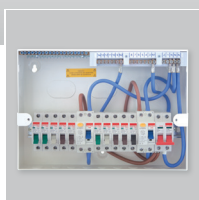


CONTACTUM

 Defender



Consumer Units
Domestic Premises

Defender

Contactum Metal Consumer Units & Surge Protection

In January 2019 the IET published the 18th Edition of the Wiring Regulations - BS7671:2018

This introduced new requirements covering for the provision of over-voltage protection by the use of Surge Protection Devices designed to overcome the potential impact upon Installations and the equipment within them.

Definition of a Surge

A surge is a fast short duration electrical transient in current or voltage within an electrical circuit.

Typically caused by an oversupply in voltage either from a switching event, or from an external source such as lightning.

Mains sources of Surges

■ Transient Voltages

These occur during switching events which release stored energy from established magnetic fields. External examples of these are power stations, distribution transformers and generators. Transient voltages can also occur locally within installations by the switching of appliances such as welders and air-con units. These by their nature will be smaller in magnitude

■ Lightning Strikes

These can be extremely detrimental to electrical installations and attached equipment, as the current contained within a strike can be up to 200kA. Ground lightning strikes can cause surges within installations up to 2km away as this energy can find its way into buried electrical cables

Benefits of Surge Protection

A correctly specified and installed surge protection device **will safely disperse over voltages to earth** – minimising damage to the installation wiring and any connected equipment.

When do you need Surge Protection?

443.4 Over-voltage Control

Protection against over-voltages **shall be provided** where the consequence caused by



Type tested by reputed third party laboratory

over-voltage could result in:

- (i) Serious injury to, or loss of human life
- (ii) Interruption of public services and/or damage to cultural heritage
- (iii) Interruption of commercial or industrial activity
- (iv) A large number of co-located individuals being affected.

For all other cases, a risk assessment according to 443.5 **shall be performed** in order to determine if protection against over-voltages is required. **Except** for single dwelling units where the total value of the

installation and equipment therein does not justify such protection.

Defender Consumer Units with Surge Protection Devices

Solution for all earthing systems

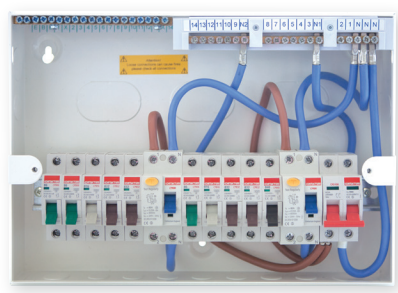
Available in:

- DD Range
- DDS Range
- Kits also available which include Surge Protection Devices, MCB and wires.

Devices for Domestic Premises



Features & Benefits



- A comprehensive range of single phase consumer units compliant with BS7671 18th Edition Wiring Regulations.
- A modern sleek design suitable for all installations.
- Comprehensive range comprising 10 different enclosure sizes.
- Up to 22 module board as standard; combine boards to increase number of outgoing ways.
- Maximum cable space and extensive number of cable entry points allowing easy installation.
- Comprehensive user instructions and high quality sub circuit identification labels.
- Degree of protection IP4X.
- Tested in accordance to BS EN 61439-3.
- Flexible board configuration to enable optimal combination of RCD, MCB and RCBO use.
- Pre-populated configurations available.
- Secure hinge design.
- Locking kits available.

Do you need SURGE PROTECTION?

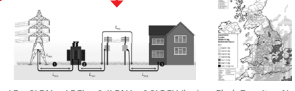


ONE OPTION
SMART CHOICE

Risk Assessment Calculation

$$CRL = f_{env} / (L_p \times N_g)$$

Environment	f_{env}
Rural and suburban environment	85
Urban environment	150



$LP = 2LPAL + LPCL + 0.4LPAH + 0.2LPCH$ (km)
 Flash Density - N_g
 LPAL is the length of LV overhead line
 LPCL is the length of LV underground cable
 LPAH is the length of HV overhead line
 LPCH is the length of HV underground cable
IF $CRL < 1000$ then SP is needed

