



## Switch and Fusegear

Clearstart switch disconnectors

Twinbreak

Quadbreak

I-Line fuse switch panelboards



SQUARE D

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**Square D - The right connection**



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# Clearstart enclosed switch disconnectors

The Clearstart range of enclosed switch disconnectors extends from 16-63A and is available in 2 sizes of enclosure. It is rated to AC23 and motor rated.

- Tested to IEC 60947-3 and meets the isolation requirements.
- Removable cover, using single screw fixing on 16A unit enables fast removal of the cover for wiring.
- Earth connection bar fitted as standard.
- Compact enclosure enables ease of cabling whilst maintaining a compact arrangement.
- Enclosure rated to IP55 for 16A device and IP65 for 32A and 63A devices. Provides excellent protection from ingress of dust and water.
- Removable switch unit provides ease of cabling.
- Cable knockouts standard at the top and bottom of the enclosure with adapters available for Pg or ISO glands.
- Handle padlockable in the OFF position with up to 3 padlocks.
- Available in 3 or 4 pole, the 4 pole version has an early make, late break neutral pole.
- The cover has the provision for lead sealing.
- Easy order references.

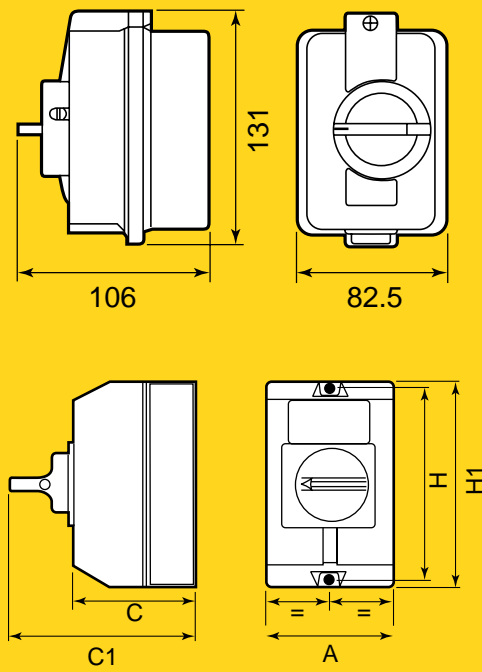


16A IP55

Reference No.	Max thermal current	Rating 415V AC21	Rating 415V AC23	Motor rating	No. of Poles	IP rating
SQSW163	16	20	11	5.5	3	IP55
SQSW164	16	20	11	5.5	3+Neutral	IP55
SQSW323	32	40	21	11	3	IP65
SQSW324	32	40	21	11	3+Neutral	IP65
SQSW633	63	80	40	22	3	IP65
SQSW634	63	80	40	22	3+Neutral	IP65



32 - 63A IP65

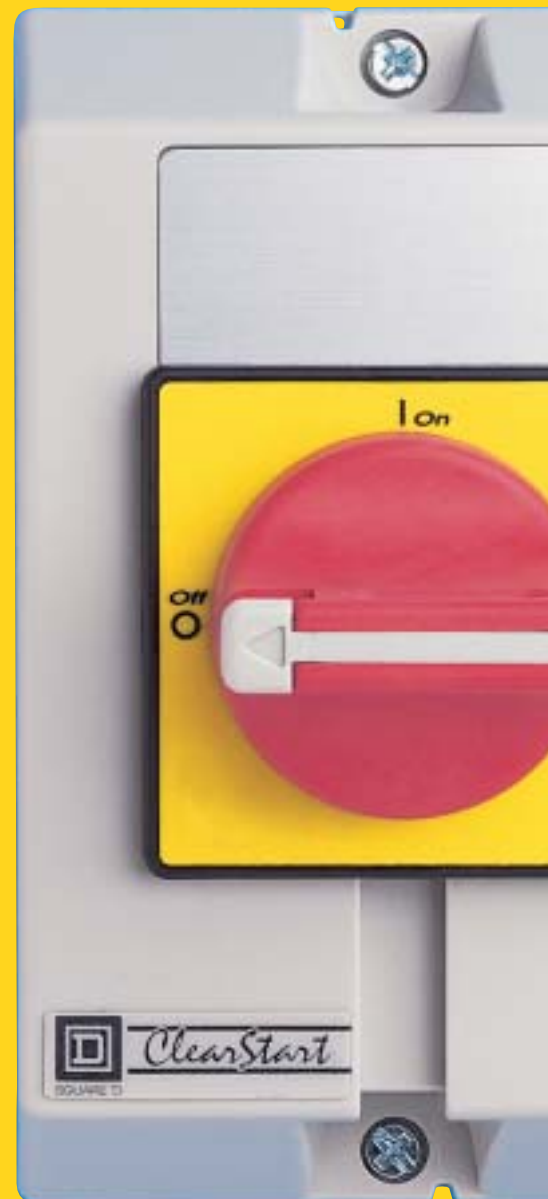


### Cabling

Flexible + Cable end mm	Rigid mm <sup>2</sup>	Tightening torque N.m	Rating A
4/6	4/10	0.7/2.1	16
6	10	2.1	32
16	25	4	63

### Dimensions

A	C	C1	H	H1	Rating A
<sup>Ø</sup> 90	85	131	130	146	32
<sup>Ø</sup> 150	106	152	164	170	63



# Twinbreak

**Fully rated to meet the requirements of AC23 up to 100A, Twinbreak eliminates the need to have a complete knowledge of the circuit and its application before selecting a device.**

**Twinbreak is available as a switch disconnecter and is supplied complete for individual mounting, mounting on cable trunking or for mounting on the twinbreak range of busbar chambers.**

