



A flexible solution for  
**17th Edition  
Wiring  
Regulation**  
Amendment 3



# fortress circuit protection wiring accessories

consumer units, enclosures, devices,  
surge protection and accessories

# Range Content

Consumer Units

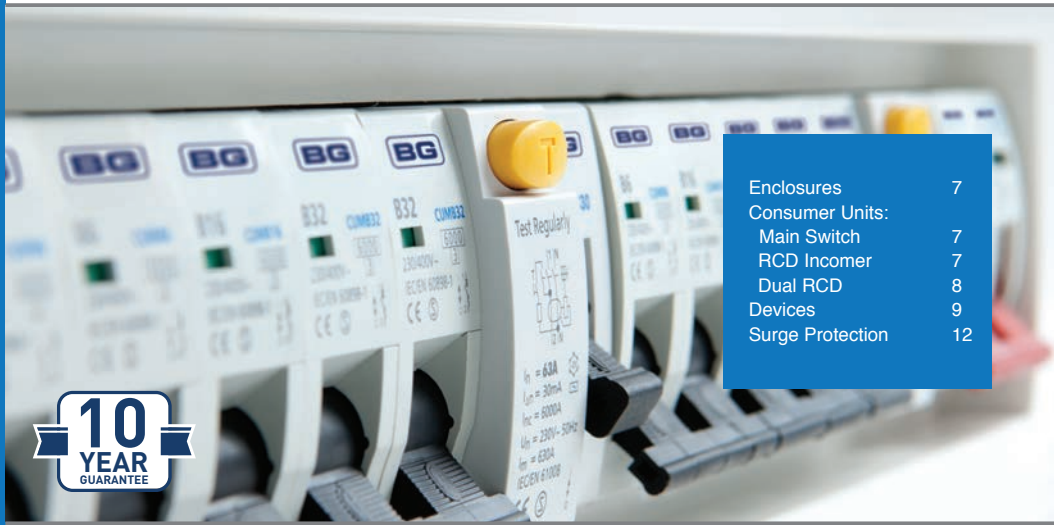


IP Rated Enclosures



Control Devices & Accessories

MCBs, RCBOs & RCDs



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## Includes Surge Protection Devices



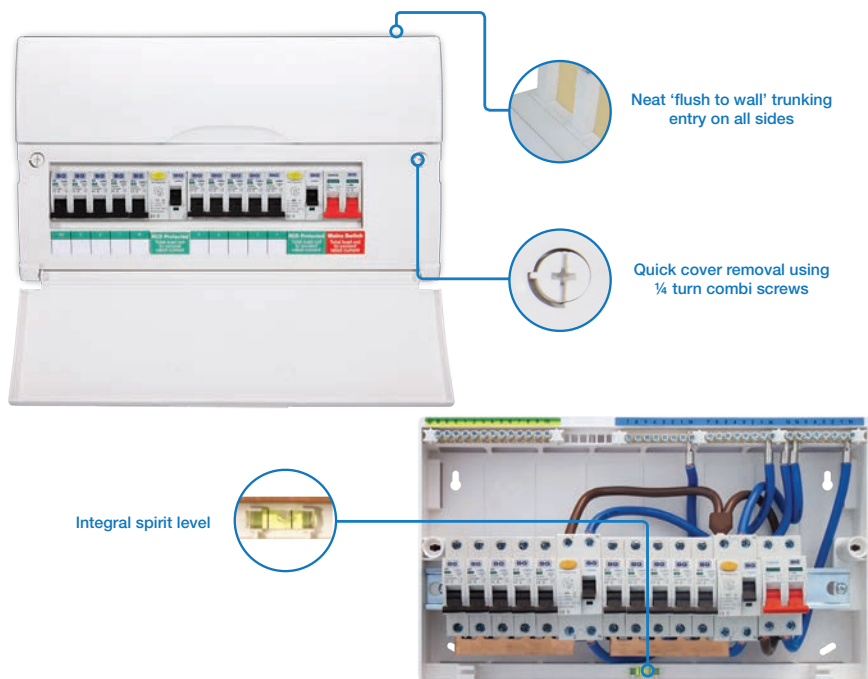
Type 1 & 2 Devices, Pre-assembled Consumer Unit and Retrofit Enclosure

# Insulated Consumer Units & Enclosures

## Consumer units for use in commercial & other premises

The use of insulated consumer units and enclosures are still permitted, under the following conditions:-

- Commercial and other premises are not specifically covered by the 17th Edition Wiring Regulation BS 7671 Amendment 3. Therefore, insulated consumer units/enclosures may continue to be used for these applications. Typical Commercial and Other premises include :- Hotels, Offices, Shops, Commercial Mobile and Portable buildings, Restaurants and Exhibition stands.
- Electrical Installations designed before July 1st 2015 for domestic (household) premises, may still use insulated consumer units/enclosures.
- Electrical installations for domestic premises, may still use insulated consumer units/enclosures, where no designs exists, i.e replacement of existing consumer units until Dec 31st 2015.