For London use
0.8 N_g

Defender SPMS



Defender Consumer Units

Switch Disconnect Incomer Consumer Units Without & With Surge Protection



Without Surge	With Surge	Description
DD024MS	-	2 Way 40A Switch
DD026MS	-	2 Way 63A Switch
DD021MS	-	2 Way 100A Switch
DD044MS	-	4 Way 40A Switch
DD046MS	-	4 Way 63A Switch
DD041MS	DD041SPMS	4 Way 100A Switch
DD066MS	-	6 Way 63A Switch
DD061MS	-	6 Way 100A Switch
-	DD081SPMS	8 Way 100A Switch
DD106MS	-	10 Way 63A Switch
DD101MS	DD101SPMS	10 Way 100A Switch
DD121MS	DD121SPMS	12 Way 100A Switch
DD141MS	DD141SPMS	14 Way 100A Switch
DD161MS	DD161SPMS	16 Way 100A Switch
DD181MS	DD181SPMS	18 Way 100A Switch
DD201MS	-	20 Way 100A Switch
DD101MS-P01	DD101SPMS-P01	10 Way 100A Switch 1 x 40A, 2 x 32A 1 x 16A, 2 x 6A eRCBO + 4 Blanks

RCD Incomer Consumer Units



Code	Description
DR024MS	2 Way 40A RCD Incomer
DR026MS	2 Way 63A RCD Incomer
DR044MS	4 Way 40A RCD Incomer
DR046MS	4 Way 63A RCD Incomer
DR048MS	4 Way 80A RCD Incomer
DR066MS	6 Way 63A RCD Incomer
DR068MS	6 Way 80A RCD Incomer
DR061MS	6 Way 100A RCD Incomer
DR106MS	10 Way 63A RCD Incomer
DR108MS	10 Way 80A RCD Incomer
DR101MS	10 Way 100A RCD Incomer
DR148MS	14 Way 80A RCD Incomer
DR141MS	14 Way 100A RCD Incomer
DR168MS	16 Way 80A RCD Incomer
DR161MS	16 Way 100A RCD Incomer
DR201MS	20 Way 100A RCD Incomer

Split Load Consumer Units



Code	Description
DS0816MS	8 Way 100A Switch + 63A RCD
DS0818MS	8 Way 100A Switch + 80A RCD
DS1016MS	10 Way 100A Switch + 63A RCD
DS1018MS	10 Way 100A Switch + 80A RCD
DS1216MS	12 Way 100A Switch + 63A RCD
DS1218MS	12 Way 100A Switch + 80A RCD
DS1416MS	14 Way 100A Switch + 63A RCD
DS1418MS	14 Way 100A Switch + 80A RCD
DS1616MS	16 Way 100A Switch + 63A RCD
DS1618MS	16 Way 100A Switch + 80A RCD
DS1818MS	18 Way 100A Switch + 80A RCD

Flexible High Integrity Split Load Dual RCD Consumer Units Without & With Surge Protection



