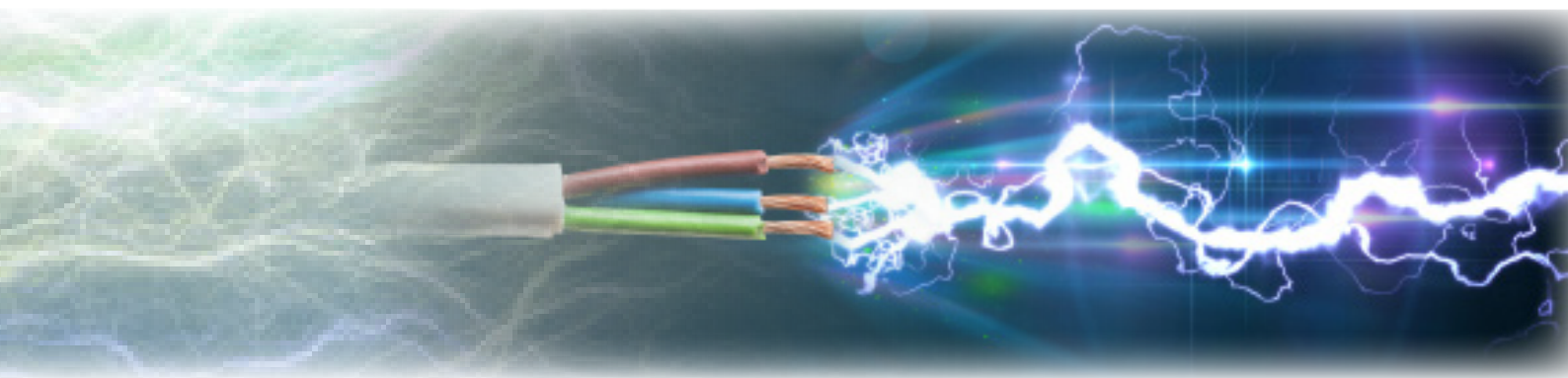


Raycap

Surge Protection for
Low Voltage Power Systems



2016
CATALOG

About Raycap

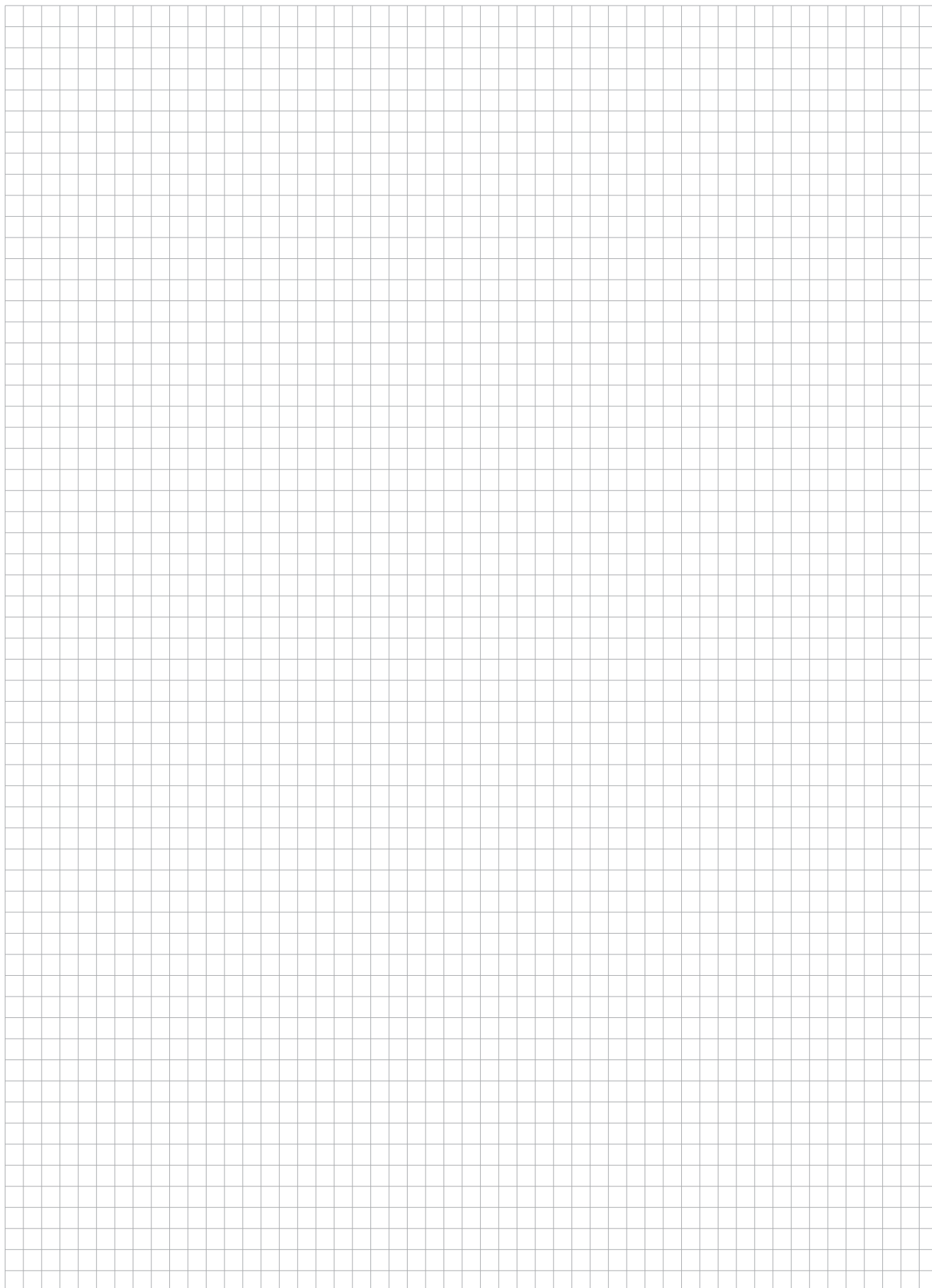









Raycap was founded in 1987 with a vision of creating and providing solutions that protect the world's infrastructures. From telecommunications to new and traditional energy networks, and from transportation systems to industrial applications of all types, Raycap is there with solutions to ensure equipment uptime in spite of harsh electrical environments. The company strives to keep its customers' sophisticated, mission-critical equipment running seamlessly and continuously, and is driven to make ongoing advancements in its surge protection technologies and product offerings.

In October 2015 Raycap acquired surge protection manufacturer and innovator Iskra Zaščite in Ljubljana Slovenia. Iskra Zaščite is a company with a long history of serving customers worldwide with best in class DIN rail surge protection solutions. Pairing Iskra Zaščite's wide product line and outstanding sales channels with Raycap's innovative Strikesorb technology and unmatched customer support culture offers Raycap customers worldwide more complete solutions across applications in the industrial, telecommunications, transportation, and energy sectors.



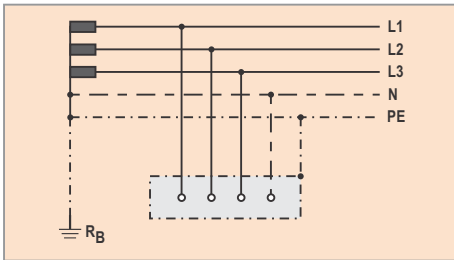
Introduction	5
Class I, II Compact Single and Multi-pole SPD 12.5kA per pole SAFETEC B(R) TCG Series; SAFEBLOC B(R) TCG Series	11
	
Class I, II Compact Single and Multi-pole SPD 25kA per pole SAFETEC B(R) TCG Series; SAFEBLOC B(R) TCG Series	25
	
Class I, II Compact Single and Multi-pole SPD 12.5kA per pole PROTEC B(R) Series; PROBLOC B(R) Series	39
	
Class I, II Compact Single and Multi-pole SPD 25kA per pole PROTEC B(R) Series; PROBLOC B(R) Series	49
	
Class I, II Compact Single pole SPD 12.5kA per pole PROTEC B2N(R) Series	61
	
Class I, II Modular Single and Multi-pole SPD 12.5kA per pole PROTEC B2S(R) Series	67
	
Class II Modular Single and Multi-pole SPD 40kA per pole SAFETEC C(R) Series	77
	
Class II Modular Single and Multi-pole SPD 50kA per pole SAFETEC C(R) - UL Series	89
	
Class II Modular Single and Multi-pole SPD 40kA per pole PROTEC C(R) Series	97
	
Class II Modular Multi-pole SPD 20kA and 40kA per pole PROTEC CMG(R) 40, PROTEC CM(R) 80(A) Series	111
	



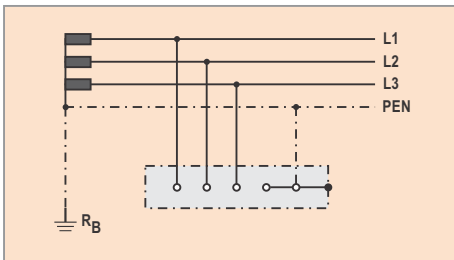
Class III Modular and Compact Single and Multi-pole SPD PROTEC D(R), DM(R), DMG(R), MPE-MINI, MPE-MINI LED, ZE 200-PS, PROFILT D, PROLED 275 16A Series	119
	
Modular and Compact SPD for DC Power Systems DC PROTEC B(R), DC PROTEC C(R), PROTEC C(R), PROTEC DMDR	135
	
Class I, II SPD for Photovoltaic Systems SAFETEC B(R) PV TCG Series, SAFETEC C(R) PV Series, SAFETEC C(R) PV UL Series, PV PROTEC C(R) series	145
	
Class I, II SPD for Wind Systems SAFETEC B(R) WT TCG Series, SAFETEC C(R) WT Series, SAFETEC C(R) WT UL Series	161
	
PV Combiner Boxes PVCB I, PVCB II Series	169
	
AC Boxes PB Series, PROFILT PSF Series	173
	
Class II SPD for Overhead Power lines PROTEC AQ, AQS	177
	
Isolating Spark Gap (ISG) for Equipotential Bonding EPZ 100, EPZ 100 Ex	181
	
Connection Accessories	185
	
Product Index	190



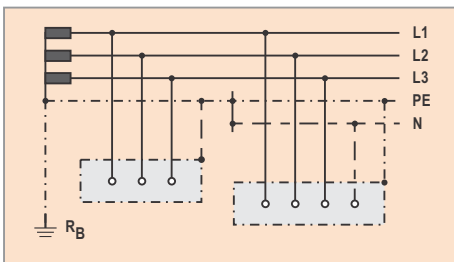
TN-S system



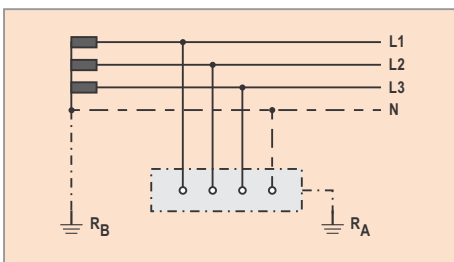
TN-C system



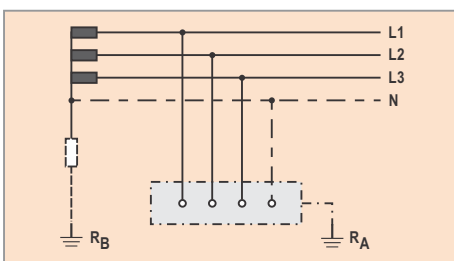
TN-C-S system



TT system



IT system



IEC 364-4-41 (1992) designates low voltage distribution systems (networks) using two letters. The first letter describes the grounding method used at the source (i.e. the secondary side of the power distribution transformer). The second letter describes the grounding method used at the consumer's electrical installation for any conductive metal parts.

This method is used to define three basic systems:

- TN** system;
- TT** system;
- IT** system.

Where the abbreviations have the following meaning:

First letter - grounding method used at the source:

- T** direct connection to ground of the power supply source (star point of transformer secondary winding).
- I** isolation of power supply source from ground, or connection via a high impedance.

Second letter - grounding method used at exposed conductive parts in the electrical installation:

- T** exposed conductive parts are directly grounded independent of the eventual existing grounded feeding point
- N** exposed conductive parts are directly connected to the ground electrode (grounding resistor)

Subsequent prefixes may be used to describe the arrangement of neutral and protective conductors:

- S** neutral and protective conductor are separated
- C** neutral and protective conductor are connected

Hence it follows that there are three possible TN sub-systems: TN-S, TN-C and TN-C-S.

Various protective devices may be installed on different distribution systems:

- Over-current protective device (CB, fuses etc),
- Residual protective device (RCD, GFI)
- Insulation monitoring device
- Fault-voltage-operated protective device
- Surge Protective Devices (SPDs)

It is important to ensure that an SPD is correctly selected and co-ordinated with the type of power system used and any over-current protection devices installed. The following protective devices are encountered in the power systems shown:

TN System

- Over-current protective device;
- Residual current protective device

TT System

- Over-current protective device;
- Residual current protective device
- Voltage fault detector

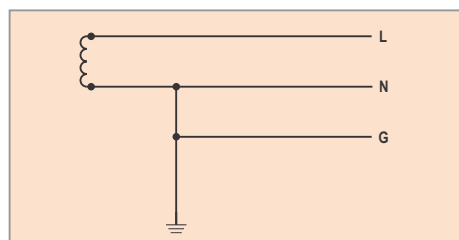
IT System

- Over-current protective device;
- Residual current protective device
- Insulation monitoring device
- Fault-voltage-operated protective device
- Voltage fault detector

Source Configuration

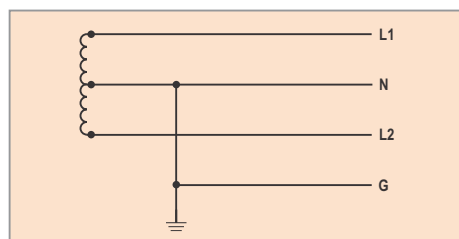
Description

Typical Supply Voltages



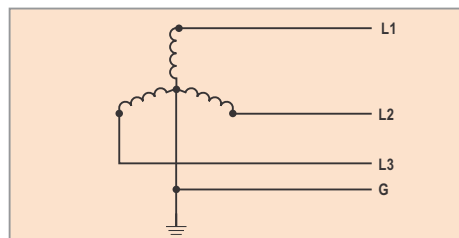
Single-phase
1Ph, 2W+G

110V, 120V, 220V, 240V
(L-N)



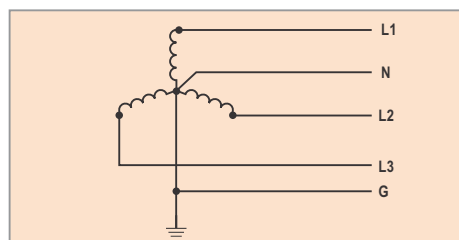
Single-phase
1Ph, W+G
Also known as Split phase or Edison system

120/240V
(L-N / L-L)



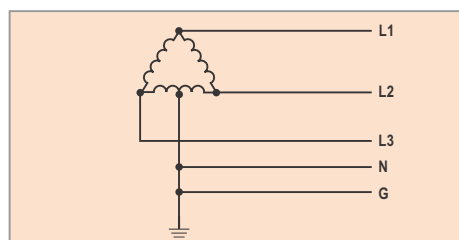
3-phase WYE without neutral
3Ph Y, 4W+G

480V
(L-L)



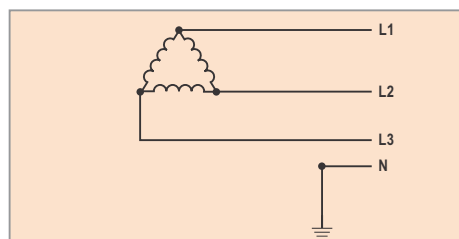
3-phase WYE with neutral
3Ph Y, 4W+G

120/208V, 220/380V
230/400V, 240/415V
277/480V, 347/600V
(L-N / L-L)



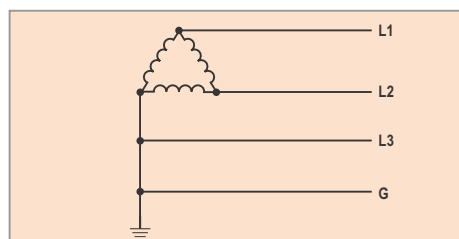
Delta High Leg
3Ph, 4W+G

120/240V
(L-N / L-L)



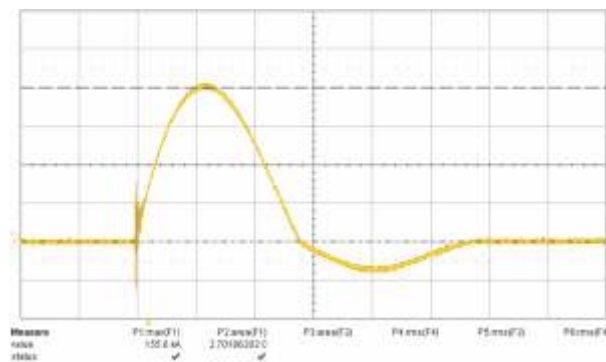
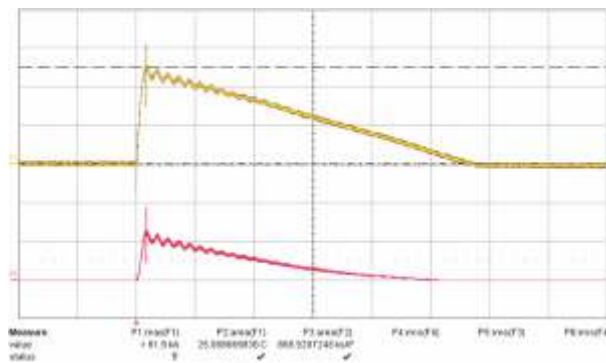
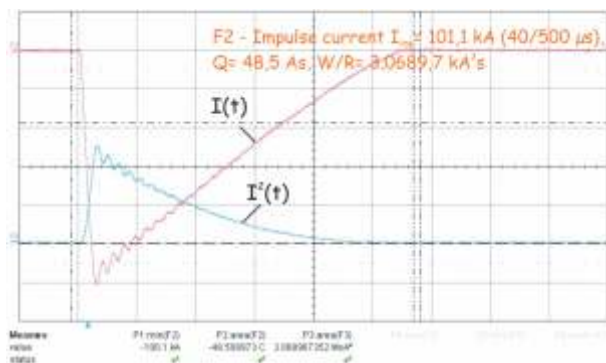
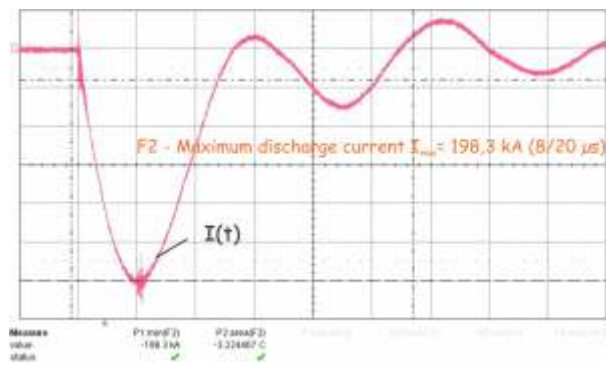
Delta Ungrounded
3Ph, 3W+G

240V, 480V
(L-L)



Delta Grounded Corner
3Ph, 3W+G

240V, 480V
(L-L)



Surge Protective Device SPD

A device that is intended to limit transient overvoltages and divert surge currents. It contains at least one nonlinear component.

Maximum continuous operating voltage U_c

The maximum r.m.s. or d.c. voltage, which may be continuously applied to the SPD's mode of protection.

Voltage protection level U_p

A parameter that characterizes the performance of the SPD in limiting the voltage across its terminals, which is selected from a list of preferred values. This value shall be greater than the highest value of the measured limiting voltages.

Residual voltage U_{res}

The peak value of voltage that appears between the terminals of an SPD due to the passage of discharge current temporary overvoltage test value.

Nominal discharge current I_n

The crest value of the current through the SPD having a current waveshape of 8/20. This is used for the classification of the SPD for class II test and also for preconditioning of the SPD for class I and II tests.

Impulse discharge current for class I test I_{imp} (10/350 current impulse)

The crest value of discharge current through the SPD with specific charge transferred Q and specified energy W/R in the specified time.

Combination wave

The combination wave is delivered by a generator that applies a 1.2/50 voltage impulse across an open circuit and an 8/20 current impulse into a short circuit. The voltage, current amplitude and waveforms that are delivered to the SPD are determined by the generator and the impedance of the SPD to which the surge is applied. The short-circuit current is symbolized by I_{SC} . The open-circuit voltage is symbolized by U_{OC} .

TOV Characteristics

Is a behavior of a surge device which is exposed to a temporary overvoltage for a certain time duration. The time can be between 5 seconds and a few weeks.

Combined Arresters

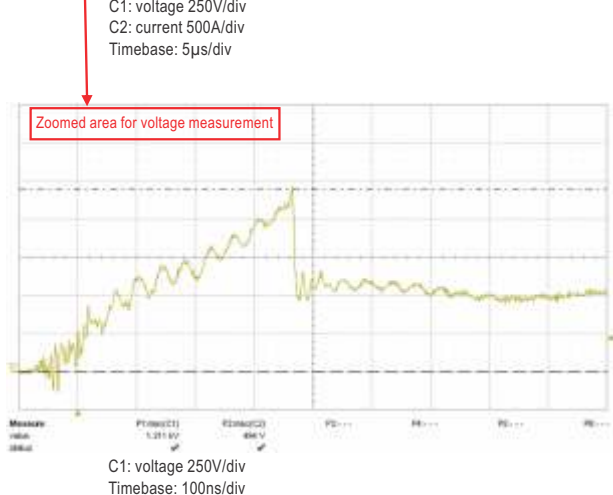
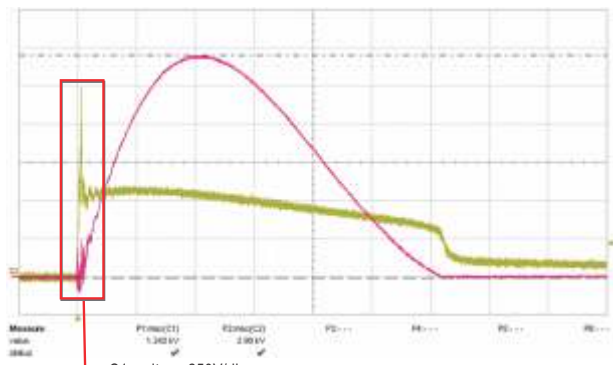
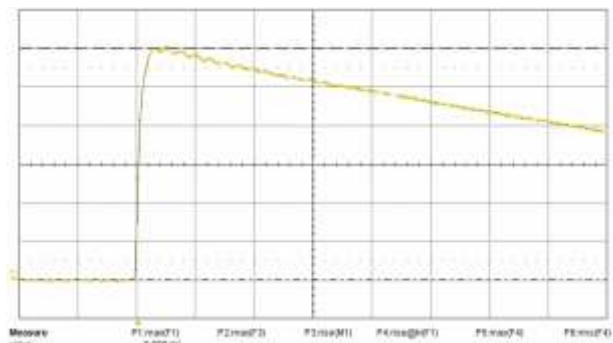
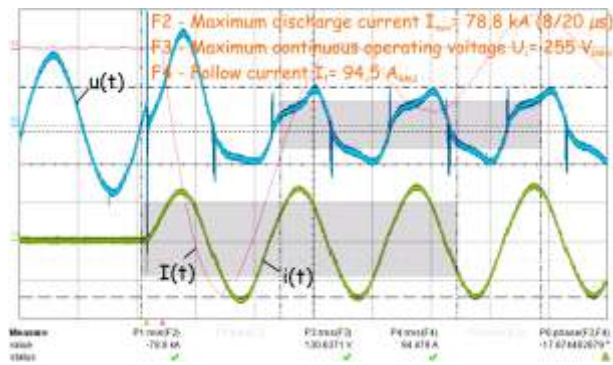
Overvoltage protection device consisting of lightning current arresters and surge arresters.

Maximum discharge current I_{max} for class II test

Crest value of a current through the SPD having an 8/20 waveshape and magnitude according to the test sequence of the class II operating duty test. I_{max} is greater than I_n .

1.2/50 voltage impulse

Voltage impulse with a virtual front time of 1.2 μs and a time to half-value of 50 μs .



8/20 current impulse

Current impulse with a virtual front time of 8μs and a time to half-value of 20μs.

Environmental protection provided by enclosure (IP code)

The extent of protection provided by an enclosure against access to hazardous parts, against ingress of solid foreign objects and/or against ingress of water (see IEC 60529).

SPD disconnector

Device (internal and/or external) required for disconnecting a SPD from the power system.

Follow current interrupt rating I_{fi}

Current supplied by the electrical power system and flowing through the SPD after a discharge current impulse. The follow current is significantly different from the continuous operating current I_c.

Back-up fuse

Overcurrent device (for example, circuit-breaker or fuse), which could be part of the electrical installation located externally upstream of the SPD.

Varistor (MOV)

A varistor is a bipolar, non-linear resistor with a symmetrical voltage-current characteristic, where the resistance decreases with an increasing characteristic curve.

Mode of protection of an SPD

An intended current path, between terminals that contains protective components, e.g. line-to-line, line-to-earth, line-to-neutral, neutral-to-earth.

Multipole SPD

Type of SPD with more than one mode of protection, or a combination of electrically interconnected SPDs offered as a unit

U₀ nominal Ac voltage

In TN and TT - systems: nominal a.c. r.m.s. line voltage to earth; in IT - systems: nominal a.c. voltage between line conductor and neutral conductor or midpoint conductor.

I_{SCCR} short-circuit current rating

Maximum prospective short-circuit current from the power system for which the SPD, in conjunction with the disconnector specified, is rated

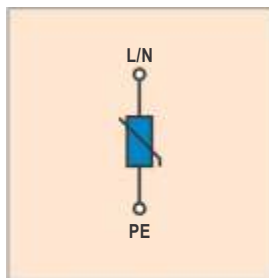
I_{Total} total discharge current

Current which flows through the PE or PEN conductor of a multipole SPD during the total discharge current test.

SCCR short circuit current rating

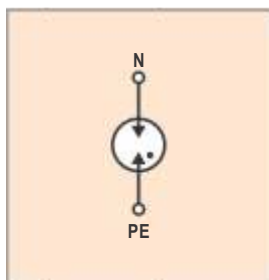
The suitability of an SPD for use on an AC power circuit that is capable of delivering not more than a declared rms symmetrical current at a declared voltage during a short circuit condition.

1. IEC 61643-11:2011 EN 61643-11:2012 IEC 61643-1:2005 EN 61643-11:2005	Surge protective devices connected to low voltage power distribution systems - Requirements and test methods;
2. IEC 61643-12:2008 (VDE 0675-6-12)	Surge protective devices connected to low voltage power distribution systems - Selection and application principles;
3. IEC 60364-5-53:2001 (VDE 0100-534)	Electrical installation of buildings - Part 5-53: Selection and erection of electrical equipment - isolation, switching and control;
4. IEC PAS 60099-7:2004	Surge arresters - Part 7: Glossary of terms and definitions from IEC publications 60099-1, 60099-4, 60099-6, 61643-11, 61643-12, 61643-21, 61643-311, 61643-321, 61643-331 and 61643-341;
5. IEC 61000-4-5:2005 (VDE 0847-4-5)	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test;
6. IEC 62305-1:2010 (VDE 0185-305-1)	Protection against lightning - Part 1: General principles;
7. IEC 62305-2:2010 (VDE 0185-305-2)	Protection against lightning - Part 2: Risk management;
8. IEC 62305-3:2010 (VDE 0185-305-3)	Protection against lightning - Part 3: Physical damage to structures and life hazard;
9. IEC 62305-4:2010 (VDE 0185-305-4)	Protection against lightning - Part 4: Electrical and electronic systems within structures;
10. ITU-T K.20:2008	Protection against interferences: Resistibility of telecommunication switching equipment to overvoltages and overcurrent;
11. ITU-T K.21:2008	Protection against interferences: Resistibility of subscriber's terminal to overvoltages and overcurrent;
12. ITU-T K.44:2011	Protection against interferences: Resistibility test for telecommunication equipment exposed to overvoltages and overcurrent - Basic Recommendation;
13. IEC 61643-21:2012 (VDE 0845-3-1)	Low voltage surge protective devices - Part 21: Surge protective devices connected to telecommunications and signaling networks - Performance requirements and testing methods;
14. IEC 61643-22:2004	Low-Voltage Surge Protective Devices - Part 22: Surge protection devices connected to telecommunications and signaling networks - Selection and application principles;
15. IEC 60099-1:1999 (VDE 0675-1)	Surge arresters - Part 1: Non-linear resistor type gapped surge arresters for a.c. systems
16. IEC 60099-4:2009 (VDE 0675-4)	Surge arresters - Part 4: Metal-oxide surge arresters without gaps for a.c. systems
17. IEC 60099-5:2000 (VDE 0675-5)	Surge arresters - Part 5: Selection and application recommendations;
18. IEC 60038:2009 (VDE 0175-1)	IEC standard voltages
19. UL 1449 4rd Edition	Standard for Surge Protective Devices
20. IEC 62497-2:2010	Railway applications - Insulation coordination - Part 2: Overvoltages and related protection
21. EN 50526-1:2012	Railway applications - Fixed installations - D.C. surge arresters and voltage limiting devices - Part 1: Surge arresters
22. EN 50123-5:2003	Railway applications - Fixed installations - D.C. switchgear - Part 5: Surge arresters and low-voltage limiters for specific use in d.c. systems
23. EN 50122-1:1998	Railway applications - Fixed installations - Part 1: Protective provisions relating to electrical safety and earthing
24. IEC 60364-7-712:2002	Electrical installations of buildings - Part 7-712 : Requirements for special installations or locations - Solar photovoltaic (PV) power supply systems
25. HD 60364-7-712:2005	Electrical installations of buildings - Part 7-712: Requirements for special installations or locations - Solar photovoltaic (PV) power supply systems
26. EN 61173:2001	Overvoltage protection for photovoltaic (PV) power generating systems - guide32. SIST EN 61400-1:2006 /A1:2011 Wind turbines - Part 1: Design requirements (IEC 61400-1:2005/A1:2010)
27. IEC TR 61400-24:2010	Wind turbine generator systems - part 24: Lightning protection
28. CLC/TS 50539-12:2012	Low-voltage surge protective devices - Surge protective devices for specific application including d.c. - Part 12: Selection and application principles - SPDs connected to photovoltaic installations
29. EN 50539-11:2012	Low-voltage surge protective devices - Surge protective devices for specific application including d.c. - Part 11: Requirements and tests for SPDs in photovoltaic applications
30. IEC 61643-311	"Components for low-voltage surge protective devices Part 311: Performance requirements and test circuits for gas discharge tubes (GDT)", Edition 2.0, 2013-04.
31. HD 60364-4-443:2006	Electrical installations of buildings - Part 4-44: Protection for safety - Protection against voltage disturbances and electromagnetic disturbances - Clause 443: Protection against overvoltages of atmospheric origin or due to switching.
32. EN 62561-3:2012	Lightning protection system components (LPSC) - Part 3: Requirements for isolating spark gaps (ISG)
33. IEC/EN 62561-6:2011	Lightning protection system components (LPSC) - Part 6: Requirements for lightning strike counters (LSC)
34. IEC/EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements



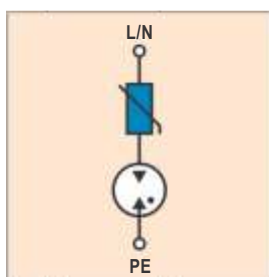
SPD comprising MOV:

- no problems with follow current I_{fi}
- quick response time $t_A (\leq 25\text{ns})$ means low residual voltage
- responds well to low overvoltages
- high surge capacity, up to 50kA 10/350 μs



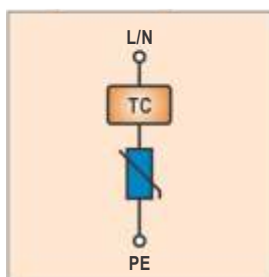
SPD comprising GDT:

- high surge capacity 100kA 10/350 μs
- no exhausting of ionised gases
- used in TT systems as galvanic separation between N-PE conductors



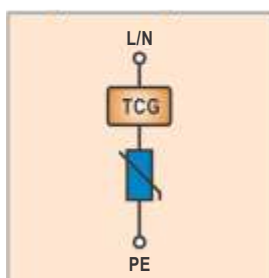
Hybrid SPD comprising both MOV and GDT:

- no follow current I_{fi}
- quick response time $t_A (\leq 25\text{ns})$ means low residual voltage
- responds well to low overvoltages
- high surge capacity, up to 25kA 10/350 μs



Hybrid SPD TC:

- no follow current I_{fi}
- quick response time $t_A (\leq 25\text{ns})$ means low residual voltage
- responds well to low overvoltages
- high surge capacity, up to 25kA 10/350 μs
- TC - Thermal Control Function



Hybrid SPD TCG:

- no follow current I_{fi}
- quick response time $t_A (\leq 25\text{ns})$ means low residual voltage
- responds well to low overvoltages
- high surge capacity, up to 25kA 10/350 μs
- TCG - Thermal Control Function without leakage current

Class I, II Compact Single and Multi-pole SPD 12.5kA per pole



Category IEC / EN:	Class I, II / Type 1, 2
Location of use:	Main distribution boards
Protection modes:	L/N-PE, L-PEN, L-N, N-PE
Protective elements:	High energy MOV and GDT
Surge discharge rating:	$I_{imp} = 12.5kA$
Safety:	TOV withstand
Internal protection:	Separate thermal disconnecter for each MOV
Complies with:	IEC 61643-11:2011, EN 61643-11:2012



The SAFETEC B(R) TCG* and SAFELOC B(R) TCG* series of SPDs:

- Have no impact on the network in normal operation due to no leakage current design
- Are highly reliable - controlled disconnection, arc-quenching
- Patented current limiting circuit
- Have longer life - protection against aging
- Have up to 5 years warranty

SAFETEC B(R) TCG Series: **SAFETEC B(R) 12.5/xxx TCG** **SAFETUBE B 50**

SAFELOC B(R) TCG Series: **SAFELOC B(R) 25/xxx (2+0) TCG** **SAFELOC B(R) 37.5/xxx (3+0) TCG** **SAFELOC B(R) 50/xxx (4+0) TCG** **SAFELOC B(R) 25/xxx (1+1) TCG** **SAFELOC B(R) 50/xxx (3+1) TCG**

The SAFETEC B(R) TCG and SAFELOC B(R) TCG series of overvoltage surge protective devices have been developed to protect against partial direct and indirect lightning discharges and are intended to provide protection in zones 0A - 2 per IEC 62305.

All in one protection from overvoltages, surges and transients in accordance to IEC/EN 61643-11.

SAFETEC B(R) TCG and SAFELOC B(R) TCG series consists of separate, high performance varistors and **TCG circuit**, each with a separate disconnection device.

The compact SAFETEC B(R) TCG and SAFELOC B(R) TCG series is suitable for all types of connection. Patented TCG technology prevents catastrophic failures in the case of TOVs (temporary overvoltages).

*TCG - Thermal control function without leakage current

SAFETEC B(R) 12.5 TCG



- **Category IEC / EN:** Class I, II / Type 1, 2
- **Location of use:** Main distribution boards
- **Network systems:** TN-S, TN- C, IT, TT (only L-N)
- **Protection modes:** L/N-PE, L-PEN, L-N
- **Protective elements:** High energy MOV and GDT
- **Surge discharge rating:** $I_{imp} = 12.5\text{kA}$
- **Safety:** TOV withstand
- **Leakage current:** NO leakage current (TCG)
- **Housing:** Compact design
- **Complies with:** IEC 61643-11:2011,
EN 61643-11:2012;



Technical data

Type	SAFETEC B(R) 12.5/xxx TCG		
	150	275	440

● Electrical characteristics

Nominal AC voltage	U_0	120V 50/60Hz	230V 50/60Hz	400V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	440/580V
Nominal discharge current (8/20)	I_n		12.5kA	
Max. discharge current (8/20)	I_{max}		50kA	
Impulse current (10/350)	I_{imp}		12.5kA	
Total discharge current (10/350)	I_{total}		12.5kA	
Specific energy	W/R		39kJ/Ω	
Charge	Q		6.25As	
Protection level	U_p	< 0.65kV	< 1.1kV	< 1.6kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.55kV	< 0.8kV	< 1.4kV
Follow current	I_{fi}		NO	
Response time	t_A		< 25ns	
Thermal protection			YES	
Back-up fuse (if mains > 160A)			160A gG/gL	
Short-circuit current rating	I_{scCR}		25kA/50Hz	
TOV withstand 5s	U_T	174V	335V	580V
TOV withstand 120min	U_T	228V	438V	765V
Number of ports			1	

● Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C		
Permissible humidity	RH	5%...95%		
Terminal screw torque	M_{max}	3.0Nm		
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)		
Mounting		35mm DIN rail, EN 60715		
Degree of protection		IP 20		
Housing material		thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnecter operation		red flag		
Remote contacts (RC)		YES		
Contact ratings		AC: 250V/0.5A; 125V/3A		
Terminal cross section		max. 1.5mm ²		
Remote terminal torque		0.25Nm		

Ordering information

U_c	150	275	440
Ordering code SAFETEC B 12.5/xxx TCG	54.0146	54.0148	54.0150
Ordering code SAFETEC BR 12.5/xxx TCG (with remote contacts)	54.0147	54.0149	54.0151

SAFETUBE B 50



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network system: TT
- Protection modes: N - PE
- Protective element: High energy GDT
- Surge discharge rating: $I_{imp} = 50\text{kA}$
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data



Type

SAFETUBE B 50

● Electrical characteristics

Nominal AC voltage	U_0	230V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	255V
Nominal discharge current (8/20)	I_n	50kA
Max. discharge current (8/20)	I_{max}	100kA
Impulse current (10/350)	I_{imp}	50kA
Total discharge current (10/350)	I_{total}	50kA
Specific energy	W/R	625kJ/Ω
Charge	Q	25As
Protection level	U_p	< 1.5kV
Follow current	I_{fi}	100A _{RMS}
Response time	t_A	< 100ns
TOV withstand 200ms	U_T	1200V/300A
Number of ports		1

● Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C
Permissible humidity	RH	5%...95%
Terminal screw torque	M_{max}	3.0Nm
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)
Mounting		35mm DIN rail, EN 60715
Degree of protection		IP 20
Housing material		thermoplastic; extinguishing degree UL 94 V-0

Ordering information

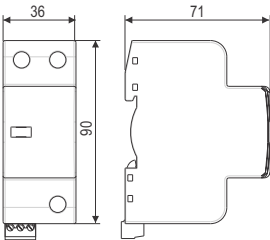
I_{imp}	50
Ordering code SAFETUBE B 50	54.0006

Dimensions, Internal configuration, Weight and Packaging

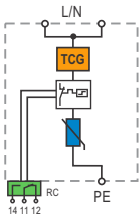


SAFETEC B(R) 12.5/xxx TCG

Dimensions



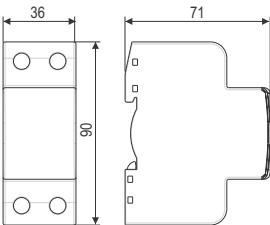
Internal configuration



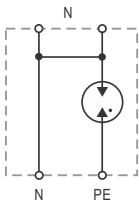
SAFETEC B 12.5/xxx TCG	150	275	440
Dimensions DIN 43880	2TE		
Weight per unit	175g	205g	255g
SAFETEC BR 12.5/xxx TCG	150	275	440
Dimensions DIN 43880	2TE		
Weight per unit	180g	210g	260g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm		
Min. packaging quantity	7 pcs.		

SAFETUBE B 50

Dimensions



Internal configuration



SAFETUBE B 50	
Dimensions DIN 43880	2TE
Weight per unit	180g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm
Min. packaging quantity	7 pcs.

SAFELOC B(R) 25 (2+0) TCG



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network systems: TN-S
- Protection modes: L/N - PE, L- PEN
- Protective elements: High energy MOV and GDT
- Surge discharge rating: $I_{imp} = 12.5\text{kA}$
- Safety: TOV withstand
- Leakage current: NO leakage current (TCG)
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type	SAFELOC B(R) 25/xxx (2+0) TCG		
	150	275	440

● Electrical characteristics

Nominal AC voltage	U_0	120V 50/60Hz	230V 50/60Hz	400V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	440/580V
Nominal discharge current (8/20)	I_n		12.5kA per pole	
Max. discharge current (8/20)	I_{max}		50kA per pole	
Impulse current (10/350)	I_{imp}		12.5kA per pole	
Total discharge current (10/350)	I_{total}		25kA	
Specific energy	W/R		39kJ/Ω	
Charge	Q		6.25As	
Protection level	U_p	< 0.65kV	< 1.1kV	< 1.6kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.55kV	< 0.8kV	< 1.4kV
Follow current	I_{fi}		NO	
Response time	t_A		< 25ns	
Thermal protection			YES	
Back-up fuse (if mains > 160A)			160A gG/gL	
Short-circuit current rating	I_{scCR}		25kA/50Hz	
TOV withstand 5s	U_T	174V	335V	580V
TOV withstand 120min	U_T	228V	438V	765V
Number of ports			1	

● Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C		
Permissible humidity	RH	5%...95%		
Terminal screw torque	M_{max}	3.0Nm		
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)		
Mounting		35mm DIN rail, EN 60715		
Degree of protection		IP 20		
Housing material		thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnecter operation		red flag		
Remote contacts (RC)		YES		
Contact ratings		AC: 250V/0.5A; 125V/3A		
Terminal cross section		max. 1.5mm ²		
Remote terminal torque		0.25Nm		

Ordering information

U_c	150	275	440
Ordering code SAFELOC B 25/xxx (2+0) TCG	54.0152	54.0154	54.0156
Ordering code SAFELOC BR 25/xxx (2+0) TCG (with remote contacts)	54.0153	54.0155	54.0157

SAFELOC B(R) 37.5 (3+0) TCG



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network systems: TN-C
- Protection modes: L/N - PE, L- PEN
- Protective elements: High energy MOV and GDT
- Surge discharge rating: $I_{imp} = 12.5\text{kA}$
- Safety: TOV withstand
- Leakage current: NO leakage current (TCG)
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type	SAFELOC B(R) 37.5/xxx (3+0) TCG		
	150	275	440

● Electrical characteristics

Nominal AC voltage	U_0	120V 50/60Hz	230V 50/60Hz	400V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	440/580V
Nominal discharge current (8/20)	I_n		12.5kA per pole	
Max. discharge current (8/20)	I_{max}		50kA per pole	
Impulse current (10/350)	I_{imp}		12.5kA per pole	
Total discharge current (10/350)	I_{total}		37.5kA	
Specific energy	W/R		39kJ/Ω	
Charge	Q		6.25As	
Protection level	U_p	< 0.65kV	< 1.1kV	< 1.6kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.55kV	< 0.8kV	< 1.4kV
Follow current	I_{fi}		NO	
Response time	t_A		< 25ns	
Thermal protection			YES	
Back-up fuse (if mains > 160A)			160A gG/gL	
Short-circuit current rating	I_{scCR}		25kA/50Hz	
TOV withstand 5s	U_T	174V	335V	580V
TOV withstand 120min	U_T	228V	438V	765V
Number of ports			1	

● Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C		
Permissible humidity	RH	5%...95%		
Terminal screw torque	M_{max}	3.0Nm		
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)		
Mounting		35mm DIN rail, EN 60715		
Degree of protection		IP 20		
Housing material		thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnect operation		red flag		
Remote contacts (RC)		YES		
Contact ratings		AC: 250V/0.5A; 125V/3A		
Terminal cross section		max. 1.5mm ²		
Remote terminal torque		0.25Nm		

Ordering information

U_c	150	275	440
Ordering code SAFELOC B 37.5/xxx (3+0) TCG	54.0164	54.0166	54.0168
Ordering code SAFELOC BR 37.5/xxx (3+0) TCG (with remote contacts)	54.0165	54.0167	54.0169

SAFEBLOC B(R) 50 (4+0) TCG



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network systems: TN-S, IT
- Protection modes: L/N - PE, L- PEN
- Protective elements: High energy MOV and GDT
- Surge discharge rating: $I_{imp} = 12.5\text{kA}$
- Safety: TOV withstand
- Leakage current: NO leakage current (TCG)
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012:



Technical data

Type	SAFEBLOC B(R) 50/xxx (4+0) TCG		
	150	275	440

● Electrical characteristics

Nominal AC voltage	U_o	120V 50/60Hz	230V 50/60Hz	400V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	440/580V
Nominal discharge current (8/20)	I_n		12.5kA per pole	
Max. discharge current (8/20)	I_{max}		50kA per pole	
Impulse current (10/350)	I_{imp}		12.5kA per pole	
Total discharge current (10/350)	I_{total}		50kA	
Specific energy	W/R		39kJ/Ω	
Charge	Q		6.25As	
Protection level	U_p	< 0.65kV	< 1.1kV	< 1.6kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.55kV	< 0.8kV	< 1.4kV
Follow current	I_{fi}		NO	
Response time	t_A		< 25ns	
Thermal protection			YES	
Back-up fuse (if mains > 160A)			160A gG/gL	
Short-circuit current rating	I_{scCR}		25kA/50Hz	
TOV withstand 5s	U_T	174V	335V	580V
TOV withstand 120min	U_T	228V	438V	765V
Number of ports			1	

● Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C		
Permissible humidity	RH	5% - 95%		
Terminal screw torque	M_{max}	3.0Nm		
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)		
Mounting		35mm DIN rail, EN 60715		
Degree of protection		IP 20		
Housing material		thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnecter operation		red flag		
Remote contacts (RC)		YES		
Contact ratings		AC: 250V/0.5A; 125V/3A		
Terminal cross section		max. 1.5mm ²		
Remote terminal torque		0.25Nm		

Ordering information

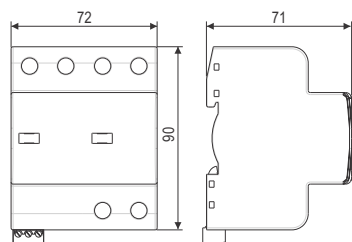
U_c	150	275	440
Ordering code SAFEBLOC B 50/xxx (4+0) TCG	54.0170	54.0172	54.0174
Ordering code SAFEBLOC BR 50/xxx (4+0) TCG (with remote contacts)	54.0171	54.0173	54.0175

Dimensions, Internal configuration, Weight and Packaging

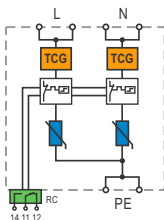


SAFELOC B(R) 25/xxx (2+0) TCG

Dimensions



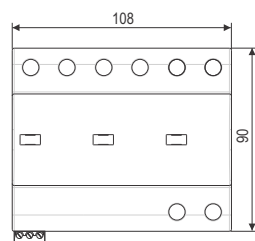
Internal configuration



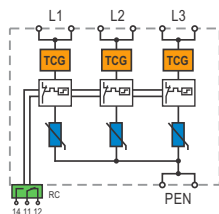
SAFELOC B 25/xxx (2+0) TCG	150	275	440
Dimensions DIN 43880		4TE	
Weight per unit	320g	420g	540g
SAFELOC BR 25/xxx (2+0) TCG	150	275	440
Dimensions DIN 43880		4TE	
Weight per unit	330g	430g	550g
Packaging dimensions (single unit)	109 x 76.5 x 80mm		
Min. packaging quantity	3 pcs.		

SAFELOC B(R) 37.5/xxx (3+0) TCG

Dimensions



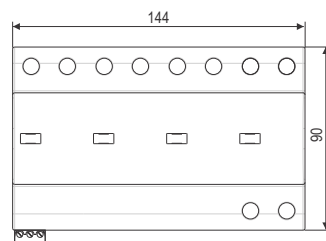
Internal configuration



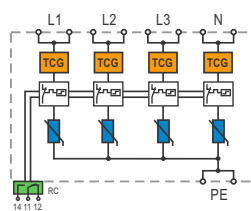
SAFELOC B 37.5/xxx (3+0) TCG	150	275	440
Dimensions DIN 43880		6TE	
Weight per unit	430g	530g	740g
SAFELOC BR 37.5/xxx (3+0) TCG	150	275	440
Dimensions DIN 43880		6TE	
Weight per unit	435g	535g	745g
Packaging dimensions (single unit)	109 x 76.5 x 114mm		
Min. packaging quantity	2 pcs.		

SAFELOC B(R) 50/xxx (4+0) TCG

Dimensions



Internal configuration



SAFELOC B 50/xxx (4+0) TCG	150	275	440
Dimensions DIN 43880		8TE	
Weight per unit	800g	1000g	1160g
SAFELOC BR 50/xxx (4+0) TCG	150	275	440
Dimensions DIN 43880		8TE	
Weight per unit	820g	1020g	1180g
Packaging dimensions (single unit)	109 x 76.5 x 148mm		
Min. packaging quantity	2 pcs.		

SAFELOC B(R) 25 (1+1) TCG



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network system: TT, TN-S
- Protection modes: L-N, N-PE
- Protective elements: High energy MOV and GDT
- Surge discharge rating: $I_{imp} (L-N/N-PE) = 12.5\text{kA}/50\text{kA}$
- Safety: TOV withstand
- Leakage current: NO leakage current (TCG)
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type	SAFELOC B(R) 25/xxx (1+1) TCG		
	150	275	440

● Electrical characteristics

Nominal AC voltage	U_0 (L-N)	120V 50/60Hz	230V 50/60Hz	400V 50/60Hz
	U_0 (N-PE)		230V 50/60Hz	
Max. continuous operating voltage (AC/DC)	U_c (L-N)	150/200V	275/350V	440/580V
	U_c (N-PE)		255V	
Nominal discharge current (8/20)	I_n (L-N/N-PE)		12.5kA/50kA	
Max. discharge current (8/20)	I_{max} (L-N/N-PE)		50kA/100kA	
Impulse current (10/350)	I_{imp} (L-N/N-PE)		12.5kA/50kA	
Total discharge current (10/350)	I_{total}		12.5kA	
Specific energy	W/R (L-N/N-PE)		39kJ/Ω/625kJ/Ω	
Charge	Q (L-N/N-PE)		6.25As/25As	
Protection level	U_p (L-N)	< 0.65kV	< 1.1kV	< 1.6kV
	U_p (N-PE)		< 1.5kV	
Residual voltage at 5kA (8/20)	U_{res} (L-N)	< 0.55kV	< 0.8kV	< 1.4kV
Follow current	I_{fi} (L-N/N-PE)		100A _{RMS}	
Response time	t_A (L-N/N-PE)		< 25ns/100ns	
Thermal protection	(L-N/N-PE)		YES/-	
Back-up fuse (if mains > 160A)	(L-N)		160A gG/gL	
Short-circuit current rating	I_{sccr}		25kA/50Hz	
TOV withstand 5s	U_T	174V	335V	580V
TOV withstand 120min	U_T (L-N)	228V	438V	765V
TOV withstand 200ms	U_T (N-PE)		1200V/300A	
Number of ports			1	

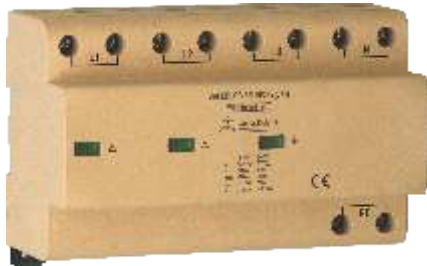
● Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C		
Permissible humidity	RH	5% - 95%		
Terminal screw torque	M_{max}	3.0Nm		
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)		
Mounting		35mm DIN rail, EN 60715		
Degree of protection		IP 20		
Housing material		thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnect operation		red flag		
Remote contacts (RC)		YES		
Contact ratings		AC: 250V/0.5A; 125V/3A		
Terminal cross section		max. 1.5mm ²		
Remote terminal torque		0.25Nm		

Ordering information

U_c	150	275	440
Ordering code SAFELOC B 25/xxx (1+1) TCG	54.0158	54.0160	54.0162
Ordering code SAFELOC BR 25/xxx (1+1) TCG (with remote contacts)	54.0159	54.0161	54.0163

SAFELOC B(R) 50 (3+1) TCG



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network system: TT, TN-S
- Protection modes: L-N, N-PE
- Protective elements: High energy MOV and GDT
- Surge discharge rating: I_{imp} (L-N/N-PE) = 12.5kA/50kA
- Safety: TOV withstand
- Leakage current: NO leakage current (TCG)
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type	SAFELOC B(R) 50/xxx (3+1) TCG		
	150	275	440

● Electrical characteristics

Nominal AC voltage	U_0 (L-N)	120V 50/60Hz	230V 50/60Hz	400V 50/60Hz
	U_0 (N-PE)		230V 50/60Hz	
Max. continuous operating voltage (AC/DC)	U_c (L-N)	150/200V	275/350V	440/580V
	U_c (N-PE)		255V	
Nominal discharge current (8/20)	I_n (L-N/N-PE)		12.5kA/50kA	
Max. discharge current (8/20)	I_{max} (L-N/N-PE)		50kA/100kA	
Impulse current (10/350)	I_{imp} (L-N/N-PE)		12.5kA/50kA	
Total discharge current (10/350)	I_{total}		50kA	
Specific energy	W/R (L-N/N-PE)		39kJ/Ω/625kJ/Ω	
Charge	Q (L-N/N-PE)		6.25As/25As	
Protection level	U_p (L-N)	< 0.65kV	< 1.1kV	< 1.6kV
	U_p (N-PE)		< 1.5kV	
Residual voltage at 5kA (8/20)	U_{res} (L-N)	< 0.55kV	< 0.8kV	< 1.4kV
Follow current	I_{fi} (L-N/N-PE)		100A _{RMS}	
Response time	t_A (L-N/N-PE)		< 25ns/100ns	
Thermal protection	(L-N/N-PE)		YES/-	
Back-up fuse (if mains > 160A)	(L-N)		160A gG/gL	
Short-circuit current rating	I_{scCR}		25kA/50Hz	
TOV withstand 5s	U_T (L-N)	174V	335V	580V
TOV withstand 120min	U_T (L-N)	228V	438V	765V
TOV withstand 200ms	U_T (N-PE)		1200V/300A	
Number of ports			1	

● Mechanical characteristics

Temperature range	T_a	-40°C +70°C
Permissible humidity	RH	5% - 95%
Terminal screw torque	M_{max}	max. 3.0Nm
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)
Mounting		35mm DIN rail, EN 60715
Degree of protection		IP 20
Housing material		thermoplastic; extinguishing degree UL 94 V-0
Indication of thermal disconnect operation		red flag
Remote contacts (RC)		YES
Contact ratings		AC: 250V/0.5A; 125V/3A
Terminal cross section		max. 1.5mm ²
Remote terminal torque		0.25Nm

Ordering information

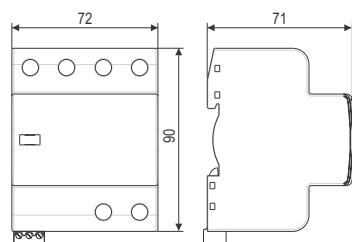
U_c	150	275	440
Ordering code SAFELOC B 50/xxx (3+1) TCG	54.0176	54.0178	54.0180
Ordering code SAFELOC BR 50/xxx (3+1) TCG (with remote contacts)	54.0177	54.0179	54.0181

Dimensions, Internal configuration, Weight and Packaging

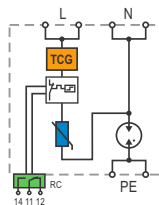


SAFELOC B(R) 25/xxx (1+1) TCG

Dimensions



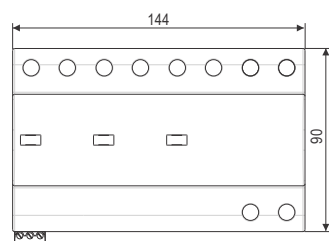
Internal configuration



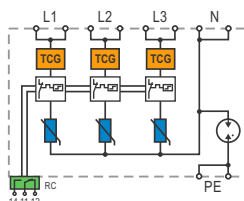
SAFELOC B 25/xxx (1+1) TCG	150	275	440
Dimensions DIN 43880		4TE	
Weight per unit	280g	315g	340g
SAFELOC BR 25/xxx (1+1) TCG	150	275	440
Dimensions DIN 43880		4TE	
Weight per unit	285g	320g	345g
Packaging dimensions (single unit)	109 x 76.5 x 80mm		
Min. packaging quantity	3 pcs.		