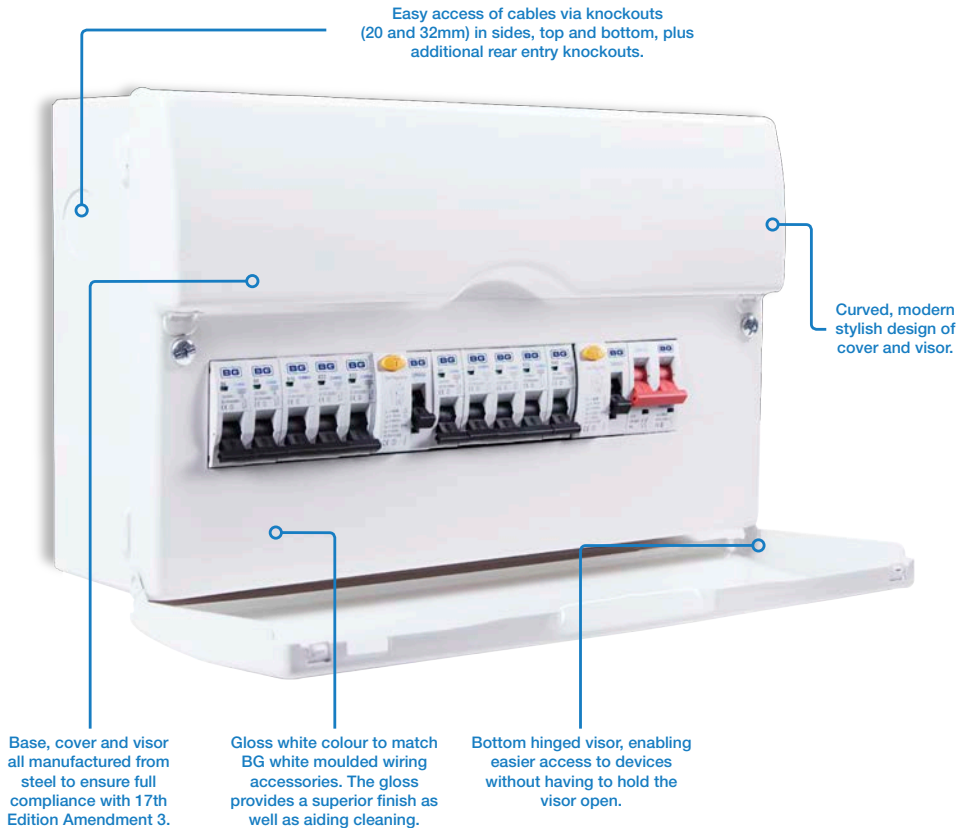
## Features & Benefits

- Smooth finish enables easy cleaning
- Rigid robust construction
- Solid downward opening visor to cover devices
- Hooded trunking entry enables neat flush finish to wall
- Easy cable entry all sides and rear, via standard mini-trunking cut outs
- Easy to fit cover provides quick fit to base and caters for uneven wall surfaces
- Large accessible wiring space provided by low base walls, raised DIN rail, wider device to terminal distance and offset main switch
- UV stable will not discolour with sunlight or age

# Metal Consumer Units

## Consumer units for use in domestic household premises

- Modern stylish design with a profile that matches Nexus wiring accessories
- Quality is designed in
- Flexibility for maximum circuit combinations and easy upgrades
- Fast and simple installation
- Taller 8 & 12 module consumer unit, with extra space for RCBOs
- Consumer unit and devices tested to all relevant standards
- 10 Year Guarantee



### 17th Edition Wiring Regulations Amendment 3

The new range of metal consumer units and enclosures comply with BS 7671:2008 (2015) Amendment 3 to the 17th Edition Wiring Regulations. This addresses the concerns raised by the London Fire Brigade regarding reducing the fire risk from consumer units.

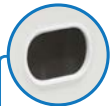
The new regulation states that within domestic premises consumer units and similar switchgear assemblies must comply with BS EN 61439-3 and have either enclosures manufactured from a non-combustible material or be enclosed within a cabinet constructed of a non-combustible material.

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**17th Edition  
 Wiring  
 Regulation  
 Amendment 3**

# Features & Benefits



Trim supplied to protect cables from sharp edged rear entry knockouts

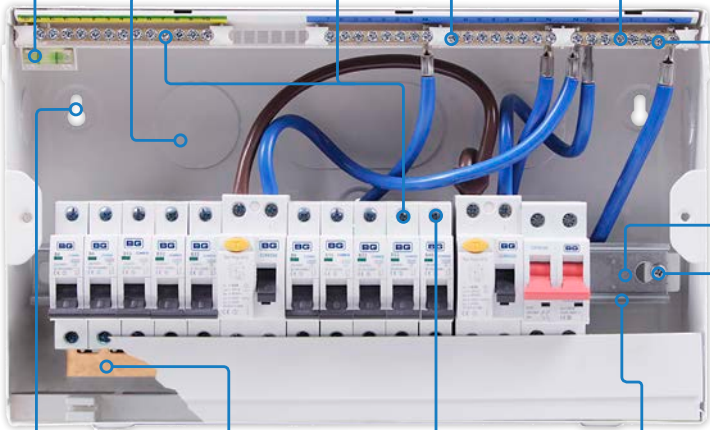


Spirit level, to enable quick installation without need of additional tools.

Backed-out and retained terminal screws, prevents loss of screws and saves on installation time.

Longer terminal bars, provide more capacity and greater flexibility of number of wiring configurations.

High Integrity as standard, allows for non RCD protected devices to be fitted.



Better cable retention due to large screws, enabling greater torque and cables fitted with ferrules.

Offset incomer, provides additional space for main incomer cables.

Fast release of DIN rail, to simplify and make first fix faster.

Tripod fixing points allows for fixing to uneven surfaces.

Floating busbar, provides maximum installation flexibility.

All screws within consumer units and enclosures are combi style, enabling need for only one screwdriver when installing fitting.

All metal raised DIN rail, allows space for cables to pass below.

## 10 Year Guarantee

BG Circuit Protection range products are guaranteed against faulty materials and workmanship for a period of 10 years from date of delivery.

(For terms and conditions see [www.bgelectrical.uk](http://www.bgelectrical.uk))



# 17th Edition Wiring Regulations Amend 3

The BS 7671:2008 17th Edition IET Wiring Regulations Amendment 3:2015, Regulation 421.1.201 prescribe that within Domestic (household) premises, consumer units and associated switchgear assemblies (enclosures), are manufactured from non combustible material or enclosed in a non combustible cabinet/enclosure and comply with product standard BS EN 61439-3.

The purpose of the new regulations is to reduce the risk and limit the spread of fire from consumer units due to faulty components or poorly installed components.

The new range of BG 'all metal' consumer units and enclosures meet this requirement.

