



**Starbreaker
Consumer Units for
Domestic Household
and other Premises**

Amendment No. 3 BS 7671

- Full metal enclosure, no exposed plastic parts
- Low Smoke & Fume paint
- Self closing, stay shut door & metal hinges
- Cable entry knockouts on all sides & large square knockouts on the rear
- Mains tails cable entry grommet for supplementary insulation similar to Class II level of protection to tails
- Non combustible cover blanks for unused ways
- Extra height for added wiring space with single module RCBOs



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

REGULATION 421.1.201

From January 2015 Amendment No. 3 to BS 7671 IET Wiring Regulations prescribe that within domestic (household) premises, consumer units and similar switchgear assemblies shall have their enclosures manufactured from non combustible material, or be enclosed in a cabinet or enclosure constructed of non combustible material and comply with product standard BS EN 61439-3.



What are Domestic Household Premises ?

Typical Domestic household premises would include single and multiple occupancy homes such as Houses, Bungalows, High Rise & Low Rise Flats, Apartments, Student lets, Sheltered Accommodation, Farmhouses, Houseboats, Static Homes, Home Office, attached Garages, Workshops and Detached Summerhouses etc.

Other types of building you may need to consider (these may be commercial ventures) but also where people live and guests sleep overnight such as Guest Houses, Hostels, Bed & Breakfast Accommodation, Nursing Homes etc.

USE IN DOMESTIC HOUSEHOLD PREMISES

Regulations Incorporating Amendment No. 3: 2015



- Finger safe, insulated busbar assembly - provides greater personal protection
- Permanent factory fitted, non removable busbar shield - can't be lost or left out
- Plug in MCB and RCBOs for instant guaranteed connections
- 25% fewer screw terminals to make - significantly reducing risk of loose connections
- Add or upgrade circuits without removing busbar - no need to disturb adjacent devices - reducing risk of installation errors
- DIN control devices can be fitted in any position along the DIN rail - without affecting any other devices or busbar connections
- High capacity neutral & earth terminals
- Factory fitted incoming devices for reduced installation time

What is Non Combustible Material ?

There are many types of non combustible material however, amendment 3 of the 17th Edition regulations provides an acceptable example as ferrous metal i.e. Steel Consumer Units.

What is an Enclosure ?

The consumer unit enclosure must be manufactured from a non combustible material so as to limit the spread of fire. An enclosure means the box, cover, door, hinges, handle and any components required to maintain the integrity of the unit.

What is Similar Switchgear ?

Similar switchgear is switchgear that is used for the same fundamental application as a consumer unit i.e. a circuit protection assembly with two pole isolator and one or more circuit protection devices, e.g. fuse switch or garage unit etc.

What are Cabinets ?

Typical cabinets are meter cabinets that are normally built into the fabric of the building and that may or may not include consumer units within. If the cabinet is of an all metal construction (non-combustible), then a standard skeleton spine unit can be installed within. If the cabinet is not non-combustible, a metal consumer unit is required.

CONSUMER UNITS FOR USE IN DOMESTIC HOUSEHOLD PREMISES

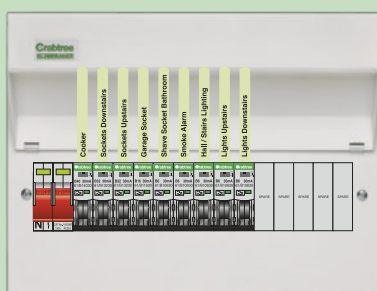
17th Edition Wiring Regulations Including Amendment No. 3

Amendment No3 has brought about the requirement for 'all metal' non combustible enclosures for consumer units and similar switchgear. This is in addition to the requirements for additional protection, which are summarised below, within domestic household premises;

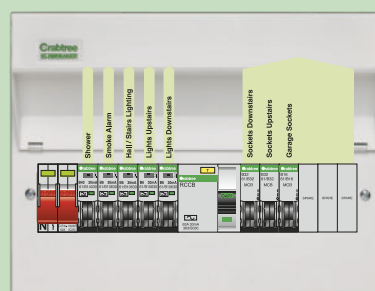
- All socket outlets should be protected by 30mA RCD
- All circuits serving or passing through a room with a fixed bath or shower should be protected by one or more 30mA RCDs**
- All cables buried beneath the plaster surface of the wall or partition (at less than 50mm) should be protected by 30mA RCDs***
- All cables concealed in metal stud partitions (common in new builds) should be protected by 30mA RCDs****
- Installations should be divided up into circuits so as to take account of danger and inconvenience caused by a single fault - e.g. such as a lighting circuit****
- Installations should be designed and arranged so as to prevent unwanted tripping of RCDs*****
- Safety services such as smoke alarms should be on independent circuits*****

SUMMARY TABLE

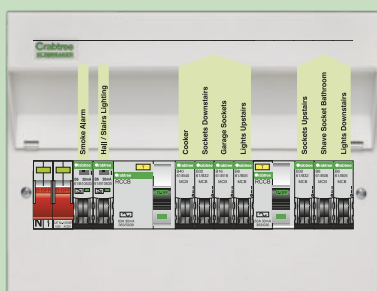
REGULATIONS	RELATING TO:	EXAMPLES	ADDITIONAL PROTECTION
411.3.3*	Sockets up to a 20A rating	Upstairs Sockets Downstairs Sockets Kitchen Sockets Cooker outlet with integral 13A socket Garage Sockets Plus any other sockets up to 20A rated	30mA RCD Taking into account 3.14.1 **** 3.14.2 ****
701.411.3.3**	All Circuits serving a room containing a fixed bath or shower or circuits not serving but passing through zones 1 or 2 of a room containing a fixed bath or shower.	Shower circuit Lighting circuit Heating circuit Ventilation circuit Shaver Socket Plus Other circuits	30mA RCDs Taking into account 3.14.1 **** 3.14.2 ****
522.6.200 series*** and 560.7.1****	All circuits buried in a wall or partition at less than 50mm and without mechanical protection	Downstairs Lighting Upstairs Lighting Immersion heater Smoke Alarms Burglar Alarm (Safety service) Plus any other circuits	30mA RCD Taking into account 3.14.1 **** 3.14.2 ****



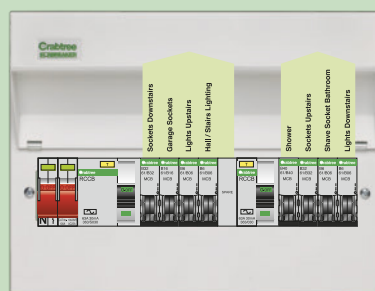
ALL INDEPENDENT CIRCUITS
Full metal Main Switch unit with RCBOs



HALF INDEPENDENT CIRCUITS
Full metal Split Load unit with RCBOs and MCBs



SOME INDEPENDENT CIRCUITS
Full metal High Integrity unit with RCBOs and MCBs



NO INDEPENDENT CIRCUITS
Full metal Dual RCD unit with MCBs

30mA Earth leakage protection

- * Regulation 411.3.3 socket outlets with a rated current not exceeding 20A.
- ** Regulation 701.411.3.3 Additional protection shall be provided for all circuits serving the location and any circuits not serving but passing through zones 1 or 2 of the location by use of one or more 30mA RCD.
- *** Regulations in the 522.6.200 series, cables concealed in a wall or partition at less than 50mm depth and without earthed mechanical protection e.g. conduit.
- **** Regulation 314.1 Every installation shall be divided into circuits as necessary to avoid danger and inconvenience in the event of a fault, take account of danger that may arise from the failure of a single circuit such as a lighting circuit, reduce the possibility of unwanted tripping of RCDs etc.
- ***** Regulation 314.2 Separate circuits to be provided for parts of the installation that need to be separately controlled in such a way that those circuits are not affected by the failure of other circuits.
- ***** Regulation 560.7.1 Chapter 56 circuits for safety services shall be independent of other circuits.