SAFELOC B(R) 50/xxx (3+1) TCG

Dimensions



Internal configuration



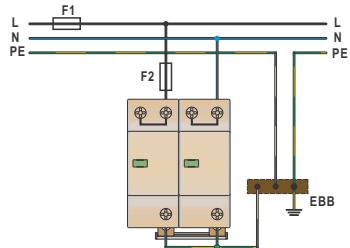
SAFELOC B 50/xxx (3+1) TCG	150	275	440
Dimensions DIN 43880		8TE	
Weight per unit	785g	900g	1020g
SAFELOC BR 50/xxx (3+1) TCG	150	275	440
Dimensions DIN 43880		8TE	
Weight per unit	800g	915g	1035g
Packaging dimensions (single unit)	109 x 76.5 x 148mm		
Min. packaging quantity	2 pcs.		

SAFETEC B(R) TCG and SAFETUBE B

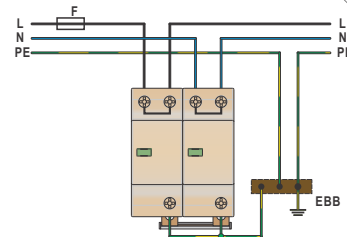
Network connections



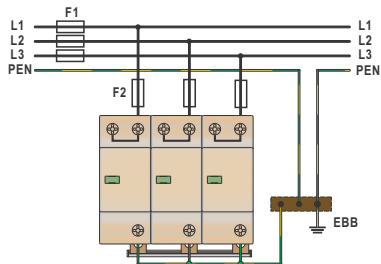
TN-S Network - Single-phase (T-connection)



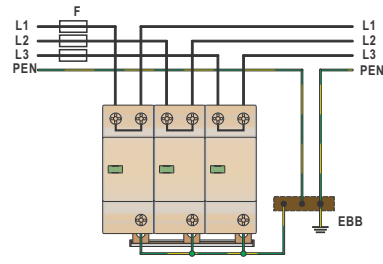
TN-S Network - Single-phase (V-connection)



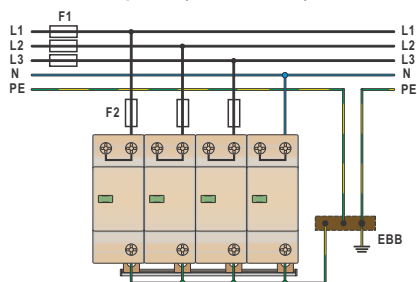
TN-C Network - Three-phase (T-connection)



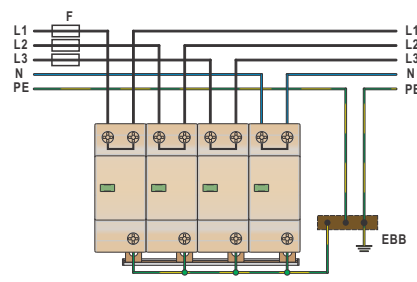
TN-C Network - Three-phase (V-connection)



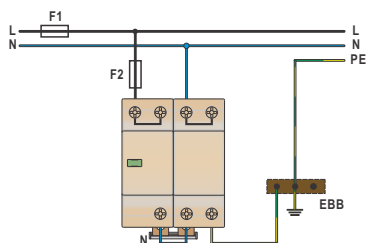
TN-S Network - Three-phase (T-connection)



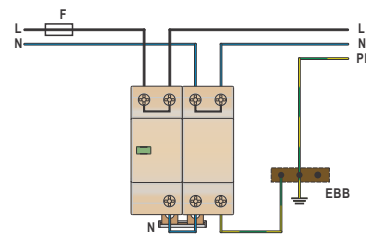
TN-S Network - Three-phase (V-connection)



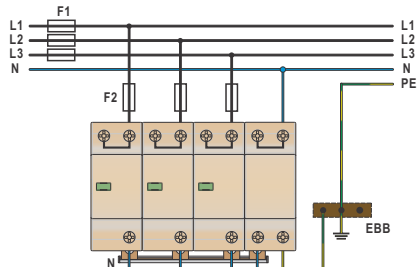
TT Network - Single-phase (T-connection)



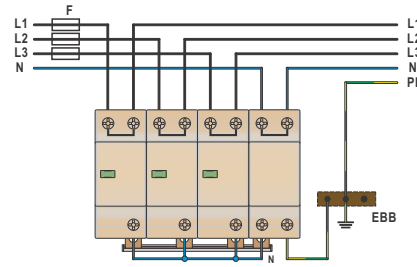
TT Network - Single-phase (V-connection)



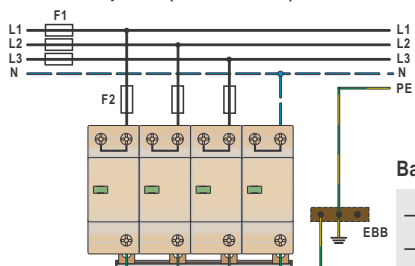
TT Network - Three-phase (T-connection)



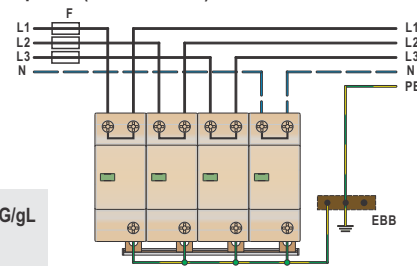
TT Network - Three-phase (V-connection)



IT Network - Three-phase (T-connection)



IT Network - Three-phase (V-connection)



$$U_c \geq 1.1 \cdot U_n \cdot \sqrt{3}$$

Back-up fuse

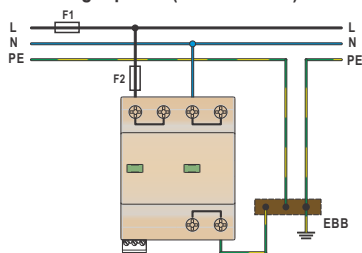
-  $F1 > 160\text{A gG/gL} \rightarrow$  $F2 = 160\text{A gG/gL}$
-  $F1 \leq 160\text{A gG/gL} \rightarrow$  $F2$
- $F \leq 100\text{A gG/gL}$

SAFEBLOC B(R) TCG Series

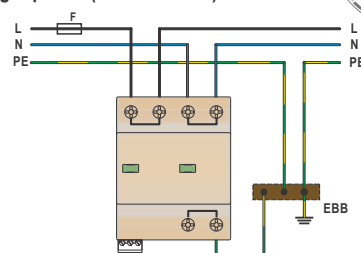
Network connections



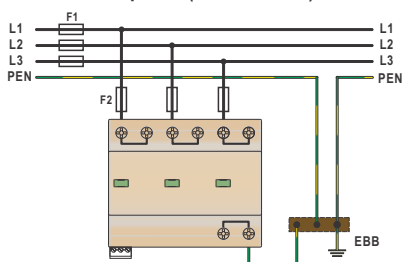
TN-S Network - Single-phase (T-connection)



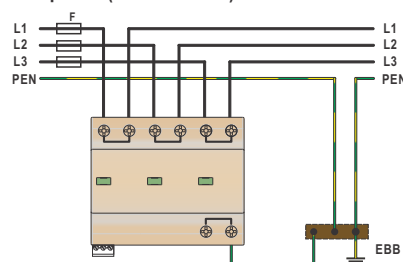
TN-S Network - Single-phase (V-connection)



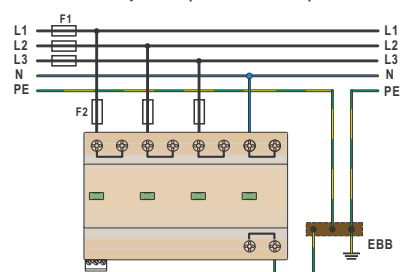
TN-C Network - Three-phase (T-connection)



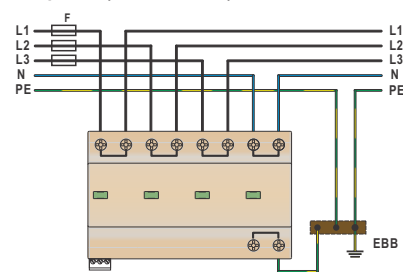
TN-C Network - Three-phase (V-connection)



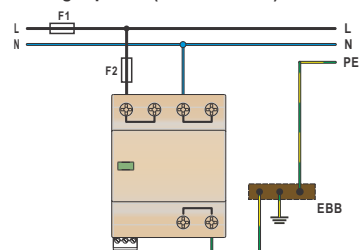
TN-S Network - Three-phase (T-connection)



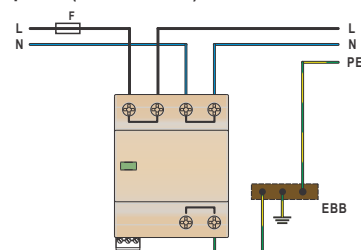
TN-S Network - Three-phase (V-connection)



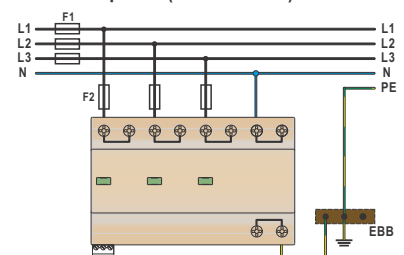
TT Network - Single-phase (T-connection)



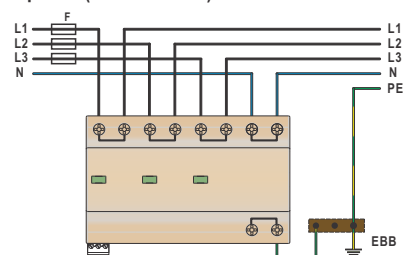
TT Network - Single-phase (V-connection)



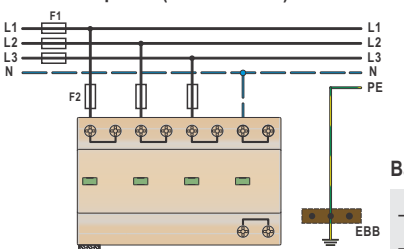
TT Network - Three-phase (T-connection)



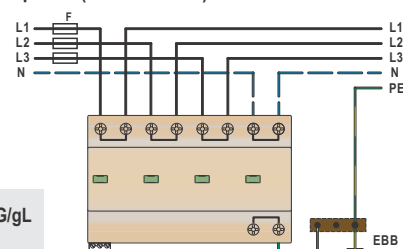
TT Network - Three-phase (V-connection)



IT Network - Three-phase (T-connection)



IT Network - Three-phase (V-connection)



$$U_c \geq 1.1 \cdot U_n \cdot \sqrt{3}$$

Back-up fuse

- F1 > 160A gG/gL → F2 = 160A gG/gL
- F1 ≤ 160A gG/gL → F2
- F ≤ 100A gG/gL



Class I, II

Compact Single and Multi-pole SPD

12.5kA per pole

Category IEC / EN:	Class I, II / Type 1, 2
Location of use:	Main distribution boards
Protection modes:	L/N-PE, L-PEN, L-N, N-PE
Protective elements:	High energy MOV and GDT
Surge discharge rating:	$I_{imp} = 12.5\text{kA}$
Internal protection and safety:	Separate thermal disconnecter for each MOV
Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



PROTEC B(R) Series:

PROTEC B(R) 12.5/xxx

PROTUBE B 50

The PROTEC B(R) 12.5 and PROBLOC B(R) 12.5 kA per pole series of overvoltage surge protective devices has been developed to protect against partial direct and indirect lightning discharges. They are suited for power supply installations and intended to provide protection in zones 0_A - 2 per IEC 62305.

PROBLOC B(R) Series:

PROBLOC B(R) 25/xxx (2+0)

PROBLOC B(R) 37.5/xxx (3+0)

PROBLOC B(R) 50/xxx (4+0)

PROBLOC B(R) 25/xxx (1+1)

PROBLOC B(R) 50/xxx (3+1)

PROTEC B(R) is a compact, single pole housing design and consists of high performance varistors, each equipped with separate disconnection mechanism.

PROBLOC B(R) is a compact, multi-pole housing design and consists of high performance varistors with thermal disconnection mechanism.

PROTEC B(R) and PROBLOC B(R) 12.5 kA per pole series is in compliance with the IEC/EN 61643-11 standard and are applicable to the following connections: TN-S, TN-C, IT and TT.

PROTEC B(R) 12.5



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network systems: TN-S, TN-C, IT
- Protection modes: L/N - PE, L- PEN
- Protective element: High energy MOV
- Surge discharge rating: $I_{imp} = 12.5\text{kA}$
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		PROTEC B(R) 12.5/xxx				
		150	275	320	385	440
● Electrical characteristics						
Max. continuous operating voltage (AC)	U_c	150	275	320	385	440
Nominal discharge current (8/20)	I_n			12.5kA		
Max. discharge current (8/20)	I_{max}			50kA		
Impulse current (10/350)	I_{imp}			12.5kA		
Specific energy	W/R			39kJ/Ω		
Charge	Q			6.25As		
Protection level	U_p	< 0.7kV	< 1.3kV	< 1.3kV	< 1.7kV	< 2.0kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.5kV	< 1.0kV	< 1.0kV	< 1.1kV	< 1.2kV
Follow current	I_{fi}			NO		
Response time	t_A			< 25ns		
Thermal protection				YES		
Back-up fuse (if mains > 160A)				160 gL/gG		
Short-circuit current rating	I_{scCR}			25kA/50Hz		
TOV withstand 5s	U_T	174V		335V		580V
TOV disconnection 120min	U_T	228V		438V		765V
Number of ports				1		
● Mechanical characteristics						
Temperature range	T_a			- 40°C+ 70°C		
Permissible humidity	RH			5%...95%		
Terminal screw torque	M_{max}			max. 3.0Nm		
Conductor cross section				35mm ² (solid)/25mm ² (stranded)		
AWG conductor cross section				2 AWG (solid) / 3 AWG (stranded)		
Mounting				35mm DIN rail, EN 60715		
Degree of protection				IP 20		
Housing material				Thermoplastic; extinguishing degree UL 94 V-0		
Indication of disconnector operation				red flag		
Remote contacts (RC)				YES		
Contact ratings				AC: 250V/0.5A; 125V/3A		
Terminal cross section				max. 1.5mm ²		
Remote terminal torque				0.25Nm		

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC B 12.5/xxx	56.0001	56.0003	56.0005	56.0007	56.0009
Ordering code PROTEC BR 12.5/xxx (with remote contacts)	56.0002	56.0004	56.0006	56.0008	56.0010

PROTUBE B



• Category IEC / EN:	Class I, II / Type 1, 2
• Location of use:	Main distribution boards
• Network system:	TT
• Protection modes:	N - PE
• Protective element:	High energy GDT
• Surge discharge rating:	$I_{imp} = 50\text{kA}$
• Housing:	Compact design
• Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type	PROTUBE B 50
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• Electrical characteristics

Max. continuous operating voltage (AC)	U_c	255V
Nominal discharge current (8/20)	I_n	50kA
Max. discharge current (8/20)	I_{max}	100kA
Impulse current (10/350)	I_{imp}	50kA
Specific energy	W/R	625kJ/Ω
Charge	Q	25As
Protection level	U_p	< 1.3kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.2kV
Follow current	I_{fi}	100ARMS
Response time	t_A	< 100ns
TOV withstand 200ms	U_T	1200V/300A
Number of ports		1

• Mechanical characteristics

Temperature range	T_a	- 40°C+ 70°C
Permissible humidity	RH	5%...95%
Terminal screw torque	M_{max}	max. 3.0Nm
Conductor cross section		35mm ² (solid)/25mm ² (stranded)
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)
Mounting		35mm DIN rail, EN 60715
Degree of protection		IP 20
Housing material		Thermoplastic; extinguishing degree UL 94 V-0

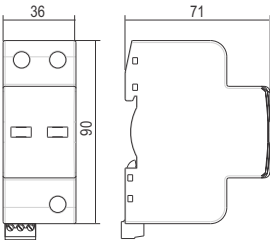
Ordering information

I_{imp}	50
Ordering code PROTUBE B xxx	56.0011

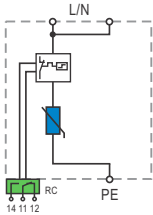
Dimensions, Internal configuration, Weight and Packaging

PROTEC B(R) 12.5/xxx

Dimensions



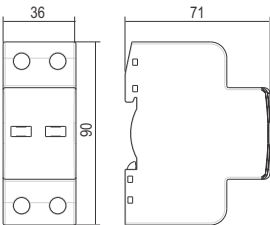
Internal configuration



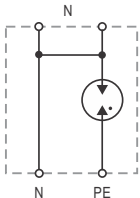
PROTEC B 12.5/xxx	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	150g	200g	200g	260g	300g
PROTEC BR 12.5/xxx	150		320		440
Dimensions DIN 43880	2TE				
Weight per unit	155g	205g	205g	265g	305g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm				
Min. packaging quantity	7 pcs.				

PROTUBE B 50

Dimensions



Internal configuration

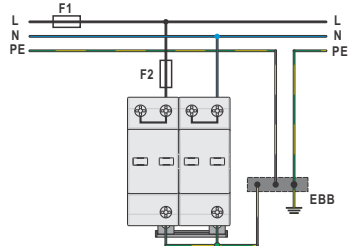


PROTUBE B 50	
Dimensions DIN 43880	2TE
Weight per unit	180g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm
Min. packaging quantity	7 pcs.

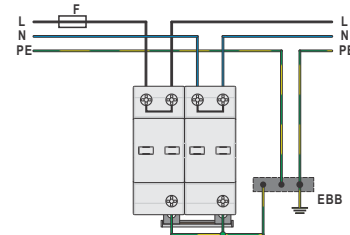
PROTEC B and PROTUBE B

Network connections

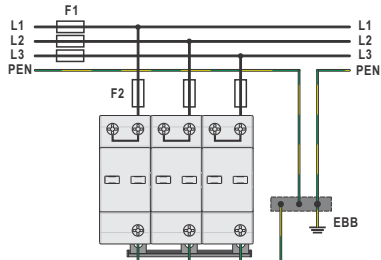
TN-S Network - Single-phase (T-connection)



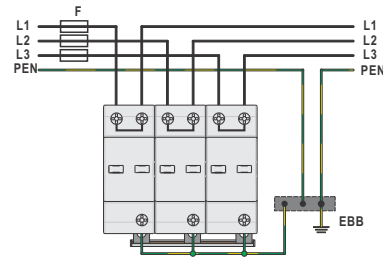
TN-S Network - Single-phase (V-connection)



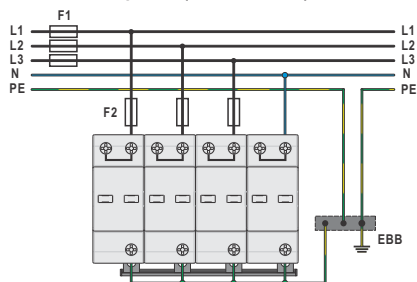
TN-C Network - Three-phase (T-connection)



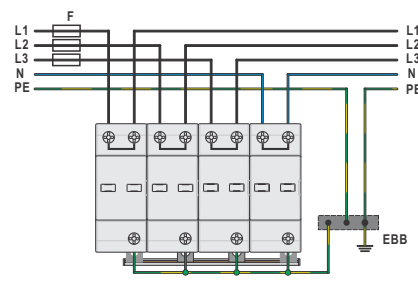
TN-C Network - Three-phase (V-connection)



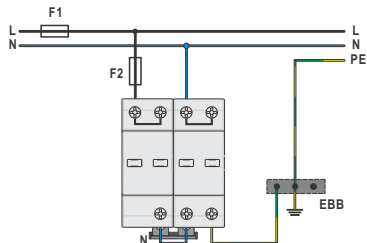
TN-S Network - Three-phase (T-connection)



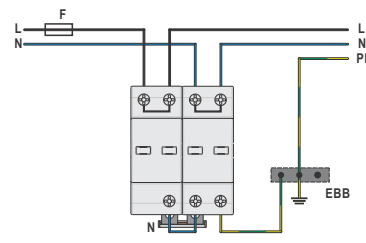
TN-S Network - Three-phase (V-connection)



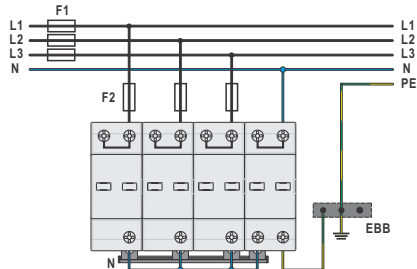
TT Network - Single-phase (T-connection)



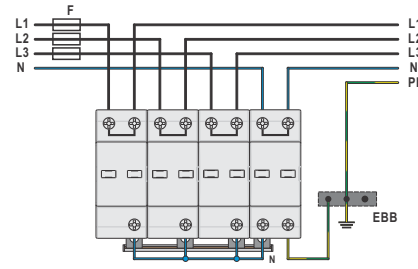
TT Network - Single-phase (V-connection)



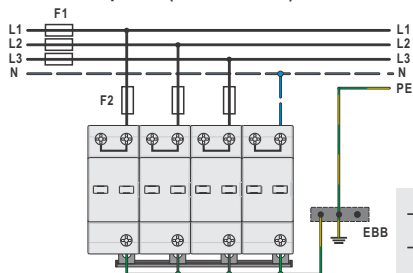
TT Network - Three-phase (T-connection)



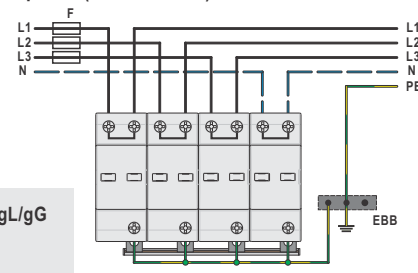
TT Network - Three-phase (V-connection)



IT Network - Three-phase (T-connection)



IT Network - Three-phase (V-connection)



$$U_c \geq 1.1 \cdot U_n \cdot \sqrt{3}$$

$F1 > 160 \text{ A gL/gG} \rightarrow F2 = 160 \text{ A gL/gG}$
 $F1 \leq 160 \text{ A gL/gG} \rightarrow F2$
 $F \leq 100 \text{ A gL/gG}$

PROBLOC B(R) 12.5kA per pole



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network system: TN-S, TN-C, IT
- Protection modes: L/N - PE, L- PEN
- Protective element: High energy MOV
- Surge discharge rating: $I_{imp} = 12.5\text{kA}$
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



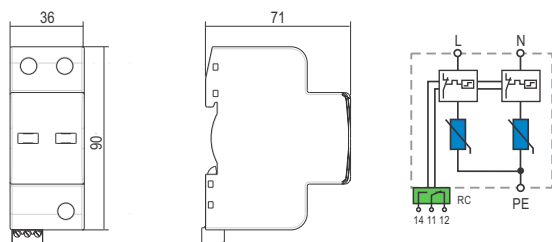
Technical data

Type		150	275	320	385	440
Electrical characteristics						
Max. continuous operating voltage (AC)	U_C	150	275	320	385	440
Nominal discharge current (8/20)	I_n			20kA per pole		
Max. discharge current (8/20)	I_{max}			50kA per pole		
Impulse current (10/350)	I_{imp}			12.5kA per pole		
Specific energy	W/R			39kJ/Ω		
Charge	Q			6.25As		
Protection level	U_p	< 0.7kV	< 1.3kV	< 1.3kV	< 1.7kV	< 2.0kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.5kV	< 1.0kV	< 1.0kV	< 1.1kV	< 1.2kV
Follow current	I_{fi}			NO		
Response time	t_A			< 25ns		
Thermal protection				YES		
Back-up fuse (if mains > 250A)				250A gL/gG		
Short-circuit current rating	I_{scCR}			25kA/50Hz		
TOV withstand 5s	U_T	174V		335V		580V
TOV disconnection 120min	U_T	228V		438V		765V
Number of ports				1		
Mechanical characteristics						
Temperature range	T_a			-40°C+ 70°C		
Permissible humidity	RH			5%...95%		
Terminal screw torque	M_{max}			max. 3.0Nm		
Conductor cross section				35mm ² (solid)/25mm ² (stranded)		
AWG conductor cross section				2 AWG (solid) / 3 AWG (stranded)		
Mounting				35mm DIN rail, EN 60715		
Degree of protection				IP 20		
Housing material				Thermoplastic; extinguishing degree UL 94 V-0		
Indication of disconnector operation				red flag		
Remote contacts (RC)				YES		
Contact ratings				AC: 250V/0.5A; 125V/3A		
Terminal cross section				max. 1.5mm ²		
Remote terminal torque				0.25Nm		
Ordering information						
U_C		150	275	320	385	440
Ordering code PROBLOC B 25/xxx (2+0)		56.0013	56.0023	56.0033	56.0043	56.0053
Ordering code PROBLOC BR 25/xxx (2+0) (with remote contacts)		56.0014	56.0024	56.0034	56.0044	56.0054
Ordering code PROBLOC B 37.5/xxx (3+0)		56.0015	56.0025	56.0035	56.0045	56.0055
Ordering code PROBLOC BR 37.5/xxx (3+0) (with remote contacts)		56.0016	56.0026	56.0036	56.0046	56.0056
Ordering code PROBLOC B 50/xxx (4+0)		56.0017	56.0027	56.0037	56.0047	56.0057
Ordering code PROBLOC BR 50/xxx (4+0) (with remote contacts)		56.0018	56.0028	56.0038	56.0048	56.0058

Dimensions, Internal configuration, Weight and Packaging

PROBLOC B(R) 25/xxx (2+0)

Dimensions

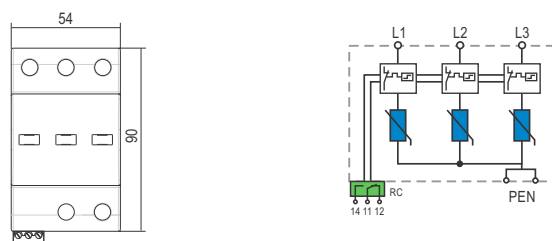


PROBLOC B 25/xxx (2+0)	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	185g	225g	225g	285g	375g
PROBLOC BR 25/xxx (2+0)	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	190g	230g	230g	290g	380g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm				
Min. packaging quantity	7 pcs.				

PROBLOC B(R) 37.5/xxx (3+0)

Dimensions

Internal configuration

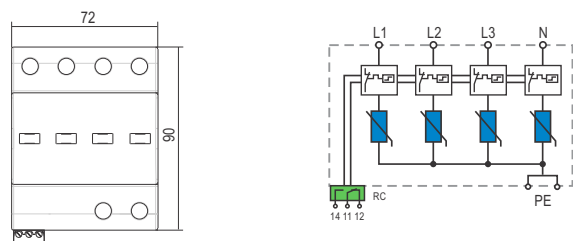


PROBLOC B 37.5/xxx (3+0)	150	275	320	385	440
Dimensions DIN 43880	3TE				
Weight per unit	290g	330g	330g	390g	480g
PROBLOC BR 37.5/xxx (3+0)	150	275	320	385	440
Dimensions DIN 43880	3TE				
Weight per unit	300g	330g	330g	400g	490g
Packaging dimensions (single unit)	109 x 76.5 x 60mm				
Min. packaging quantity	5 pcs.				

PROBLOC B(R) 50/xxx (4+0)

Dimensions

Internal configuration



PROBLOC B 50/xxx (4+0)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	550g	590g	590g	650g	740g
PROBLOC BR 50/xxx (4+0)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	560g	560g	600g	660g	750g
Packaging dimensions (single unit)	109 x 76.5 x 78mm				
Min. packaging quantity	3 pcs.				

PROBLOC B(R) 12.5kA per pole



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network system: TT, TN-S
- Protection modes: L-N, N-PE
- Protective element: High energy MOV and GDT
- Surge discharge rating: $I_{imp} = 12.5\text{kA}/50\text{kA}$ (L-N/N-PE)
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type	150	275	320	385	440
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• Electrical characteristics

Max. continuous operating voltage (AC)	U_c (L-N)	150	275	320	385	440
	U_c (N-PE)			255V		
Nominal discharge current (8/20)	I_n (L-N/N-PE)			12.5kA/50kA		
Max. discharge current (8/20)	I_{max} (L-N/N-PE)			50kA/100kA		
Impulse current (10/350)	I_{imp} (L-N/N-PE)			12.5kA/50kA		
Specific energy	W/R (L-N/N-PE)			39kJ/Ω/625kJΩ		
Charge	Q (L-N/N-PE)			6.25As/25As		
Protection level	U_p (L-N)	< 0.7kV	< 1.3kV	< 1.3kV	< 1.7kV	< 2.0kV
	U_p (N-PE)			< 1.3kV		
Residual voltage at 5kA (8/20)	U_{res} (L-N)	< 0.5kV	< 1.0kV	< 1.0kV	< 1.1kV	< 1.2kV
Follow current	I_{fi} (N-PE)			100ARMS		
Response time	t_A (L-N/N-PE)			< 25ns/100ns		
Thermal protection	(L-N)			YES		
Back-up fuse (if mains > 160A)	(L-N)			160A gL/gG		
Short-circuit current rating	I_{scCR}			25kA/50Hz		
TOV withstand 5s	U_T (L-N)		174V	335V	580V	
TOV disconnection 120min	U_T (L-N)		228V	438V	765V	
TOV disconnection 200ms	U_T (N-PE)			1200V/300A		
Number of ports				1		

• Mechanical characteristics

Temperature range	T_a			- 40°C + 70°C		
Permissible humidity	RH			5%...95%		
Terminal screw torque	M_{max}			max. 3.0Nm		
Conductor cross section				35mm ² (solid)/25mm ² (stranded)		
AWG conductor cross section				2 AWG (solid) / 3 AWG (stranded)		
Mounting				35mm DIN rail, EN 60715		
Degree of protection				IP 20		
Housing material				Thermoplastic; extinguishing degree UL 94 V-0		
Indication of disconnector operation				red flag		
Remote contacts (RC)				YES		
Contact ratings				AC: 250V/0.5A; 125V/3A		
Terminal cross section				max. 1.5mm ²		
Remote terminal torque				0.25Nm		

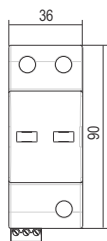
Ordering information

U_c	150	275	320	385	440
Ordering code PROBLOC B 25/xxx (1+1)	56.0019	56.0029	56.0039	56.0049	56.0059
Ordering code PROBLOC BR 25/xxx (1+1) (with remote contacts)	56.0020	56.0030	56.0040	56.0050	56.0060
Ordering code PROBLOC B 50/xxx (3+1)	56.0021	56.0031	56.0041	56.0051	56.0061
Ordering code PROBLOC BR 50/xxx (3+1) (with remote contacts)	56.0022	56.0032	56.0042	56.0052	56.0062

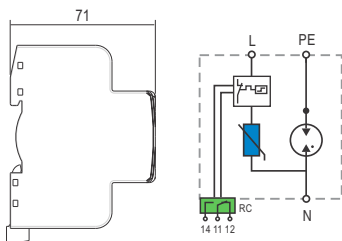
Dimensions, Internal configuration, Weight and Packaging

PROBLOC B(R) 25/xxx (1+1)

Dimensions



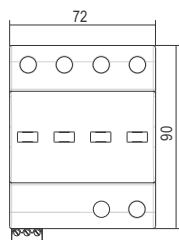
Internal configuration



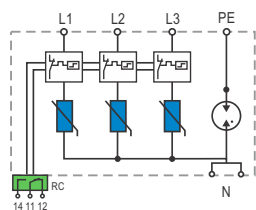
PROBLOC B 25/xxx (1+1)	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	110g	150g	150g	210g	300g
PROBLOC BR 25/xxx (1+1)	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	115g	155g	155g	215g	305g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm				
Min. packaging quantity	7 pcs.				

PROBLOC B(R) 50/xxx (3+1)

Dimensions



Internal configuration

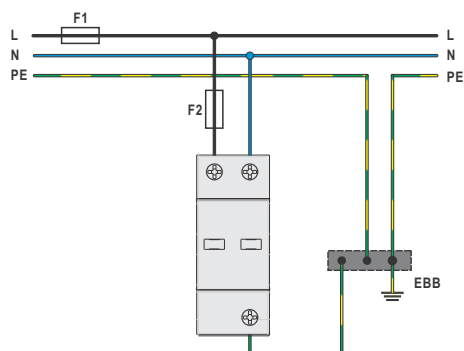


PROBLOC B 50/xxx (3+1)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	555g	595g	595g	655g	745g
PROBLOC BR 50/xxx (3+1)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	560g	600g	600g	660g	750g
Packaging dimensions (single unit)	109 x 76.5 x 78mm				
Min. packaging quantity	3 pcs.				

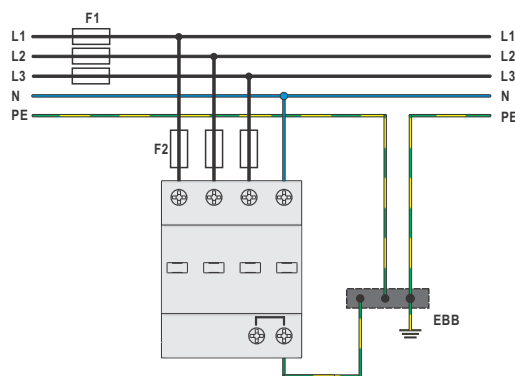
PROBLOC B(R) Series

Network connections

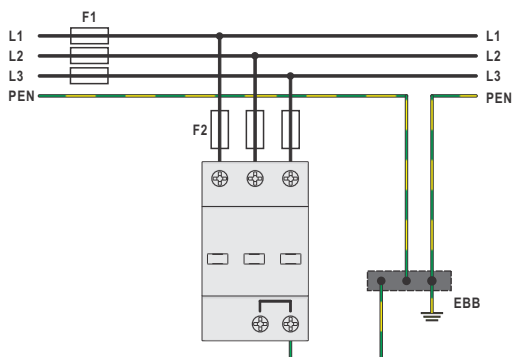
TN-S Network - Single-phase



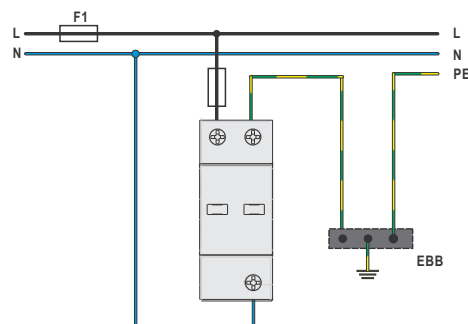
TN-S Network - Three-phase



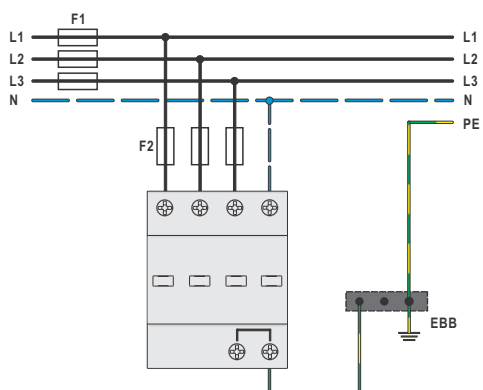
TN-C Network - Three-phase



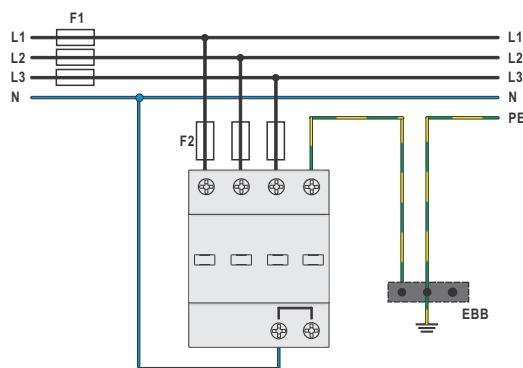
TT Network - Single-phase



IT Network - Three-phase



TT Network - Three-phase



$$U_c \geq 1.1 \cdot U_n \cdot \sqrt{3}$$

$F1 > 160 \text{ A gL/gG} \rightarrow F2 = 160 \text{ A gL/gG}$
 $F1 \leq 160 \text{ A gL/gG} \rightarrow F2$
 $F \leq 100 \text{ A gL/gG}$

Class I, II

Compact Single and Multi-pole SPD

25kA per pole

Category IEC / EN:	Class I, II / Type 1, 2
Location of use:	Main distribution boards
Protection modes:	L/N-PE, L-PEN, L-N, N-PE
Protective elements:	High energy MOV and GDT
Surge discharge ratings:	$I_{imp} = 25kA$
Internal protection and safety:	Separate thermal disconnecter for each MOV
Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



PROTEC B(R) Series:

PROTEC B(R) 25/xxx
PROTUBE B 50, 100

The PROTEC B(R) 25 kA and PROBLOC B(R) 25 kA per pole series of overvoltage surge protective devices have been developed to protect against partial direct and indirect lightning discharges. They are suited for power supply installations and intended to provide protection in zones 0_A - 2 per IEC 62305.

PROTEC B(R) is a compact, single pole housing design and consists of a high performance paired varistors, each equipped with separate disconnection mechanism.

PROBLOC B(R) is a compact, multi-pole housing design and consists of a high performance paired varistors combination, each equipped with separate disconnection mechanism.

PROTUBE B is a compact, single pole housing design and consists of a high energy encapsulated gas discharge tube. It is utilized for galvanic separation between the N and PE conductors in a 1+1 or 3+1 power distribution networks.

PROBLOC B(R) Series:

PROBLOC B(R) 50/xxx (2+0)
PROBLOC B(R) 75/xxx (3+0)
PROBLOC B(R) 100/xxx (4+0)
PROBLOC B(R) 50/xxx (1+1)
PROBLOC B(R) 100/xxx (3+1)

PROTEC B(R) 25 kA and PROBLOC B(R) 25 kA per pole series are in compliance with the IEC/EN 61643-11 standard and are applicable to the following connections: TN-S, TN-C, IT and TT.

PROTEC B(R) 25kA per pole



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network systems: TN-S, TN-C, IT
- Protection modes: L/N - PE, L- PEN
- Protective element: High energy MOV
- Surge discharge rating: $I_{imp} = 25\text{kA}$
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		150	275	PROTEC B(R) 25/xxx	385	440
● Electrical characteristics						
Max. continuous operating voltage (AC)	U _c	150	275	320	385	440
Nominal discharge current (8/20)	I _n	25kA				
Max. discharge current (8/20)	I _{max}	100kA				
Impulse current (10/350)	I _{imp}	25kA				
Specific energy	W/R	156kJ/Ω				
Charge	Q	12.5As				
Protection level	U _p	< 0.7kV	< 1.4kV	< 1.4kV	< 1.7kV	< 2.0kV
Residual voltage at 5kA (8/20)	U _{res}	< 0.5kV	< 1.0kV	< 1.0kV	< 1.1kV	< 1.2kV
Follow current	I _{fi}	NO				
Response time	t _A	< 25ns				
Thermal protection		YES				
Back-up fuse (if mains > 250A)		250A gL/gG				
Short-circuit current rating	I _{scCR}	25kA/50Hz				
TOV withstand 5s	U _T	174V		335V		580V
TOV disconnection 120min	U _T	228V		438V		765V
Number of ports		1				
● Mechanical characteristics						
Temperature range	T _a	- 40°C+ 70°C				
Permissible humidity	RH	5%...95%				
Terminal screw torque	M _{max}	max. 3.0Nm				
Conductor cross section		35mm ² (solid)/25mm ² (stranded)				
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)				
Mounting		35mm DIN rail, EN 60715				
Degree of protection		IP 20				
Housing material		Thermoplastic; extinguishing degree UL 94 V-0				
Indication of disconnector operation		red flag				
Remote contacts (RC)		YES				
Contact ratings		AC: 250V/0.5A; 125V/3A				
Terminal cross section		max. 1.5mm ²				
Remote terminal torque		0.25Nm				

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC B 25/xxx	56.0063	56.0065	56.0067	56.0069	56.0071
Ordering code PROTEC BR 25/xxx (with remote contacts)	56.0064	56.0066	56.0068	56.0070	56.0072

PROTUBE B



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network system: TT
- Protection modes: N - PE
- Protective element: High energy GDT
- Surge discharge rating: I_{imp} up to 100kA
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		50	PROTUBE B yyy	100
● Electrical characteristics				
Max. continuous operating voltage (AC)	U _c	255V		
Nominal discharge current (8/20)	I _n	50kA		100kA
Max. discharge current (8/20)	I _{max}	100kA		
Impulse current (10/350)	I _{imp}	50kA		100kA
Specific energy	W/R	625kJ/Ω		2.5MJ/Ω
Charge	Q	25As		50As
Protection level	U _p	< 1.3kV		< 1.5kV
Residual voltage at 5kA (8/20)	U _{res}	< 0.2kV		< 0.2kV
Follow current	I _{fi}	100A _{RMS}		
Response time	t _A	<100ns		
TOV withstand 200ms	U _T	1200V/300A		
Number of ports		1		
● Mechanical characteristics				
Temperature range	T _a	- 40°C+ 70°C		
Permissible humidity	RH	5%...95%		
Terminal screw torque	M _{max}	max. 3.0Nm		
Conductor cross section		35mm² (solid)/25mm² (stranded)		
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)		
Mounting		35mm DIN rail, EN 60715		
Degree of protection		IP 20		
Housing material		Thermoplastic; extinguishing degree UL 94 V-0		

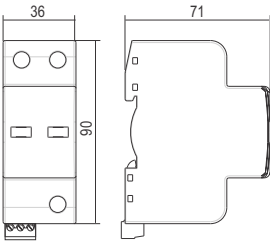
Ordering information

I_{imp}	50	100
Ordering code PROTUBE B	56.0011	56.0012

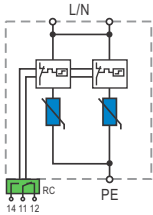
Dimensions, Internal configuration, Weight and Packaging

PROTEC B(R) 25/xxx

Dimensions



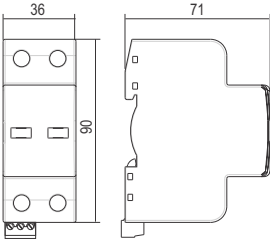
Internal configuration



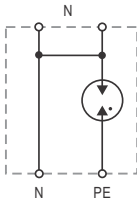
PROTEC B 25/xxx	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	245g	295g	295g	320g	345g
PROTEC BR 25/xxx	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	250g	300g	300g	325g	350g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm				
Min. packaging quantity	7 pcs.				

PROTUBE B yyy

Dimensions



Internal configuration

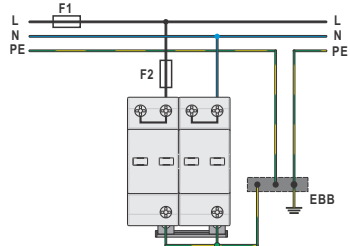


PROTUBE B yyy	50	100
Dimensions DIN 43880	2TE	
Weight per unit	180g	240g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm	
Min. packaging quantity	7 pcs.	

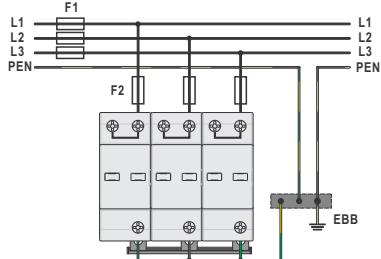
PROTEC B(R) and PROTUBE B

Network connections

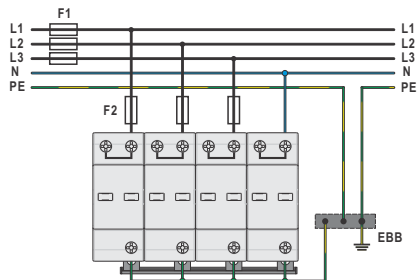
TN-S Network - Single-phase (T-connection)



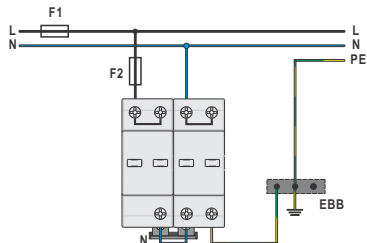
TN-C Network - Three-phase (T-connection)



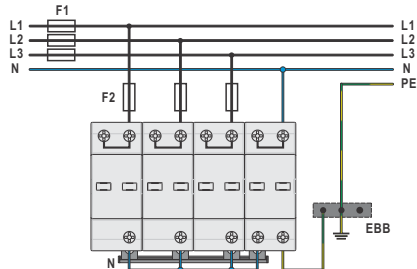
TN-S Network - Three-phase (T-connection)



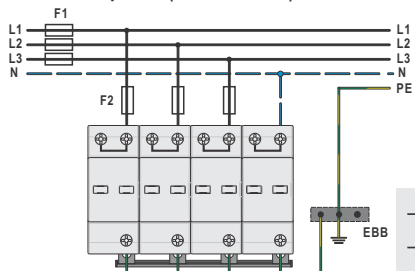
TT Network - Single-phase (T-connection)



TT Network - Three-phase (T-connection)



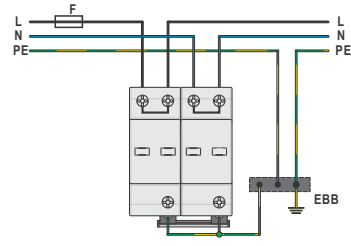
IT Network - Three-phase (T-connection)



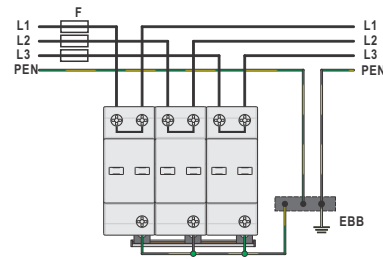
$$U_c \geq 1.1 \cdot U_n \cdot \sqrt{3}$$

$F1 > 250 \text{ A gL/gG} \rightarrow F2 = 250 \text{ A gL/gG}$
 $F1 \leq 250 \text{ A gL/gG} \rightarrow F2$
 $F \leq 100 \text{ A gL/gG}$

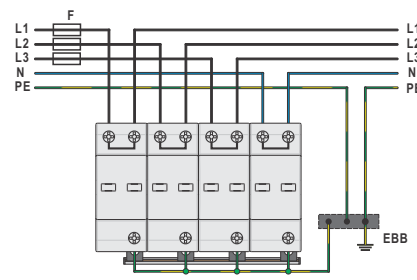
TN-S Network - Single-phase (V-connection)



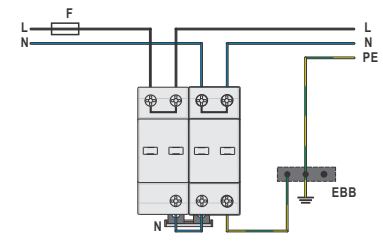
TN-C Network - Three-phase (V-connection)



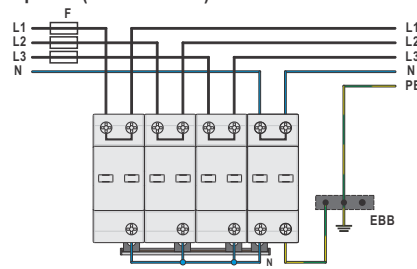
TN-S Network - Three-phase (V-connection)



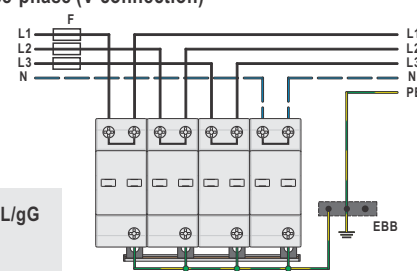
TT Network - Single-phase (V-connection)



TT Network - Three-phase (V-connection)



IT Network - Three-phase (V-connection)



PROBLOC B(R) 25kA per pole



- **Category IEC / EN:** Class I, II / Type 1, 2
- **Location of use:** Main distribution boards
- **Network system:** TN-S
- **Protection modes:** L/N - PE
- **Protective element:** High energy MOV
- **Surge discharge rating:** $I_{imp} = 25\text{kA}$
- **Housing:** Compact design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type	150	275	320	385	440
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Electrical characteristics

Max. continuous operating voltage (AC)	U_c	150	275	320	385	440
Nominal discharge current (8/20)	I_n	25kA per pole				
Max. discharge current (8/20)	I_{max}	100kA per pole				
Impulse current (10/350)	I_{imp}	25kA per pole				
Specific energy	W/R	156kJ/Ω				
Charge	Q	12.5As				
Protection level	U_p	< 0.7kV	< 1.4kV	< 1.4kV	< 1.8kV	< 2.1kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.5kV	< 1.0kV	< 1.0kV	< 1.1kV	< 1.2kV
Follow current	I_{fi}	NO				
Response time	t_A	< 25ns				
Thermal protection		YES				
Back-up fuse (if mains > 250A)		250A gL/gG				
Short-circuit current rating	I_{scCR}	25kA/50Hz				
TOV withstand 5s	U_T	174V		335V		580V
TOV disconnection 120min	U_T	228V		438V		765V
Number of ports		1				

Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C				
Permissible humidity	RH	5%...95%				
Terminal screw torque	M_{max}	max. 3.0Nm				
Conductor cross section		35mm ² (solid)/25mm ² (stranded)				
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)				
Mounting		35mm DIN rail, EN 60715				
Degree of protection		IP 20				
Housing material		Thermoplastic; extinguishing degree UL 94 V-0				
Indication of disconnector operation		red flag				
Remote contacts (RC)		YES				
Contact ratings		AC: 250V/0.5A; 125V/3A				
Terminal cross section		max. 1.5mm ²				
Remote terminal torque		0.25Nm				

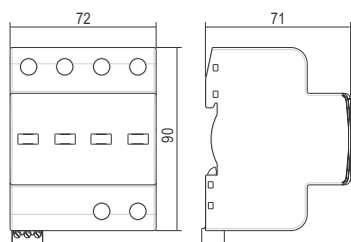
Ordering information

U_c	150	275	320	385	440
Ordering code PROBLOC B 50/xxx (2+0)	56.0073	56.0083	56.0093	56.0103	56.0113
Ordering code PROBLOC BR 50/xxx (2+0) (with remote contacts)	56.0074	56.0084	56.0094	56.0104	56.0114
Ordering code PROBLOC B 75/xxx (3+0)	56.0075	56.0085	56.0095	56.0105	56.0115
Ordering code PROBLOC BR 75/xxx (3+0) (with remote contacts)	56.0076	56.0086	56.0096	56.0106	56.0116
Ordering code PROBLOC B 100/xxx (4+0)	56.0077	56.0087	56.0097	56.0107	56.0117
Ordering code PROBLOC BR 75/xxx (4+0) (with remote contacts)	56.0078	56.0088	56.0098	56.0108	56.0118

Dimensions, Internal configuration, Weight and Packaging

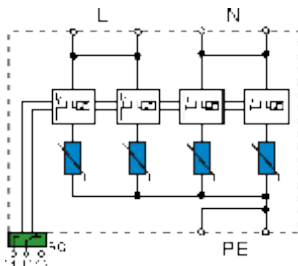
PROBLOC B(R) 50/xxx (2+0)

Dimensions



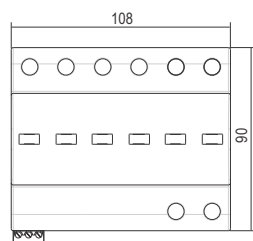
PROBLOC B 50/xxx (2+0)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	460g	560g	560g	620g	680g
PROBLOC BR 50/xxx (2+0)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	470g	570g	570g	630g	690g
Packaging dimensions (single unit)	109 x 76.5 x 80mm				
Min. packaging quantity	3 pcs.				

Internal configuration



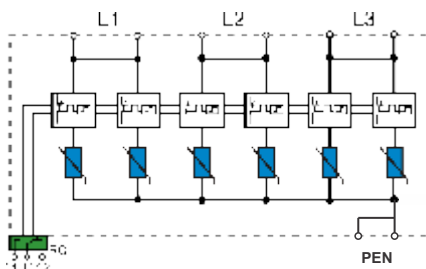
PROBLOC B(R) 75/xxx (3+0)

Dimensions



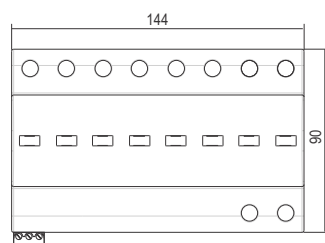
PROBLOC B 75/xxx (3+0)	150	275	320	385	440
Dimensions DIN 43880	6TE				
Weight per unit	690g	840g	840g	900g	1005g
PROBLOC BR 75/xxx (3+0)	150	275	320	385	440
Dimensions DIN 43880	6TE				
Weight per unit	705g	855g	855g	915g	1020g
Packaging dimensions (single unit)	109 x 76.5 x 114mm				
Min. packaging quantity	3 pcs.				

Internal configuration



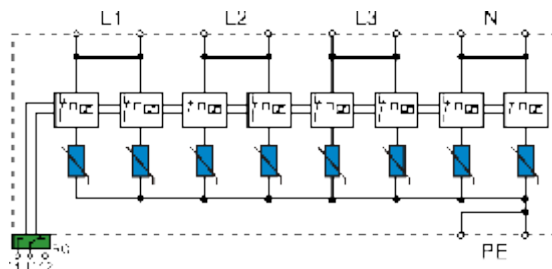
PROBLOC B(R) 100/xxx (4+0)

Dimensions



PROBLOC B 100/xxx (4+0)	150	275	320	385	440
Dimensions DIN 43880	8TE				
Weight per unit	920g	1120g	1120g	1180g	1345g
PROBLOC BR 100/xxx (4+0)	150	275	320	385	440
Dimensions DIN 43880	8TE				
Weight per unit	940g	1140g	1140g	1180g	1360g
Packaging dimensions (single unit)	109 x 76.5 x 148mm				
Min. packaging quantity	2 pcs.				