Without Surge	With Surge	Description
DDS06166MS	DDS06166SPMS	6 Way 100A Switch + 2 x 63A RCD
DDS06188MS	DDS06188SPMS	6 Way 100A Switch + 2 x 80A RCD
DDS08166MS	DDS08166SPMS	8 Way 100A Switch + 2 x 63A RCD
DDS08188MS	DDS08188SPMS	8 Way 100A Switch + 2 x 80A RCD
DDS10166MS	DDS10166SPMS	10 Way 100A Switch + 2 x 63A RCD
DDS10188MS	DDS10188SPMS	10 Way 100A Switch + 2 x 80A RCD
DDS12166MS	DDS12166SPMS	12 Way 100A Switch + 2 x 63A RCD
DDS12188MS	DDS12188SPMS	12 Way 100A Switch + 2 x 80A RCD
DDS14166MS	DDS14166SPMS	14 Way 100A Switch + 2 x 63A RCD
DDS14188MS	DDS14188SPMS	14 Way 100A Switch + 2 x 80A RCD
DDS16166MS	-	16 Way 100A Switch + 2 x 63A RCD
DDS16188MS	-	16 Way 100A Switch + 2 x 80A RCD
DDS06166MS-P01	-	6 Way 100A Switch + 2 x 63A RCD c/w 1 x 40A, 2 x 32A, 1 x 16A, 2 x 6A MCBs
DDS06188MS-P01	-	6 Way 100A Switch + 2 x 80A RCD c/w 1 x 40A, 2 x 32A, 1 x 16A, 2 x 6A MCBs
DDS08166MS-P01	-	8 Way 100A Switch + 2 x 63A RCD c/w 1 x 40A, 3 x 32A, 2 x 16A, 2 x 6A MCBs
DDS08188MS-P01	-	8 Way 100A Switch + 2 x 80A RCD c/w 1 x 40A, 3 x 32A, 2x 16A, 2 x 6A MCBs
DDS10166MS-P01	-	10 Way 100A Switch + 2 x 63A RCD c/w 1 x 40A, 4 x 32A, 2 x 16A, 3 x 6A MCBs
DDS10166MS-P02	-	10 Way 100A Switch + 2 x 63A RCD c/w 1 x 40A, 4 x 32A, 2 x 16A, 2 x 6A MCBs + 1 x 6A eRCBO
DDS10188MS-P01	DDS10188SPMS-P01	10 Way 100A Switch + 2 x 80A RCD c/w 1 x 40A, 4 x 32A, 2 x 16A, 3 x 6A MCBs
DDS10188MS-P02	-	10 Way 100A Switch + 2 x 80A RCD c/w 1 x 40A, 4 x 32A, 2 x 16A, 2 x 6A MCBs + 1 x 6A eRCBO
DDS12188MS-P01	DDS12188SPMS-P01	12 Way 100A Switch + 2 x 80A RCD c/w 1 x 40A, 4 x 32A, 2 x 16A, 3 x 6A MCBs
DDS14188MS-P01	DDS14188SPMS-P01	14 Way 100A Switch + 2 x 80A RCD c/w 1 x 40A, 4 x 32A, 2 x 16A, 3 x 6A MCBs
DDS16188MS-P01	-	16 Way 100A Switch + 2 x 80A RCD c/w 1 x 40A, 4 x 32A, 2 x 16A, 3 x 6A MCBs

DDS also available with 100A RCD 30mA class A.
Other populated configuration available upon request.

Garage Unit, Shower Enclosures & Time Delay Enclosure



Code	Description
DR026MS-P01	Garage Unit 2 Way 63A RCD + 1 x 16A, 1 x 6A MCBs
DSPE1MS	40A RCD Shower Enclosure - No O/G Ways
DSPE2MS	63A RCD Shower Enclosure - 1 O/G 50A MCB
DSPE3MS	63A RCD Shower Enclosure + 2 x MCBs
DTDDR001MS	100A Time Delay RCD Incomer TT Enclosure

Defender Devices

Empty Enclosures



Metal Enclosures Earth/Neutral

DME02MS	IP4X 2 Mod 114 x 260 x 130mm
DME04MS	IP4X 4 Mod 150 x 260 x 130mm
DME06MS	IP4X 6 Mod 186 x 260 x 130mm
DME08MS	IP4X 8 Mod 222 x 260 x 130mm
DME012MS	IP4X 12 Mod 294 x 260 x 130mm
DME014MS	IP4X 14 Mod 330 x 260 x 130mm
DME016MS	IP4X 16 Mod 366 x 260 x 130mm
DME018MS	IP4X 18 Mod 402 x 260 x 130mm
DME020MS	IP4X 20 Mod 438 x 260 x 130mm
DME022MS	IP4X 22 Mod 474 x 260 x 130mm

Brackets



Defender Brackets

RCEB-TE-12MOD	12 Mod
RCEB-TE-14MOD	14 Mod
RCEB-TE-16MOD	16 Mod
RCEB-TE-18MOD	18 Mod
RCEB-TE-20MOD	20 Mod
RCEB-TE-22MOD	22 Mod

Isolators



Double Pole Isolators

CPD40	40A Double Pole Isolator
CPD63	63A Double Pole Isolator
CPD100	100A Double Pole Isolator

RCDs



Double Pole RCD Devices

CPR25	25A 30mA DP Type AC RCD
CPR40	40A 30mA DP Type AC RCD
CPR63	63A 30mA DP Type AC RCD
CPR80	80A 30mA DP Type AC RCD
CPR100	100A 30mA DP Type AC RCD
CPR100A	100A 30mA DP Type A RCD

