

# Crabtree



Starbreaker consumer units  
and the 17th edition



Installers must assume that, domestic installations will not be under the supervision of skilled or instructed users, socket circuits certainly will be subject to use by the general public.

However, any circuits wired by traditional methods (twin and earth cable at a depth of less than 50mm) without mechanical protection are required to be afforded 'Additional protection' (a specific requirement of the 17<sup>th</sup> edition) by use of an RCD not exceeding 30mA.

Once it is accepted that all circuits will require 30mA RCD protection the issue of how this additional protection is applied should be considered?

Circuit division within an installation may be necessary, (ie: downstairs lights and upstairs sockets may share one RCD, while upstairs lights and downstairs sockets share another) to avoid unnecessary loss of light or power, following the operation of an RCD. It may be that some items of equipment will require their own RCD.

All domestic installations will incorporate socket circuits and bathroom circuits and these are addressed individually by the 17<sup>th</sup> edition.

Crabtree's range of consumer units provides many options to installers as they strive to meet the new regulations.



## STARBREAKER CONSUMER UNITS AND THE 17th EDITION

**Under the 17th edition wiring regulations (Published in January 2008) the following will apply to all domestic and residential installations.**

### SOCKET CIRCUITS 411.3.3

RCDs are now 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 operating current.

- **RCDs are now required for all general use socket outlets rated up to 20A.** Two exceptions are allowed for;
  1. Socket outlets used under supervision of skilled or instructed persons.
  2. A socket outlet suitably identified for connection of a particular item of equipment.

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

### CABLES 522.6.6, 522.6.7

#### Regulation 522.6.6

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

1. Incorporate an earthed metallic covering suitable for service as the circuit CPC - *or*
2. Be enclosed in earthed conduit, trunking or ducting *or*
3. Be mechanically protected against damage from penetration by nails or screws and the like *or*
4. Be installed in the prescribed zones.

**Regulation 522.6.7** Where 522.6.6 applies and the installation is **not intended to be under the supervision of skilled or instructed persons**, cables installed in accordance with 522.6.6 (4) but not having mechanical protection of 1,2,or3 shall be provided with additional protection by means of a 30mA RCD.

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.
- Zone 3 has been removed.
- Suitable equipment can be within 600mm of a bath, excluding 13A sockets to BS1363 which must be 3m from the edge of a bath or shower.
- Additional protection shall be provided by the use of **one or more residual current device** with a rated operating current not exceeding 30mA (701.411.3.3).
- Supplementary bonding is not required so long as any Protective Equipotential Bonding has been installed (411.3.1.2).

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

- Shower circuit
- Lighting circuit
- Heating circuit
- Ventilation circuit

### Chapter 31

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

- i. Avoid danger and minimize 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.

### Consideration

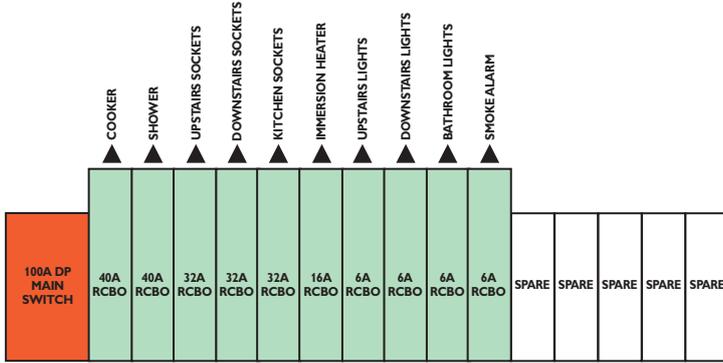
Consideration for appropriate circuit division has never been greater.

Specific reference is made within the new standard to taking account of and reducing possibilities of danger and inconvenience arising from the failure of a single circuit such as a lighting circuit. For example; the result of an RCD operating due to a fault at the shower should not create a low light hazard in the bathroom.

**Some circuits may require independence from a shared RCD but their installation method may still dictate 30mA RCD protection. Examples may be smoke alarms, burglar alarms, door entry systems.**

**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.**

### CRABTREE MAIN SWITCH CONTROLLED UNIT

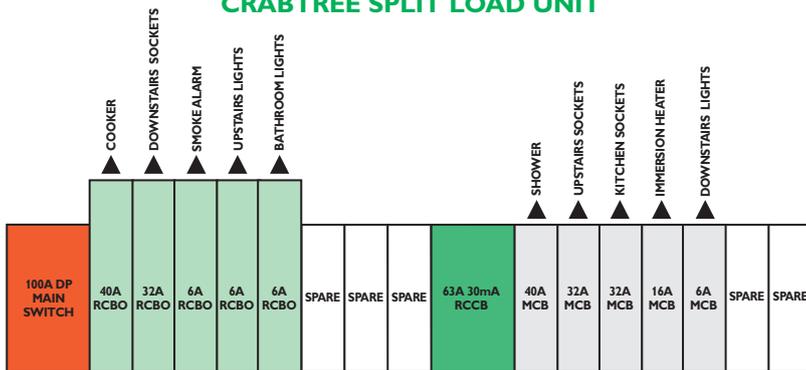


Utilising RCBOs throughout would provide a secure dedicated 30mA protected supply to every circuit.



