



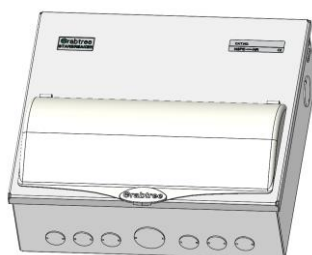
### IMPORTANT INFORMATION

*This unit should be installed by a qualified competent person in accordance with all relevant legislation and regulations including building regulations and wiring regulations BS7671. If in doubt contact a qualified competent person.*

- Turn off all power supplying this equipment before working on or inside the equipment.
- Always use a properly rated volt-sensing device to confirm the power is off.
- Replace all devices, doors and covers before turning on the power to this equipment.

**Failure to follow these instructions could result in serious injury or death.**

### **DO NOT USE POWER TOOL SCREWDRIVERS ON ELECTRICAL CONNECTIONS**



Only Crabtree Starbreaker range busbars, MCBs RCCBs, RCBOs, AFDDs, SPDs and main switches must be used within the Crabtree Starbreaker range of units.

The total current supplied by the unit must not exceed the rating of the incoming main switch or RCCB or any additional limitation (as shown on the way label). The total sum of the individual MCB ratings may exceed this value where there is appropriate diversity on the installation.

This product is suitable for indoor use only and is rated at IP2XC.

The consumer unit and associated components have been type tested to the following specifications:-

Consumer Unit	BSEN61439-3
MCBs	BSEN60898-1 Type B or C
RCCBs	BSEN61008-1
RCBOs	BSEN61009-1 Type B or C
Main Switch	BSEN60947-3
SPD	BSEN61643-11
AFDD	BSEN62606 Type B or C

### **Ambient Temperature Considerations**

The Starbreaker MCBs are calibrated to meet the 30 °C Ref Calibration Temperature requirements of BSEN 60898-1. At other temperatures the following rating factors should be used:-

At 60 °C use 0.9	At 20 °C use 1.0	At 0 °C use 1.1
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Adjacent thermal-magnetic MCBs should not be continuously loaded or approaching their nominal rated currents when mounted in enclosures. It is good engineering practice to apply generous derating factors or make provision for adequate free air between devices. In these situations, and in common with other manufacturers, we recommend a 60% diversity factor is applied to the MCB nominal rated current where it is intended to load the MCBs continuously (in excess of 1 hour)

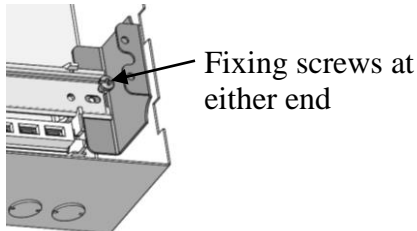
**Before fitting the front cover, check the tightness of all screw type connections, including factory made connections. Check that all live prods on the devices are fully inserted and located into the live busbar.**



## 1. Enclosure Mounting

The mounting rail assembly can be removed if required by undoing the fixings at either end of the rail (Fig. 1.1)

Fig. 1.1



Fixing screws at either end

- Remove appropriate knockouts.
- Fix base to wall using screws and Rawlplugs as appropriate.
- Bring cables through appropriate knockouts.
- Route main incoming cables to desired position.
  - Replace interior if previously removed.

## 2. Configurations

Note: - Split-load and High Integrity busbars have a red insert between the sections of the busbar, this gives a clear indication of the modular split. Connectors are supplied where required for RCCB connection.

Cut and dress the main incoming cables and earth conductor. Fit them into the appropriate terminals

Note: - The holes at the extreme end of the earth bar are for bonding purposes.

The following diagrams illustrate the methods of installation for various configurations.