Domestic (household) premises include houses, bungalows, flats, apartments, student lets, sheltered accommodation, static homes, home offices, and attached garages etc. Other types of property that are classed as commercial, and you may wish to consider using all metal consumer units for are :- Nursing Homes, guest houses, bed and breakfast houses and hostels, etc.

BG 'all metal' consumer units consist of a metal base, cover and visor and are manufactured from steel – a non-combustible material.

Regulation 421.1.201 requires all designs for new installations from July 1st 2015 to be to the new standard, between July 1st and end of December 2015 installation of 'all metal' consumer units is optional unless designed after July 1st, from Jan 1st 2016 'all metal' consumer units must be installed in domestic premises unless designed before July 1st 2015, in which case choice of metal or plastic is optional.

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## Requirements for Additional Protection (30mA RCD)

The 17th Edition Wiring Regulations also has the requirement for additional protection from 30mA RCDs, summarised below.

- i) All Socket outlets should be protected
  - ii) Socket outlets (section 411.3.3)
    - All sockets up to 20A
    - All mobile equipment up to 32A, used outdoors
    - Exceptions are socket outlets under supervision of someone skilled/instructing, and labelled socket, e.g. 'Freezer'.
  - iii) Cables buried in Walls (section 522.6.200)
    - All cables concealed in a wall/partition less than 50mm depth, and without earthed mechanical protection, e.g. earth metal conduit.
  - iv) Location containing a bath or a shower (section 701.411.3.3)
    - All circuits serving or passing through a room with a fixed bath or shower
- v) Circuit Separation (section 314.1)
  - Regulation 314.1. Installation shall be divided into circuits as necessary, to avoid danger and prevents unwanted tripping
  - Regulation 314.2. Separate circuits that need to be separately controlled so that so that these circuits are not affected by the failure of other circuits
- vi) Safety Circuits
  - Safety circuits such as smoke alarms should be on independent circuits.

## 17th Edition BG Consumer Unit Options

Possible consumer unit options to support 17th Edition Wiring Regulations compliance.

Note:- The following diagrams use a 12 module consumer unit to demonstrate the available options



### 1. Main Switch

- Main switch plus the use of RCBOs for every circuit



### 2. Split Load

- Some circuits using MCBs protected by an RCD
- Other independent circuits using RCBOs
- Can be created using standard mains switch consumer unit, additional RCD and cable kit CUA5



### 3. Dual RCD

- Some circuits using MCBs protected by an RCD1
- Some circuits using MCBs protected by an RCD2



### 4. High Integrity Dual RCD

- Some circuits using MCBs protected by an RCD1
  - Some circuits using MCBs protected by an RCD2
  - Other independent circuits using RCBOs
- Standard Dual RCD consumer unit offers option of High Integrity Dual RCD as standard.

*Note: High Integrity Triple RCD is achieved using only the 22 module Consumer Unit.*

## Standards

New all metal consumer units comply with 17th Edition Wiring Regulations BS 7671 Amendment 3

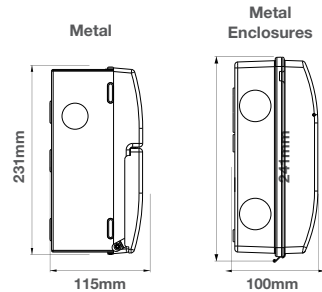
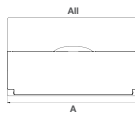
Product	Standard
Consumer Unit	BS EN 61439-3
Main Switch	EN/IEC 60947-3
MCB	EN/IEC 60898
RCBO	EN/IEC 61009-1

Product	Standard
RCD	EN/IEC 61008
Enclosure	EN/IEC 61439
Contactors	EN/IEC 60947, 61095
RCBO	EN/IEC 61558-1

## Technical

Devices - pole pitch 18mm

Consumer Unit	Metal (A)
8 Modules	244mm
12 Modules	316mm
16 Modules	388mm
19 Modules	442mm
22 Modules	496mm



\*Note 8 & 12 module 'Tall' variant, height is 261mm

### Terminals

Device	Capacity mm <sup>2</sup>	Max Torque Nm
Switch	35	2.5
MCB	16 (32-50A 25mm <sup>2</sup> )	2
RCD	35	2.5 (80A 3.5Nm)
RCBO	16 (32-40A 25mm <sup>2</sup> )	2

### Cut Outs and Knockouts

Range	Top & Bottom Face	Sides	Base
Metal 8 Module	6 x ø20mm, 1 x ø32mm	1 x ø32mm	1 x ø50 x 100mm
Metal 12 Module	8 x ø20mm, 1 x ø32mm	1 x ø32mm	1 x ø50 x 100mm
Metal 16 Module	9 x ø20mm, 2 x ø32mm	1 x ø32mm	2 x ø50mm, 1 x ø50 x 100mm
Metal 19 Module	11 x ø20mm, 2 x ø32mm	1 x ø32mm	2 x ø50mm, 1 x ø50 x 100mm
Metal 22 Module	13 x ø20mm, 2 x ø32mm	1 x ø32mm	3 x ø50 x 100mm
Insulated 8 Module	4 off - 40, 25 x 16mm	40, 25 x 16mm	3 off - 50, 30 x 40mm
Insulated 12 Module	6 off - 40, 25 x 16mm	40, 25 x 16mm	4 off - 50, 30 x 50mm
Insulated 12 Module Tall	6 off - 40, 25 x 16mm	40, 25 x 16mm, 1 x Ø25 or Ø20mm	4 off - 50, 30 x 50mm
Insulated 16 Module	8 off - 40, 25 x 16mm	40, 25 x 16mm	2 off 50,30 x 50, 4 off 50,30 x 40mm
Insulated 19 Module	9 off - 40, 25 x 16mm	40, 25 x 16mm	6 off - 50, 30 x 50mm
Insulated 22 Module	10 off - 40, 25 x 16mm	40, 25 x 16mm	2 off 50,30 x 50, 6 off 50,30 x 40mm

