

electrium



 **Crabtree**

Starbreaker
Consumer Units
& Devices



electrium

LAKEBIDE POINT
AQ 2005

Electrium Sales Ltd. is a Siemens company,
Crabtree is part of Electrium.

CONTENTS

Consumer Units	8
Meter Cabinet Consumer Units	11
Consumer Unit Accessories	12
Miniature Arc Fault Detection Devices	14
Surge Protection Devices	16 & 21
Miniature RCBOs	18
Miniature Circuit Breakers	20
Replacement Incomers	22
Enclosures	22
Busbar Kits	23
DIN Rail Mounting Accessories	24
Lifestar RCCB Range	26
Domestic Switch Fuse	28
Technical Data & Dimensions	30



Certificate Number 18828
ISO 9001, ISO 14001, ISO 45001



2013-RTL-L4-75
2013-RTL-L4-36



Testing Laboratory No. 1460
Testing Laboratory No. 2003

As a leading manufacturer of electrical installation equipment, Crabtree is committed to the continual improvement of all quality assurance procedures and performance.

**Crabtree**
EASIER, SAFER, FASTER.

STARBREAKER MINIATURE AFDDs

Arc Fault Detection, RCD and MCB in a single module device

AFDDs Mandated

The use of Arc fault detection devices is mandated for single-phase AC final circuits supplying socket-outlets (with a rated current up to 32A) in certain types of premises.

- In Higher Risk Residential Buildings (HRRB)
- In Houses in Multiple Occupation (HMO)
- In Purpose-Built Student Accommodation
- In Care Homes

AFDDs Recommended in All Other Premises

The use of AFDDs is also recommended in all other types of premises for single-phase AC final circuits supplying socket outlets rated up to 32A.

AFDDs in Consumer Units

AFDDs shall be placed at the origin of the circuit to be protected i.e. in the consumer unit or distribution board.



EASIER, SAFER, FASTER.

(1) Requirements of BS7671 can be found in Chapters 13 (Protection For Safety) and Chapter 42 (Protection Against Thermal Effects) other chapters may also be applicable. Readers should refer to BS7671 including Amendment 2 for full details.

STARBREAKER MINIATURE SPDs

Transient overvoltage protection
in consumer units

SPDs Required in All Installations

Transient overvoltage protection devices (SPDs) are now required in all electrical installations however, in some cases the owner of the installation can opt out and accept all risks and consequential losses from such overvoltages.

Specific Installations - No Exceptions

Transient overvoltage protection must be provided where the consequence of overvoltage can cause.

- serious injury to, or loss of, human life
- failure of a safety service, as defined in Part 2
- significant financial or data loss.

All Other Installations

Transient overvoltage protection is required in all other cases too unless the owner of the installation declares it is not required and accepts all risks, consequences and losses.

See BS 7671 (including Amendment 2) for full details.



EASIER, SAFER, FASTER.

STARBREAKER MINIATURE RCBOs

Single module, type A RCBOs
with switched neutral as standard.

RCBOs & Avoiding Unwanted Tripping

Amendment 2 to BS 7671 states - Where additional protection is required (by use of a 30mA device) designers should consider the use of RCBOs for individual final circuits in residential premises in order to avoid unwanted tripping of healthy circuits.

Earth Leakage Current in Normal Operation

Any earth leakage currents that occur during normal operation of equipment should not cause unwanted tripping.

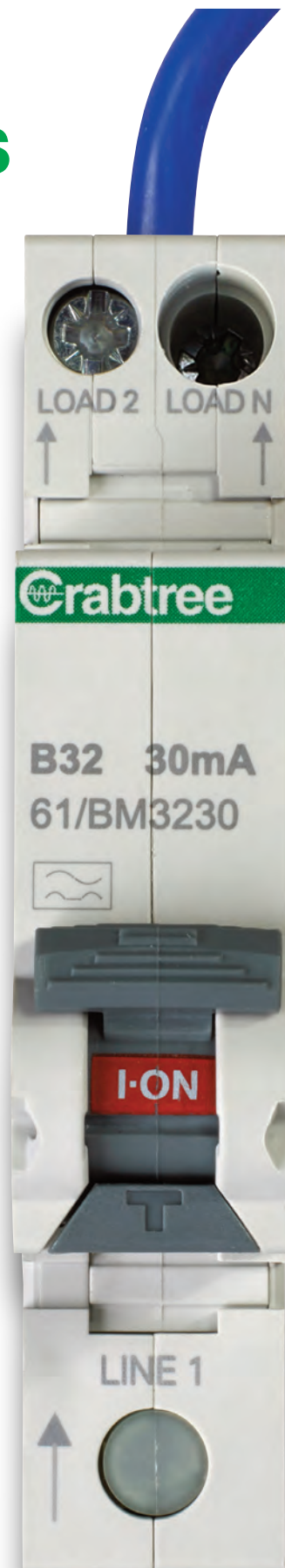
PE Currents - No more than 9mA

To avoid unwanted tripping by protective conductor currents such currents should be less than 30% of 30mA (9mA).

Chapter 53 & Chapter 31

Every installation must be divided into final circuits as necessary to reduce the possibility of unwanted tripping of RCDs, avoid danger, minimize inconvenience in the event of a fault and to avoid hazards from the failure of a single circuit such as a lighting circuit.

Use of RCBOs per circuit, instead of grouping circuits to single RCDs, is a more reliable way of maintaining power continuity, avoiding unwanted tripping, and meeting the requirements of the wiring regulations including Amendment 2.



EASIER, SAFER, FASTER.

ULTIMATE PROTECTION FOR RESIDENTIAL INSTALLATIONS

Safety and style

Starbreaker all metal consumer units have an attractive curved metal visor providing a useful and practical temporary locking facility. Where included Starbreaker RCCBs are type A (80A or 100A 30mA) mirroring the specification of Starbreaker miniature RCBOs and AFDD/RCBOs to ensure performance consistency across the range.

Safer installation

Main incoming isolators include twin supply terminals providing greater support and stronger more robust connections for meter tails. Starbreaker plug in AFDDs, SPDs, double pole RCBOs & MCBs make instant guaranteed connections, which equates to 25% fewer screw terminations, significantly reducing the risk of loose connections. Circuits may be added or upgraded without the need to disturb adjacent devices as busbar removal is not necessary.

Only Starbreaker switchgear can be fitted preventing cross brand pollution throughout the lifespan of the consumer units installation therefore completely supporting the correct integration of devices and components (Chapter 53).

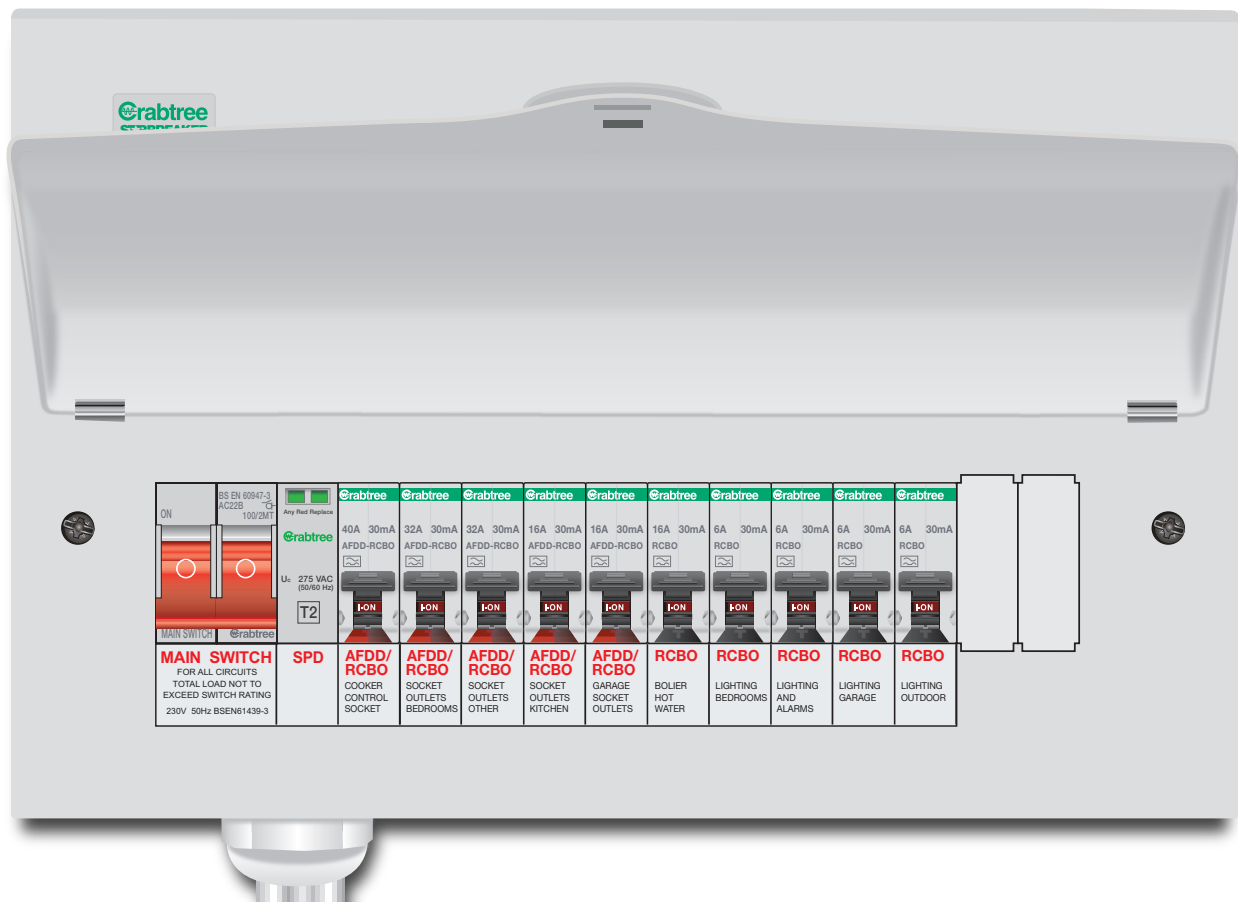
Personal protection

The insulated busbar assembly provides greater personal protection with permanent, factory fitted, non removeable busbar insulation which cannot be lost or left out. DIN control devices can be placed in any position along the full width DIN rail without affecting any other device or busbar connection. All Consumer Units include clearly marked high capacity neutral and earth terminals.

Ease of installation

All Type A RCCBs are two modules wide which means split load, high integrity twin RCD and dual RCD options all have plenty of outgoing ways. Cabling capacity is amongst the most generous available due to the miniature size of all Starbreaker devices. There are plenty of cable entry knockouts on all sides & large square knockouts on the rear and the of a main tails cable entry gland allows for supplementary insulation similar to class II level of protection to tails.

UKAS certified to BS EN 61439-3 and RoHS compliant in excess of UK standards.



