F	F		
50								800	2000	2000	F	F	2000	F	F	F		
63								800	2000	2000	F	F	2000	F	F	F		
80									1250	1250	F	F		F	F	F		
100										1250	F	F		F	F	F		
125 CN											4000	5000		3000	F	F		
160												5000			F	F		
200																F		
250																	F	
16 CH				500	500	500	630	800	2000	2000	F	F	2000	3000	F	F		
25						500	630	800	2000	2000	F	F	2000	3000	F	F		
32							630	800	2000	2000	F	F	2000	3000	F	F		
40							630	800	2000	2000	F	F	2000	3000	F	F		
50								800	2000	2000	F	F	2000	3000	F	F		
63								800	2000	2000	F	F	2000	3000	F	F		
80									1250	1250	F	F		3000	F	F		
100										1250	F	F		3000	F	F		
125											4000	5000		3000	F	F		
160												5000			F	F		
200																F		
250																	F	
400 DH																		
630																		

Discrimination is achieved up to the magnetic setting of the upstream breaker

F = Full Discrimination

Cascading chart

Cascading permits the installation of a circuit breaker having a breaking capacity lower than the prospective at its point of installation. The upstream breaker, which must have the required breaking capacity, limits the fault current to that which may safely be interrupted by the downstream breaker. In the case of a high fault current both breakers may operate. For example: a KQ breaker rated at 10kA may be used at a point in the network having a prospective fault current of 40kA provided that it is protected by a CH breaker (50kA).

Downstream breaker		Upstream breaker									
Ref	Rating	Ref	CD	CN	CN	CH	CH	SLA	DH	SMAL	SPAF
		Rating	100A	100A	250A	100A	250A	400A	630A	1000A	2000A
		Icu	25kA	36kA	36kA	50kA	50kA	36kA	50kA	50kA	50kA
KQ	63A	6 & 10kA	25	25	30	40	30				
CD	100A	25kA		36	36	50	50	36	50	36	36
CN	250A	36kA				50	50		50	50	50
SLA	400A	36kA								50	50

Technical data

Maximum earth loop impedance values

Frame	Max. Zs ohms at 230V		
	Rating	0.4s	5s
SFA	16	0.58	2.36
	20	0.58	1.89
	32	0.48	1.12
	40	0.38	0.90
	50	0.38	0.72
	63	0.23	0.57
	80	0.19	0.45
	100	0.19	0.36
C	16	1.21	2.30
	25	0.77	1.67
	32	0.58	1.33
	40	0.46	1.06
	50	0.46	0.85
	63	0.46	0.68
	80	0.36	0.36
	100	0.29	0.29
	125	0.18	0.18
	160	0.18	0.18
	200	0.12	0.12
C electronic	160	0.14	0.22
	250	0.09	0.14
SL	250	0.092	0.092
	300	0.077	0.077
	350	0.066	0.066
	400	0.058	0.058
SM	300	0.077	0.077
	350	0.066	0.066
	400	0.058	0.058
	450	0.051	0.051
	500	0.046	0.046
	630	0.037	0.037
	700	0.033	0.033
SN	630	0.029	0.037
	700	0.029	0.033
	800	0.029	0.032
	900	0.023	0.027
	1000	0.023	0.026
	1250	0.023	0.023

For adjustable breakers the figures given refer to the breaker with settings on maximum.

Switch-disconnector-fuse outgoing units

	PF32	PF63	PF100	PF160
Standard	BSEN 60947-3			
Poles	3	3	3	3
Rating In	32	63	100	160
Utilisation category	415V AC23A	AC23A	AC23A	AC23A
Rated Insulation voltage	750	750	750	750
Rated Operational voltage	750	750	750	750
Rated Impulse voltage	8kA	8kA	8kA	8kA
Rated s.c. making capacity Icm	415V 176kA	176kA	176kA	176kA
Rated s.c. breaking capacity Icn	415V 80kA	80kA	80kA	80kA
Connections	clamp	clamp	clamp	clamp
BS88 fuse reference	A1, A2, A3	A2, A3	A2, A3, A4*	A2, A3, A4

* A4 maximum dia 32 mm

Other Square D products

Qwikline II Consumer Units

- Insulated metal consumer units 2 to 24 SP ways, standard split bus, dual and multi tariff supply options.
- Accept Plug-On 6kA MCB's, RCBOs and control devices.
- Totally encapsulated busbar system providing complete finger safety to IP2X.
- Incoming devices - terminal blocks, switch disconnectors or RCD up to 100A.



LoadCentre KQ+ distribution boards

- Reduce installation times with 50% fewer connections to outgoing devices.
- Factory fitted busbar shields give you protection to IP2X while you work.
- A unique wiring channel enables faster and neater installation.
- More easily accessible earth and neutral bars.



Single phase

- Choice of sizes from 6SP to 24SP MCB outgoing ways.
- Standard and split busbar arrangements.
- Incoming devices - terminal blocks, switch disconnector or RCD devices.

Three phase

- Choice of sizes from 4TP to 18TP MCB outgoing ways.
- 3 different types - standard, split load and boards complete with a dedicated extension box for control products.
- Incoming devices - terminal blocks, switch disconnector, RCD's, MCCB's and combined MCCB/RCD devices.

Both single and three phase LoadCentre boards accept plug on KQ 10kA outgoing MCB, RCBO and control devices.

Twinbreak and Quadbreak Fusegear

A range of switch disconnector and switch disconnectors supplied complete for individual mounting or for mounting to busbar chambers.

Twinbreak

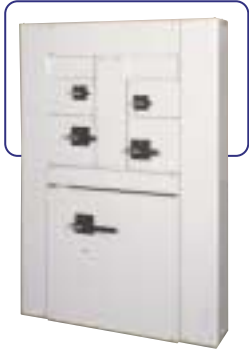
Full AC23 ratings to 100A (AC22 @ 160A).

- 20A to 100A Switch disconnectors fuses.
- 20A to 100A Switch disconnectors.
- 160A Busbar chambers.

Quadbreak

- 63A to 630A Switch disconnectors fuses (supplied with fuse).
- 63A to 630A Switch disconnectors supplied with isolator links.
- 200A to 800A Busbar chambers.

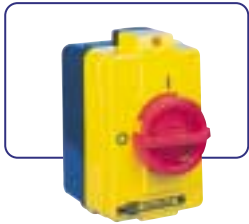




I-Line Fuse switch panelboards

Fuse switch Panelboards

- Four sizes with incoming devices from 400A to 2000A.
- Outgoing Plug-On fuse combination units from 32A to 400A.



Clearstart control gear

- Enclosed motor starters - direct on line, reversing direct and automatic star delta.
- Enclosed heating and lighting contactors.
- Enclosed switch disconnectors.
- Push button stations.



Unit mount MCCB's

- Ratings from 16 to 2000A.
- Range of accessories.
- Single, double and triple pole.
- Thermal, magnetic or electronic trip units.



Standard Plus – Ready assembled and custom built distribution boards up to 2000A and Form3Fast factory assembled switchboards up to 2000A from a standard range

- Tailor made solutions to meet specific requirements.
- Direct to site delivery.
- Total project assistance.
- Fast response to quotation requests.
- Fixed delivery times.

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