407/2B

### CRABTREE SPLIT LOAD UNIT

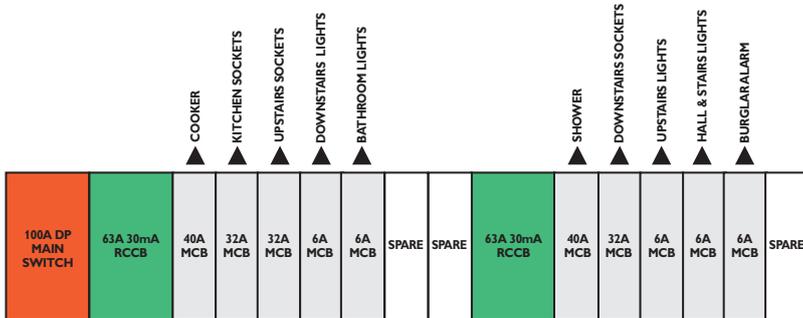


With one RCD protected section with MCBs and RCBOs on the switch side.



412/2683B

### CRABTREE DUAL RCD CONSUMER UNIT

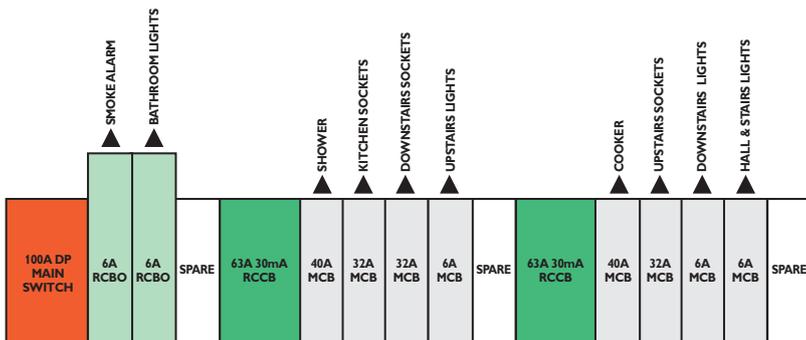


Comprise two sections – each protected by a 30mA RCD.

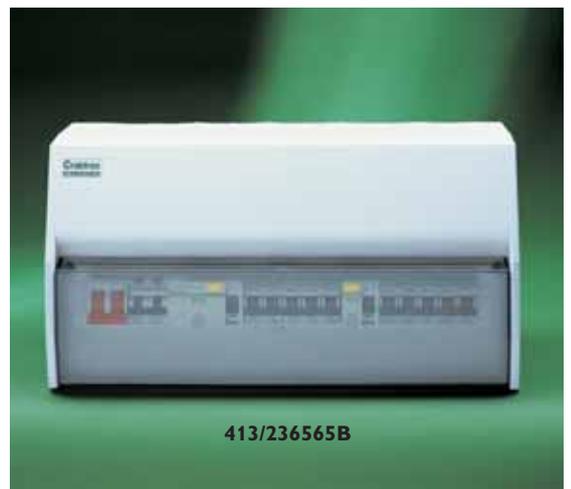


413/2637636B

### CRABTREE HIGH INTEGRITY DUAL RCD CONSUMER UNIT



Uses two RCD protected sections and a number of ways for dedicated (High Integrity Circuits) using 30mA RCBOs.