- Units tested and constructed to BSEN60947-3.
- Live terminal barriers.
- Clear visual indication of the contact position.
- Door interlock preventing the door being opened with the switch on.
- Door interlock has integral defeat mechanism.
- Operating handle is padlockable in the ON or OFF position.
- Operating handle stays in position once the door is opened.
- Supplied with fuses fitted.
- Fully removable single piece switch unit, for ease of installation.
- ASTA certified to AC23 up to 100A (AC22B 125A & 160A).
- ASTA certified short circuit rating of 50kA and 12 x rated current for 1 second.
- IP41 degree of protection.
- Fully removable cross rails 100A and above for ease of cabling as cables can be laid in.
- Fully removable gland plate allows the unit to be directly connected to 3" cable trunking.
- Positive contact indication.
- Easy access to fuses.
- Cable knockouts provided as standard.
- Lift off door provides greater access to switch units, for ease of cabling and for installation.
- The door opens within its own overall dimensions allowing Twinbreak units to be mounted adjacent to each other.
- Keyhole slots on the enclosure base allow ease of installation.
- Fully shrouded operating mechanism ensure cables etc. do not interfere with the switch operation.
- Neutral terminal block with link fitted as standard.
- Earthing kit supplied as standard.

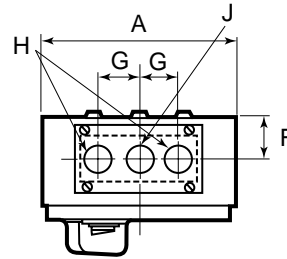
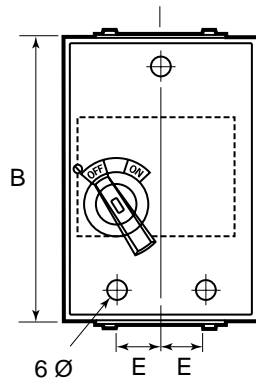
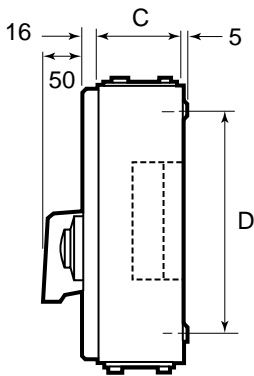
### Switch disconnecter fuse<sub>1</sub>

### Switch disconnecter

Rating AC20/21/22/23	SP&SN	TP&N	SP&SN	TP&N
20	SD202SFK	SD203SFK	SD202SW	SD203SW
32	SD322SFK	SD323SFK	SD322SW	SD323SW
63	SD632SFK	SD633SFK	SD632SW	SD633SW
100	SD1002SFK	SD1003SFK	SD1002SW	SD1003SW
125 <sub>2</sub>				SD1253SW
160 <sub>2</sub>				SD1603SW

<sup>1</sup> Switch Disconnector Fuse. \* Rated duty see page 19. Switch Disconnector continuously rated.

<sup>2</sup> AC20/21/22



Current rating	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	Terminal capacity mm <sup>2</sup>	Packed weight kg
20	210	240	105	160	50	51	44	20	25	10	6
32	210	240	105	160	50	51	44	20	25	10	6
63	235	350	105	270	55	51	50	32	32	25	8
100	260	400	120	320	65	51	60	38	38	50	8
125	292	521	121	421	94.5	51	60	38	38	M8 stud	10.5
160	292	521	121	421	94.5	51	60	38	38	M8 stud	10.5

For full technical details see page 20.

# Twinbreak busbar chambers with switch units

Designed to accept Twinbreak devices without drilling or cutting. Twinbreak busbar chambers offer the simplest solutions where fused installations are required.

- 4 or 6 unit mounting.
- 160A rated copper busbars.
- Supplied complete with all necessary fixings.
- Supplied with a fully rated neutral.



Nothing could be simpler than ordering a Twinbreak busbar chamber.

## Step 1

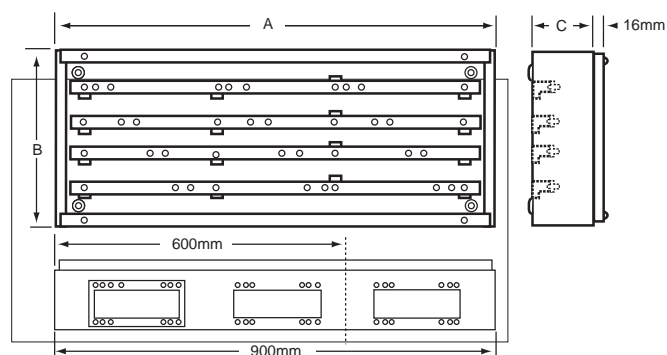
Select Twinbreak units required. If a 125 or 160A unit is fitted the rating of the adjacent units can not exceed 63A.

Current ratings Amps	4	Number of units	6
160	SBC106		SBC109

## Step 2

Select appropriate busbar chamber.

Reference No	
TBCKIT	Contains 4 fixings bolts and nuts plus 4 busbar connection bolts.



Reference No	A(mm)	B(mm)	C(mm)	Packaged weight kg
SBC106	600	350	120	9.6
SBC109	900	350	120	14.25

# Quadbreak

Units are rated to AC23 up to 630A so specifiers do not need to have a complete knowledge of the switching duty and its application before selecting a device, as it is suitable for all types of switching. Quadbreak is available as a switch disconnector fuse, or a switch disconnector and is supplied complete with fuse or isolator links. Quadbreak is complemented by a range of cable entry boxes and busbar chambers.