• Positive contact status indication on Switch, MCB, RCD & RCBO provided by green indicator to show contacts are open

### Consumer Unit

Max current rating 100A  
 Operating Voltage 230V  
 Short circuit withstand 16kA rms  
 Metal CU base manufactured from 1.2mm steel

### RCD

Type AC  
 Tripping Time : 1 x In ≤ 100ms  
 5 x In ≤ 40ms

### RCBO

Type AC  
 Poles: 1 (1P + N)

### Enclosures

IP65  
 5 Module  
 Dims- W-176mm, H- 241mm, D- 100mm  
 Knockouts- Dia ø20mm can be drilled to 32mm, sides - 2 off, top and bottom - 3 off, base - 1 off

### MCB

Breaking Capacity 6000A  
 Type B operating 3-5 x In  
 Type C operating 5-10 x In

### Contactors

Poles: 2 (1 + N)  
 NO (Normally Open)

### Bell Transformer

- Output voltage 4, 6, 8, 12, 16, 24V  
 - Rated output 8VA  
 - Consumption 1, 15W

# Consumer Units

Metal	Description	Modules
<b>Enclosures</b>		
CUE4M	Metal - IP30	4
CFE5W	Weatherproof - IP65	5
CFGAR1	Garage Kit - IP65, 40A 30mA RCD, 6+32A MCB	5
CFSHOW1	Shower Kit - IP65, 63A 30mA RCD, 50A MCB	5



- Enclosures supplied with DIN rail and neutral and earth terminals
- Manufactured and tested to BS EN 61439
- 5 Module enclosures accept SP RCBOs
- IP65 enclosures c/w Ø20mm knockouts on all sides drillable to Ø32mm
- Enclosure kits supplied complete with devices, DIN rail, neutral cable, neutral and earth terminals, cover blanks and busbar

Metal	Description	Modules	Switch	Max No. Ways	Max Total
<b>Main Switch Consumer Units - Unpopulated</b>					
CFSW06*	6 way with 100A switch	8	6	6	6
CFSW10*	10 way with 100A switch	12	10	10	10
CFSW14	14 way with 100A switch	16	14	14	14
CFSW17	17 way with 100A switch	19	17	17	17
CFSW20	20 way with 100A switch	22	20	20	20



- \*Denotes taller consumer units, increased height provides more space to enable easier installation of RCBOs
- Metal units supplied with Ø20mm and Ø32mm knockouts
- Each consumer unit supplied with two cover blanks
- Lockable covers also available, see accessories section

Metal	Description	Modules	Switch	Max No. Ways	Max Total
<b>RCD Incomer Consumer Units - Unpopulated</b>					
CFRSW806	6 way with 80A 30mA RCD	8	6	6	6
CFRSW810	10 way with 80A 30mA RCD	12	10	10	10
CFRSW814	14 way with 80A 30mA RCD	16	14	14	14
CFRSW817	17 way with 80A 30mA RCD	19	17	17	17
CFRSW820	20 way with 80A 30mA RCD	22	20	20	20



- Metal units supplied with Ø20mm and Ø32mm knockouts
- Each consumer unit supplied with two cover blanks
- Lockable covers also available, see accessories section

**Note:- Split load configurations, can be created using Main Switch Consumer Unit, RCD and cable kit CUA05**



# Consumer Units

Metal	Description	Modules	Switch	Max No. Ways RCD1	RCD2	Max Total
<b>Dual RCD Consumer Units - Unpopulated</b>						
CFD8606	6 way with 100A switch, 1x 80A & 1x 63A 30mA RCD	12	4	6	5	6
CFD8610	10 way with 100A switch, 1x 80A & 1x 63A 30mA RCD	16	5	7	7	10
CFD8613	13 way with 100A switch, 1x 80A & 1x 63A 30mA RCD	19	5	8	8	13
CFD8616	16 way with 100A switch, 1x 80A & 1x 63A 30mA RCD	22	up to 9	up to 13	up to 11	16



- Dual RCD units supplied with optional High Integrity as standard
- Each consumer unit supplied with two cover blanks
- Terminal and busbar design provide maximum flexibility for combination of protected or unprotected circuits
- Lockable covers also available, see accessories section

Metal	Description	Modules	Switch	Max No. Ways RCD1	RCD2	Max Total
<b>Dual RCD Consumer Units - Populated</b>						
CFDP18606	6 way with 100A switch, 1x 80A & 1x 63A 30mA RCD, 6x MCBs	12	4	6	5	6
CFDP18610	10 way with 100A switch, 1x 80A & 1x 63A 30mA RCD, 10x MCBs	16	5	7	7	10
CFDP18613	13 way with 100A switch, 1x 80A & 1x 63A 30mA RCD, 10x MCBs	19	5	8	8	13
CFDP18616	16 way with 100A switch, 1x 80A & 1x 63A 30mA RCD, 12x MCBs	22	up to 9	up to 13	up to 11	16



- Supplied complete with MCBs fitted, see table below
- Dual RCD units supplied with optional High Integrity as standard
- Each consumer unit supplied with spare cover blanks
- Terminal and busbar design provide maximum flexibility for combination of protected or unprotected circuits
- Lockable covers also available, see accessories section

Consumer Unit Size	Qty of MCBs	MCBs Included	Qty of Cover Blanks
6 Way	6	6Ax2, 16A, 32Ax2, 40A	2
10/13 Way	10	6Ax3, 16Ax2, 32Ax4, 40A	2
16 Way	12	6Ax3, 10A, 16Ax2, 32Ax4, 40A, 50A	4