Internal configuration



PROBLOC B(R) (1+1)



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network system: TT, TN-S
- Protection modes: L-N, N-PE
- Protective element: High energy MOV and GDT
- Surge discharge rating: $I_{imp} = 25\text{kA}/50\text{kA}$ (L-N/N-PE)
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		PROBLOC B(R) 50/xxx (1+1)				
		150	275	320	385	440
● Electrical characteristics						
Max. continuous operating voltage (AC)	U_c (L-N)	150	275	320	385	440
	U_c (N-PE)			255V		
Nominal discharge current (8/20)	I_n (L-N/N-PE)			25kA/50kA		
Max. discharge current (8/20)	I_{max} (L-N/N-PE)			100kA/100kA		
Impulse current (10/350)	I_{imp} (L-N/N-PE)			25kA/50kA		
Specific energy	W/R (L-N/N-PE)			156kJ/Ω/625kJ/Ω		
Charge	Q (L-N/N-PE)			12.5As/25As		
Protection level	U_p (L-N)	< 0.8kV	< 1.4kV	< 1.4kV	< 1.8kV	< 2.1kV
	U_p (N-PE)			< 1.3kV		
Residual voltage at 5kA (8/20)	U_{res}	< 0.6kV	< 1.0kV	< 1.0kV	< 1.1kV	< 1.2kV
Follow current	I_{fi} (N-PE)			100ARMS		
Response time	t_A (L-N/N-PE)			< 25ns/100ns		
Thermal protection	(L-N)			YES		
Back-up fuse (if mains > 250A)	(L-N)			250A gL/gG		
Short-circuit current rating	I_{scCR}			25kA/50Hz		
TOV withstand 5s	U_T (L-N)		174V	335V	580V	
TOV disconnection 120min	U_T (L-N)		228V	438V	765V	
TOV disconnection 200ms	U_T (N-PE)			1200V/300A		
Number of ports				1		
● Mechanical characteristics						
Temperature range	T_a			- 40°C+ 70°C		
Permissible humidity	RH			5%...95%		
Terminal screw torque	M_{max}			max. 3.0Nm		
Conductor cross section				35mm ² (solid)/25mm ² (stranded)		
AWG conductor cross section				2 AWG (solid) / 3 AWG (stranded)		
Mounting				35mm DIN rail, EN 60715		
Degree of protection				IP 20		
Housing material				Thermoplastic; extinguishing degree UL 94 V-0		
Indication of disconnector operation				red flag		
Remote contacts (RC)				YES		
Contact ratings				AC: 250V/0.5A; 125V/3A		
Terminal cross section				max. 1.5mm ²		
Remote terminal torque				0.25Nm		

Ordering information

U_c	150	275	320	385	440
Ordering code PROBLOC B 50/xxx (1+1)	56.0079	56.0089	56.0099	56.0109	56.0119
Ordering code PROBLOC BR 50/xxx (1+1) (with remote contacts)	56.0080	56.0090	56.0100	56.0110	56.0120

PROBLOC B(R) (3+1)



- **Category IEC / EN:** Class I, II / Type 1, 2
- **Location of use:** Main distribution boards
- **Network system:** TT, TN-S
- **Protection modes:** L-N, N-PE
- **Protective element:** High energy MOV and GDT
- **Surge discharge rating:** $I_{imp} = 25kA/50kA (L-N/N-PE)$
- **Housing:** Compact design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		150	275	320	385	440
PROBLOC B(R) 100/xxx (3+1)						
Electrical characteristics						
Max. continuous operating voltage (AC)	$U_C (L-N)$	150	275	320	385	440
	$U_C (N-PE)$			255V		
Nominal discharge current (8/20)	$I_n (L-N/N-PE)$			25kA/100kA		
Max. discharge current (8/20)	$I_{max} (L-N/N-PE)$			100kA/100kA		
Impulse current (10/350)	$I_{imp} (L-N/N-PE)$			25kA/100kA		
Specific energy	$W/R (L-N/N-PE)$			156kJ/Ω/625kJ/Ω		
Charge	$Q (L-N/N-PE)$			12.5As/25As		
Protection level	$U_p (L-N)$	< 0.9kV	< 1.4kV	< 1.4kV	< 1.9kV	< 2.2kV
	$U_p (N-PE)$			< 1.5kV		
Residual voltage at 5kA (8/20)	U_{res}	< 0.5kV	< 1.0kV	< 1.0kV	< 1.1kV	< 1.2kV
Follow current	$I_{fi} (N-PE)$			100ARMS		
Response time	$t_A (L-N/N-PE)$			< 25ns/100ns		
Thermal protection	(L-N)			YES		
Back-up fuse (if mains > 250A)	(L-N)			250A gL/gG		
Short-circuit current rating	I_{scCR}			25kA/50Hz		
TOV withstand 5s	$U_T (L-N)$		174V	335V	580V	
TOV disconnection 120min	$U_T (L-N)$		228V	438V	765V	
TOV disconnection 200ms	$U_T (N-PE)$			1200V/300A		
Number of ports				1		
Mechanical characteristics						
Temperature range	T_a			- 40°C+ 70°C		
Permissible humidity	RH			5%...95%		
Terminal screw torque	M_{max}			max. 3.0Nm		
Conductor cross section				35mm ² (solid)/25mm ² (stranded)		
AWG conductor cross section				2 AWG (solid) / 3 AWG (stranded)		
Mounting				35mm DIN rail, EN 60715		
Degree of protection				IP 20		
Housing material				Thermoplastic; extinguishing degree UL 94 V-0		
Indication of disconnector operation				red flag		
Remote contacts (RC)				YES		
Contact ratings				AC: 250V/0.5A; 125V/3A		
Terminal cross section				max. 1.5mm ²		
Remote terminal torque				0.25Nm		

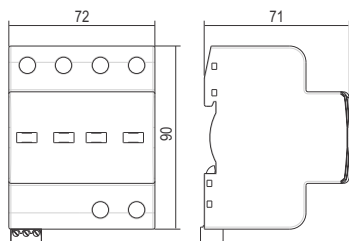
Ordering information

U_C	150	275	320	385	440
Ordering code PROBLOC B 100/xxx (3+1)	56.0081	56.0091	56.0101	56.0111	56.0121
Ordering code PROBLOC BR 100/xxx (3+1) (with remote contacts)	56.0082	56.0092	56.0102	56.0112	56.0122

Dimensions, Internal configuration, Weight and Packaging

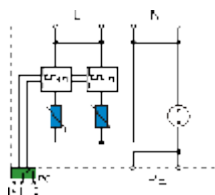
PROBLOC B(R) 50/xxx (1+1)

Dimensions



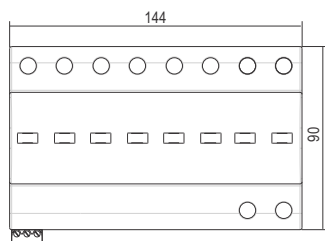
PROBLOC B 50/xxx (1+1)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	445g	485g	485g	545g	895g
PROBLOC BR 50/xxx (1+1)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	450g	490g	490g	550g	910g
Packaging dimensions (single unit)	109 x 76.5 x 80mm				
Min. packaging quantity	3 pcs.				

Internal configuration



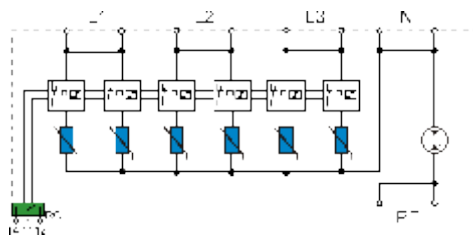
PROBLOC B(R) 100/xxx (3+1)

Dimensions



PROBLOC B 100/xxx (3+1) TCG	150	275	320	385	440
Dimensions DIN 43880	8TE				
Weight per unit	985g	1135g	1135g	1285g	1285g
PROBLOC BR 100/xxx (3+1) TCG	150	275	320	385	440
Dimensions DIN 43880	8TE				
Weight per unit	1000g	1150g	1150g	1300g	1300g
Packaging dimensions (single unit)	109 x 76.5 x 148mm				
Min. packaging quantity	2 pcs.				

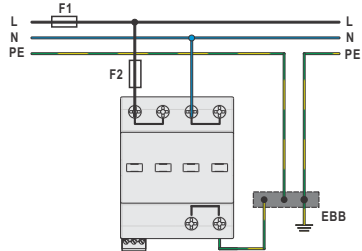
Internal configuration



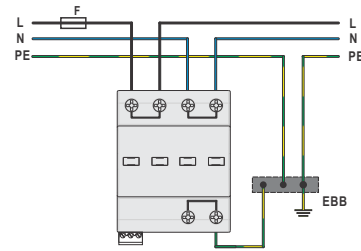
PROBLOC B(R) Series

Network connections

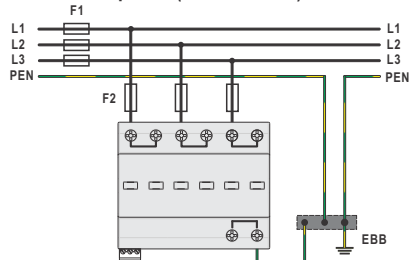
TN-S Network - Single-phase (T-connection)



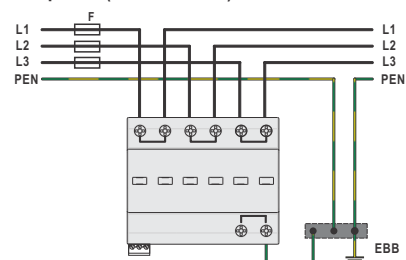
TN-S Network - Single-phase (V-connection)



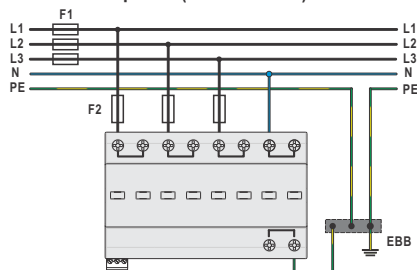
TN-C Network - Three-phase (T-connection)



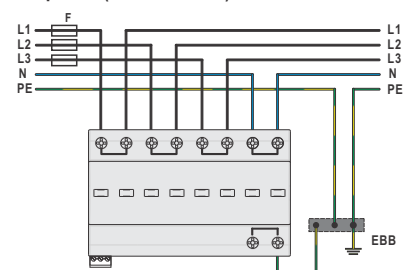
TN-C Network - Three-phase (V-connection)



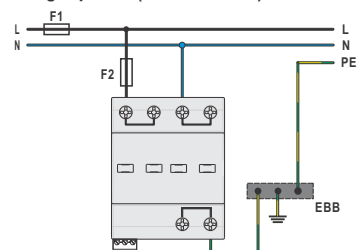
TN-S Network - Three-phase (T-connection)



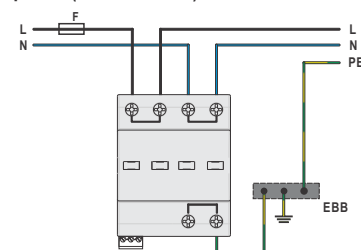
TN-S Network - Three-phase (V-connection)



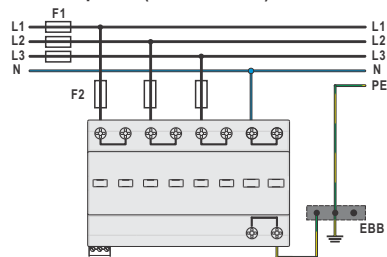
TT Network - Single-phase (T-connection)



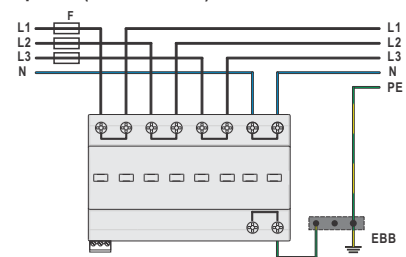
TT Network - Single-phase (V-connection)



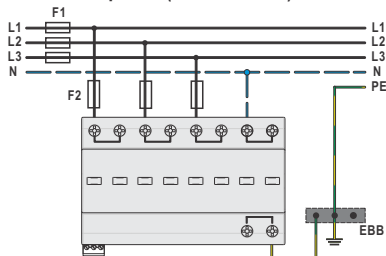
TT Network - Three-phase (T-connection)



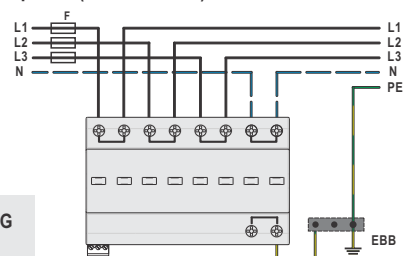
TT Network - Three-phase (V-connection)



IT Network - Three-phase (T-connection)



IT Network - Three-phase (V-connection)



$$U_c \geq 1.1 \cdot U_n \cdot \sqrt{3}$$

$F1 > 250 \text{ A gL/gG} \rightarrow F2 = 250 \text{ A gL/gG}$
 $F1 \leq 250 \text{ A gL/gG} \rightarrow F2$
 $F \leq 100 \text{ A gL/gG}$



Class I, II

Compact Single and Multi-pole SPD

12.5kA per pole

Category IEC / EN:	Class I, II / Type 1, 2
Location of use:	Main distribution boards
Protection modes:	L/N-PE, L-PEN, L-N, N-PE
Protective elements:	High energy MOV and GDT
Surge discharge rating:	$I_{imp} = 12.5kA$
Internal protection and safety:	Separate thermal disconnecter for each MOV
Complies with:	IEC 61643-1:2005, EN 61643-11:2005;



PROTEC B2N(R) Series:

PROTEC B2N(R) 12.5/xxx

PROTUBE B2N 50

The PROTEC B2N(R) 12.5 kA per pole series of overvoltage surge protective devices have been developed to protect against partial direct and indirect lightning discharges. They are suited for power supply installations and intended to provide protection in zones 0_A - 2 per IEC 62305.

PROTEC B2N(R) is a compact, single pole housing design and consists of a high performance varistor with thermal disconnection mechanism.

PROTUBE B2N is a compact, single pole housing design and consists of a high energy encapsulated gas discharge tube. It is utilized for galvanic separation between the N and PE conductors in a 1+1 or 3+1 power distribution networks.

PROTEC B2N(R) 12.5



- **Category IEC / EN:** Class I, II / Type 1, 2
- **Location of use:** Main distribution boards
- **Network systems:** TN-S, TN-C, IT, TT (only L-N)
- **Protection modes:** L/N - PE, L- PEN
- **Protective element:** High energy MOV
- **Surge discharge rating:** $I_{imp} = 12.5\text{kA}$
- **MOV max. withstand capability 1 x 8/20:** 80kA
- **Housing:** Compact design
- **Complies with:** IEC 61643-1:2005, EN 61643-11:2005;



Technical data

Type	PROTEC B2N(R) 12.5/xxx			
	150	275	320	
● Electrical characteristics				
Nominal AC voltage	U_0	120V 50/60Hz	230V 50/60Hz	
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	320/420V
Nominal discharge current (8/20)	I_n		20kA	
Max. discharge current (8/20)	I_{max}		50kA	
Impulse current (10/350)	I_{imp}		12.5kA	
Total discharge current (10/350)	I_{total}		12.5kA	
Specific energy	W/R		39kJ/Ω	
Charge	Q		6.25As	
Protection level	U_p	< 0.8kV	< 1.5kV	< 1.5kV
Residual voltage at I_{imp}	U_{res}	< 0.7kV	< 1.2kV	< 1.2kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.6kV	< 1.0kV	< 1.0kV
Follow current	I_{fi}		NO	
Response time	t_A		< 25ns	
Thermal protection			YES	
Back-up fuse (if mains > 160A)			160A gG/gL	
Short-circuit current rating	I_{scCR}		25kA/50Hz	
TOV withstand 5s	U_T	174V		335V
Number of ports			1	
● Mechanical characteristics				
Temperature range	T_a	- 40°C + 70°C		
Permissible humidity	RH	5%...95%		
Terminal screw torque	M_{max}	3.0Nm		
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)		
Mounting		35mm DIN rail, EN 60715		
Degree of protection		IP 20		
Housing material		thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnecter operation		red flag		
Remote contacts (RC)		YES		
Contact ratings		AC: 250V/0.5A; 125V/3A		
Terminal cross section		max. 1.5mm ²		
Remote terminal torque		0.25Nm		

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC B2N 12.5/xxx	507.501	507.503	507.505	507.535	507.507
Ordering code PROTEC B2NR 12.5/xxx (with remote contacts)	507.509	507.511	507.513	507.537	507.515

PROTUBE B2N 50



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network system: TT
- Protection modes: N - PE
- Protective element: High energy GDT
- Surge discharge rating: $I_{imp} = 50\text{kA}$
- GDT max. withstand capability 1 x 8/20: 150kA
- Housing: Compact design
- Complies with: IEC 61643-1:2005, EN 61643-1:2005;



Technical data

Type

PROTUBE B2N 50

● Electrical characteristics

Nominal AC voltage	U_0	230V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	255V
Nominal discharge current (8/20)	I_n	50kA
Max. discharge current (8/20)	I_{max}	100kA
Impulse current (10/350)	I_{imp}	50kA
Total discharge current (10/350)	I_{total}	50kA
Specific energy	W/R	625kJ/Ω
Charge	Q	25As
Protection level	U_p	< 1.5kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.2kV
Follow current	I_{fi}	100A _{RMS}
Response time	t_A	100ns
Number of ports		1

● Mechanical characteristics

Temperature range	T_a	-40°C +70°C
Permissible humidity	RH	5%...95%
Terminal screw torque	M_{max}	3.0Nm
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)
Mounting		35mm DIN rail, EN 60715
Degree of protection		IP 20
Housing material		thermoplastic; extinguishing degree UL 94 V-0

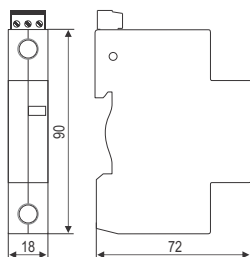
Ordering information

I_{imp}	50
Ordering code PROTUBE B2N 50	507.572

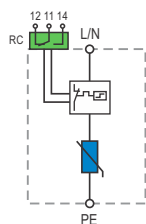
Dimensions, Internal configuration, Weight and Packaging

PROTEC B2N(R) 12.5

Dimensions



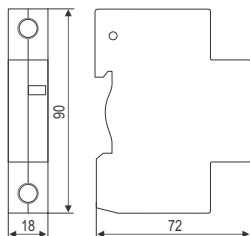
Internal configuration



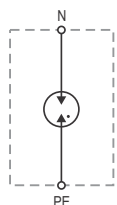
PROTEC B2N 12.5/xxx	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	124g	150g	150g	143g	146g
PROTEC B2NR 12.5/xxx	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	129g	155g	155g	148g	151g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm				
Min. packaging quantity	12 pcs.				

PROTUBE B2N 50

Dimensions



Internal configuration

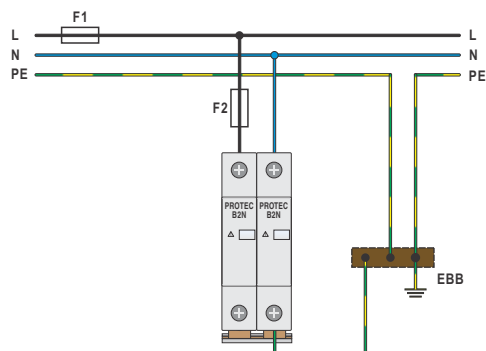


PROTUBE B2N 50	
Dimensions DIN 43880	1TE
Weight per unit	238g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm
Min. packaging quantity	7 pcs.

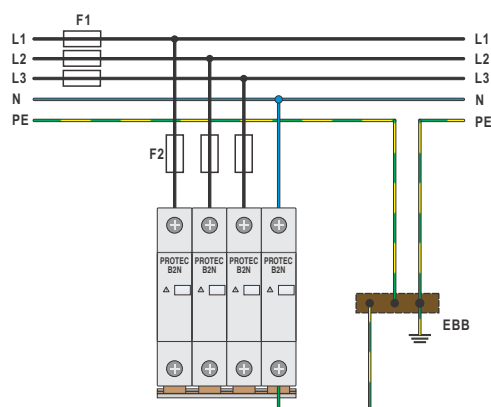
PROTEC B2N(R) and PROTUBE B2N

Network connections

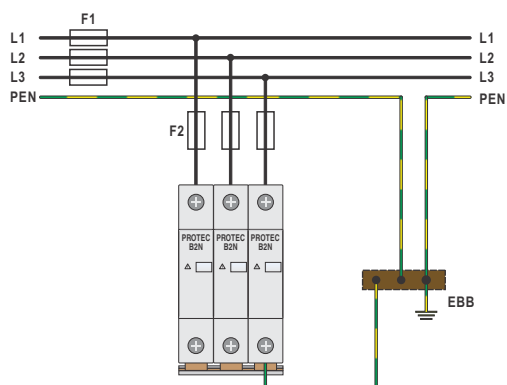
TN-S Network - Single-phase



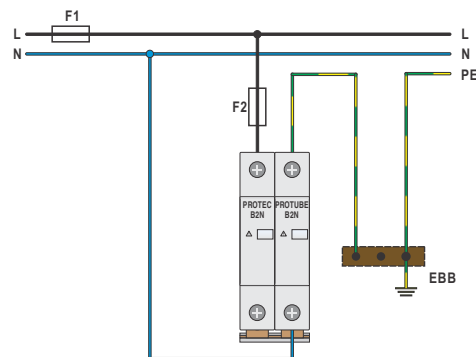
TN-S Network - Three-phase



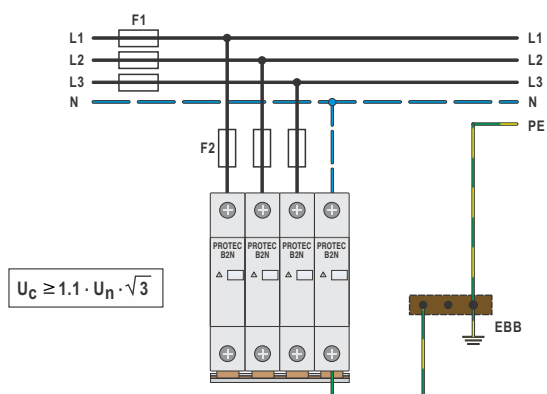
TN-C Network - Three-phase



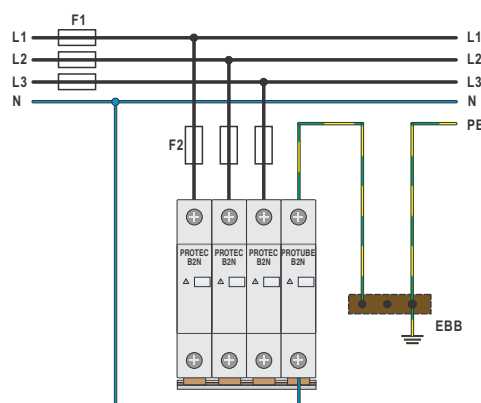
TT Network - Single-phase



IT Network - Three-phase



TT Network - Three-phase



Back-up fuse

- $F1 > 160\text{A gG/gL} \rightarrow$ $F2 = 160\text{A gG/gL}$
- $F1 \leq 160\text{A gG/gL} \rightarrow$



Class I, II

Compact Single and Multi-pole SPD

12.5kA per pole

Category IEC / EN:	Class I, II / Type 1, 2
Location of use:	Main distribution boards
Protection modes:	L/N-PE, L-PEN, L-N, N-PE
Protective elements:	High energy MOV and GDT
Surge discharge ratings:	$I_{imp} = 12.5kA$
Internal protection and safety:	Thermal disconnecter for each MOV
Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



PROTEC B2S(R) Series:
PROTEC B2S(R) 12.5/xxx
PROTEC B2S(R) 25/xxx (2+0)
PROTEC B2S(R) 37.5/xxx (3+0)
PROTEC B2S(R) 50/xxx (4+0)
PROTEC B2S(R) 25/xxx (1+1)
PROTEC B2S(R) 50/xxx (3+1)

The PROTEC B2S(R) 12.5 kA per pole series of overvoltage surge protection devices has been developed to protect against partial and indirect lightning discharges. It is suited for power supply installations and intended to provide protection in zones 0A - 2 per IEC 62305.

The plug-in module / base design facilitates replacement of a failed module *in situ* without the need to remove system wiring.

PROTEC B2S(R) series consists of a high performance paired varistors combination for each pole, equipped with a thermal disconnection mechanism.

PROTEC B2S(R) series complies with the IEC/EN 61643-11 standard and is applicable to the following connections: TN-S, TN-C, IT and TT.

PROTEC B2S(R)



- **Category IEC / EN:** Class I, II / Type 1, 2
- **Location of use:** Main distribution boards
- **Network systems:** TN-S, TN-C, IT, TT (only L-N)
- **Protection modes:** L/N - PE, L- PEN, L-N
- **Protective element:** High energy MOV
- **Surge discharge rating:** $I_{imp} = 12.5\text{kA}$
- **MOV max. withstand capability 1 x 8/20:** 100kA
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		PROTEC B2S(R) 12.5/xxx				
		150	275	320	385	440
● Electrical characteristics						
Nominal AC voltage	U _o	120V 50/60Hz		230V 50/60Hz		400V 50/60Hz
Max. continuous operating voltage (AC/DC)	U _c	150/200V	275/350V	320/420V	385/500V	440/580V
Nominal discharge current (8/20)	I _n	25kA				
Max. discharge current (8/20)	I _{max}	60kA				
Impulse current (10/350)	I _{imp}	12.5kA				
Total discharge current (10/350)	I _{total}	12.5kA				
Specific energy	W/R	39kJ/Ω				
Charge	Q	6.25As				
Protection level	U _p	< 1.0kV	< 1.4kV	< 1.5kV	< 1.7kV	< 2.0kV
Residual voltage at I _{imp}	U _{res}	< 0.7kV	< 1.0kV	< 1.1kV	< 1.4kV	< 1.5kV
Residual voltage at 5kA (8/20)	U _{res}	< 0.6kV	< 0.9kV	< 1.0kV	< 1.3kV	< 1.4kV
Follow current	I _{fi}	NO				
Response time	t _A	< 25ns				
Thermal protection		YES				
Back-up fuse (if mains > 160A)		160A gG/gL				
Short-circuit current rating	I _{scCR}	25kA/50Hz				
TOV withstand 5s	U _T	174V		335V		580V
TOV disconnection 120min	U _T	228V		438V		765V
Number of ports		1				
● Mechanical characteristics						
Temperature range	T _a	- 40°C + 70°C				
Permissible humidity	RH	5%...95%				
Terminal screw torque	M _{max}	3.0Nm				
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)				
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)				
Mounting		35mm DIN rail, EN 60715				
Degree of protection		IP 20				
Housing material		thermoplastic; extinguishing degree UL 94 V-0				
Indication of thermal disconnector operation		red flag				
Remote contacts (RC)		YES				
Contact ratings		AC: 250V/0.5A; 125V/3A				
Terminal cross section		max. 1.5mm ²				
Remote terminal torque		0.25Nm				

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC B2S 12.5/xxx	506.017	506.018	506.019	506.020	506.021
Ordering code PROTEC B2SR 12.5/xxx (with remote contacts)	506.022	506.023	506.024	506.025	506.026
Ordering code Module PROTEC B2S(R) 12.5/xxx (with remote contacts)	506.001	506.002	506.003	506.004	506.005

PROTEC B2S(R) 25 (2+0)



- **Category IEC / EN:** Class I, II / Type 1, 2
- **Location of use:** Main distribution boards
- **Network systems:** TN-S
- **Protection modes:** L/N - PE, L-PEN
- **Protective element:** High energy MOV
- **Surge discharge rating:** $I_{imp} = 12.5\text{kA}$
- **MOV max. withstand capability 1 x 8/20:** 100kA per pole
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		150	275	320	385	440
PROTEC B2S(R) 25/xxx (2+0)						
Electrical characteristics						
Nominal AC voltage	U_o	120V 50/60Hz		230V 50/60Hz		400V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	320/420V	385/500V	440/580V
Nominal discharge current (8/20)	I_n			25kA per pole		
Max. discharge current (8/20)	I_{max}			60kA per pole		
Impulse current (10/350)	I_{imp}			12.5kA per pole		
Total discharge current (10/350)	I_{total}			25kA		
Specific energy	W/R			39kJ/Ω		
Charge	Q			6.25As		
Protection level	U_p	< 1.0kV	< 1.4kV	< 1.5kV	< 1.7kV	< 2.0kV
Residual voltage at I_{imp}	U_{res}	< 0.7kV	< 1.0kV	< 1.1kV	< 1.4kV	< 1.5kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.6kV	< 0.9kV	< 1.0kV	< 1.3kV	< 1.4kV
Follow current	I_{fi}			NO		
Response time	t_A			< 25ns		
Thermal protection				YES		
Back-up fuse (if mains > 160A)				160A gG/gL		
Short-circuit current rating	I_{scCR}			25kA/50Hz		
TOV withstand 5s	U_T	174V		335V		580V
TOV disconnection 120min	U_T	228V		438V		765V
Number of ports				1		
Mechanical characteristics						
Temperature range	T_a			- 40°C + 70°C		
Permissible humidity	RH			5%...95%		
Terminal screw torque	M_{max}			3.0Nm		
Conductor cross section				35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section				2 AWG (solid) / 3 AWG (stranded)		
Mounting				35mm DIN rail, EN 60715		
Degree of protection				IP 20		
Housing material				thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnector operation				red flag		
Remote contacts (RC)				YES		
Contact ratings				AC: 250V/0.5A; 125V/3A		
Terminal cross section				max. 1.5mm ²		
Remote terminal torque				0.25Nm		

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC B2S 25/xxx (2+0)	506.027	506.028	506.029	506.030	506.031
Ordering code PROTEC B2SR 25/xxx (2+0) (with remote contacts)	506.032	506.033	506.034	506.035	506.036
Ordering code Module PROTEC B2S(R) 12.5/xxx	506.001	506.002	506.003	506.004	506.005

PROTEC B2S(R) 37.5 (3+0)


- **Category IEC / EN:** Class I, II / Type 1, 2
- **Location of use:** Main distribution boards
- **Network systems:** TN-C
- **Protection modes:** L/N - PE, L-PEN
- **Protective element:** High energy MOV
- **Surge discharge rating:** $I_{imp} = 12.5\text{kA}$
- **MOV max. withstand capability 1 x 8/20:** 100kA per pole
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;


Technical data

Type		150	275	320	385	440
PROTEC B2S(R) 37.5/xxx (3+0)						
Electrical characteristics						
Nominal AC voltage	U_o	120V 50/60Hz		230V 50/60Hz		400V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	320/420V	385/500V	440/580V
Nominal discharge current (8/20)	I_n			25kA per pole		
Max. discharge current (8/20)	I_{max}			60kA per pole		
Impulse current (10/350)	I_{imp}			12.5kA per pole		
Total discharge current (10/350)	I_{total}			37.5kA		
Specific energy	W/R			39kJ/Ω		
Charge	Q			6.25As		
Protection level	U_p	< 1.0kV	< 1.4kV	< 1.5kV	< 1.7kV	< 2.0kV
Residual voltage at I_{imp}	U_{res}	< 0.7kV	< 1.0kV	< 1.1kV	< 1.4kV	< 1.5kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.6kV	< 0.9kV	< 1.0kV	< 1.3kV	< 1.4kV
Follow current	I_{fi}			NO		
Response time	t_A			< 25ns		
Thermal protection				YES		
Back-up fuse (if mains > 160A)				160A gG/gL		
Short-circuit current rating	I_{scCR}			25kA/50Hz		
TOV withstand 5s	U_T	174V		335V		580V
TOV disconnection 120min	U_T	228V		438V		765V
Number of ports				1		
Mechanical characteristics						
Temperature range	T_a			- 40°C + 70°C		
Permissible humidity	RH			5%...95%		
Terminal screw torque	M_{max}			3.0Nm		
Conductor cross section				35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section				2 AWG (solid) / 3 AWG (stranded)		
Mounting				35mm DIN rail, EN 60715		
Degree of protection				IP 20		
Housing material				thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnector operation				red flag		
Remote contacts (RC)				YES		
Contact ratings				AC: 250V/0.5A; 125V/3A		
Terminal cross section				max. 1.5mm ²		
Remote terminal torque				0.25Nm		

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC B2S 37.5/xxx (3+0)	506.047	506.048	506.049	506.050	506.051
Ordering code PROTEC B2SR 37.5/xxx (3+0) (with remote contacts)	506.052	506.053	506.054	506.055	506.056
Ordering code Module PROTEC B2S(R) 12.5/xxx	506.001	506.002	506.003	506.004	506.005

PROTEC B2S(R) 50 (4+0)



- **Category IEC / EN:** Class I, II / Type 1, 2
- **Location of use:** Main distribution boards
- **Network systems:** TN-S, IT
- **Protection modes:** L/N - PE, L-PEN
- **Protective element:** High energy MOV
- **Surge discharge rating:** $I_{imp} = 12.5\text{kA}$
- **MOV max. withstand capability 1 x 8/20:** 100kA per pole
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		150	275	320	385	440
PROTEC B2S(R) 50/xxx (4+0)						
Electrical characteristics						
Nominal AC voltage	U_o	120V 50/60Hz		230V 50/60Hz		400V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	320/420V	385/500V	440/580V
Nominal discharge current (8/20)	I_n			25kA per pole		
Max. discharge current (8/20)	I_{max}			60kA per pole		
Impulse current (10/350)	I_{imp}			12.5kA per pole		
Total discharge current (10/350)	I_{total}			50kA		
Specific energy	W/R			39kJ/Ω		
Charge	Q			6.25As		
Protection level	U_p	< 1.0kV	< 1.4kV	< 1.5kV	< 1.7kV	< 2.0kV
Residual voltage at I_{imp}	U_{res}	< 0.7kV	< 1.0kV	< 1.1kV	< 1.4kV	< 1.5kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.6kV	< 0.9kV	< 1.0kV	< 1.3kV	< 1.4kV
Follow current	I_{fi}			NO		
Response time	t_A			< 25ns		
Thermal protection				YES		
Back-up fuse (if mains > 160A)				160A gG/gL		
Short-circuit current rating	I_{scCR}			25kA/50Hz		
TOV withstand 5s	U_T	174V		335V		580V
TOV disconnection 120min	U_T	228V		438V		765V
Number of ports				1		
Mechanical characteristics						
Temperature range	T_a			- 40°C + 70°C		
Permissible humidity	RH			5%...95%		
Terminal screw torque	M_{max}			3.0Nm		
Conductor cross section				35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section				2 AWG (solid) / 3 AWG (stranded)		
Mounting				35mm DIN rail, EN 60715		
Degree of protection				IP 20		
Housing material				thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnector operation				red flag		
Remote contacts (RC)				YES		
Contact ratings				AC: 250V/0.5A; 125V/3A		
Terminal cross section				max. 1.5mm ²		
Remote terminal torque				0.25Nm		

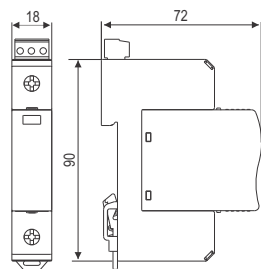
Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC B2S 50/xxx (4+0)	506.057	506.058	506.059	506.060	506.061
Ordering code PROTEC B2SR 50/xxx (4+0) (with remote contacts)	506.062	506.063	506.064	506.065	506.066
Ordering code Module PROTEC B2S(R) 12.5/xxx	506.001	506.002	506.003	506.004	506.005

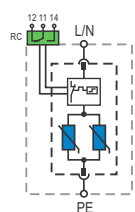
Dimensions, Internal configuration, Weight and Packaging

PROTEC B2S(R) 12.5

Dimensions



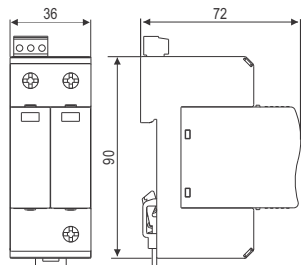
Internal configuration



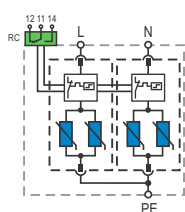
PROTEC B2S 12.5/xxx	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	124g	150g	150g	143g	146g
PROTEC B2SR 12.5/xxx	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	129g	155g	155g	148g	151g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm				
Min. packaging quantity	12 pcs.				

PROTEC B2S(R) 25/xxx (2+0)

Dimensions



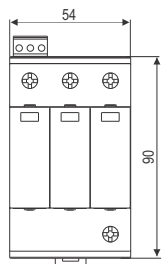
Internal configuration



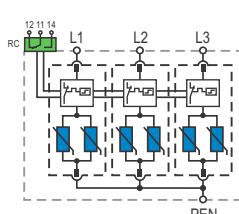
PROTEC B2S 25/xxx (2+0)	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	198g	251g	251g	267g	283g
PROTEC B2SR 25/xxx (2+0)	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	203g	256g	256g	272g	288g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm				
Min. packaging quantity	7 pcs.				

PROTEC B2S(R) 37.5/xxx (3+0)

Dimensions



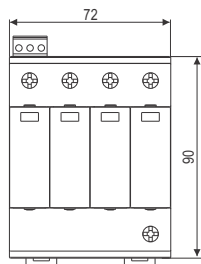
Internal configuration



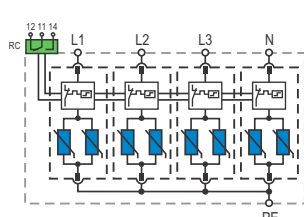
PROTEC B2S 37.5/xxx (3+0)	150	275	320	385	440
Dimensions DIN 43880	3TE				
Weight per unit	300g	382g	382g	394g	432g
PROTEC B2SR 37.5/xxx (3+0)	150	275	320	385	440
Dimensions DIN 43880	3TE				
Weight per unit	305g	387g	387g	399g	437g
Packaging dimensions (single unit)	109 x 76.5 x 61.5mm				
Min. packaging quantity	5 pcs.				

PROTEC B2S(R) 50/xxx (4+0)

Dimensions



Internal configuration



PROTEC B2S 50/xxx (4+0)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	366g	462g	462g	494g	526g
PROTEC B2SR 50/xxx (4+0)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	371g	467g	467g	499g	531g
Packaging dimensions (single unit)	109 x 76.5 x 80mm				
Min. packaging quantity	3 pcs.				

PROTEC B2S(R) 25 (1+1)



- **Category IEC / EN:** Class I, II / Type 1, 2
- **Location of use:** Main distribution boards
- **Network system:** TT, TN-S
- **Protection modes:** L-N, N-PE
- **Protective element:** High energy MOV and GDT
- **Surge discharge rating:** I_{imp} = 12.5kA/50kA (L-N/N-PE)
- **MOV max. withstand capability 1 x 8/20:** 100kA per pole
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		PROTEC B2S(R) 25/xxx (1+1)				
		150	275	320	385	440
● Electrical characteristics						
Nominal AC voltage	U _o (L-N)	120V 50/60Hz		230V 50/60Hz		400V 50/60Hz
	U _o (N-PE)			230V 50/60Hz		
Max. continuous operating voltage (AC/DC)	U _c (L-N)	150/200V	275/350V	320/420V	385/500V	440/580V
	U _c (N-PE)			255V		
Nominal discharge current (8/20)	I _n (L-N/N-PE)			25kA/30kA		
Max. discharge current (8/20)	I _{max} (L-N/N-PE)			60kA/50kA		
Impulse current (10/350)	I _{imp} (L-N/N-PE)			12.5kA/50kA		
Total discharge current (10/350)	I _{total}			25kA		
Specific energy	W/R (L-N/N-PE)			39kJ/Ω/2.5MJ/Ω		
Charge	Q (L-N/N-PE)			6.25As/50As		
Protection level	U _p (L-N)	< 1.0kV	< 1.4kV	< 1.5kV	< 1.7kV	< 2.0kV
	U _p (N-PE)			< 1.7kV		
Residual voltage at I _{imp}	U _{res} (L-N)	< 0.7kV	< 1.0kV	< 1.1kV	< 1.4kV	< 1.5kV
Residual voltage at 5kA (8/20)	U _{res} (L-N)	< 0.6kV	< 0.9kV	< 1.0kV	< 1.3kV	< 1.4kV
Follow current	I _{fi} (L-N/N-PE)			100A _{RMS}		
Response time	t _A (L-N/N-PE)			< 25ns/100ns		
Thermal protection	(L-N)			YES		
Back-up fuse (if mains > 160A)	(L-N)			160A gG/gL		
Short-circuit current rating	I _{scCR}			25kA/50Hz		
TOV withstand 5s	U _T (L-N)	174V		335V		580V
TOV disconnection 120min	U _T (L-N)	228V		438V		765V
TOV withstand 200ms	U _T (N-PE)			1200V/300A		
Number of ports				1		
● Mechanical characteristics						
Temperature range	T _a			- 40°C + 70°C		
Permissible humidity	RH			5%...95%		
Terminal screw torque	M _{max}			3.0Nm		
Conductor cross section				35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section				2 AWG (solid) / 3 AWG (stranded)		
Mounting				35mm DIN rail, EN 60715		
Degree of protection				IP 20		
Housing material				thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnector operation				red flag		
Remote contacts (RC)				YES		
Contact ratings				AC: 250V/0.5A; 125V/3A		
Terminal cross section				max. 1.5mm ²		
Remote terminal torque				0.25Nm		

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC B2S 25/xxx (1+1)	506.037	506.038	506.039	506.040	506.041
Ordering code PROTEC B2SR 25/xxx (1+1) (with remote contacts)	506.042	506.043	506.044	506.045	506.046
Ordering code Module PROTEC B2S(R) 12.5/xxx	506.001	506.002	506.003	506.004	506.005
Ordering code Module PROTUBE B2S 50/255			506.006		

PROTEC B2S(R) 50 (3+1)



- **Category IEC / EN:** Class I, II / Type 1, 2
- **Location of use:** Main distribution boards
- **Network system:** TT, TN-S
- **Protection modes:** L-N, N-PE
- **Protective element:** High energy MOV and GDT
- **Surge discharge rating:** I_{imp} = 12.5kA/50kA (L-N/N-PE)
- **MOV max. withstand capability 1 x 8/20:** 100kA per pole
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



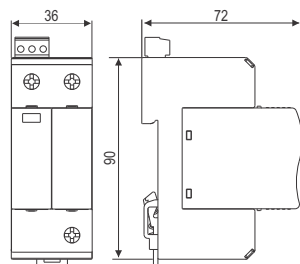
Technical data

Type		PROTEC B2S(R) 50/xxx (3+1)				
		150	275	320	385	440
● Electrical characteristics						
Nominal AC voltage	U _o (L-N)	120V 50/60Hz		230V 50/60Hz		400V 50/60Hz
	U _o (N-PE)			230V 50/60Hz		
Max. continuous operating voltage (AC/DC)	U _c (L-N)	150/200V	275/350V	320/420V	385/500V	440/580V
	U _c (N-PE)			255V		
Nominal discharge current (8/20)	I _n (L-N/N-PE)			25kA/30kA		
Max. discharge current (8/20)	I _{max} (L-N/N-PE)			60kA/50kA		
Impulse current (10/350)	I _{imp} (L-N/N-PE)			12.5kA/50kA		
Total discharge current (10/350)	I _{total}			50kA		
Specific energy	W/R (L-N/N-PE)			39kJ/Ω/2.5MJ/Ω		
Charge	Q (L-N/N-PE)			6.25As/50As		
Protection level	U _p (L-N)	< 1.0kV	< 1.4kV	< 1.5kV	< 1.7kV	< 2.0kV
	U _p (N-PE)			< 1.7kV		
Residual voltage at I _{imp}	U _{res} (L-N)	< 0.7kV	< 1.0kV	< 1.1kV	< 1.4kV	< 1.5kV
Residual voltage at 5kA (8/20)	U _{res} (L-N)	< 0.6kV	< 0.9kV	< 1.0kV	< 1.3kV	< 1.4kV
Follow current	I _{fi} (L-N/N-PE)			100ARMS		
Response time	t _A (L-N/N-PE)			< 25ns/100ns		
Thermal protection	(L-N)			YES		
Back-up fuse (if mains > 160A)	(L-N)			160A gG/gL		
Short-circuit current rating	I _{scCR}			25kA/50Hz		
TOV withstand 5s	U _T (L-N)	174V		335V		580V
TOV disconnection 120min	U _T (L-N)	228V		438V		765V
TOV withstand 200ms	U _T (N-PE)			1200V/300A		
Number of ports				1		
● Mechanical characteristics						
Temperature range	T _a			- 40°C + 70°C		
Permissible humidity	RH			5%...95%		
Terminal screw torque	M _{max}			3.0Nm		
Conductor cross section				35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section				2 AWG (solid) / 3 AWG (stranded)		
Mounting				35mm DIN rail, EN 60715		
Degree of protection				IP 20		
Housing material				thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnector operation				red flag		
Remote contacts (RC)				YES		
Contact ratings				AC: 250V/0.5A; 125V/3A		
Terminal cross section				max. 1.5mm ²		
Remote terminal torque				0.25Nm		
Ordering information						
U _c		150	275	320	385	440
Ordering code PROTEC B2S 50/xxx (3+1)		506.067	506.068	506.069	506.070	506.071
Ordering code PROTEC B2SR 50/xxx (3+1) (with remote contacts)		506.072	506.073	506.074	506.075	506.076
Ordering code Module PROTEC B2S(R) 12.5/xxx		506.001	506.002	506.003	506.004	506.005
Ordering code Module PROTUBE B2S 50/255				506.006		

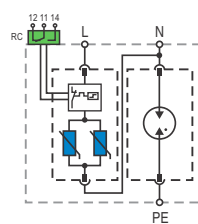
Dimensions, Connection diagrams, Weight and Packaging

PROTEC B2S 25/xxx (1+1)

Dimensions



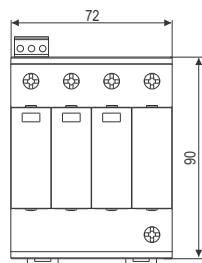
Internal configuration



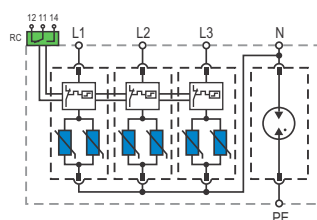
PROTEC B2S 25/xxx (1+1)	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	270g	310g	342g	366g	370g
PROTEC B2SR 25/xxx (1+1)	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	275g	315g	347g	371g	375g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm				
Min. packaging quantity	7 pcs.				

PROTEC B2S(R) 50/xxx (3+1)

Dimensions



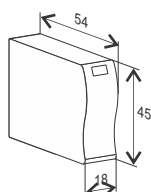
Internal configuration



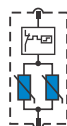
PROTEC B2S 50/xxx (3+1)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	498g	578g	642g	690g	698g
PROTEC B2SR 50/xxx (3+1)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	503g	583g	647g	695g	703g
Packaging dimensions (single unit)	109 x 76.5 x 80mm				
Min. packaging quantity	3 pcs.				

Module PROTEC B2S(R) 12.5/xxx

Dimensions



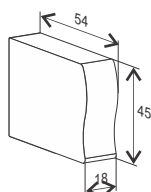
Internal configuration



Module PROTEC B2S(R) 12.5/xxx	150	275	320	385	440
Weight per unit	78g	88g	102g	116g	128g
Packaging dimensions	221 x 64.5 x 48.5mm				
Min. packaging quantity	12 pcs.				

Module PROTUBE B2S 50

Dimensions



Internal configuration

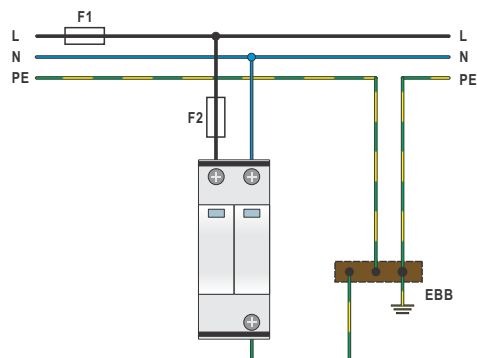


Module PROTUBE B2S 50	255
Weight per unit	70g
Packaging dimensions	221 x 64.5 x 48.5mm
Min. packaging quantity	12 pcs.

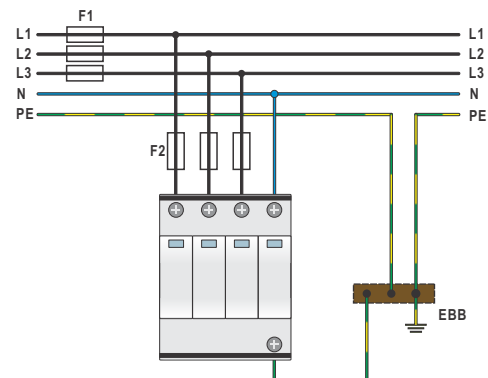
PROTEC B2S(R) Series

Network connections

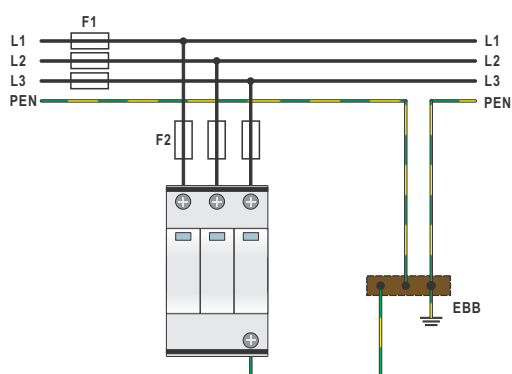
TN-S Network (Single-phase)



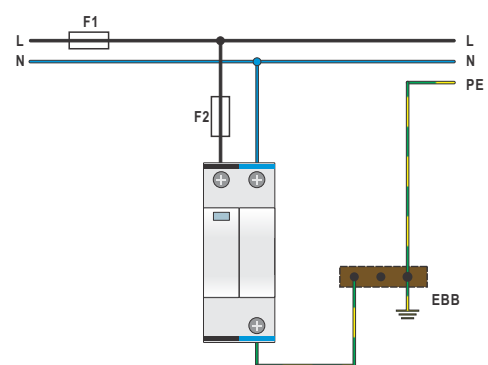
TN-S Network (Three-phase)



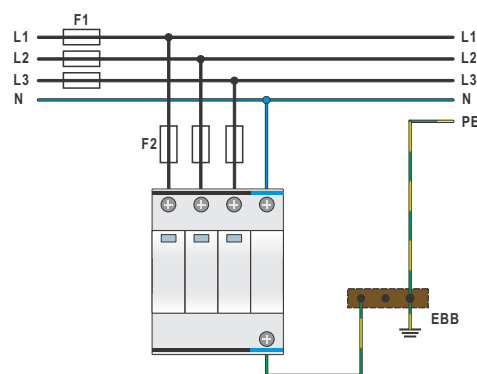
TN-C Network (Three-phase)



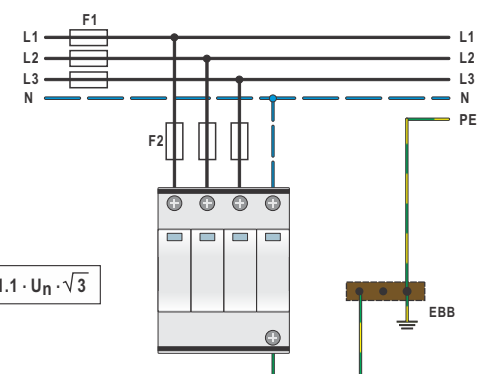
TT Network (Single-phase)



TT Network (Three-phase)



IT Network (Three-phase)



$$U_c \geq 1.1 \cdot U_n \cdot \sqrt{3}$$

Back-up fuse

- $F1 > 160\text{A gG/gL} \rightarrow$ $F2 = 160\text{A gG/gL}$
- $F1 \leq 160\text{A gG/gL} \rightarrow$ $F2$

Class II Modular Single and Multi-pole SPD 40kA per pole

Category IEC / EN:	Class II / Type 2
Location of use:	Sub-distribution boards
Protection modes:	L/N-PE, L-PEN, L-N, N-PE
Protective elements:	MOV and GDT
Surge discharge ratings:	I_{\max} up to 40kA
Safety:	TOV withstand
Internal protection:	Separate thermal disconnecter for each MOV
Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



The SAFETEC series of SPDs:

- Are highly reliable - controlled disconnection, arc-quenching
- Patented current limiting circuit
- Have longer life - protection against aging
- Have up to 5 years warranty

SAFETEC C(R) Series:

SAFETEC C(R) 40

SAFETUBE C 40

SAFETEC C(R) 80/xxx (2+0)

SAFETEC C(R) 120/xxx (3+0)

SAFETEC C(R) 160/xxx (4+0)

SAFETEC C(R) 80/xxx (1+1)

SAFETEC C(R)/xxx 160 (3+1)

The modular SAFETEC C(R) series is suitable for all type of connections.

Patented TC* technology prevents catastrophic failures in case of TOVs (temporary overvoltages).

All in one technology is a protection from overvoltages surges and transients. It has been developed to protect against partial direct and indirect lightning discharges and are intended to provide protection in zones OB - 2 per IEC 62305.

*TC - Thermal control function

SAFETEC C(R)



- **Category IEC / EN:** Class II / Type 2
- **Location of use:** Sub-distribution boards
- **Network systems:** TN-S, TN-C, IT, TT (only L-N)
- **Protection modes:** L/N - PE, L- PEN, L-N
- **Protective element:** MOV and GDT
- **Surge discharge rating:** I_{\max} up to 40kA
- **Safety:** TOV withstand
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		75	150	SAFETEC C(R) yy/xxx				
				275	385	440	750	880
● Electrical characteristics								
Nominal AC voltage	U _O	48V 50/60Hz	120V 50/60Hz	230V 50/60Hz			690V 50/60Hz	
Max. continuous operating voltage (AC/DC)	U _C	75/100V	150/200V	275/350V	385/500V	440/580V	750/1000V	880/1100V
Nominal discharge current (8/20)	I _n	10kA			20kA		12.5kA	
Max. discharge current (8/20)	I _{max}	20kA			40kA		25kA	
Protection level	U _p	< 0.8kV	< 1.1kV	< 1.5kV	< 2.2kV	< 2.3kV	< 2.8kV	< 3.0kV
Residual voltage at 5kA (8/20)	U _{res}	< 0.4kV	< 0.7kV	< 1.1kV	< 1.5kV	< 1.7kV	< 2.4kV	< 2.6kV
Follow current	I _{fi}	NO						
Response time	t _A	< 25ns						
Thermal protection		YES						
Back-up fuse (if mains > 125A)		125A gG/gL						
Short-circuit current rating	I _{sccr}	25kA/50Hz						
TOV withstand 5s	U _T	70V	174V	335V			1000V	
TOV withstand 120min	U _T	92V	228V	438V			1320V	
Number of ports		1						
● Mechanical characteristics								
Temperature range	T _a	- 40°C + 70°C						
Permissible humidity	RH	5%...95%						
Terminal screw torque	M _{max}	3.0Nm						
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)						
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)						
Mounting		35mm DIN rail, EN 60715						
Degree of protection		IP 20						
Housing material		thermoplastic; extinguishing degree UL 94 V-0						
Indication of thermal disconnect operation		red flag						
Remote contacts (RC)		YES						
Contact ratings		AC: 250V/0.5A; 125V/3A						
Terminal cross section		max. 1.5mm ²						
Remote terminal torque		0.25Nm						

Ordering information

U_c	75	150	275	385	440	750	880
Ordering code SAFETEC C 20/75	516.612						
Ordering code SAFETEC CR 20/75 (with remote contacts)	516.613						
Ordering code SAFETEC C 40/xxx		516.001	516.003	516.614	516.005		
Ordering code SAFETEC CR 40/xxx (with remote contacts)		516.002	516.004	516.615	516.006		
Ordering code SAFETEC C 25/xxx						516.616	516.755
Ordering code SAFETEC CR 25/xxx (with remote contacts)						516.617	516.756
Ordering code Module SAFETEC C(R) 20/75	516.648						
Ordering code Module SAFETEC C(R) 40/xxx		516.037	516.038	516.649	516.039		
Ordering code Module SAFETEC C(R) 25/xxx						516.650	516.754

SAFETUBE C 40



- Category IEC / EN: Class II / Type 2
- Location of use: Sub-distribution boards
- Network system: TT
- Protection modes: N - PE
- Protective element: GDT
- Surge discharge rating: $I_{\max} = 40\text{kA}$
- Housing: Modular design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;

Technical data



Type

SAFETUBE C 40/255

● Electrical characteristics

Nominal AC voltage	U_o	230V 50/60Hz
Max. continuous operating voltage (AC)	U_c	255V
Nominal discharge current (8/20)	I_n	20kA
Max. discharge current (8/20)	I_{\max}	40kA
Protection level	U_p	< 1.5kV
Follow current	I_{fi}	100A _{RMS}
Response time	t_A	25ns
TOV withstand 200ms	U_T	1200V/300A
Number of ports		1

● Mechanical characteristics

Temperature range	T_a	-40°C +70°C
Permissible humidity	RH	5%...95%
Terminal screw torque	M_{\max}	3.0Nm
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)
Mounting		35mm DIN rail, EN 60715
Degree of protection		IP 20
Housing material		thermoplastic; extinguishing degree UL 94 V-0

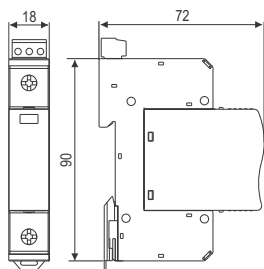
Ordering information

I_{\max}	40
Ordering code SAFETUBE C 40/255	516.417
Ordering code Module SAFETUBE C 40/255	516.115

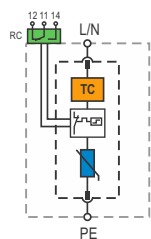
Dimensions, Internal configuration, Weight and Packaging

SAFETEC C(R)

Dimensions



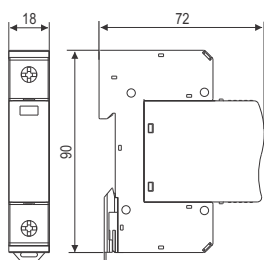
Internal configuration



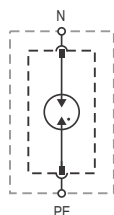
SAFETEC C 20/75	75			
Weight per unit	125g			
SAFETEC C 40/xxx	150	275	385	440
Weight per unit	140g	140g	148g	150g
SAFETEC C 25/xxx	750 880			
Weight per unit	156g 156g			
SAFETEC CR 20/75	75			
Weight per unit	130g			
SAFETEC CR 40/xxx	150	275	385	440
Weight per unit	148g	148g	156g	158g
SAFETEC CR 25/xxx	750 880			
Weight per unit	164g 164g			
Dimensions DIN 43880	1TE			
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm			
Min. packaging quantity	12 pcs.			