- Tested and constructed to BSEN60947-3.
- Removable cross rails allow ease of cabling as cables can be laid without a barrier.
- Terminals are fully shrouded.
- Direct front access for cabling without dismantling the mechanism.
- Clear shrouds allow easy access for inspection and visual indication of contact position.
- Positive contact indication is guaranteed.
- Door interlock prevents the door being opened when the unit is switched ON.
- Padlocking facilities are provided for padlocking in either the ON or OFF position.
- Door interlock defeat mechanism.
- Castell locks can be factory fitted as an option.
- Lift off door, opens within its overall dimensions, allowing Quadbreak units to be mounted directly adjacent to one another.
- Keyhole slots on the enclosure base provided for easy wall mounting.
- ASTA certified to a short circuit rating of 50kA.
- Single folded construction ensures that the Quadbreak easily withstands the rigours of installation and the distortions that large cables can bring.
- Quick make and break silver plated contacts.
- Cable extension boxes allow easy cabling.
- Cable extension pads.



# Fuse-switch disconnecter supplied with fuses order reference

Rating <sup>1</sup> AC20/21/22/23	Single phase & switched neutral	Three phase with neutral link	Recommended cable entry box	Cable stud	Palm width	Max. cable size <sup>2</sup>
63A	SQB0632K	SQB0633K	SQBX100	M6	20mm	50mm <sup>2</sup>
100A	SQB1002K	SQB1003K	SQBX100	M8	20mm	50mm <sup>2</sup>
160A	SQB1602K	SQB1603K	SQBX160	M8	20mm	50mm <sup>2</sup>
200A	SQB2002K	SQB2003K	SQBX250	M10	30mm	120mm <sup>2</sup>
250A	SQB2502K	SQB2503K	SQBX250	M10	30mm	120mm <sup>2</sup>
315A	-	SQB3153K	SQBX500	M12	50mm	400mm <sup>2</sup>
400A	-	SQB4003K	SQBX500	M12	50mm	400mm <sup>2</sup>
500A	-	SQB5003K	SQBX500	M12	50mm	400mm <sup>2</sup>
630A	-	SQB6303K	SQBX630	M12	50mm	400mm <sup>2</sup>

# Switch disconnecter supplied with isolator links order reference

<sup>1</sup> Rated duty page 19.

<sup>2</sup> Assumes correct cable box is fitted.

<sup>3</sup> Continuous duty.

<sup>4</sup> 800A unit is rated up to AC22 only. It must be used with SQBX630 (except where mounted on Quadbreak busbar chambers).

Rating <sup>3</sup> AC20/21/22/23	Single phase & switched neutral	Three phase with neutral link	Recommended cable entry box	Cable stud	Palm width	Max. cable size <sup>2</sup>
63A	SQB0632L	SQB0633L	SQBX100	M6	20mm	50mm <sup>2</sup>
100A	SQB1002L	SQB1003L	SQBX100	M8	20mm	50mm <sup>2</sup>
160A	SQB1602L	SQB1603L	SQBX160	M8	20mm	50mm <sup>2</sup>
250A	SQB2502L	SQB2503L	SQBX250	M10	30mm	120mm <sup>2</sup>
400A	-	SQB4003L	SQBX500	M12	50mm	400mm <sup>2</sup>
500A	-	SQB5003L	SQBX500	M12	50mm	400mm <sup>2</sup>
630A	-	SQB6303L	SQBX630	M12	50mm	400mm <sup>2</sup>
800A <sup>4</sup>	-	SQB8003L	SQBX630	M12	50mm	400mm <sup>2</sup>

Cable extension pads are available for 315/630A units reference number OEX630. When fitted they must be used with cable box SQBX630.

## Castell figure locks

Quadbreak can be factory fitted with castell interlock (castle type FS) for locking in off position

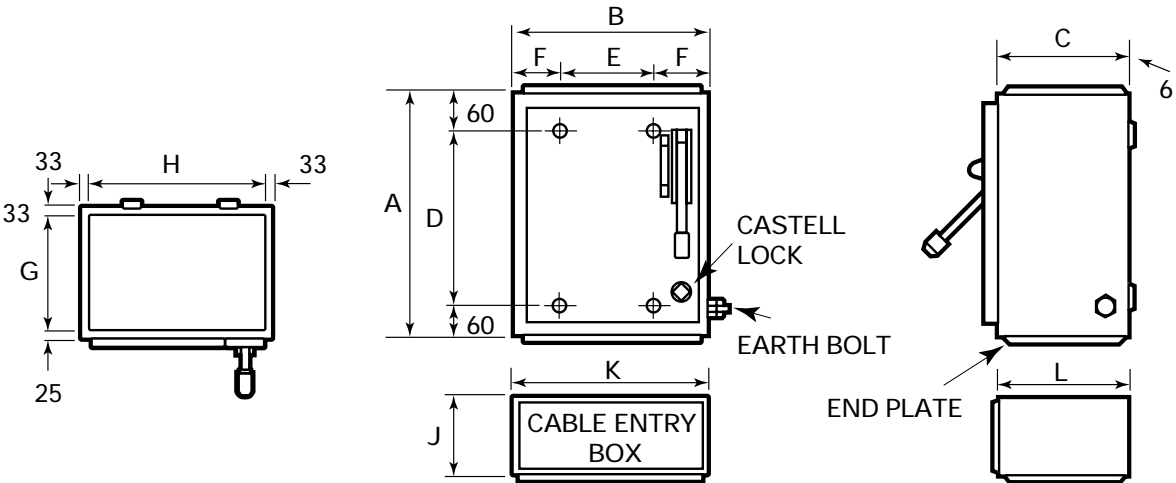
To order:

- 1 Specify required unit eg. SQB503K.
- 2 Add Castle figure lock order suffix EY.
- 3 Add Castle key symbol e.g. A

Thus the order reference for a 250A switch disconnecter fuse fitted with a Castell lock symbol A is **SQB2503KEYA**.

For full technical details see page 20.