In addition Chapter 51 requires designers/installers to take account of all relevant British Standards and manufacturers instructions. For example BS5839 Part 6 is the British Standard for fire detection and alarm systems in dwellings. It states that power supplies to Grade D smoke alarms should be an independent circuit at the consumer unit, or a separately electrically protected local lighting circuit.

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Starbreaker 5 Series metal consumer units will be available from January 2015

All Crabtree products comply with the applicable British Standard specification and should be installed by suitably qualified personnel in accordance with the requirements of relevant legislation, regulations (including IEE Wiring Regulations) and the accepted practice in the industry.

The products listed or described in this publication may be protected by one or more patents, and/or registered designs and/or applications. A full list of patents registered designs and applications may be obtained from the company secretary of Electrium Limited.



518/2B

MAIN SWITCH UNITS

MS Rating	Total MCB/RCBO Ways	Main Switch	Metal
40A	2*	2	502/2B
63A	2*	2	502/26B
100A	4	4	504/2B
100A	7	7	507/2B
100A	10	10	510/2B
100A	13	13	513/2B
100A	18	18	518/2B

*RCBOs are not recommended for use within 502/-- units.



515/2963B

SPLIT LOAD UNITS 100A SWITCH 63A 30mA RCCB

MS Rating	Total Ways	Main Switch	RCCB	Metal
100A	4	2	2	504/2263B
100A	7	2	5	507/2263B
100A	7	3	4	507/2363B
100A	7	4	3	507/2463B
100A	7	5	2	507/2563B
100A	10	3	7	510/2363B
100A	10	4	6	510/2463B
100A	10	5	5	510/2563B
100A	10	6	4	510/2663B
100A	10	7	3	510/2763B
100A	15	5	10	515/2563B
100A	15	6	9	515/2663B
100A	15	7	8	515/2763B
100A	15	8	7	515/2863B
100A	15	9	6	515/2963B
100A	15	10	5	515/2163B

Both MCBs and RCBOs may be included for final circuit positions that are not protected by resident RCCBs.



515/2883B

SPLIT LOAD UNITS 100A SWITCH 80A 30mA RCCB

MS Rating	Total Ways	Main Switch	RCCB	Metal
100A	7	2	5	507/2283B
100A	7	3	4	507/2383B
100A	7	4	3	507/2483B
100A	7	5	2	507/2583B
100A	10	3	7	510/2383B
100A	10	4	6	510/2483B
100A	10	5	5	510/2583B
100A	10	6	4	510/2683B
100A	12	6	6	512/2683B
100A	15	6	9	515/2683B
100A	15	7	8	515/2783B
100A	15	8	7	515/2883B
100A	15	9	6	515/2983B
100A	15	10	5	515/2183B

Both MCBs and RCBOs may be included for final circuit positions that are not protected by resident RCCBs.



513/236565B

HIGH INTEGRITY DUAL RCD UNITS

MS Rating	Total Ways	Main Switch	RCCB 1 63A 30mA	RCCB 2 63A 30mA	Metal
100A	8	2	3	3	508/226363B
100A	13	2	6	5	513/226665B
100A	13	2	7	4	513/226764B
100A	13	2	8	3	513/226863B
100A	13	3	5	5	513/236565B
100A	13	3	6	4	513/236664B
100A	13	3	7	3	513/236763B
100A	13	4	5	4	513/246564B
100A	13	4	6	3	513/246663B
100A	13	5	4	4	513/256464B
100A	13	5	5	3	513/256563B
100A	13	6	4	3	513/266463B

MS Rating	Total MCB Ways	Main Switch	RCCB 1 80A 30mA	RCCB 2 80A 30mA	Metal
100A	9	1	4	4	509/218484B
100A	13	3	5	5	513/238585B

MS Rating	Total MCB Ways	Main Switch	RCCB 1 80A 30mA	RCCB 2 63A 30mA	Metal
100A	13	3	5	5	513/238565B
100A	13	2	6	5	513/228665B



513/2837636B

DUAL RCD SPLIT LOAD UNITS

MS Rating	Total MCB Ways	Main Switch	RCCB 1 63A 30mA	RCCB 2 63A 30mA	Metal
100A	13	0	7	6	513/2637636B
100A	13	0	8	5	513/2638635B
100A	13	0	9	4	513/2639634B

MS Rating	Total MCB Ways	Main Switch	RCCB 1 80A 30mA	RCCB 2 63A 30mA	Metal
100A	8	0	4	4	508/2834634B
100A	13	0	7	6	513/2837636B
100A	13	0	8	5	513/2838635B
100A	13	0	9	4	513/2839634B



518/383B

RCD INCOMER UNITS

RCCB Rating	Total MCB Ways	RCCB	Metal
40A 30mA	2	2	502/343B
63A 30mA	2	2	502/363B
40A 30mA	4	4	504/343B
80A 30mA	4	4	504/383B
40A 30mA	7	7	507/343B
80A 30mA	7	7	507/383B
80A 30mA	10	10	510/383B
100A 30mA	10	10	510/313B
80A 30mA	13	13	513/383B
100A 30mA	13	13	513/313B
80A 30mA	18	18	518/383B
100A 30mA	18	18	518/313B

RCD INCOMER UNIT WITH MCBs

RCCB Rating	MCB 1 (B)	MCB 2 (B)	Metal
63A 30mA	2	2	502/363GU



DUAL TARIFF UNITS

Total MCB/ RCBO Ways	Main Switch 100A Tariff 1	Main Switch 100A Tariff 2	Metal
5	3	2	505/232B
8	3	5	508/232B
8	4	4	508/242B
8	5	3	508/252B
8	6	2	508/262B
11	4	7	511/242B
11	5	6	511/252B
11	6	5	511/262B
11	7	4	511/272B
11	8	3	511/282B
16	6	10	516/262B
16	7	9	516/272B
16	8	8	516/282B
16	9	7	516/292B
16	10	6	516/212B
16	11	5	516/2112B



MULTI TARIFF UNITS

Total MCB/ RCBO Ways	Main Switch 100A Tariff 1	Main Switch 100A 2 Tariff	Main Switch 100A Tariff 3	Metal
9	4	1	4	509/242124B
14	8	1	5	514/282125B
14	7	1	6	514/272126B

SPLIT LOAD DUAL TARIFF UNITS

MS Rating	Total Ways	Main Switch	RCCB 63A 30mA	Main Switch 100A Tariff 2	Metal
100A	8	2	3	3	508/22623B
100A	13	5	2	6	513/25626B
100A	13	3	6	4	513/23624B

Both MCBs and RCBOs may be included for final circuit positions that are not protected by resident RCCBs.