SAFETUBE C 40/255

Dimensions



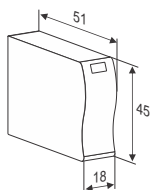
Internal configuration



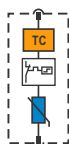
SAFETUBE C 40/255	255
Dimensions DIN 43880	1TE
Weight per unit	118g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm
Min. packaging quantity	12 pcs.

Module SAFETEC C(R)

Dimensions



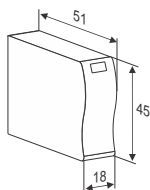
Internal configuration



Module SAFETEC C(R) 20/75	75			
Weight per unit	58g			
Module SAFETEC C(R) 40/xxx	150	275	385	440
Weight per unit	62g	66g	72g	74g
Module SAFETEC C(R) 25/xxx	750 880			
Weight per unit	78g 78g			
Packaging dimensions	221 x 64.5 x 48.5mm			
Min. packaging quantity	12 pcs.			

Module SAFETUBE C 40/255

Dimensions



Internal configuration



Module SAFETUBE C 40/255	255
Weight per unit	34g
Packaging dimensions	221 x 64.5 x 48.5mm
Min. packaging quantity	12 pcs.

SAFETEC C(R) (2+0)



- **Category IEC / EN:** Class II / Type 2
- **Location of use:** Sub-distribution boards
- **Network systems:** TN-S
- **Protection modes:** L/N - PE, L- PEN
- **Protective element:** MOV and GDT
- **Surge discharge rating:** I_{max} up to 40kA
- **Safety:** TOV withstand
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		75	150	SAFETEC C(R) yyy/xxx (2+0)					
				275	385	440	750	880	
● Electrical characteristics									
Nominal AC voltage	U _o	48V 50/60Hz 120V 50/60Hz		230V 50/60Hz			690V 50/60Hz		
Max. continuous operating voltage (AC/DC)	U _c	75/100V	150/200V	275/350V	385/500V	440/580V	750/1000V	880/1100V	
Nominal discharge current (8/20)	I _n	10kA per pole		20kA per pole			12.5kA per pole		
Max. discharge current (8/20)	I _{max}	20kA per pole		40kA per pole			25kA per pole		
Protection level	U _p	< 0.8kV	< 1.1kV	< 1.5kV	< 2.2kV	< 2.3kV	< 2.8kV	< 3.0kV	
Residual voltage at 5kA (8/20)	U _{res}	< 0.6kV	< 0.7kV	< 1.1kV	< 1.3kV	< 1.6kV	< 2.2kV	< 2.6kV	
Follow current	I _{fi}	NO							
Response time	t _A	< 25ns							
Thermal protection		YES							
Back-up fuse (if mains > 125A)		125A gG/gL							
Short-circuit current rating	I _{sccr}	25kA/50Hz							
TOV withstand 5s	U _T	70V	174V	335V			1000V		
TOV withstand 120min	U _T	92V	228V	438V			1320V		
Number of ports		1							
● Mechanical characteristics									
Temperature range	T _a	- 40°C + 70°C							
Permissible humidity	RH	5%...95%							
Terminal screw torque	M _{max}	3.0Nm							
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)							
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)							
Mounting		35mm DIN rail, EN 60715							
Degree of protection		IP 20							
Housing material		thermoplastic; extinguishing degree UL 94 V-0							
Indication of thermal disconnector operation		red flag							
Remote contacts (RC)		YES							
Contact ratings		AC: 250V/0.5A; 125V/3A							
Terminal cross section		max. 1.5mm ²							
Remote terminal torque		0.25Nm							

Ordering information

U_c	75	150	275	385	440	750	880
Ordering code SAFETEC C 40/75 (2+0)	516.618						
Ordering code SAFETEC CR 40/75 (2+0) (with remote contacts)	516.619						
Ordering code SAFETEC C 80/xxx (2+0)		516.007	516.009	516.620	516.011		
Ordering code SAFETEC CR 80/xxx (2+0) (with remote contacts)		516.008	516.010	516.621	516.012		
Ordering code SAFETEC C 50/xxx (2+0)						516.622	516.757
Ordering code SAFETEC CR 50/xxx (2+0) (with remote contacts)						516.623	516.758
Ordering code Module SAFETEC C(R) 20/75	516.648						
Ordering code Module SAFETEC C(R) 40/xxx		516.037	516.038	516.649	516.039		
Ordering code Module SAFETEC C(R) 25/xxx						516.650	516.754

SAFETEC C(R) (3+0)



● Category IEC / EN:	Class II / Type 2
● Location of use:	Sub-distribution boards
● Network systems:	TN-C
● Protection modes:	L/N - PE, L- PEN
● Protective element:	MOV and GDT
● Surge discharge rating:	I_{\max} up to 40kA
● Safety:	TOV withstand
● Housing:	Modular design
● Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		75	150	SAFETEC C(R) yyy/xxx (3+0)					
				275	385	440	750	880	
● Electrical characteristics									
Nominal AC voltage	U _O	48V 50/60Hz 120V 50/60Hz		230V 50/60Hz			690V 50/60Hz		
Max. continuous operating voltage (AC/DC)	U _c	75/100V	150/200V	275/350V	385/500V	440/580V	750/1000V	880/1100V	
Nominal discharge current (8/20)	I _n	10kA per pole		20kA per pole			12.5kA per pole		
Max. discharge current (8/20)	I _{max}	20kA per pole		40kA per pole			25kA per pole		
Protection level	U _p	< 0.8kV	< 1.1kV	< 1.5kV	< 2.2kV	< 2.3kV	< 2.8kV	< 3.0kV	
Residual voltage at 5kA (8/20)	U _{res}	< 0.4kV	< 0.7kV	< 1.1kV	< 1.5kV	< 1.7kV	< 2.4kV	< 2.6kV	
Follow current	I _{fi}	NO							
Response time	t _A	< 25ns							
Thermal protection		YES							
Back-up fuse (if mains > 125A)		125A gG/gL							
Short-circuit current rating	I _{scCR}	25kA/50Hz							
TOV withstand 5s	U _T	70V	174V	335V			1000V		
TOV withstand 120min	U _T	92V	228V	438V			1320V		
Number of ports		1							
● Mechanical characteristics									
Temperature range	T _a	- 40°C + 70°C							
Permissible humidity	RH	5%...95%							
Terminal screw torque	M _{max}	3.0Nm							
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)							
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)							
Mounting		35mm DIN rail, EN 60715							
Degree of protection		IP 20							
Housing material		thermoplastic; extinguishing degree UL 94 V-0							
Indication of thermal disconnector operation		red flag							
Remote contacts (RC)		YES							
Contact ratings		AC: 250V/0.5A; 125V/3A							
Terminal cross section		max. 1.5mm ²							
Remote terminal torque		0.25Nm							

Ordering information

U_c	75	150	275	385	440	750	880
Ordering code SAFETEC C 60/75 (3+0)	516.630						
Ordering code SAFETEC CR 60/75 (3+0) (with remote contacts)	516.631						
Ordering code SAFETEC C 120/xxx (3+0)		516.019	516.021	516.632	516.023		
Ordering code SAFETEC CR 120/xxx (3+0) (with remote contacts)		516.020	516.022	516.633	516.024		
Ordering code SAFETEC C 75/xxx (3+0)						516.634	516.759
Ordering code SAFETEC CR 75/xxx (3+0) (with remote contacts)						516.635	516.760
Ordering code Module SAFETEC C(R) 20/75	516.648						
Ordering code Module SAFETEC C(R) 40/xxx		516.037	516.038	516.649	516.039		
Ordering code Module SAFETEC C(R) 25/xxx						516.650	516.754

SAFETEC C(R) (4+0)



- **Category IEC / EN:** Class II / Type 2
- **Location of use:** Sub-distribution boards
- **Network systems:** TN-S, IT
- **Protection modes:** L/N - PE, L- PEN
- **Protective element:** MOV and GDT
- **Surge discharge rating:** I_{\max} up to 40kA
- **Safety:** TOV withstand
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		75	150	SAFETEC C(R) yyy/xxx (4+0)			750	880
				275	385	440		
● Electrical characteristics								
Nominal AC voltage	U _O	48V 50/60Hz 120V 50/60Hz		230V 50/60Hz		690V 50/60Hz		
Max. continuous operating voltage (AC/DC)	U _C	75/100V	150/200V	275/350V	385/500V	440/580V	750/1000V	880/1100V
Nominal discharge current (8/20)	I _n	10kA per pole		20kA per pole		12.5kA per pole		
Max. discharge current (8/20)	I _{max}	20kA per pole		40kA per pole		25kA per pole		
Protection level	U _p	< 0.8kV	< 1.1kV	< 1.5kV	< 2.2kV	< 2.3kV	< 2.8kV	< 3.0kV
Residual voltage at 5kA (8/20)	U _{res}	< 0.4kV	< 0.7kV	< 1.1kV	< 1.5kV	< 1.7kV	< 2.4kV	< 2.6kV
Follow current	I _{fi}	NO						
Response time	t _A	< 25ns						
Thermal protection		YES						
Back-up fuse (if mains > 125A)		125A gG/gL						
Short-circuit current rating	I _{scCR}	25kA/50Hz						
TOV withstand 5s	U _T	70V	174V	335V		1000V		
TOV withstand 120min	U _T	92V	228V	438V		1320V		
Number of ports		1						
● Mechanical characteristics								
Temperature range	T _a	- 40°C + 70°C						
Permissible humidity	RH	5%...95%						
Terminal screw torque	M _{max}	3.0Nm						
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)						
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)						
Mounting		35mm DIN rail, EN 60715						
Degree of protection		IP 20						
Housing material		thermoplastic; extinguishing degree UL 94 V-0						
Indication of disconnector operation		red flag						
Remote contacts (RC)		YES						
Contact ratings		AC: 250V/0.5A; 125V/3A						
Terminal cross section		max. 1.5mm ²						
Remote terminal torque		0.25Nm						

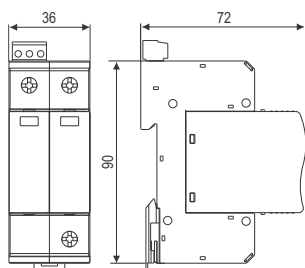
Ordering information

U_c	75	150	275	385	440	750	880
Ordering code SAFETEC C 80/75 (4+0)	516.636						
Ordering code SAFETEC CR 80/75 (4+0) (with remote contacts)	516.637						
Ordering code SAFETEC C 160/xxx (4+0)		516.025	516.027	516.638	516.029		
Ordering code SAFETEC CR 160/xxx (4+0) (with remote contacts)		516.026	516.028	516.639	516.030		
Ordering code SAFETEC C 100/xxx (4+0)						516.640	516.761
Ordering code SAFETEC CR 100/xxx (4+0) (with remote contacts)						516.641	516.762
Ordering code Module SAFETEC C(R) 20/75	516.648						
Ordering code Module SAFETEC C(R) 40/xxx		516.037	516.038	516.649	516.039		
Ordering code Module SAFETEC C(R) 25/xxx						516.650	516.754

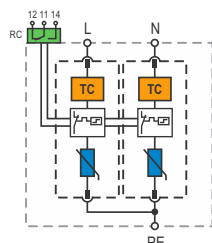
Dimensions, Internal configuration, Weight and Packaging

SAFETEC C(R) (2+0)

Dimensions



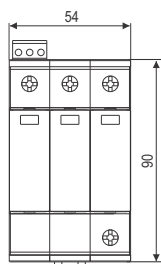
Internal configuration



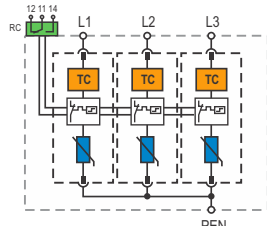
SAFETEC C 40/75 (2+0)	75			
Weight per unit	250g			
SAFETEC C 80/xxx (2+0)	150	275	385	440
Weight per unit	280g	281g	284g	286g
SAFETEC C 50/xxx (2+0)	750 880			
Weight per unit	288g 288g			
SAFETEC CR 40/75 (2+0)	75			
Weight per unit	260g			
SAFETEC CR 80/xxx (2+0)	150	275	385	440
Weight per unit	288g	289g	292g	294g
SAFETEC CR 50/xxx (2+0)	750 880			
Weight per unit	296g 296g			
Dimensions DIN 43880	2TE			
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm			
Min. packaging quantity	7 pcs.			

SAFETEC C(R) (3+0)

Dimensions



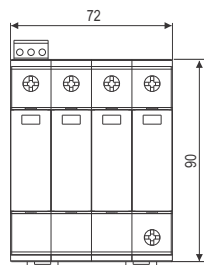
Internal configuration



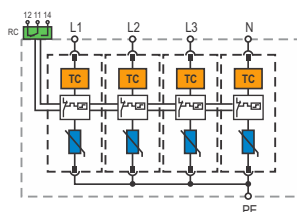
SAFETEC C 60/75 (3+0)	75			
Weight per unit	375g			
SAFETEC C 120/xxx (3+0)	150	275	385	440
Weight per unit	420g	422g	448g	450g
SAFETEC C 75/xxx (3+0)	750 880			
Weight per unit	468g 468g			
SAFETEC CR 60/75 (3+0)	75			
Weight per unit	390g			
SAFETEC CR 120/xxx (3+0)	150	275	385	440
Weight per unit	428g	430g	456g	458g
SAFETEC CR 75/xxx (3+0)	750 880			
Weight per unit	476g 476g			
Dimensions DIN 43880	3TE			
Packaging dimensions (single unit)	109 x 76.5 x 61.5mm			
Min. packaging quantity	5 pcs.			

SAFETEC C(R) (4+0)

Dimensions



Internal configuration



SAFETEC C 80/75 (4+0)	75			
Weight per unit	500g			
SAFETEC C 160/xxx (4+0)	150	275	385	440
Weight per unit	560g	562g	595g	598g
SAFETEC C 100/xxx (4+0)	750 880			
Weight per unit	602g 602g			
SAFETEC CR 80/75 (4+0)	75			
Weight per unit	520g			
SAFETEC CR 160/xxx (4+0)	150	275	385	440
Weight per unit	568g	570g	603g	606g
SAFETEC CR 100/xxx (4+0)	750 880			
Weight per unit	610g 610g			
Dimensions DIN 43880	4TE			
Packaging dimensions (single unit)	109 x 76.5 x 80mm			
Min. packaging quantity	3 pcs.			

SAFETEC C(R) (1+1)



● Category IEC / EN:	Class II / Type 2
● Location of use:	Sub-distribution boards
● Network system:	TT, TN-S
● Protection modes:	L-N, N-PE
● Protective element:	MOV and GDT
● Surge discharge rating:	I_{\max} up to 40kA
● Safety:	TOV withstand
● Housing:	Modular design
● Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		75	150	SAFETEC C(R) yyy/xxx (1+1)					
		275	385	440	750	880			
● Electrical characteristics									
Nominal AC voltage	U _o (L-N)	48V 50/60Hz 120V 50/60Hz		230V 50/60Hz		690V 50/60Hz			
	U _o (N-PE)	230V 50/60Hz							
Max. continuous operating voltage (AC/DC)	U _c (L-N)	75/100V	150/200V	275/350V	385/500V	440/580V	750/1000V	880/1100V	
	U _c (N-PE)	255V							
Nominal discharge current (8/20)	I _n (L-N/N-PE)	10kA/20kA		20kA/20kA		12.5kA/20kA			
Max. discharge current (8/20)	I _{max} (L-N/N-PE)	20kA/40kA		40kA/40kA		25kA/40kA			
Protection level	U _p (L-N)	< 0.8kV	< 1.1kV	< 1.5kV	< 2.2kV	< 2.3kV	< 2.8kV	< 3.0kV	
	U _p (N-PE)	< 1.5kV							
Residual voltage at 5kA (8/20)	U _{res} (L-N)	< 0.4kV	< 0.7kV	< 1.1kV	< 1.5kV	< 1.7kV	< 2.4kV	< 2.6kV	
Follow current	I _{fi} (N-PE)	100A _{RMS}							
Response time	t _A (L-N/N-PE)	< 25ns							
Thermal protection		YES							
Back-up fuse (if mains > 125A)		125A gG/gL							
Short-circuit current rating	I _{scCR}	25kA/50Hz							
TOV withstand 5s	U _T (L-N)	70V	174V	335V		1000V			
TOV withstand 120min	U _T (L-N)	92V	228V	438V		1320V			
TOV withstand 200ms	U _T (N-PE)	1200V/300A							
Number of ports		1							
● Mechanical characteristics									
Temperature range	T _a	- 40°C + 70°C							
Permissible humidity	RH	5%...95%							
Terminal screw torque	M _{max}	3.0Nm							
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)							
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)							
Mounting		35mm DIN rail, EN 60715							
Degree of protection		IP 20							
Housing material		thermoplastic; extinguishing degree UL 94 V-0							
Indication of thermal disconnector operation		red flag							
Remote contacts (RC)		YES							
Contact ratings		AC: 250V/0.5A; 125V/3A							
Terminal cross section		max. 1.5mm ²							
Remote terminal torque		0.25Nm							

Ordering information

U_c	75	150	275	385	440	750	880
Ordering code SAFETEC C 40/75 (1+1)	516.624						
Ordering code SAFETEC CR 40/75 (1+1) (with remote contacts)	516.625						
Ordering code SAFETEC C 80/xxx (1+1)		516.013	516.015	516.626	516.017		
Ordering code SAFETEC CR 80/xxx (1+1) (with remote contacts)		516.014	516.016	516.627	516.018		
Ordering code SAFETEC C 50/xxx (1+1)						516.628	516.766
Ordering code SAFETEC CR 50/xxx (1+1) (with remote contacts)						516.629	516.767
Ordering code Module SAFETEC C(R) 20/75	516.648						
Ordering code Module SAFETEC C(R) 40/xxx		516.037	516.038	516.649	516.039		
Ordering code Module SAFETEC C(R) 25/xxx						516.650	516.754
Ordering code Module SAFETUBE C 40/255				516.115			

SAFETEC C(R) (3+1)



● Category IEC / EN:	Class II / Type 2
● Location of use:	Sub-distribution boards
● Network system:	TT, TN-S
● Protection modes:	L-N, N-PE
● Protective element:	MOV and GDT
● Surge discharge rating:	I_{\max} up to 40kA
● Safety:	TOV withstand
● Housing:	Modular design
● Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



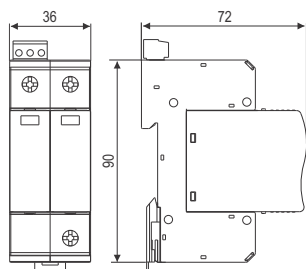
Technical data

Type		75	150	SAFETEC C(R) yyy/xxx (3+1)				
				275	385	440	750	880
● Electrical characteristics								
Nominal AC voltage	U _o (L-N)	48V 50/60Hz 120V 50/60Hz		230V 50/60Hz			690V 50/60Hz	
	U _o (N-PE)	230V 50/60Hz						
Max. continuous operating voltage (AC/DC)	U _c (L-N)	75/100V	150/200V	275/350V	385/500V	440/580V	750/1000V	880/1100V
	U _c (N-PE)	255V						
Nominal discharge current (8/20)	I _n (L-N/N-PE)	10kA/20kA		20kA/20kA			12.5kA/20kA	
Max. discharge current (8/20)	I _{max} (L-N/N-PE)	20kA/40kA		40kA/40kA			25kA/40kA	
Protection level	U _p (L-N)	< 0.8kV	< 1.1kV	< 1.5kV	< 2.2kV	< 2.3kV	< 2.8kV	< 3.0kV
	U _p (N-PE)	< 1.5kV						
Residual voltage at 5kA (8/20)	U _{res} (L-N)	< 0.4kV	< 0.7kV	< 1.1kV	< 1.5kV	< 1.7kV	< 2.4kV	< 2.6kV
Follow current	I _{fi} (N-PE)	100ARMS						
Response time	t _A (L-N/N-PE)	< 25ns						
Thermal protection		YES						
Back-up fuse (if mains > 125A)		125A gG/gL						
Short-circuit current rating	I _{scCR}	25kA/50Hz						
TOV withstand 5s	U _T (L-N)	70V	174V	335V			1000V	
TOV withstand 120min	U _T (L-N)	92V	228V	438V			1320V	
TOV withstand 200ms	U _t (N-PE)	1200V/300A						
Number of ports		1						
● Mechanical characteristics								
Temperature range	T _a	- 40°C + 70°C						
Permissible humidity	RH	5%...95%						
Terminal screw torque	M _{max}	3.0Nm						
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)						
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)						
Mounting		35mm DIN rail, EN 60715						
Degree of protection		IP 20						
Housing material		thermoplastic; extinguishing degree UL 94 V-0						
Indication of thermal disconnector operation		red flag						
Remote contacts (RC)		YES						
Contact ratings		AC: 250V/0.5A; 125V/3A						
Terminal cross section		max. 1.5mm ²						
Remote terminal torque		0.25Nm						
Ordering information								
U _c		75	150	275	385	440	750	880
Ordering code SAFETEC C 80/75 (3+1)		516.642						
Ordering code SAFETEC CR 80/75 (3+1) (with remote contacts)		516.643						
Ordering code SAFETEC C 160/xxx (3+1)			516.031	516.033	516.644	516.035		
Ordering code SAFETEC CR 160/xxx (3+1) (with remote contacts)			516.032	516.034	516.645	516.036		
Ordering code SAFETEC C 100/xxx (3+1)							516.646	516.768
Ordering code SAFETEC CR 100/xxx (3+1) (with remote contacts)							516.647	516.769
Ordering code Module SAFETEC C(R) 20/75		516.648						
Ordering code Module SAFETEC C(R) 40/xxx			516.037	516.038	516.649	516.039		
Ordering code Module SAFETEC C(R) 25/xxx							516.650	516.754
Ordering code Module SAFETUBE C 40/255					516.115			

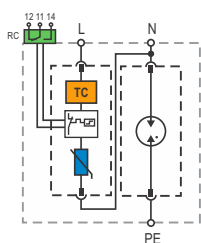
Dimensions, Internal configuration, Weight and Packaging

SAFETEC C(R) (1+1)

Dimensions



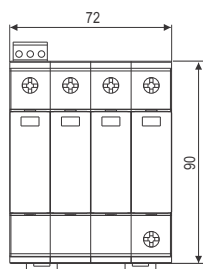
Internal configuration



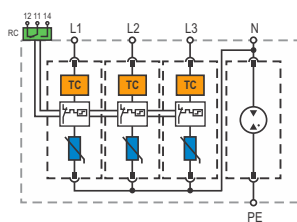
SAFETEC C 40/75 (1+1)	75			
Weight per unit	253g			
SAFETEC C 80/xxx (1+1)	150	275	385	440
Weight per unit	258g	258g	265g	268g
SAFETEC C 50/xxx (1+1)	750 880			
Weight per unit	271g 271g			
SAFETEC CR 40/75 (1+1)	75			
Weight per unit	261g			
SAFETEC CR 80/xxx (1+1)	150	275	385	440
Weight per unit	266g	266g	274g	276g
SAFETEC CR 50/xxx (1+1)	750 880			
Weight per unit	279g 279g			
Dimensions DIN 43880	2TE			
Packaging dimensions (single unit)	109 x 76,5 x 41,5mm			
Min. packaging quantity	7 pcs.			

SAFETEC C(R) (3+1)

Dimensions



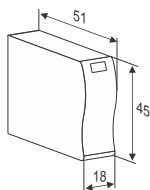
Internal configuration



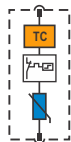
SAFETEC C 80/75 (3+1)	75			
Weight per unit	533g			
SAFETEC C 160/xxx (3+1)	150	275	385	440
Weight per unit	538g	540g	565g	568g
SAFETEC C 160/xxx (3+1)	750 880			
Weight per unit	571g 571g			
SAFETEC CR 80/75 (3+1)	75			
Weight per unit	541g			
SAFETEC CR 160/xxx (3+1)	150	275	385	440
Weight per unit	546g	548g	574g	576g
SAFETEC CR 160/xxx (3+1)	750 880			
Weight per unit	579g 579g			
Dimensions DIN 43880	4TE			
Packaging dimensions (single unit)	109 x 76,5 x 80mm			
Min. packaging quantity	3 pcs.			

Module SAFETEC C(R)

Dimensions



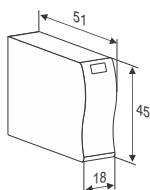
Internal configuration



Module SAFETEC C(R) 20/75	75			
Weight per unit	58g			
Module SAFETEC C(R) 40/xxx	150	275	385	440
Weight per unit	62g	66g	72g	74g
Module SAFETEC C(R) 25/xxx	750 880			
Weight per unit	78g 78g			
Packaging dimensions	221 x 64,5 x 48,5mm			
Min. packaging quantity	12 pcs.			

Module SAFETUBE C 40/255

Dimensions



Internal configuration

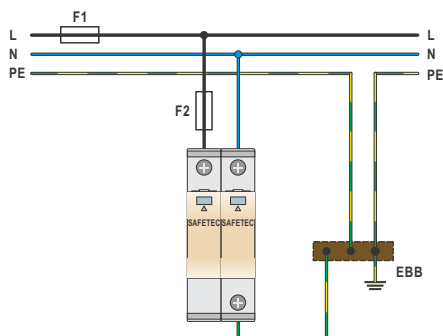


Module SAFETUBE C 40/255	255			
Weight per unit	34g			
Packaging dimensions	221 x 64,5 x 48,5mm			
Min. packaging quantity	12 pcs.			

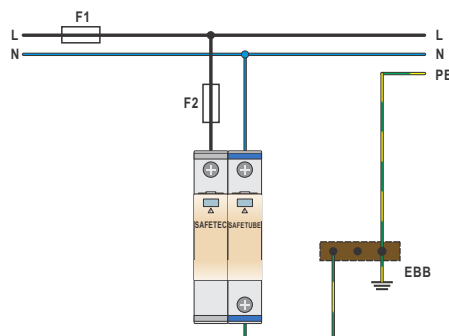
SAFETEC C(R) Series

Network connections

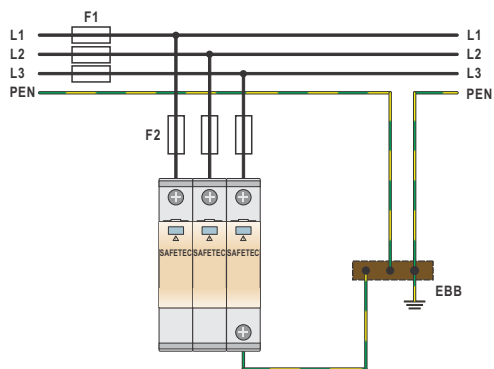
TN-S Network (Single-phase)



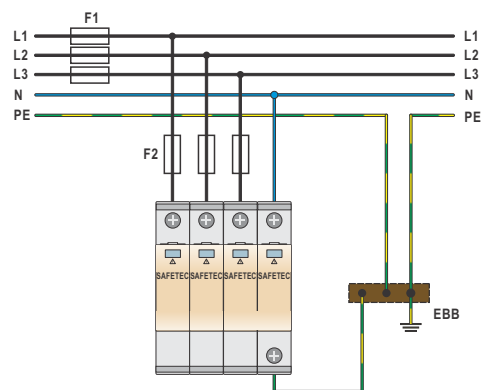
TT Network (Single-phase)



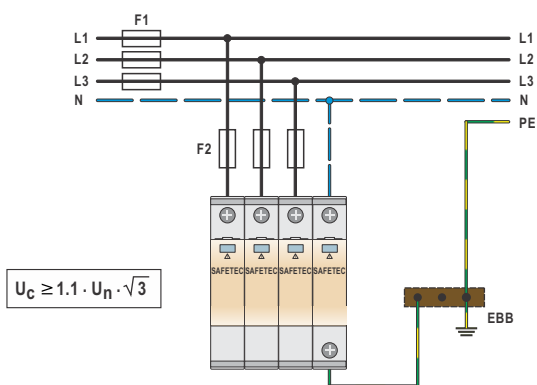
TN-C Network (Three-phase)



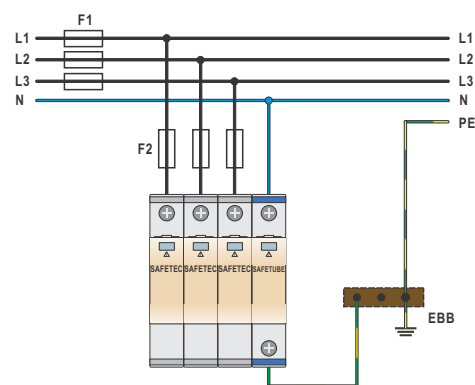
TN-S Network (Three-phase)



IT Network (Three-phase)



TT Network (Three-phase)



Back-up fuse

- F1 > 125A gG/gL → — F2 = 125A gG/gL
- F1 ≤ 125A gG/gL → ~~— F2~~

Type 2 Modular Single and Multi-pole SPD up to 50kA per pole



Classification UL 1449 4th ed.:

Location of use:

Protection modes:

Protective elements:

Surge discharge ratings:

Housing:

Complies with:

Type 1, 2 / CA (Component Assembly)

Sub-distribution boards

L - G (PE), L - N, N - G (PE) or L - L

MOV and GDT

I_{max} up to 50kA

Modular design

UL 1449 4th Ed.;



The SAFETEC series of SPDs :

- Are highly reliable - controlled disconnection, arc-quenching
- Patented current limiting circuit
- Have longer life - protection against aging
- Have up to 5 years warranty

SAFETEC C(R) UL Series:

SAFETEC C(R) UL

SAFETEC C(R) (2+0) UL

SAFETEC C(R) (3+0) UL

SAFETEC C(R) (4+0) UL

The modular SAFETEC C(R) series is suitable for all type of connections.

Patented TC* technology prevents catastrophic failures in case of TOVs (temporary overvoltages).

All in one technology is a protection from overvoltages surges and transients. It has been developed to protect against partial direct and indirect lightning discharges and are intended to provide protection in zones O_B - 2 per IEC 62305.

*TC - Thermal control function



SAFETEC C(R) UL



- Classification UL 1449 4th Ed.: Type 1, 2 CA
- Location of use: Sub-distribution boards
- Protection modes: L - G (PE), L - N, N - G (PE) or L - L
- Protective element: MOV and GDT
- Surge discharge rating: I_{max} up to 50kA
- Safety: TOV withstand
- Housing: Modular design
- Complies with: UL 1449 4th Ed.

Technical data



Type		150	277	385	SAFETEC C(R) 440	550	750	880
● Electrical characteristics								
Max. continuous operating voltage (AC)	MCOV	150V	300V	385V	440V	550V	750V	880V
Nominal discharge current (8/20) per mode of protection	I _n	20kA	20kA	20kA	20kA	20kA	10kA	10kA
Max. discharge current (8/20) per mode of protection	I _{max}	50kA	50kA	50kA	50kA	50kA	20kA	20kA
Voltage protection rating	VPR	1.2kV	1.6kV	1.8kV	2.0kV	2.5kV	2.5kV	3.0kV
Short-circuit current rating	SCCR	200kA						
Follow current	I _{fi}	NO						
Response time	t _A	< 25ns						
Thermal protection		YES						
Back-up fuse		No back-up fuse needed						
Number of ports		1						
● Mechanical characteristics								
Temperature range	T _a	- 40°C + 85°C						
Permissible humidity	RH	5%...95%						
Terminal screw torque	M _{max}	3.0Nm						
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)						
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)						
Mounting		35mm DIN rail, EN 60715						
Degree of protection		IP 20						
Housing material		thermoplastic; extinguishing degree UL 94 V-0						
Indication of thermal disconnecter operation		red flag						
Remote contacts (RC)		YES						
Contact ratings		AC: 250V/0.5A; 125V/3A						
Terminal cross section		max. 1.5mm ²						
Remote terminal torque		0.25Nm						

Ordering information

MCOV	150	277	385	440	550	750	880
Ordering code SAFETEC C 50/xxx	516.058	516.060	516.062	516.064	516.066		
Ordering code SAFETEC CR 50/xxx (with remote contacts)	516.059	516.061	516.063	516.065	516.067		
Ordering code SAFETEC C 25/xxx						516.068	516.586
Ordering code SAFETEC CR 25/xxx (with remote contacts)						516.069	516.587
Ordering code Module SAFETEC C(R) 50/xxx	516.201	516.202	516.203	516.204	516.205		
Ordering code Module SAFETEC C(R) 25/xxx						516.206	516.585

SAFETEC C(R) (3+0) UL

- **Classification UL 1449 4th Ed.:** Type 1, 2 CA
- **Location of use:** Sub-distribution boards
- **Protection modes:** L - G (PE), L - N, N - G (PE) or L - L
- **Protective element:** MOV and GDT
- **Surge discharge rating:** I_{max} up to 50kA
- **Safety:** TOV withstand
- **Housing:** Modular design
- **Complies with:** UL 1449 4th Ed.

Technical data

Type	150	277	SAFETEC C(R) (3+0) UL					750	880
			385	440	550				

● **Electrical characteristics**

Max. continuous operating voltage (AC)	MCOV	150V	300V	385V	440V	550V	750V	880V
Nominal discharge current (8/20) per mode of protection	I_n	20kA	20kA	20kA	20kA	20kA	10kA	10kA
Max. discharge current (8/20) per mode of protection	I_{max}	50kA	50kA	50kA	50kA	50kA	20kA	20kA
Voltage protection rating	VPR	1.2kV	1.6kV	1.8kV	2.0kV	2.5kV	2.5kV	3.0kV
Short-circuit current rating	SCCR	200kA						
Follow current	I_{fi}	NO						
Response time	t_A	< 25ns						
Thermal protection		YES						
Back-up fuse		No back-up fuse needed						
Number of ports		1						

● **Mechanical characteristics**

Temperature range	T_a	- 40°C + 85°C						
Permissible humidity	RH	5%...95%						
Terminal screw torque	M_{max}	3.0Nm						
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)						
AWG conductor cross section		2 (solid) / 3 (stranded)						
Mounting		35mm DIN rail, EN 60715						
Degree of protection		IP 20						
Housing material		thermoplastic; extinguishing degree UL 94 V-0						
Indication of thermal disconnecter operation		red flag						
Remote contacts (RC)		YES						
Contact ratings		AC: 250V/0.5A; 125V/3A						
Terminal cross section		max. 1.5mm ²						
Remote terminal torque		0.25Nm						

Ordering information

MCOV	150	277	385	440	550	750	880
Ordering code SAFETEC C 150/xxx (3+0)	516.082	516.084	516.086	516.088	516.090		
Ordering code SAFETEC CR 150/xxx (3+0) (with remote contacts)	516.083	516.085	516.087	516.089	516.130		
Ordering code SAFETEC C 75/xxx (3+0)						516.091	516.590
Ordering code SAFETEC CR 75/xxx (3+0) (with remote contacts)						516.092	516.591
Ordering code Module SAFETEC C(R) 50/xxx	516.201	516.202	516.203	516.204	516.205		
Ordering code Module SAFETEC C(R) 25/xxx						516.206	516.585



SAFETEC C(R) (2+0) UL



- Classification UL 1449 4th Ed.: Type 1, 2 CA
- Location of use: Sub-distribution boards
- Protection modes: L - G (PE), L - N, N - G (PE) or L - L
- Protective element: MOV and GDT
- Surge discharge rating: I_{max} up to 50kA
- Safety: TOV withstand
- Housing: Modular design
- Complies with: UL 1449 4th Ed.

Technical data



Type		150	277	SAFETEC C(R) (2+0) UL		750	880
				385	440		
● Electrical characteristics							
Max. continuous operating voltage (AC)	MCOV	150V	300V	385V	440V	750V	880V
Nominal discharge current (8/20) per mode of protection	I _n	20kA	20kA	20kA	20kA	10kA	10kA
Max. discharge current (8/20) per mode of protection	I _{max}	50kA	50kA	50kA	50kA	20kA	20kA
Voltage protection rating	VPR	1.2kV	1.6kV	1.8kV	2.0kV	2.5kV	3.0kV
Short-circuit current rating	SCCR	200kA					
Follow current	I _{fi}	NO					
Response time	t _A	< 25ns					
Thermal protection		YES					
Back-up fuse		No back-up fuse needed					
Number of ports		1					
● Mechanical characteristics							
Temperature range	T _a	- 40°C + 85°C					
Permissible humidity	RH	5%...95%					
Terminal screw torque	M _{max}	3.0Nm					
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)					
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)					
Mounting		35mm DIN rail, EN 60715					
Degree of protection		IP 20					
Housing material		thermoplastic; extinguishing degree UL 94 V-0					
Indication of thermal disconnecter operation		red flag					
Remote contacts (RC)		YES					
Contact ratings		AC: 250V/0.5A; 125V/3A					
Terminal cross section		max. 1.5mm ²					
Remote terminal torque		0.25Nm					

Ordering information

MCOV	150	277	385	440	750	880
Ordering code SAFETEC C 100/xxx (2+0)	516.070	516.072	516.074	516.076		
Ordering code SAFETEC CR 100/xxx (2+0) (with remote contacts)	516.071	516.073	516.075	516.077		
Ordering code SAFETEC C 50/xxx (2+0)					516.080	516.588
Ordering code SAFETEC CR 50/xxx (2+0) (with remote contacts)					516.081	516.589
Ordering code Module SAFETEC C(R) 50/xxx	516.201	516.202	516.203	516.204		
Ordering code Module SAFETEC C(R) 25/xxx					516.206	516.585



SAFETEC C(R) (4+0) UL



- Classification UL 1449 4th Ed.: Type 1, 2 CA
- Location of use: Sub-distribution boards
- Protection modes: L - G (PE), L - N, N - G (PE) or L - L
- Protective element: MOV and GDT
- Surge discharge rating: I_{max} up to 50kA
- Safety: TOV withstand
- Housing: Modular design
- Complies with: UL 1449 4th Ed.

Technical data



Type		150	277	SAFETEC C(R) (4+0) UL		750	880
				385	440		
● Electrical characteristics							
Max. continuous operating voltage (AC)	MCOV	150V	300V	385V	440V	750V	880V
Nominal discharge current (8/20) per mode of protection	I _n	20kA	20kA	20kA	20kA	10kA	10kA
Max. discharge current (8/20) per mode of protection	I _{max}	50kA	50kA	50kA	50kA	20kA	20kA
Voltage protection rating	VPR	1.2kV	1.6kV	1.8kV	2.0kV	2.5kV	3.0kV
Short-circuit current rating	SCCR	200kA					
Follow current	I _{fi}	NO					
Response time	t _A	< 25ns					
Thermal protection		YES					
Back-up fuse		No back-up fuse needed					
Number of ports		1					
● Mechanical characteristics							
Temperature range	T _a	- 40°C + 85°C					
Permissible humidity	RH	5%...95%					
Terminal screw torque	M _{max}	3.0Nm					
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)					
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)					
Mounting		35mm DIN rail, EN 60715					
Degree of protection		IP 20					
Housing material		thermoplastic; extinguishing degree UL 94 V-0					
Indication of thermal disconnecter operation		red flag					
Remote contacts (RC)		YES					
Contact ratings		AC: 250V/0.5A; 125V/3A					
Terminal cross section		max. 1.5mm ²					
Remote terminal torque		0.25Nm					

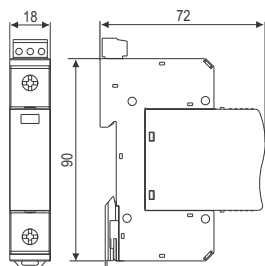
Ordering information

MCOV	150	277	385	440	750	880
Ordering code SAFETEC C 200/xxx (4+0)	516.093	516.095	516.097	516.099		
Ordering code SAFETEC CR 200/xxx (4+0) (with remote contacts)	516.094	516.096	516.098	516.100		
Ordering code SAFETEC C 100/xxx (4+0)					516.103	516.592
Ordering code SAFETEC CR 100/xxx (4+0) (with remote contacts)					516.104	516.593
Ordering code Module SAFETEC C(R) 50/xxx	516.201	516.202	516.203	516.204		
Ordering code Module SAFETEC C(R) 25/xxx					516.206	516.585

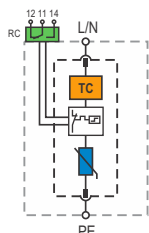
Dimensions, Internal configuration, Weight and Packaging

SAFETEC C(R) UL

Dimensions



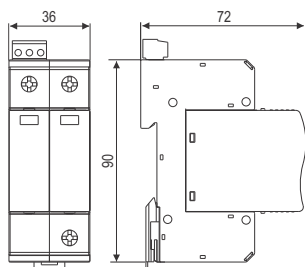
Internal configuration



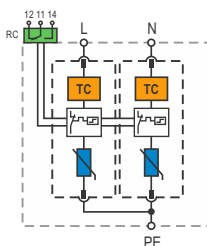
SAFETEC C 50/xxx	150	277	385	440	550
Dimensions DIN 43880	1TE				
Weight per unit	140g	140g	145g	150g	153g
SAFETEC CR 50/xxx	150	277	385	440	550
Weight per unit	148g	148g	153g	158g	161g
SAFETEC C 25/xxx	750 880				
Weight per unit	156g 156g				
SAFETEC CR 25/xxx	750 880				
Weight per unit	164g 164g				
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm				
Min. packaging quantity	12 pcs.				

SAFETEC C(R) (2+0) UL

Dimensions



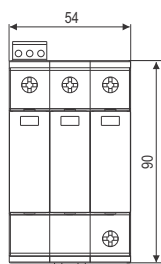
Internal configuration



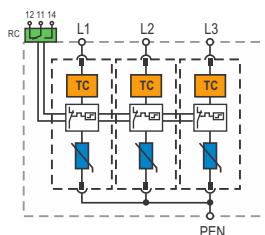
SAFETEC C 100/xxx (2+0)	150	277	385	440
Dimensions DIN 43880	2TE			
Weight per unit	280g	281g	290g	299g
SAFETEC CR 100/xxx (2+0)	150	277	385	440
Weight per unit	288g	289g	298g	307g
SAFETEC CR 50/xxx (2+0)	750 880			
Weight per unit	312g 312g			
SAFETEC CR 50/xxx (2+0)	750 880			
Weight per unit	320g 320g			
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm			
Min. packaging quantity	7 pcs.			

SAFETEC C(R) (3+0) UL

Dimensions



Internal configuration

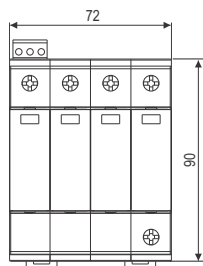


SAFETEC C 150/xxx (3+0)	150	277	385	440	550
Dimensions DIN 43880	3TE				
Weight per unit	420g	422g	435g	450g	459g
SAFETEC CR 150/xxx(3+0)	150	277	385	440	550
Weight per unit	428g	430g	443g	458g	467g
SAFETEC C 75/xxx (3+0)	750 880				
Weight per unit	468g 468g				
SAFETEC CR 75/xxx (3+0)	750 880				
Weight per unit	476g 476g				
Packaging dimensions (single unit)	109 x 76.5 x 61.5mm				
Min. packaging quantity	5 pcs.				

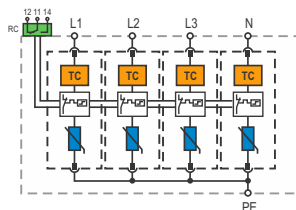
Dimensions, Internal configuration, Weight and Packaging

SAFETEC C(R) (4+0) UL

Dimensions



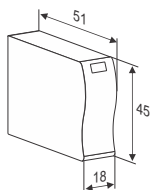
Internal configuration



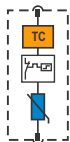
SAFETEC C 200/xxx (4+0)	150	277	385	440
Dimensions DIN 43880	4TE			
Weight per unit	560g	562g	580g	598g
SAFETEC CR 200/xxx (4+0)	150	277	385	440
Weight per unit	568g	570g	588g	606g
SAFETEC CR 100/xxx (4+0)	750 880			
Weight per unit	624g 624g			
SAFETEC CR 100/xxx (4+0)	750 880			
Weight per unit	632g 632g			
Packaging dimensions (single unit)	109 x 76.5 x 80mm			
Min. packaging quantity	3 pcs.			

Module SAFETEC C(R) UL

Dimensions

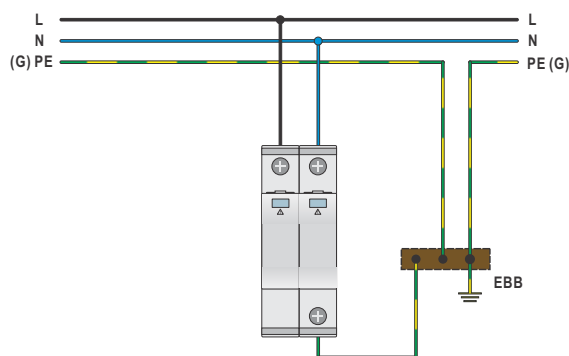


Internal configuration

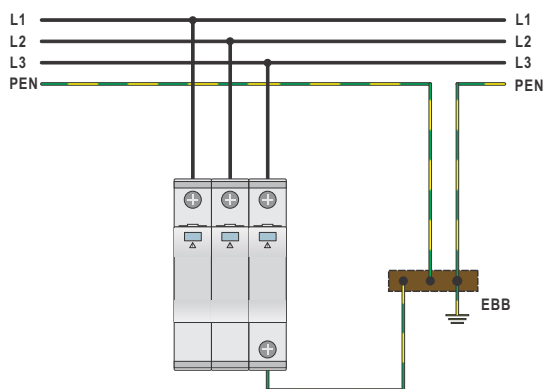


Module SAFETEC C(R) 50/xxx	150	277	385	440	550
Weight per unit	62g	66g	72g	74g	76g
Module SAFETEC C(R) 25/xxx	750 880				
Weight per unit	78g 78g				
Packaging dimensions	221 x 64.5 x 48.5mm				
Min. packaging quantity	12 pcs.				

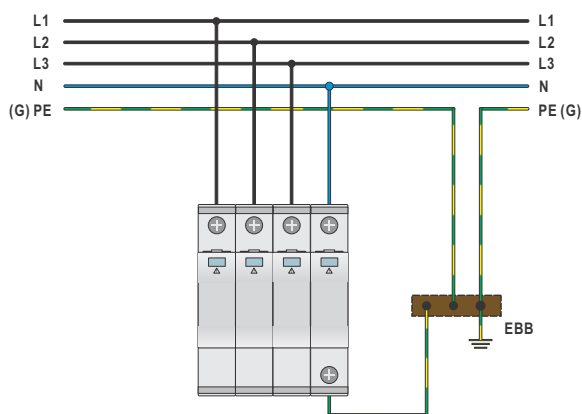
- TN-S Network (Single-phase);
- Single-phase



- TN-C Network (3-phase),
- Split phase System,
- 3-phase WYE without neutral,
- Delta Ungrounded



- TN-S Network (3-phase),
- 3-phase WYE with neutral,
- Delta Grounded Corner



Class II

Modular Single and Multi-pole SPD

40kA per pole

Category IEC / EN:	Class II / Type 2
Location of use:	Sub-distribution boards
Protection modes:	L/N-PE, L-PEN, L-N, N-PE
Protective elements:	MOV and GDT
Surge discharge ratings:	I_{\max} up to 40kA
Internal protection and safety:	Separate thermal disconnecter for each MOV
Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



PROTEC C(R) Series:
PROTEC C(R) 40/xxx
PROTEC C(R) 20/xxx
PROTUBE C 40
PROTEC C(R) 80/xxx (2+0)
PROTEC C(R) 120/xxx (3+0)
PROTEC C(R) 160/xxx (4+0)
PROTEC C(R) 80/xxx (1+1)
PROTEC C(R) 160/xxx (3+1)

The PROTEC C(R) series of overvoltage surge protective devices has been developed to protect low-voltage consumer installation against surges and effects of indirect lightning discharges and induced voltages. They are to be installed within lightning protection zones 0_B-2 as per IEC 62305.

PROTEC C(R) series consists of a high performance varistor with thermal disconnection mechanism. The plug-in module / base facilitates replacement of a failed module *in situ* without the need to remove system wiring.

PROTUBE C is a modular, single pole housing design and consists of a high energy encapsulated gas discharge tube. It is utilized for galvanic separation between the N and PE conductors in a 1+1 or 3+1 power distribution networks.

PROTEC C(R) series complies with the IEC/EN 61643-11 standards and is applicable to the following network systems: TN-S, TN-C, IT and TT.

PROTEC C(R) 40



- **Category IEC / EN:** Class II / Type 2
- **Location of use:** Sub-distribution boards
- **Network systems:** TN-S, TN-C, IT, TT (only L-N)
- **Protection modes:** L/N - PE, L- PEN, L-N
- **Protective element:** MOV
- **Surge discharge rating:** $I_{\max} = 40\text{kA}$
- **MOV max. withstand capability 1 x 8/20:** 60kA
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		75	150	PROTEC C(R) 40/xxx		385	440
		275	320				
● Electrical characteristics							
Nominal AC voltage	U _o	60V 50/60Hz	120V 50/60Hz	230V 50/60Hz			
Max. continuous operating voltage (AC/DC)	U _c	75/100V	150/200V	275/350V	320/420V	385/500V	440/580V
Nominal discharge current (8/20)	I _n	20kA					
Max. discharge current (8/20)	I _{max}	40kA					
Protection level	U _p	< 0.7kV	< 1.0kV	< 1.5kV	< 1.5kV	< 1.9kV	< 2.0kV
Residual voltage at 5kA (8/20)	U _{res}	< 0.4kV	< 0.6kV	< 1.1kV	< 1.1kV	< 1.4kV	< 1.6kV
Follow current	I _{fi}	NO					
Response time	t _A	< 25ns					
Thermal protection		YES					
Back-up fuse (if mains > 125A)		125A gG/gL					
Short-circuit current rating	I _{scCR}	25kA/50Hz					
TOV withstand 5s	U _T	90V	174V			334V	
TOV disconnection 120min	U _T	115V	229V			438V	
Number of ports		1					
● Mechanical characteristics							
Temperature range	T _a	- 40°C + 70°C					
Permissible humidity	RH	5%...95%					
Terminal screw torque	M _{max}	3.0Nm					
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)					
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)					
Mounting		35mm DIN rail, EN 60715					
Degree of protection		IP 20					
Housing material		thermoplastic; extinguishing degree UL 94 V-0					
Indication of thermal disconnector operation		red flag					
Remote contacts (RC)		YES					
Contact ratings		AC: 250V/0.5A; 125V/3A					
Terminal cross section		max. 1.5mm ²					
Remote terminal torque		0.25Nm					

Ordering information

U_c	75	150	275	320	385	440
Ordering code PROTEC C 40/xxx	50.0001	50.0003	50.0005	50.0007	50.0171	50.0009
Ordering code PROTEC CR 40/xxx (with remote contacts)	50.0011	50.0013	50.0015	50.0017	50.0175	50.0019
Ordering code Module PROTEC C(R) 40/xxx	50.0216	50.0217	50.0219	50.0220	50.0221	50.0222

PROTEC C(R) 20



- Category IEC / EN: Class II / Type 2
- Location of use: Sub-distribution boards
- Network systems: TN-S, TN-C, IT, TT (only L-N)
- Protection modes: L/N - PE, L- PEN, L-N
- Protective element: MOV
- Surge discharge rating: $I_{\max} = 20\text{kA}$
- MOV max. withstand capability 1 x 8/20: 40kA
- Housing: Modular design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		PROTEC C(R) 20/xxx				
		150	275	320	385	440
● Electrical characteristics						
Nominal AC voltage	U_o	120V 50/60Hz		230V 50/60Hz		
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	320/420V	385/500V	440/580V
Nominal discharge current (8/20)	I_n	10kA				
Max. discharge current (8/20)	I_{\max}	20kA				
Protection level	U_p	< 0.7kV	< 1.2kV	< 1.2kV	< 1.6kV	< 1.8kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.6kV	< 1.1kV	< 1.1kV	< 1.4kV	< 1.6kV
Follow current	I_{fi}	NO				
Response time	t_A	< 25ns				
Thermal protection		YES				
Back-up fuse (if mains > 125A)		125A gG/gL				
Short-circuit current rating	I_{scCR}	25kA/50Hz				
TOV withstand 5s	U_T	174V			334V	
TOV disconnection 120min	U_T	229V			438V	
Number of ports		1				
● Mechanical characteristics						
Temperature range	T_a	- 40°C + 70°C				
Permissible humidity	RH	5%...95%				
Terminal screw torque	M_{\max}	3.0Nm				
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)				
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)				
Mounting		35mm DIN rail, EN 60715				
Degree of protection		IP 20				
Housing material		thermoplastic; extinguishing degree UL 94 V-0				
Indication of thermal disconnector operation		red flag				
Remote contacts (RC)		YES				
Contact ratings		AC: 250V/0.5A; 125V/3A				
Terminal cross section		max. 1.5mm ²				
Remote terminal torque		0.25Nm				

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC C 20/xxx	50.0037	50.0039	50.0041	50.0315	50.0043
Ordering code PROTEC CR 20/xxx (with remote contacts)	50.0045	50.0047	50.0049	50.0317	50.0051
Ordering code Module PROTEC C(R) 20/xxx	50.0479	50.0480	50.0481	50.0482	50.0483

PROTUBE C 40



● Category IEC / EN:	Class II / Type 2
● Location of use:	Sub-distribution boards
● Network system:	TT
● Protection modes:	N - PE
● Protective element:	GDT
● Surge discharge rating:	$I_{\max} = 40\text{kA}$
● Housing:	Modular design
● Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type

PROTUBE C 40/255

● Electrical characteristics

Nominal AC voltage	U_o	230V 50/60Hz
Max. continuous operating voltage (AC)	U_c	255V
Nominal discharge current (8/20)	I_n	20kA
Max. discharge current (8/20)	I_{\max}	40kA
Protection level	U_p	< 1.5kV
Follow current	I_{fi}	100ARMS
Response time	t_A	100ns
TOV withstand 200ms	U_T	1200V/300A
Number of ports		1

● Mechanical characteristics

Temperature range	T_a	-40°C +70°C
Permissible humidity	RH	5%...95%
Terminal screw torque	M_{\max}	3.0Nm
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)
Mounting		35mm DIN rail, EN 60715
Degree of protection		IP 20
Housing material		thermoplastic; extinguishing degree UL 94 V-0

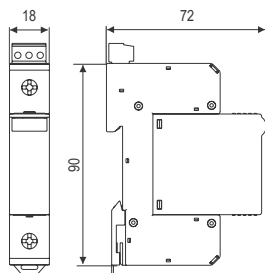
Ordering information

I_{\max}	40
Ordering code PROTUBE C 40/255	50.3005
Ordering code Module PROTUBE C 40/255	50.0234

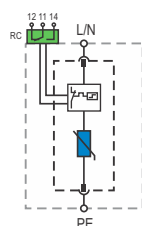
Dimensions, Internal configuration, Weight and Packaging

PROTEC C(R) 40/xxx

Dimensions



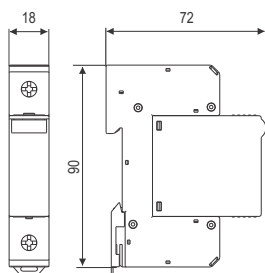
Internal configuration



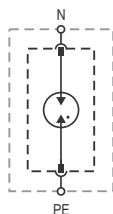
PROTEC C 40/xxx	75	150	275	320	385	440
Dimensions DIN 43880	1TE					
Weight per unit	112g	122g	128g	128g	129g	130g
PROTEC CR 40/xxx	75	150	275	320	385	440
Dimensions DIN 43880	1TE					
Weight per unit	117g	127g	133g	133g	134g	135g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm					
Min. packaging quantity	12 pcs.					