# Quadbreak



Current rating	Reference No	Switch enclosures (mm)								Packed Weight kg	Reference No	Cable entry box (mm)		
		A	B	C	D	E	F	G	H			J	K	L
63A	SQB0632K													
	SQB0633K	380	292	200	260	130	81	142	226	14.5	SQBX100	100	292	200
	SQB0632L													
	SQB0633L													
100A	SQB1002K													
	SQB1003K	380	292	200	260	130	81	142	226	15.6	SQBX100	100	292	200
	SQB1002L													
	SQB1003L													
160A	SQB1602K													
	SQB1603K	380	292	200	260	130	81	142	226	15.6	SQBX160	150	292	200
	SQB1602L													
	SQB1603L													
200A/ 250A	SQB2002													
	SQB2003K	380	340	200	260	180	81	142	274	19.5	SQBX250	180	340	200
	SQB2502K													
	SQB2503K													
	SQB2502L													
315A/ 400A	SQB3153K													
	SQB4003K	455	489	270	335	289	100	212	423	36.2	SQBX500	300	489	270
	SQB4003L													
630A 800A*	SQB6303K	455	489	270	335	289	100	212	423	36.2	SQBX630	400	489	270
	SQB6303L													
	SQB8003L													

\*800A unit is provided with cable extension pads which are external to the above dimensions. Cable entry box SQBX630 must be used except where fitted to a Quadbreak busbar chamber.

# Quadbreak busbar chambers with switch units

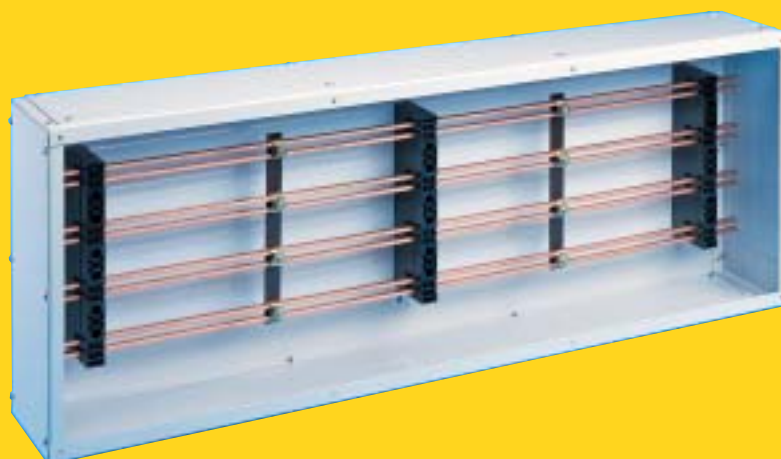
**Primarily designed for Quadbreak switch disconnecter (fuse) the Quadbreak busbar chamber can be used for the mounting of any equipment.**

- Manufactured in accordance with BSEN60439-1.
- 200, 400, 630 and 800 rated copper busbars.
- Available in 750, 1200 and 1800mm lengths.
- Rigid construction.
- Copper link kits available for direct connection of Quadbreak switch disconnecter (fuse).
- Overall height and depth of units remains unchanged for the different current ratings.



# Busbar chamber order reference

Busbar length mm	height mm	depth mm	Current rating			
			200A	400A	630A	800A
750	450	200	SBC20007TN	SBC40007TN	SBC63007TN	SBC80007TN
1200	450	200	SBC20012TN	SBC40012TN	SBC63012TN	SBC80012TN
1800	450	200	SBC20018TN	SBC40018TN	SBC63018TN	SBC80018TN



## Busbar cable connections

Rating	
200A	FTC200
400A	FTC400
630A	FTC630
800A	FTC800



## Busbar interconnections

Rating	
200A	CEC200
400A	CEC400
630A	CEC630
800A	CEC800



## Switch disconnecter busbar interconnections

Rating	Top mounted	Bottom mounted
63/160A	QBL160TN	QBL160BN
200/250A	QBL250TN	QBL250BN
315/630A	QBL630TTN	QBL630BTN
800A	-	QBL800BTN



# Size 1 I-Line fuse switch panelboards 400A

- Single sided to give best possible space utilisation.
- Incoming unit can be mounted at the top or bottom of the panelboard.
- Tin plated busbars are ASTA certified to withstand 50kA for 1 second.
- Dead font construction to IP3X and degree of separation to form 4a (type 5).
- Hinged lift off cable way to provide easy access for cabling.
- Pre-drilled neutral and earth bars are fitted as standard to save installation time.
- Removable top and bottom gland plates.
- Plug on fuse units, keep installation times to a minimum and saves up to 50% on installation times, when compared to more traditional units.
- Fuse switch units are rated to AC23 at 660V.
- Plug on fuse switch units are fitted with door interlocked rotary handles so that the door cannot be opened when the unit is switched on.
- Rotary handles are suitable for padlocking in the OFF position.
- Full front access design is suitable for wall or floor mounting.

## Product selection

### Step 1 - select panelboard required

Catalogue number	Outgoing modules	Maximum outgoing TP fuse switch units		
		63A	100/160A	250A
FP40031	15	3	3	2
FP40061	30	7	6	4



### Step 2 - select incoming device

Catalogue number	Module ways	Maximum current rating	Maximum fuse size
FP100	5	100	A4
FP160	5	160	B2
FP250	7	250	B3
FP400	7	400	B4
FPSL160	5	160	Link
FPSL400	7	400	Link

### Step 3 - select outgoing device

Catalogue number	Module ways	Maximum current rating	Maximum fuse size
FP32	4	32	A2
FP63	4	63	A3
FP100	5	100	A4
FP160	5	160	B2
FP250	7	250	B3
FP400	7	400	B4





FP100

#### Step 4 - accessories

Blank filler covers and Busbar shroud		Pad extension kits	
1 module	3 module	100/160A	250/400A
FP1BP	FP3BP	FPTK160	FPTK400

- Blank filler covers and busbar shroud are required to shroud all outgoing ways not fitted with outgoing plug on units to prevent accidental contact with live parts.
- Pad extension kit comprises three copper extension bars, nuts bolts and terminal sleeves to facilitate cable connection on to plug on units where access may be difficult.