MS Rating	Total MCB/ RCBO Ways	Main Switch	RCCB 80A 30mA	Main Switch 100A Tariff 2	Metal
100A	13	3	6	4	513/23824B

Both MCBs and RCBOs may be included for final circuit positions that are not protected by resident RCCBs.



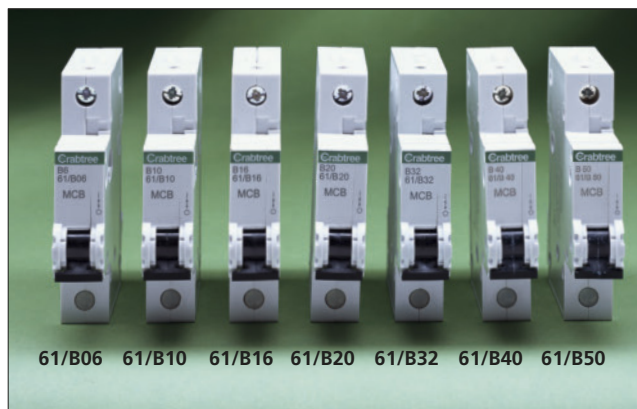
TWO BANK SPLIT LOAD METAL UNITS

MS Rating	Total Ways	Main Switch	RCCB 80A 30mA	LIST No
100A	20	10	10	520/283B
100A	26	13	13	526/283B
100A	36	18	18	536/283B

Both MCBs and RCBOs may be included for final circuit positions that are not protected by resident RCCBs.

TWO BANK DUAL RCD SPLIT LOAD METAL UNITS

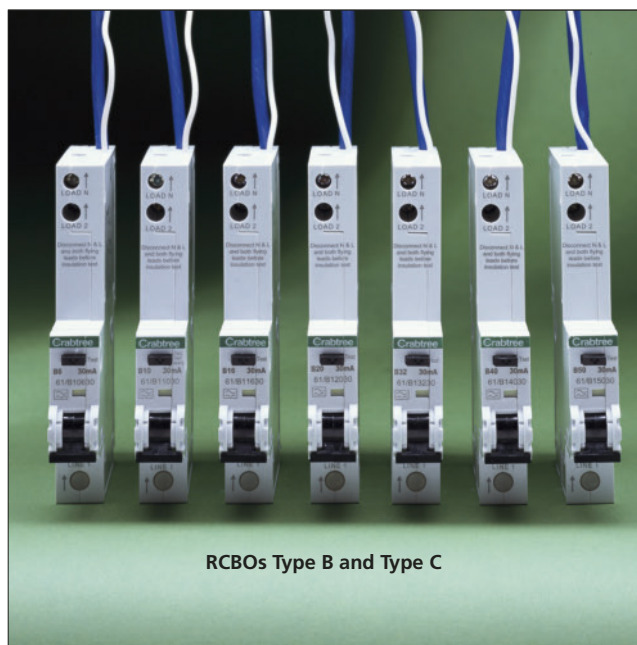
MS Rating	Total MCB/ RCBO Ways	Main Switch	RCCB 1 63A 30mA	RCCB 2 80A 30mA	LIST No
100A	17	0	7	10	517/26383B
100A	23	0	10	13	523/26383B
100A	33	0	15	18	533/26383B



MINIATURE CIRCUIT BREAKERS

RATING	MODULES	LIST No	
		Type B	Type C
6A	1	61/B06	61/C06
10A	1	61/B10	61/C10
16A	1	61/B16	61/C16
20A	1	61/B20	61/C20
32A	1	61/B32	61/C32
40A	1	61/B40	61/C40
50A	1	61/B50	61/C50

- BS EN 60898 6kA – 240V 50Hz.
- Type B classification (3–5In). Type C classification (5–10In).
- 25mm² terminal capacity.



RESIDUAL CURRENT CIRCUIT BREAKER WITH OVERCURRENT PROTECTION (RCBOs)

RATING	MODULES	LIST No	
		30mA Type B	30mA Type C
6A	1	61/B10630	61/C10630
10A	1	61/B11030	61/C11030
16A	1	61/B11630	61/C11630
20A	1	61/B12030	61/C12030
32A	1	61/B13230	61/C13230
40A	1	61/B14030	61/C14030
50A	1	61/B15030	61/C15030

- EN 61009-1, IEC61009-1.
- 230 (240)V AC 50/60 Hz.
- 16mm² terminal capacity.

CAUTION

These devices are electronic units and should be disconnected from the supply during insulation and earth fault loop impedance testing.



ACCESSORIES

Metal Blanking Plate	543
MCB Padlocking Device	MCBLD
Universal Adaptor	MTCG32

Consumer units for use in commercial and other premises are not specifically covered by Regulation 421.1.201 in BS7671: 2008 Amendment 3 therefore the existing insulated consumer units are suitable for continued use where such types of distribution boards can be considered an appropriate solution. However other requirements of Amendment 3 must also be considered.



Regulation 411.3.3 prescribes a more widespread use of 30mA RCD protection, in accordance with Regulation 415.1, for socket outlets with a rated current not exceeding 20A. This applies to all users and all circuit applications as references to ordinary persons and general use have been removed.

Previous exemptions have been revised. There is no longer any provision for non RCD protected circuits being under the supervision of skilled or instructed persons.

An exemption can still be applied to a specifically labelled / suitably identified socket outlet or where a documented risk assessment determines that RCD protection is not necessary.

Regulation 411.3.3 continues to require 30mA RCD protection, in accordance with Regulation 415.1, for mobile equipment with a current rating not exceeding 32A for use outdoors. Such equipment may well be more common in commercial applications.

Regulations in the 522.6.200 series require cables concealed in a wall or partition at less than 50mm from the surface to either be provided with 30mA RCD protection or earthed mechanical protection.

USE IN COMMERCIAL & OTHER PREMISES

Installations Incorporating Amendment No. 3: 2015

Cables concealed within walls or partitions that include metallic parts in their construction are now always required to either be provided with 30mA RCD protection or earthed mechanical protection. This is a requirement irrespective of the depth of cable installation or of the supervisory status of the installation. BS 7671 no longer makes any reference to premises under the supervision of skilled or instructed persons.