PROTUBE C 40/255

Dimensions



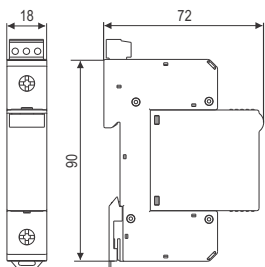
Internal configuration



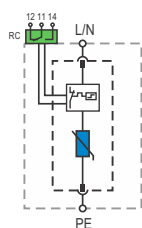
PROTUBE C 40/255	255
Dimensions DIN 43880	1TE
Weight per unit	118g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm
Min. packaging quantity	12 pcs.

PROTEC C(R) 20/xxx

Dimensions



Internal configuration

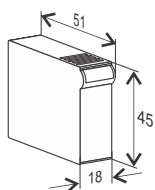


PROTEC C 20/xxx	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	119g	125g	125g	126g	127g
PROTEC CR 20/xxx	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	124g	130g	130g	131g	132g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm				
Min. packaging quantity	12 pcs.				

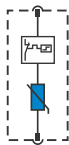
Dimensions, Internal configuration, Weight and Packaging

Module PROTEC C(R) 40/xxx

Dimensions



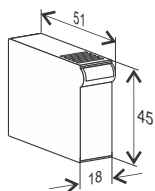
Internal configuration



Module PROTEC C(R) 40/xxx	75	150	275	320	385	440
Weight per unit	44g	48g	52g	56g	58g	60g
Packaging dimensions	221 x 64.5 x 48.5mm					
Min. packaging quantity	12 pcs.					

Module PROTUBE C 40/255

Dimensions



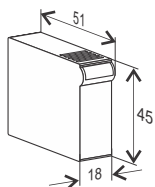
Internal configuration



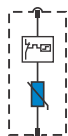
Module PROTUBE C 40/255	255
Weight per unit	36g
Packaging dimensions	221 x 64.5 x 48.5mm
Min. packaging quantity	12 pcs.

Module PROTEC C(R) 20/xxx

Dimensions



Internal configuration



Module PROTEC C(R) 20/xxx	150	275	320	385	440
Weight per unit	48g	56g	56g	60g	58g
Packaging dimensions	221 x 64.5 x 48.5mm				
Min. packaging quantity	12 pcs.				

PROTEC C(R) 80 (2+0)



- **Category IEC / EN:** Class II / Type 2
- **Location of use:** Sub-distribution boards
- **Network systems:** TN-S
- **Protection modes:** L/N - PE, L- PEN
- **Protective element:** MOV
- **Surge discharge rating:** $I_{\max} = 40\text{kA}$
- **MOV max. withstand capability 1 x 8/20:** 60kA per pole
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		150	275	PROTEC C(R) 80/xxx (2+0)			385	440
				320				
● Electrical characteristics								
Nominal AC voltage	U _O	120V 50/60Hz		230V 50/60Hz				
Max. continuous operating voltage (AC/DC)	U _C	150/200V	275/350V	320/420V	385/500V	440/580V		
Nominal discharge current (8/20)	I _n				20kA per pole			
Max. discharge current (8/20)	I _{max}				40kA per pole			
Protection level	U _p	< 0.9kV	< 1.5kV	< 1.5kV	< 1.8kV	< 2.2kV		
Residual voltage at 5kA (8/20)	U _{res}	< 0.6kV	< 1.1kV	< 1.1kV	< 1.4kV	< 1.6kV		
Follow current	I _{fi}				NO			
Response time	t _A				< 25ns			
Thermal protection					YES			
Back-up fuse (if mains > 125A)					125A gG/gL			
Short-circuit current rating	I _{scCR}				25kA/50Hz			
TOV withstand 5s	U _T	174V			334V			
TOV disconnection 120min	U _T	229V			438V			
Number of ports					1			
● Mechanical characteristics								
Temperature range	T _a				- 40°C + 70°C			
Permissible humidity	RH				5%...95%			
Terminal screw torque	M _{max}				3.0Nm			
Conductor cross section					35mm ² (solid) / 25mm ² (stranded)			
AWG conductor cross section					2 AWG (solid) / 3 AWG (stranded)			
Mounting					35mm DIN rail, EN 60715			
Degree of protection					IP 20			
Housing material					thermoplastic; extinguishing degree UL 94 V-0			
Indication of thermal disconnector operation					red flag			
Remote contacts (RC)					YES			
Contact ratings					AC: 250V/0.5A; 125V/3A			
Terminal cross section					max. 1.5mm ²			
Remote terminal torque					0.25Nm			

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC C 80/xxx (2+0)	50.0073	50.0075	50.0077	50.0179	50.0079
Ordering code PROTEC CR 80/xxx (2+0) (with remote contacts)	50.0081	50.0083	50.0085	50.0183	50.0087
Ordering code Module PROTEC C(R) 40/xxx	50.0217	50.0219	50.0220	50.0221	50.0222

PROTEC C(R) 120 (3+0)



- Category IEC / EN: Class II / Type 2
- Location of use: Sub-distribution boards
- Network systems: TN-C
- Protection modes: L/N - PE, L- PEN
- Protective element: MOV
- Surge discharge rating: $I_{\max} = 40\text{kA}$
- MOV max. withstand capability 1 x 8/20: 60kA per pole
- Housing: Modular design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		150	275	PROTEC C(R) 120/xxx (3+0)	320	385	440
● Electrical characteristics							
Nominal AC voltage	U _o	120V 50/60Hz		230V 50/60Hz			
Max. continuous operating voltage (AC/DC)	U _c	150/200V	275/350V	320/420V	385/500V	440/580V	
Nominal discharge current (8/20)	I _n	20kA per pole					
Max. discharge current (8/20)	I _{max}	40kA per pole					
Protection level	U _p	< 0.9kV	< 1.5kV	< 1.5kV	< 1.9kV	< 2.2kV	
Residual voltage at 5kA (8/20)	U _{res}	< 0.6kV	< 1.1kV	< 1.1kV	< 1.4kV	< 1.6kV	
Follow current	I _{fi}	NO					
Response time	t _A	< 25ns					
Thermal protection		YES					
Back-up fuse (if mains > 125A)		125A gG/gL					
Short-circuit current rating	I _{scCR}	25kA/50Hz					
TOV withstand 5s	U _T	174V		334V			
TOV disconnection 120min	U _T	229V		438V			
Number of ports		1					
● Mechanical characteristics							
Temperature range	T _a	- 40°C + 70°C					
Permissible humidity	RH	5%...95%					
Terminal screw torque	M _{max}	3.0Nm					
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)					
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)					
Mounting		35mm DIN rail, EN 60715					
Degree of protection		IP 20					
Housing material		thermoplastic; extinguishing degree UL 94 V-0					
Indication of thermal disconnector operation		red flag					
Remote contacts (RC)		YES					
Contact ratings		AC: 250V/0.5A; 125V/3A					
Terminal cross section		max. 1.5mm ²					
Remote terminal torque		0.25Nm					

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC C 120/xxx (3+0)	50.0105	50.0107	50.0109	50.0195	50.0111
Ordering code PROTEC CR 120/xxx (3+0) (with remote contacts)	50.0113	50.0115	50.0117	50.0199	50.0119
Ordering code Module PROTEC C(R) 40/xxx	50.0217	50.0219	50.0220	50.0221	50.0222

PROTEC C(R) 160 (4+0)



- **Category IEC / EN:** Class II / Type 2
- **Location of use:** Sub-distribution boards
- **Network systems:** TN-S
- **Protection modes:** L/N - PE, L- PEN
- **Protective element:** MOV
- **Surge discharge rating:** $I_{\max} = 40\text{kA}$
- **MOV max. withstand capability 1 x 8/20:** 60kA per pole
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		150	275	320	385	440
		PROTEC C(R) 160/xxx (4+0)				
● Electrical characteristics						
Nominal AC voltage	U_o	120V 50/60Hz		230V 50/60Hz		
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	320/420V	385/500V	440/580V
Nominal discharge current (8/20)	I_n	20kA per pole				
Max. discharge current (8/20)	I_{\max}	40kA per pole				
Protection level	U_p	< 0.9kV	< 1.5kV	< 1.5kV	< 1.9kV	< 2.2kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.6kV	< 1.1kV	< 1.1kV	< 1.4kV	< 1.6kV
Follow current	I_{fi}	NO				
Response time	t_A	< 25ns				
Thermal protection		YES				
Back-up fuse (if mains > 125A)		125A gG/gL				
Short-circuit current rating	I_{scCR}	25kA/50Hz				
TOV withstand 5s	U_T	174V		334V		
TOV disconnection 120min	U_T	229V		438V		
Number of ports		1				
● Mechanical characteristics						
Temperature range	T_a	- 40°C + 70°C				
Permissible humidity	RH	5%...95%				
Terminal screw torque	M_{\max}	3.0Nm				
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)				
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)				
Mounting		35mm DIN rail, EN 60715				
Degree of protection		IP 20				
Housing material		thermoplastic; extinguishing degree UL 94 V-0				
Indication of thermal disconnector operation		red flag				
Remote contacts (RC)		YES				
Contact ratings		AC: 250V/0.5A; 125V/3A				
Terminal cross section		max. 1.5mm ²				
Remote terminal torque		0.25Nm				

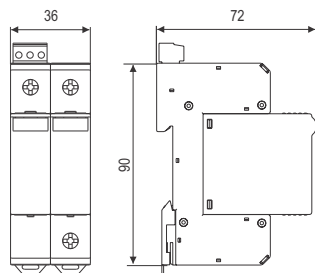
Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC C 160/xxx (4+0)	50.0121	50.0123	50.0125	50.0203	50.0127
Ordering code PROTEC CR 160/xxx (4+0) (with remote contacts)	50.0129	50.0131	50.0133	50.0207	50.0135
Ordering code Module PROTEC C(R) 40/xxx	50.0217	50.0219	50.0220	50.0221	50.0222

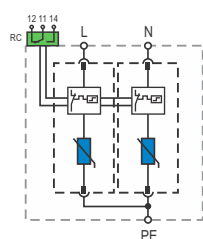
Dimensions, Internal configuration, Weight and Packaging

PROTEC C(R) 80/xxx (2+0)

Dimensions



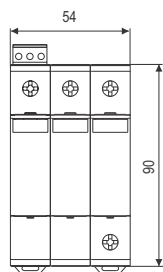
Internal configuration



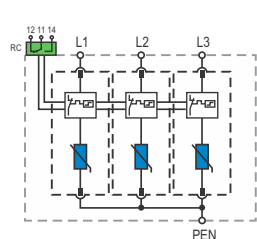
PROTEC C 80/xxx (2+0)	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	234g	244g	244g	245g	247g
PROTEC CR 80/xxx (2+0)	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	239g	249g	249g	250g	252g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm				
Min. packaging quantity	7 pcs.				

PROTEC C(R) 120/xxx (3+0)

Dimensions



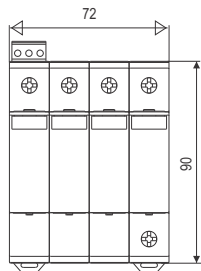
Internal configuration



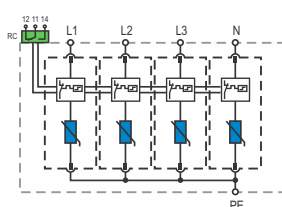
PROTEC C 120/xxx (3+0)	150	275	320	385	440
Dimensions DIN 43880	3TE				
Weight per unit	330g	352g	352g	354g	356g
PROTEC CR 120/xxx (3+0)	150	275	320	385	440
Dimensions DIN 43880	3TE				
Weight per unit	335g	357g	357g	359g	361g
Packaging dimensions (single unit)	109 x 76.5 x 61.5mm				
Min. packaging quantity	5 pcs.				

PROTEC C(R) 160/xxx (4+0)

Dimensions



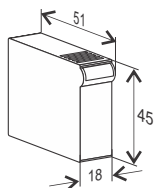
Internal configuration



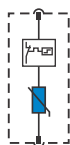
PROTEC C 160/xxx (4+0)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	432g	456g	456g	460g	466g
PROTEC CR 160/xxx (4+0)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	437g	461g	461g	465g	471g
Packaging dimensions (single unit)	109 x 76.5 x 80mm				
Min. packaging quantity	3 pcs.				

Module PROTEC C(R) 40/xxx

Dimensions



Internal configuration



Module PROTEC C(R) 40/xxx	75	150	275	320	385	440
Weight per unit	44g	48g	52g	56g	58g	60g
Packaging dimensions	221 x 64.5 x 48.5mm					
Min. packaging quantity	12 pcs.					

PROTEC C(R) 80 (1+1)



- **Category IEC / EN:** Class II / Type 2
- **Location of use:** Sub-distribution boards
- **Network system:** TT, TN-S
- **Protection modes:** L-N, N-PE
- **Protective element:** MOV and GDT
- **Surge discharge rating:** $I_{\max} = 40\text{kA}$
- **MOV max. withstand capability 1 x 8/20:** 60kA per pole
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		150	275	PROTEC C(R) 80/xxx (1+1)	385	440
● Electrical characteristics		120V 50/60Hz		230V 50/60Hz		
Nominal AC voltage	U _o (L-N)	230V 50/60Hz				
	U _o (N-PE)	150/200V	275/350V	320/420V	385/500V	440/580V
Max. continuous operating voltage (AC/DC)	U _c (L-N)	255V				
	U _c (N-PE)	20kA/20kA				
Nominal discharge current (8/20)	I _n (L-N/N-PE)	40kA/40kA				
Max. discharge current (8/20)	I _{max} (L-N/N-PE)	< 0.9kV	< 1.5kV	< 1.5kV	< 1.8kV	< 2.2kV
Protection level	U _p (L-N)	< 1.5kV				
	U _p (N-PE)	< 0.6kV	< 1.1kV	< 1.1kV	< 1.4kV	< 1.6kV
Residual voltage at 5kA (8/20)	U _{res} (L-N)	100A _{RMS}				
Follow current	I _{fi} (N-PE)	< 25ns/100ns				
Response time	t _A (L-N/N-PE)	YES				
Thermal protection		125A gG/gL				
Back-up fuse (if mains > 125A)		25kA/50Hz				
Short-circuit current rating	I _{scCR}	174V	334V			
TOV withstand 5s	U _T (L-N)	229V	438V			
TOV disconnection 120min	U _T (L-N)	1200V/300A				
TOV withstand 200ms	U _T (N-PE)	1				
Number of ports						
● Mechanical characteristics						
Temperature range	T _a	- 40°C + 70°C				
Permissible humidity	RH	5%...95%				
Terminal screw torque	M _{max}	3.0Nm				
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)				
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)				
Mounting		35mm DIN rail, EN 60715				
Degree of protection		IP 20				
Housing material		thermoplastic; extinguishing degree UL 94 V-0				
Indication of thermal disconnector operation		red flag				
Remote contacts (RC)		YES				
Contact ratings		AC: 250V/0.5A; 125V/3A				
Terminal cross section		max. 1.5mm ²				
Remote terminal torque		0.25Nm				

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC C 80/xxx (1+1)	50.0089	50.0091	50.0093	50.0187	50.0095
Ordering code PROTEC CR 80/xxx (1+1) (with remote contacts)	50.0097	50.0099	50.0101	50.0191	50.0103
Ordering code Module PROTEC C(R) 40/xxx	50.0217	50.0219	50.0220	50.0221	50.0222
Ordering code Module PROTUBE C 40/255	50.0234				

PROTEC C(R) 160 (3+1)



- **Category IEC / EN:** Class II / Type 2
- **Location of use:** Sub-distribution boards
- **Network system:** TT, TN-S
- **Protection modes:** L-N, N-PE
- **Protective element:** MOV and GDT
- **Surge discharge rating:** $I_{\max} = 40\text{kA}$
- **MOV max. withstand capability 1 x 8/20:** 60kA per pole
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		PROTEC C(R) 160/xxx (3+1)				
		150	275	320	385	440
● Electrical characteristics		120V 50/60Hz		230V 50/60Hz		
Nominal AC voltage	U _o (L-N)	230V 50/60Hz				
	U _o (N-PE)	150/200V	275/350V	320/420V	385/500V	440/580V
Max. continuous operating voltage (AC/DC)	U _c (L-N)	255V				
	U _c (N-PE)	20kA/20kA				
Nominal discharge current (8/20)	I _n (L-N/N-PE)	40kA/40kA				
Max. discharge current (8/20)	I _{max} (L-N/N-PE)	< 0.9kV	< 1.5kV	< 1.5kV	< 1.9kV	< 2.2kV
Protection level	U _p (L-N)	< 1.5kV				
	U _p (N-PE)	< 0.6kV	< 1.1kV	< 1.1kV	< 1.4kV	< 1.6kV
Residual voltage at 5kA (8/20)	U _{res} (L-N)	100A _{RMS}				
Follow current	I _{fi} (N-PE)	< 25ns/100ns				
Response time	t _A (L-N/N-PE)	YES				
Thermal protection		125A gG/gL				
Back-up fuse (if mains > 125A)		25kA/50Hz				
Short-circuit current rating	I _{scCR}	174V	334V			
TOV withstand 5s	U _T (L-N)	229V	438V			
TOV disconnection 120min	U _T (L-N)	1200V/300A				
TOV withstand 200ms	U _T (N-PE)	1				
Number of ports						
● Mechanical characteristics						
Temperature range	T _a	- 40°C + 70°C				
Permissible humidity	RH	5%...95%				
Terminal screw torque	M _{max}	3.0Nm				
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)				
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)				
Mounting		35mm DIN rail, EN 60715				
Degree of protection		IP 20				
Housing material		thermoplastic; extinguishing degree UL 94 V-0				
Indication of thermal disconnector operation		red flag				
Remote contacts (RC)		YES				
Contact ratings		AC: 250V/0.5A; 125V/3A				
Terminal cross section		max. 1.5mm ²				
Remote terminal torque		0.25Nm				

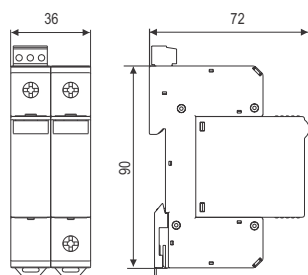
Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC C 160/xxx (3+1)	50.0137	50.0139	50.0141	50.0211	50.0143
Ordering code PROTEC CR 160/xxx (3+1) (with remote contacts)	50.0145	50.0147	50.0149	50.0215	50.0151
Ordering code Module PROTEC C(R) 40/xxx	50.0217	50.0219	50.0220	50.0221	50.0222
Ordering code Module PROTUBE C 40/255	50.0234				

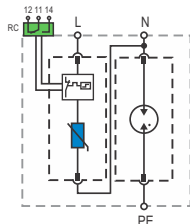
Dimensions, Connection diagrams, Weight and Packaging

PROTEC C(R) 80/xxx (1+1)

Dimensions



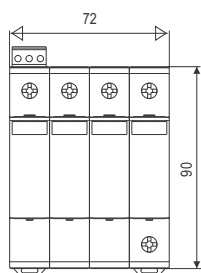
Internal configuration



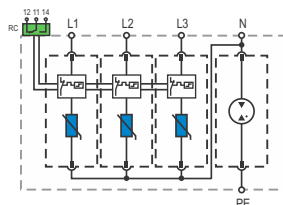
PROTEC C 80/xxx (1+1)	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	221g	225g	225g	226g	227g
PROTEC CR 80/xxx (1+1)	150	275	320	385	440
Dimensions DIN 43880	2TE				
Weight per unit	226g	230g	230g	231g	232g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm				
Min. packaging quantity	7 pcs.				

PROTEC C(R) 160/xxx (3+1)

Dimensions



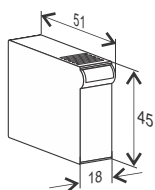
Internal configuration



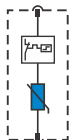
PROTEC C 160/xxx (3+1)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	423g	441g	441g	445g	447g
PROTEC CR 160/xxx (3+1)	150	275	320	385	440
Dimensions DIN 43880	4TE				
Weight per unit	428g	446g	446g	450g	452g
Packaging dimensions (single unit)	109 x 76.5 x 80mm				
Min. packaging quantity	3 pcs.				

Module PROTEC C(R) 40/xxx

Dimensions



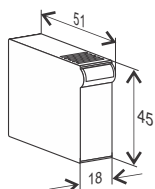
Internal configuration



Module PROTEC C(R) 40/xxx	75	150	275	320	385	440
Weight per unit	44g	48g	52g	56g	58g	60g
Packaging dimensions	221 x 64.5 x 48.5mm					
Min. packaging quantity	12 pcs.					

Module PROTUBE C 40/255

Dimensions



Internal configuration

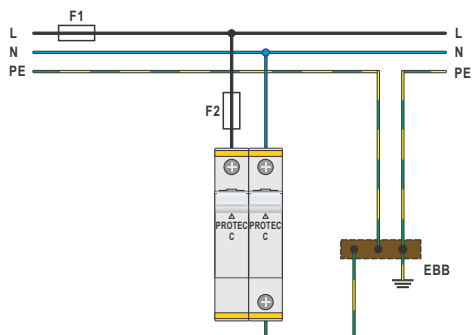


Module PROTUBE C 40/255	255
Weight per unit	36g
Packaging dimensions	221 x 64.5 x 48.5mm
Min. packaging quantity	12 pcs.

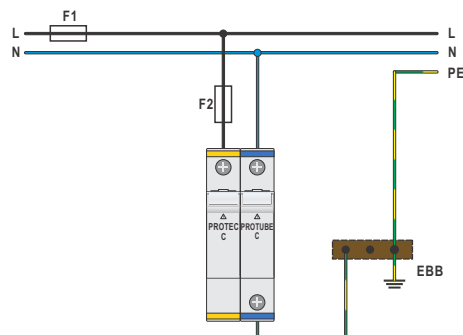
PROTEC C(R) Series

Network connections

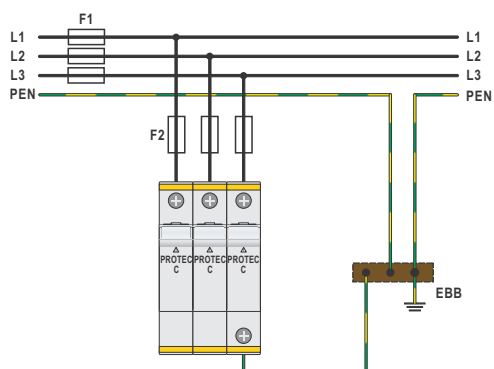
TN-S Network (Single-phase)



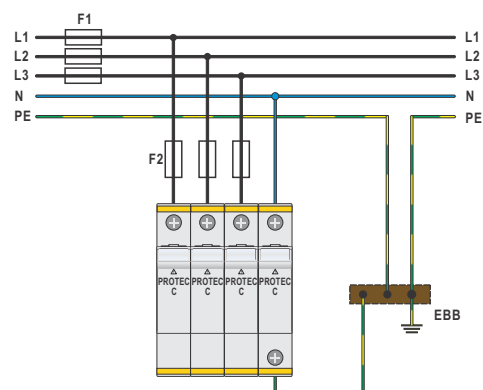
TT Network (Single-phase)



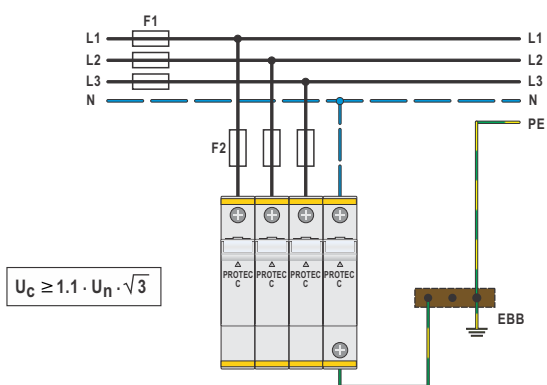
TN-C Network (Three-phase)



TN-S Network (Three-phase)

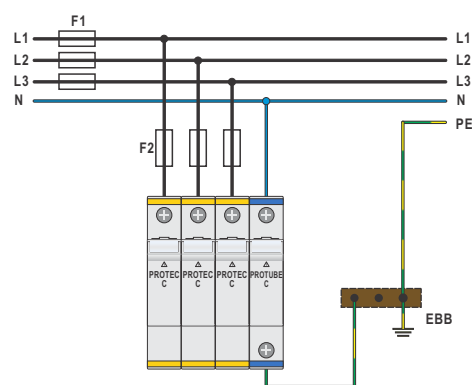


IT Network (Three-phase)



$$U_c \geq 1.1 \cdot U_n \cdot \sqrt{3}$$

TT Network (Three-phase)



Back-up fuse

- F1 > 125A gG/gL → — F2 = 125A gG/gL
- F1 ≤ 125A gG/gL → ~~— F2~~

Class II

Modular Multi-pole SPD

up to 40kA per pole



Category IEC / EN:	Class II / Type 2
Location of use:	Sub-distribution boards
Protection modes:	L/N-PE, L-PEN, L-N, N-PE
Protective elements:	MOV and GDT
Surge discharge ratings:	I_{\max} up to 40kA
Internal protection and safety:	Separate thermal disconnecter for each MOV
Complies with:	IEC 61643-1:2005, EN 61643-11:2005;

PROTEC CMG(R) 40/xxx (2+0)

PROTEC CM(R) Series:

PROTEC CM(R) 80/xxx (2+0)

PROTEC CM(R) 80/xxx (1+1)

PROTEC CM(R) 80A/xxx (1+1)

The PROTEC CM(R) and PROTEC CMG(R) series of overvoltage surge protective devices have been developed to protect low-voltage consumer installation against surges and effects of indirect lightning discharges and induced voltages. They are to be installed within lightning protection zones 0_B-2 as per IEC 62305.

PROTEC CM(R) is available in two configurations: 1+1 or 2+0. 1+1 version consists of high performance varistor with thermal disconnection mechanism and an encapsulated gas discharge tube. 2+0 version consists of two high performance varistors with thermal disconnection mechanism. Plug-in module / base facilitates replacement of a failed module *in situ* without the need to remove system wiring.

PROTEC CMG(R) consists of two high performance varistors with thermal disconnection mechanism in series with an encapsulated gas discharge tube to limit leakage current. Plug-in module / base facilitates replacement of a failed module *in situ* without the need to remove system wiring.

PROTEC CM(R) and PROTEC CMG(R) series comply with the IEC/EN 61643-1 standards and are applicable to the following network systems: TN-S, IT and TT.

PROTEC CMG(R) 40 (2+0)



● Category IEC / EN:	Class II / Type 2
● Location of use:	Sub-distribution boards
● Network system:	TN-S
● Protection modes:	L/N - PE, L - N
● Protective element:	MOV and GDT
● Surge discharge rating:	$I_{\max} = 20\text{kA}$
● Housing:	Modular design
● Complies with:	IEC 61643-1:2005 EN 61643-11:2005;



Technical data

Type	PROTEC CMG(R) 40/xxx (2+0)
	150 275

● Electrical characteristics

Nominal AC voltage	U_o	120V 50/60Hz	230V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V
Nominal discharge current (8/20)	I_n (L/N-PE, L-N)	10kA per pole	
Max. discharge current (8/20)	I_{\max} (L/N-PE, L-N)	20kA per pole	
Protection level	U_p (L/N-PE)	< 0.7kV	< 1.1kV
	U_p (L-N)	< 1.2kV	< 1.9kV
Residual voltage at 3kA (8/20)	U_{res} (L/N-PE)	< 0.5kV	< 0.8kV
	U_{res} (L-N)	< 0.8kV	< 1.4kV
Follow current	I_{fi}	NO	
Response time	t_A (L/N-PE, L-N)	< 100ns / < 25ns	
Thermal protection		YES	
Back-up fuse (if mains > 100A)		100A gG/gL	
Short-circuit current rating	I_{SCCR}	25kA/50Hz	
TOV withstand 5s	U_T	174V	334V
Number of ports		2	

● Mechanical characteristics

Temperature range	T_a	-40°C +70°C	
Permissible humidity	RH	5%...95%	
Terminal screw torque	M_{\max} upper	2.0Nm	
	M_{\max} lower	3.0Nm	
Conductor cross section	upper	6mm ² (solid) / 4mm ² (stranded)	
	lower	35mm ² (solid) / 25mm ² (stranded)	
AWG conductor cross section	upper	11 AWG (solid) / 13 AWG (stranded)	
	lower	2 AWG (solid) / 3 AWG (stranded)	
Mounting		35mm DIN rail, EN 60715	
Degree of protection		IP 20	
Housing material		Thermoplastic; extinguishing degree UL 94 V-0	
Indication of thermal disconnector operation		red flag	
Remote contacts (RC)		YES	
Contact ratings		AC: 250V/0.5A; 125V/3A	
Terminal cross section		max. 1.5mm ²	
Remote terminal torque		0.25Nm	

Ordering information

U_c	150	275
Ordering code PROTEC CMG 40/xxx (2+0)	508.197	508.198
Ordering code PROTEC CMGR 40/xxx (2+0) (with remote contacts)	508.199	508.200
Ordering code Module PROTEC CMG(R) 40/xxx	508.201	508.202

PROTEC CM(R) 80 (2+0)



● Category IEC / EN:	Class II / Type 2
● Location of use:	Sub-distribution boards
● Network system:	TN-S
● Protection modes:	L/N - PE
● Protective element:	MOV
● Surge discharge rating:	$I_{\max} = 40\text{kA}$
● Housing:	Modular design
● Complies with:	IEC 61643-1:2005 EN 61643-11:2005



Technical data

Type		150	275	PROTEC CM(R) 80/xxx (2+0)		320	385	440
● Electrical characteristics								
Nominal AC voltage	U_o	120V 50/60Hz				230V 50/60Hz		440V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V			320/420V	385/500V	440/580V
Nominal discharge current (8/20)	I_n					15kA per pole		
Max. discharge current (8/20)	I_{\max}					40kA per pole		
Protection level	U_p (L/N-PE)	< 0.8kV	< 1.4kV			< 1.4kV	< 1.8kV	< 2.0kV
Residual voltage at 3kA (8/20)	U_{res} (L/N-PE)	< 0.6kV	< 1.1kV			< 1.1kV	< 1.6kV	< 1.8kV
Follow current	I_{fi}					NO		
Response time	t_A					< 25ns		
Thermal protection						YES		
Back-up fuse (if mains > 100A)						100A gG/gL		
Short-circuit current rating	I_{scCR}					25kA/50Hz		
TOV withstand 5s	U_T	174V				334V		580V
Number of ports						1		
● Mechanical characteristics								
Temperature range	T_a					- 40°C + 70°C		
Permissible humidity	RH					5%...95%		
Terminal screw torque	M_{\max} upper					2.0Nm		
	M_{\max} lower					3.0Nm		
Conductor cross section	upper					6mm ² (solid) / 4mm ² (stranded)		
	lower					35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section	upper					11 AWG (solid) / 13 AWG (stranded)		
	lower					2 AWG (solid) / 3 AWG (stranded)		
Altitude		4.000m				3.000m		2.000m
Mounting						35mm DIN rail, EN 60715		
Degree of protection						IP 20		
Housing material						Thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnecter operation						red flag		
Remote contacts (RC)						YES		
Contact ratings						AC: 250V/0.5A; 125V/3A		
Terminal cross section						max. 1.5mm ²		
Remote terminal torque						0.25Nm		

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC CM 80/xxx (2+0)	508.001	508.003	508.005	508.109	508.007
Ordering code PROTEC CMR 80/xxx (2+0) (with remote contacts)	508.009	508.011	508.013	508.111	508.015
Ordering code Module PROTEC CM(R) 80/xxx	508.174	508.164	508.175	508.146	508.147

PROTEC CM(R) 80 (1+1)



● Category IEC / EN:	Class II / Type 2
● Location of use:	Sub-distribution boards
● Network system:	TT, TN-S
● Protection modes:	L-N, N-PE
● Protective element:	MOV and GDT
● Surge discharge rating:	I_{\max} = 40kA/40kA (MOV/GDT)
● Housing:	Modular design
● Complies with:	IEC 61643-1:2005 EN 61643-11:2005



Technical data

Type		150	275	PROTEC CM(R) 80/xxx (1+1)			440
				320	385		
● Electrical characteristics							
Nominal AC voltage	U _o (L-N)	120V 50/60Hz		230V 50/60Hz		440V 50/60Hz	
	U _o (N-PE)			230V 50/60Hz			
Max. continuous operating voltage (AC/DC)	U _c	150/200V	275/350V	320/420V	385/500V	440/580V	
Nominal discharge current (8/20)	I _n (L-N/N-PE)			15kA/20kA			
Max. discharge current (8/20)	I _{max} (L-N/N-PE)			40kA/40kA			
Protection level	U _p (L-N)	< 0.8kV	< 1.4kV	< 1.4kV	< 1.8kV	< 2.0kV	
	U _p (N-PE)			< 1.5kV			
Residual voltage at 3kA (8/20)	U _{res} (L-N)	< 0.6kV	< 1.1kV	< 1.1kV	< 1.6kV	< 1.8kV	
Follow current	I _{fi} (N-PE)			100A _{RMS}			
Response time	t _A (L-N/N-PE)			< 25ns/< 100ns			
Thermal protection				YES			
Back-up fuse (if mains > 100A)				100A gG/gL			
Short-circuit current rating	I _{SCCR}			25kA/50Hz			
TOV withstand 5s	U _T (L-N)	174V		334V		580V	
TOV withstand 200ms	U _T (N-PE)			1200V/300A			
Number of ports				1			
● Mechanical characteristics							
Temperature range	T _a			- 40°C + 70°C			
Permissible humidity	RH			5%...95%			
Terminal screw torque	M _{max} upper			2.0Nm			
	M _{max} lower			3.0Nm			
Conductor cross section	upper			6mm ² (solid) / 4mm ² (stranded)			
	lower			35mm ² (solid) / 25mm ² (stranded)			
AWG conductor cross section	upper			11 AWG (solid) / 13 AWG(stranded)			
	lower			2 AWG (solid) / 3 AWG (stranded)			
Mounting				35mm DIN rail, EN 60715			
Degree of protection				IP 20			
Housing material				Thermoplastic; extinguishing degree UL 94 V-0			
Indication of thermal disconnector operation				red flag			
Remote contacts (RC)				YES			
Contact ratings				AC: 250V/0.5A; 125V/3A			
Terminal cross section				max. 1.5mm ²			
Remote terminal torque				0.25Nm			

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC CM 80/xxx (1+1)	508.045	508.047	508.049	508.117	508.051
Ordering code PROTEC CMR 80/xxx (1+1) (with remote contacts)	508.053	508.055	508.057	508.119	508.059
Ordering code Module PROTEC CM(R) 80/xxx	508.186	508.187	508.188	508.189	508.190

PROTEC CM(R) 80A (1+1)



● Category IEC / EN:	Class II / Type 2
● Location of use:	Sub-distribution boards
● Network system:	TT, TN-S
● Protection modes:	L-N, N-PE
● Protective element:	MOV and GDT
● Surge discharge rating:	$I_{\max} = 40\text{kA}/40\text{kA}$ (MOV/GDT)
● Housing:	Modular design
● Complies with:	IEC 61643-1:2005 EN 61643-11:2005



Technical data

Type		150	275	320	385	440
PROTEC CM(R) 80A/xxx (1+1)						
● Electrical characteristics						
Nominal AC voltage	U_o (L-N)	120V 50/60Hz		230V 50/60Hz		440V 50/60Hz
	U_o (N-PE)			230V 50/60Hz		
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	320/420V	385/500V	440/580V
Nominal discharge current (8/20)	I_n (L-N/N-PE)			15kA/20kA		
Max. discharge current (8/20)	I_{\max} (L-N/N-PE)			40kA/40kA		
Protection level	U_p (L-N)	< 0.8kV	< 1.4kV	< 1.4kV	< 1.8kV	< 2.0kV
	U_p (N-PE)			< 1.5kV		
Residual voltage at 3kA (8/20)	U_{res} (L-N)	< 0.6kV	< 1.1kV	< 1.1kV	< 1.6kV	< 1.8kV
Follow current	I_{fi} (N-PE)			100A _{RMS}		
Response time	t_A (L-N/N-PE)			< 25ns / < 100ns		
Thermal protection				YES		
Back-up fuse (if mains > 100A)				100A gG/gL		
Short-circuit current rating	I_{SCCR}			25kA/50Hz		
TOV withstand 5s	U_T (L-N)	174V		334V		580V
TOV withstand 200ms	U_T (N-PE)			1200V/300A		
Number of ports				1		
● Mechanical characteristics						
Temperature range	T_a			-40°C +70°C		
Permissible humidity	RH			5%...95%		
Terminal screw torque	M_{\max} upper			max. 2.0Nm		
	M_{\max} lower			max. 3.0Nm		
Conductor cross section	upper			6mm ² (solid) / 4mm ² (stranded)		
	lower			35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section	upper			11 AWG (solid) / 13 AWG (stranded)		
	lower			2 AWG (solid) / 3 AWG (stranded)		
Altitude		4.000m		3.000m		2.000m
Mounting				35mm DIN rail, EN 60715		
Degree of protection				IP 20		
Housing material				Thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnector operation				red flag		
Remote contacts (RC)				YES		
Contact ratings				AC: 250V/0.5A; 125V/3A		
Terminal cross section				max. 1.5mm ²		
Remote terminal torque				0.25Nm		

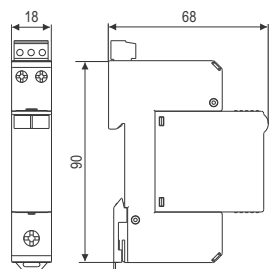
Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC CM 80A/xxx (1+1)	508.120	508.122	508.124	508.126	508.128
Ordering code PROTEC CMR 80A/xxx (1+1) (with remote contacts)	508.130	508.132	508.134	508.136	508.138
Ordering code Module PROTEC CM(R) 80A/xxx	508.176	508.143	508.177	508.144	508.145

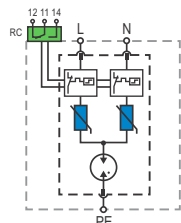
Dimensions, Internal configuration, Weight and Packaging

PROTEC CMG(R) 40/xxx (2+0)

Dimensions



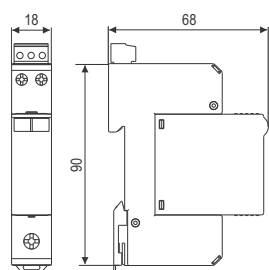
Internal configuration



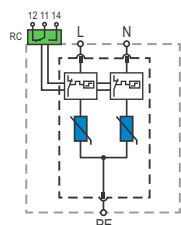
PROTEC CMG 40/xxx (2+0)	150	275
Dimensions DIN 43880	1TE	
Weight per unit	130g	146g
PROTEC CMGR 40/xxx (2+0)	150	275
Dimensions DIN 43880	1TE	
Weight per unit	135g	151g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm	
Min. packaging quantity	12 pcs.	

PROTEC CM(R) 80/xxx (2+0)

Dimensions



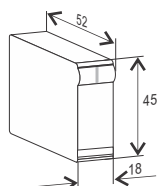
Internal configuration



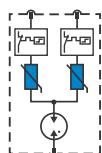
PROTEC CM 80/xxx (2+0)	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	134g	144g	144g	150g	152g
PROTEC CMR 80/xxx (2+0)	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	139g	149g	149g	155g	157g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm				
Min. packaging quantity	12 pcs.				

Module PROTEC CMG(R) 40/xxx (2+0)

Dimensions



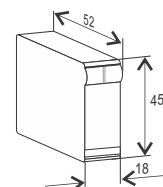
Internal configuration



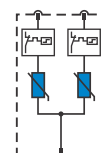
Module PROTEC CMG(R) 40/xxx (2+0)	150	275
Weight per unit	63g	79g
Packaging dimensions	221 x 64.5 x 48.5mm	
Min. packaging quantity	12 pcs.	

Module PROTEC CM(R) 80/xxx (2+0)

Dimensions



Internal configuration

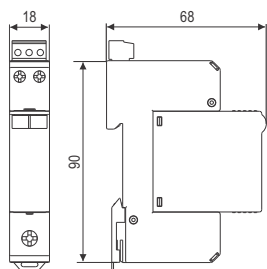


Module PROTEC CM(R) 80/xxx (2+0)	150	275	320	385	440
Weight per unit	67g	78g	78g	83g	85g
Packaging dimensions	221 x 64.5 x 48.5mm				
Min. packaging quantity	12 pcs.				

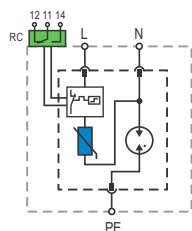
Dimensions, Internal configuration, Weight and Packaging

PROTEC CM(R) 80/xxx (1+1)

Dimensions



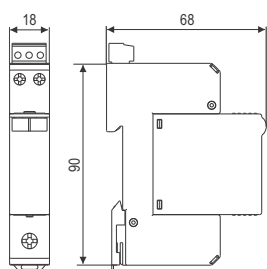
Internal configuration



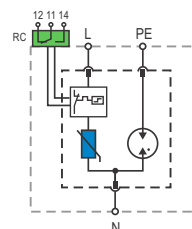
PROTEC CM 80/xxx (1+1)	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	124g	126g	126g	129g	130g
PROTEC CMR 80/xxx (1+1)	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	129g	131g	131g	134g	135g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm				
Min. packaging quantity	12 pcs.				

PROTEC CM(R) 80A/xxx (1+1)

Dimensions



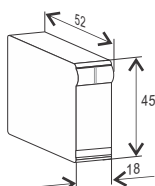
Internal configuration



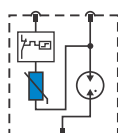
PROTEC CM 80A/xxx (1+1)	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	124g	126g	126g	129g	130g
PROTEC CMR 80A/xxx (1+1)	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	129g	131g	131g	134g	135g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm				
Min. packaging quantity	12 pcs.				

Module PROTEC CM(R) 80/xxx (1+1)

Dimensions



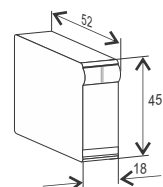
Internal configuration



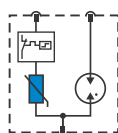
Module PROTEC CM(R) 80/xxx (1+1)	150	275	320	385	440
Weight per unit	57g	59g	59g	62g	63g
Packaging dimensions	221 x 64.5 x 48.5mm				
Min. packaging quantity	12 pcs.				

Module PROTEC CM(R) 80A/xxx (1+1)

Dimensions



Internal configuration



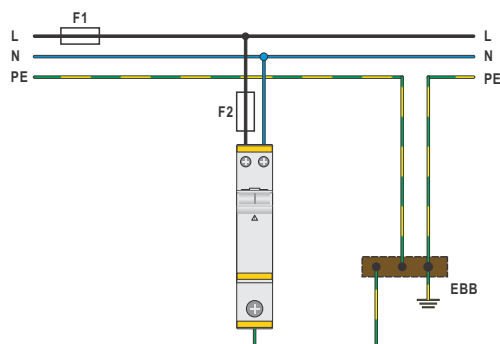
Module PROTEC CM(R) 80A/xxx (1+1)	150	275	320	385	440
Weight per unit	57g	59g	59g	62g	63g
Packaging dimensions	221 x 64.5 x 48.5mm				
Min. packaging quantity	12 pcs.				

PROTEC CMG(R) Series
PROTEC CM(R) Series

Network connections

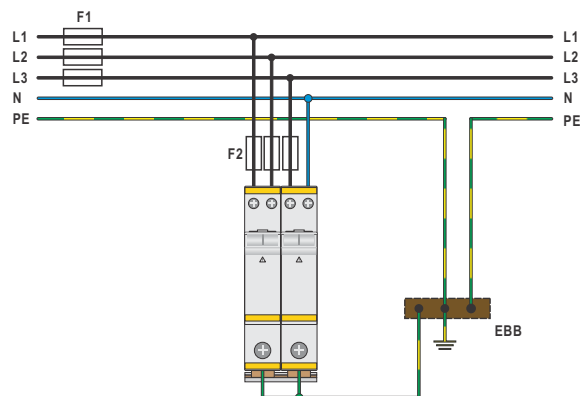
TN-S Network (Single-phase)

PROTEC CMG(R) 40 (2+0)
PROTEC CM(R) 80 (2+0)



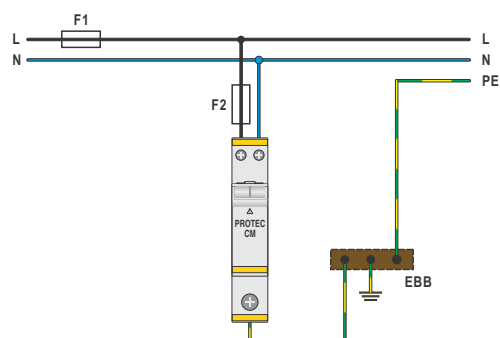
TN-S Network (Three-phase)

2x PROTEC CMG(R) 40 (2+0)
2x PROTEC CM(R) 80 (2+0)



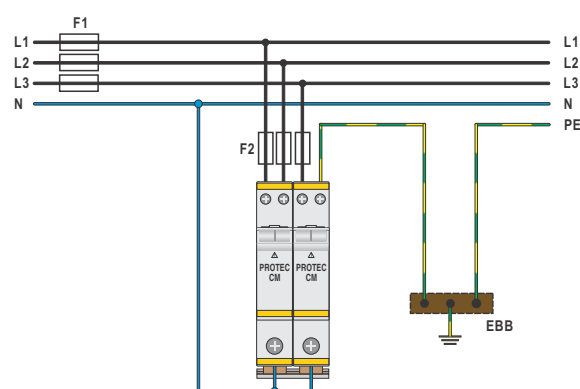
TT Network (Single-phase)

PROTEC CM(R) 80 (1+1)



TT Network (Three-phase)

PROTEC CM(R) 80 (2+0) + PROTEC CM(R) 80A (1+1)



Back-up fuse

$F1 > 100\text{A gG/gL} \rightarrow F2 = 100\text{A gG/gL}$
 $F1 \leq 100\text{A gG/gL} \rightarrow \text{no } F2$

Class III

Modular and Compact

Single and Multi-pole SPD



Category IEC / EN:	Class III / Type 3
Location of use:	Sub-distribution boards, cable ducts, power outlets
Protection modes:	L/N-PE
Protective elements:	MOV, GDT or EMI filter
Surge discharge ratings:	U_{oc} up to 10kV
Internal protection and safety:	Separate thermal disconnecter for each MOV
Complies with:	IEC 61643-11:2011, EN 61643-11:2012 IEC 61643-1:2005, EN 61643-11:2005;

PROTEC D(R) 10/xxx
PROTEC DM(R) 20/xxx (2+0)
PROTEC DMG(R) 20/xxx (2+0)

PROLED 275 16A Series

MPE-MINI
MPE-MINI LED

ZE 200-PS

PROFILT D xxx

SPDs Class I and Class II are not enough to protect sensitive electronic elements. Overvoltage waves are slowly increasing and, at a greater distance, reoccurring and threatening devices. Incidence of low value surges, which are still too high for electronic elements, is still common in the object itself. They are caused by activation/switching of major appliances, inductive devices and motors, industrial systems operation. They intended to provide protection in zones 2 - 3 as per IEC 62305.

The PROTEC D series of overvoltage surge protective devices has been developed to protect against indirect lightning discharges and induced voltages. The plug-in module/base design facilitate replacement of a failed module without the need to remove system wiring etc.

PROLED series is designed for advanced 3-phase devices, equipment and systems up to 16A/230VAC per phase.

MPE series is designed for installation into electrical installation systems, cable ducts and wiring sockets.

ZE 200-PS is designed for plug in to the power outlet.

PROFILT D series contains surge arresters and filter, which are connected in serial.

PROTEC D(R) 10



- **Category IEC / EN:** Class III / Type 3
- **Location of use:** Sub-distribution boards
- **Network systems:** TN-S, TN-C, TT (only L-N), IT
- **Protection modes:** L/N - PE, L-PEN, L-N
- **Protective element:** MOV
- **Surge discharge rating:** $U_{oc} = 10kV$
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		150	275	PROTEC D(R) 10/xxx			385	440
● Electrical characteristics								
Nominal AC voltage	U _O	120V 50/60Hz		230V 50/60Hz		400V 50/60Hz		
Max. continuous operating voltage (AC/DC)	U _C	150/200V	275/350V	320/420V	385/500V	440/580V		
Open circuit voltage of the combination wave generator	U _{OC}				10kV			
Max. discharge current (8/20)	I _{max}				10kA			
Nominal discharge current (8/20)	I _n				5kA			
Protection level	U _p	< 0.8kV	< 1.2kV	< 1.2kV	< 1.6kV	< 2.0kV		
Follow current	I _{fi}				NO			
Response time	t _A				< 25ns			
Thermal protection					YES			
Back-up fuse (if mains > 63A)					63A gG/gL			
Short-circuit current rating	I _{scCR}				25kA/50Hz			
TOV withstand 5s	U _T	174V		334V		580V		
TOV disconnection 120min	U _T	229V		438V		765V		
Number of ports					1			
● Mechanical characteristics								
Temperature range	T _a	- 40°C + 70°C						
Permissible humidity	RH	5%...95%						
Terminal screw torque	M _{max}	3.0Nm						
Conductor cross section		35mm² (solid) / 25mm² (stranded)						
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)						
Mounting		35mm DIN rail, EN 60715						
Degree of protection		IP 20						
Housing material		thermoplastic; extinguishing degree UL 94 V-0						
Indication of thermal disconnector operation		red flag						
Remote contacts (RC)		YES						
Contact ratings		AC: 250V/0.5A; 125V/3A						
Terminal cross section		max. 1.5mm²						
Remote terminal torque		0.25Nm						

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC D 10/xxx	508.601	508.603	508.605	508.617	508.607
Ordering code PROTEC DR 10/xxx (with remote contacts)	508.609	508.611	508.613	508.619	508.615
Ordering code Module PROTEC D(R) 10/xxx	508.620	508.621	508.622	508.623	508.624

PROTEC DM(R) 20 (2+0)



● Category IEC / EN:	Class III / Type 3
● Location of use:	Sub-distribution boards
● Network systems:	TN-S
● Protection modes:	L/N - PE
● Protective element:	MOV
● Surge discharge rating:	$U_{OC} = 10kV$
● Housing:	Modular design
● Complies with:	IEC 61643-1:2005, EN 61643-11:2005;



Technical data

Type		150	275	320	385	440
PROTEC DM(R) 20/xxx (2+0)						
● Electrical characteristics						
Nominal AC voltage	U_o	120V 50/60Hz		230V 50/60Hz		400V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	320/420V	385/500V	440/580V
Open circuit voltage of the combination wave generator	U_{oc}			10kV		
Max. discharge current (8/20)	I_{max}			10kA per pole		
Protection level	U_p (L/N-PE)	< 0.8kV	< 1.2kV	< 1.2kV	< 1.6kV	< 2.0kV
Follow current	I_{fi}			NO		
Response time	t_A			< 25ns		
Thermal protection				YES		
Back-up fuse (if mains > 63A)				63A gG/gL		
Short-circuit current rating	I_{scCR}			10kA/50Hz		
TOV withstand 5s	U_T	174V		334V		580V
Number of ports				1		
● Mechanical characteristics						
Temperature range	T_a			- 40°C + 70°C		
Permissible humidity	RH			5%...95%		
Terminal screw torque	M_{max} upper			2.0Nm		
	M_{max} lower			3.0Nm		
Conductor cross section	upper			6mm ² (solid) / 4mm ² (stranded)		
	lower			35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section	upper			11 AWG (solid) / 13 AWG (stranded)		
	lower			2 AWG (solid) / 3 AWG (stranded)		
Mounting				35mm DIN rail, EN 60715		
Degree of protection				IP 20		
Housing material				Thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnector operation				red flag		
Remote contacts (RC)				YES		
Contact ratings				AC: 250V/0.5A; 125V/3A		
Terminal cross section				max. 1.5mm ²		
Remote terminal torque				0.25Nm		

Ordering information

U_c	150	275	320	385	440
Ordering code PROTEC DM 20/xxx (2+0)	508.029	508.031	508.033	508.113	508.035
Ordering code PROTEC DMR 20/xxx (2+0) (with remote contacts)	508.037	508.039	508.041	508.115	508.043
Ordering code Module PROTEC DM(R) 20/xxx	508.191	508.192	508.193	508.194	508.195

PROTEC DMG(R) 20 (2+0)



● Category IEC / EN:	Class III / Type 3
● Location of use:	Sub-distribution boards
● Network systems:	TN-S
● Protection modes:	L/N - PE
● Protective elements:	MOV and GDT
● Surge discharge rating:	$U_{OC} = 10\text{kV}$
● Housing:	Modular design
● Complies with:	IEC 61643-1:2005, EN 61643-11:2005



Technical data

Type

PROTEC DMG(R) 20/320 (2+0)

● Electrical characteristics

Nominal AC voltage	U_o	230V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	320/420V
Open circuit voltage of the combination wave generator	U_{oc}	10kV
Max. discharge current (8/20)	I_{max}	10kA per pole
Max. discharge current (8/20)	I_n	5kA
Protection level	U_p (L/N-PE)	< 1.6kV
Follow current	I_{fi}	NO
Response time	t_A	< 100ns
Thermal protection		YES
Back-up fuse (if mains > 63A)		63A gG/gL
Short-circuit current rating	I_{SCCR}	10kA/50Hz
TOV withstand 5s	U_T	334V
Number of ports		1

● Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C
Permissible humidity	RH	5%...95%
Terminal screw torque	M_{max} upper	2.0Nm
	M_{max} lower	3.0Nm
Conductor cross section	upper	6mm ² (solid) / 4mm ² (stranded)
	lower	35mm ² (solid) / 25mm ² (stranded)
AWG conductor cross section	upper	11 AWG (solid) / 13 AWG (stranded)
	lower	2 AWG (solid) / 3 AWG (stranded)
Mounting		35mm DIN rail, EN 60715
Degree of protection		IP 20
Housing material		Thermoplastic; extinguishing degree UL 94 V-0
Indication of thermal disconnecter operation		red flag
Remote contacts (RC)		YES
Contact ratings		AC: 250V/0.5A; 125V/3A
Terminal cross section		max. 1.5mm ²
Remote terminal torque		0.25Nm

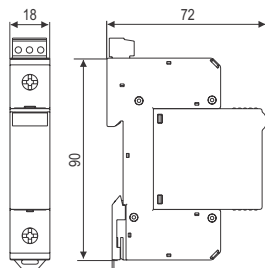
Ordering information

U_c	320
Ordering code PROTEC DMG 20/xxx (2+0)	508.021
Ordering code PROTEC DMGR 20/xxx (2+0) (with remote contacts)	508.027
Ordering code Module PROTEC DMG(R) 20/xxx	508.196

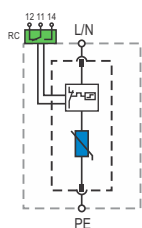
Dimensions, Internal configuration, Weight and Packaging

PROTEC D(R) 10/xxx

Dimensions



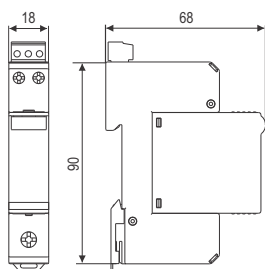
Internal configuration



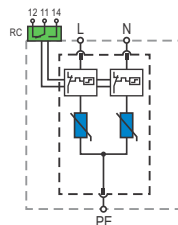
PROTEC D 10/xxx	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	124g	130g	130g	131g	132g
PROTEC DR 10/xxx	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	129g	135g	135g	136g	137g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm				
Min. packaging quantity	12 pcs.				