FP1BP

Description	Catalogue number	Dimensions mm			weight kg
		Height	Width	Depth	
Cable spreader box	EXS3811	381	680	258	14
Side extension box 15 mod	EXMS1170	1170	550	258	33
Side extension box 30 mod	EXMS1960	1960	550	258	60

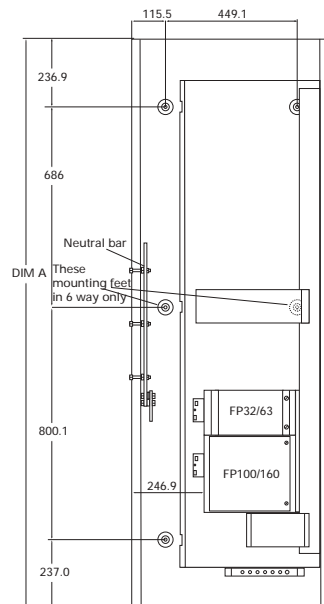
- Cable spreader box to assist in easier termination of larger feeder cables. May be used on the top or bottom of the fuse switch panelboard.
- Side extension box with steel covers may be used to accommodate auxiliary equipment.



FP3BP

Neutral and earthing terminal bars		
Catalogue number	Number of ways	Max. conductor size
NE916	9	25
NE1816	18	25
NE950	9	50
NE7150	7	150
NE13150	13	150

- Neutral and earth terminal bars are field installable terminal bars for clamping stranded cables, as an alternative to the use of compression cable connections on the pre-drilled neutral and earth bar assembly.
- Standard terminal connections: neutral 14mm diameter hole, earth 10mm diameter hole.



Catalogue number	Incoming cable space mm	Width	Depth	Dim A	Weight kg
FP40031	260	680	258	1170	60
FP40061	336	680	258	1960	95

# Size 2 I-Line fuse switch panelboards

## Step 1 select panelboard with factory fitted incomer

Catalogue number	Outgoing modules		Max outgoing TP switch units		
	LH	RH	Up to 63A	100/160	250/400
<b>Main switch</b>					
FPS63062	15	15	6	6	4
FPS630102	25	25	12	10	6
FPS630142	35	35	16	14	10
<b>Main fuse switch</b>					
FPF63062	15	15	6	6	4
FPF630102	25	25	12	10	6
FPF630142	35	35	16	14	10
<b>Main Lugs</b>					
FPL63062	15	15	6	6	4
FPL630102	25	25	12	10	6
FPL630142	35	35	16	14	10

## Step 2 select outgoing device

Catalogue number	Module ways	Maximum current rating A	Maximum fuse size
FP32	4	32	A2
FP63	4	63	A3
FP100	5	100	A4
FP160	5	160	B2
FP250	7	250	B3
FP400	7	400	B4





FP100

### Step 3 accessories

Blank filler covers and busbar shroud		Pad extension kits	
1 module	3 module	100/160A	250/400A
FP1BP	FP3BP	FPTK160	FPTK400

- Blank filler covers and busbar shroud are required to shroud all outgoing ways not fitted with outgoing plug on units to prevent accidental contact with live parts.
- Pad extension kit comprises three copper extension bars, nuts bolts and terminal sleeves to facilitate cable connection on to plug on units where access may be difficult.



FP1BP

Description	Catalogue number	Dimensions mm			weight kg
		Height	Width	Depth	
Cable spreader box	EXS3812	381	1100	258	17
Instrumentation kit 600:5	FP630INS2	236	543	187	8.2
Side extension box 6 way	EXMS1579	1579	550	258	54
Side extension box 10 way	EXMS1960	1960	550	258	60
Side extension box 14 way	EXMS2341	2341	550	258	82

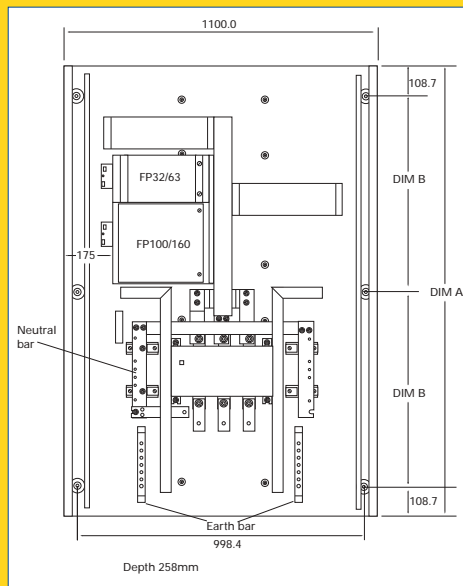
- Cable spreader box to assist in easier termination of larger feeder cubicles. May be used on the top or bottom of the fuse switch panelboard.
- Instrumentation kit field installable, comprising of three ammeters and CT's, voltmeter and selector switch and phase indication lamps.
- Side extension box with steel covers may be used to accommodate auxiliary equipment and could provide extra cabling space.



FP3BP

Neutral and earthing terminal bars		
Catalogue number	Number of ways	Max. conductor size mm
NE916	9	25
NE1816	18	25
NE950	9	50
NE7150	7	150
NE13150	13	150

- Neutral and earth terminal bars are field installable terminal bars for clamping stranded cables, as an alternative to the use of compression cable connections on the pre-drilled neutral and earth bar assembly.
- Standard terminal connections: neutral 14mm diameter hole, Earth 10mm diameter hole.