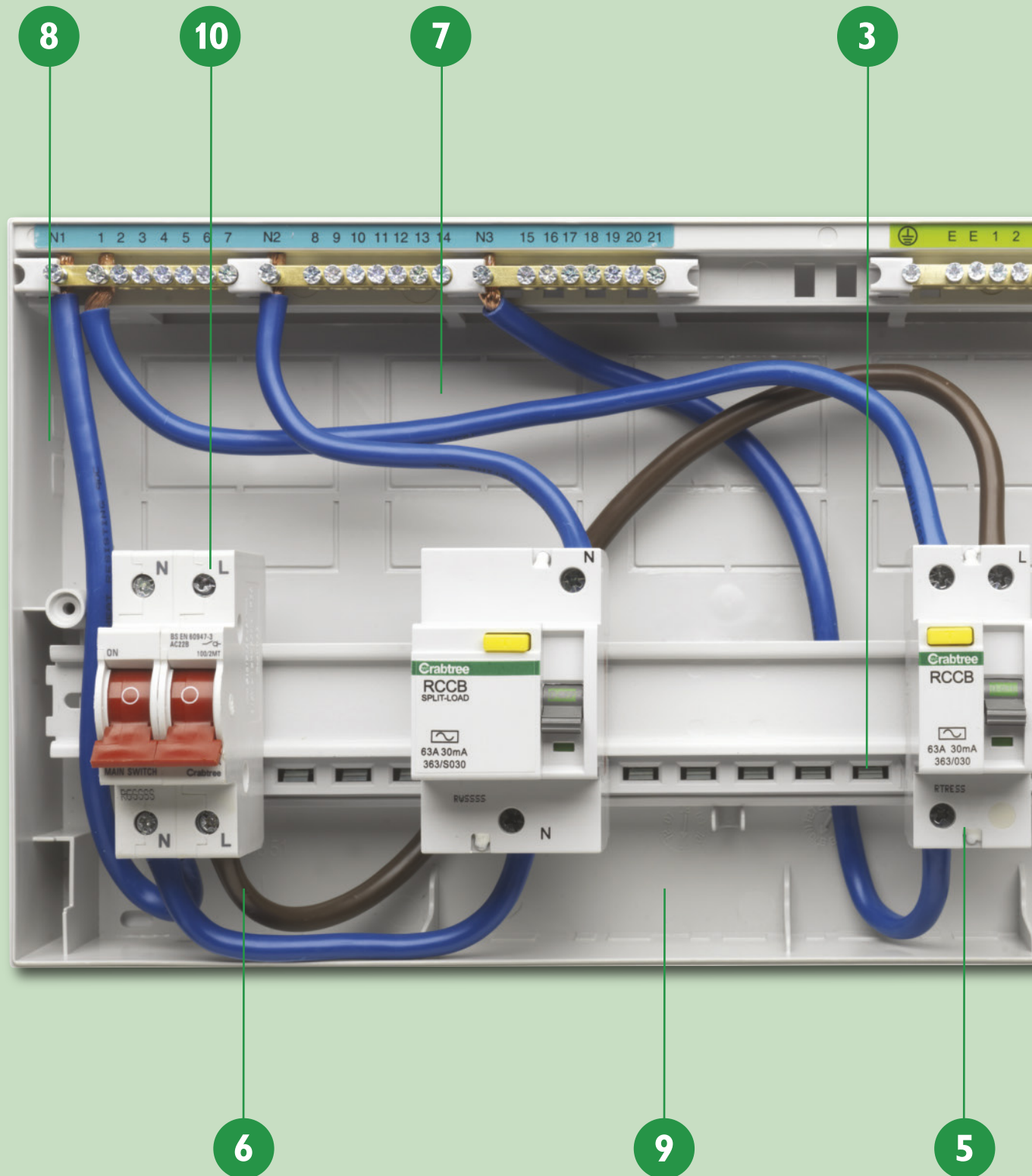
For any location containing a bath or shower Regulation 701.411.3.3 now requires that not only low voltage circuits serving the location but also circuits that do not serve but pass through zones 1 and 2 of the location be protected by one or more 30mA RCDs, in accordance with Regulation 415.1.1

Wherever additional protection by means of an RCD becomes an integral part of an electrical installation consideration must be given to Regulations 314.1 and 531.2.4 so as to ensure that circuits are sub divided in such a way to reduce risk or inconvenience that may follow their operation.

Typical commercial and other types of premises that tend to use consumer units would be Hotels, Mobile and Portable Buildings such as Site Offices, Exhibition Stands, Kiosks, Hairdressing Salon, Shops, Cafe, Restaurant, Storage Units, and Offices. An appropriately selected consumer unit can address the requirements for necessary and sensible circuit division that increased RCD usage demands.

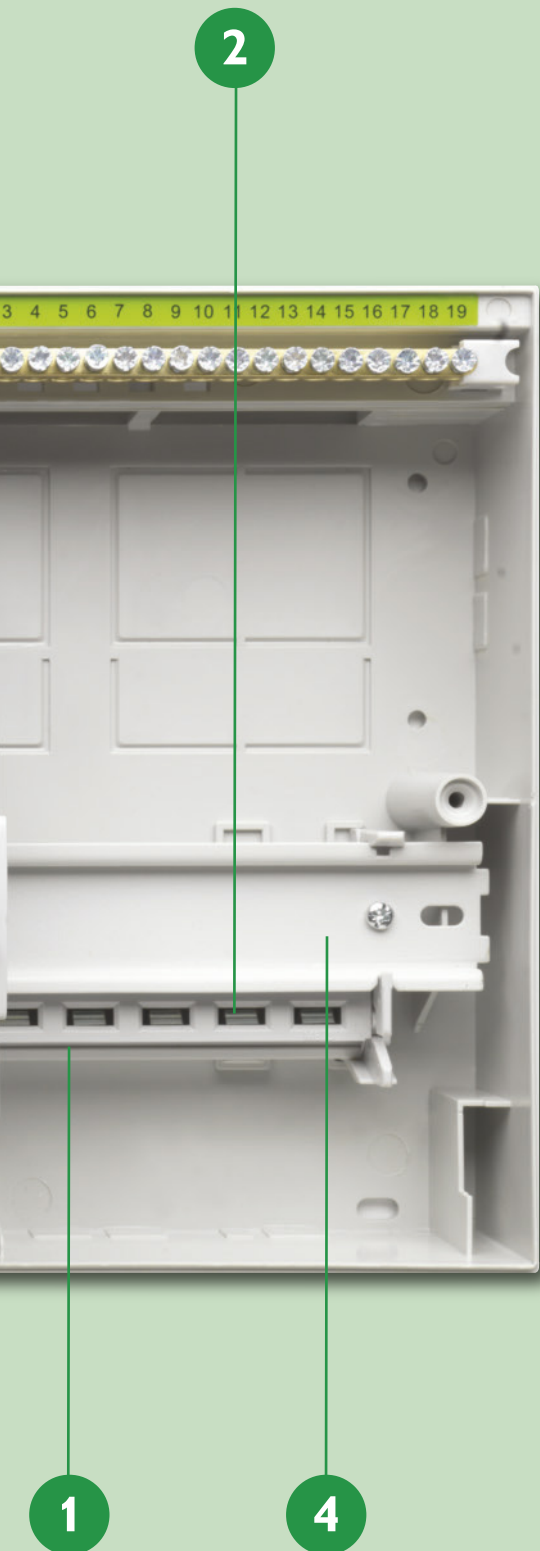


NOTE: All metal consumer units are also suitable for use in commercial & other premises



USE IN COMMERCIAL & OTHER PREMISES

Specifications Incorporating Amendment No. 3: 2015



- 1** Permanently Insulated Busbar gives greater protection for employers and employees
- 2** Plug in MCBs and RCBOs, 25% fewer screw terminals and instant guaranteed connections
- 3** Its easy to add or upgrade circuits without removing the busbar
- 4** The full DIN rail accepts DIN modules, contactors, timers and meters in any unused way
- 5** Incoming devices and RCDs are already fitted
- 6** Fewer interconnecting cables give increased wiring space
- 7** Large knockouts for rear cable entry
- 8** Side knockouts for surface or hidden wiring
- 9** Ample space to route wiring with top and bottom access
- 10** Devices fitted with high capacity tunnel terminals

NOTE: All metal consumer units are also suitable for use in commercial & other premises

..... Easier Faster Safer



410/2B

MAIN SWITCH UNITS

MS Rating	Total MCB/RCBO Ways	Main Switch	Insulated
40A	2	2	402/2B
63A	2	2	402/26B
100A	4	4	404/2B
100A	7	7	407/2B
100A	10	10	410/2B
100A	13	13	413/2B
100A	18	18	418/2B

RCBOs are not recommended for use within 402/802 units.