PROTEC DM(R) 20/xxx (2+0)

Dimensions



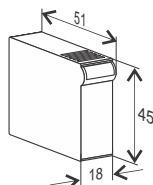
Internal configuration



PROTEC DM 20/xxx (2+0)	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	136g	140g	150g	153g	155g
PROTEC DMR 20/xxx (2+0)	150	275	320	385	440
Dimensions DIN 43880	1TE				
Weight per unit	141g	145g	155g	158g	160g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm				
Min. packaging quantity	12 pcs.				

Module PROTEC D(R) 10/xxx

Dimensions



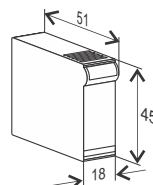
Internal configuration



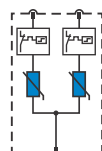
Module PROTEC D(R) 10/xxx	150	275	320	385	440
Weight per unit	52g	58g	58g	59g	60g
Packaging dimensions	221 x 64.5 x 48.5mm				
Min. packaging quantity	12 pcs.				

Module PROTEC DM(R) 20/xxx (2+0)

Dimensions



Internal configuration

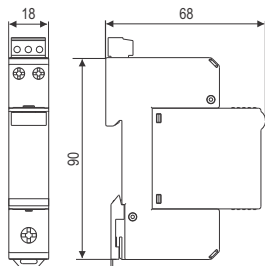


Module PROTEC DM(R) 20/xxx (2+0)	150	275	320	385	440
Weight per unit	69g	73g	83g	86g	88g
Packaging dimensions	221 x 64.5 x 48.5mm				
Min. packaging quantity	12 pcs.				

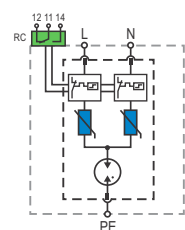
Dimensions, Internal configuration, Weight and Packaging

PROTEC DMG(R) 20/320 (2+0)

Dimensions



Internal configuration

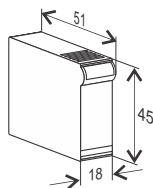


PROTEC DMG 20/320 (2+0)

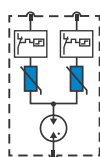
Dimensions DIN 43880	1TE
Weight per unit	118g
PROTEC DMGR 20/320 (2+0)	
Dimensions DIN 43880	1TE
Weight per unit	123g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm
Min. packaging quantity	12 pcs.

Module PROTEC DMG(R) 20/320 (2+0)

Dimensions



Internal configuration



Module PROTEC DMG(R) 20/320 (2+0)

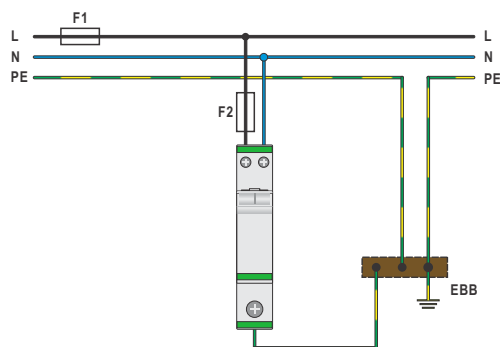
Weight per unit	51g
Packaging dimensions	221 x 64.5 x 48.5mm
Min. packaging quantity	12 pcs.

PROTEC DM(R) Series PROTEC DMG(R) Series

Network connections

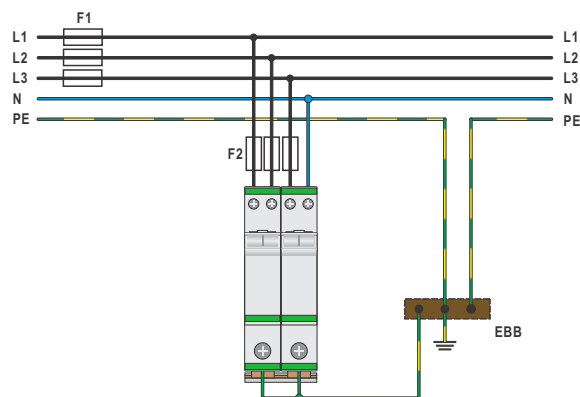
TN-S Network (Single-phase)

PROTEC DM(R) 20 (2+0)
PROTEC DMG(R) 20 (2+0)



TN-S Network (Three-phase)

2x PROTEC DM(R) 20 (2+0)
2x PROTEC DMG(R) 20 (2+0)



Back-up fuse

$F1 > 63A \text{ gG/gL} \rightarrow F2 = 63A \text{ gG/gL}$
 $F1 \leq 63A \text{ gG/gL} \rightarrow \text{No F2}$

PROLED 275 16A Series



● Category IEC/EN:	Class III / Type 3
● Location of use:	Sub distribution board
● Network systems:	TN-S, TT
● Max. load current:	16A AC
● Protection modes:	L/N-PE
● Protective elements:	MOV, GDT
● Indication:	Red and green LED
● No. of ports:	Two ports SPD
● Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type		275 (3+1) 16A	PROLED	275 (4+0) 16A
● Electrical characteristics				
Nominal AC voltage	U _o	230V 50/60Hz		
Max. continuous operating voltage (AC/DC) at 50/60Hz	U _c	275V		
Max. rated load current	I _L	16A		
Open circuit voltage of the combination wave generator	U _{oc}	6kV		
Nominal discharge current	I _n	3kA		
Protection level at U _{OC}	U _p (L-N)	850V	/	
	U _p (L-PE)	/	850V	
Thermal protection		YES		
Remote contacts		10A/230VAC		
Back-up fuse (if mains > 16A)		16A gG/gL		
TOV withstand 5s	U _T	334V		
TOV disconnection 120min	U _T	438V		
Number of ports		2		
● Mechanical characteristics				
Temperature range	T _a	- 40°C + 70°C		
Permissible humidity	RH	5%...95%		
Conductor cross section		4mm ² (stranded)		
AWG conductor cross section		11 AWG (stranded)		
Mounting		35mm DIN rail, EN 60715		
Degree of protection		IP 20		
Housing material		Thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnector operation		Red and green LED		

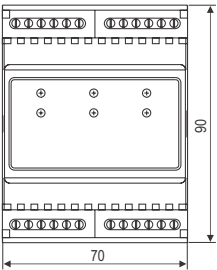
Ordering information

U_c	275 (3+1) 16A	275 (4+0) 16A
Ordering code PROLED	130 302	130 301

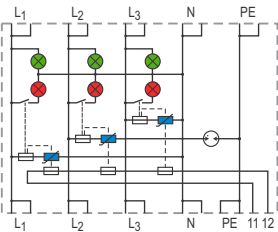
Dimensions, Internal configuration, Weight and Packaging

PROLED 275 (3+1) 16A

Dimensions



Internal configuration



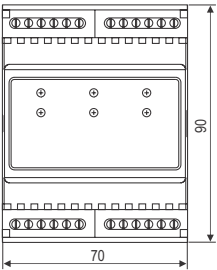
PROLED 275 (3+1) 16A

Dimensions, weight and packaging

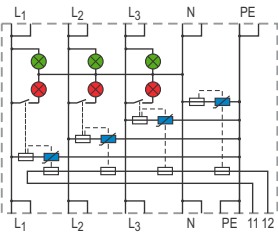
PROLED	275 (3+1) 16A	275 (4+0) 16A
Dimensions DIN 43890		4TE
Weight per unit		164g
Packaging dimensions (single unit)		109 x 76.5 x 80mm
Min. packaging quantity		3 pcs.

PROLED 275 (4+0) 16A

Dimensions



Internal configuration

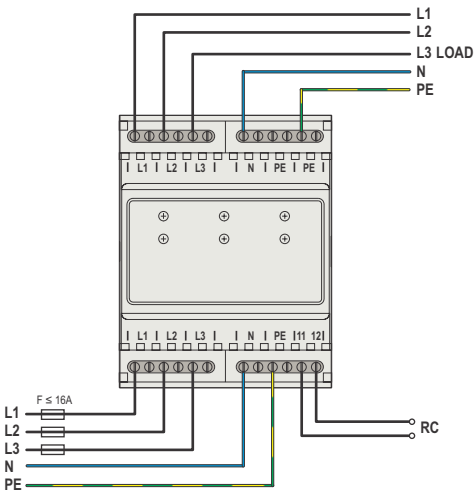


PROLED 275 (4+0) 16A

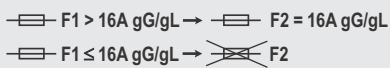
Network connections

TN-S, TT Network

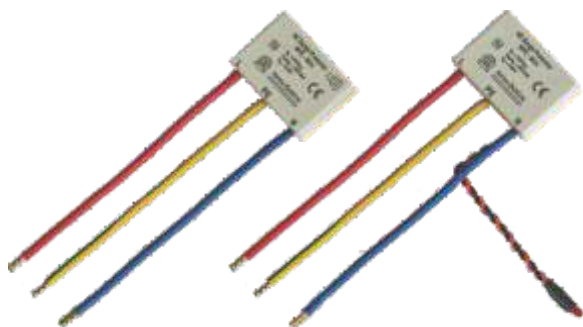
PROLED 275 16A



Back-up fuse



MPE-MINI



● Category IEC/EN:	Class III/Type 3
● Location of use:	Cable ducts, wiring outlets
● Network systems:	TN-S
● Protection modes:	L/N, L/N-PE
● Protective elements:	MOV and GDT
● Surge discharge rating:	$U_{OC} = 6kV$
● Fault indication:	Buzzer; LED
● Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type	MPE-MINI	MPE-MINI LED
● Electrical characteristics		
Max. continuous operating voltage (AC/DC) at 50/60Hz	U_C	275V
Nominal AC voltage	U_O	230V 50/60Hz
Open circuit voltage of the combination wave generator	U_{cw}	1.5kV 6kV/3kA 1.4kV
Protection level	U_P (L-N) U_P (L/N-PE)	1.7kV 0.9kV
Thermal protection		YES
Back-up fuse (if mains > 16A)		MCB/B 16 A
TOV withstand 5s	U_T	335V
TOV disconnection 120min	U_T	438V
Short circuit current rating	ISCCR	1kA
Number of ports		1
● Mechanical characteristics		
Temperature range	T_a	- 40°C + 70°C
Conductor cross section		1.5mm ² (stranded)
AWG conductor cross section		15 AWG (stranded)
Permissible humidity	RH	5%...95%
Mounting		Cable ducts
Degree of protection		IP 20
Housing material		Thermoplastic; extinguishing degree UL 94 V-0
Indication of thermal disconnector operation	Buzzer	LED

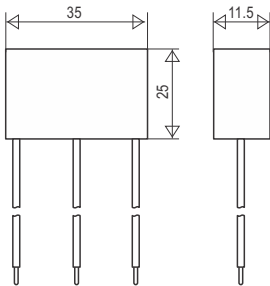
Ordering information

U_C	275
Ordering code MPE-MINI	121 501
Ordering code MPE-MINI LED	130 331

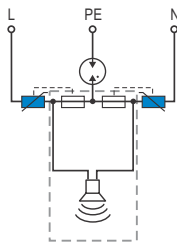
Dimensions, Internal configuration, Weight and Packaging

MPE-MINI

Dimensions



Internal configuration

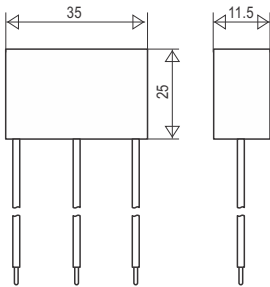


Dimensions, weight and packaging

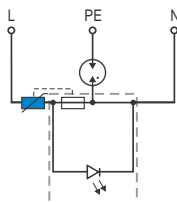
MPE-MINI	
Dimensions	35 x 25 x 12mm
Weight per unit	52g
Packaging dimensions	305 x 116 x 83mm
Min. packaging quantity	30 pcs.

MPE-MINI LED

Dimensions



Internal configuration



Dimensions, weight and packaging

MPE-MINI LED	
Dimensions DIN 43880	35 x 25 x 12mm
Weight per unit	52g
Packaging dimensions	305 x 116 x 83mm
Min. packaging quantity	30 pcs.

ZE 200-PS



- **Category IEC / EN:** Class III / Type 3
- **Location of use:** Power outlet
- **Network systems:** TN-S, TT
- **Protection modes:** L(N) - PE, L-N
- **Protective elements:** MOV and GDT
- **Surge discharge rating:** $U_{OC} = 6kV$
- **Indication:** Green and red light
- **Housing:** Compact design
- **Complies with:** IEC 61643-1:2005, EN 61643-11:2005



Technical data

Type	ZE 200-PS	
● Electrical characteristics		
Nominal AC voltage	U _o	230V 50/60Hz
Max. continuous operating voltage (AC/DC) at 50/60Hz	U _c	275V
Open circuit voltage of the combination wave generator	U _{oc}	6kV
Protection level at U _{OC}	U _p (L-N)	< 1000V
	U _p (L/N-PE)	< 1500V
Response time	t _A (L-N)	< 25ns
	t _A (L/N-PE)	< 100ns
Thermal protection		YES
Back-up fuse (if mains > 16A)		MCB/B16A
TOV withstand 5s	U _T	334V
Number of ports		1
● Mechanical characteristics		
Temperature range	T _a	- 40°C + 70°C
Permissible humidity	RH	5%...95%
Connection		DIN 49 440-CE(7)III; DIN 49 441-CEE(7)IV; Grounding contact
Degree of protection		IP 20
Housing material		Thermoplastic; extinguishing degree UL 94 V-0
Indication of thermal disconnecter operation		Green and red light

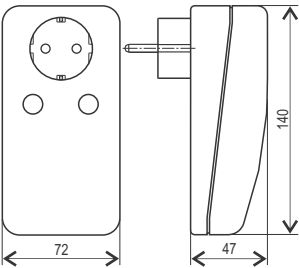
Ordering information

U_c	275
Ordering code ZE 200-PS	121 532

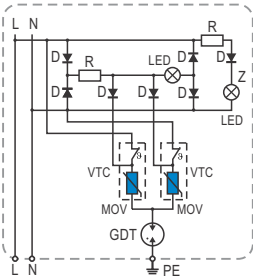
Dimensions, Internal configuration, Weight and Packaging

ZE-200 PS

Dimensions



Internal configuration



Dimensions, weight and packaging

ZE 200-PS	
Dimensions	140 x 47 x 72mm
Weight per unit	182g
Packaging dimensions (single unit)	151.5 x 96 x 79.5mm
Min. packaging quantity	1 pc.

PROFILT D 8A



● Category IEC/EN:	Class III / Type 3
● Location of use:	Sub distribution boards
● Network systems:	TN-S, TT
● Max. load current:	8A
● Protection modes:	L/N PE
● Protective elements:	MOV, GDT, EMI Filter
● Fault indication:	Red light
● No. of ports:	Two port
● Complies with:	IEC 61643-1:2005, EN 61643-11:2005;



Technical data

Type

PROFILT D 8A

● Electrical characteristics

Nominal AC voltage	U_o	230V 50/60Hz
Max. continuous operating voltage (AC/DC) at 50/60Hz	U_c	275V
Max. load current	I_L	8A
Open circuit voltage of the combination wave generator	U_{oc}	6kV
Protection level at U_{oc}	U_p (L-N)	< 1.0kV
Thermal protection		YES
Filtering		< 90dB@5MHz
Back-up fuse (if mains > 8A)		8A gG/gL
TOV withstand 5s	U_T	334V
Number of ports		2

● Mechanical characteristics

Temperature range	T_a	- 40°C + 80°C
Permissible humidity	RH	5%...95%
Terminal screw torque	M_{max}	0.51Nm
Conductor cross section		13mm ² (stranded)
AWG conductor cross section		2.5 AWG (stranded)
Mounting		35mm DIN rail, EN 60715
Degree of protection		IP 20
Housing material		Thermoplastic; extinguishing degree UL 94 V-0
Indication of thermal disconnector operation		Red light

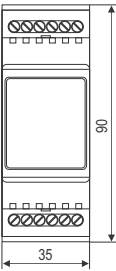
Ordering information

I_L	8A
Ordering code PROFILT 8A	130 061

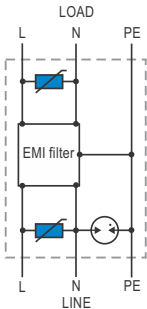
Dimensions, Internal configuration, Weight and Packaging

PROFILT D 8A

Dimensions



Internal configuration



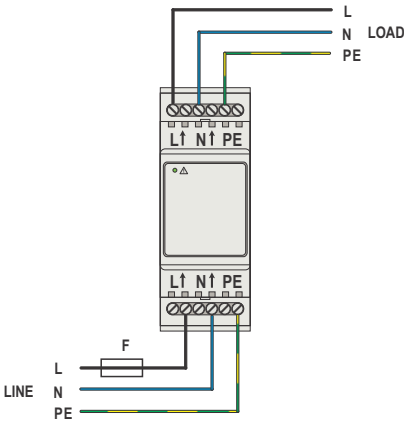
Dimensions, weight and packaging

PROFILT D 8A	
Dimensions DIN 43880	2TE
Weight per unit	94g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm
Min. packaging quantity	7 pcs.

Network connections

TN-S, TT Network

PROFILT D 8A



PROFIL D



- Category IEC/EN: Class III / Type 3
- Location of use: Sub distribution boards
- Network systems: TN-S, TT
- Max. load current: 30A
- Protection modes: L/N-PE
- Protective elements: MOV, GDT, EMI Filter
- Fault indication: Red light
- No. of ports: Two port
- Complies with: IEC 61643-1:2005, EN 61643-11:2005;



Technical data

Type		10A	PROFIL D yy		30A
		16A	25A		
● Electrical characteristics					
Nominal AC voltage	U _o	230V 50/60Hz			
Max. continuous operating voltage (AC/DC) at 50/60Hz	U _c	275V			
Max. load current	I _L	10A	16A	25A	30A
Open circuit voltage of the combination wave generator	U _{oc}	6kV			
Protection level at U _{oc}	U _p (L-N)	< 1.0kV			
Thermal protection		YES			
Filtering		< 70dB@1MHz			
Back-up fuse		10A gG/gL	16A gG/gL	25A gG/gL	30A gG/gL
TOV withstand 5s	U _T	334V			
Number of ports		2			
● Mechanical characteristics					
Temperature range	T _a	- 40°C + 70°C			
Permissible humidity	RH	5% - 95%			
Terminal screw torque	M _{max}	3.0Nm			
Conductor cross section		25mm ² (stranded)			
AWG conductor cross section		3 AWG (stranded)			
Mounting		35mm DIN rail, EN 60715			
Degree of protection		IP 20			
Housing material		Thermoplastic; extinguishing degree UL 94 V-0			
Indication of thermal disconnecter operation		Red light			

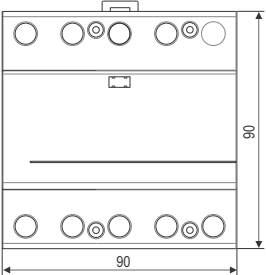
Ordering information

I_L	10A	16A	25A	30A
Ordering code PROFIL D xxx	130 051	130 052	130 053	130 050

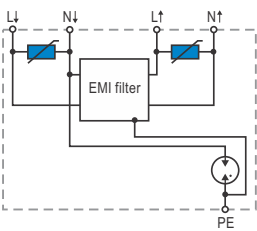
Dimensions, Internal configuration, Weight and Packaging

PROFILT D

Dimensions



Internal configuration



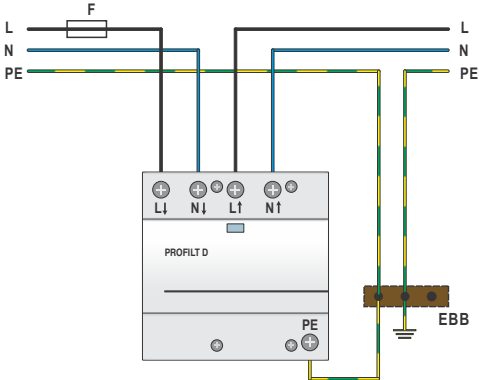
Dimensions, weight and packaging

PROFILT D yy	10A	16A	25A	30A
Dimensions DIN 43880	5TE			
Weight per unit	420g			
Packaging dimensions (single unit)	112 x 76.5 x 100mm			
Min. packaging quantity	3 pcs.			

Network connections

TN-S, TT Network

PROFILT D



Modular and Compact SPD for DC Power Systems



Category IEC/EN:	Class I, II, III / Type 1, 2, 3
Category IEC/EN:	D1/C1/C2/C3 (IEC/EN 61643-21)
Location of use:	Distribution boards, DC Power Systems
Protective elements:	MOV, GDT, diodes
Surge discharge ratings:	I_{\max} up to 60kA, I_{imp} up to 10kA
Complies with:	IEC 61643-1:2005, EN 61643-11:2005;

DC PROTEC B(R) 10/xx
DC PROTEC C(R) 40/xx
PROTEC C(R) 40/75
PROTEC DMDR 20/xxx

SPDs for DC Power Systems have been designed to meet the unique requirements of protection of DC Power Systems used for telecommunication and railway applications. Internal thermal disconnectors are used to eliminate the hazard of thermal runaway fault conditions.

DC PROTEC B(R) 10



- Category IEC / EN: Class I / Type 1
- Location of use: Main-distribution boards
- Protection modes: (+) → PE, (-) → PE, (+) → (-)
- Protective element: MOV
- Surge discharge rating: $I_{imp} = 10\text{kA}$
- Housing: Compact design
- Complies with: IEC 61643-1:2005, EN 61643-11:2005;



Technical data

Type	DC PROTEC B(R) 10/xx		
	24	48	
● Electrical characteristics			
Nominal operating voltage	U _n	24V	48V
Max. continuous operating voltage (DC)	U _c	30V	60V
Nominal discharge current (8/20)	I _n	20kA	
Max. discharge current (8/20)	I _{max}	60kA	
Impulse current (10/350)	I _{imp}	10kA	
Protection level	U _p	< 0.6kV	
Residual voltage at I _{imp}	U _{res}	< 0.3kV	
Response time	t _A	< 25ns	
Thermal protection		YES	
Number of ports		1	
● Mechanical characteristics			
Temperature range	T _a	- 40°C + 70°C	
Permissible humidity	RH	5%...95%	
Terminal screw torque	M _{max}	3.0Nm	
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)	
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)	
Mounting		35mm DIN rail, EN 60715	
Degree of protection		IP 20	
Housing material		Thermoplastic; extinguishing degree UL 94 V-0	
Indication of thermal disconnect operation		red flag	
Remote contacts (RC)		YES	
Contact ratings		AC: 250V/0.5A; 125V/3A	
Terminal cross section		max. 1.5mm ²	
Remote terminal torque		0.25Nm	

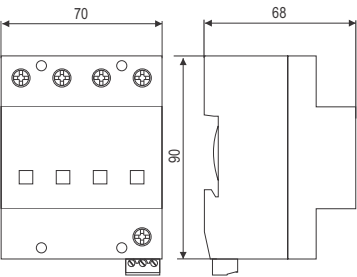
Ordering information

U_n	24	48
Ordering code DC PROTEC B 10/xx	510 598	510 600
Ordering code DC PROTEC BR 10/xx (with remote contacts)	510 599	510 601

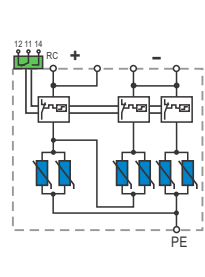
Dimensions, Internal configurations, Weight and Packaging

DC PROTEC B(R) 10/xx

Dimensions



Internal configuration



DC PROTEC B 10	24	48
Dimensions DIN 43880	4TE	
Weight per unit	327g	327g
DC PROTEC BR 10	24	48
Dimensions DIN 43880	4TE	
Weight per unit	332g	332g
Packaging dimensions (single unit)	109 x 76.5 x 80mm	
Min. packaging quantity	3 pcs.	

DC PROTEC C(R) 40



- Category IEC / EN: Class II / Type 2
- Location of use: Sub-distribution boards
- Protection modes: (+) → PE, (-) → PE, (+) → (-)
- Protective element: MOV
- Surge discharge rating: $I_{max} = 40\text{kA}$
- Housing: Compact design
- Complies with: IEC 61643-1:2005, EN 61643-11:2005;



Technical data

Type		DC PROTEC C(R) 40/xx	
		24	48
● Electrical characteristics			
Nominal operating voltage	U _n	24V	48V
Max. continuous operating voltage (DC)	U _c	30V	60V
Nominal discharge current (8/20)	I _n	20kA	
Max. discharge current (8/20)	I _{max}	40kA	
Protection level	U _p (+) → (-)	< 0.6kV	
	(+), (-) → PE	< 1.5kV	
Response time	t _A	< 25ns	
Thermal protection		YES	
Number of ports		1	
● Mechanical characteristics			
Temperature range	T _a	- 40°C + 70°C	
Permissible humidity	RH	5%...95%	
Terminal screw torque	M _{max}	3.0Nm	
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)	
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)	
Mounting		35mm DIN rail, EN 60715	
Degree of protection		IP 20	
Housing material		Thermoplastic; extinguishing degree UL 94 V-0	
Indication of thermal disconnecter operation		red flag	
Remote contacts (RC)		YES	
Contact ratings		AC: 250V/0.5A; 125V/3A	
Terminal cross section		max. 1.5mm ²	
Remote terminal torque		0.25Nm	

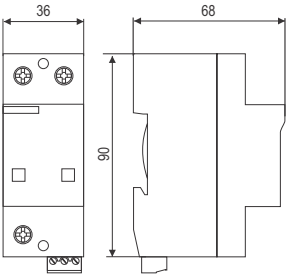
Ordering information

U_n	24	48
Ordering code DC PROTEC C 40/xx	510 564	510 566
Ordering code DC PROTEC CR 40/xx (with remote contacts)	510 565	510 567

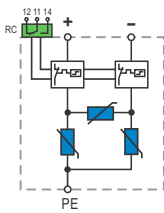
Dimensions, Internal configurations, Weight and Packaging

DC PROTEC C(R) 40/xx

Dimensions



Internal configuration



DC PROTEC C 40	24	48
Dimensions DIN 43880	2TE	
Weight per unit	204g	204g
DC PROTEC CR 40	24	48
Dimensions DIN 43880	2TE	
Weight per unit	208g	208g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm	
Min. packaging quantity	7 pcs.	

PROTEC C(R) 40



- **Category IEC / EN:** Class II / Type 2
- **Location of use:** Sub- distribution boards
- **Protection modes:** L/N- PE, L-PEN
- **Protective element:** MOV
- **Surge discharge rating:** $I_{max} = 40kA$
- **Housing:** Modular design
- **Complies with:** IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type

PROTEC C(R) 40/75

● **Electrical characteristics**

Nominal AC voltage	U_o	60V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	75/100V
Nominal discharge current (8/20)	I_n	20kA
Max. discharge current (8/20)	I_{max}	40kA
Protection level	U_p	< 0.7kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.4kV
Follow current	I_{fi}	NO
Response time	t_A	< 25ns
Thermal protection		YES
Back-up fuse (if mains > 125A)		125A gG/gL
Short-circuit current rating	I_{SCCR}	25kA/50Hz
TOV withstand 5s	U_T	90V
TOV disconnection 120min	U_T	115V
Number of ports		1

● **Mechanical characteristics**

Temperature range	T_a	- 40°C + 70°C
Permissible humidity	RH	5%...95%
Terminal screw torque	M_{max}	3.0Nm
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)
Mounting		35mm DIN rail, EN 60715
Degree of protection		IP 20
Housing material		thermoplastic; extinguishing degree UL 94 V-0
Indication of thermal disconnector operation		red flag
Remote contacts (RC)		YES
Contact ratings		AC: 250V/0.5A; 125V/3A
Terminal cross section		max. 1.5mm ²
Remote terminal torque		0.25Nm

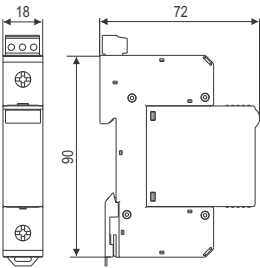
Ordering information

U_c	75
Ordering code PROTEC C 40/75	50.0001
Ordering code PROTEC CR 40/75 (with remote contacts)	50.0011
Ordering code Module PROTEC C(R) 40/75	50.0216

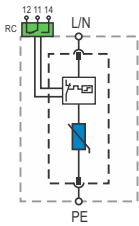
Dimensions, Internal configurations, Weight and Packaging

PROTEC C(R) 40/75

Dimensions



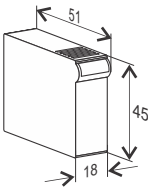
Internal configuration



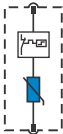
PROTEC C 40	75
Dimensions DIN 43880	1TE
Weight per unit	112g
PROTEC CR 40	75
Dimensions DIN 43880	1TE
Weight per unit	117g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm
Min. packaging quantity	12 pcs.

Module PROTEC C(R) 40/75

Dimensions



Internal configuration



Module PROTEC C(R) 40	75
Weight per unit	44g
Packaging dimensions	221 x 76.5 x 48.5mm
Min. packaging quantity	12 pcs.

PROTEC DMDR 20



- **Category IEC / EN:** Class III / Type 3
- **Location of use:** Sub- distribution boards
- **Protection modes:** L/N - PE
- **Protective element:** MOV + GDT
- **Surge discharge ratings:** I_{max} up to 10kA
- **Housing:** Modular design
- **Complies with:** IEC 61643-1:2005, EN 61643-11:2005;



Technical data

Type		24	48	60	120
PROTEC DMDR 20/xxx					
Electrical characteristics					
Nominal operating voltage (AC)	U _n	24V	48V	60V	120V
Max. continuous operating voltage (AC/DC)	U _c	34V/44V	60V	75V	150V
Open circuit voltage of the combination wave generator	U _{oc}	4kV	4kV	6kV	6kV
Nominal discharge current (8/20μs)	I _n	1.2kA	2.5kA	2.5kA	4kA
Max. discharge current (8/20μs)	I _{max}	3kA	6kA	6kA	10kA
Protection level	U _p (L-N)	< 180V	< 370V	< 400V	< 600V
	(L-PE/N-PE)	< 550V	< 650V	< 700V	< 850V
Response time of overvoltage protection	t _A (L-N)			< 25ns	
	(L-PE/N-PE)			< 100ns	
Thermal protection				YES	
Number of ports				1	
Mechanical characteristics					
Temperature range	T _a		-40°C ... +70°C		
Permissible humidity	RH		5%...95%		
Terminal screw torque	M _{max}		2Nm		
Conductor cross section			Multi-strand to 6 mm ²		
AWG conductor cross section			9 AWG (stranded)		
Degree of protection			IP 20		
Housing material			Thermoplastic; gray, extinguishing degree UL 94 V-0		
Mounting			35mm DIN rail, EN 60715		

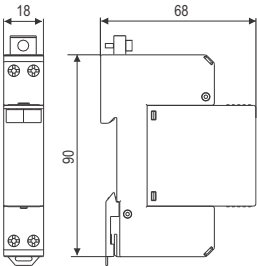
Ordering information

U _n	24	48	60	120
Ordering code PROTEC DMDR 20/xxx	515 051	515 053	515 054	515 055
Ordering code Module PROTEC DMDR 20/xxx	515 086	515 087	515 088	515 089

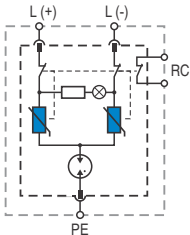
Dimensions, Internal configurations, Weight and Packaging

PROTEC DMDR 20/xxx

Dimensions



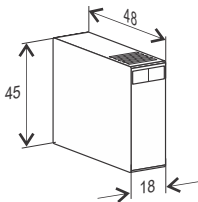
Internal configuration



PROTEC DMDR 20/xxx	24	48	60	120
Dimensions DIN 43880	1TE			
Weight per unit	96g	96g	96g	96g
Packaging dimensions (single unit)	110 x 76.5 x 23.5mm			
Min. packaging quantity	12 pcs.			

Module PROTEC DMDR 20/xxx

Dimensions



Module PROTEC DMDR 20/xxx	24	48	60	120
Weight per unit	32g	32g	32g	32g
Packaging dimensions	221 x 64.5 x 48.5mm			
Min. packaging quantity	12 pcs.			



Class I, II SPD for Photovoltaic Systems



Category IEC / EN:

Class I, II / Type 1, 2

Location of use:

Photovoltaic systems - PV module side

Protection modes:

(+) → PE, (-) → PE, (+) → (-)

Protective element:

High energy MOV and GDT

Surge discharge rating:

$I_{imp} = 12.5kA$; I_{max} up to 40kA

Safety:

Ground fault withstand

Internal protection:

Separate thermal disconnecter for each MOV

Complies with:

EN 50539-11:2013, UL 1449 3rd Ed.;

The SAFETEC PV TCG* series of surge protective devices (SPDs):

- Are highly reliable - controlled disconnection, arc-quenching
- Have no risk of fire in PV system - arc prevention function using rotating disc
- Patented current limiting circuit
- Have longer life - protection against aging
- Have up to 5 years warranty

SAFETEC B(R) PV TCG Series:

SAFETEC B(R) 12.5/xxxx PV TCG

SAFETEC B(R) 12.5/xxxx Y PV TCG

SAFETEC C(R) PV Series:

SAFETEC C(R) xxxx PV

SAFETEC C(R) xxxx Y PV

SAFETEC C(R) xxxx PV UL

PV PROTEC C(R) 40/xxxx

SAFETEC B(R) PV TCG series provides common and differential protection mode.

Patented TC(G) technology provides high level of reliability and safety in solar PV systems.

A unique indicator monitors all disconnectors and brings up a common status flag if any of current branches fails.

TC(G) technology enables high immunity in the case of ground faults in solar PV systems.

TC(G) technology means no leakage current.

Combination of GDT + MOV prevents intensive aging of components, thereby prolonging the SPDs life-span.

*TCG - Thermal control function without leakage current

TC - Thermal control function

SAFETEC B(R) 12.5 PV TCG



- **Category IEC / EN:** Class I, II / Type 1, 2
- **Location of use:** Photovoltaic systems - PV module side
- **Protection modes:** (+) → PE, (-) → PE, (+) → (-)
- **Protective elements:** High energy MOV and GDT
- **Surge discharge rating:** $I_{imp} = 12.5\text{kA}$
- **Safety:** Patented current limiting function
- **Leakage current:** NO leakage current (TCG)
- **Housing:** Compact design
- **Complies with:** EN 50539-11:2013



Technical data

Type		SAFETEC B(R) 12.5/xxxx PV TCG		
		300	600	1000
● Electrical characteristics				
Max. continuous operating voltage (DC)	U_{CPV}	300V	600V	1000V
Nominal discharge current (8/20)	I_n (+)→PE/(-)→PE		12.5kA	
Max. discharge current (8/20)	I_{max} (+)→PE/(-)→PE		40kA	
Impulse current (10/350)	I_{imp} (+)→PE/(-)→PE		12.5kA	
Total discharge current (10/350)	I_{total}		25kA	
Specific energy	W/R		39kJ/Ω	
Charge	Q		6.25As	
Short circuit current rating	ISCPV		1000A	
Protection level	U_p	< 1.1kV	< 1.6kV	< 2.4kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.8kV	< 1.4kV	< 2.1kV
Residual current	IPE		NO	
Response time	tA		< 25ns	
Thermal protection			YES	
Number of ports			1	
● Mechanical characteristics				
Temperature range	Ta	- 40°C + 70°C		
Permissible humidity	RH	5%...95%		
Terminal screw torque	Mmax	3.0Nm		
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)		
Mounting		35mm DIN rail, EN 60715		
Degree of protection		IP 20		
Housing material		thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnect operation		red flag		
Remote contacts (RC)		YES		
Contact ratings		AC: 250V/0.5A; 125V/3A		
Terminal cross section		max. 1.5mm ²		
Remote terminal torque		0.25Nm		

Ordering information

U_{CPV}	300	600	1000
Ordering code SAFETEC B 12.5/xxxx PV TCG	54.0096	54.0098	54.0102
Ordering code SAFETEC BR 12.5/xxxx PV TCG (with remote contacts)	54.0097	54.0099	54.0103

SAFETEC B(R) 12.5 Y PV TCG



- **Category IEC / EN:** Class I, II / Type 1, 2
- **Location of use:** Photovoltaic systems - PV module side
- **Protection modes:** (+) → PE, (-) → PE, (+) → (-)
- **Protective elements:** High energy MOV and GDT
- **Surge discharge rating:** $I_{imp} = 12.5\text{kA}$
- **Safety:** Patented current limiting function
- **Leakage current:** NO leakage current (TCG)
- **Housing:** Compact design
- **Complies with:** EN 50539-11:2013



Technical data

Type		600	1000	1200	1500
		SAFETEC B(R) 12.5/xxxx Y PV TCG			
		600V	1000V	1200V	1500V
● Electrical characteristics					
Max. continuous operating voltage (DC)	U_{CPV}			12.5kA	
Nominal discharge current (8/20)	I_n (+)→PE/(-)→PE/(+)→(-)			40kA	
Max. discharge current (8/20)	I_{max} (+)→PE/(-)→PE/(+)→(-)			12.5kA	
Total discharge current (10/350)	I_{total}			25kA	
Specific energy	W/R			39kJ/Ω	
Charge	Q			6.25As	
Short circuit current rating	ISCPV			1000A	
Protection level	U_p	< 1.8kV	< 3.0kV	< 3.6kV	< 4.2kV
Residual voltage at 5kA (8/20)	U_{res}	< 1.5kV	< 2.6kV	< 3.2kV	< 3.8kV
Residual current	IPE			NO	
Response time	tA			< 25ns	
Thermal protection				YES	
Number of ports				1	
● Mechanical characteristics					
Temperature range	T_a		- 40°C + 70°C		
Permissible humidity	RH		5%...95%		
Terminal screw torque	Mmax		3.0Nm		
Conductor cross section			35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section			2 AWG (solid) / 3 AWG (stranded)		
Mounting			35mm DIN rail, EN 60715		
Degree of protection			IP 20		
Housing material			thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnector operation			red flag		
Remote contacts (RC)			YES		
Contact ratings			AC: 250V/0.5A; 125V/3A		
Terminal cross section			max. 1.5mm ²		
Remote terminal torque			0.25Nm		

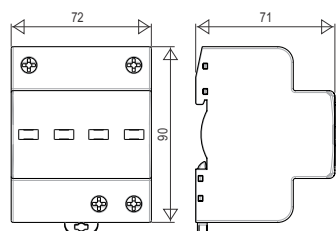
Ordering information

U_{CPV}	600	1000	1200	1500
Ordering code SAFETEC B 12.5/xxxx Y PV TCG	54.0100	54.0104	54.0106	54.0108
Ordering code SAFETEC BR 12.5/xxxx Y PV TCG (with remote contacts)	54.0101	54.0105	54.0107	54.0109

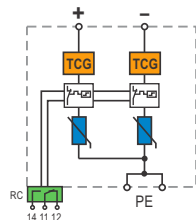
Dimensions, Internal configuration, Weight, Packaging, Connections

SAFETEC B(R) 12.5/xxxx PV TCG

Dimensions



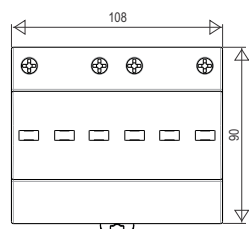
Internal configuration



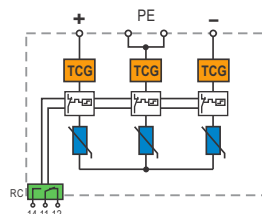
SAFETEC B 12.5/xxxx PV TCG	300	600	1000
Dimensions DIN 43880	4TE		
Weight per unit	440g	460g	800g
SAFETEC BR 12.5/xxxx PV TCG	300	600	1000
Dimensions DIN 43880	4TE		
Weight per unit	445g	465g	805g
Packaging dimensions (single unit)	109 x 76.5 x 80mm		
Min. Packaging quantity	3 pcs.		

SAFETEC B(R) 12.5/xxxx Y PV TCG

Dimensions

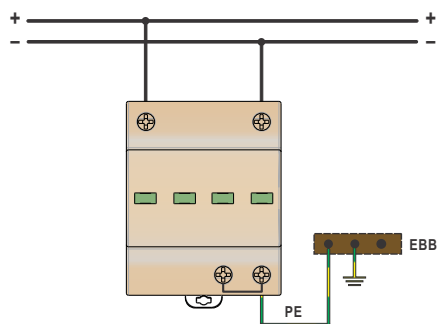


Internal configuration

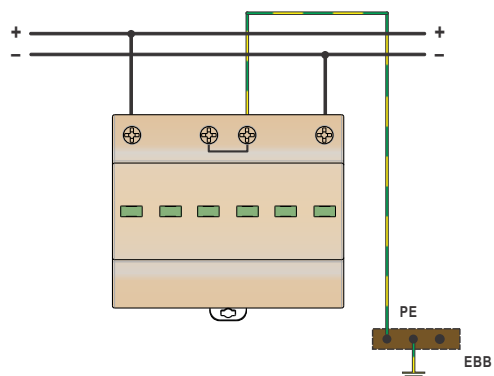


SAFETEC B 12.5/xxxx Y PV TCG	600	1000	1200	1500
Dimensions DIN 43880	6TE			
Weight per unit	590g	630g	1100g	1160g
SAFETEC BR 12.5/xxxx Y PV TCG	600	1000	1200	1500
Dimensions DIN 43880	6TE			
Weight per unit	600g	640g	1110g	1170g
Packaging dimensions (single unit)	109 x 76.5 x 114mm			
Min. Packaging quantity	2 pcs.			

SAFETEC B(R) 12.5/xxxx PV TCG



SAFETEC B(R) 12.5/xxxx Y PV TCG



SAFETEC C(R) PV



- **Category IEC / EN:** Class II / Type 2
- **Location of use:** Photovoltaic systems - PV module side
- **Protection modes:** (+) → PE, (-) → PE, (+) → (-)
- **Protective elements:** MOV and GDT
- **Surge discharge rating:** I_{\max} up to 40kA
- **Safety:** Patented current limiting function
- **Housing:** Modular design
- **Complies with:** EN 50539-11:2013



Technical data

Type		75	SAFETEC C(R) xxxx PV			1000
			300	600		
● Electrical characteristics						
Max. continuous operating voltage (DC)	U_{CPV} (+) @ PE/(-) @ PE	75V	300V	600V		1000V
Nominal discharge current (8/20)	I_n (+) @ PE/(-) @ PE	10kA	20kA	20kA		12.5kA
Max. discharge current (8/20)	I_{\max} (+) @ PE/(-) @ PE	20kA	40kA	40kA		25kA
Short-circuit current rating	I_{SCP}			1000A		
Protection level	U_p (+) @ PE/(-) @ PE	< 0.8kV	< 1.5kV	< 2.3kV		< 2.8kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.6kV	< 1.1kV	< 1.6kV		< 2.2kV
Response time	t_A			< 25ns		
Thermal protection				YES		
Number of ports				1		
● Mechanical characteristics						
Temperature range	T_a		- 40°C + 70°C			
Permissible humidity	RH		5%...95%			
Terminal screw torque	M_{\max}		3.0Nm			
Conductor cross section			35mm ² (solid) / 25mm ² (stranded)			
AWG conductor cross section			2 AWG (solid) / 3 AWG (stranded)			
Mounting			35mm DIN rail, EN 60715			
Degree of protection			IP 20			
Housing material			thermoplastic; extinguishing degree UL 94 V-0			
Indication of thermal disconnecter operation			red flag			
Remote contacts (RC)			YES			
Contact ratings			AC: 250V/0.5A; 125V/3A			
Terminal cross section			max. 1.5mm ²			
Remote terminal torque			0.25Nm			

Ordering information

U_{CPV}	75	300	600	1000
Ordering code SAFETEC C xxxx PV	516.040	516.042	516.044	516.046
Ordering code SAFETEC CR xxxx PV (with remote contacts)	516.041	516.043	516.045	516.047
Ordering code Module SAFETEC C(R) xxxx PV	516.050	516.051	516.052	516.053

SAFETEC C(R) Y PV



- Category IEC / EN: Class II / Type 2
- Location of use: Photovoltaic systems - PV module side
- Protection modes: (+) → PE, (-) → PE, (+) → (-)
- Protective elements: MOV and GDT
- Surge discharge rating: I_{\max} up to 40kA
- Safety: Patented current limiting function
- Housing: Modular design
- Complies with: EN 50539-11:2013



Technical data

Type		1000	SAFETEC C(R) xxxx Y PV 1200	1500
● Electrical characteristics				
Max. continuous operating voltage (DC)	U_{CPV}^* (+)→PE/(-)→PE	1000V	1200V	1500V
	U_{CPV} per module	500V	600V	750V
Nominal discharge current (8/20)	I_n (+)→PE/(-)→PE/(+)→(-)	20kA	20kA	12.5kA
Max. discharge current (8/20)	I_{\max} (+)→PE/(-)→PE/(+)→(-)	40kA	40kA	25kA
Short-circuit current rating	I_{SCP}		1000A	
Protection level	U_p (+)→PE/(-)→PE/(+)→(-)	< 4.2kV	< 4.6kV	< 5.0kV
Residual voltage at 5kA (8/20)	U_{res}	< 3.2kV	< 3.6kV	< 4.0kV
Response time	t_A		< 25ns	
Thermal protection			YES	
Number of ports			1	
● Mechanical characteristics				
Temperature range	T_a	- 40°C + 70°C		
Permissible humidity	RH	5%...95%		
Terminal screw torque	M_{\max}	3.0Nm		
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)		
Mounting		35mm DIN rail, EN 60715		
Degree of protection		IP 20		
Housing material		thermoplastic; extinguishing degree UL 94 V-0		
Indication of disconnector operation		red flag		
Remote contacts (RC)		YES		
Contact ratings		AC: 250V/0.5A; 125V/3A		
Terminal cross section		max. 1.5mm ²		
Remote terminal torque		0.25Nm		

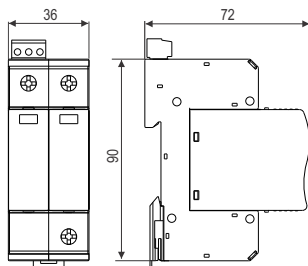
Ordering information

U_{CPV}	1000	1200	1500
Ordering code SAFETEC C xxxx Y PV	516.242	516.048	516.271
Ordering code SAFETEC CR xxxx Y PV (with remote contacts)	516.243	516.049	516.272
Ordering code Module SAFETEC C(R) xxxx Y PV	516.244	516.054	516.273

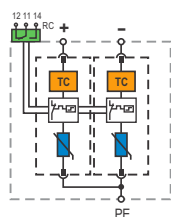
Dimensions, Internal configuration, Weight and Packaging

SAFETEC C(R) xxxx PV

Dimensions



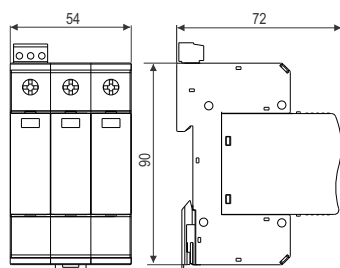
Internal configuration



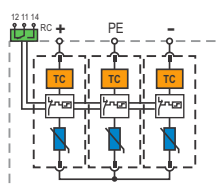
SAFETEC C xxxx PV	75	300	600	1000
Dimensions DIN 43880	2TE			
Weight per unit	246g	280g	290g	299g
SAFETEC CR xxxx PV	75	300	600	1000
Dimensions DIN 43880	2TE			
Weight per unit	251g	288g	298g	307g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm			
Min. packaging quantity	7 pcs.			

SAFETEC C(R) xxxx Y PV

Dimensions



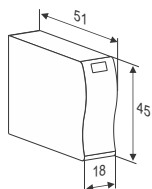
Internal configuration



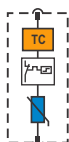
SAFETEC C xxxx Y PV	1000	1200	1500
Dimensions DIN 43880	3TE		
Weight per unit	396g	390g	400g
SAFETEC CR xxxx Y PV	1000	1200	1500
Dimensions DIN 43880	3TE		
Weight per unit	402g	396g	406g
Packaging dimensions (single unit)	109 x 76.5 x 61.5mm		
Min. packaging quantity	5 pcs.		

Module SAFETEC C(R) xxxx PV

Dimensions



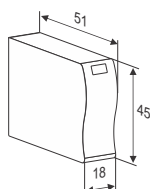
Internal configuration



Module SAFETEC C(R) xxxx PV	75	300	600	1000
Weight per unit	45g	68g	74g	78g
Packaging dimensions	221 x 64.5 x 48.5mm			
Min. packaging quantity	12 pcs.			

Module SAFETEC C(R) xxxx Y PV

Dimensions



Internal configuration

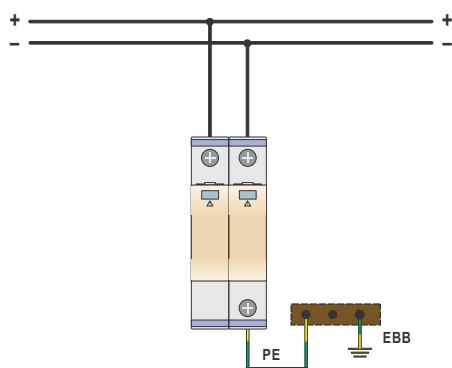


Module SAFETEC C(R) xxxx Y PV	1000	1200	1500
Weight per unit	74g	74g	76g
Packaging dimensions	221 x 64.5 x 48.5mm		
Min. packaging quantity	12 pcs.		

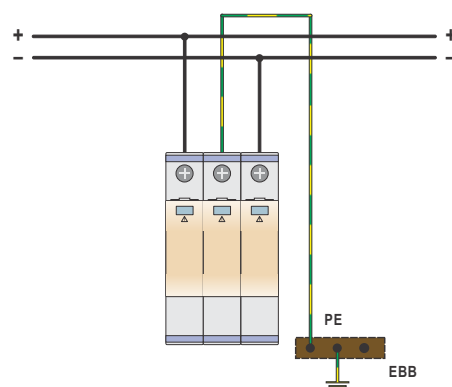
SAFETEC C(R) PV Series

Network Connections

SAFETEC C(R) xxxx PV



SAFETEC C(R) xxxx Y PV





SAFETEC C(R) PV (2+0) UL



- Classification UL 1449 3rd ed.: Type 4 / For use in SPD Type 2
- Location of use: Photovoltaic systems - PV module side
- Protection modes: (+) → PE (G), (-) → PE (G), (+) → (-)
- Protective elements: MOV and GDT
- Surge discharge rating: I_{max} up to 50kA
- Safety: Patented current limiting function
- Housing: Modular design
- Complies with: UL 1449 3rd Ed.



Technical data

Type		300	600	1000
SAFETEC C(R) xxxx PV (2+0) UL				
● Electrical characteristics				
Max. continuous operating voltage (DC)	MCOV	300V	600V	1000V
Nominal discharge current (8/20) per mode of protection	I _n	20kA	20kA	10kA
Max. discharge current (8/20) per mode of protection	I _{max}	50kA	50kA	20kA
Voltage protection rating per UL 1449 3rd ed.	VPR	1.5kV	2.0kV	4.0kV
Short circuit current rating	SCCR		200kA	
Response time	tA		< 25ns	
Thermal protection			YES	
Number of ports			1	
● Mechanical characteristics				
Temperature range	T _a		- 40°C + 85°C	
Permissible humidity	RH		5%...95%	
Terminal screw torque	M _{max}		3.0Nm	
Conductor cross section			35mm ² (solid) / 25mm ² (stranded)	
AWG conductor cross section			2 AWG (solid) / 3 AWG (stranded)	
Mounting			35mm DIN rail, EN 60715	
Degree of protection			IP 20	
Housing material			thermoplastic; extinguishing degree UL 94 V-0	
Indication of thermal disconnecter operation			red flag	
Remote contacts (RC)			YES	
Contact ratings			AC: 250V/0.5A; 125V/3A	
Terminal cross section			max. 1.5mm ²	
Remote terminal torque			0.25Nm	

Ordering information

MCOV	300	600	1000
Ordering code SAFETEC C xxxx PV (2+0) UL	516.105	516.107	516.199
Ordering code SAFETEC CR xxxx PV (2+0) UL (with remote contacts)	516.106	516.108	516.200
Ordering code Module SAFETEC C(R) xxxx PV UL	516.207	516.208	516.209



SAFETEC C(R) PV (3+0) UL



- Classification UL 1449 3rd ed.: Type 4 / For use in SPD Type 2
- Location of use: Photovoltaic systems - PV module side
- Protection modes: (+) → PE (G), (-) → PE (G), (+) → (-)
- Protective elements: MOV and GDT
- Surge discharge rating: I_{max} up to 50kA
- Safety: Ground fault withstand
- Housing: Modular design
- Complies with: UL 1449 3rd Ed.



Technical data

Type	SAFETEC C(R) xxxx PV (3+0) UL	
	1000	1200
● Electrical characteristics		
Max. continuous operating voltage (DC)	MCOV	1000V1200V
Nominal discharge current (8/20) per mode of protection	I _n	20kA
Max. discharge current (8/20) per mode of protection	I _{max}	50kA
Voltage protection rating per UL 1449 3rd ed.	VPR	4.0kV
Short circuit current rating	SCCR	200kA
Response time	tA	< 25ns
Thermal protection		YES
Number of ports		1
● Mechanical characteristics		
Temperature range	Ta	- 40°C + 85°C
Permissible humidity	RH	5%...95%
Terminal screw torque	Mmax	3.0Nm
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)
Mounting		35mm DIN rail, EN 60715
Degree of protection		IP 20
Housing material		thermoplastic; extinguishing degree UL 94 V-0
Indication of thermal disconnecter operation		red flag
Remote contacts (RC)		YES
Contact ratings		AC: 250V/0.5A; 125V/3A
Terminal cross section		max. 1.5mm ²
Remote terminal torque		0.25Nm

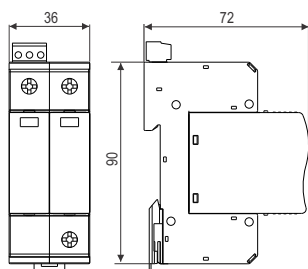
Ordering information

MCOV	1000	1200
Ordering code SAFETEC C xxxx PV (3+0) UL	516.600	516.109
Ordering code SAFETEC CR xxxx PV (3+0) UL (with remote contacts)	516.596	516.110
Ordering code Module SAFETEC C(R) xxxx PV UL	516.604	516.210

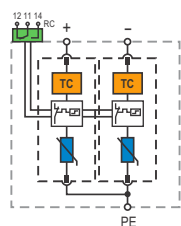
Dimensions, Internal configuration, Weight and Packaging

SAFETEC C(R) xxxx PV (2+0) UL

Dimensions



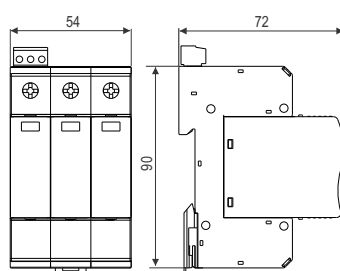
Internal configuration



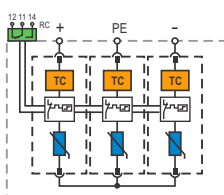
SAFETEC C xxxx PV (2+0) UL	300	600	1000
Dimensions DIN 43880	2TE		
Weight per unit	280g	290g	299g
SAFETEC CR xxxx PV (2+0) UL	300	600	1000
Dimensions DIN 43880	2TE		
Weight per unit	288g	298g	307g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm		
Min. packaging quantity	7 pcs.		

