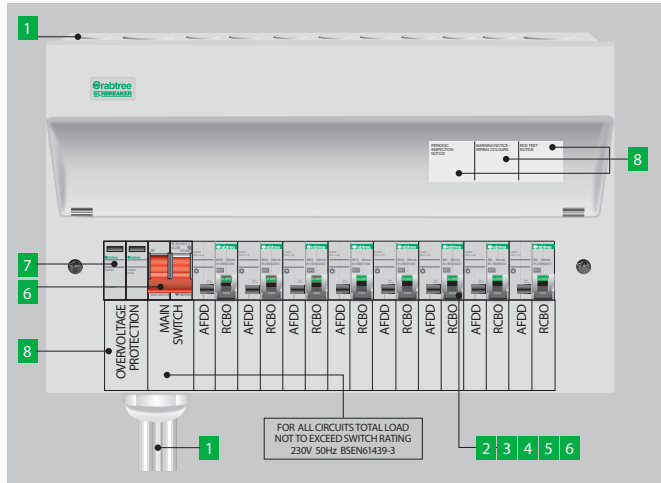


# CONSUMER UNITS FOR THE 18TH EDITION



## 1 ENCLOSURES BARRIERS & FIXINGS

- 421.1.201 Consumer units shall have enclosures manufactured from non combustible materials (e.g. steel) and comply with BS EN 61439-3.
- 416.2.1 Basic protection - 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 (including meter tails) appropriate supports, clips/fixing should be used.

## 2 DEVICES & COMPONENTS

- 536.4.203 Only manufacturer approved parts can be used in low voltage assemblies i.e. consumer units. Do not mix brands. If in doubt, check with the manufacturer, otherwise the installer becomes the responsible manufacturer.

## 3 ADDITIONAL PROTECTION BY 30mA RCD

- 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 RCD shall be provided for all luminaire circuits in domestic household premises.
- 411.3.3 Additional protection by use of a 30mA RCD shall be provided for all socket outlets up to & including 32A rating.
- 411.3.3 Additional protection by use of a 30mA RCD shall be provided for all mobile equipment (for use outdoors) up to & including 32A rating.
- 522.6.201 Cables concealed in walls or partitions as less than 50mm depth and without earthed mechanical protection (e.g. conduit), shall be protected by 30mA RCD.
- 522.6.203 Cables buried in walls or partitions (which include metallic parts in their construction) shall be provided with additional protection by 30mA RCD, or be installed in earthed metallic carrier systems that also provide mechanical protection.
- 701.411.3.3 Additional protection by use of a 30mA RCD, shall be provided for all circuits serving or passing through a location with a fixed bath or shower.
- 531.1.1 Devices for protection against electric shock must be suitable for isolation as required in Chapter 46 & Section 537.

## 4 PROTECTION AGAINST UNWANTED TRIPPING OF RCDs, DIVISION OF THE INSTALLATION & PE CURRENTS

- 314.1 (iv) Every installation shall be divided into circuits as necessary 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 circuits as necessary 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 hazards that may arise from the failure of a single circuit such as a lighting circuit.
- 531.3.2 RCDs shall be selected and installed so as to limit the risk of unwanted tripping, by either dividing the installation into individual circuits using a 30mA RCBO on each circuit, or by ensuring that PE current (leakage current not due to a fault) is no more than 30% of 30mA.
- 560.7.1 Circuits of safety services, e.g. fire detection and alarm systems, CO detection and alarm systems, shall be independent of other circuits.

## 5 PROTECTION AGAINST FIRES CAUSED BY ARC FAULTS

- 131.1.1 The risk of ignition of flammable materials from high temperature or electric arc shall be minimized, there should be minimal risk of burns to people.
- 421.1.1 Protection against harmful effects from fire caused by electrical equipment is required. Such effects from heat or fire may be caused by failure of equipment or insulation faults, or arcs, sparks and high temperature particles.
- 421.1.7 AFDDs (arc fault detection devices) are devices that are recommended as a method for providing additional protection against fires caused by arc faults in final AC circuits. Such devices can be used in premises with sleeping accommodation and several other types of location/building.
- 532.6 AFDDs (when specified) should be installed at the origin of each final (230V AC) circuit that is being protected i.e. in the consumer unit.

## 6 SAFE ISOLATION USING MAIN SWITCHES / 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 as in 461.2) 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.

## 7 PROTECTION AGAINST OVERVOLTAGE

- 443.4 (&5) Overvoltage protection is required in single dwellings (subject to risk assessment) where the value of the installation and equipment connected to it justifies the protection.
- Note - If a risk assessment is not carried, overvoltage protection must be provided.

## 8 IDENTIFICATION

- 514.1.1 A suitable means of identification shall be provided for the identification & purpose of each item of switchgear.

**Consumer Unit contains 100A main isolator, SPD device, 2P RCBOs with AFDD protection on each outgoing circuit - to meet the requirements and recommendations of the 18th Edition.**

This is not a substitute for BS7671, other regulations also apply see BS7671 for full details.

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Crabtree