410/2563B

SPLIT LOAD UNITS 100A SWITCH 63A 30mA RCCB

MS Rating	Total Ways	Main Switch	RCCB	Insulated
100A	4	2	2	404/2263B
100A	7	2	5	407/2263B
100A	7	3	4	407/2363B
100A	7	4	3	407/2463B
100A	7	5	2	407/2563B
100A	10	3	7	410/2363B
100A	10	4	6	410/2463B
100A	10	5	5	410/2563B
100A	10	6	4	410/2663B
100A	10	7	3	410/2763B
100A	15	5	10	415/2563B
100A	15	6	9	415/2663B
100A	15	7	8	415/2763B
100A	15	8	7	415/2863B
100A	15	9	6	415/2963B
100A	15	10	5	415/2163B

Both MCBs and RCBOs may be included for final circuit positions that are not protected by resident RCCBs.



415/2883B

SPLIT LOAD UNITS 100A SWITCH 80A 30mA RCCB

MS Rating	Total Ways	Main Switch	RCCB	Insulated
100A	7	2	5	407/2283B
100A	7	3	4	407/2383B
100A	7	4	3	407/2483B
100A	7	5	2	407/2583B
100A	10	3	7	410/2383B
100A	10	4	6	410/2483B
100A	10	5	5	410/2583B
100A	10	6	4	410/2683B
100A	10	7	3	410/2783B
100A	12	6	6	412/2683B
100A	15	5	10	415/2583B
100A	15	6	9	415/2683B
100A	15	7	8	415/2783B
100A	15	8	7	415/2883B
100A	15	9	6	415/2983B
100A	15	10	5	415/2183B

Both MCBs and RCBOs may be included for final circuit positions that are not protected by resident RCCBs.



413/236565B



413/2837636B



404/383B

HIGH INTEGRITY DUAL RCD UNITS

MS Rating	Total Ways	Main Switch	RCCB 1 63A 30mA	RCCB 2 63A 30mA	Insulated
100A	8	2	3	3	408/226363B
100A	13	2	6	5	413/226665B
100A	13	2	7	4	413/226764B
100A	13	2	8	3	413/226863B
100A	13	3	5	5	413/236565B
100A	13	3	6	4	413/236664B
100A	13	3	7	3	413/236763B
100A	13	4	5	4	413/246564B
100A	13	4	6	3	413/246663B
100A	13	5	4	4	413/256464B
100A	13	5	5	3	413/256563B
100A	13	6	4	3	413/266463B

MS Rating	Total Ways	Main Switch	RCCB 1 80A 30mA	RCCB 2 80A 30mA	Insulated
100A	9	1	4	4	409/218484B
100A	9	2	4	3	409/228483B
100A	13	3	5	5	413/238585B

Both MCBs and RCBOs may be included for final circuit positions that are not protected by resident RCCBs.

DUAL RCD SPLIT LOAD UNITS

MS Rating	Total MCB Ways	Main Switch	RCCB 1 63A 30mA	RCCB 2 63A 30mA	Insulated
100A	13	0	7	6	413/2637636B
100A	13	0	8	5	413/2638635B
100A	13	0	9	4	413/2639634B

MS Rating	Total MCB Ways	Main Switch	RCCB 1 80A 30mA	RCCB 2 63A 30mA	Insulated
100A	8	0	4	4	408/2834634B
100A	13	0	7	6	413/2837636B
100A	13	0	8	5	413/2838635B
100A	13	0	9	4	413/2839634B

RCD INCOMER UNITS

RCCB Rating	Total MCB Ways	RCCB	Insulated
40A 30mA	2	2	402/343B
63A 30mA	2	2	402/363B
63A 30mA	4	4	404/363B
80A 30mA	4	4	404/383B
80A 30mA	7	7	407/383B
100A 30mA	7	7	407/313B
80A 30mA	10	10	410/383B
100A 30mA	10	10	410/313B
80A 30mA	13	13	413/383B
100A 30mA	13	13	413/313B
80A 30mA	18	18	418/383B
100A 30mA	18	18	418/313B



411/262B

DUAL TARIFF UNITS

Total MCB/ RCBO Ways	Main Switch 100A Tariff 1	Main Switch 100A Tariff 2	Insulated
5	3	2	405/232B
8	3	5	408/232B
8	4	4	408/242B
8	5	3	408/252B
8	6	2	408/262B
11	4	7	411/242B
11	5	6	411/252B
11	6	5	411/262B
11	7	4	411/272B
11	8	3	411/282B
16	6	10	416/262B
16	7	9	416/272B
16	8	8	416/282B
16	9	7	416/292B
16	10	6	416/212B
16	11	5	416/2112B



408/22623B

MULTI TARIFF UNITS

Total MCB/ RCBO Ways	Main Switch 100A Tariff 1	Main Switch 100A 2 Tariff	Main Switch 100A Tariff 3	Insulated
9	4	1	4	409/242124B
14	8	1	5	414/282125B
14	7	1	6	414/272126B

SPLIT LOAD DUAL TARIFF UNITS

MS Rating	Total Ways	Main Switch	RCCB 63A 30mA	Main Switch 100A Tariff 2	Insulated
100A	8	2	3	3	408/22623B
100A	13	5	2	6	413/25626B
100A	13	3	6	4	413/23624B

Both MCBs and RCBOs may be included for final circuit positions that are not protected by resident RCCBs.

MS Rating	Total MCB/ RCBO Ways	Main Switch	RCCB 80A 30mA	Main Switch 100A Tariff 2	Insulated
100A	13	3	6	4	413/23824B

Both MCBs and RCBOs may be included for final circuit positions that are not protected by resident RCCBs.

For components selection & dimensions see *Starbreaker Components* page 140.



H913/2WB

ASSEMBLED SPINE BACKPLATES

MAIN SWITCH

MS Rating	Total MCB/ RCBO Ways	Main Switch	LIST No
100A	13	13	H913/2WB
100A	18	18	H918/2WB

SPLIT LOAD 100A SWITCH 63A 30mA RCCB

MS Rating	Total Ways	Main Switch	RCCB	LIST No
100A	10	4	6	H910/2463WB
100A	10	5	5	H910/2563WB
100A	10	6	4	H910/2663WB

MCBs and RCBOs may be included for final circuit positions not protected by resident RCCBs.

SPLIT LOAD 100A SWITCH 80A 30mA RCCB

MS Rating	Total Ways	Main Switch	RCCB	LIST No
100A	10	4	6	H910/2483WB
100A	10	5	5	H910/2583WB

DUAL RCD SPLIT LOAD

MS Rating	Total Ways	Main Switch	RCCB 1 80A 30mA	RCCB 2 63A 30mA	LIST No
100A	8	0	4	4	908/2834634WB

MCBs and RCBOs may be included for final circuit positions not protected by resident RCCBs. Starbreaker spine backplates (H) accept both MCBs and single module RCBOs.