Metal	Description	Modules	Switch	Max No. Ways RCD1	RCD2	Max Total
<b>Fully Recessed Consumer Units</b>						
CFDD8610	10 way with 100A switch, 1x 80A 30mA RCD & 1x 63A 30mA RCD	16	5	7	7	10
CFDD8616	16 way with 100A switch, 1x 80A 30mA RCD & 1x 63A 30mA RCD	22	Up to 9	Up to 13	Up to 11	16



- Fully recessed for low intrusion
- 68mm depth into wall cavity
- Dual RCD units supplied with optional high integrity as standard
- Each consumer unit supplied with two cover blanks
- Supplied with lockable cover as standard
- Optional barrel lock supplied separately
- Upward opening visor
- Terminals and Busbar design provide maximum flexibility for combination of protected or unprotected circuits.
- Integrated spirit level for ease of installation

Metal	Description	Modules	Switch	Max No. Ways	Max Total
<b>RCBO Main Switch Consumer Units - Populated</b>					
CFSWP610	10 way with 100A switch - with 6 RCBOs fitted	12	10	10	10
CFSWP810	10 way with 100A switch - with 8 RCBOs fitted	12	10	10	10
CFSWP110	10 way with 100A switch - with 10 RCBOs fitted	12	10	10	10



- Supplied complete with SP RCBOs fitted
- Each consumer unit supplied with spare cover blanks
- Increased height to enable easier installation of RCBOs
- Lockable covers also available, see accessories section

Consumer Unit Size	Qty of RCBOs	RCBOs Included	Qty of Cover Blanks
CFSWP610	6	6Ax2, 16A, 32Ax2, 40A	4
CFSWP810	8	6Ax3, 16A, 32Ax3, 40A	2
CFSWP110	10	6Ax3, 16Ax2, 32Ax4, 40A	1

# Devices

Cat No.	Description	Rating	Modules	Inner Carton
<b>Main Switch (Isolator)</b>				
CUSW100	Double Pole	100A	2	10



CUSW100

- Positive contact status indication
- Device capable of being locked in 'ON' or 'OFF' position using a device lock

Type B	Type C	Description	Rating	Modules	Inner Carton
<b>MCBs</b>					
CUMB6	CUMC6	Single Pole, Breaking Capacity 6kA	6A	1	10
CUMB10	CUMC10	Single Pole, Breaking Capacity 6kA	10A	1	10
CUMB16	CUMC16	Single Pole, Breaking Capacity 6kA	16A	1	10
CUMB20	CUMC20	Single Pole, Breaking Capacity 6kA	20A	1	10
CUMB32	CUMC32	Single Pole, Breaking Capacity 6kA	32A	1	10
CUMB40	CUMC40	Single Pole, Breaking Capacity 6kA	40A	1	10
CUMB50	CUMC50	Single Pole, Breaking Capacity 6kA	50A	1	10



CUMB6

- Positive contact status indication
- Available in type B or C
- Device capable of being locked in 'ON' or 'OFF' position using a device lock

<b>RCBOs</b>					
CURB6	CURC6	Single Pole, Breaking Capacity 6kA	6A 30mA	1	5
CURB10	CURC10	Single Pole, Breaking Capacity 6kA	10A 30mA	1	5
CURB16	CURC16	Single Pole, Breaking Capacity 6kA	16A 30mA	1	5
CURB20	CURC20	Single Pole, Breaking Capacity 6kA	20A 30mA	1	5
CURB32	CURC32	Single Pole, Breaking Capacity 6kA	32A 30mA	1	5
CURB40	CURC40	Single Pole, Breaking Capacity 6kA	40A 30mA	1	5



CURB6

- Positive contact status indication
- Available in type B or C
- Device capable of being locked in 'ON' or 'OFF' position using a device lock
- Additional white earth lead, to provide increased protection from earth leakage.

Cat No.	Description	Rating	Modules	Inner Carton
<b>RCDs</b>				
CUR4030	Double Pole, Type AC	40A 30mA	1	5
CUR6330	Double Pole, Type AC	63A 30mA	1	5
CUR8030	Double Pole, Type AC	80A 30mA	1	5
CUR80100	Double Pole, Type AC	80A 100mA	1	5
CUR80100TD	Double Pole, Type AC, Time Delayed	80A 100mA	1	5



CUR8030

- Positive contact status indication
- Device capable of being locked in 'ON' or 'OFF' position using a device lock

<b>Control Devices</b>				
CUC20	Contactors 20A double pole		1	5
CUC40	Contactors 40A double pole		2	5
CUB1	Bell Transformer		2	5
CUTS1	Time Delay Switch, 1 - 20 mins		1	5
CUTS5	Timer Analogue 24 Hr		3	5
CUTS10	Timer Digital 1 Channel		2	5
CUTS11	Timer Digital 2 Channels		2	5



CUC20

CUB1

CUTS5

CUTS10

CUTS11

<b>Accessories</b>				
CUA01	Consumer Unit Cover Blanks (pack of 10, 5 x pairs)			10
CUA02	Busbar 21 Way			10
CUA03	Busbar Shield 21 way			10
CUA04	MCB Blank, 1 Module, DIN rail mounted			10
CUA05	Cable Kit includes neutral and live cables, terminal bar, fixing clip and spare labels (may be used to convert mains switch to split load consumer unit)			5
CUA11	Spare label sheets (Pack of 5)			10
CUA15	Cover lock (to fit insulated tall 12 module consumer units only)			1
CFA16	Metal cover lock blank for use with the metal lockable covers after the barrel lock is removed			1



CUA01

CUA02

CUA03

CUA04

CUA05

CUA11

- Cable kit enables consumer unit upgrade from main switch to split load or split load to dual RCD, or dual RCD to triple RCD (22 module only)

For further technical information or installation advice please visit our website

Metal	Description	Inner Carton
<b>Lockable Cover</b>		
CFA20	Lockable Cover, 8 Module, cover complete with fitted visor and lock	1
CFA21	Lockable Cover, 12 Module, cover complete with fitted visor and lock	1
CFA22	Lockable Cover, 16 Module, cover complete with fitted visor and lock	1
CFA23	Lockable Cover, 19 Module, cover complete with fitted visor and lock	1
CFA24	Lockable Cover, 22 Module, cover complete with fitted visor and lock	1