### Main Switch

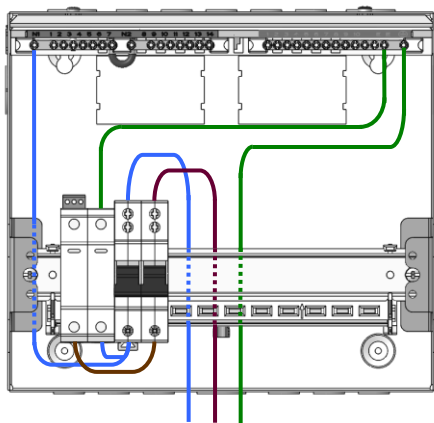


Fig. 2.1

### Split-load

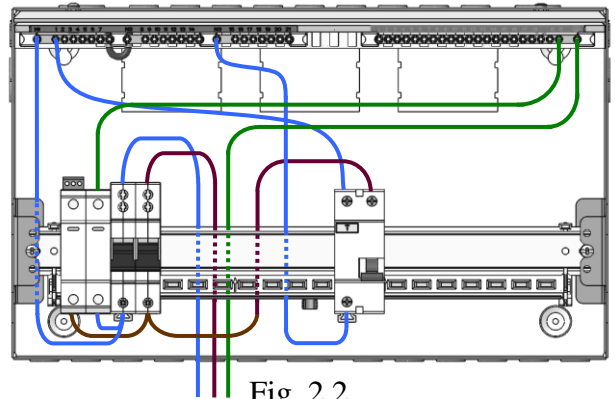


Fig. 2.2

### High Integrity Dual RCCB

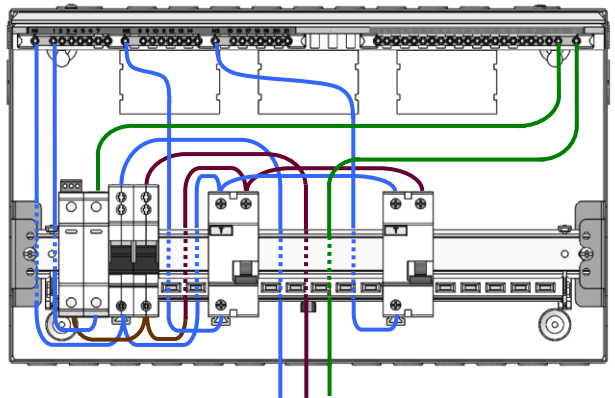
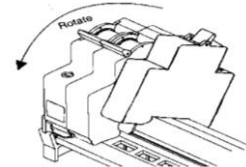


Fig. 2.3

## 3. Installation of MCBs, RCBOs and AFDDs

MCBs, RCBOs and AFDDs are mounted in the same manner as main incoming devices (Fig. 3.1). Ensure the retaining clip engages.

Fig 3.1



It is recommended that the highest rated MCB, RCBO or AFDD is fitted nearest to the main incoming device (or split-load RCCB where relevant).



## 4. Circuit Connections to MCBs, RCBOs and AFDDs

Device	Max. Cable Capacity	Recommended tightening torque
Main Switch / RCCB	50 mm <sup>2</sup>	2.3 Nm
MCB	25 mm <sup>2</sup>	2.3 Nm
RCBO	Outgoing connection – 16 mm <sup>2</sup>	2.0 Nm
AFDD	Outgoing connection – 16 mm <sup>2</sup>	2 MOD   2.5 Nm
		1 MOD   2.0 Nm
Earth & neutral terminals	16 mm <sup>2</sup>	1.7 Nm
SPD	1.5 mm <sup>2</sup> to 16 mm <sup>2</sup>	3.0 Nm
	25 mm <sup>2</sup> to 35 mm <sup>2</sup>	4.5 Nm

### Use No.2 Pozidrive bit

- Cut, dress and connect circuit conductors to appropriate MCB, RCBOs, AFDDs, neutral and earth terminals. (Figs 4.1 and 4.2)
- Ensure that each earth and neutral outgoing circuit is correctly made to its corresponding numbered terminal (Figs 4.1 and 4.2).