Catalogue number	Incoming cable space mm	Dimensions mm		Weight kg
		Dim A	Dim B	
FPS80062	415	1579	681	146
FPS800102	415	1960	871	165
FPS800142	415	2341	1062	184
FPF80062	415	1579	681	146
FPF800102	415	1960	871	165
FPF800142	415	2341	1062	184
FPL80062	545	1579	681	132
FPL800102	545	1960	871	151
FPL800142	545	2341	1062	170

# Size 3 I-Line fuse switch panelboards

## Step 1 select panelboard with factory fitted incomer

Catalogue number	Outgoing modules		Max outgoing TP switch units		
	LH	RH	Up to 63A	100/160	250/400
<b>Main switch</b>					
FPS80063	15	15	6	6	4
FPS800103	25	25	12	10	6
FPS800143	35	35	16	14	10
<b>Main fuse switch</b>					
FPF80063	15	15	6	6	4
FPF800103	25	25	12	10	6
FPF800143	35	35	16	14	10
<b>Main lugs</b>					
FPL80063	15	15	6	6	4
FPL800103	25	25	12	10	6
FPL800143	35	35	16	14	10

## Step 2 select outgoing device

Catalogue number	Module ways	Maximum current rating A	Maximum fuse size
FP32	4	32	A2
FP63	4	63	A3
FP100	5	100	A4
FP160	5	160	B2
FP250	7	250	B3
FP400	7	400	B4



### Step 3 accessories



FP100

Blank filler covers and busbar shroud		Pad extension kits	
1 module	3 module	100/160A	250/400A
FP1BP	FP3BP	FPTK160	FPTK400

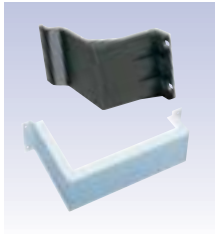
- Blank filler covers and busbar shroud are required to shroud all outgoing ways not fitted with outgoing plug on units to prevent accidental contact with live parts.
- Pad extension kit comprises three copper extension bars, nuts bolts and terminal sleeves to facilitate cable connection on to plug on units where access may be difficult.



FP1BP

Description	Catalogue number	Dimensions mm			weight kg
		Height	Width	Depth	
Cable spreader box	EXS3813	381	1300	258	21
Instrumentation kit 800:5	FP800INS3	236	543	187	8.2
Side extension box 15 mod	EXMS1579	1579	550	258	54
Side extension box 25 mod	EXMS1960	1960	550	258	60
Side extension box 35 mod	EXMS2341	2341	550	258	82

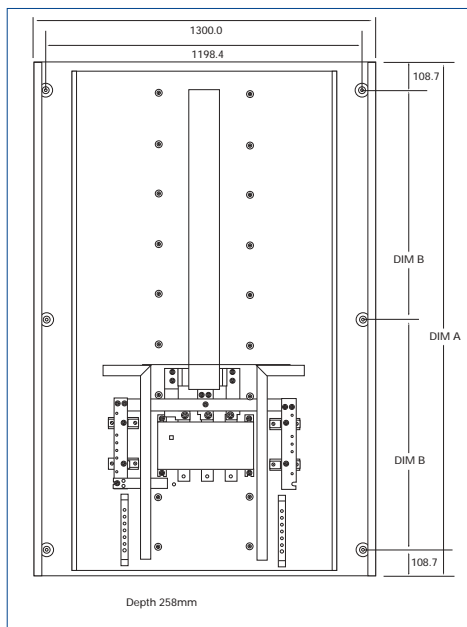
- Cable spreader box to assist in easier termination of larger feeder cables. May be used on the top or bottom of the fuse panelboard.
- Instrumentation kit field installable, comprising of three ammeters and CT's, voltmeter and selector switch and phase indication lamps.
- Side extension box with steel covers may be used to accommodate auxiliary equipment.



FP3BP

Neutral and earthing terminal bars		
Catalogue number	Number of ways	Max. conductor size
NE916	9	25
NE1816	18	25
NE950	9	50
NE7150	7	150
NE13150	13	150

- Neutral and earth terminal bars are field installable terminal bars for clamping stranded cables, as an alternative to the use of compression cable connections on the pre-drilled neutral and earth bar assembly.
- Standard terminal connections: neutral 14mm diameter hole, earth 10mm diameter hole.



Catalogue number	Incoming cable space mm	Dimensions mm		Weight kg
		Dim A	Dim B	
FPS63063	396	1579	681	168
FPS630103	396	1960	871	192
FPS630143	396	2341	1062	216
FPF63063	396	1579	681	168
FPF630103	396	1960	871	192
FPF630143	396	2341	1062	216
FPL63063	595	1579	681	153
FPL630103	595	1960	871	177
FPL630143	595	2341	1062	201

# Size 4 I-Line fuse switch panelboards

## Step 1 select panelboard with factory fitted incomer

Catalogue number	Outgoing modules		Max outgoing TP switch units		
	LH	RH	Up to 63A	100/160	250/400
Main circuit breaker 1200A rated with instrumentation					
PA1200M84MFS	20	20	10	8	4
Main circuit breaker 2000A rated with instrumentation					
PA200084MFS	20	20	10	8	4

## Step 2 select outgoing device

Catalogue number	Module ways	Maximum current rating A	Maximum fuse size
FP32	4	32	A2
FP63	4	63	A3
FP100	5	100	A4
FP160	5	160	B2
FP250	7	250	B3
FP400	7	400	B4