STARBREAKER CONSUMER UNITS



513/2B



526/283B

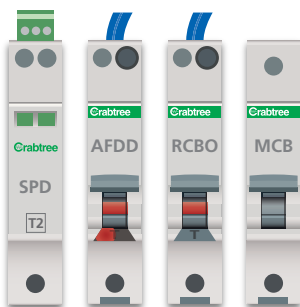
MAIN SWITCH UNITS

MS Rating	Enclosure Size	Total Ways	List No.
40A	4 module	2	502/2B
63A	4 module	2	502/26B
100A	6 module	4	504/2B
100A	9 module	7	507/2B
100A	12 module	10	510/2B
100A	15 module	13	513/2B
100A	20 module	18	518/2B

MAIN SWITCH TWO BANK UNITS

MS Rating	Enclosure Size	Total Ways	List No.
100A	24 module	21	521/2B
100A	30 module	27	527/2B
100A	40 module	37	537/2B

- Full DIN rail throughout
- Consumer unit accessories on pages 12 & 13
- Consumer unit dimensions on pages 32 & 33
- For further information please contact Crabtree technical support 01543 438310



SPLIT LOAD UNITS 80A 30mA TYPE A RCCB

MS Rating	Enclosure Size	Total Ways	Main Switch Ways	RCCB Ways	List No.
100A	12 module	8	4	4	508/2483B
100A	15 module	11	5	6	511/2583B
100A	15 module	11	6	5	511/2683B
100A	15 module	11	7	4	511/2783B
100A	20 module	16	7	9	516/2783B
100A	20 module	16	8	8	516/2883B
100A	20 module	16	9	7	516/2983B

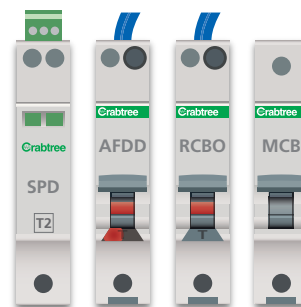
SPLIT LOAD UNITS 100A 30mA TYPE A RCCB

MS Rating	Enclosure Size	Total Ways	Main Switch Ways	RCCB Ways	List No.
100A	15 module	11	6	5	511/2613B
100A	20 module	16	8	8	516/2813B

SPLIT LOAD DUPLEX UNITS 80A 30mA TYPE A RCCB

MS Rating	Enclosure Size	Total Ways	Main Switch Ways	RCCB Ways	List No.
100A	24 module	20	10	10	520/283B
100A	30 module	26	13	13	526/283B
100A	40 module	36	18	18	536/283B

- Full DIN rail throughout
- Consumer unit accessories on pages 12 & 13
- Consumer unit dimensions on pages 32 & 33
- For further information please contact Crabtree technical support 01543 438310





514/231615B

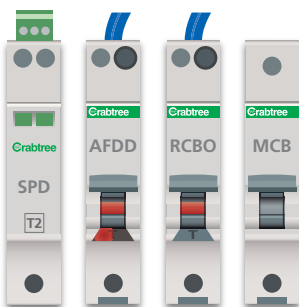
HIGH INTEGRITY TWIN RCD UNITS 80A 30mA TYPE A RCCBs

MS Rating	Enclosure Size	Total Ways	Main Switch Ways	RCCB 1 Ways	RCCB 2 Ways	List No.
100A	15 module	9	1	4	4	509/218484B
100A	15 module	9	3	3	3	509/238383B
100A	20 module	14	3	6	5	514/238685B
100A	20 module	14	4	5	5	514/248585B
100A	20 module	14	6	4	4	514/268484B

HIGH INTEGRITY TWIN RCD UNITS 100A 30mA TYPE A RCCBs

MS Rating	Enclosure Size	Total MCB Ways	Main Switch Ways	RCCB 1 Ways	RCCB 2 Ways	List No.
100A	15 module	9	1	4	4	509/211414B
100A	20 module	14	3	6	5	514/231615B

- Full DIN rail throughout
- Consumer unit accessories on pages 12 & 13
- Consumer unit dimensions on pages 32 & 33
- For further information please contact Crabtree technical support 01543 438310



514/2837837B

DUAL RCD SPLIT LOAD UNITS 80A 30mA TYPE A RCCBs

MS Rating	Enclosure Size	Total Ways	Main Switch Ways	RCCB 1 Ways	RCCB 2 Ways	List No.
100A	15 module	9	0	5	4	509/2835834B
100A	20 module	14	0	7	7	514/2837837B
100A	20 module	14	0	8	6	514/2838836B

DUAL RCD SPLIT LOAD UNITS 100A 30mA TYPE A RCCBs

MS Rating	Enclosure Size	Total Ways	Main Switch Ways	RCCB 1 Ways	RCCB 2 Ways	List No.
100A	15 module	9	0	5	4	509/2135134B
100A	20 module	14	0	7	7	514/2137137B

DUAL RCD SPLIT LOAD DUPLEX UNITS 80A 30mA TYPE A RCCBs

MS Rating	Enclosure Size	Total Ways	Main Switch Ways	RCCB 1 Ways	RCCB 2 Ways	List No.
100A	24 module	18	0	8	10	518/28383B
100A	30 module	24	0	11	13	524/28383B
100A	40 module	34	0	16	18	534/28383B

- Full DIN rail throughout
- Consumer unit accessories on pages 12 & 13
- Consumer unit dimensions on pages 32 & 33
- For further information please contact Crabtree technical support 01543 438310



STARBREAKER CONSUMER UNITS



504/383B

RCD INCOMER UNITS TYPE A RCCB

RCCB Rating	Enclosure Size	Total Ways	List No.
63A 30mA	4 module	2	502/363B
80A 30mA	6 module	4	504/383B
80A 30mA	9 module	7	507/383B
80A 30mA	12 module	10	510/383B
100A 30mA	15 module	13	513/313B

RCD INCOMER UNIT 63A 30mA TYPE A RCCB WITH MCBs

RCCB Rating	Enclosure Size	Total Ways	MCB 1 (B)	MCB 2 (B)	List No.
63A 30mA	4 module	2	6A	16A	502/363GU

- Full DIN rail throughout
- Consumer unit accessories on pages 12 & 13
- Consumer unit dimensions on pages 32 & 33
- For further information please contact Crabtree technical support 01543 438310

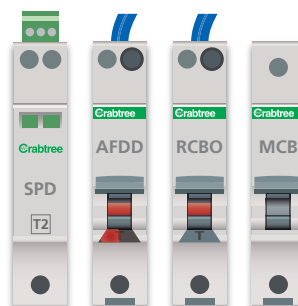


511/282B

DUAL & MULTI TARIFF UNITS

MS Rating	Enclosure Size	Total Ways	Tariff 1 Main Switch Ways	Tariff 2 Main Switch Ways	Tariff 3 Main Switch Ways	List No.
100A	9 module	5	3	2	0	505/232B
100A	12 module	8	6	2	0	508/262B
100A	15 module	11	7	4	0	511/272B
100A	15 module	11	8	3	0	511/282B
100A	20 module	16	10	6	0	516/212B
100A	20 module	16	11	5	0	516/2112B
100A	20 module	14	7	1	6	514/272126B

- Full DIN rail throughout
- Consumer unit accessories on pages 12 & 13
- Consumer unit dimensions on pages 32 & 33
- For further information please contact Crabtree technical support 01543 438310



STARBREAKER CONSUMER UNITS FOR METER CABINETS



610/2B

MAIN SWITCH METER CABINET UNITS

273mm WIDE FIXING CENTRES

MS Rating	Enclosure Size	Total Ways	List No.
100A	9 module	7	607/2B

320mm WIDE FIXING CENTRES

MS Rating	Enclosure Size	Total Ways	List No.
100A	12 module	10	610/2B

430mm WIDE FIXING CENTRES

MS Rating	Enclosure Size	Total Ways	List No.
100A	15 module	13	613/2B

SPLIT LOAD METER CABINET UNITS

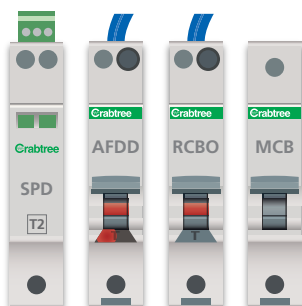
320mm WIDE FIXING CENTRES - 80A 30mA TYPE A RCCB

MS Rating	Enclosure Size	Total Ways	Main Switch Ways	RCCB Ways	List No.
100A	12 module	8	4	4	608/2483B

430mm WIDE FIXING CENTRES - 80A 30mA TYPE A RCCB

MS Rating	Enclosure Size	Total Ways	Main Switch Ways	RCCB Ways	List No.
100A	15 module	11	5	6	611/2583B

- Full DIN rail throughout
- Consumer unit accessories on pages 12 & 13
- Consumer unit dimensions on pages 32 & 33
- For further information please contact Crabtree technical support 01543 438310



609/218484B

HIGH INTEGRITY TWIN RCD METER CABINET UNITS

320mm WIDE FIXING CENTRES - 80A 30mA TYPE A RCCBs

MS Rating	Enclosure Size	Total Ways	Main Switch Ways	RCCB 1 Ways	RCCB 2 Ways	List No.
100A	12 module	6	2	2	2	606/228282B

430mm WIDE FIXING CENTRES - 80A 30mA TYPE A RCCBs

MS Rating	Enclosure Size	Total Ways	Main Switch Ways	RCCB 1 Ways	RCCB 2 Ways	List No.
100A	15 module	9	1	4	4	609/218484B

DUAL RCD METER CABINET UNITS

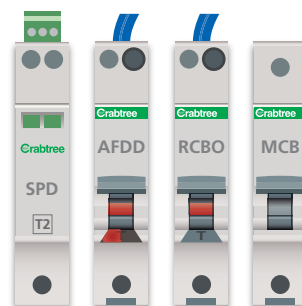
320mm WIDE FIXING CENTRES - 80A 30mA TYPE A RCCBs

MS Rating	Enclosure Size	Total Ways	Switch Ways	RCCB 1 Ways	RCCB 2 Ways	List No.
100A	12 module	6	0	3	3	606/2833833B

430mm WIDE FIXING CENTRES - 80A 30mA TYPE A RCCBs

MS Rating	Enclosure Size	Total Ways	Main Switch Ways	RCCB 1 Ways	RCCB 2 Ways	List No.
100A	15 module	9	0	5	4	609/2835834B

- Full DIN rail throughout
- Consumer unit accessories on pages 12 & 13
- Consumer unit dimensions on pages 32 & 33
- For further information please contact Crabtree technical support 01543 438310



STARBREAKER CONSUMER UNIT ACCESSORIES

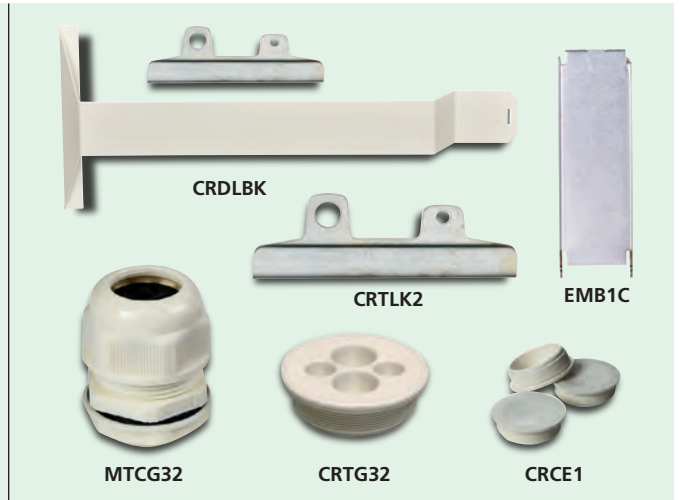


INTUMESCENT STRIPS FITTED INSIDE CONSUMER UNIT COVERS

INTUMESCENT STRIPS

Description	Enclosure Size	List No.
Intumescent Strip	6 module	CR0708FS
Intumescent Strip	9 module	CR1009FS
Intumescent Strip	12 module	CR1312FS
Intumescent Strip	15 module	CR1615FS
Intumescent Strip	20 module	CR2120FS