CFA22

- Lockable covers are pre-assembled
- Ideal during first installation to ensure power isolation, and protect installer

<b>Recess Kit</b>		
CFA32	Recessing Kit, 16 Module	1
CFA33	Recessing Kit, 19 Module	1
CFA34	Recessing Kit, 22 Module	1



CFA34

- Enables 16, 19 or 22 module consumer unit to be recessed into wall
- Supplied with adjustable brackets and trim
- Adjustable brackets enable the consumer unit to be recessed between 42mm and 62mm from the outer surface of the wall
- Consumer unit not included with kit
- Suitable for surface mount consumer units

Cat No.	Description	Material	Cable Acceptance	Inner Carton
<b>Cable Glands</b>				
CPRGPT32	Plastic Tails Kit. c/w Multiple Inserts, Locknut, Blanking insert	Polyamide	2x16mm <sup>2</sup> + 1x16mm <sup>2</sup>	40
CPRGPT40	Plastic Tails Kit. c/w, Multiple Inserts, Locknut, Blanking insert	Polyamide	2x25mm <sup>2</sup> + 1x16mm <sup>2</sup>	40
CPRGPT40A	Plastic Tails Kit. c/w Adaptor, Multiple Inserts, Locknut, Blanking insert	Polyamide	2x25mm <sup>2</sup> + 1x16mm <sup>2</sup> + Adaptor	40
CPRGBT32	Brass Tails Kit. c/w, Multiple Inserts, Locknut, Blanking insert	Nickel Plated Brass	2x16mm <sup>2</sup> + 1x16mm <sup>2</sup>	30
CPRGBT40	Brass Tails Kit. c/w Multiple Inserts, Locknut, Blanking insert	Nickel Plated Brass	2x25mm <sup>2</sup> + 1x16mm <sup>2</sup>	30
CPRGBT40A	Brass Tails Kit. c/w Adaptor, Multiple Inserts, Locknut, Blanking insert	Nickel Plated Brass	2x25mm <sup>2</sup> + 1x16mm <sup>2</sup> + Adaptor	30
CPRGPF20S	Plastic Gland Kit for 1-1.5mm flat cable c/w Flat Cable Insert, Locknut	Polyamide	1-1.5mm <sup>2</sup> Flat Cable	40
CPRGPF20	Plastic Gland Kit for 2.5-4mm flat cable c/w Flat Cable Insert, Locknut	Polyamide	2.5-4mm <sup>2</sup> Flat Cable	40
CPRGPF252	Plastic Gland Kit for 2x2.5mm flat cable c/w Flat Cable Insert, Locknut, Adaptor	Polyamide	2x2.5mm <sup>2</sup> Flat Cable	40
CPRGPF25	Plastic Gland Kit for 6mm flat cable c/w Flat Cable Insert, Locknut, Adaptor	Polyamide	6mm <sup>2</sup> Flat Cable	40
CPRGPF32	Plastic Gland Kit for 10-16mm flat cable c/w Flat Cable Insert, Locknut	Polyamide	10-16mm <sup>2</sup> Flat Cable	40
CPRGBF20S	Brass Gland Kit for 1-1.5mm flat cable c/w Flat Cable Insert, Locknut	Nickel Plated Brass	1-1.5mm <sup>2</sup> Flat Cable	30
CPRGBF20	Brass Gland Kit for 2.5-4mm flat cable c/w Flat Cable Insert, Locknut	Nickel Plated Brass	2.5-4mm <sup>2</sup> Flat Cable	30
CPRGBF252	Brass Gland Kit for 2x2.5mm flat cable c/w Flat Cable Insert, Locknut, Reducer	Nickel Plated Brass	2x2.5mm <sup>2</sup> Flat Cable	30
CPRGBF25	Brass Gland Kit for 6mm flat cable c/w Flat Cable Insert, Locknut, Reducer	Nickel Plated Brass	6mm <sup>2</sup> Flat Cable	30
CPRGBF32	Brass Gland Kit for 10-16mm flat cable c/w Flat Cable Insert, Locknut	Nickel Plated Brass	10-16mm <sup>2</sup> Flat Cable	30
CPRGMGR	10x M20, 3x M32 Semi Blind Grommets	TPE, Flame Retardant	1 - 25mm <sup>2</sup>	10

- Both Plastic and Brass Glands acceptable, due to no set regulation on cable entry
- Tails Glands allow 2 x tails and 1 x earth cable to enter one single entry, whilst being individually sealed
- Reducer Adaptor enables 40mm Gland to be fitted in 32mm diameter knockout
- All Glands/Grommets satisfy IP4X (minimum requirement as per NICEIC Guidelines for all cable entry and exit on horizontal planes)
- Cable Retention, negates requirement for additional tails clamp
- All products are self-extinguishing
- Glands are vibration resistant
- Halogen Free Material



The inclusion of Surge Protection Devices (SPDs) in the 17th edition of the BS EN 7671 Wiring Regulations amendment 1 shows how far the complexity and concern for personal safety of modern installation has come.

To be clear, SPDs do not protect an installation from lightning strikes, only a fitted lightning protection system to BS EN 62305 will prevent a direct strike from damaging the property. SPDs provide protection from two forms of surge:-

LEMP - Lightning Electro Magnetic Pulse

SEMP - Switching Electro Magnetic Pulse

## What are surges?

Surges are short-term high voltage impulses often called 'spikes', 'transients' or 'glitches'. The duration of these surges are typically measured in micro seconds.

Surges are typically produced from internal tripping events such as a lift motor in a hotel or office, lighting being turned on and off. When there is a high energy inrush, this generates a surge and continues on around the circuits and can damage sensitive electronic equipment.