SAFETEC C(R) xxxx PV (3+0) UL

Dimensions



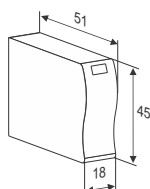
Internal configuration



SAFETEC C xxxx PV (3+0) UL	1000	1200
Dimensions DIN 43880	3TE	
Weight per unit	396g	390g
SAFETEC CR xxxx PV (3+0) UL	1000	1200
Dimensions DIN 43880	3TE	
Weight per unit	402g	392g
Packaging dimensions (single unit)	109 x 76.5 x 61.5mm	
Min. packaging quantity	5 pcs.	

Module SAFETEC C(R) xxxx PV UL

Dimensions



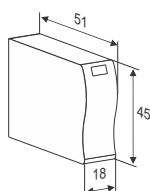
Internal configuration



Module SAFETEC C(R) xxxx PV UL	1000	1200
Weight per unit	74g	74g
Packaging dimensions	221 x 64.5 x 48.5mm	
Min. packaging quantity	12 pcs.	

Module SAFETEC C(R) xxxx PV UL

Dimensions



Internal configuration



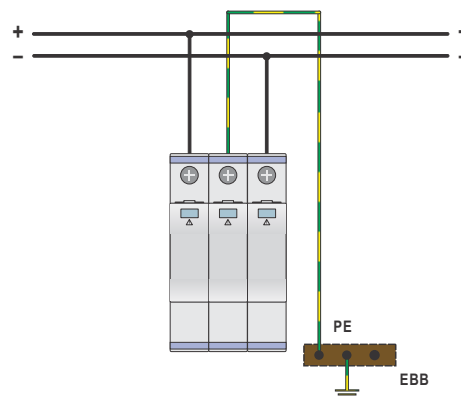
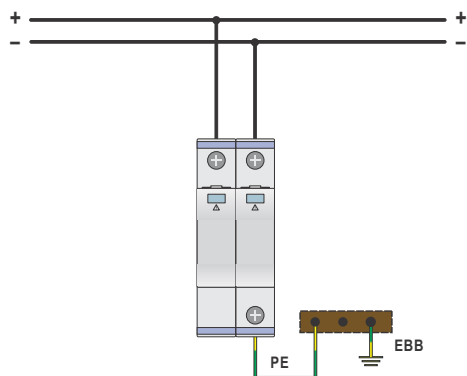
Module SAFETEC C(R) xxxx PV UL	300	600	1000
Weight per unit	68g	74g	78g
Packaging dimensions	221 x 64.5 x 48.5mm		
Min. packaging quantity	12 pcs.		

SAFETEC C(R) xxxx PV UL Series

Connections

SAFETEC C(R) 300 - 1000 PV (2+0) UL

SAFETEC C(R) 1000 - 1200 PV (3+0) UL



PV PROTEC C(R) 40



- Category IEC / EN: Class II / Type 2
- Location of use: Photovoltaic systems - PV module side
- Protection modes: (+) → PE, (-) → PE, (+) → (-)
- Protective element: MOV
- Surge discharge rating: $I_{\max} = 40\text{kA}$
- Housing: Modular design
- Complies with: EN 50539-11:2013



Technical data

Type	PV PROTEC C(R) 40/xxxx	
	100	550

● Electrical characteristics

Max. continuous operating voltage (DC)	U_{CPV} (+)→PE/(-)→PE	100V	550V
	U_{CPV} per module	100V	550V
Nominal discharge current (8/20)	I_n	20kA per pole	
Max. discharge current (8/20)	I_{\max}	40kA per pole	
Short-circuit current rating	I_{SCP}	<100A	
Protection level	U_p	< 0.7kV	< 1.9kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.4kV	< 1.6kV
Response time	t_A	< 25ns	
Thermal protection		YES	
Number of ports		1	

● Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C	
Permissible humidity	RH	5% - 95%	
Terminal screw torque	M_{\max}	3.0Nm	
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)	
AWG conductor cross section		2 (solid) / 3 (stranded)	
Mounting		35mm DIN rail, EN 60715	
Degree of protection		IP 20	
Housing material		thermoplastic; extinguishing degree UL 94 V-0	
Indication of thermal disconnector operation		red flag	
Remote contacts (RC)		YES	
Contact ratings		AC: 250V/0.5A; 125V/3A	
Terminal cross section		max. 1.5mm ²	
Remote terminal torque		0.25Nm	

Ordering information

U_{CPV}	100	550
Ordering code PV PROTEC C 40/xxxx	501.521	501.527
Ordering code PV PROTEC CR 40/xxxx (with remote contacts)	501.531	501.537
Ordering code Module PV PROTEC C(R) 40/xxxx	50.0496	50.0497

PV PROTEC C(R) 40



- Category IEC / EN: Class II / Type 2
- Location of use: Photovoltaic systems - PV module side
- Protection modes: (+) → PE, (-) → PE, (+) → (-)
- Protective element: MOV
- Surge discharge rating: $I_{\max} = 40\text{kA}$
- Housing: Modular design
- Complies with: EN 50539-11:2013



Technical data

Type	PV PROTEC C(R) 40/xxxx	
	600	1000

● Electrical characteristics

Max. continuous operating voltage (DC)	U_{CPV} (+)→PE/(-)→PE	600V	1000V
	U_{CPV} per module	300V	500V
Nominal discharge current (8/20)	I_n	20kA per pole	
Max. discharge current (8/20)	I_{\max}	40kA per pole	
Protection level	U_p	< 3.0kV	< 3.6kV
Residual voltage at 5kA (8/20)	I_{SCP}	< 2.2kV	< 3.0kV
Short-circuit current rating	U_{res}	100A	
Response time	t_A	< 25ns	
Thermal protection		YES	
Number of ports		1	

● Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C	
Permissible humidity	RH	5%...95%	
Terminal screw torque	M_{\max}	max. 3.0Nm	
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)	
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)	
Altitude		2.000m	
Mounting		35mm DIN rail, EN 60715	
Degree of protection		IP 20	
Housing material		thermoplastic; extinguishing degree UL 94 V-0	
Indication of disconnector operation		red flag	
Remote contacts (RC)		YES	
Contact ratings		AC: 250V/0.5A; 125V/3A	
Terminal cross section		max. 1.5mm ²	
Remote terminal torque		0.25Nm	

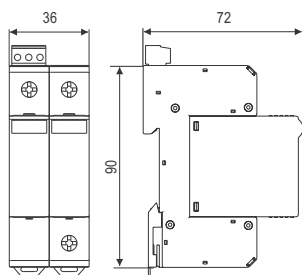
Ordering information

U_{CPV}	600	1000
Ordering code PV PROTEC C 40/xxxx	501.709	501.543
Ordering code PV PROTEC CR 40/xxxx (with remote contacts)	501.710	501.547
Ordering code Module PV PROTEC C(R) 40/xxxx	501.711	50.0498

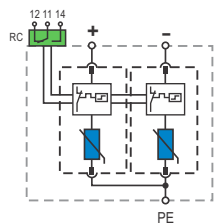
Dimensions, Internal configuration, Weight, Packaging

PV PROTEC C(R) 40/xxxx

Dimensions

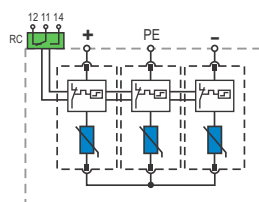
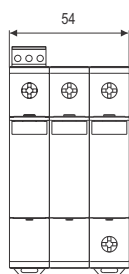


Internal configuration



Dimensions, weight and packaging

PV PROTEC C 40/xxx	100	550
Dimensions DIN 43880	2TE	
Weight per unit	274g	302g
PV PROTEC CR 40/xxx	100	550
Dimensions DIN 43880	2TE	
Weight per unit	279g	307g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm	
Min. packaging quantity	7 pcs.	

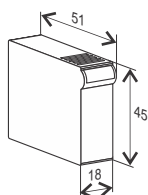


Dimensions, weight and packaging

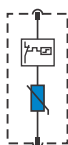
PV PROTEC C 40/xxxx	600	1000
Dimensions DIN 43880	3TE	
Weight per unit	329g	398g
PV PROTEC CR 40/xxxx	600	1000
Dimensions DIN 43880	3TE	
Weight per unit	334g	403g
Packaging dimensions (single unit)	109 x 76.5 x 61.5mm	
Min. packaging quantity	5 pcs.	

Module PV PROTEC C(R) 40/xxxx

Dimensions



Internal configuration

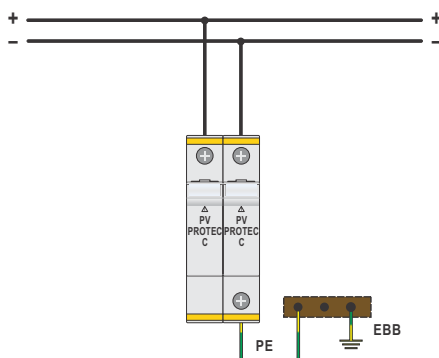


Dimensions, weight and packaging

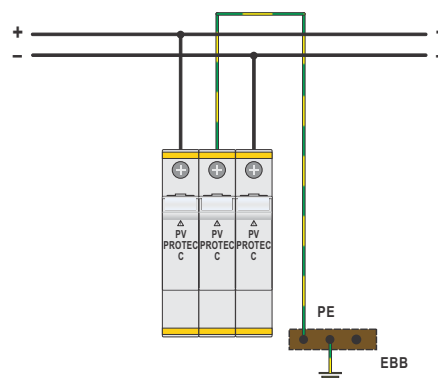
Module PV PROTEC C(R) 40/xxxx	100	550	600	1000
Weight per unit	46g	58g	52g	58g
Packaging dimensions	221 x 64.5 x 48.5mm			
Min. packaging quantity	12 pcs.			

Network connections

PV PROTEC C(R) 40/100, 40/550



PV PROTEC C(R) 40/600, 40/1000





Class I, II SPD for Wind Systems



Category IEC / EN:	Class I, II / Type 1, 2
Location of use:	Main distribution boards
Protection modes:	L/N-PE, L-PEN
Protective elements:	High energy MOV and GDT
Surge discharge ratings:	I _{imp} up to 25kA
Safety:	TOV withstand for unlimited time
Internal protection:	Separate thermal disconnecter for each MOV
Complies with:	IEC 61643-11:2011, EN 61643-11:2012, UL 1449 4th Ed.;

The SAFETEC B(R) WT TCG* of surge protective devices (SPDs):

- Are highly reliable - controlled disconnection, arc-quenching
- Patented current limiting circuit
- Have longer life - protection against aging
- Have up to 5 years warranty

SAFETEC B(R) WT TCG Series:
SAFETEC B(R) 12.5/xxx WT TCG
SAFETEC B(R) 25/xxx WT TCG

SAFETEC C(R) xxx (3+0) WT

SAFETEC C(R) xxx (3+0) WT UL

SAFETEC B(R) WT TCG series provides common and differential protection mode.

Patented TC(G) technology provides high level of reliability and safety in Wind Systems.

A unique indicator monitors all disconnectors and brings up a common status flag if any of current branches fails.

TC(G) technology means no leakage current.

Combination of GDT + MOV prevents intensive aging of components thereby prolonging the SPDs life-span.

*TCG - Thermal control function without leakage current
TC - Thermal control function

SAFETEC B(R) 12.5 WT TCG



• Category IEC / EN:	Class I, II / Type 1, 2
• Location of use:	Main distribution boards
• Network systems:	TN-S, TN-C, IT, TT (only L-N)
• Protection modes:	L/N - PE, L- PEN, L-N
• Protective elements:	High energy MOV and GDT
• Surge discharge rating:	$I_{imp} = 12.5\text{kA}$
• Safety:	TOV withstand
• Leakage current:	NO leakage current (TCG)
• Housing:	Compact design
• Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type	SAFETEC B(R) 12.5/xxx WT TCG	
	440	750

• Electrical characteristics

Nominal AC voltage	U_o	400V 50/60Hz	690V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	440/580V	750/1000V
Nominal discharge current (8/20)	I_n	12.5kA	
Max. discharge current (8/20)	I_{max}	40kA	
Impulse current (10/350)	I_{imp}	12.5kA	
Total discharge current (10/350)	I_{total}	12.5kA	
Specific energy	W/R	39kJ/Ω	
Charge	Q	6.25As	
Protection level	U_p	< 1.6kV	< 2.4kV
Residual voltage at 5kA (8/20)	U_{res}	< 1.4kV	< 2.1kV
Follow current	I_{fi}	NO	
Response time	t_A	< 25ns	
Thermal protection		YES	
Back-up fuse (if mains > 160A)		160A gG/gL	
Short-circuit current rating	I_{SCCR}	25kA/50Hz	
TOV withstand 5s	U_T	580V	1000V
TOV withstand 120min	U_T	765V	1320V
Number of ports		1	

• Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C	
Permissible humidity	RH	5%...95%	
Terminal screw torque	M_{max}	3.0Nm	
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)	
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)	
Mounting		35mm DIN rail, EN 60715	
Degree of protection		IP 20	
Housing material		thermoplastic; extinguishing degree UL 94 V-0	
Indication of thermal disconnecter operation		red flag	
Remote contacts (RC)		YES	
Contact ratings		AC: 250V/0.5A; 125V/3A	
Terminal cross section		max. 1.5mm ²	
Remote terminal torque		0.25Nm	

Ordering information

U_c	440	750
Ordering code SAFETEC B 12.5/xxx WT TCG	54.0320	54.0078
Ordering code SAFETEC BR 12.5/xxx WT TCG (with remote contacts)	54.0321	54.0079

TC solution available on request

SAFETEC B(R) 25 WT TCG



- Category IEC / EN: Class I, II / Type 1, 2
- Location of use: Main distribution boards
- Network systems: TN-S, TN-C, IT, TT (only L-N)
- Protection modes: L/N - PE, L- PEN, L-N
- Protective elements: High energy MOV and GDT
- Surge discharge rating: $I_{imp} = 25\text{kA}$
- Safety: TOV withstand
- Leakage current: NO leakage current (TCG)
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type	SAFETEC B(R) 25/xxx WT TCG	
	440	750

● Electrical characteristics

Nominal AC voltage	U_o	400V 50/60Hz	690V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	440/580V	750/1000V
Nominal discharge current (8/20)	I_n		25kA
Max. discharge current (8/20)	I_{max}		80kA
Impulse current (10/350)	I_{imp}		25kA
Total discharge current (10/350)	I_{total}		25kA
Specific energy	W/R		156kJ/Ω
Charge	Q		12.5As
Protection level	U_p	< 1.9kV	< 2.5kV
Residual voltage at 5kA (8/20)	U_{res}	< 1.4kV	< 2.1kV
Follow current	I_{fi}		NO
Response time	t_A		< 25ns
Thermal protection			YES
Back-up fuse (if mains > 250A)			250A gG/gL
Short-circuit current rating	I_{SCCR}		25kA/50Hz
TOV withstand 5s	U_T	580V	1000V
TOV withstand 120min	U_T	765V	1320V
Number of ports			1

● Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C	
Permissible humidity	RH	5%...95%	
Terminal screw torque	M_{max}	3.0Nm	
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)	
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)	
Mounting		35mm DIN rail, EN 60715	
Degree of protection		IP 20	
Housing material		thermoplastic; extinguishing degree UL 94 V-0	
Indication of thermal disconnect operation		red flag	
Remote contacts (RC)		YES	
Contact ratings		AC: 250V/0.5A; 125V/3A	
Terminal cross section		max. 1.5mm ²	
Remote terminal torque		0.25Nm	

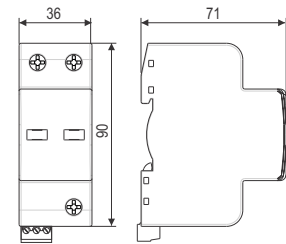
Ordering information

U_c	440	750
Ordering code SAFETEC B 25/xxx WT TCG	54.0322	54.0080
Ordering code SAFETEC BR 25/xxx WT TCG (with remote contacts)	54.0323	54.0081

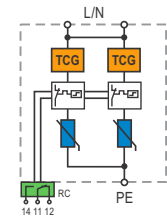
Dimensions, Internal configuration, Weight, Packaging

SAFETEC B(R) 12.5/xxx WT TCG

Dimensions



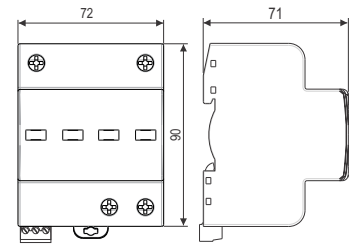
Internal configuration



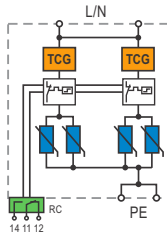
SAFETEC B 12.5/xxx WT TCG	440	750
Dimensions DIN 43880	2TE	
Weight per unit	371g	400g
SAFETEC BR 12.5/xxx WT TCG	440	750
Dimensions DIN 43880	2TE	
Weight per unit	376g	405g
Packaging dimensions (single unit)	109 x 76.5 x 41.5mm	
Min. packaging quantity	7 pcs.	

SAFETEC B(R) 25/xxx WT TCG

Dimensions



Internal configuration

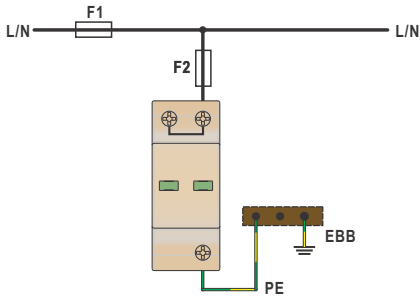


SAFETEC B 25/xxx WT TCG	440	750
Dimensions DIN 43880	4TE	
Weight per unit	692g	800g
SAFETEC BR 25/xxx WT TCG	440	750
Dimensions DIN 43880	4TE	
Weight per unit	697g	805g
Packaging dimensions (single unit)	109 x 76.5 x 80mm	
Min. packaging quantity	3 pcs.	

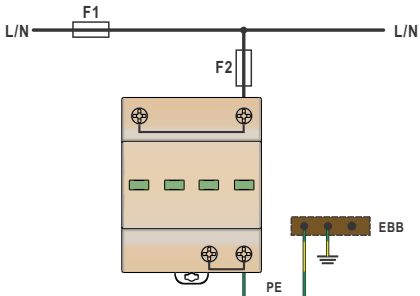
Network connections

T connection

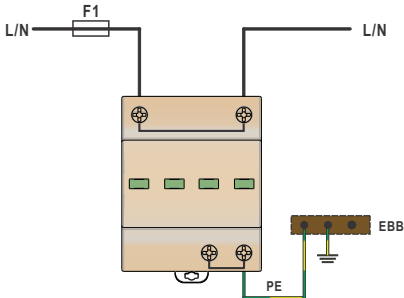
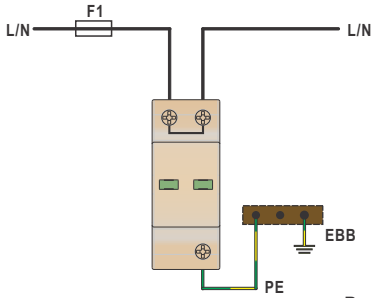
SAFETEC B(R) 12.5 WT TCG



SAFETEC B(R) 25 WT TCG



V connection



Back-up fuse

SAFETEC B(R) 12.5 WT TCG

F1 > 160A gG/gL	→	F2 = 160A gG/gL
F1 ≤ 160A gG/gL	→	F2

SAFETEC B(R) 25 WT TCG

F1 > 250A gG/gL	→	F2 = 250A gG/gL
F1 ≤ 250A gG/gL	→	F2

SAFETEC C(R) (3+0) WT



● Category IEC / EN:	Class II / Type 2
● Location of use:	Sub-distribution boards
● Network system:	TN-C
● Protection modes:	L - PEN
● Protective elements:	MOV and GDT
● Surge discharge rating:	I_{\max} up to 40kA
● Safety:	TOV withstand
● Housing:	Modular design
● Complies with:	IEC 61643-11:2011 EN 61643-11:2012;



Technical data

Type		SAFETEC C(R) xxx (3+0) WT		
		440	750	880
● Electrical characteristics				
Nominal AC voltage	U_o	400V 50/60Hz	690V 50/60Hz	
Max. continuous operating voltage (AC/DC)	U_c	440/580V	750/1000V	880/1170V
Nominal discharge current (8/20)	I_n (L-PEN)	20kA per pole	12.5kA per pole	
Max. discharge current (8/20)	I_{\max} (L-PEN)	40kA per pole	25kA per pole	
Protection level	U_p	< 2.3kV	< 2.8kV	< 3.0kV
Residual voltage at 5kA (8/20)	U_{res}	< 1.6kV	< 2.2kV	< 2.6kV
Follow current	I_{fi}		NO	
Response time	t_A		< 25ns	
Thermal protection			YES	
Back-up fuse (if mains > 125A)			125A gG/gL	
Short-circuit current rating	I_{SCCR}		25kA/50Hz	
TOV withstand 5s	U_T	580V	700V	1000V
TOV withstand 120min	U_T	765V	915V	1320V
Number of ports			1	
● Mechanical characteristics				
Temperature range	T_a	- 40°C + 70°C		
Permissible humidity	RH	5%...95%		
Terminal screw torque	M_{\max}	3.0Nm		
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)		
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)		
Mounting		35mm DIN rail, EN 60715		
Degree of protection		IP 20		
Housing material		thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnect operation		red flag		
Remote contacts (RC)		YES		
Contact ratings		AC: 250V/0.5A; 125V/3A		
Terminal cross section		max. 1.5mm ²		
Remote terminal torque		0.25Nm		

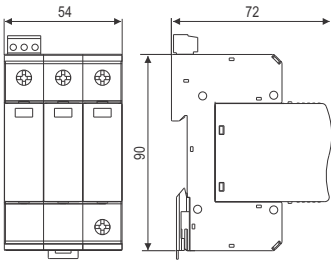
Ordering information

U_c	440	750	880
Ordering code SAFETEC C xxx (3+0) WT	516.652	516.055	516.369
Ordering code SAFETEC CR xxx (3+0) WT (with remote contacts)	516.653	516.056	516.370
Ordering code Module SAFETEC C(R) xxx WT	516.654	516.057	516.371

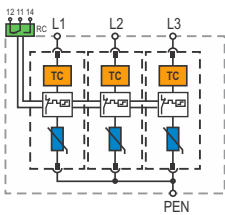
Dimensions, Internal configuration, Weight, Packaging

SAFETEC C(R) (3+0) xxx WT

Dimensions



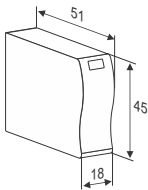
Internal configuration



SAFETEC C xxx (3+0) WT	440	750	880
Dimensions DIN 43880	3TE		
Weight per unit	397g	364g	364g
SAFETEC CR xxx (3+0) WT	440	750	880
Dimensions DIN 43880	3TE		
Weight per unit	402g	369g	369g
Packaging dimensions (single unit)	109 x 76.5 x 61.5mm		
Min. packaging quantity	5 pcs.		

Module SAFETEC C(R) xxx WT

Dimensions



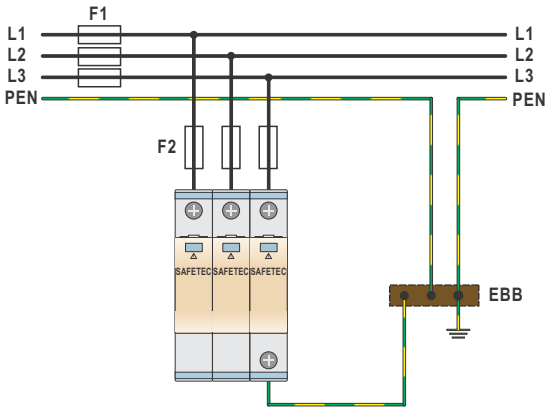
Internal configuration



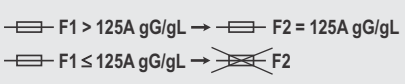
Module SAFETEC C(R) xxx WT	440	750	880
Weight per unit	74g	78g	78g
Packaging dimensions	221 x 64.5 x 48.5mm		
Min. packaging quantity	12 pcs.		

Network connections

SAFETEC C(R) (3+0) WT



Back-up fuse
SAFETEC C(R) (3+0) WT





SAFETEC C(R) WT UL



- Classification UL 1449 4th Ed.: Type 2 Surge Protective Device
- Location of use: Sub-distribution boards
- Protection modes: L - PEN (G)
- Protective elements: MOV and GDT
- Surge discharge rating: I_{max} up to 50kA
- Safety: TOV withstand
- Housing: Modular design
- Complies with: UL 1449 4th Ed.



Technical data

Type		440	SAFETEC C(R) xxx WT UL 690	750	880
● Electrical characteristics					
Max. continuous operating voltage (AC)	MCOV	440V	690V	750V	880V
Nominal discharge current (8/20)	I _n	20kA per pole	10kA per pole	10kA per pole	10kA per pole
Max. discharge current (8/20)	I _{max}	50kA per pole	20kA per pole	20kA per pole	20kA per pole
Voltage protection rating per UL 1449 3rd ed.	VPR	< 2.0kV	< 2.5kV	< 2.5kV	<3.0kV
Short-circuit withstand current	SCCR	200kA			
Follow current	I _{fi}	NO			
Response time	t _A	< 25ns			
Thermal protection		YES			
Back-up fuse		No back-up fuse needed			
Number of ports		1			
● Mechanical characteristics					
Temperature range	T _a	- 40°C + 85°C			
Permissible humidity	RH	5% ...95%			
Terminal screw torque	M _{max}	3.0Nm			
Conductor cross section		35mm ² (solid) / 25mm ² (stranded)			
AWG conductor cross section		2 AWG (solid) / 3 AWG (stranded)			
Mounting		35mm DIN rail, EN 60715			
Degree of protection		IP 20			
Housing material		thermoplastic; extinguishing degree UL 94 V-0			
Indication of thermal disconnect operation		red flag			
Remote contacts (RC)		YES			
Contact ratings		AC: 250V/0.5A; 125V/3A			
Terminal cross section		max. 1.5mm ²			
Remote terminal torque		0.25Nm			

Ordering information

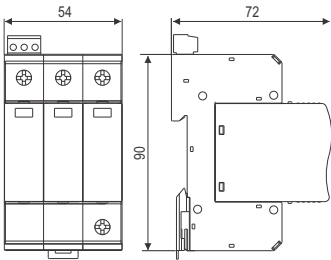
MCOV	440	690	750	880
Ordering code SAFETEC C xxx WT UL	516.225	516.227	516.229	516.582
Ordering code SAFETEC CR xxx WT UL (with remote contacts)	516.226	516.228	516.230	516.583
Ordering code Module SAFETEC C(R) xxx WT UL	516.262	516.263	516.264	516.584



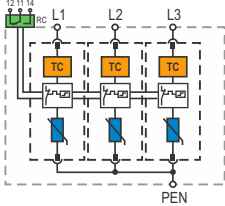
Dimensions, Internal configuration, Weight, Packaging

SAFETEC C(R) xxx WT UL

Dimensions



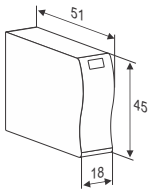
Internal configuration



SAFETEC C xxx WT UL	440	690	750
Dimensions DIN 43880	3TE		
Weight per unit	397g	364g	364g
SAFETEC CR xxx WT UL	440	690	750
Dimensions DIN 43880	3TE		
Weight per unit	402g	369g	369g
Packaging dimensions (single unit)	109 x 76.5 x 61.5mm		
Min. packaging quantity	5 pcs.		

Module SAFETEC C(R) xxx WT UL

Dimensions



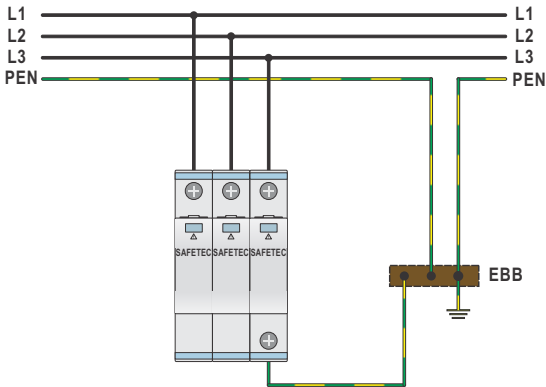
Internal configuration



Module SAFETEC C(R) xxx WT UL	440	690	750
Weight per unit	74g	78g	78g
Packaging dimensions	221 x 64.5 x 48.5mm		
Min. packaging quantity	12 pcs.		

Network connections

SAFETEC C(R) WT UL



PV Combiner Boxes for Photovoltaic Systems



Category IEC / EN:	Class I, II / Type 1, 2
Location of use:	Photovoltaic power plants
Protection modes:	(+) → PE, (-) → PE, (+) → (-)
Protective elements:	SPD, fuse, switch, steering diode
Safety:	Ground fault withstand
Housing:	Waterproof enclosure (IP 65)
Complies with:	EN 50539-11:2013, CLC/TS 50539-12:2012;

Features of PV Combiner Boxes:

- Waterproof housing IP 65 RAL 7035 with transparent front cover
- Safe and easy installation Up to 1500VDC
- Up to 6 strings
- Leakage free version - optional
- String current up to 8A
- Customised designs

PVCB I Series PVCB II Series

Iskra Zaščite manufactures a range of PV Combiner Boxes for the use in Photovoltaic Systems.

Various models are available including surge protection, DC fuses, DC isolation switches or steering diodes and are compliant with the relevant standards such as EN 50539-11.

PVCB I Series



- **Category IEC/EN:** Class I, II / Type 1, 2
- **Location of use:** Photovoltaic power plants
- **Surge Protections modes:** (+) → PE, (-) → PE, (+) → (-)
- **Options:** DC fuses, isolation switch, steering diodes
- **Housing:** IP 65 enclosures
- **Complies with:** EN 50539-11, CLC/TS 50539-12:2012;



Technical data

● **Electrical characteristic**

Max. strings input	2	4	6	2	4	6
Max. current per string (DC fuse per + string)	< 8A					
U _C (DC)	600V	600V	600V	1000V	1000V	1000V
I _{max} (8/20)	40kA					
I _{imp} (10/350)	12.5kA					

● **Mechanical characteristics**

Degree of protection	IP65					
Terminal cross section						
string	6 mm ²			6 mm ²		
inverter	6 mm ²	10 mm ²	16 mm ²	6 mm ²	10 mm ²	16 mm ²
Housing material	Technical polymer - transparent front RAL 7035					

Ordering information

● **Type**

- Fuse only on + side	PVCB I	PVCB I	PVCB I	PVCB I	PVCB I	PVCB I
	2-0.6	4-0.6	6-0.6	2-1	4-1	6-1
Ordering code	130 130	130 131	130 132	130 133	130 134	130 135

● **Type**

- Fuse on + and - side	PVCB I	PVCB I	PVCB I	PVCB I	PVCB I	PVCB I
	2-0.6-F	4-0.6-F	6-0.6-F	2-1-F	4-1-F	6-1-F
Ordering code	130 136	130 137	130 138	130 139	130 140	130 141

● **Type**

- Main isolation switch	PVCB I	PVCB I	PVCB I	PVCB I	PVCB I	PVCB I
	2-0.6-MS-F	4-0.6-MS-F	6-0.6-MS-F	2-1-MS-F	4-1-MS-F	6-1-MS-F
- DC fuse on + and - side						
Max. rated current (DC isolation switch)	32A	63A	63A	32A	63A	63A
Ordering code	130 142	130 143	130 144	130 145	130 146	130 147

● **Type**

- Main isolation switch	PVCB I	PVCB I	PVCB I	PVCB I	PVCB I	PVCB I
	2-0.6-MS-D	4-0.6-MS-D	6-0.6-MS-D	2-1-MS-D	4-1-MS-D	6-1-MS-D
- Steering diode on - side						
Ordering code	130 148	130 149	130 150	130 151	130 152	130 153

Various PV combiner boxes available on request

PVCB II Series



- **Category IEC/EN:** Class II / Type 2
- **Location of use:** Photovoltaic power plants
- **Surge Protections modes:** (+) → PE, (-) → PE, (+) → (-)
- **Options:** DC fuses, isolation switch, steering diodes
- **Housing:** IP 65 enclosures
- **Complies with:** EN 50539-11, CLC/TS 50539-12:2012;



Technical data

● **Electrical characteristic**

Max. strings input	2	4	6	2	4	6
Max. current per string (DC fuse per + string)	< 8A					
U _C (DC)	600V	600V	600V	1000V	1000V	1000V
I _{max} (8/20) (+) → PE/(-) → PE	40kA					
I _n (8/20) (+) → PE/(-) → PE	20kA					

● **Mechanical characteristics**

Degree of protection	IP65					
Terminal cross section						
string	6 mm ²			6 mm ²		
inverter	6 mm ²	10 mm ²	16 mm ²	6 mm ²	10 mm ²	16 mm ²
Housing material	Technical polymer - transparent front RAL 7035					

Ordering information

● **Type**

- Fuse only on + side	PVCB II	PVCB II	PVCB II	PVCB II	PVCB II	PVCB II
	2-0.6	4-0.6	6-0.6	2-1	4-1	6-1
Ordering code	130 154	130 155	130 156	130 157	130 158	130 159

● **Type**

- Fuse on + and - side	PVCB II	PVCB II	PVCB II	PVCB II	PVCB II	PVCB II
	2-0.6-F	4-0.6-F	6-0.6-F	2-1-F	4-1-F	6-1-F
Ordering code	130 160	130 161	130 162	130 163	130 164	130 165

● **Type**

- Main isolation switch	PVCB II	PVCB II	PVCB II	PVCB II	PVCB II	PVCB II
	2-0.6-MS-F	4-0.6-MS-F	6-0.6-MS-F	2-1-MS-F	4-1-MS-F	6-1-MS-F
- DC fuse on + and - side						
Max. rated current (DC isolation switch)	32A	63A	63A	32A	63A	63A
Ordering code	130 166	130 167	130 168	130 169	130 170	130 171

● **Type**

- Main isolation switch	PVCB II	PVCB II	PVCB II	PVCB II	PVCB II	PVCB II
	2-0.6-MS-D	4-0.6-MS-D	6-0.6-MS-D	2-1-MS-D	4-1-MS-D	6-1-MS-D
- Steering diode on - side						
Ordering code	130 172	130 173	130 174	130 175	130 176	130 177

Various PV combiner boxes available on request





AC Boxes



Location of use:	Indoor and outdoor As close as possible to the equipment to be protected
Protection modes:	L-N, N-PE
Protective elements:	SPD, surge filter, fuse, MCB
Housing:	Waterproof enclosure (IP 65)
Complies with:	IEC / EN 61643-11

PB Series

PROFILT PSF Series

The PB series is intended to provide protection for electric appliances and equipment with sensitive electronic components and are installed directly before the protected equipment.

Moisture and water resistant enclosures (IP65) are used.

The Profilt PSF series combines Class I and Class II SPDs, a special low-pass filter and overcurrent protection. The low-pass filter plays an important role in reducing the fast rate of rise (du/dt) associated with the lightning discharges and surge transients. This helps to reduce the stress on the sensitive electronic components.

PB Series



- **Category IEC / EN:** Class II, III / Type 2, 3
- **Location of use:** As close as possible to the equipment to be protected
- **Max. rated current:** 16A
- **Protection modes:** L/N-PE
- **Protection elements:** MOV, GDT, MCB
- **Housing :** Waterproof enclosure (IP 65)
- **Complies with:** IEC / EN 61643-11



Technical data

● Electrical characteristic

Category IEC		Class II	Class II	Class III
Network system		TN	TT	TN
Max. continuous operating voltage (AC/DC) at 50/60Hz	U_c		320V/420V	
Nominal discharge current (8/20)	I_n	20kA per pole	20kA/20kA	/
Max. discharge current (8/20)	I_{max}	40kA per pole	40kA/20kA	/
Open circuit voltage of the combination wave generator	U_{oc}	/	/	10kV
Protection level	U_p	1.5kV	1.5kV	1.2kV

● Mechanical characteristics

Operating temperature		- 40°C...+ 80°C		
Degree of protection		IP 65		
Housing material		technical polymer		

● Type

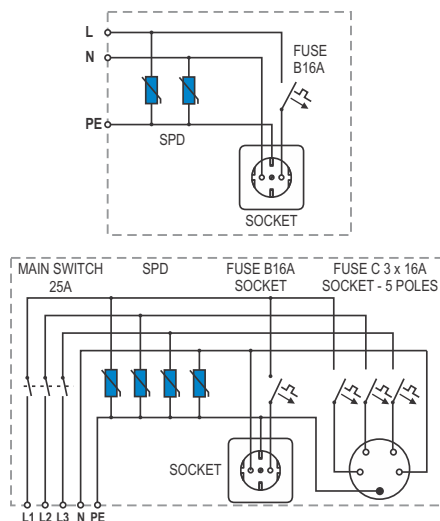
1 phase	PBS-C80 (2+0)-F16	PBS-C80 (1+1)-F16	PBS-D10 (2+0)-F16
Socket 230V		1	
Miniature circuit breaker (MCB)		16A	
Housing dimensions (W x H x D)		9.8 x 24.8 x 11.4 cm	
Ordering code	130 021	130 022	130 023

● Type

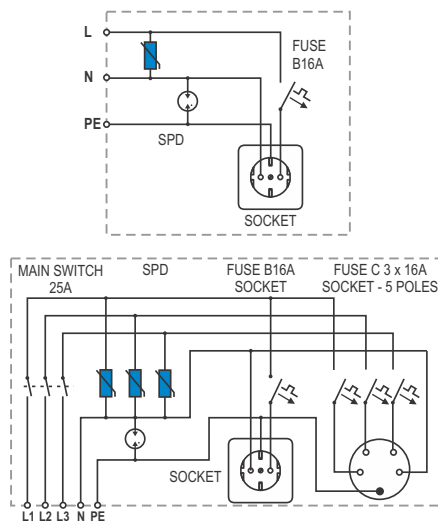
3 phase	PBL-C160 (4+0)-F16	PBL-C160 (3+1)-F16	PBL-D40 (4+0)-F16
Socket 230V , socket 5 poles, main switch		1	
Miniature circuit breaker (MCB)		4 x 16A	
Housing dimensions (W x H x D)		34 x 33.5 x 17.5 cm	
Ordering code	130 024	130 025	130 026

Internal configuration

TN Network



TT Network



PROFILT PSF Series



- **Category IEC / EN:** Class I, II / Type 1, 2
- **Location of use:** As close as possible to equipment to be protected
- **Max. rated current:** 40A, 63A
- **Protection modes:** L/N-PE
- **Protection elements:** MOV, GDT, surge filter
- **Housing:** Waterproof metal enclosure (IP 65)
- **Complies with:** IEC / EN 61643-11



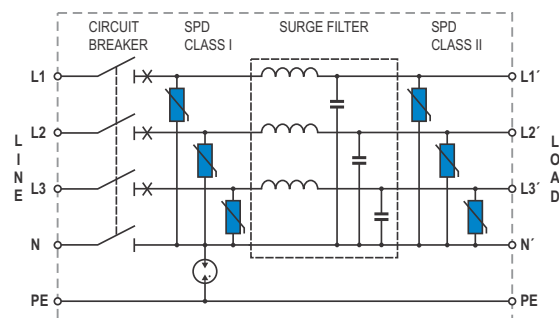
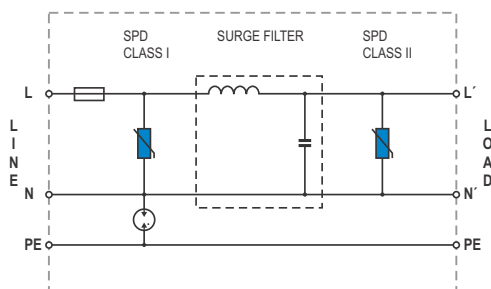
Technical data

Type	40A	PROFILT PSF yy	63A
● Electrical characteristic			
Network system	TT, TN-S		TT, TN-S
Max. continuous operating voltage(AC/DC) at 50/60Hz	Uc		320V/420V
Max. Load current	I _L		40A 63A
Max. discharge current (8/20)	I _{max} (L-N)		100kA 150kA 100kA 150kA
Impulse current (10/350)	I _{imp} (L-N)		25kA 50kA 25kA 50kA
Voltage protection level 20kA (8/20)	Up		< 670V < 570V < 670V < 570V
Voltage protection level 25kA (8/20)	Up		< 780V < 680V < 780V < 680V
Max. voltage drop	ΔU		< 1% < 1%
● Mechanical characteristics			
Operating temperature	- 20°C...+ 40°C		
Terminal cross section	16mm ²		35mm ²
Housing material	metal		
● Type			
	PROFILT PSF (1 phase)		PROFILT PSF (1 phase)
	1/40/320/TT-25kA	1/40/320/TT-50kA	1/63/320/TT-25kA 1/63/320/TT-50kA
Distribution systems	L1, N, PE		
Mounting	Wall mount		
Dimensions (w x h x d)	30 x 40 x 16cm		
Weight	9kg	9.5kg	9kg 9.5kg
Ordering code	130 086	130 046	130 079 130 070
● Type			
	PROFILT PSF (3 phase)		PROFILT PSF (3 phase)
	3/40/320/TT-25kA	3/40/320/TT-50kA	3/63/320/TT-25kA 3/63/320/TT-50kA
Distribution systems	L1, L2, L3, N, PE		
Mounting	Wall mount		
Dimensions (w x h x d)	40 x 50 x 21cm		
Weight	17kg	18kg	17kg 18kg
Ordering code	130 083	130 048	130 044 130 056

Other solutions available on request

Internal configuration

TT, TN-S Network







Class II SPD for Overhead Power Lines



Category IEC / EN:	Class II / Type 2
Location of use:	Overhead Power lines
Protection modes:	L/N-PE
Protective element:	MOV
Surge discharge ratings:	I_{max} up to 40kA
Internal protection and safety:	Thermal disconnecter
Complies with:	IEC 61643-11:2011, EN 61643-11:2012;

PROTEC AQ 25/xxx
PROTEC AQ 40/xxx
PROTEC AQS 40/xxx

The PROTEC AQ series of overvoltage surge protective devices has been developed to protect against indirect lightning discharges on Overhead Power lines. It consists of a high performance varistor with disconnection device which protects against short circuit conditions.

PROTEC AQS - provides the same compactness as the PROTEC AQ series but with a silicon jacket for greater hermetic sealing properties.

PROTEC AQ 25



- Category IEC / EN: Class II / Type 2
- Location of use: Overhead Power lines
- Network systems: TN-C, TN-S
- Protection modes: L/N - PE
- Protective element: MOV
- Surge discharge rating: $I_{\max} = 25\text{kA}$
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



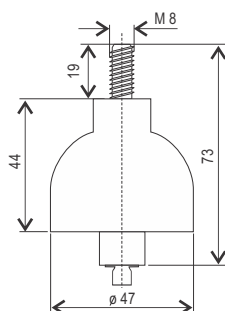
Technical data

Type		150	PROTEC AQ 25/xxx		440
		275	320		
● Electrical characteristics					
Nominal AC voltage	U_o	120V 50/60Hz	230V 50/60Hz		440V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	320/420V	440/580V
Nominal discharge current (8/20)	I_n			10kA	
Max. discharge current (8/20)	I_{\max}			25kA	
Protection level	U_p	< 0.9kV	< 1.3kV	< 1.4kV	< 1.9kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.7kV	< 1.0kV	< 1.0kV	< 1.4kV
Follow current	I_{fi}			NO	
Response time	t_A			< 25ns	
Thermal protection				YES	
Back-up fuse				NO	
TOV withstand 5s	U_T	174V	335V		580V
TOV withstand disconnection 120min	U_T	228V	438V		765V
Number of ports				1	
● Mechanical characteristics					
Temperature range	T_a			-40°C +70°C	
Permissible humidity	RH			5% - 95%	
Terminal screw torque	M_{\max}			3.5Nm	
Conductor cross section	L/N			M8	
	PE			6mm ² (stranded)	
AWG conductor cross section				9 AWG (stranded)	
Mounting				outdoors	
Degree of protection				IP 20	
Housing material				Thermoplastic; extinguishing degree UL 94 V-0	
Indication of thermal disconnector operation				disconnected cable	

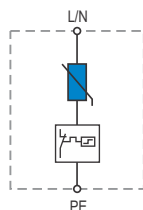
Ordering information

U_c	150	275	320	440
Ordering code PROTEC AQ 25/xxx	509.017	509.019	509.021	509.023

Dimensions



Internal configuration



Dimensions, weight and packaging

PROTEC AQ 25/xxx	150	275	320	440
Weight per unit	104g	106g	108g	112g
Packaging dimensions	390 x 380 x 280mm			
Packaging quantity	100 pcs.			

PROTEC AQ 40



- Category IEC / EN: Class II / Type 2
- Location of use: Overhead Power lines
- Network systems: TN-C, TN-S
- Protection modes: L/N - PE
- Protective element: MOV
- Surge discharge rating: $I_{\max} = 40\text{kA}$
- Housing: Compact design
- Complies with: IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type	150	PROTEC AQ 40/xxx		440
		275	320	

● Electrical characteristics

Nominal AC voltage	U_o	120V 50/60Hz	230V 50/60Hz	440V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	320/420V
Nominal discharge current (8/20)	I_n	20kA		
Max. discharge current (8/20)	I_{\max}	40kA		
Protection level	U_p	< 1.2kV	< 1.7kV	< 1.8kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.7kV	< 1.0kV	< 1.0kV
Follow current	I_{fi}	NO		
Response time	t_A	< 25ns		
Thermal protection		YES		
Back-up fuse		NO		
TOV withstand 5s	U_T	174V	335V	580V
TOV withstand disconnection 120min	U_T	228V	438V	765V
Number of ports		1		

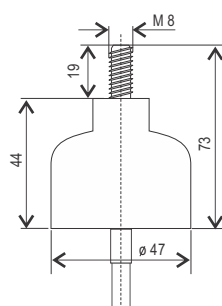
● Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C		
Permissible humidity	RH	5% - 95%		
Terminal screw torque	M_{\max}	3.5Nm		
Conductor cross section	L/N	M8		
	PE	6mm ² (stranded)		
AWG conductor cross section		9 AWG (stranded)		
Mounting		outdoors		
Degree of protection		IP 20		
Housing material		Thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnector operation		disconnected cable		

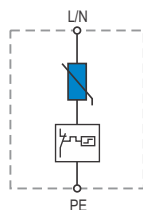
Ordering information

U_c	150	275	320	440
Ordering code PROTEC AQ 40/xxx	509.029	509.031	509.033	509.035

Dimensions



Internal configuration



Dimensions, weight and packaging

PROTEC AQ 40/xxx	150	275	320	440
Weight per unit	144g	146g	149g	157g
Packaging dimensions	390 x 380 x 280mm			
Packaging quantity	100 pcs.			

PROTEC AQS 40



● Category IEC / EN:	Class II / Type 2
● Location of use:	Overhead Power lines
● Network systems:	TN-C, TN-S
● Protection modes:	L/N - PE
● Protective element:	MOV
● Surge discharge rating:	$I_{\max} = 40\text{kA}$
● Housing:	Compact design
● Complies with:	IEC 61643-11:2011, EN 61643-11:2012;



Technical data

Type	150	PROTEC AQS 40/xxx		440
		275	320	

● Electrical characteristics

Nominal AC voltage	U_o	120V 50/60Hz	230V 50/60Hz	440V 50/60Hz
Max. continuous operating voltage (AC/DC)	U_c	150/200V	275/350V	440/580V
Nominal discharge current (8/20)	I_n		20kA	
Max. discharge current (8/20)	I_{\max}		40kA	
Protection level	U_p	< 0.9kV	< 1.4kV	< 1.4kV
Residual voltage at 5kA (8/20)	U_{res}	< 0.7kV	< 1.0kV	< 1.0kV
Follow current	I_{fi}		NO	
Response time	t_A		< 25ns	
Thermal protection			YES	
Back-up fuse			NO	
TOV withstand 5s	U_T	174V	335V	580V
TOV withstand disconnection 120min	U_T	228V	438V	765V
Number of ports			1	

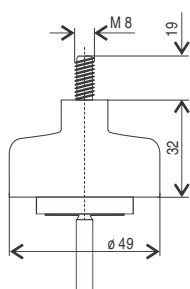
● Mechanical characteristics

Temperature range	T_a	- 40°C + 70°C		
Permissible humidity	RH	5% - 95%		
Terminal screw torque	M_{\max}	3.5Nm		
Conductor cross section	L/N	M8		
	PE	6mm ² (stranded)		
AWG conductor cross section		9 AWG (stranded)		
Mounting		outdoors		
Degree of protection		IP 20		
Housing material		Thermoplastic; extinguishing degree UL 94 V-0		
Indication of thermal disconnector operation		disconnected cable		

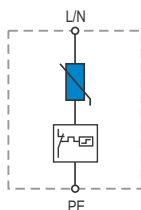
Ordering information

U_c	150	275	320	440
Ordering code PROTEC AQS 40/xxx	509 049	509 051	509 053	509 055

Dimensions



Internal configuration



Dimensions, weight and packaging

PROTEC AQS 40/xxx	150	275	320	440
Weight per unit	122g	126g	130g	134g
Packaging dimensions	390 x 380 x 280mm			
Packaging quantity	100 pcs.			

Isolating Spark Gaps (ISG) for Equipotential Bonding



Location of use:	Exposed environments or direct burial
Protective element:	GDT
High surge discharge rating:	$I_{max} = 100kA$
Housing:	Corrosion resistant enclosure with hermetic environmental seal and flying leads for ease of connection
Complies with:	EN 62561-3:2012;

EPZ 100/xxx
EPZ 100/xxx Ex

The EPZ series of isolating spark gaps have been developed to prevent unsafe potential gradients from establishing between adjacent metallic structures or surfaces during the lightning discharges. This is achieved by an internal voltage switching component which operates to establish equipotential equalisation when its predetermined spark-over voltage is reached, thereby preventing damage to equipment or eliminating unsafe conditions to personnel.

The EPZ has been developed for the use in applications such as: lightning protection grounding, where for instance circumstances may dictate that a "clean" signal ground can not be directly connected to a "dirty" power system ground.

It has also found wide application in the petrochemical industry in the protection of oil and gas pipeline insulating flanges from flash-overs during direct or nearby lightning discharges or when ground faults of nearby power transmission lines can cause large potential gradients across these flanges.

The EPZ is available in a hermetically sealed version for direct burial applications. It is also available with Baseefa **Ex approval certificate** for the use in hazardous locations (zone 2, gases).

These devices have been developed to meet the requirements EN 62561-3 Ed. 1.0 - Requirements for Lightning Protection Components (LPC) - Part 3: Requirements for isolating spark gaps.

Surge protective devices for Signaling Networks with Ex certificate are also available. Data sheets are available in the catalog "Surge Protective Devices for Signalling Networks".

EPZ 100/xxx



- **Location of use:** Exposed environments or direct burial
- **Protective element:** GDT
- **High surge discharge rating:** $I_{max} = 100kA$
- **Housing:** Corrosion resistant enclosure with hermetic environmental seal and flying leads for ease of connection
- **Complies with:** EN 62561-3:2012



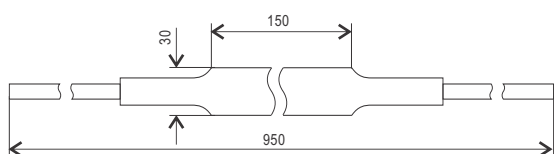
Technical data

Type	EPZ 100/xxx 350		
<div>● Electrical Characteristics</div>			
Rated DC withstand voltage	U_{wDC}		350V
Rated impulse sparkover voltage	$U_{r\ imp}$		1000V
Max. discharge current (8/20μs)	I_{max}		100kA
Impulse discharge current	I_{imp}		25kA
Class (lighting current currying capability)			1L
Capacitance at 1MHz	C		< 10pf
Insulation resistance at 100V _{DC}	R		> 1GΩ
<div>● Dimensions</div>			
Nominal outer diameter			28mm
Nominal length			140mm
Length with cables			1m approx.
<div>● Cable</div>			
Cross sectional area			16mm ²
Length			450mm approx.
Number of conductors			≥ 462/0.21
Insulation			Double insulated
Environmental protection			UV stabilised, flame retardant
Resistant			Acids, solvents and oils
Connection			Suitable for screw or lug termination
<div>● Physicals</div>			
Degree of protection			IP 67
Housing			Plastic sheath
Location			Indoor/Outdoor
Weight			0.5kg approx.
Temperature range	Ta		- 30°C ... + 70°C
<div>● The specific conditions of use</div>			
Local heating by pipelines and other hot surfaces in vicinity of the installation of the product must be considered by the installer to ensure that specified maximum ambient temperature is not exceeded.			
Connection of the integral cables must be in accordance with the applicable requirements of IEC 60079-0 and IEC 60079-15 for field wiring connections.			
The Type EPZ Equipotential clamp has an external non-metalic heat shrink sleeve which may provide a potential electrostatic charging hazard. See the instrucitons for further information.			

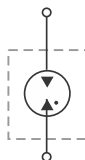
Ordering information

	350
Ordering code EPZ 100/xxx	509 509

Dimensions



Internal configuration



Dimensions, weight and packaging

EPZ 100/xxx	350
Weight per unit	500g
Packaging dimensions (single unit)	350 x 125 x 55 mm
Min. packaging quantity	27 pcs.



EPZ 100/xxx Ex



- **Location of use:** Exposed environments or direct burial
- **Protective element:** GDT
- **High surge discharge rating:** $I_{max} = 100kA$
- **Housing:** Corrosion resistant enclosure with hermetic environmental seal and flying leads for ease of connection
- **ATEX approvals:** Ex marking according to EN 60079-0 and 60079-15; Baseefa 15ATEX0102X; Ex II 3G
- **IECEX approvals:** Ex marking according to EN 60079-0 and 60079-15; IECEX BAS 15.0069X;
- **Complies with:** Ex n C II C T5 Gc
EN 62561-3:2012



Technical data

Type	EPZ 100/xxx Ex 350
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● **Electrical Characteristics**

Rated DC withstand voltage	U_{WDC}	350V
Rated impulse sparkover voltage	$U_{r imp}$	1000V
Max. discharge current (8/20)	I_{max}	100kA
Impulse discharge current	I_{imp}	25kA
Class (lighting current carrying capability)		1L
Capacitance at 1MHz	C	< 10pf
Insulation resistance at 100V _{DC}	R	> 1GΩ

● **Dimensions**

Nominal outer diameter	28mm
Nominal length	140mm
Length with cables	1m approx.

● **Cable**

Cross sectional area	16mm ²
Length	450mm approx.
Number of conductors	≥ 462/0.21
Insulation	Double insulated
Environmental protection	UV stabilised, flame retardant
Resistant	Acids, solvents and oils
Connection	Suitable for screw or lug termination

● **Physicals**

Degree of protection	IP 67
Housing	Plastic sheath
Location	Indoor/Outdoor
Weight	0.5kg approx.
Temperature range	- 30°C ... + 70°C

● **The specific conditions of use**

Local heating by pipelines and other hot surfaces in vicinity of the installation of the product must be considered by the installer to ensure that specified maximum ambient temperature is not exceeded.

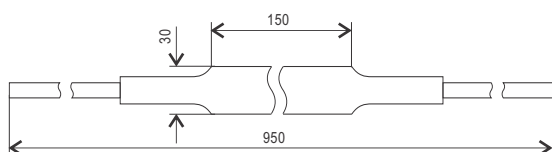
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The Type EPZ Equipotential clamp has an external non-metallic heat shrink sleeve which may provide a potential electrostatic charging hazard. See the instructions for further information.

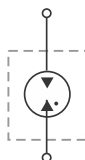
Ordering information

Ordering code EPZ 100/xxx Ex	350 322 973
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Dimensions



Internal configuration



Dimensions, weight and packaging

EPZ 100/xxx Ex	350
Weight per unit	500g
Packaging dimensions (single unit)	350 x 125 x 55 mm
Min. packaging quantity	27 pcs.