- Application guidance covering the full consumer unit range is available from the Starbreaker technical department



CABLE ENTRY ACCESSORIES - MAINS TAILS GLAND

Description	List No.
Mains tails gland - 32mm knockout	MTCG32
Flush 'push fit' tails grommet - 32mm knockout	CRTG32

Mains tails accessories are for 16mm² or 25mm² double insulated cable and 16mm² earth cable

FIRE RETARDENT MEMBRANE CABLE ENTRIES

Description	List No.
Membrane cable entries kit 1 - 3 x 32mm & 7 x 20mm	CRCE1
Membrane cable entries kit 2 - 10 x 20mm	CRCE2

VISOR LOCKING KIT

Description	List No.
Visor Locking Kit	CRTLK2
Visor Locking Kit for Duplex Consumer Units	CRDLBK

- An additional padlock is required
Holes in this locking device are 4mm and 8mm in diameter so to accommodate different padlock shackle sizes

TOUCH UP PAINT

Description	List No.
White touch up paint RAL9010	18M59010TUP

STARBREAKER ACCESSORIES

Description	List No.
Push Fit Metal Blank	EMB1C
Twist Fit Blank	CSBC
Full Profile Blank	CSB1
MCB Padlocking Device	MCBLD
Padlock	748
25mm ² Earth Terminal	18ET25



515/FLA



MNSPE6584/4NR

FLUSH MOUNTING KITS FOR STARBREAKER

Description	Enclosure Size	List No.
6 Module Flush Kit Assembly	6 module	506/FLA
9 Module Flush Kit Assembly	9 module	509/FLA
12 Module Flush Kit Assembly	12 module	512/FLA
15 Module Flush Kit Assembly	15 module	515/FLA
20 Module Flush Kit Assembly	20 module	520/FLA
24 Module Flush Kit Assembly	24 module (duplex)	524/FLA
30 Module Flush Kit Assembly	30 module (duplex)	530/FLA
40 Module Flush Kit Assembly	40 module (duplex)	540/FLA

- For flush fitting of surface mounting Starbreaker units only
- Not suitable for meter cabinet units

CONSUMER UNIT PATTTRESSES FOR STARBREAKER

Depth	Enclosure Size	North / South List No.
16mm	6 module	MNSPE6584/1NR
16mm	9 module	MNSPE6584/2NR
16mm	12 module	MNSPE6584/3NR
16mm	15 module	MNSPE6584/4NR
16mm	20 module	MNSPE6584/5NR

Depth	Enclosure Size	East / West List No.
16mm	6 module	MNSPE6670/1NR
16mm	9 module	MNSPE6670/2NR
16mm	12 module	MNSPE6670/3NR
16mm	15 module	MNSPE6670/4NR
16mm	20 module	MNSPE6670/5NR

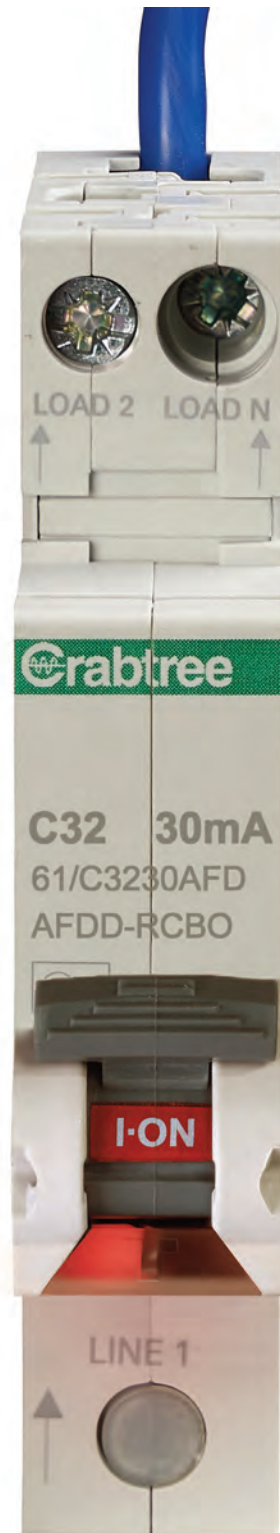
- For use with Starbreaker consumer units
- Allows surface cable entry through rear knockouts when mounting upon solid walls
- Cable entry slot may be positioned North / South or East / West
- Not suitable for meter cabinet units

Dimensions page 32

STARBREAKER MINIATURE AFDDs

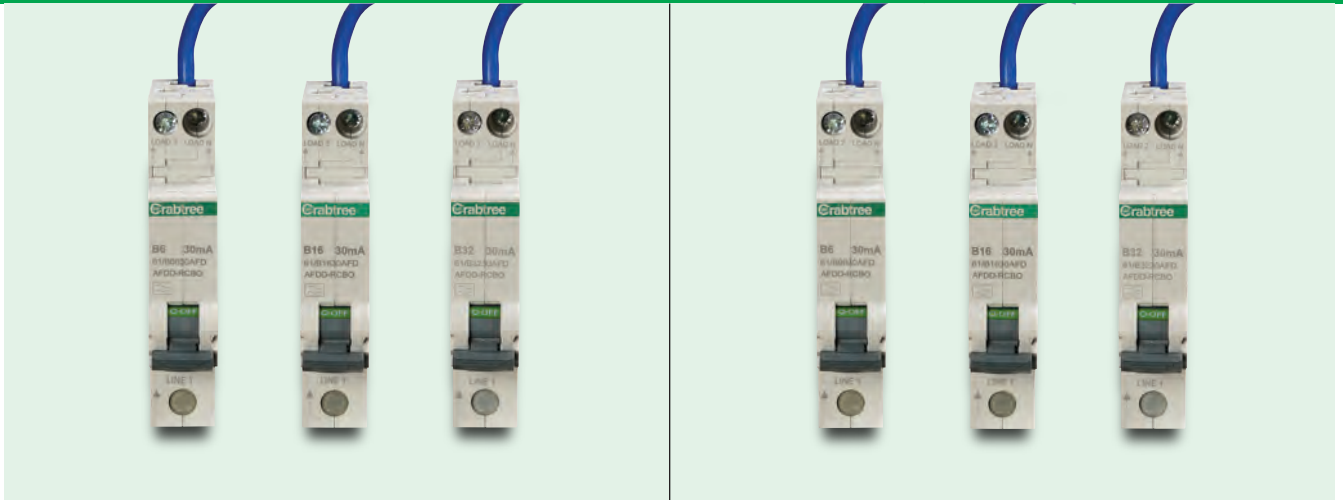
Arc Fault Detection Devices with Integral RCBO

- MCB sized AFDD
- Easy to install
- Uses 1 consumer unit way
- Ring circuit compatible
- Radial circuit compatible
- Detects series arc faults
- Detects parallel arc faults
- Includes integral Type A RCBO
- Includes double pole switching
- Self tests every day
- Fault type indicator light
- Fits regular consumer units
- No special assembly required
- BS EN 62606 compliant
- One size fits all



Also available as an AFDD-MCB device

STARBREAKER MINIATURE AFDDs



MINIATURE AFDD / RCBO (TYPE A, 6kA)

Rating	RCD Rating	RCD Type	Switching Poles	Modules	B Curve List No.
6A	30mA	A	2	1	61/B0630AFD
10A	30mA	A	2	1	61/B1030AFD
13A	30mA	A	2	1	61/B1330AFD
16A	30mA	A	2	1	61/B1630AFD
20A	30mA	A	2	1	61/B2030AFD
25A	30mA	A	2	1	61/B2530AFD
32A	30mA	A	2	1	61/B3230AFD
40A	30mA	A	2	1	61/B4030AFD

Starbreaker AFDD/RCBOs combine all protective functions of both an AFDD and RCBO within a single module, miniature device.

Type A RCD - Pure AC and pulsating DC sensitivity

Switched neutral as standard.

MINIATURE AFDD / MCB (6kA)

Rating	RCD Rating	RCD Type	Switching Poles	Modules	B Curve List No.
6A	-	-	2	1	61/B06AFD
10A	-	-	2	1	61/B10AFD
16A	-	-	2	1	61/B16AFD
20A	-	-	2	1	61/B20AFD
32A	-	-	2	1	61/B32AFD
40A	-	-	2	1	61/B40AFD

Starbreaker AFDD/MCBs combine the protective functions of both AFDD and MCB within a single module, miniature device.

Switched neutral as standard.

Starbreaker AFDD / MCBs can be included within existing units where residual fault current protection is provided to a number of circuits via 30 mA RCCB(s).

MINIATURE AFDD / RCBO (TYPE A, 6kA)

Rating	RCD Rating	RCD Type	Switching Poles	Modules	C Curve List No.
6A	30mA	A	2	1	61/C0630AFD
10A	30mA	A	2	1	61/C1030AFD
13A	30mA	A	2	1	61/C1330AFD
16A	30mA	A	2	1	61/C1630AFD
20A	30mA	A	2	1	61/C2030AFD
25A	30mA	A	2	1	61/C2530AFD
32A	30mA	A	2	1	61/C3230AFD
40A	30mA	A	2	1	61/C4030AFD

Starbreaker AFDD/RCBOs combine all protective functions of both an AFDD and RCBO within a single module, miniature device.

Type A RCD - Pure AC and pulsating DC sensitivity

Switched neutral as standard.

SURGE PROTECTION DEVICES

Transient overvoltage protection for consumer units

- MCB sized SPD
- For Starbreaker consumer units
- Direct busbar connection
- Simple installation process
- Uses 1 consumer unit way
- 100A rated
- No back up MCB required
- Type 2 surge protection
- Health status indicator
- Remote signal facility
- Replace cartridge indicator
- BS EN 61643 -11
- Retrofit compatible
- Protects appliances and electronic devices
- One size fits all



EASIER, SAFER, FASTER.

TYPE 2 SURGE ARRESTER OPTIONS



SBT2SPD3W/1

SURGE PROTECTION DEVICE

Description	List No.
Miniature Type 2 SPD	SBT2SPD3W/1

- For installer assembly within standard Starbreaker consumer units
- Suitable for all Single Phase 3 Wire Systems TN-C-S, TN-S and TT
- Clear Indication of device status
- Fitted with remote signalling contact
- Starbreaker device with plug-in busbar connection
- Suitable for use in Main Switch, Split Load & Hi-Integrity consumer unit configurations
- Not suitable for Dual RCD configurations

For stand alone type 2 surge arrester options see page 21.

TECHNICAL DATA

Product Standard	IEC EN 61643-11
Nominal discharge surge current (8/20) μs	20kA
Short-circuit breaking capacity (I_{sc}cr)	25kA
Max. continuous voltage AC	275V
Max. discharge surge current (8/20) μs	40kA
Voltage protection level	1.3 kV
Voltage protection level L-N	1.3 kV
Voltage protection level N-PE	1.3 kV
Degree of protection	IP20
Dimensions	Height 85mm x Width 18mm x Depth 70mm



CRT2SPD/P

REPLACEMENT PLUG-IN CARTRIDGE

Description	List No.
Replacement Plug-in Cartridge for SBT2SPD3W/1	CRT2SPD/P

- Combined Metal Oxide Varistor (L1 & N) and Gas Discharge Tube (N & E)

STARBREAKER MINIATURE RCBOs

Type A RCBOs with switched neutral as standard.