Lightning strikes also produce huge surges, up to 2km away from a direct strike. Surges can be induced in cabling systems, even when there is no direct connection to the point of a lightning strike.

## The consequences of a surge

Without adequate protection the greatest consequence is a risk to human life, particularly in circumstances where medical equipment is involved and could be damaged. Secondly, there is the potential downtime in production e.g. in a workshop, retail outlet or office. Finally, there is the inconvenience of replacing valuable and sensitive equipment, insurance claims, and increased insurance premiums.

Note:- Currently, cabling for data, telephones and satellites are outside the scope of the 17th edition, but installers and specifiers should still consider providing surge protection for these systems.

# Surge Protection Devices

## Changes to the 17th Edition BS 7671 Wiring Regulations amendment 1

Two specific sections of the regulations are pertinent to SPDs, and it is important to understand these in more detail:

Section 443 refers to why and when SPDs should be fitted.  
Section 534 refers to device selection.

The following is where high risk and SPDs must be fitted

- **Risk to human life** - places where people are receiving medical treatment, safety equipment used, properties with overhead TT systems.
- **Public Services** - museums, IT centres, libraries
- **Commercial and industrial** - factories, offices, shops  
Areas where SPDs should be considered and further risk assessment required:
- **Large residential** - flats
- **Domestic** - depending on location, cabling system etc.

### Section 443

Is simply a risk assessment, and asks the question if not installing an SPD, represents an issue to human life, public service or industrial activity. If the answer is 'Yes' then fitting of the SPD is mandatory.

Where some confusion arises is the reference to risk of lightning in relation to the number of thunderstorm days per year. The UK on a whole has less than 25 thunderstorm days per year. Therefore, it is not generally required to fit SPDs to all domestic properties. However, where higher risk to personal injury or prevention of commercial activity, further risk assessment is required.

The main driver for installation of SPDs will be insurance companies, with the potential for reduced premiums if SPDs are fitted, or the possibility of non-payment of insurance in the event of any damage or injury if not fitted.

### Section 534

Refers to how to divert the surge current to earth before this surge has a way to propagate about the wiring of the installation and cause damage, by considering which device to install. A house or building is split into Lightning Protection Zones (LPZ), as a potential surge passes between one zone to another, this is where the appropriate SPD should be fitted, e.g. between the outside (LPZ0A) to the inside of a building (LPZ1) -SPD fitted in a consumer unit. There are three types of SPD, called Type (or Class) 1, 2 and 3:

Installation as defined in the standard is simple enough, the device is connected with cables to and from the unit no longer than a metre in total, and a short path to earth will ensure the effective discharge of the surge to earth.

Type 1	Type 2	Type 3
Used on buildings that has an overhead (TT) supply or a lightning protection system fitted on the roof.	Suitable for all other installations at the incomer or after a Type 1 SPD at sub distribution level. The modern home with an underground cable supply would typically use a Type 2 unit.	Used after a Type 2 for localised over voltage protection in control cabinets or sensitive or valuable electronic equipment. E.g. A surge protected extension lead to a large plasma TV, is an example of a Type 3 device

Note, if a Type 2 SPD is installed and cable lengths are less than 10m, then there is no longer a requirement to fit Type 3 surge protected extension leads. If greater than 10m then type 3 surge protection should be fitted.

For the most part a simple two pole device for single phase TT or TNS will be enough. In TNCS systems a single pole unit may be sufficient as only the live conductor comes to the property that can bring a threat from outside influences affecting that supply.

# Surge Protection Devices

## Features

No resetting of SPD required, the excess voltage is quickly taken to earth, before the rest of the circuits are damaged.

The Type 1 and 2 SPDs are a parallel connection so it fails safe or in a way to not take out the supply, some additional fuse may be added in the SPD "spur" in larger installations.

Devices have indicators to advise end of life of the device.

The SPD can be installed in a consumer unit on the DIN rail or beside an additional enclosure that give some separation from the clean circuits. This may also help to meet the 1 metre\* total installation cable length requirements of the standard.

To cater for situations where cables come into an SPD and out again. A cable stacking kit is available to allow increased terminal space, and fits all BG SPDs.

The device meets the requirements of the IEC 61634-1 and EN 61643-11 standards.