### Step 3 accessories



FP1BP



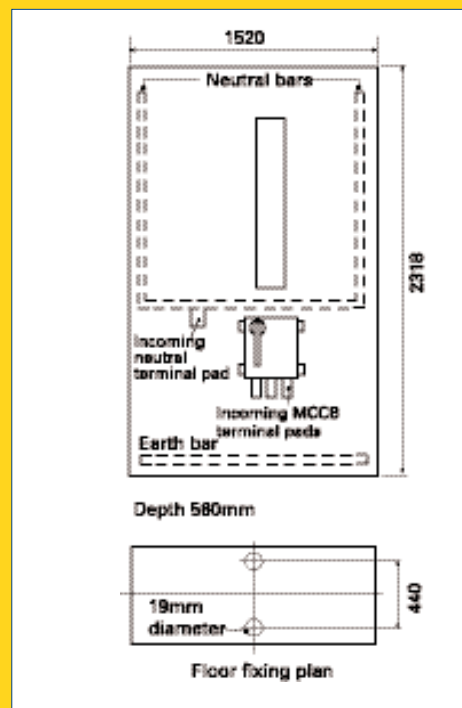
FP3BP

Blank filler covers and busbar shroud		Pad extension kits	
1 module	3 module	100/160A	250/400A
FP1BP	FP3BP	FPTK160	FPTK400

- Blank filler covers and busbar shroud are required to shroud all outgoing ways not fitted with outgoing plug on units to prevent accidental contact with live parts.
- Pad extension kit comprises three copper extension bars, nuts bolts and terminal sleeves to facilitate cable connection on to plug on units where access may be difficult.

Neutral and earthing terminal bars	Number of ways	Max. conductor size
NE916	9	25
NE1816	18	25
NE950	9	50
NE7150	7	150
NE13150	13	150

- Neutral and earth terminal bars are field installable terminal bars for clamping stranded cables, as an alternative to the use of compression cable connections on the pre-drilled neutral and earth bar assembly.
- Standard terminal connections: neutral 14mm diameter hole, earth 10mm diameter hole.



Catalogue number	Incoming cable space mm	Weight kg
PA120084MFS	515	440
PA200084MFS	515	440

# Technical information

## Rated duty

- All equipment built to BS EN 60947-3 Low voltage switchgear and controlgear have ratings based on an 8 hour duty cycle (clause 4.3.4.1.). The rating of Quadbreak and Twinbreak are accordingly based on this clause of the standard.
- For switch disconnector fuse units we recommend that for uninterrupted (continuous) duty loadings do not exceed 80% of its current rating.
- Switch disconnectors (isolators) do not require derating.

## Utilisation category

BSEN 60947-3 details various categories of duty which relate to the nature of the load:

Utilisation category	Application
AC20	<b>Connecting and disconnecting under NO-Load</b> All switching operations are carried out by other devices.
AC21	<b>Switching of resistive loads including moderate overloads</b> Devices can switch purely resistive loads and 150% of its rated current under fault conditions.
AC22	<b>Switching of mixed resistive/inductive loads, including moderate overloads</b> Suitable for mixed resistive/inductive loads, device can switch 300% of its rated current under fault conditions.
AC23	<b>Switching of highly inductive loads</b> Devices can switch motors or can be used as back up to other means of switching.

## Capacitor rating

When used for switching and protection of capacitive loads i.e. Power Factor Correction capacitor banks, Twinbreak, Quadbreak and I-Line fuse switch units should be derated by 50%.

# Technical data

## Clearstart

Ratings	16A	32A	63A
Standard	BSEN60947-3	BSEN60947-3	BSEN60947-3
Rated current Ie	16	32	63
Voltage Ue/Uimp 50/60Hz	690/8kV	690/8kV	690/8kV
Rated short time withstand Icw	300A	480A	960A
Rated short circuit making capacity Icm	1kA	2.1kA	2.8kA
Rated short circuit breaking capacity Icn	200A	320A	640A
Utilisation category	AC20/21/22	AC20/21/22	AC20/21/22
Kilowatt rating	5.5	11	22
Mechanical endurance	50,000	30,000	30,000
Electrical endurance	BSEN60947-3	BSEN60947-3	BSEN60947-3
Rated service temperature	40°C	40°C	40°C

## Twinbreak

Ratings	20A	32A	63A	100A	125A	160A
Standard	BSEN60947-3 I.E.C. 947-3					
Rated current Ie	20A	32A	63A	100A	125A	160A
Voltage Ue/Uimp 50/60Hz	415V/500V/6kV					
Rated short time withstand Icw	416A	416A	756A	1300A	1300A	1300A
Rated short circuit making capacity Icm	1.35kA	1.35kA	1.35kA	3.5kA	3.5kA	3.5kA
Rated short circuit breaking capacity Icn	50kA	50kA	50kA	50kA	50kA	50kA
Utilisation category	AC20/21/22A/23B				AC20/21/22B	
Kilowatt rating	11kW	15kW	30kW	55kW	55kW	55kW
Mechanical endurance	As per BSEN60947-3					
Electrical endurance	As per BSEN60947-3					
Rated service temperature	40°C					

## Quadbreak

Ratings	63A	100A	160A	200/250A	315/400A	500A	630	800A
Standard	BSEN60947-3 I.E.C. 947-3							
Rated current Ie	63A	100A	160A	200/250A	315/400A	500A	630A	800A
Voltage Ue/Uimp 50/60Hz	415/500/8kV							
Rated short time withstand Icw	3.4kA	3.4kA	3.4kA	5.23kA	12kA	12kA	12kA	12kA
Rated short circuit making capacity Icm	5kA	5kA	5kA	8kA	24kA	24kA	24kA	24kA
Rated short circuit breaking capacity Icn	50kA	50kA	50kA	50kA	50kA	50kA	50kA	50kA
Utilisation category	AC20/21/22/23A				AC20/21/22/23B			
Kilowatt rating	30kW	55kW	90kW	110/130kW	175/220kW	250	300kW	-
Mechanical endurance	As per BSEN60947-3							
Electrical endurance	As per BSEN60947-3							
Rated service temperature	40°C							