413/236565B

### MAIN SWITCH CONSUMER UNITS

Insulated	Metal	Description	Switch	Total
404/2B	804/2B	4 Way unit C/W 100A main switch	4	4
407/2B	807/2B	7 Way unit C/W 100A main switch	7	7
410/2B	810/2B	10 Way unit C/W 100A main switch	10	10
413/2B	813/2B	13 Way unit C/W 100A main switch	13	13
418/2B	818/2B	18 Way unit C/W 100A main switch	18	18

### SPLIT LOAD CONSUMER UNITS

Insulated	Metal	Description	Switch	RCD	RCD	Total
410/2463B	810/2463B	4+6 Split-Load Consumer Unit	4	6	n/a	10
410/2563B	810/2563B	5+5 Split-Load Consumer Unit	5	5	n/a	10
410/2663B	810/2663B	6+4 Split-Load Consumer Unit	6	4	n/a	10
410/2763B	810/2763B	7+3 Split-Load Consumer Unit	7	3	n/a	10
412/2683B	N/A	6+6 Split-Load Consumer Unit	6	6	n/a	12
415/2663B	815/2663B	6+9 Split-Load Consumer Unit	6	9	n/a	15
415/2763B	815/2763B	7+8 Split-Load Consumer Unit	7	8	n/a	15
415/2863B	815/2863B	8+7 Split-Load Consumer Unit	8	7	n/a	15
415/2963B	815/2963B	9+6 Split-Load Consumer Unit	9	6	n/a	15

### DUAL RCD SPLIT LOAD CONSUMER UNITS

Insulated	Metal	Description	Switch	RCD	RCD	Total
413/2637636B	813/2637636B	13 Way Dual RCD Consumer Unit	-	7	6	13
413/2638635B	813/2638635B	13 Way Dual RCD Consumer Unit	-	8	5	13
413/2639634B	813/2639634B	13 Way Dual RCD Consumer Unit	-	9	4	13

### HIGH INTEGRITY DUAL RCD CONSUMER UNITS

Insulated	Metal	Description	Switch	RCD	RCD	Total
413/226665B	813/226665B	13 Way High Intergrity Dual RCD Consumer Unit	2	6	5	13
413/226764B	813/226764B	13 Way High Intergrity Dual RCD Consumer Unit	2	7	4	13
413/226863B	813/226863B	13 Way High Intergrity Dual RCD Consumer Unit	2	8	3	13
413/236565B	813/236565B	13 Way High Intergrity Dual RCD Consumer Unit	3	5	5	13
413/236664B	813/236664B	13 Way High Intergrity Dual RCD Consumer Unit	3	6	4	13
413/236763B	813/236763B	13 Way High Intergrity Dual RCD Consumer Unit	3	7	3	13
413/246564B	813/246564B	13 Way High Intergrity Dual RCD Consumer Unit	4	5	4	13
413/246663B	813/246663B	13 Way High Intergrity Dual RCD Consumer Unit	4	6	3	13
413/256464B	813/256464B	13 Way High Intergrity Dual RCD Consumer Unit	5	4	4	13
413/256563B	813/256563B	13 Way High Intergrity Dual RCD Consumer Unit	5	5	3	13
413/266463B	813/266463B	13 Way High Intergrity Dual RCD Consumer Unit	6	4	3	13

Dual RCD & High Integrity consumer units are supplied with two 63A RCCBs as standard. 80A/63A combinations are available upon request.

### MAIN INCOMING & SPLIT-LOAD DEVICES

Type AC	Type A	Description	Rating
325/030	325/A030	Main Incoming RCCB	25A DP, 30mA
340/030	340/A030	Main Incoming RCCB	40A DP, 30mA
363/030	-	Main Incoming RCCB	63A DP, 30mA
380/030	380/A030	Main Incoming RCCB	80A DP, 30mA
310/030	310/A030	Main Incoming RCCB	100A DP, 30mA
363/S030	363/AS030	Splt-Load RCCB	63A DP, 30mA
380/S030	380/AS030	Splt-Load RCCB	80A DP, 30mA

### OUTGOING DEVICES MINIATURE CIRCUIT BREAKERS

Type B	Type C	Description	Modules	Current Rating (A)
61/B06	61/C06	Miniature Circuit Breaker	1	6
61/B10	61/C10	Miniature Circuit Breaker	1	10
61/B16	61/C16	Miniature Circuit Breaker	1	16
61/B20	61/C20	Miniature Circuit Breaker	1	20
61/B32	61/C32	Miniature Circuit Breaker	1	32
61/B40	61/C40	Miniature Circuit Breaker	1	40
61/B50	61/C50	Miniature Circuit Breaker	1	50

### RESIDUAL CURRENT CIRCUIT BREAKERS with overcurrent protection (RCBO)

Type B	Type C	Description	Modules	Current Rating (A)
61/B10630	61/C10630	RCBO	1	6
61/B11030	61/C11030	RCBO	1	10
61/B11630	61/C11630	RCBO	1	16
61/B12030	61/C12030	RCBO	1	20
61/B13230	61/C13230	RCBO	1	32
61/B14030	61/C14030	RCBO	1	40
	61/C15030	RCBO	1	50



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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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