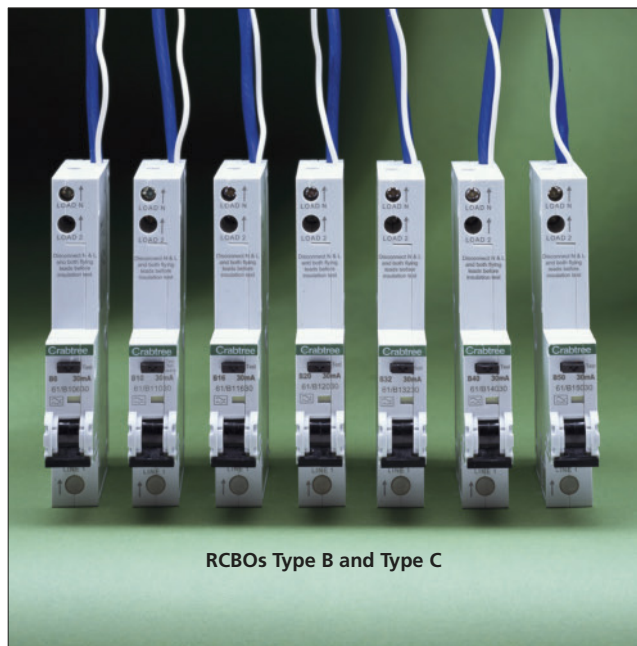
For use in domestic household premises these spine units must be mounted within a non-combustible enclosure.



MINIATURE CIRCUIT BREAKERS

RATING	MODULES	LIST No	
		Type B	Type C
6A	1	61/B06	61/C06
10A	1	61/B10	61/C10
16A	1	61/B16	61/C16
20A	1	61/B20	61/C20
32A	1	61/B32	61/C32
40A	1	61/B40	61/C40
50A	1	61/B50	61/C50

- BS EN 60898 6kA – 240V 50Hz.
- Type B classification (3–5In). Type C classification (5–10In).
- 25mm² terminal capacity.



RCBOs Type B and Type C

RESIDUAL CURRENT CIRCUIT BREAKER WITH OVERCURRENT PROTECTION (RCBOs)

RATING	MODULES	LIST No	
		30mA Type B	30mA Type C
6A	1	61/B10630	61/C10630
10A	1	61/B11030	61/C11030
16A	1	61/B11630	61/C11630
20A	1	61/B12030	61/C12030
32A	1	61/B13230	61/C13230
40A	1	61/B14030	61/C14030
50A	1	61/B15030	61/C15030

- EN 61009-1, IEC61009-1.
- 230 (240)V AC 50/60 Hz.
- 16mm² terminal capacity.

CAUTION

These devices are electronic units and should be disconnected from the supply during insulation and earth fault loop impedance testing.



ACCESSORIES

Blanking Plate	443
Blanking Unit (90°)	CSB1
Blanking Plate twist fit	CSBC
MCB Padlocking Device	MCBLD



303/B12

BELL TRANSFORMER

DESCRIPTION	MODULES	LIST No
12V bell transformer	2	303/B12

- With overload protection.

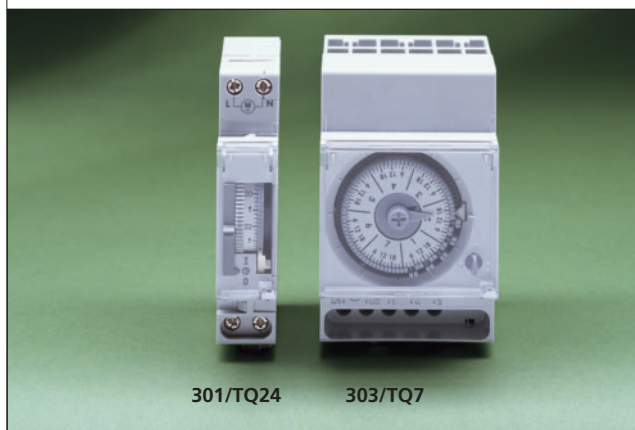


301/TD1

302/TD2

DIGITAL TIMESWITCHES

DESCRIPTION	MOD	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



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

Thermal Rating per Pole AC1(A)		Pole Configuration		LIST No
TYPE		N/O	N/C	
CIK22	20	2 1 0	0 1 2	1 Mod { CIK22-20 CIK22-11 CIK22-02
CIK24	24	4 3 2 0	0 1 2 4	2 Mod { CIK24-40 CIK24-31 CIK24-22 CIK24-04
CIK40	40	4 3 2 0	0 1 2 4	3 Mod { CIK40-40 CIK40-31 CIK40-22 CIK40-04
CIK63	63	4 3 2	0 1 2	3 Mod { CIK63-40 CIK63-31 CIK63-22
Auxiliary Contacts (40A & 63A only)	230V	400V		CHHSLA11 CHHSLA20
	AC15			
	6	4	1 2	

CIRCUIT PROTECTION REQUIREMENTS WITHIN ELECTRICAL INSTALLATIONS.

SOCKET CIRCUITS 411.3.3

RCDs are required to provide additional protection. To be recognised as providing additional protection the RCD must be rated at 30mA or less and operate within 40ms when tested at 5x rated residual operating current (415.1).

● RCDs are required for all socket outlets

rated up to 20A. Two exceptions are allowed for;

- 1. Where, for other than an installation in a dwelling, a documented risk assessment determines that the RCD protection is not necessary.
- 2. A socket outlet suitably identified for connection of a particular item of equipment (not general use).

Additional protection must be provided in the event of failure of the provision of basic protection and/or the provision of fault protection or carelessness by users of the installation. **Protection by 30mA RCD will be required for;**

- Upstairs ring circuit
- Downstairs ring circuit
- Kitchen ring circuit
- Cooker control unit c/w socket outlet

CONCEALED CABLES

Cables installed in a wall or partition (1)

A cable concealed in a wall or partition at less than 50mm from the surface shall;

1. Be installed in the prescribed zones **or**
2. Comply with

Where 1. but not 2. applies the cable shall be provided with additional protection by RCD having the characteristics described by 415.1.1

Cables installed in a wall or partition (2)

Irrespective of depth a cable concealed in a wall or partition having a construction which includes metallic parts shall;

1. Be provided with additional protection by RCD having the characteristics described by 415.1.1 **or**
2. Be mechanically protected to avoid damage during construction of the wall or partition and during installation of the cable **or**
3. Comply with

For a cable installed at a depth of less than 50mm the requirements of 1 & 2 shall also apply.

Non RCD protected cable methods

For non RCD protected circuit a cable shall;

1. Incorporate an earthed metallic covering suitable for service as the CPC **or**
2. Be enclosed in earthed conduit **or**
3. Be enclosed in earthed trunking or ducting
4. Be protected against damage from penetration by nails or screws and the like **or**
5. Form part of a SELV or PELV circuit.

In the majority of domestic situations cables installed beneath a plaster surface within partition walls without mechanical protection will require additional protection by **30mA RCD regardless** of their routing.

- Upstairs lighting
- Downstairs lighting
- Immersion heater
- Smoke alarm
- Burglar alarm

Bathrooms

- **Section 7** Special installations or Locations.
- **Section 701** Locations containing a bath or shower.