## I-Line fuse switch units

Ratings	32A	63A	100A	160A	250A	315A	400A
Standard	BSEN60947-3						
Rated current Ie	32A	63A	100A	160A	250A	315A	400A
Voltage Ue/Uimp 50/60Hz	690/1000/8kV						
Rated short time withstand Icw	As per BSEN60947-3						
Rated short circuit making capacity Icm	50kA						
Rated short circuit breaking capacity Icn	50kA						
Utilisation category	AC21/22/23B						
Kilowatt rating	30kW	30kW	55kW	59kW	147kW	184	220kW
Mechanical endurance	As per BSEN60947-3						
Electrical endurance	As per BSEN60947-3						
Rated service temperature	35°C						

# Replacement Fuse Links

## Twinbreak

Rating	BS88 reference	Bussman* reference	GEC reference
20A	A1 44.5mm	NITD20	NIT20
32A	A2 73mm	AA032	TIA20
63A	A3 73mm	BAO63	TIS63
100A	A4 93.7mm	CEO100	TCP100

## Quadbreak

Rating	BS88 reference	Bussman* reference	GEC reference
63A	-	NITD20	TBC63
100A	B1 111mm	CD100	TC100
160A	B2 111mm	DD160	TF160
200A	B2 111mm	DD200	TF200
250A	B3/4 111mm	ED250	TKF250
315A	C1 133mm	EFS315	TKM315
400A	C1 133mm	EF400	TM400
500A	C2 133mm	FF500	TTM500
630A	C2 133mm	FF630	TTM630

\* To conform with ASTA certification Bussman fuses should be used.



# Fuse Link selection data

## Suitable BS 88 HRC fuse links for plug-on units

Fuse switch unit catalogue No	BS 88 ref	Fuse link fixing hole centre	Rating A	Bussman	GEC	BILL	Brush	Lawson				
FP32	A2	73mm	2	AA02	TIA2	BTIA2	2H07	GTIA2				
			4	AA04	TIA4	BTIA4	4H07	GTIA4				
			6	AA06	TIA6	BTIA6	6H07	GTIA6				
			10	AA010	TIA10	BTIA10	10H07	GTIA10				
			16	AA016	TIA16	BTIA16	16H07	GTIA16				
			20	AA020	TIA20	BTIA20	20H07	GTIA20				
			25	AA025	TIA25	BTIA25	25H07	GTIA25				
FP63	A3	73mm	32	AA032	TIA32	BTIA32	32H07	GTIA32				
			35		TIS35	-	-	-				
			40	BA040	TIS40	BTIS40	40K07	TIS40				
			50	BA050	TIS50	BTIS50	50K07	TIS50				
			63	BA063	TIS63	BTIS63	63K07	TIS63				
			FP100	A4	94mm	32	CE032				TCP32	
						40	CE040					TCP40
						50	CE050					TCP50
63	CE063								TCP63			
80	CE080								TCP80			
100	CE0100					TCP100						
FP400	FP250	None	111mm	2	AD2	TBC2	BTBC2	2K09	TBC2			
				4	AD4	TBC4	BTBC4	4K09	TBC4			
				6	AD6	TBC6	BTBC6	6K09	TBC6			
				10	AD10	TBC10	BTBC10	10K09	TBC10			
				16	AD16	TBC16	BTBC16	16K09	TBC16			
				20	AD20	TBC20	BTBC20	20K09	TBC20			
				25	AD25	TBC25	BTBC25	25K09	TBC25			
				32	AD32	TBC32	BTBC32	32K09	TBC32			
				35		TBC35						
				40	BC40	TBC40	BTBC40	40K09	TBC40			
				50	BC50	TBC50	BTBC50	50K09	TBC50			
				63	BC63	TBC63	BTBC63	63K09	TBC63			
				FPT60	B1	111mm	80	CD80	TC80	BTBC80	80L09	TC80
							100	CD100	TC100	BTBC100	100L09	TC100
	100MI25		TC100MI25									
	100M160		TC100M160				BTBC100M160	1100M160L09				
	B2	111mm	125		DD125	TF125	BTF125	125M09	TF125			
			160		DD160	TF160	BTF160	160M09	TF160			
	B2	111mm	200		DD200	TF200	BTF200	200M09	TF200			
			200M250			TF200M250	BTF200M250	200M250M09				
	B3	111mm	250		ED250	TKF250	BTKF250	250N09	TKF250			
	B3	111mm	315		ED315	TFK315	315BTKF315	315N09	TKF315			
			315M355			TKF315M350						
	B4	111mm	355		ED355	TMF355	BTMF355	355P09	TMF355			
			400		ED400	TMF400	BTMF400	400P09	TMF400			

## Suitable BS 88 HRC fuse links for incoming units

800A	630A	C1	133mm	355	EF355	TM355	BTM355	355P11	TM355
				400	EF400	TM400	BTM400	400P11	TM400
				400M450		TM400M450			
				450	FF450	TTM450	BTTM450	450R11	TTM450
				500	FF500	TTM500	BTTM500	500R11	TTM500
				560	FF560	TTM560	BTTM560	560R11	TTM560
	C2	133mm	630	FF630	TTM630	BTTM630	630R11	TTM630	
			670		TLM670			TLM670	
			710	GF710	TLM710	BTLM710	710S11	TLM710	
			750		TLM750			TLM750	
			800	GF800	TLM800	BTLM800	800S11	TLM800	

# Other Square D products

## Qwikline II consumer units



- Insulated and metal consumer units 2 to 24 SP ways, standard, split bus, dual and multi tariff supply options.
- Accept plug on 6kA MCB's, RCBO's and control and command devices.
- Totally encapsulated busbar system providing complete finger safety to IP2XB.

## I-Line panelboards



### MCCB panelboards:

- Four sizes with incoming devices from 250A to 2000A.
- Outgoing Plug-On single pole and triple MCCB devices, 16A to 1250A.
- Full compliment of accessories, cable extension boxes, plinths, side extension boxes, instrumentation kits and blanking plates.

# Other Square D products

## 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 disconnecter 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 disconnecter, 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.

## 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.
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