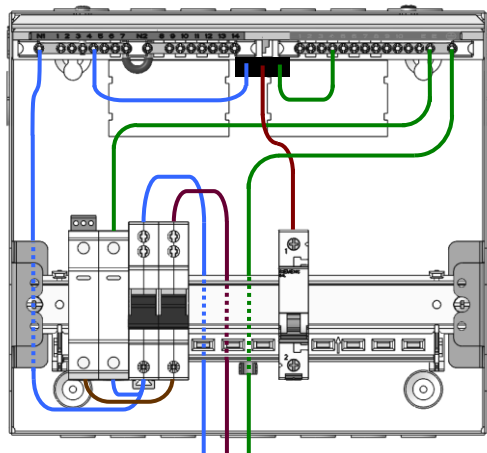


Fig 4.1 – connection to MCBs

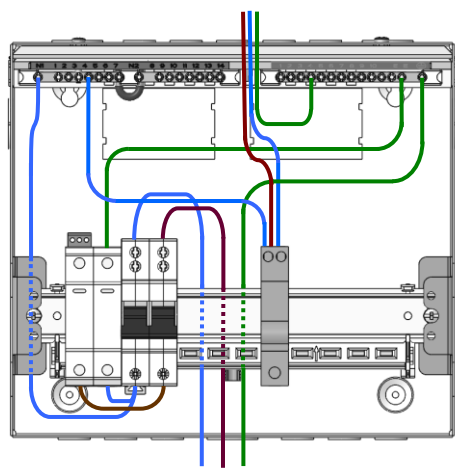


Fig 4.2 – connection to RCBOs/AFDDs (1 Mod)

## 5. Blanking of unused ways

Blanking plates should be fitted to cover any spare modular ways. Blanking plates are available to order if required.

## 6. Installation of Control Devices

Control devices such as timers, transformers and contactors can be fitted to the consumer unit in any position on the mounting rail. The incoming supply for the device must be fed from an MCB (*not directly from the busbar*).

Detailed installation instructions are supplied with all Crabtree control devices.

## 7. Circuit Identification

The consumer unit way label is supplied with the consumer unit. This should be fixed into position below the circuit devices on the front cover. Pre-printed identification labels are provided and should be fixed in position on the way label according to the outgoing circuit.

## 8. Testing of the installation

After completion of the installation, it is essential that it is tested in accordance with the latest Edition of the IET Wiring Regulations for Electrical Installations (BS7671).

It is important that the following are included in the above.

- Operation of the test button of any RCCBs, RCBOs and AFDDs fitted.
- Verification that the earth loop impedance requirements are satisfactory.



**9. Consumer Unit Accessories**

CABLE ENTRY PATRESSES for use with all metal consumer units allowing compliance with BS7671 416.2.2. IP4X can be maintained on the consumer unit's horizontal top surface by providing cable entry via rear knock outs.

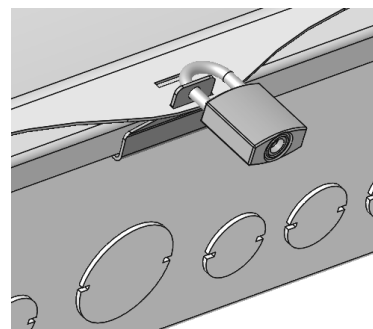
Pattress cable entry slots can be provided top or bottom OR left or right.

CR0706FS	6 module
CR1009FS	9 module
CR1312FS	12 module
CR1615FS	15 module
CR2120FS	20 module

Top / Bottom	Width	Left / Right	Width
MNSPE6584 /1NR	6 mod. (188 mm)	MNSPE6670 /1NR	6 mod. (188 mm)
MNSPE6584 /2NR	9 mod. (242 mm)	MNSPE6670 /2NR	9 mod. (242 mm)
MNSPE6584 /3NR	12 mod. (292 mm)	MNSPE6670 /3NR	12 mod. (292 mm)
MNSPE6584 /4NR	15 mod. (343 mm)	MNSPE6670 /4NR	15 mod. (343 mm)
MNSPE6584 /5NR	20 mod. (438 mm)	MNSPE6670 /5NR	20 mod. (438 mm)

TEMPORARY LOCKING KIT for use with consumer units with curved visors while installing on site.

CRTLK2	Temp locking kit for curved visor
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Fire retardant CABLE MEMBRANE ENTRIES protect cables from damage and support compliance with the IP4X requirement BS7671 416.2.2.

CRCE1	Kit 1 3X 32 mm & 7X 20 mm
CRCE2	Kit 2 10X 20 mm

In line with published IET formal recommendation MAINS TAILS GLANDS will protect mains tails at their point of entry into all metal consumer units. Furthermore disturbance of mains tails within the consumer unit, up to their point of connection to the isolator, is restricted.

MTCG32	Tails Gland Kit 32 mm
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INTUMESCENT STRIPS will dramatically subdue or fully extinguish any fire which may occur within a consumer unit. The addition of an intumescent strip within a correctly installed all metal consumer unit will support the requirement of BS7671 421.1.201 effectively containing and suppressing a fire at source.