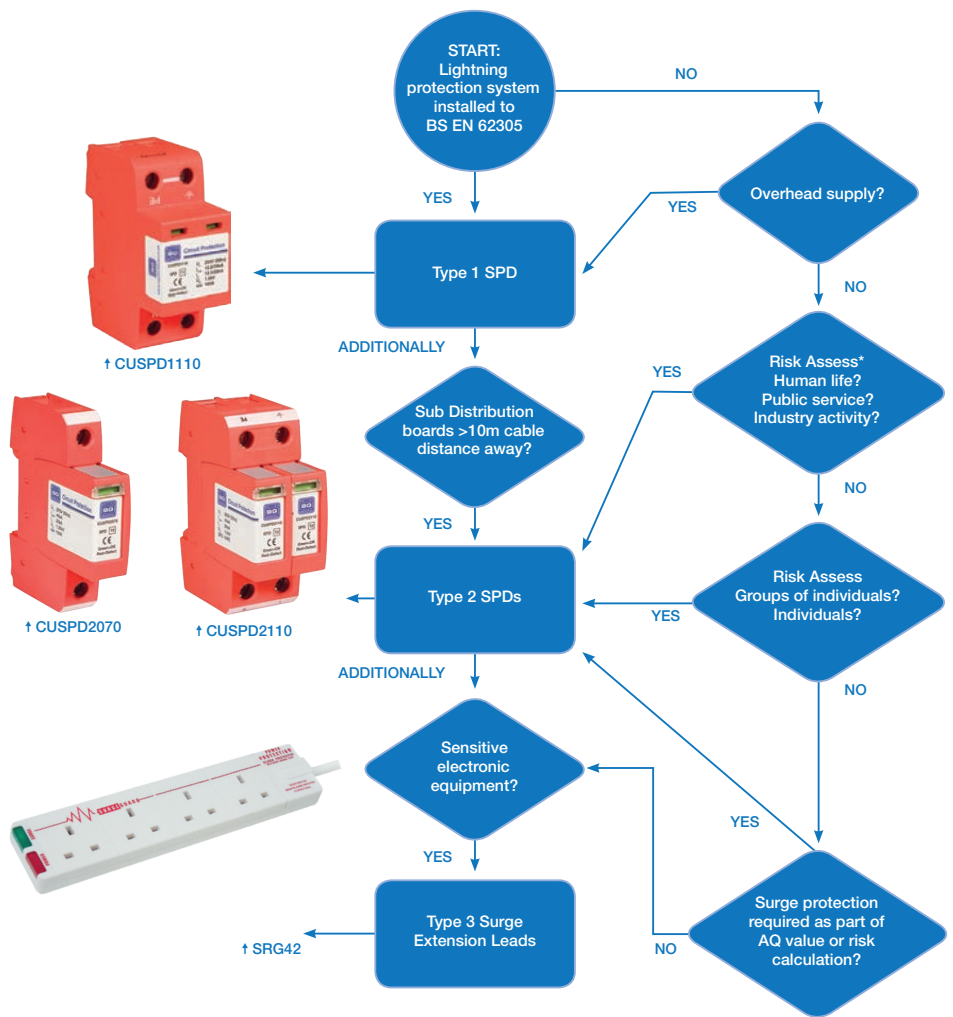
**10 YEAR GUARANTEE**

The SPD range is guaranteed against faulty materials and workmanship for a period of 10 years from date of delivery - Contact BG for more details.

The pre-assembled Enclosure provide a simple one stop shop for wholesalers and contractors. The SPD enclosure can be fitted next to any existing or new consumer unit of any brand where surge protection is required.

# Surge Protection Devices

## Selection Guide



\* According to BS 7671 (443.2.4 note 2), there is no need to perform a risk assessment calculation for levels of consequence, because this calculation always leads to the result that protection is required.

Note :- Within section 534 there is the 10m rule, about the voltage protection level of an SPD. E.g. if there was an SPD in the consumer unit, after this point the SPD has an effective protection distance of up to 10m as defined in the BS7671 amendment 1, this means that a PC in a study >10m from the main SPD will need local over voltage protection. This can be provided by standard surge protection extension leads - see current range in catalogue.



## The Range

The BG range has been selected to cater for the majority of domestic/commercial applications with the minimal of range, in order to keep selection simple and minimise stock holding for potential stockists.

### Type 1 & 2 - Surge Protected Devices

Part No.	Description
CUSPD1110	Type 1 and 2, 2 Module, TT, TN and TNCS
CUSPD2070	Type 2, 1 Module, TNCS
CUSPD2110	Type 2, 2 Module, TT, TN and TNCS
CUSPDA01	Accessory - Cable stacker kit, allows cables to enter in & out of SPD



† CUSPDA01



† CUSPD1110



† CUSPD2070



† CUSPD2110

### Type 2 - Pre-assembled Consumer unit and Type 1 & 2 Retrofit Surge and Lightning Protection Enclosure

- Stand alone enclosure to be fitted to existing consumer units / enclosures, to provide lightning and surge protection, supplied with 100A mains switch to enable SPD and consumer unit to be isolated, and enclosure is weatherproof to IP65 and accepts both mini-trunking and conduit entry

Part No.	Description	Product Detail
CFSPDE01	SPD Enclosure Kit	c/w SPD Type 1/2 (CUSPD1110), TT, TN and TNCS, 100A Main Switch



† CFSPDE01

### Type 3 - Surge Protection Extension Leads

Note :- Information on this range can be found on page 170 of the BG electrical catalogue.



BG Electrical is an integral part of the Nexus Industries group. Other brands include Luceco, Masterplug and Ross; together they provide a 'One Stop Shop' offer for accessories. With over 70 years of experience in the manufacture and distribution of electrical accessories, BG has gained an enviable reputation.

- **Comprehensive Product Range**  
Continuous product development to meet market and customer needs.
- **Style & Function**  
Our products combine modern styling with easy to install features such as in-line colour coded terminals, and backed out captive screws.
- **Quality & Reliability**  
All products manufactured to the latest British Standards, and the company is ISO9001:2008, BSI approved.
- **10 Year Product Guarantee**  
Our circuit protection is guaranteed for 10 years against faulty workmanship and materials.
- **Central Distribution Warehouse Facility**  
120,000 sq feet warehouse, with next-day delivery service.
- **High Levels of Customer Service, Care & Support**  
Our friendly and professional sales and technical teams are there to support customers' requirements. Together with EDI trading technology, and advanced supply chain management, we strive to ensure high levels of service.



Nexus Industries believes that we have a responsibility to care for and protect the environment in which we operate.

We are fully committed to improving environmental performance across all of our manufacturing and other business activities.



To this end it is our policy to source and manufacture products which comply with the following EU directives (where applicable) to ensure that our environment is protected:

Directive 2011/65/EU –  
RoHS (Restriction of Hazardous Substances)

Directive 2006/121/EC –  
REACH (Registration, Evaluation and Authorisation of Chemicals)

In addition, we will ensure that all products sold are disposed of in a responsible manner. To facilitate this, Nexus Industries carries a valid registration with a notified service provider for compliance with the Directive 2002/96/EC - WEEE (Waste Electrical and Electronic Equipment).

Nexus Industries will endeavour to communicate these policies to all members of staff with the express purpose of assisting in the procurement and sourcing of raw materials, sourcing of finished goods, and disposal of company waste.

Our manufacturing site has gained ISO 14001:2004 approval for its environmental management system.

We continually aim to reduce our environmental impact from both products and activities. We are always looking for new methods and materials to provide environmentally friendly solutions.

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