- MCB sized RCBO
- Maximises wiring space
- Plug in connection
- Guaranteed busbar alignment
- Maintains power continuity
- Type A 30mA device
- Two pole switching device
- IR Test compatible (off position)
- Total isolation of faults
- Safer working environment
- B & C Curve variants
- 6A to 40A
- Fully compliant to IEC 61009-1
- Retro fit compatible
- One size fits all



STARBREAKER MINIATURE RCBOs



MINIATURE RCBO (TYPE A, 6kA)

Rating	RCD Rating	RCD Type	Switched Poles	Modules	B Curve List No
6A	30mA	A	2	1	61/BM0630
10A	30mA	A	2	1	61/BM1030
16A	30mA	A	2	1	61/BM1630
20A	30mA	A	2	1	61/BM2030
25A	30mA	A	2	1	61/BM2530
32A	30mA	A	2	1	61/BM3230
40A	30mA	A	2	1	61/BM4030

Type A RCD - Pure AC and pulsating DC sensitivity

Switched neutral as standard.

MINIATURE RCBO (TYPE A, 6kA)

Rating	RCD Rating	RCD Type	Switched Poles	Modules	C Curve List No
6A	30mA	A	2	1	61/CM0630
10A	30mA	A	2	1	61/CM1030
16A	30mA	A	2	1	61/CM1630
20A	30mA	A	2	1	61/CM2030
25A	30mA	A	2	1	-
32A	30mA	A	2	1	61/CM3230
40A	30mA	A	2	1	61/CM4030

Type A RCD - Pure AC and pulsating DC sensitivity

Switched neutral as standard.

STARBREAKER MINIATURE CIRCUIT BREAKERS



MINIATURE CIRCUIT BREAKERS (6kA)

Rating	Poles	Modules	B Curve List No
6A	1	1	61/B06
10A	1	1	61/B10
16A	1	1	61/B16
20A	1	1	61/B20
32A	1	1	61/B32
40A	1	1	61/B40
50A	1	1	61/B50

• BS EN 60898



MINIATURE CIRCUIT BREAKERS (6kA)

Rating	Poles	Modules	C Curve List No
6A	1	1	61/C06
10A	1	1	61/C10
16A	1	1	61/C16
20A	1	1	61/C20
32A	1	1	61/C32
40A	1	1	61/C40
50A	1	1	61/C50

• BS EN 60898

TYPE 2 SURGE ARRESTER OPTIONS



CSPD7462-1

3 CONDUCTOR SYSTEM; L, N, PE

Description	List No.
Type 2 Surge Arrester single phase 3 wire systems	CSPD7462-1

REPLACEMENT PLUGS

Description	List No.
L-N Varistor Plug, Type 2 20kA (8/20) μ s	CSPD7468-1
N-PE GDT Plug, Type 2 20kA (8/20) μ s, 12.5 kA (10/350) μ s	CSPD7468-1

- Plugs are keyed to ensure correct alignment

Type 2 Surge Arresters provide protection against overvoltage originating from switching and the secondary effects of lightning strikes. These devices will discharge current having an 8/20 μ s waveform and provide a low voltage protection level of ≤ 1.5 kV (Up) for sensitive electronic equipment exceeding the requirements for category II equipment identified within table 44.3 (BS7671).

Surge and lightning arresters have a lifespan directly related to the number and magnitude of their operations.

All Crabtree devices provide visual life status indication.

The plug in unit must be removed during installation insulation resistance testing.



502RECBS

50SPDREC

ENCLOSED ISOLATOR WITH TYPE 2 SURGE ARRESTER

Description	List No.
Metal Consumer Unit Enclosure with 100A DP Supply Isolator and Type 2 SPD, CSPD7462-1	502RECBS

INSULATED REC ENCLOSED ISOLATOR WITH TYPE 2 SURGE ARRESTER

Description	List No.
Insulated Three Part Sealable Enclosure with 100A DP Supply Isolator and Type 2 SPD, CSPD7462-1	40SPDREC

METAL REC ENCLOSED ISOLATOR WITH TYPE 2 SURGE ARRESTER

Description	List No.
Metal Three Part Sealable Enclosure with 100A DP Supply Isolator and Type 2 SPD, CSPD7462-1 (220 X 88 X 66mm)	50SPDREC
Extended Metal Three Part Sealable Enclosure with 100A DP Supply Isolator and Type 2 SPD, CSPD7462-1 (280 X 88 X 66mm)	50SPDREC/1

STARBREAKER REPLACEMENT INCOMERS & ENCLOSURES



100/2MTT

380/A030

MAIN INCOMING SWITCH DISCONNECTORS

Description	Rating	Modules	List No.
Main Switch Disconnector DP	40A	2 module	40/MI2
Main Switch Disconnector DP	63A	2 module	63/MI2
Main Switch Disconnector DP	100A	2 module	100/2MTT

- IEC 60947-3
- 100/2MTT includes twin supply terminals

MAIN INCOMING SWITCH DISCONNECTORS

Description	Rating	Modules	List No.
Direct Connection Unit SP	100A	1 module	100/DC1
Direct Connection Unit DP	100A	2 module	100/DC2

- IEC 60947-3

RESIDUAL CURRENT CIRCUIT BREAKERS TYPE A

Description	Rating	List No.	List No.
Type A RCCB DP	63A 30mA	2 module	363/A030
Type A RCCB DP	80A 30mA	2 module	380/A030
Type A RCCB DP	100A 30mA	2 module	310/A030

- BS EN 60898
- Electro-mechanical



540/2A

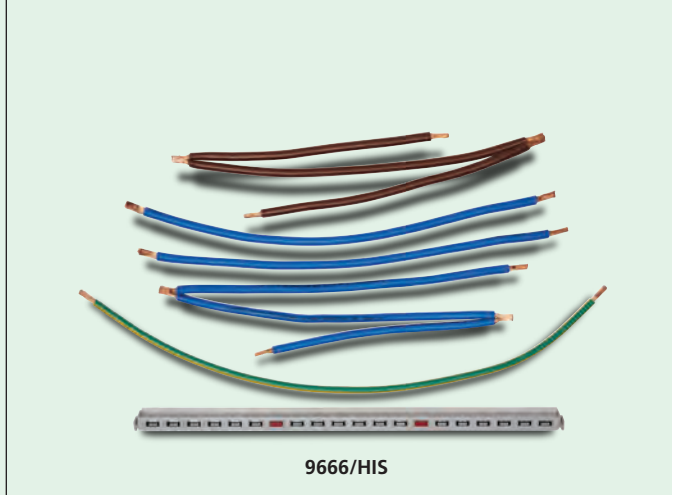
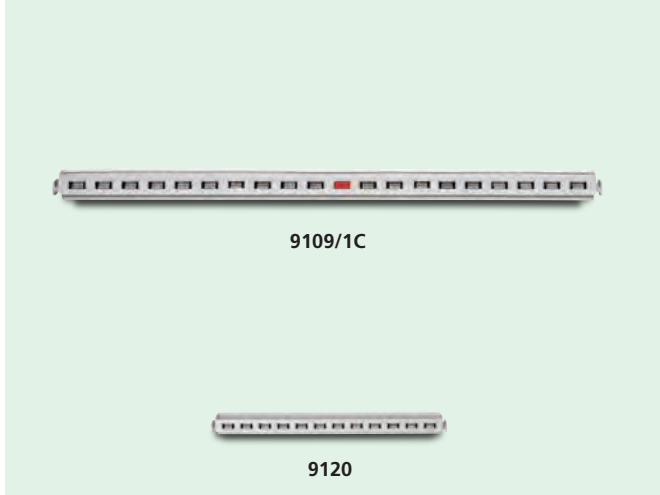
STARBREAKER ENCLOSURES

Description	List No.
4 Module Enclosure	504/0A
6 Module Enclosure	506/0A
9 Module Enclosure	509/0A
12 Module Enclosure	512/0A
15 Module Enclosure	515/0A
20 Module Enclosure	520/0A
24 Module Duplex Enclosure	524/2A
30 Module Duplex Enclosure	530/2A
40 Module Duplex Enclosure	540/2A

- Supplied with earth and neutral terminal bars, cover and visor
- Temporary locking facility available, see page 12

- Replacement covers for series 5 metal enclosures are listed on page 33
- AM3 upgrade / replacement covers for 8 series enclosures are listed on page 33
- Starbreaker enclosure dimensions are listed on pages 32 & 33
- A complete breakdown of Starbreaker consumer units including their busbars can be found within the technical section

STARBREAKER BUSBAR KITS



STARBREAKER BUSBAR KITS

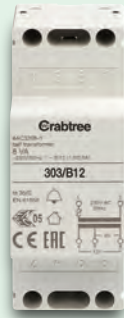
Description	List No.
for MAIN SWITCH & RCCB INCOMER	.
Main switch or RCCB 4 way	9060
Main switch or RCCB 7 way	9090
Main switch or RCCB 10 way	9120
Main switch or RCCB 13 way	9150
Main switch or RCCB 18 way	9200
for SPLIT LOAD 80A RCCB	
Split load 4+4 way	9650/1
Split load 5+6 way	9770/1
Split load 6+5 way	9860/1
Split load 7+4 way	9950/1
Split load 7+9 way	9910/1
Split load 8+8 way	9109/1
Split load 9+7 way	9118/1
for SPLIT LOAD 100A RCCB	
Split load (100A RCCB) 6+5 way	9860/1C
Split load (100A RCCB) 8+8 way	9109/1C

100A RCDs must only be used in conjunction with specifically identified C suffixed busbar kits.

STARBREAKER BUSBAR KITS

Description	List No.
for HIGH INTEGRITY 80A RCCBs	
High integrity 1+4+4 way	9355/HI
High integrity 3+3+3 way	9544/HI
High integrity 3+6+5 way	9576/HI
High integrity 4+5+5 way	9666/HI
High integrity 6+4+4 way	9855/HI
for HIGH INTEGRITY 100A RCCBs	
High integrity (100A RCCBs) 1+4+4 way	9355/HIC
High integrity (100A RCCBs) 3+6+5 way	9576/HIC
for DUAL RCD 80A RCCBs	
Dual RCD 5+4 way	9265/DR
Dual RCD 7+7 way	9288/DR
Dual RCD 8+6 way	9297/DR
Dual RCD, Main switch/RCCB +8 (TOP BANK)	9290/D
Dual RCD, Main switch/RCCB +11 (TOP BANK)	9212/D
Dual RCD, Main switch/RCCB +16 (TOP BANK)	9217/D
for DUAL RCD 100A RCCBs	
Dual RCD (100A RCCBs) 5+4 way	9265/DRC
Dual RCD (100A RCCBs) 7+7 way	9288/DRC
for DUAL & MULTI TARIFF	
Dual tariff 3+2 way	9530
Dual tariff 6+2 way	9830
Dual tariff 7+4 way	9950
Dual tariff 8+3 way	9104
Dual tariff 10+6 way	9127
Dual tariff 11+5 way	9136
Multi tariff 7+1+6 way	9716/M

100A RCDs must only be used in conjunction with specifically identified C suffixed busbar kits.