Regulation 701.411.3.3

Additional protection shall be provided for all low voltage circuits either serving the location or passing through zones 1 or 2 of the location by the use of one or more RCDs having the characteristics described by 415.1.1.

- Supplementary bonding is not required as long as final circuits of this location comply with requirements for automatic disconnection (411.3.2) and all extraneous conductive parts are effectively connected to the protective equipotential bonding (411.3.1.2).

Additional protection must be provided by one or more 30mA RCDs.

- shower circuit
- lighting circuit
- Heating circuit
- Ventilation circuit
- Any circuit passing through

Chapter 31

314.1 Requires that; Every installation shall be divided into circuits, as necessary, to:

- i. Avoid danger and minimise inconvenience in the event of a fault
- ii. Facilitate safe inspection, testing and maintenance
- iii. Take account of danger that may arise from the failure of a single circuit such as a lighting circuit
- iv. Reduce the possibility of unwanted tripping of residual current devices (RCDs) due to excessive protective conductor currents produced by equipment in normal operation.

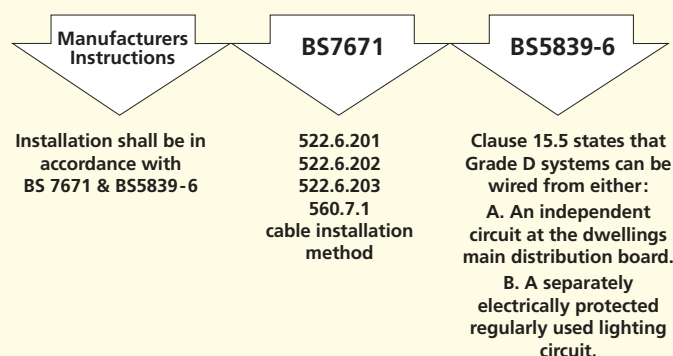
MAINS SUPPLIES FOR SMOKE ALARMS WITHIN DOMESTIC SETTINGS

Clause 7.1 of BS 5839-6 defines a Grade D system as: "A system of one or more mains-powered smoke alarms, each with an integral standby supply (The system may in addition, incorporate one or more mains-powered heat alarms each with an integral standby supply).

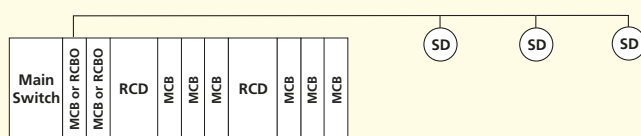
The 17th Edition of the wiring regulations do not cover every item of Electrical Equipment likely to be installed. They do not specifically mention Smoke Alarms. However:

CHAPTER 13 REGULATION 134.1.1 states that electrical equipment shall be installed in accordance with the instructions of the manufacturer of the equipment.

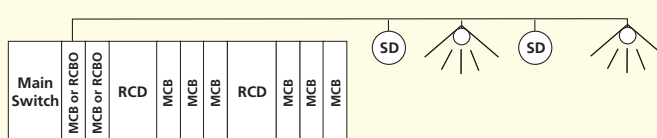
CHAPTER 51 REGULATION 510.3 states that every item of electrical equipment shall be selected and erected so as to allow compliance with the regulations stated in this chapter and the relevant regulations in other parts of BS7671 and shall take account of manufacturers instructions.



A.



B.



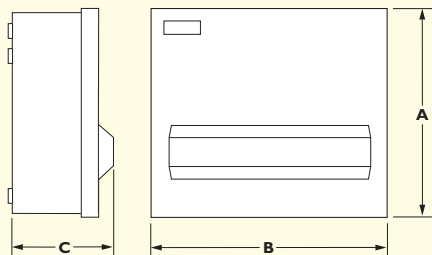
Elements of Electrical Protection will include short circuit, overcurrent and may also include additional protection by a residual current device (30mA) for certain installation methods covered by BS7671 (522.6.201) & (522.6.202)

IF ADDITIONAL PROTECTION IS REQUIRED BY BS7671 THE NEED FOR SEPARATE ELECTRICAL PROTECTION CANNOT BE MET BY DUAL RCD CONSUMER UNIT ARRANGEMENTS WHERE SINGLE RESIDUAL CURRENT DEVICES PROTECT GROUPS OF CIRCUITS.

British Standards and IEE regulations are subject to change and amendment. This guide to Crabtree consumer units is not a substitute for the regulations which should always be used for all types of electrical installation design, and installation work.

DIMENSIONS

METAL ENCLOSURES



STARBREAKER SIZE 4 ENCLOSURE (504/0A)

DIMENSIONS A=185mm B=130mm C=104mm

502/26B 502/343B
502/2B 502/363B

STARBREAKER SIZE 6 ENCLOSURE (506/0A)

DIMENSIONS A=261mm B=188mm C=121mm

504/2B 504/383B
504/343B

STARBREAKER SIZE 9 ENCLOSURE (509/0A)

DIMENSIONS A=261mm B=242mm C=121mm

504/2263B 507/2B
505/232B 507/383B
507/343B

STARBREAKER SIZE 12 ENCLOSURE (512/0A)

DIMENSIONS A=261mm B=292mm C=121mm

507/2263B 507/2563B 510/2B
507/2283B 507/2583B 510/313B
507/2363B 508/232B 510/383B
507/2383B 508/242B
507/2463B 508/252B
507/2483B 508/262B

STARBREAKER SIZE 15 ENCLOSURE (515/0A)

DIMENSIONS A=261mm B=343mm C=121mm

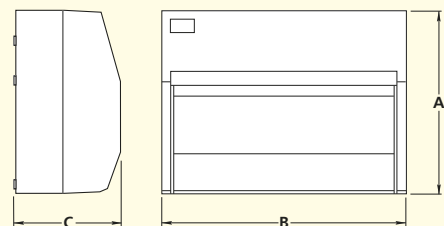
508/22623B 510/2683B
508/226363B 510/2763B
508/2834634B 510/2783B
509/242124B 511/242B
510/2363B 511/252B
510/2383B 511/262B
510/2463B 511/272B
510/2483B 511/282B
510/2563B 513/2B
510/2583B 513/313B
510/2663B 513/383B

STARBREAKER SIZE 20 ENCLOSURE (520/0A)

DIMENSIONS A=261mm B=438mm C=121mm

513/226764B 513/256563B 515/2183B 516/2112B
513/226863B 513/2637636B 515/2563B 516/212B
513/23624B 513/2638635B 515/2583B 516/262B
513/236565B 513/2639634B 515/2663B 516/272B
513/236664B 513/266463B 515/2683B 516/282B
513/236763B 513/2837636B 515/2763B 516/292B
513/23824B 513/2838635B 515/2783B 518/2B
513/246564B 513/2839634B 515/2863B 518/313B
513/246663B 514/272126B 515/2883B 518/383B
513/25626B 514/282125B 515/2963B 512/2683B
513/256464B 515/2163B 515/2983B 513/226665B

INSULATED ENCLOSURES



STARBREAKER SIZE 4 ENCLOSURE (404/0A)

DIMENSIONS A=160mm B=117mm C=102mm

402/2B 402/363B
402/26B
402/343B

STARBREAKER SIZE 6 ENCLOSURE (406/0A)