RCBOs



RCBO Devices

Type AC	Type A	
CPBR0606B	CPBR0606AB	6A 6kA B Curve SP RCBO
CPBR0610B	CPBR0610AB	10A 6kA B Curve SP RCBO
CPBR0616B	CPBR0616AB	16A 6kA B Curve SP RCBO
CPBR0620B	CPBR0620AB	20A 6kA B Curve SP RCBO
CPBR0632B	CPBR0632AB	32A 6kA B Curve SP RCBO
CPBR0640B	CPBR0640AB	40A 6kA B Curve SP RCBO
CPBR0650B	CPBR0650AB	50A 6kA B Curve SP RCBO

RCBO Devices C Curve also available

MCBs



MCB Devices B Curve

CPB06	6A 6kA B Curve SP MCB
CPB10	10A 6kA B Curve SP MCB
CPB16	16A 6kA B Curve SP MCB
CPB20	20A 6kA B Curve SP MCB
CPB25	25A 6kA B Curve SP MCB
CPB32	32A 6kA B Curve SP MCB
CPB40	40A 6kA B Curve SP MCB
CPB50	50A 4.5kA B Curve SP MCB
CPB63	63A 4.5kA B Curve SP MCB

Contactors, Transformer & Sensor



Installation Contactors

COA20-20/230	20A 230V 2N/O (1 Mod)
COA25-40/230	25A 230V 4N/O (2 Mods)
COA40-20/230	40A 230V 2N/O (3 Mods)
COA40-40/230	40A 230V 4N/O (3 Mods)
COA63-20/230	63A 230V 2N/O (3 Mods)
COA63-40/230	63A 230V 4N/O (3 Mods)

Bell Transformer

TSBT2	Bell Transformer 1A 8VA Output
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Time Switches



Digital Timing Devices

TSD1T	7 Day 24 Hour 1 Channel 2 Module
TSD2T	7 Day 24 Hour 2 Channel 2 Module

Analogue Timing Devices

TSAQ1	24 Hour 1 Channel 3 Module
TSAQ2	7 Day 1 Channel 3 Module

Staircase Timing Device

TSSL1	1 Channel 1 Module
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Surge Kits



Surge Kits

T2C4011KIT	Surge 40KA 1+1 Protection Retro Fit Kit
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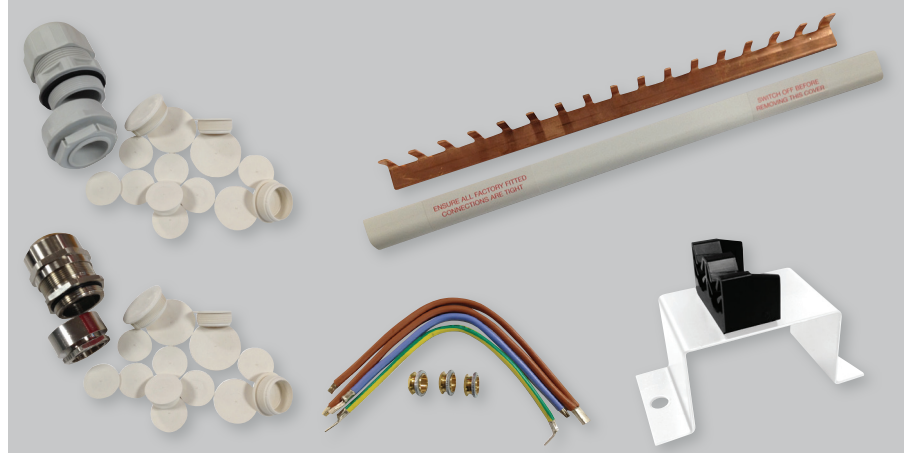
MCB Accessories



MCB Blank & Locking Device

CPBBL	MCB Blank
CPA10	MCB/RCBO Toggle Locking Device

General Accessories



Accessories

DCA01	1/4 Turn Camlock Accessory	DCA24	Defender C/U Stacking & Link (DDS) Kit
DCA02	Key Lock Camlock Accessory	DCA25	Defender C/U Stacking & Link (DD) Kit
DCA20	AMD3 Membrane Grommet Kit	DCA30	Defender 14 Mod Spare Busbar and Cover
DCA21	40/32mm Tails Red Kit Metal	DCA31	Defender 22 Mod Spare Busbar and Cover
DCA22	40/32mm Tails Red Kit Plastic		
DCA23	25mm Tail Retention Bracket		



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