303/B12

BELL TRANSFORMER

Description	Modules	List No.
8V / 12V bell transformer	2	303/B12

- With overload protection



301/TD1

302/TD2

402/TD1

DIGITAL TIMESWITCHES

Description	Modules	List No.
1 Channel Digital Timeswitch	1	301/TD1
1 Channel Digital Timeswitch	2	302/TD1
2 Channel Digital Timeswitch	2	302/TD2
1 Channel Digital Timeswitch + data key facility	2	402/TD1
2 Channel Digital Timeswitch + data key facility	2	402/TD2
1 Channel Digital Astro Timeswitch + data key facility	2	502/TD1
2 Channel Digital Astro Timeswitch + data key facility	2	502/TD2
1-10 min Staircase Timeswitch	1	301/S10
Software		USB/S
Data Key		4/5DK
Data Key		6DK

STARBREAKER DIN RAIL MOUNTING ACCESSORIES



301/TQ24

303/TQ7

ANALOGUE TIMERS

Description	Modules	List No.
24hr Analogue Quartz	1	301/TQ24
24hr Analogue Quartz	3	303/TQ24
7 Day Analogue Quartz	3	303/TQ7
24hr Analogue Synchronous	1	301/TS11
24hr Analogue Synchronous	3	303/TS24



CIK22-02

CIK24-40

CIK63-40

SILENT OPERATION INSTALLATION CONTACTORS

TYPE	Thermal Rating per Pole		Pole Configuration			LIST No
	AC 1(A)	N/O	N/C			
CIK22	20	2	0			CIK22-20
		1	1	1 Mod		CIK22-11
		0	2			CIK22-02
CIK24	24	4	0			CIK24-40
		3	1	2 Mod		CIK24-31
		2	2			CIK24-22
CIK40	40	4	0			CIK40-40
		3	1	3 Mod		CIK40-31
		2	2			CIK40-22
CIK63	63	4	0			CIK63-40
		2	2	3 Mod		CIK63-22
		230V	400V			
Auxiliary Contacts (40A & 63A only)		AC15				
		6	4	1	1	CHHSLA11
				2	0	CHHSLA20

When mounted adjacent to one another ventilation module **301/CS** should be included between every second contactor.

LIFESTAR RCCB RANGE

Stand-alone Residual Current Circuit Breakers

Residual Current Circuit Breakers are a critical device that help installers meet the requirements of BS 7671 the IET Wiring Regulations, BS 7671 prescribes the circumstances under which additional protection is necessary.

Lifestar RCCBs and enclosures are ideal where additional circuits are needed to enable existing installations to meet current regulations.

Type A (DC sensitive) devices are available as standard to meet the requirements of the 18th Edition of the Wiring Regulations, all devices have fully shrouded terminals, contact position indication on the dolly handle and are available in a variety of ratings including a time delay version.

A range of enclosures is available with ingress protection ratings from IP20 up to IP65



LIFESTAR STANDALONE RESIDUAL CURRENT CIRCUIT BREAKERS



226/A030

2 POLE RCDs DC SENSITIVE – TYPE A

Rated Current	Sensitivity	List No.
40A	30mA	224/A030
40A	100mA	224/A100
63A	30mA	226/A030
80A	30mA	228/A030
100A	30mA	221/A030
100A	100mA	221/A100

TIME DELAY UNITS (100ms) TYPE S

Description	Rated Current	Sensitivity	List No.
2P	100A	100mA	221/100TD

STAND-ALONE RCBO (COMBINED MCB/RCD DEVICE)

Current Rating	RCD Rating	Poles	Modules	C Curve List No.
6A	30mA	2	2	2FSNR063C
10A	30mA	2	2	2FSNR103C
16A	30mA	2	2	2FSNR163C
20A	30mA	2	2	2FSNR203C
32A	30mA	2	2	2FSNR323C
40A	30mA	2	2	2FSNR403C



744/3

CBE/3

744/4

844/4

DIN RAIL ENCLOSURES

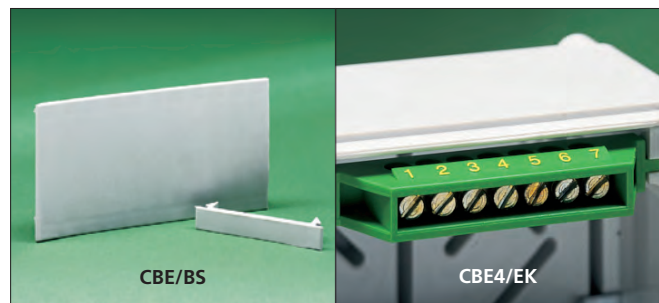
Description	Modular Size	IP Rating	List No.
Insulated	2 (or 3)	IP20	744/3
Insulated	3 (or 4)	IP20	744/4
Metal	4	IP20	844/4

- Complete with DIN rail

IP65 DIN ENCLOSURES AND ACCESSORIES

Description	List No.
2/3 module enclosure	CBE3
4 module enclosure	CBE4
Earth block	CBE3/EK
Neutral block	CBE3/NK
Earth block	CBE4/EK
Neutral block	CBE4/NK
Blanks	CBE/BS

- Complete with DIN rail
- Features sealable cover and hinged protective cover
- Polycarbonate construction
- Accessories available
- Self adhesive way label provided



CBE/BS

CBE4/EK

- None of the devices detailed on this page are suitable for use within Starbreaker consumer units

DOMESTIC SWITCH FUSE

Designed for stand-alone applications or for conversion projects where a large building is being converted to several apartments these domestic switch fuse units are supplied complete with a fuse at 60, 80 or 100A rating.

All units have been designed and tested by Electrium engineers in the UK and fully meet the relevant product standards and requirements of the IET Wiring Regulations.



DOMESTIC SWITCH FUSE

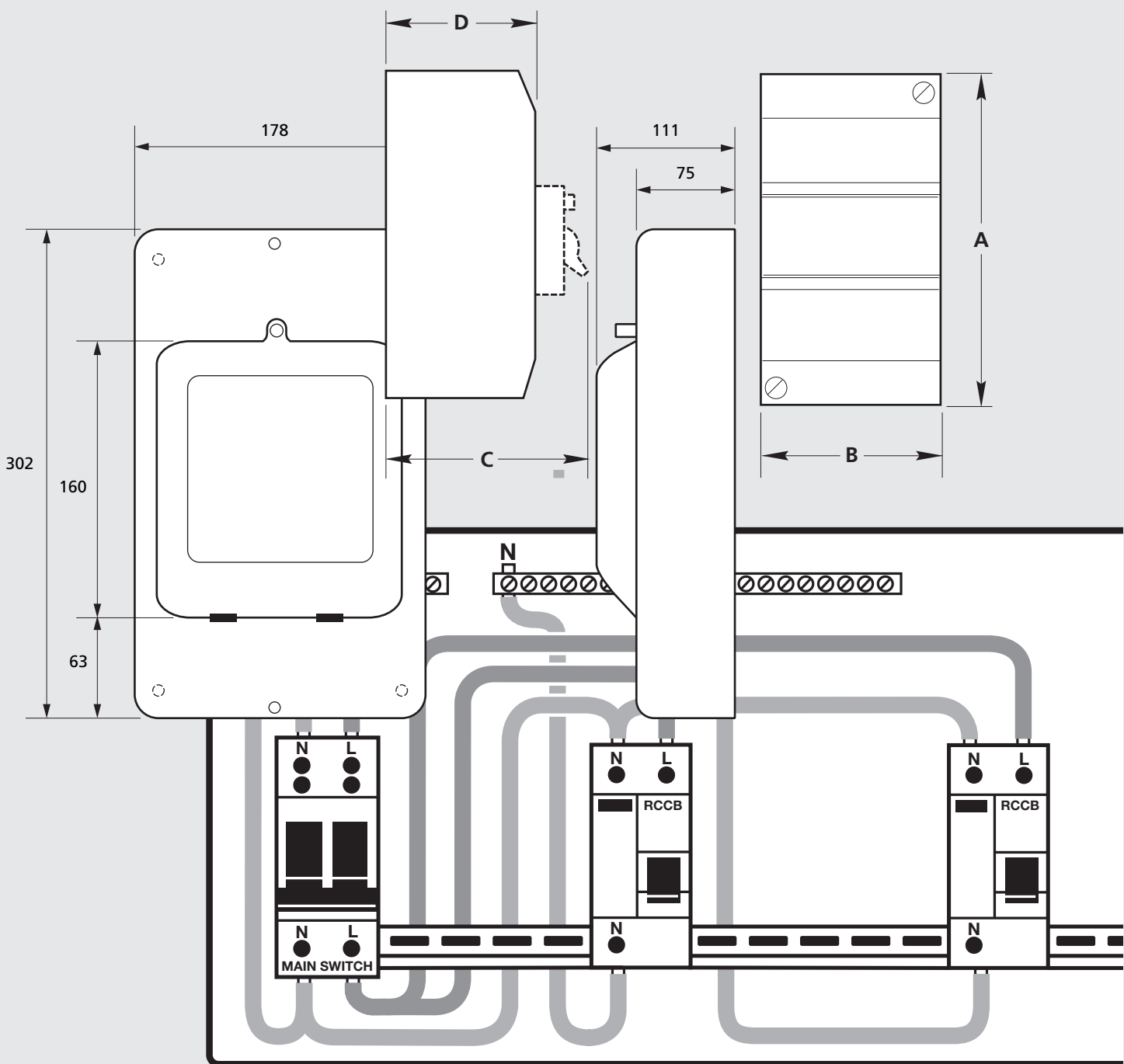


ALL METAL SWITCH FUSE UNIT - FOR USE IN DOMESTIC HOUSEHOLD PREMISES

Description		List No.
Switch Fuse including fuse	100A	19M100DSF
Switch Fuse including fuse	80A	19M80DSF
Switch Fuse including fuse	60A	19M60DSF
Cable gland for meter tails	16/25mm ²	MTCG32
Push fit cable gland for meter tails	16/25mm ²	CRTG32

- Enclosed in a robust all metal enclosure
- 32mm diameter standard knock out for cable gland (top & bottom)
- Metal door and robust metal enclosure, 1.0mm thick steel with low smoke & fume Epoxy paint finish
- Live and Neutral cable capacity 16mm² min 35mm² max
- 16mm² Earth terminating point inside metal enclosure
- Lockable for safe isolation
- Rotating fuse carrier for easy withdrawal

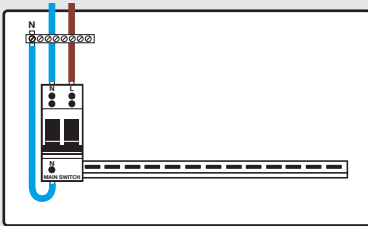
TECHNICAL DATA & DIMENSIONS



STARBREAKER CONSUMER UNIT APPLICATIONS

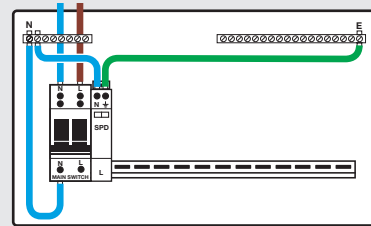
MAIN SWITCH

Allows for the use of MCBs, RCBOs and AFDDs throughout.



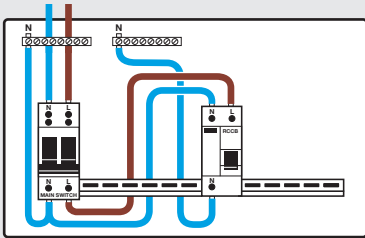
MAIN SWITCH WITH SURGE PROTECTION

Allows for the use of MCBs, RCBOs and AFDDs throughout. With SPD.