DIMENSIONS A=230mm B=190mm C=120mm

404/2B 404/363B
404/383B

STARBREAKER SIZE 9 ENCLOSURE (409/0A)

DIMENSIONS A=230mm B=243mm C=120mm

404/2263B 407/313B
405/232B 407/383B
407/2B

STARBREAKER SIZE 12 ENCLOSURE (412/0A)

DIMENSIONS A=230mm B=294mm C=120mm

407/2263B 407/2563B 410/2B
407/2283B 407/2583B 410/313B
407/2363B 408/232B 410/383B
407/2383B 408/242B
407/2463B 408/252B
407/2483B 408/262B

STARBREAKER SIZE 15 ENCLOSURE (415/0A)

DIMENSIONS A=230mm B=344mm C=120mm

408/22623B 410/2563B 411/282B
408/226363B 410/2583B 413/2B
408/2834634B 410/2663B 413/313B
409/218484B 410/2683B 413/383B
409/228483B 410/2763B
409/242124B 410/2783B
410/2363B 411/242B
410/2383B 411/252B
410/2463B 411/262B
410/2483B 411/272B

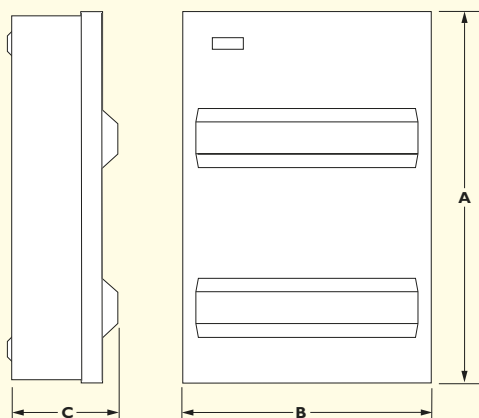
STARBREAKER SIZE 20 ENCLOSURE (420/0A)

DIMENSIONS A=230mm B=439mm C=120mm

412/2683B 413/246564B 413/2838635B 415/2763B 416/282B
413/226665B 413/246663B 413/2839634B 415/2783B 416/292B
413/226764B 413/25626B 414/272126B 415/2863B 418/2B
413/226863B 413/256464B 414/282125B 415/2883B 418/313B
413/23624B 413/256563B 415/2163B 415/2963B 418/383B
413/236565B 413/2637636B 415/2183B 415/2983B
413/236664B 413/2638635B 415/2563B 416/2112B
413/236763B 413/2639634B 415/2583B 416/212B
413/23824B 413/266463B 415/2663B 416/262B
413/238585B 413/2837636B 415/2683B 416/272B

DIMENSIONS

TWO BANK UNITS



STARBREAKER SIZE 24 ENCLOSURE (524/2A)

DIMENSIONS A =506mm B =295mm C =121mm

517/26383B 520/283B

STARBREAKER SIZE 30 ENCLOSURE (530/2A)

DIMENSIONS A =506mm B =345mm C =121mm

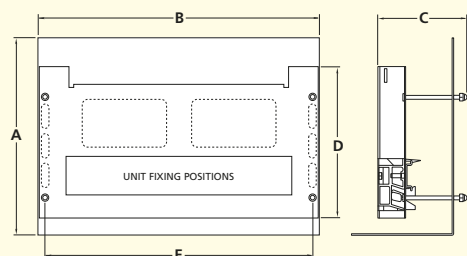
523/26383B 526/283B

STARBREAKER SIZE 40 ENCLOSURE (540/2A)

DIMENSIONS A =506mm B =440mm C =121mm

533/26383B 536/283B

SPINE BACKPLATE ASSEMBLIES (White PVC Cover)



STARBREAKER 15 MODULE SPINE BACKPLATE UNIT

DIMENSIONS A =235mm B =335mm C =106mm D =180mm E =319.5mm

H910/2463WB H910/2563WB H913/2WB
H910/2483WB H910/2583WB
H910/2663WB

STARBREAKER 20 MODULE SPINE BACKPLATE UNIT

DIMENSIONS A =235mm B =448mm C =106mm D =180mm E =435mm

H918/2WB

STARBREAKER 15 MODULE DRCD (8W)

DIMENSIONS A =205mm B =333mm C =106mm D =140mm E =320mm

908/2834634B

STARBREAKER INCOMING DEVICES AND ENCLOSURES ENCLOSURES

MODULAR WIDTH	ALL METAL	ALL INSULATED
4	504/0A	404/0A
6	506/0A	406/0A
9	509/0A	409/0A
12	512/0A	412/0A
15	515/0A	415/0A
20	520/0A	420/0A
24	524/0A	
30	530/0A	
40	540/0A	

FLUSH MOUNTING KIT

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

REPLACEMENT COVERS FOR 5 SERIES ENCLOSURES

MODULAR WIDTH	ALL METAL
6	506/LID
9	509/LID
12	512/LID
15	515/LID
20	520/LID

DOUBLE POLE MAIN SWITCH DISCONNECTORS

RATING	MODULAR WIDTH	LIST No
40A	2	40/M12*
63A	2	63/M12*
100A	2	100/MI2*
100A	2	100/2MT**

* Used within main switch only and split-load applications

** Used within high integrity and dual RCD applications

RESIDUAL CURRENT CIRCUIT BREAKERS

RATING	MODULAR WIDTH	LIST No
40A 30mA	2	340/030
63A 30mA	2	363/030
80A 30mA	2	380/030
100A 30mA	2	310/030
63A 30mA	3	363/S030*
80A 30mA	3	380/S030*

* Dedicated as a split-load RCCB (3 modules)

AM 3 UPGRADE / REPLACEMENT COVERS FOR 8 SERIES ENCLOSURES

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



Acknowledged as one the leading brands in the UK and in British Standard markets around the world, Crabtree offers designers & specifiers a wide range of quality products that caters for a vast array of applications including Commerce, Offices, Education, Hospitals & Health, Hotels & Leisure facilities, in fact wherever quality products are required.

Crabtree factories operate a series of internationally recognized standards including ISO9001 for quality, OHSAS 18001 for Health & Safety and ISO14001 for Environmental Management. The UK production locations are home to the product management, engineering, design, quality & logistics teams.



In the UK Crabtree operates two UKAS accredited Laboratories that carry out R&D and compliance testing on all Crabtree products, these highly accredited facilities ensure that safety, quality & reliability remain consistent with UK & EU legislation regulations & Siemens internal standards, policies and practices.

Crabtree products are all designed manufactured and tested in accordance with the recognised product standards, and backed by standard & extended guarantees.

Crabtree also operates to recognised standards for product safety & sustainability, Crabtree wiring accessories are **ROHS** and **REACH** compliant often in excess of the UK market standards.

Crabtrees **WEEE** compliance process and recycling scheme ensures that the end of product life circumstances are catered for in line with UK & EU Legislation.

Recycled materials are used in product packaging, and declared into a recycling scheme locally to control environmental impacts and assure that the maximum level of recycling of materials and use of recycled materials is achieved.

As a Siemens company Crabtree also operates a zero harm scheme within all of its manufacturing, logistics & sales facilities, and is proud to have achieved a 5 star Health & Safety rating.





Electrium



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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.

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