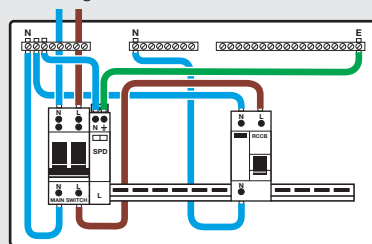
SPLIT LOAD

An arrangement which allows the use of MCBs, RCBOs & AFDDs immediately following the Main Switch and MCBs following the Split Load RCCB.



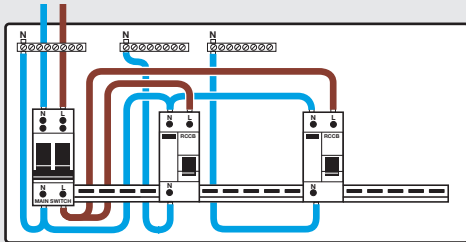
SPLIT LOAD WITH SURGE PROTECTION

An arrangement which allows the use of MCBs, RCBOs & AFDDs immediately following the Main Switch and MCBs following the Split Load RCCB. With SPD.



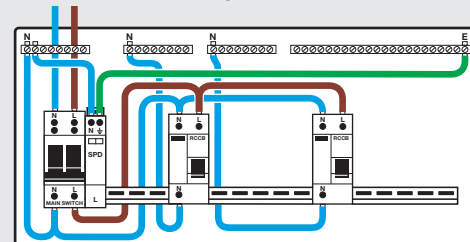
HIGH INTEGRITY

A unit which allows for a number of MCBs used between two RCCBs but retaining provision for a small number of independent MCB, RCBO or AFDD circuits following the Main Switch.



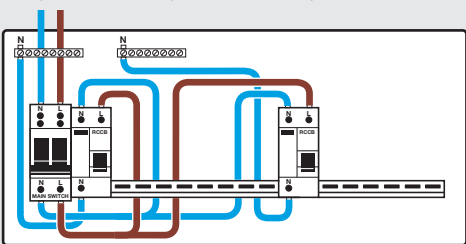
HIGH INTEGRITY WITH SURGE PROTECTION

A unit which allows for a number of MCBs used between two RCCBs but retaining provision for a small number of independent MCB, RCBO or AFDD circuits following the Main Switch. With SPD.



DUAL RCD

This unit utilizes MCBs throughout divided between two RCCBs. Circuit independence or separate electrical protection cannot be achieved here.

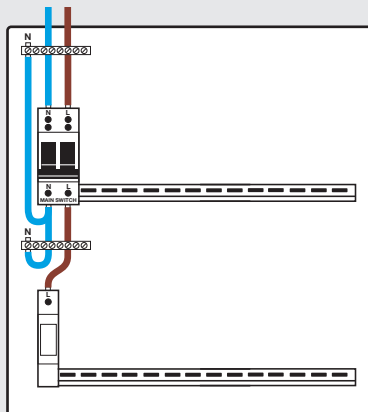


Detail above reflects the inclusion of the 1 module wide miniature SPD, within pre-assembled consumer units (pages 8-11)

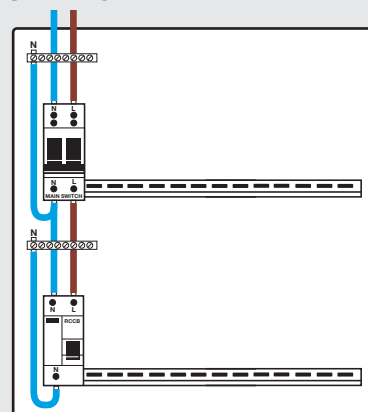
DUPLEX

Duplex consumer units provide the facility to offer a wide range of configurations for applications which demand increased numbers of circuits.

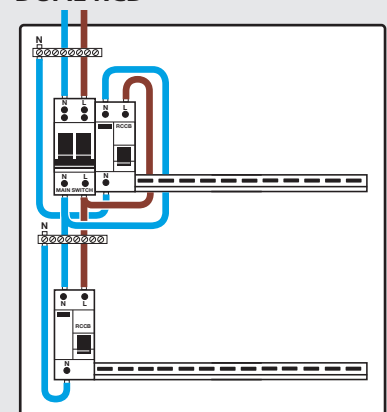
MAIN SWITCH



SPLIT LOAD

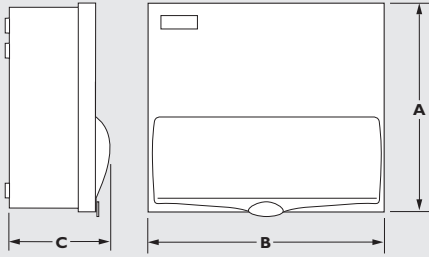


DUAL RCD



STARBREAKER DIMENSIONS

METAL ENCLOSURES



STARBREAKER SIZE 4 ENCLOSURE (504/0A)

Dimensions: A =185mm B =130mm C =104mm

502/2B 502/363B 502RECBS
502/26B 502/363GU

STARBREAKER SIZE 6 ENCLOSURE (506/0A)

Dimensions: A =261mm B =188mm C =121mm

504/2B 504/383B
502/2BS

STARBREAKER SIZE 9 ENCLOSURE (509/0A)

Dimensions: A =261mm B =242mm C =121mm

507/2B
505/232B
507/383B

STARBREAKER SIZE 12 ENCLOSURE (512/0A)

Dimensions: A =261mm B =292mm C =121mm

510/2B 508/262B
508/2483B
510/383B

STARBREAKER SIZE 15 ENCLOSURE (515/0A)

Dimensions: A =261mm B =343mm C =121mm

513/2B 509/2135134B 511/282B
511/2583B 509/211414B
511/2683B 509/238383B
511/2613B 509/2835834B
511/2783B 513/313B
509/218484B 511/272B

STARBREAKER SIZE 20 ENCLOSURE (520/0A)

Dimensions: A =261mm B =438mm C =121mm

518/2B 514/238685B 514/2137137B
516/2783B 514/231615B 514/2838836B
516/2883B 514/248585B 516/212B
516/2813B 514/268484B 516/2112B
516/2983B 514/2837837B 514/272126B

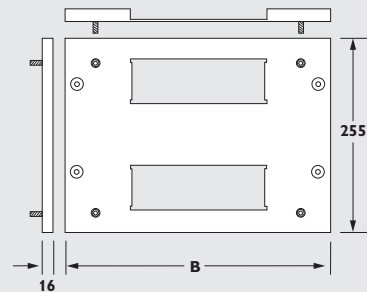
CONSUMER UNIT PATTTRESSES

ENCLOSURE WIDTH	DIMENSION B	PATTTRESS DEPTH	NORTH/SOUTH ENTRY
6 Module	188mm	16mm	MNSPE6584/1NR
9 Module	242mm	16mm	MNSPE6584/2NR
12 Module	292mm	16mm	MNSPE6584/3NR
15 Module	343mm	16mm	MNSPE6584/4NR
20 Module	438mm	16mm	MNSPE6584/5NR

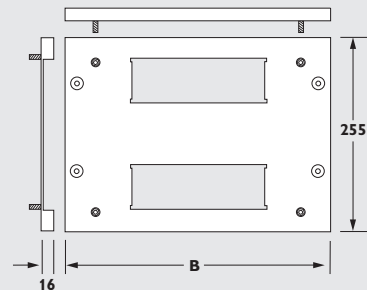
ENCLOSURE WIDTH	DIMENSION B	PATTTRESS DEPTH	EAST/WEST ENTRY
6 Module	188mm	16mm	MNSPE6670/1NR
9 Module	242mm	16mm	MNSPE6670/2NR
12 Module	292mm	16mm	MNSPE6670/3NR
15 Module	343mm	16mm	MNSPE6670/4NR
20 Module	438mm	16mm	MNSPE6670/5NR

For use with Crabtree All Metal consumer units. Allows surface cable entry through rear knockouts and automatically maintains enclosure IP rating to comply with BS7671 and BSEN61439-3 and the IET onsite guide.

NORTH/SOUTH CABLE ENTRY



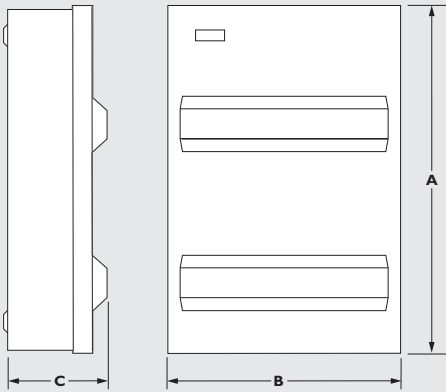
EAST/WEST CABLE ENTRY



Cable entry slot lines up with rear knockouts, remove only the minimum number of knockouts for cable entry. Suitable for use with trunking systems.

STARBREAKER DIMENSIONS

DUPLEX UNITS



STARBREAKER SIZE 24 ENCLOSURE (524/2A)

Dimensions: A = 506mm B = 295mm C = 121mm

521/2B 520/283B 518/28383B

STARBREAKER SIZE 30 ENCLOSURE (530/2A)

Dimensions: A = 506mm B = 345mm C = 121mm

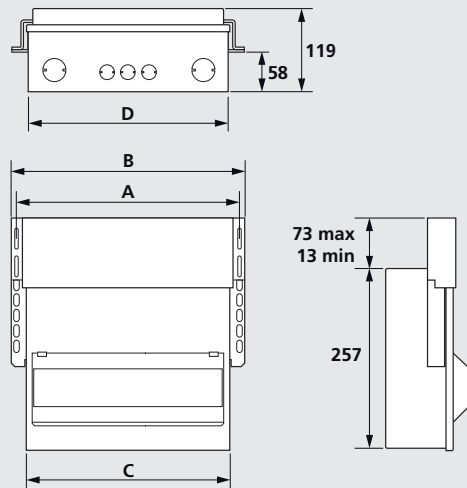
527/2B 526/283B 524/28383B

STARBREAKER SIZE 40 ENCLOSURE (540/2A)

Dimensions: A = 506mm B = 440mm C = 121mm

537/2B 536/283B 534/28383B

CONSUMER UNITS FOR METER CABINETS



9 MODULE

Dimensions: A=273mm, B=289mm, C=241mm, D=235mm

607/2B

12 MODULE

Dimensions: A=320mm, B=335mm, C=292mm, D=286mm

610/2B 606/2833833B

606/228282B 608/2483B

15 MODULE

Dimensions: A=430mm, B=445mm, C=343mm, D=336mm

613/2B 609/2835834B 609/218484B

611/2583B

INCOMING DEVICES AND ENCLOSURES

ENCLOSURES

MODULAR SIZE	METAL
4	504/OA
6	506/OA
9	509/OA
12	512/OA
15	515/OA
20	520/OA
24	524/OA
30	530/OA
40	540/OA

FLUSH MOUNTING KIT

MODULAR SIZE	METAL
6	506/FLA
9	509/FLA
12	512/FLA
15	515/FLA
20	520/FLA
24	524/DFLA
30	530/DFLA
40	540/DFLA

REPLACEMENT COVERS FOR 5 SERIES ENCLOSURES

MODULAR SIZE	METAL
6	506/CLID
9	509/CLID
12	512/CLID
15	515/CLID
20	520/CLID

DOUBLE POLE MAIN SWITCH DISCONNECTORS

RATING	MODULAR SIZE	LIST No
40A	2	40/M12
63A	2	63/M12
100A	2	100/2MTT

RESIDUAL CURRENT CIRCUIT BREAKERS

RATING	MODULAR SIZE	LIST No
63A 30mA Type A	2	363/A030
80A 30mA Type A	2	380/A030
100A 30mA Type A	2	310/A030

AM3 UPGRADE / REPLACEMENT COVERS FOR 8 SERIES ENCLOSURES

MODULAR SIZE	LIST No
6	806/LID255G
9	809/LID255G
12	812/LID255G
15	815/LID255G
20	820/LID255G

Finished in RAL7035 paint.

STARBREAKER CONSUMER UNIT COMPONENTS



Consumer unit List No Surface metal enclosure Busbar Main incoming device RCCB 1 RCCB 2



513/2B



527/2B



511/2683B



526/283B



514/238685B

Main Switch

502/2B	504/0A	included	40/MI2	-	-
502/26B	504/0A	included	63/MI2	-	-
504/2B	506/0A	9060	100/2MTT	-	-
507/2B	509/0A	9090	100/2MTT	-	-
510/2B	512/0A	9120	100/2MTT	-	-
513/2B	515/0A	9150	100/2MTT	-	-
518/2B	520/0A	9200	100/2MTT	-	-

Main Switch duplex

521/2B	524/2A	9120 + 9120	100/2MTT + 100/DC1	-	-
527/2B	530/2A	9150 + 9150	100/2MTT + 100/DC1	-	-
537/2B	540/2A	9200 + 9200	100/2MTT + 100/DC1	-	-

Split Load

508/2483B	512/0A	9650/1	100/2MTT	380/A030	-
511/2583B	515/0A	9770/1	100/2MTT	380/A030	-
511/2683B	515/0A	9860/1	100/2MTT	380/A030	-
511/2783B	515/0A	9950/1	100/2MTT	380/A030	-
516/2783B	520/0A	9910/1	100/2MTT	380/A030	-
516/2883B	520/0A	9109/1	100/2MTT	380/A030	-
516/2983B	520/0A	9118/1	100/2MTT	380/A030	-

Split Load duplex

520/283B	524/2A	9120 + 9120	100/2MTT	380/A030	-
526/283B	530/2A	9150 + 9150	100/2MTT	380/A030	-
536/283B	540/2A	9200 + 9200	100/2MTT	380/A030	-

Split Load 100A

511/2613B	515/0A	9860/1C	100/2MTT	310/A030	-
516/2813B	515/0A	9109/1C	100/2MTT	310/A030	-

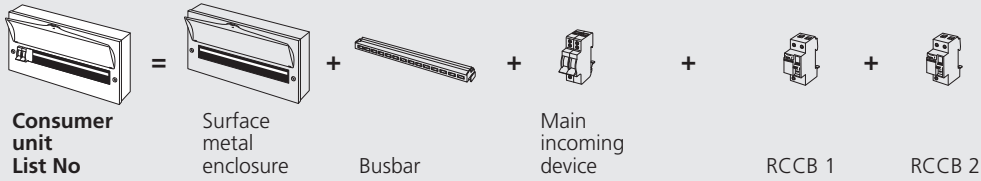
High Integrity

509/218484B	515/0A	9355/HI	100/2MTT	380/A030	380/A030
509/238383B	515/0A	9544/HI	100/2MTT	380/A030	380/A030
514/238685B	520/0A	9576/HI	100/2MTT	380/A030	380/A030
514/248585B	520/0A	9666/HI	100/2MTT	380/A030	380/A030
514/268484B	520/0A	9855/HI	100/2MTT	380/A030	380/A030

• All consumer unit designs (except Dual RCD) can be fitted with a Starbreaker plug in Miniature SPD part reference SBT2SPD3W/1 into position way 1 on consumer unit.

For dual RCD, split load & high integrity applications 100A rated RCDs can only be used in conjunction with the C suffixed busbar kits.

STARBREAKER CONSUMER UNIT COMPONENTS



High Integrity 100A

509/211414B	515/0A	9355/HIC	100/2MTT	310/A030	310/A030
514/231615B	520/0A	9576/HIC	100/2MTT	310/A030	310/A030

Dual RCD *

509/2835834B	515/0A	9265/DR	100/2MTT	380/A030	380/A030
514/2837837B	520/0A	9288/DR	100/2MTT	380/A030	380/A030
514/2838836B	520/0A	9297/DR	100/2MTT	380/A030	380/A030

Dual RCD Duplex *

518/28383B	524/2A	9290/D+9120	100/2MTT	380/A030	380/A030
524/28383B	530/2A	9212/D+9150	100/2MTT	380/A030	380/A030
534/28383B	540/2A	9217/D+9200	100/2MTT	380/A030	380/A030

Dual RCD 100A *

509/2135134B	515/0A	9265/DRC	100/2MTT	310/A030	310/A030
514/2137137B	520/0A	9288/DRC	100/2MTT	310/A030	310/A030

RCD Incoming

502/363B	504/0A	included	363/A030	-	-
502/363GU	504/0A	included	363/A030	-	-
504/383B	506/0A	9060	380/A030	-	-
507/383B	509/0A	9090	380/A030	-	-
510/383B	512/0A	9120	380/A030	-	-
513/313B	515/0A	9150	310/A030	-	-

Dual Tariff

505/232B	509/0A	9530	100/2MTT+100/2MTT	-	-
508/262B	512/0A	9830	100/2MTT+100/2MTT	-	-
511/272B	515/0A	9950	100/2MTT+100/2MTT	-	-
511/282B	515/0A	9104	100/2MTT+100/2MTT	-	-
516/212B	520/0A	9127	100/2MTT+100/2MTT	-	-
516/2112B	520/0A	9136	100/2MTT+100/2MTT	-	-
514/272126B	520/0A	9716/M	100/2MTT+100/2MTT	-	-

Main Switch Meter Cabinet Units

607/2B	Available as built only	-	-	-	-
610/2B	Available as built only	-	-	-	-
613/2B	Available as built only	-	-	-	-

Split load Meter Cabinet Units

608/2483B	Available as built only	-	-	-	-
611/2583B	Available as built only	-	-	-	-

High Integrity Meter Cabinet Units

609/218484B	Available as built only	-	-	-	-
606/228282B	Available as built only	-	-	-	-

High Integrity Meter Cabinet Units

606/2833833B	Available as built only	-	-	-	-
609/2835834B	Available as built only	-	-	-	-



514/2137137B



502/363B



511/282B



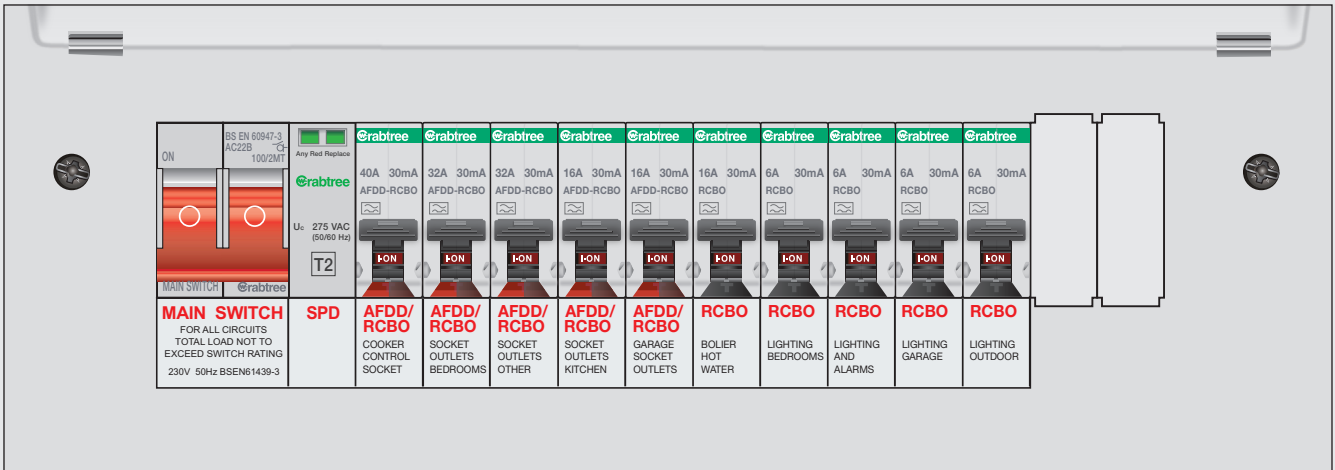
811/282B

* Dual RCD units are unable to be fitted Starbreaker Miniature SPDs

For dual RCD, split load & high integrity applications 100A rated RCDs can only be used in conjunction with the C suffixed busbar kits.

STARBREAKER MCB & RCBO - TECHNICAL DATA

MODEL	AFDD & RCBO	RCBO	MCB
Product brand name	Starbreaker	Starbreaker	Starbreaker
Product designation	AFDD and RCBO	RCD operated circuit breaker	Miniature circuit breaker
Product standard	BS EN 62606 & IEC 61009-1	IEC 61009-1	BS EN 61008
GENERAL TECHNICAL DATA			
Number of poles	2	2	1
Number of poles / switched	1P+N	1P+N	1P
Number of poles / with protection (overcurrent)	1	1	1
Tripping characteristics class	B or C	B or C	B or C
RCD type	A	A	-
Mechanical service life (switching cycles) / typical	10,000	10,000	-
Overvoltage category	III	III	3
PRODUCT FUNCTION			
Product function / neutral conductor switching	Yes	Yes	N/A
VOLTAGE			
Surge current resistance / at (8/20) μ s	1kA	1kA	N/A
SUPPLY VOLTAGE			
• at AC / rated value	240V	240V	250V
• for testing equipment / minimum	195V	195V	-
Supply voltage frequency / rated value	50Hz	50Hz	50Hz
PROTECTION CLASS			
Protection class IP	IP20	IP20	IP20
Energy limiting class	3	3	3
SWITCHING CAPACITY CURRENT			
• acc. to EN 60898 / rated value	6kA	6kA	6kA
ELECTRICITY			
Tripping residual current / rated value	30mA	30mA	N/A
Current / at AC / rated value	6A - 40A	6A - 40A	6A - 50A
CONNECTIONS			
Connectable conductor cross-section / stranded			
• minimum	0.75mm ²	0.75mm ²	0.75mm ²
• maximum	16mm ²	16mm ²	25mm ²
Connectable conductor cross-section			
• solid - minimum	0.75mm ²	0.75mm ²	0.75mm ²
• solid - maximum	16mm ²	16mm ²	25mm ²
• fine strand / with core end processing - minimum	0.75mm ²	0.75mm ²	0.75mm ²
TIGHTENING TORQUE / WITH SCREW-TYPE TERMINALS			
Load terminal			
• minimum	1.2Nm	1.2Nm	2.3Nm
• maximum	2.0Nm	2.0Nm	3.0Nm
MECHANICAL DESIGN			
Height x Width x Depth	90mm x 36mm x 77mm	90mm x 18mm x 77mm	90mm x 18mm x 77mm
Mounting position	DIN	DIN	DIN
Installation depth	70mm	70mm	70mm
Number of width units	2	1	1
Connection	Plug in	Plug in	Plug in
ENVIRONMENTAL CONDITIONS			
Degree of pollution	2	2	2
Influence of the surrounding temperature	Maximum 95% humidity	Maximum 95% humidity	Maximum 95% humidity
Ambient Temperature			
• minimum	-25°C	-25°C	-25°C
• maximum	55°C	55°C	45°C
• during storage / minimum	-40°C	-40°C	-40°C
• during storage / maximum	75°C	75°C	75°C



CONSUMER UNIT ENCLOSURES, BARRIERS, FIXINGS & COMPONENTS

- 421.1.201** Consumer units must have enclosures manufactured from non-combustible materials & comply with BS EN 61439-3.
- 416.2.1** Live parts must be inside enclosures and suitable provisions must be made to prevent contact with live parts.
- 416.2.2** Installed consumer units must achieve IP4X on the top elevation of the enclosure.
- 416.2.3** Barriers must be secured in place with sufficient stability and durability to achieve and maintain appropriate levels of protection from live parts.
- 522.8.5** Every cable must be installed so that there is no undue stress or strain on the conductors & terminations. Meter tails require appropriate clips/fixings.
- 536.4.203** Only manufacturer approved parts can be used in low voltage assemblies i.e. consumer units. Mixing brands without approvals will invalidate guarantees.

PROTECTION AGAINST OVERVOLTAGE IN ALL INSTALLATIONS

- 443.4.1** Transient overvoltage protection is required in all electrical installations, however, in some cases the owner can opt out and accept all risks & consequential losses from such over-voltages.

PROTECTION AGAINST HAZARDS & DANGER CAUSED BY UNWANTED TRIPPING OF RCDs

- 531.3.2** The use of RCBOs shall be considered for each circuit in residential dwellings.
- Devices shall be selected and installed so as to limit the risk of unwanted tripping. Dividing the installation into individual circuits- each one using a 30mA RCBO will maintain power continuity to healthy circuits.
- Any earth leakage currents that occur during normal operation of equipment should not cause unwanted tripping.
- PE current (leakage current not due to a fault) is no more than 30% of 30mA.
- 314.1 (iv)** Every installation shall be divided into the necessary number of circuits to reduce the possibility of unwanted tripping of RCDs from PE current (not due to a fault).
 - 314.1 (i)** Every installation shall be divided into the necessary number of circuits to avoid danger and inconvenience in the event of a fault.
 - 314.1 (iii)** Every installation shall be divided into circuits as necessary to take account of hazards that may arise from the failure of a single circuit such as a lighting circuit.
- 560.7.1** Circuits of safety services, e.g. Smoke & Heat Alarm systems, CO detection, etc. shall be independent of other circuits.

SAFE ISOLATION - SWITCHES AND PROTECTIVE DEVICES

- 462.1.201** A mains switch intended to be operated by ordinary persons (e.g. in domestic household premises) must switch both live conductors (L&N) of a single phase supply.
- 462.2** A means of isolation shall be provided for each circuit, for all live conductors (except where the neutral is reliably connected to earth by a low resistance and required disconnection times can be met).
- 422.3.13** Every circuit requires a means of isolation from all live supply conductors. Common isolation of a group of circuits may be provided if service conditions allow.
- 531.1.1** Devices for protection against electric shock must be suitable for isolation as required in Chapter 46 & Section 537.
- 514.1.1** A suitable means of identification shall be provided for the identification & purpose of each item of switchgear.

PROTECTION AGAINST FIRE CAUSED BY ELECTRICAL EQUIPMENT

- 421.1.7** AFDDs are mandatory for circuits serving socket outlets in certain buildings i.e. Higher Risk Residential Buildings, Homes in Multiple Occupation, Purpose Built Student Accommodation & Care Homes.
- AFDDs are also recommended for circuits serving socket outlets in all other types of building.
- 532.6** AFDDs should be installed at the origin of each final (230Vac) circuit that is being protected i.e. in the consumer unit or distribution board.

ADDITIONAL PROTECTION BY 30mA RCBO/RCD PROTECTING USERS OF ELECTRICAL INSTALLATIONS

- 415.1.1** RCDs (including RCBOs) with a residual operating current of no more than 30mA are prescribed for provision of additional protection.
- 411.3.4** Additional protection by use of a 30mA device is required for all luminaire circuits in domestic household premises.
- 411.3.3** Additional protection by use of a 30mA device is required for all socket outlets up to & including 32A rating.
- 411.3.3** Additional protection by use of a 30mA device is required for all mobile equipment (for use outdoors) up to & including 32A rating.
- 522.6.202** Cables concealed in walls or partitions as less than 50mm depth and without earthed mechanical protection (e.g. conduit), must be protected by 30mA device.
- 522.6.203** Cables buried in walls or partitions (which include metallic parts in their construction) must be provided with additional protection by 30mA device, or be installed in earthed metallic carrier systems that also provide mechanical protection.
- 701.411.3.3** Additional protection by use of a 30mA device, is required for all circuits serving or passing through a location with a fixed bath or shower.

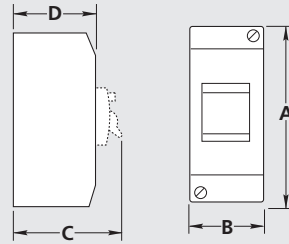
DIN ENCLOSURES DIMENSIONS

APPROXIMATE DIMENSIONS (mm)

3 MODULE GENERAL PURPOSE ENCLOSURE IP20

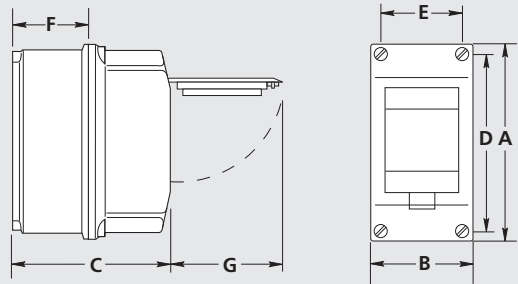
List No	A	B	C*	D
744/3	150	60	79	60

* Allow 4mm for dolly clearance.



3 MODULE ALL-PURPOSE ENCLOSURE IP65

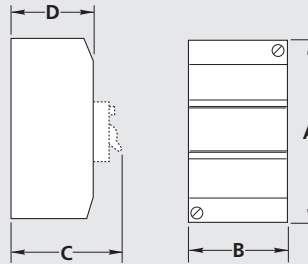
List No	A	B	C	D	E	F	G
CBE3	160	85	114	140	65	69	96



4 MODULE GENERAL PURPOSE ENCLOSURES IP20

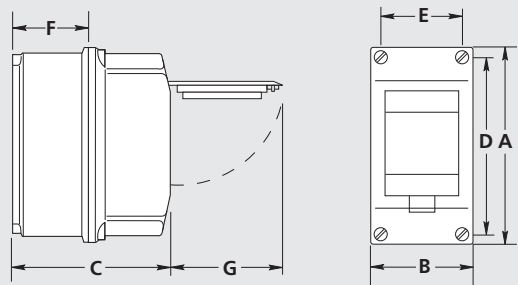
List No	A	B	C*	D
744/4	150	79	79	60

* Allow 4mm for dolly clearance.



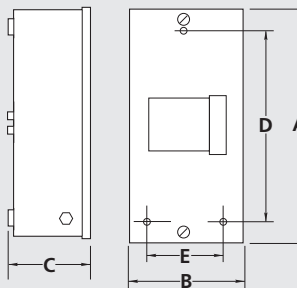
4 MODULE ALL-PURPOSE ENCLOSURE IP65

List No	A	B	C	D	E	F	G
CBE4	160	110	114	140	90	69	96



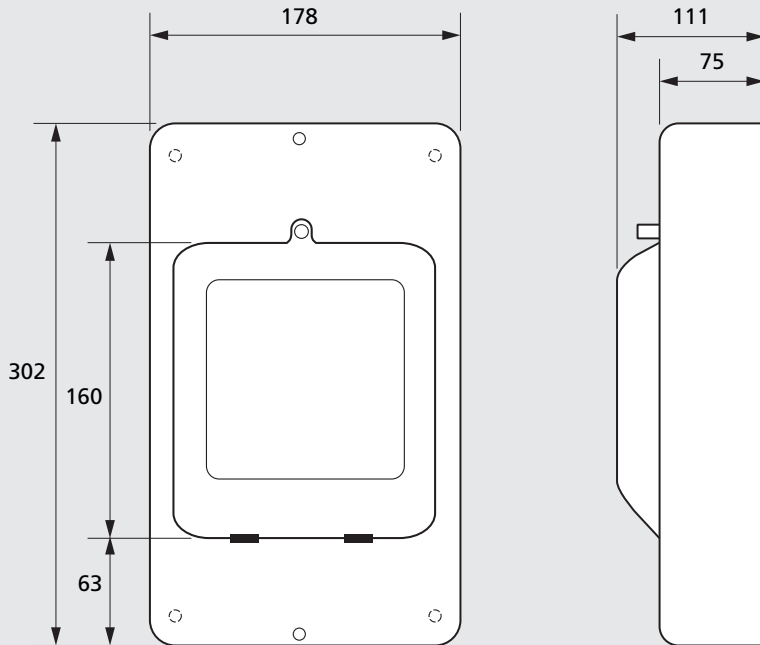
4 MODULE FABRICATED STEEL ENCLOSURE IP20

List No	A	B	C	D	E
844/4	223	112	66	184	73



DOMESTIC SWITCH FUSE UNITS - TECHNICAL DATA

APPROXIMATE DIMENSIONS (mm)



RECOMMENDED TIGHTENING TORQUES

Live and Neutral terminal cage	Earth Terminal cage	Earth Terminal bar (metal clad only)
2.3Nm	0.7Nm	1.2Nm
16mm ² min	10mm ² min	10mm ² min
35mm ² max	16mm ² max	16mm ² max

FUSE LINKS SPECIFICATION

Class of Operation: gG
 Standards/Approvals:

- ASTA Certified
- BS 1361 : 1971 including amendments 1, 2 and 3

TECHNICAL DATA

Rated Voltage: 415Vac
 Amps: 5 to 100A
 Rated breaking capacity: 33kA

FUSE LINKS DATA

CAT REF	AMP RATING	1 ² t (AMP ² SECONDS)			NOM. WATTS LOSS
		PRE-ARCING	TOTAL at 240V	TOTAL at 415V	
DSF40FL	40	2500	6800	14000	3.8
DSF45FL	45	3600	9880	20500	3.8
DSF50FL	50	4720	13000	27000	4.2
DSF60FL	60	9100	25000	52000	4.3
DSF80FL	80	24500	41500	58500	5.4
DSF100FL	100	43500	73500	105000	6.1

electrium

**ELECTRIUM SALES LIMITED
A SIEMENS COMPANY**

Commercial Centre, Lakeside Plaza,
Walkmill Lane, Bridgtown,
Cannock WS11 0XE.
eMail: info@electrium.co.uk

www.electrium.co.uk

UK SALES

Telephone: 01543 455010
eMail: callcentre@electrium.co.uk

TECHNICAL

Telephone: 01543 438310
eMail: crabtree.technical@electrium.co.uk

EXPORT SALES

Telephone: +44 1543 455049
eMail: export@electrium.co.uk

DUBAI OFFICE

Telephone: +971 4 3660684
eMail: export@electrium.co.uk



Although every effort has been made to ensure accuracy in the compilation of the technical detail within this publication, specifications and performance data are constantly changing. Latest details can be obtained from Crabtree.

Publication No. B2600c 06/23