Connection Accessories



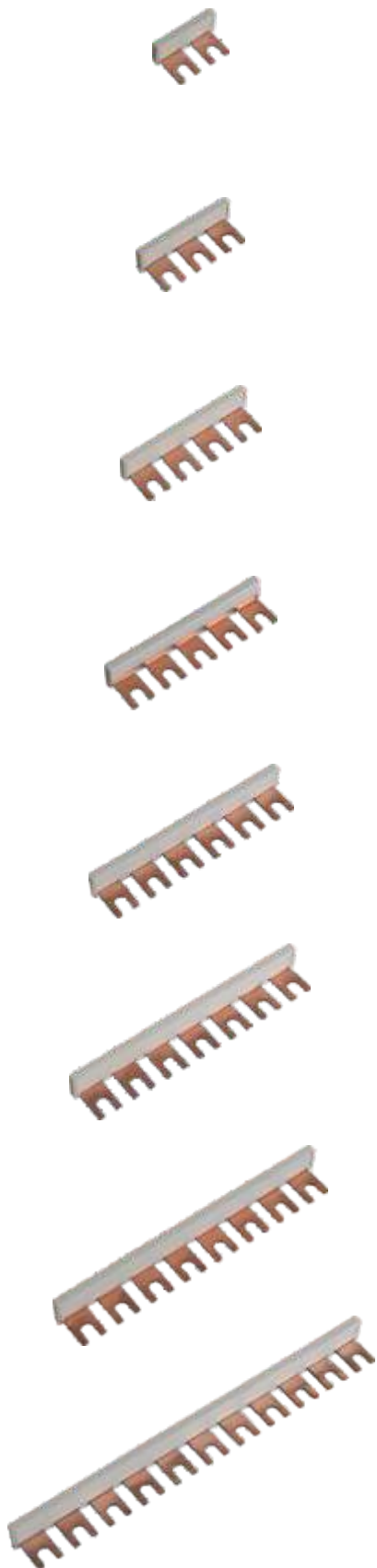
PROBAR Series

- Fixing cable
- Fixing hook
- PSN
- PSI

PROBAR series of insulated busbar interconnects for use with DIN rail products.

Fixing cable and fixing hook are used as fastening devices for PROTEC AQ overhead power lines.

Single-phase busbars



Ordering information

Type

PROBAR	1-2
No. of poles	2
Busbar cross-section	16mm ²
Ordering code	501 301

Type

PROBAR	1-3
No. of poles	3
Busbar cross-section	16mm ²
Ordering code	501 303

Type

PROBAR	1-4
No. of poles	4
Busbar cross-section	16mm ²
Ordering code	501 305

Type

PROBAR	1-5
No. of poles	5
Busbar cross-section	16mm ²
Ordering code	501 307

Type

PROBAR	1-6
No. of poles	6
Busbar cross-section	16mm ²
Ordering code	501 309

Type

PROBAR	1-7
No. of poles	7
Busbar cross-section	16mm ²
Ordering code	501 311

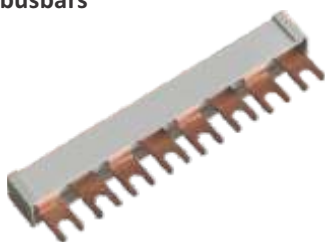
Type

PROBAR	1-8
No. of poles	8
Busbar cross-section	16mm ²
Ordering code	501 313

Type

PROBAR	1-11
No. of poles	11
Busbar cross-section	16mm ²
Ordering code	501 315

Two-phase busbars

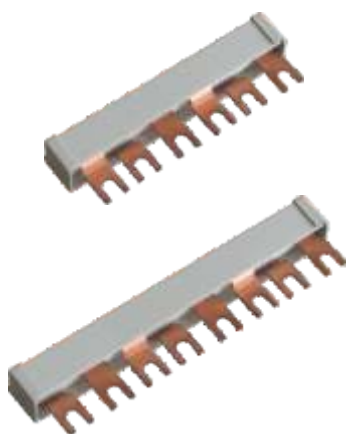


Ordering information

Type

PROBAR	2-8
No. of poles	8
Busbar cross-section	16mm ²
Ordering code	501 317

Three-phase busbars



Ordering information

Type

PROBAR	3-6
No. of poles	6
Busbar cross-section	16mm ²
Ordering code	501 319

Type

PROBAR	3-8
No. of poles	8
Busbar cross-section	16mm ²
Ordering code	501 321

Single-phase busbars

PROTEC B(R) - 2TE, SAFETEC B(R) - 2TE



Ordering information

Type

PB	1-(2+0)
No. of poles	2
Busbar cross-section	16mm ²
Ordering code	501 331

Type

PB	1-(3+0)
No. of poles	3
Busbar cross-section	16mm ²
Ordering code	501 332

Type

PB	1-(4+0)
No. of poles	4
Busbar cross-section	16mm ²
Ordering code	501 335

Type

PB	1-(3+1)
No. of poles	4
Busbar cross-section	16mm ²
Ordering code	501 334

Connection parts for PROTEC AQ and AQS Series



Ordering information












Type	Fixing cable
Ordering code	509 507

Type	Fixing hook
Ordering code	509 501










Type	PSN (Connection clamp for the non insulated conductor)
Ordering code	509 503

Type	PSI (Connection clamp for the insulated conductor)
Ordering code	509 505










Product Index

	Product name	Ordering code	Dimensions DIN 43880	Packaging dimensions (single unit)	Minimum packaging quantity	Weight	Page
Class I, II Compact Single and Multi-pole SPD 12.5kA per pole							
	SAFETEC B 12.5/150 TCG	54.0146	2TE	109 x 76.5 x 41.5mm	7 pcs.	175g	12
	SAFETEC BR 12.5/150 TCG	54.0147	2TE	109 x 76.5 x 41.5mm	7 pcs.	180g	12
	SAFETEC B 12.5/275 TCG	54.0148	2TE	109 x 76.5 x 41.5mm	7 pcs.	205g	12
	SAFETEC BR 12.5/275 TCG	54.0149	2TE	109 x 76.5 x 41.5mm	7 pcs.	210g	12
	SAFETEC B 12.5/440 TCG	54.0150	2TE	109 x 76.5 x 41.5mm	7 pcs.	255g	12
	SAFETEC BR 12.5/440 TCG	54.0151	2TE	109 x 76.5 x 41.5mm	7 pcs.	260g	12
	SAFETUBE B 50	54.0006	2TE	109 x 76.5 x 41.5mm	7 pcs.	180g	13
	SAFELOC B 25/150 (2+0) TCG	54.0152	4TE	109 x 76.5 x 80mm	3 pcs.	320g	15
	SAFELOC BR 25/150 (2+0) TCG	54.0153	4TE	109 x 76.5 x 80mm	3 pcs.	330g	15
	SAFELOC B 25/275 (2+0) TCG	54.0154	4TE	109 x 76.5 x 80mm	3 pcs.	420g	15
	SAFELOC BR 25/275 (2+0) TCG	54.0155	4TE	109 x 76.5 x 80mm	3 pcs.	430g	15
	SAFELOC B 25/440 (2+0) TCG	54.0156	4TE	109 x 76.5 x 80mm	3 pcs.	540g	15
	SAFELOC BR 25/440 (2+0) TCG	54.0157	4TE	109 x 76.5 x 80mm	3 pcs.	550g	15
	SAFELOC B 37.5/150 (3+0) TCG	54.0164	6TE	109 x 76.5 x 114mm	2 pcs.	430g	16
	SAFELOC BR 37.5/150 (3+0) TCG	54.0165	6TE	109 x 76.5 x 114mm	2 pcs.	435g	16
	SAFELOC B 37.5/275 (3+0) TCG	54.0166	6TE	109 x 76.5 x 114mm	2 pcs.	530g	16
	SAFELOC BR 37.5/275 (3+0) TCG	54.0167	6TE	109 x 76.5 x 114mm	2 pcs.	535g	16
	SAFELOC B 37.5/440 (3+0) TCG	54.0168	6TE	109 x 76.5 x 114mm	2 pcs.	740g	16
	SAFELOC BR 37.5/440 (3+0) TCG	54.0169	6TE	109 x 76.5 x 114mm	2 pcs.	745g	16
	SAFELOC B 50/150 (4+0) TCG	54.0170	8TE	109 x 76.5 x 148mm	2 pcs.	800g	17
	SAFELOC BR 50/150 (4+0) TCG	54.0171	8TE	109 x 76.5 x 148mm	2 pcs.	820g	17
	SAFELOC B 50/275 (4+0) TCG	54.0172	8TE	109 x 76.5 x 148mm	2 pcs.	1000g	17
	SAFELOC BR 50/275 (4+0) TCG	54.0173	8TE	109 x 76.5 x 148mm	2 pcs.	1020g	17
	SAFELOC B 50/440 (4+0) TCG	54.0174	8TE	109 x 76.5 x 148mm	2 pcs.	1160g	17
	SAFELOC BR 50/440 (4+0) TCG	54.0175	8TE	109 x 76.5 x 148mm	2 pcs.	1080g	17
	SAFELOC B 25/150 (1+1) TCG	54.0158	4TE	109 x 76.5 x 80mm	3 pcs.	280g	19
	SAFELOC BR 25/150 (1+1) TCG	54.0159	4TE	109 x 76.5 x 80mm	3 pcs.	285g	19
	SAFELOC B 25/275 (1+1) TCG	54.0160	4TE	109 x 76.5 x 80mm	3 pcs.	315g	19
	SAFELOC BR 25/275 (1+1) TCG	54.0161	4TE	109 x 76.5 x 80mm	3 pcs.	320g	19
	SAFELOC B 25/440 (1+1) TCG	54.0162	4TE	109 x 76.5 x 80mm	3 pcs.	340g	19
	SAFELOC BR 25/440 (1+1) TCG	54.0163	4TE	109 x 76.5 x 80mm	3 pcs.	345g	19
	SAFELOC B 50/150 (3+1) TCG	54.0176	8TE	109 x 76.5 x 148mm	2 pcs.	785g	20
	SAFELOC BR 50/150 (3+1) TCG	54.0177	8TE	109 x 76.5 x 148mm	2 pcs.	800g	20
	SAFELOC B 50/275 (3+1) TCG	54.0178	8TE	109 x 76.5 x 148mm	2 pcs.	900g	20
	SAFELOC BR 50/275 (3+1) TCG	54.0179	8TE	109 x 76.5 x 148mm	2 pcs.	915g	20
	SAFELOC B 50/440 (3+1) TCG	54.0180	8TE	109 x 76.5 x 148mm	2 pcs.	1020g	20
	SAFELOC BR 50/440 (3+1) TCG	54.0181	8TE	109 x 76.5 x 148mm	2 pcs.	1035g	20
Class I, II Compact Single and Multi-pole SPD 25kA per pole							
	SAFETEC B 25/150 TCG	54.0038	2TE	109 x 76.5 x 41.5mm	7 pcs.	275g	26
	SAFETEC BR 25/150 TCG	54.0039	2TE	109 x 76.5 x 41.5mm	7 pcs.	280g	26
	SAFETEC B 25/275 TCG	54.0040	2TE	109 x 76.5 x 41.5mm	7 pcs.	325g	26
	SAFETEC BR 25/275 TCG	54.0041	2TE	109 x 76.5 x 41.5mm	7 pcs.	330g	26
	SAFETEC B 25/440 TCG	54.0042	2TE	109 x 76.5 x 41.5mm	7 pcs.	375g	26
	SAFETEC BR 25/440 TCG	54.0043	2TE	109 x 76.5 x 41.5mm	7 pcs.	380g	26
	SAFETUBE B 50	54.0006	2TE	109 x 76.5 x 41.5mm	7 pcs.	180g	27
	SAFETUBE B 100	54.0007	2TE	109 x 76.5 x 41.5mm	7 pcs.	240g	27
	SAFELOC B 50/150 (2+0) TCG	54.0044	4TE	109 x 76.5 x 80mm	3 pcs.	520g	29
	SAFELOC BR 50/150 (2+0) TCG	54.0045	4TE	109 x 76.5 x 80mm	3 pcs.	530g	29
	SAFELOC B 50/275 (2+0) TCG	54.0046	4TE	109 x 76.5 x 80mm	3 pcs.	620g	29
	SAFELOC BR 50/275 (2+0) TCG	54.0047	4TE	109 x 76.5 x 80mm	3 pcs.	630g	29
	SAFELOC B 50/440 (2+0) TCG	54.0048	4TE	109 x 76.5 x 80mm	3 pcs.	740g	29
	SAFELOC BR 50/440 (2+0) TCG	54.0049	4TE	109 x 76.5 x 80mm	3 pcs.	750g	29
	SAFELOC B 75/150 (3+0) TCG	54.0056	6TE	109 x 76.5 x 114mm	2 pcs.	780g	30
	SAFELOC BR 75/150 (3+0) TCG	54.0057	6TE	109 x 76.5 x 114mm	2 pcs.	795g	30
	SAFELOC B 75/275 (3+0) TCG	54.0058	6TE	109 x 76.5 x 114mm	2 pcs.	930g	30
	SAFELOC BR 75/275 (3+0) TCG	54.0059	6TE	109 x 76.5 x 114mm	2 pcs.	945g	30
	SAFELOC B 75/440 (3+0) TCG	54.0060	6TE	109 x 76.5 x 114mm	2 pcs.	1095g	30
	SAFELOC BR 75/440 (3+0) TCG	54.0061	6TE	109 x 76.5 x 114mm	2 pcs.	1110g	30
	SAFELOC B 100/150 (4+0) TCG	54.0062	8TE	109 x 76.5 x 148mm	2 pcs.	1040g	31
	SAFELOC BR 100/150 (4+0) TCG	54.0063	8TE	109 x 76.5 x 148mm	2 pcs.	1060g	31
	SAFELOC B 100/275 (4+0) TCG	54.0064	8TE	109 x 76.5 x 148mm	2 pcs.	1240g	31
	SAFELOC BR 100/275 (4+0) TCG	54.0065	8TE	109 x 76.5 x 148mm	2 pcs.	1260g	31
	SAFELOC B 100/440 (4+0) TCG	54.0066	8TE	109 x 76.5 x 148mm	2 pcs.	1460g	31
	SAFELOC BR 100/440 (4+0) TCG	54.0067	8TE	109 x 76.5 x 148mm	2 pcs.	1480g	31
	SAFELOC B 50/150 (1+1) TCG	54.0050	4TE	109 x 76.5 x 80mm	3 pcs.	475g	33
	SAFELOC BR 50/150 (1+1) TCG	54.0051	4TE	109 x 76.5 x 80mm	3 pcs.	480g	33









Product Index








	Product name	Ordering code	Dimensions DIN 43880	Packaging dimensions (single unit)	Minimum packaging quantity	Weight	Page
	SAFELOC B 50/275 (1+1) TCG	54.0052	4TE	109 x 76.5 x 80mm	3 pcs.	515g	33
	SAFELOC BR 50/275 (1+1) TCG	54.0053	4TE	109 x 76.5 x 80mm	3 pcs.	520g	33
	SAFELOC B 50/440 (1+1) TCG	54.0054	4TE	109 x 76.5 x 80mm	3 pcs.	565g	33
	SAFELOC BR 50/440 (1+1) TCG	54.0055	4TE	109 x 76.5 x 80mm	3 pcs.	570g	33
	SAFELOC B 100/150 (3+1) TCG	54.0068	8TE	109 x 76.5 x 148mm	2 pcs.	985g	34
	SAFELOC BR 100/150 (3+1) TCG	54.0069	8TE	109 x 76.5 x 148mm	2 pcs.	1000g	34
	SAFELOC B 100/275 (3+1) TCG	54.0070	8TE	109 x 76.5 x 148mm	2 pcs.	1135g	34
	SAFELOC BR 100/275 (3+1) TCG	54.0071	8TE	109 x 76.5 x 148mm	2 pcs.	1150g	34
	SAFELOC B 100/440 (3+1) TCG	54.0072	8TE	109 x 76.5 x 148mm	2 pcs.	1285g	34
	SAFELOC BR 100/440 (3+1) TCG	54.0073	8TE	109 x 76.5 x 148mm	2 pcs.	1300g	34
	Class I, II Compact Single and Multi-pole SPD 12.5kA per pole						
	PROTEC B 12.5/150 (1+0)	56.0001	2TE	109x76.5x41.5mm	7 pcs.	150	40
	PROTEC BR 12.5/150 (1+0)	56.0002	2TE	109x76.5x41.5mm	7 pcs.	155	40
	PROTEC B 12.5/275 (1+0)	56.0003	2TE	109x76.5x41.5mm	7 pcs.	200	40
	PROTEC BR 12.5/275 (1+0)	56.0004	2TE	109x76.5x41.5mm	7 pcs.	205	40
	PROTEC B 12.5/320 (1+0)	56.0005	2TE	109x76.5x41.5mm	7 pcs.	200	40
	PROTEC BR 12.5/320 (1+0)	56.0006	2TE	109x76.5x41.5mm	7 pcs.	205	40
	PROTEC B 12.5/385 (1+0)	56.0007	2TE	109x76.5x41.5mm	7 pcs.	260	40
	PROTEC BR 12.5/385 (1+0)	56.0008	2TE	109x76.5x41.5mm	7 pcs.	265	40
	PROTEC B 12.5/440 (1+0)	56.0009	2TE	109x76.5x41.5mm	7 pcs.	300	40
	PROTEC BR 12.5/440 (1+0)	56.0010	2TE	109x76.5x41.5mm	7 pcs.	305	40
	PROTUBE 50	56.0011	2TE	109x76.5x41.5mm	7 pcs.	180	42
	PROBLOC B 25/150 (2+0)	56.0013	2TE	109x76.5x41.5mm	7 pcs.	185	44
	PROBLOC BR 25/150 (2+0)	56.0014	2TE	109x76.5x41.5mm	7 pcs.	190	44
	PROBLOC B 25/275 (2+0)	56.0023	2TE	109x76.5x41.5mm	7 pcs.	225	44
	PROBLOC BR 25/275 (2+0)	56.0024	2TE	109x76.5x41.5mm	7 pcs.	230	44
	PROBLOC B 25/320 (2+0)	56.0033	2TE	109x76.5x41.5mm	7 pcs.	225	44
	PROBLOC BR 25/320 (2+0)	56.0034	2TE	109x76.5x41.5mm	7 pcs.	230	44
	PROBLOC B 25/385 (2+0)	56.0043	2TE	109x76.5x41.5mm	7 pcs.	285	44
	PROBLOC BR 25/385 (2+0)	56.0044	2TE	109x76.5x41.5mm	7 pcs.	290	44
	PROBLOC B 25/440 (2+0)	56.0053	2TE	109x76.5x41.5mm	7 pcs.	375	44
	PROBLOC BR 25/440 (2+0)	56.0054	2TE	109x76.5x41.5mm	7 pcs.	380	44
	PROBLOC B 37.5/150 (3+0)	56.0015	3TE	109x76.5x60mm	5 pcs.	290	44
	PROBLOC BR 37.5/150 (3+0)	56.0016	3TE	109x76.5x60mm	5 pcs.	300	44
	PROBLOC B 37.5/275 (3+0)	56.0025	3TE	109x76.5x60mm	5 pcs.	330	44
	PROBLOC BR 37.5/275 (3+0)	56.0026	3TE	109x76.5x60mm	5 pcs.	340	44
	PROBLOC B 37.5/320 (3+0)	56.0035	3TE	109x76.5x60mm	5 pcs.	330	44
	PROBLOC BR 37.5/320 (3+0)	56.0036	3TE	109x76.5x60mm	5 pcs.	340	44
	PROBLOC B 37.5/385 (3+0)	56.0045	3TE	109x76.5x60mm	5 pcs.	390	44
	PROBLOC BR 37.5/385 (3+0)	56.0046	3TE	109x76.5x60mm	5 pcs.	400	44
	PROBLOC B 37.5/440 (3+0)	56.0055	3TE	109x76.5x60mm	5 pcs.	480	44
	PROBLOC BR 37.5/440 (3+0)	56.0056	3TE	109x76.5x60mm	5 pcs.	490	44
	PROBLOC B 50/150 (4+0)	56.0017	4TE	109x76.5x78mm	3 pcs.	550	44
	PROBLOC BR 50/150 (4+0)	56.0018	4TE	109x76.5x78mm	3 pcs.	560	44
	PROBLOC B 50/275 (4+0)	56.0027	4TE	109x76.5x78mm	3 pcs.	590	44
	PROBLOC BR 50/275 (4+0)	56.0028	4TE	109x76.5x78mm	3 pcs.	600	44
	PROBLOC B 50/320 (4+0)	56.0037	4TE	109x76.5x78mm	3 pcs.	590	44
	PROBLOC BR 50/320 (4+0)	56.0038	4TE	109x76.5x78mm	3 pcs.	600	44
	PROBLOC B 50/385 (4+0)	56.0047	4TE	109x76.5x78mm	3 pcs.	650	44
	PROBLOC BR 50/385 (4+0)	56.0048	4TE	109x76.5x78mm	3 pcs.	660	44
	PROBLOC B 50/440 (4+0)	56.0057	4TE	109x76.5x78mm	3 pcs.	740	44
	PROBLOC BR 50/440 (4+0)	56.0058	4TE	109x76.5x78mm	3 pcs.	750	44
	PROBLOC B 25/150 (1+1)	56.0019	2TE	109x76.5x41.5mm	7 pcs.	110	46
	PROBLOC BR 25/150 (1+1)	56.0020	2TE	109x76.5x41.5mm	7 pcs.	115	46
	PROBLOC B 25/275 (1+1)	56.0029	2TE	109x76.5x41.5mm	7 pcs.	150	46
	PROBLOC BR 25/275 (1+1)	56.0030	2TE	109x76.5x41.5mm	7 pcs.	155	46
	PROBLOC B 25/320 (1+1)	56.0039	2TE	109x76.5x41.5mm	7 pcs.	150	46
	PROBLOC BR 25/320 (1+1)	56.0040	2TE	109x76.5x41.5mm	7 pcs.	155	46
	PROBLOC B 25/385 (1+1)	56.0049	2TE	109x76.5x41.5mm	7 pcs.	210	46
	PROBLOC BR 25/385 (1+1)	56.0050	2TE	109x76.5x41.5mm	7 pcs.	215	46
	PROBLOC B 25/440 (1+1)	56.0059	2TE	109x76.5x41.5mm	7 pcs.	300	46
	PROBLOC BR 25/440 (1+1)	56.0060	2TE	109x76.5x41.5mm	7 pcs.	305	46
	PROBLOC B 50/150 (3+1)	56.0021	4TE	109x76.5x78mm	3 pcs.	555	46
	PROBLOC BR 50/150 (3+1)	56.0022	4TE	109x76.5x78mm	3 pcs.	560	46
	PROBLOC B 50/275 (3+1)	56.0031	4TE	109x76.5x78mm	3 pcs.	595	46
	PROBLOC BR 50/275 (3+1)	56.0032	4TE	109x76.5x78mm	3 pcs.	600	46
	PROBLOC B 50/320 (3+1)	56.0041	4TE	109x76.5x78mm	3 pcs.	595	46
	PROBLOC BR 50/320 (3+1)	56.0042	4TE	109x76.5x78mm	3 pcs.	600	46
	PROBLOC B 50/385 (3+1)	56.0051	4TE	109x76.5x78mm	3 pcs.	655	46
	PROBLOC BR 50/385 (3+1)	56.0052	4TE	109x76.5x78mm	3 pcs.	660	46
	PROBLOC B 50/440 (3+1)	56.0061	4TE	109x76.5x78mm	3 pcs.	745	46
	PROBLOC BR 50/440 (3+1)	56.0062	4TE	109x76.5x78mm	3 pcs.	750	46

Product Index






	Product name	Ordering code	Dimensions DIN 43880	Packaging dimensions (single unit)	Minimum packaging quantity	Weight	Page
Class I, II Compact Single and Multi-pole SPD 25kA per pole							
	PROTEC B 25/150 (1+0)	56.0063	2TE	109×76.5×41.5mm	7 pcs.	245	50
	PROTEC BR 25/150 (1+0)	56.0064	2TE	109×76.5×41.5mm	7 pcs.	250	50
	PROTEC B 25/275 (1+0)	56.0065	2TE	109×76.5×41.5mm	7 pcs.	295	50
	PROTEC BR 25/275 (1+0)	56.0066	2TE	109×76.5×41.5mm	7 pcs.	300	50
	PROTEC B 25/320 (1+0)	56.0067	2TE	109×76.5×41.5mm	7 pcs.	295	50
	PROTEC BR 25/320 (1+0)	56.0068	2TE	109×76.5×41.5mm	7 pcs.	300	50
	PROTEC B 25/385 (1+0)	56.0069	2TE	109×76.5×41.5mm	7 pcs.	320	50
	PROTEC BR 25/385 (1+0)	56.0070	2TE	109×76.5×41.5mm	7 pcs.	325	50
	PROTEC B 25/440 (1+0)	56.0071	2TE	109×76.5×41.5mm	7 pcs.	345	50
	PROTEC BR 25/440 (1+0)	56.0072	2TE	109×76.5×41.5mm	7 pcs.	350	50
	PROTUBE 50	56.0011	2TE	109×76.5×41.5mm	7 pcs.	180	51
	PROTUBE 100	56.0012	2TE	109×76.5×41.5mm	7 pcs.	240	51
	PROBLOC B 50/150 (2+0)	56.0073	4TE	109×76.5×78mm	3 pcs.	460	54
	PROBLOC BR 50/150 (2+0)	56.0074	4TE	109×76.5×78mm	3 pcs.	470	54
	PROBLOC B 50/275 (2+0)	56.0083	4TE	109×76.5×78mm	3 pcs.	560	54
	PROBLOC BR 50/275 (2+0)	56.0084	4TE	109×76.5×78mm	3 pcs.	570	54
	PROBLOC B 50/320 (2+0)	56.0093	4TE	109×76.5×78mm	3 pcs.	560	54
	PROBLOC BR 50/320 (2+0)	56.0094	4TE	109×76.5×78mm	3 pcs.	570	54
	PROBLOC B 50/385 (2+0)	56.0103	4TE	109×76.5×78mm	3 pcs.	620	54
	PROBLOC BR 50/385 (2+0)	56.0104	4TE	109×76.5×78mm	3 pcs.	630	54
	PROBLOC B 50/440 (2+0)	56.0113	4TE	109×76.5×78mm	3 pcs.	680	54
	PROBLOC BR 50/440 (2+0)	56.0114	4TE	109×76.5×78mm	3 pcs.	690	54
	PROBLOC B 75/150 (3+0)	56.0075	6TE	109×76.5×115mm	3 pcs.	690	54
	PROBLOC BR 75/150 (3+0)	56.0076	6TE	109×76.5×115mm	3 pcs.	705	54
	PROBLOC B 75/275 (3+0)	56.0085	6TE	109×76.5×115mm	3 pcs.	840	54
	PROBLOC BR 75/275 (3+0)	56.0086	6TE	109×76.5×115mm	3 pcs.	855	54
	PROBLOC B 75/320 (3+0)	56.0095	6TE	109×76.5×115mm	3 pcs.	840	54
	PROBLOC BR 75/320 (3+0)	56.0096	6TE	109×76.5×115mm	3 pcs.	855	54
	PROBLOC B 75/385 (3+0)	56.0105	6TE	109×76.5×115mm	3 pcs.	900	54
	PROBLOC BR 75/385 (3+0)	56.0106	6TE	109×76.5×115mm	3 pcs.	915	54
	PROBLOC B 75/440 (3+0)	56.0115	6TE	109×76.5×115mm	3 pcs.	1005	54
	PROBLOC BR 75/440 (3+0)	56.0116	6TE	109×76.5×115mm	3 pcs.	1020	54
	PROBLOC B 100/150 (4+0)	56.0077	8TE	109×76.5×148mm	2 pcs.	920	54
	PROBLOC BR 100/150 (4+0)	56.0078	8TE	109×76.5×148mm	2 pcs.	940	54
	PROBLOC B 100/275 (4+0)	56.0087	8TE	109×76.5×148mm	2 pcs.	1120	54
	PROBLOC BR 100/275 (4+0)	56.0088	8TE	109×76.5×148mm	2 pcs.	1140	54
	PROBLOC B 100/320 (4+0)	56.0097	8TE	109×76.5×148mm	2 pcs.	1120	54
	PROBLOC BR 100/320 (4+0)	56.0098	8TE	109×76.5×148mm	2 pcs.	1140	54
	PROBLOC B 100/385 (4+0)	56.0107	8TE	109×76.5×148mm	2 pcs.	1180	54
	PROBLOC BR 100/385 (4+0)	56.0108	8TE	109×76.5×148mm	2 pcs.	1200	54
	PROBLOC B 100/440 (4+0)	56.0117	8TE	109×76.5×148mm	2 pcs.	1345	54
	PROBLOC BR 100/440 (4+0)	56.0118	8TE	109×76.5×148mm	2 pcs.	1360	54
	PROBLOC B 50/150 (1+1)	56.0079	4TE	109×76.5×78mm	3 pcs.	445	56
	PROBLOC BR 50/150 (1+1)	56.0080	4TE	109×76.5×78mm	3 pcs.	450	56
	PROBLOC B 50/275 (1+1)	56.0089	4TE	109×76.5×78mm	3 pcs.	485	56
	PROBLOC BR 50/275 (1+1)	56.0090	4TE	109×76.5×78mm	3 pcs.	490	56
	PROBLOC B 50/320 (1+1)	56.0099	4TE	109×76.5×78mm	3 pcs.	485	56
	PROBLOC BR 50/320 (1+1)	56.0100	4TE	109×76.5×78mm	3 pcs.	490	56
	PROBLOC B 50/385 (1+1)	56.0109	4TE	109×76.5×78mm	3 pcs.	545	56
	PROBLOC BR 50/385 (1+1)	56.0110	4TE	109×76.5×78mm	3 pcs.	550	56
	PROBLOC B 50/440 (1+1)	56.0119	4TE	109×76.5×78mm	3 pcs.	535	56
	PROBLOC BR 50/440 (1+1)	56.0120	4TE	109×76.5×78mm	3 pcs.	540	56
	PROBLOC B 100/150 (3+1)	56.0081	8TE	109×76.5×148mm	2 pcs.	895	57
	PROBLOC BR 100/150 (3+1)	56.0082	8TE	109×76.5×148mm	2 pcs.	910	57
	PROBLOC B 100/275 (3+1)	56.0091	8TE	109×76.5×148mm	2 pcs.	1045	57
	PROBLOC BR 100/275 (3+1)	56.0092	8TE	109×76.5×148mm	2 pcs.	1060	57
	PROBLOC B 100/320 (3+1)	56.0101	8TE	109×76.5×148mm	2 pcs.	1045	57
	PROBLOC BR 100/320 (3+1)	56.0102	8TE	109×76.5×148mm	2 pcs.	1060	57
	PROBLOC B 100/385 (3+1)	56.0111	8TE	109×76.5×148mm	2 pcs.	1105	57
	PROBLOC BR 100/385 (3+1)	56.0112	8TE	109×76.5×148mm	2 pcs.	1120	57
	PROBLOC B 100/440 (3+1)	56.0121	8TE	109×76.5×148mm	2 pcs.	1195	57
	PROBLOC BR 100/440 (3+1)	56.0122	8TE	109×76.5×148mm	2 pcs.	1210	57
Class I, II Compact Single pole SPD 12.5kA							
	PROTEC B2N 12.5/150	507.501	1TE	110 x 76.5 x 23.5mm	12 pcs.	124g	62
	PROTEC B2N 12.5/275	507.503	1TE	110 x 76.5 x 23.5mm	12 pcs.	150g	62
	PROTEC B2N 12.5/320	507.505	1TE	110 x 76.5 x 23.5mm	12 pcs.	150g	62
	PROTEC B2N 12.5/385	507.535	1TE	110 x 76.5 x 23.5mm	12 pcs.	143g	62
	PROTEC B2N 12.5/440	507.507	1TE	110 x 76.5 x 23.5mm	12 pcs.	146g	62
	PROTEC B2NR 12.5/150	507.509	1TE	110 x 76.5 x 23.5mm	12 pcs.	129g	62
	PROTEC B2NR 12.5/275	507.511	1TE	110 x 76.5 x 23.5mm	12 pcs.	155g	62
	PROTEC B2NR 12.5/320	507.513	1TE	110 x 76.5 x 23.5mm	12 pcs.	155g	62
	PROTEC B2NR 12.5/385	507.537	1TE	110 x 76.5 x 23.5mm	12 pcs.	148g	62
	PROTEC B2NR 12.5/440	507.515	1TE	110 x 76.5 x 23.5mm	12 pcs.	151g	62
	PROTUBE B2N 50	507.572	1TE	110 x 76.5 x 23.5mm	7 pcs.	238g	63










Product Index

	Product name	Ordering code	Dimensions DIN 43880	Packaging dimensions (single unit)	Minimum packaging quantity	Weight	Page
Class I, II Modular Single and Multi-pole SPD 12.5kA per pole							
	PROTEC B2S 12.5/150	506.017	1TE	110 x 76.5 x 23.5mm	12 pcs.	124g	68
	PROTEC B2S 12.5/275	506.018	1TE	110 x 76.5 x 23.5mm	12 pcs.	150g	68
	PROTEC B2S 12.5/320	506.019	1TE	110 x 76.5 x 23.5mm	12 pcs.	150g	68
	PROTEC B2S 12.5/385	506.020	1TE	110 x 76.5 x 23.5mm	12 pcs.	143g	68
	PROTEC B2S 12.5/440	506.021	1TE	110 x 76.5 x 23.5mm	12 pcs.	146g	68
	PROTEC B2SR 12.5/150	506.022	1TE	110 x 76.5 x 23.5mm	12 pcs.	129g	68
	PROTEC B2SR 12.5/275	506.023	1TE	110 x 76.5 x 23.5mm	12 pcs.	155g	68
	PROTEC B2SR 12.5/320	506.024	1TE	110 x 76.5 x 23.5mm	12 pcs.	155g	68
	PROTEC B2SR 12.5/385	506.025	1TE	110 x 76.5 x 23.5mm	12 pcs.	148g	68
	PROTEC B2SR 12.5/440	506.026	1TE	110 x 76.5 x 23.5mm	12 pcs.	151g	68
	PROTEC B2S 25/150 (2+0)	506.027	2TE	109 x 76.5 x 41.5mm	7 pcs.	198g	69
	PROTEC B2S 25/275 (2+0)	506.028	2TE	109 x 76.5 x 41.5mm	7 pcs.	251g	69
	PROTEC B2S 25/320 (2+0)	506.029	2TE	109 x 76.5 x 41.5mm	7 pcs.	251g	69
	PROTEC B2S 25/385 (2+0)	506.030	2TE	109 x 76.5 x 41.5mm	7 pcs.	267g	69
	PROTEC B2S 25/440 (2+0)	506.031	2TE	109 x 76.5 x 41.5mm	7 pcs.	283g	69
	PROTEC B2SR 25/150 (2+0)	506.032	2TE	109 x 76.5 x 41.5mm	7 pcs.	203g	69
	PROTEC B2SR 25/275 (2+0)	506.033	2TE	109 x 76.5 x 41.5mm	7 pcs.	256g	69
	PROTEC B2SR 25/320 (2+0)	506.034	2TE	109 x 76.5 x 41.5mm	7 pcs.	256g	69
	PROTEC B2SR 25/385 (2+0)	506.035	2TE	109 x 76.5 x 41.5mm	7 pcs.	272g	69
	PROTEC B2SR 25/440 (2+0)	506.036	2TE	109 x 76.5 x 41.5mm	7 pcs.	288g	69
	PROTEC B2S 37.5/150 (3+0)	506.047	3TE	109 x 76.5 x 61.5mm	5 pcs.	300g	70
	PROTEC B2S 37.5/275 (3+0)	506.048	3TE	109 x 76.5 x 61.5mm	5 pcs.	382g	70
	PROTEC B2S 37.5/320 (3+0)	506.049	3TE	109 x 76.5 x 61.5mm	5 pcs.	382g	70
	PROTEC B2S 37.5/385 (3+0)	506.050	3TE	109 x 76.5 x 61.5mm	5 pcs.	394g	70
	PROTEC B2S 37.5/440 (3+0)	506.051	3TE	109 x 76.5 x 61.5mm	5 pcs.	432g	70
	PROTEC B2SR 37.5/150 (3+0)	506.052	3TE	109 x 76.5 x 61.5mm	5 pcs.	305g	70
	PROTEC B2SR 37.5/275 (3+0)	506.053	3TE	109 x 76.5 x 61.5mm	5 pcs.	387g	70
	PROTEC B2SR 37.5/320 (3+0)	506.054	3TE	109 x 76.5 x 61.5mm	5 pcs.	387g	70
	PROTEC B2SR 37.5/385 (3+0)	506.055	3TE	109 x 76.5 x 61.5mm	5 pcs.	399g	70
	PROTEC B2SR 37.5/440 (3+0)	506.056	3TE	109 x 76.5 x 61.5mm	5 pcs.	437g	70
	PROTEC B2S 50/150 (4+0)	506.057	4TE	109 x 76.5 x 80mm	3 pcs.	366g	71
	PROTEC B2S 50/275 (4+0)	506.058	4TE	109 x 76.5 x 80mm	3 pcs.	462g	71
	PROTEC B2S 50/320 (4+0)	506.059	4TE	109 x 76.5 x 80mm	3 pcs.	462g	71
	PROTEC B2S 50/385 (4+0)	506.060	4TE	109 x 76.5 x 80mm	3 pcs.	494g	71
	PROTEC B2S 50/440 (4+0)	506.061	4TE	109 x 76.5 x 80mm	3 pcs.	526g	71
	PROTEC B2SR 50/150 (4+0)	506.062	4TE	109 x 76.5 x 80mm	3 pcs.	371g	71
	PROTEC B2SR 50/275 (4+0)	506.063	4TE	109 x 76.5 x 80mm	3 pcs.	467g	71
	PROTEC B2SR 50/320 (4+0)	506.064	4TE	109 x 76.5 x 80mm	3 pcs.	467g	71
	PROTEC B2SR 50/385 (4+0)	506.065	4TE	109 x 76.5 x 80mm	3 pcs.	499g	71
	PROTEC B2SR 50/440 (4+0)	506.066	4TE	109 x 76.5 x 80mm	3 pcs.	531g	71
	PROTEC B2S 25/150 (1+1)	506.037	2TE	109 x 76.5 x 41.5mm	7 pcs.	270g	73
	PROTEC B2S 25/275 (1+1)	506.038	2TE	109 x 76.5 x 41.5mm	7 pcs.	310g	73
	PROTEC B2S 25/320 (1+1)	506.039	2TE	109 x 76.5 x 41.5mm	7 pcs.	342g	73
	PROTEC B2S 25/385 (1+1)	506.040	2TE	109 x 76.5 x 41.5mm	7 pcs.	366g	73
	PROTEC B2S 25/440 (1+1)	506.041	2TE	109 x 76.5 x 41.5mm	7 pcs.	370g	73
	PROTEC B2SR 25/150 (1+1)	506.042	2TE	109 x 76.5 x 41.5mm	7 pcs.	275g	73
	PROTEC B2SR 25/275 (1+1)	506.043	2TE	109 x 76.5 x 41.5mm	7 pcs.	315g	73
	PROTEC B2SR 25/320 (1+1)	506.044	2TE	109 x 76.5 x 41.5mm	7 pcs.	347g	73
	PROTEC B2SR 25/385 (1+1)	506.045	2TE	109 x 76.5 x 41.5mm	7 pcs.	371g	73
	PROTEC B2SR 25/440 (1+1)	506.046	2TE	109 x 76.5 x 41.5mm	7 pcs.	375g	73
	PROTEC B2S 50/150 (3+1)	506.067	4TE	109 x 76.5 x 80mm	3 pcs.	498g	74
	PROTEC B2S 50/275 (3+1)	506.068	4TE	109 x 76.5 x 80mm	3 pcs.	578g	74
	PROTEC B2S 50/320 (3+1)	506.069	4TE	109 x 76.5 x 80mm	3 pcs.	642g	74
	PROTEC B2S 50/385 (3+1)	506.070	4TE	109 x 76.5 x 80mm	3 pcs.	690g	74
	PROTEC B2S 50/440 (3+1)	506.071	4TE	109 x 76.5 x 80mm	3 pcs.	698g	74
	PROTEC B2SR 50/150 (3+1)	506.072	4TE	109 x 76.5 x 80mm	3 pcs.	503g	74
	PROTEC B2SR 50/275 (3+1)	506.073	4TE	109 x 76.5 x 80mm	3 pcs.	583g	74
	PROTEC B2SR 50/320 (3+1)	506.074	4TE	109 x 76.5 x 80mm	3 pcs.	647g	74
	PROTEC B2SR 50/385 (3+1)	506.075	4TE	109 x 76.5 x 80mm	3 pcs.	695g	74
	PROTEC B2SR 50/440 (3+1)	506.076	4TE	109 x 76.5 x 80mm	3 pcs.	703g	74
	Module PROTEC B2S 12.5/150	506.001		221 x 64.5 x 48.5mm	12 pcs.	78g	74
	Module PROTEC B2S 12.5/275	506.002		221 x 64.5 x 48.5mm	12 pcs.	88g	74
	Module PROTEC B2S 12.5/320	506.003		221 x 64.5 x 48.5mm	12 pcs.	102g	74
	Module PROTEC B2S 12.5/385	506.004		221 x 64.5 x 48.5mm	12 pcs.	116g	74
	Module PROTEC B2S 12.5/440	506.005		221 x 64.5 x 48.5mm	12 pcs.	128g	74
	Module PROTUBE B2S 50/255	506.006		221 x 64.5 x 48.5mm	12 pcs.	70g	74
Class II Modular Single and Multi-pole SPD up to 40kA per pole							
	SAFETEC C 20/75	516.612	1TE	110 x 76.5 x 23.5mm	12 pcs.	125g	78
	SAFETEC C 40/150	516.001	1TE	110 x 76.5 x 23.5mm	12 pcs.	140g	78
	SAFETEC C 40/275	516.003	1TE	110 x 76.5 x 23.5mm	12 pcs.	140g	78
	SAFETEC C 40/385	516.614	1TE	110 x 76.5 x 23.5mm	12 pcs.	148g	78








	Product name	Ordering code	Dimensions DIN 43880	Packaging dimensions (single unit)	Minimum packaging quantity	Weight	Page
	SAFETEC C 40/440	516.005	1TE	110 x 76.5 x 23.5mm	12 pcs.	150g	78
	SAFETEC C 25/750	516.616	1TE	110 x 76.5 x 23.5mm	12 pcs.	156g	78
	SAFETEC CR 20/75	516.613	1TE	110 x 76.5 x 23.5mm	12 pcs.	130g	78
	SAFETEC CR 40/150	516.002	1TE	110 x 76.5 x 23.5mm	12 pcs.	148g	78
	SAFETEC CR 40/275	516.004	1TE	110 x 76.5 x 23.5mm	12 pcs.	148g	78
	SAFETEC CR 40/385	516.615	1TE	110 x 76.5 x 23.5mm	12 pcs.	156g	78
	SAFETEC CR 40/440	516.006	1TE	110 x 76.5 x 23.5mm	12 pcs.	158g	78
	SAFETEC CR 25/750	516.617	1TE	110 x 76.5 x 23.5mm	12 pcs.	164g	78
	Module SAFETEC C(R) 20/75	516.648		221 x 64.5 x 48.5mm	12 pcs.	58g	78
	Module SAFETEC C(R) 40/150	516.037		221 x 64.5 x 48.5mm	12 pcs.	62g	78
	Module SAFETEC C(R) 40/275	516.038		221 x 64.5 x 48.5mm	12 pcs.	66g	78
	Module SAFETEC C(R) 40/385	516.649		221 x 64.5 x 48.5mm	12 pcs.	72g	78
	Module SAFETEC C(R) 40/440	516.039		221 x 64.5 x 48.5mm	12 pcs.	74g	78
	Module SAFETEC C(R) 25/750	516.650		221 x 64.5 x 48.5mm	12 pcs.	78g	78
	SAFETUBE C 40/255	516.417	1TE	110 x 76.5 x 23.5mm	12 pcs.	118g	79
	Module SAFETUBE C 40/255	516.115		221 x 64.5 x 48.5mm	12 pcs.	34g	79
	SAFETEC C 40/75 (2+0)	516.618	2TE	109 x 76.5 x 41.5mm	7 pcs.	250g	81
	SAFETEC C 80/150 (2+0)	516.007	2TE	109 x 76.5 x 41.5mm	7 pcs.	280g	81
	SAFETEC C 80/275 (2+0)	516.009	2TE	109 x 76.5 x 41.5mm	7 pcs.	281g	81
	SAFETEC C 80/385 (2+0)	516.620	2TE	109 x 76.5 x 41.5mm	7 pcs.	284g	81
	SAFETEC C 80/440 (2+0)	516.011	2TE	109 x 76.5 x 41.5mm	7 pcs.	286g	81
	SAFETEC C 50/750 (2+0)	516.622	2TE	109 x 76.5 x 41.5mm	7 pcs.	288g	81
	SAFETEC CR 40/75 (2+0)	516.619	2TE	109 x 76.5 x 41.5mm	7 pcs.	260g	81
	SAFETEC CR 80/150 (2+0)	516.008	2TE	109 x 76.5 x 41.5mm	7 pcs.	288g	81
	SAFETEC CR 80/275 (2+0)	516.010	2TE	109 x 76.5 x 41.5mm	7 pcs.	289g	81
	SAFETEC CR 80/385 (2+0)	516.621	2TE	109 x 76.5 x 41.5mm	7 pcs.	292g	81
	SAFETEC CR 80/440 (2+0)	516.012	2TE	109 x 76.5 x 41.5mm	7 pcs.	294g	81
	SAFETEC CR 50/750 (2+0)	516.623	2TE	109 x 76.5 x 41.5mm	7 pcs.	296g	81
	SAFETEC C 60/75 (3+0)	516.630	3TE	109 x 76.5 x 61.5mm	5 pcs.	375g	82
	SAFETEC C 120/150 (3+0)	516.019	3TE	109 x 76.5 x 61.5mm	5 pcs.	420g	82
	SAFETEC C 120/275 (3+0)	516.021	3TE	109 x 76.5 x 61.5mm	5 pcs.	422g	82
	SAFETEC C 120/385 (3+0)	516.632	3TE	109 x 76.5 x 61.5mm	5 pcs.	448g	82
	SAFETEC C 120/440 (3+0)	516.023	3TE	109 x 76.5 x 61.5mm	5 pcs.	450g	82
	SAFETEC C 75/750 (3+0)	516.634	3TE	109 x 76.5 x 61.5mm	5 pcs.	468g	82
	SAFETEC CR 60/75 (3+0)	516.631	3TE	109 x 76.5 x 61.5mm	5 pcs.	390g	82
	SAFETEC CR 120/150 (3+0)	516.020	3TE	109 x 76.5 x 61.5mm	5 pcs.	428g	82
	SAFETEC CR 120/275 (3+0)	516.022	3TE	109 x 76.5 x 61.5mm	5 pcs.	430g	82
	SAFETEC CR 120/385 (3+0)	516.633	3TE	109 x 76.5 x 61.5mm	5 pcs.	456g	82
	SAFETEC CR 120/440 (3+0)	516.024	3TE	109 x 76.5 x 61.5mm	5 pcs.	458g	82
	SAFETEC CR 75/750 (3+0)	516.635	3TE	109 x 76.5 x 61.5mm	5 pcs.	476g	82
	SAFETEC C 80/75 (4+0)	516.636	4TE	109 x 76.5 x 80mm	3 pcs.	500g	83
	SAFETEC C 160/150 (4+0)	516.025	4TE	109 x 76.5 x 80mm	3 pcs.	560g	83
	SAFETEC C 160/275 (4+0)	516.027	4TE	109 x 76.5 x 80mm	3 pcs.	562g	83
	SAFETEC C 160/385 (4+0)	516.638	4TE	109 x 76.5 x 80mm	3 pcs.	595g	83
	SAFETEC C 160/440 (4+0)	516.029	4TE	109 x 76.5 x 80mm	3 pcs.	598g	83
	SAFETEC C 100/750 (4+0)	516.640	4TE	109 x 76.5 x 80mm	3 pcs.	602g	83
	SAFETEC CR 80/75 (4+0)	516.637	4TE	109 x 76.5 x 80mm	3 pcs.	520g	83
	SAFETEC CR 160/150 (4+0)	516.026	4TE	109 x 76.5 x 80mm	3 pcs.	568g	83
	SAFETEC CR 160/275 (4+0)	516.028	4TE	109 x 76.5 x 80mm	3 pcs.	570g	83
	SAFETEC CR 160/385 (4+0)	516.639	4TE	109 x 76.5 x 80mm	3 pcs.	603g	83
	SAFETEC CR 160/440 (4+0)	516.030	4TE	109 x 76.5 x 80mm	3 pcs.	606g	83
	SAFETEC CR 100/750 (4+0)	516.641	4TE	109 x 76.5 x 80mm	3 pcs.	610g	83
	SAFETEC C 80/75 (1+1)	516.624	2TE	109 x 76.5 x 41.5mm	7 pcs.	253g	85
	SAFETEC C 80/150 (1+1)	516.013	2TE	109 x 76.5 x 41.5mm	7 pcs.	258g	85
	SAFETEC C 80/275 (1+1)	516.015	2TE	109 x 76.5 x 41.5mm	7 pcs.	258g	85
	SAFETEC C 80/385 (1+1)	516.626	2TE	109 x 76.5 x 41.5mm	7 pcs.	265g	85
	SAFETEC C 80/440 (1+1)	516.017	2TE	109 x 76.5 x 41.5mm	7 pcs.	268g	85
	SAFETEC C 50/750 (1+1)	516.628	2TE	109 x 76.5 x 41.5mm	7 pcs.	271g	85
	SAFETEC CR 40/75 (1+1)	516.625	2TE	109 x 76.5 x 41.5mm	7 pcs.	261g	85
	SAFETEC CR 80/150 (1+1)	516.014	2TE	109 x 76.5 x 41.5mm	7 pcs.	266g	85
	SAFETEC CR 80/275 (1+1)	516.016	2TE	109 x 76.5 x 41.5mm	7 pcs.	266g	85
	SAFETEC CR 80/385 (1+1)	516.627	2TE	109 x 76.5 x 41.5mm	7 pcs.	274g	85
	SAFETEC CR 80/440 (1+1)	516.018	2TE	109 x 76.5 x 41.5mm	7 pcs.	276g	85
	SAFETEC CR 50/750 (1+1)	516.629	2TE	109 x 76.5 x 41.5mm	7 pcs.	279g	85
	SAFETEC C 80/75 (3+1)	516.642	4TE	109 x 76.5 x 80mm	3 pcs.	533g	86
	SAFETEC C 160/150 (3+1)	516.031	4TE	109 x 76.5 x 80mm	3 pcs.	538g	86
	SAFETEC C 160/275 (3+1)	516.033	4TE	109 x 76.5 x 80mm	3 pcs.	540g	86
	SAFETEC C 160/385 (3+1)	516.644	4TE	109 x 76.5 x 80mm	3 pcs.	565g	86
	SAFETEC C 160/440 (3+1)	516.035	4TE	109 x 76.5 x 80mm	3 pcs.	568g	86
	SAFETEC C 100/750 (3+1)	516.646	4TE	109 x 76.5 x 80mm	3 pcs.	571g	86
	SAFETEC CR 80/75 (3+1)	516.643	4TE	109 x 76.5 x 80mm	3 pcs.	541g	86
	SAFETEC CR 160/150 (3+1)	516.032	4TE	109 x 76.5 x 80mm	3 pcs.	546g	86
	SAFETEC CR 160/275 (3+1)	516.034	4TE	109 x 76.5 x 80mm	3 pcs.	548g	86











Product Index

	Product name	Ordering code	Dimensions DIN 43880	Packaging dimensions (single unit)	Minimum packaging quantity	Weight	Page
	SAFETEC CR 160/385 (3+1)	516.645	4TE	109 x 76.5 x 80mm	3 pcs.	574g	86
	SAFETEC CR 160/440 (3+1)	516.036	4TE	109 x 76.5 x 80mm	3 pcs.	576g	86
	SAFETEC CR 100/750 (3+1)	516.647	4TE	109 x 76.5 x 80mm	3 pcs.	579g	86
	Module SAFETEC C(R) 20/75	516.648		221 x 64.5 x 48.5mm	12 pcs.	58g	86
	Module SAFETEC C(R) 40/150	516.037		221 x 64.5 x 48.5mm	12 pcs.	62g	86
	Module SAFETEC C(R) 40/275	516.038		221 x 64.5 x 48.5mm	12 pcs.	66g	86
	Module SAFETEC C(R) 40/385	516.649		221 x 64.5 x 48.5mm	12 pcs.	72g	86
	Module SAFETEC C(R) 40/440	516.039		221 x 64.5 x 48.5mm	12 pcs.	74g	86
	Module SAFETEC C(R) 25/750	516.650		221 x 64.5 x 48.5mm	12 pcs.	78g	86
	Module SAFETUBE C 40/255	516.115		221 x 64.5 x 48.5mm	12 pcs.	34g	86
Type 2 Modular Single and Multi-pole SPD							
	SAFETEC C 50/150 UL	516.058	1TE	110 x 76.5 x 23.5mm	12 pcs.	62g	90
	SAFETEC C 50/277 UL	516.060	1TE	110 x 76.5 x 23.5mm	12 pcs.	66g	90
	SAFETEC C 50/385 UL	516.062	1TE	110 x 76.5 x 23.5mm	12 pcs.	72g	90
	SAFETEC C 50/440 UL	516.064	1TE	110 x 76.5 x 23.5mm	12 pcs.	74g	90
	SAFETEC C 50/550 UL	516.066	1TE	110 x 76.5 x 23.5mm	12 pcs.	76g	90
	SAFETEC C 20/750 UL	516.068	1TE	110 x 76.5 x 23.5mm	12 pcs.	78g	90
	SAFETEC C 20/880 UL	516.586	1TE	110 x 76.5 x 23.5mm	12 pcs.	78g	90
	SAFETEC CR 50/150 UL	516.059	1TE	110 x 76.5 x 23.5mm	12 pcs.	62g	90
	SAFETEC CR 50/277 UL	516.061	1TE	110 x 76.5 x 23.5mm	12 pcs.	66g	90
	SAFETEC CR 50/385 UL	516.063	1TE	110 x 76.5 x 23.5mm	12 pcs.	72g	90
	SAFETEC CR 50/440 UL	516.065	1TE	110 x 76.5 x 23.5mm	12 pcs.	74g	90
	SAFETEC CR 50/550 UL	516.067	1TE	110 x 76.5 x 23.5mm	12 pcs.	76g	90
	SAFETEC CR 25/750 UL	516.069	1TE	110 x 76.5 x 23.5mm	12 pcs.	78g	90
	SAFETEC CR 25/880 UL	516.587	1TE	110 x 76.5 x 23.5mm	12 pcs.	78g	90
	SAFETEC C 150/150 (3+0) UL	516.082	3TE	109 x 76.5 x 61.5mm	5 pcs.	420g	91
	SAFETEC C 150/277 (3+0) UL	516.084	3TE	109 x 76.5 x 61.5mm	5 pcs.	422g	91
	SAFETEC C 150/385 (3+0) UL	516.086	3TE	109 x 76.5 x 61.5mm	5 pcs.	435g	91
	SAFETEC C 150/440 (3+0) UL	516.088	3TE	109 x 76.5 x 61.5mm	5 pcs.	450g	91
	SAFETEC C 150/550 (3+0) UL	516.090	3TE	109 x 76.5 x 61.5mm	5 pcs.	459g	91
	SAFETEC C 60/750 (3+0) UL	516.091	3TE	109 x 76.5 x 61.5mm	5 pcs.	468g	91
	SAFETEC C 60/880 (3+0) UL	516.590	3TE	109 x 76.5 x 61.5mm	5 pcs.	468g	91
	SAFETEC CR 150/150 (3+0) UL	516.083	3TE	109 x 76.5 x 61.5mm	5 pcs.	428g	91
	SAFETEC CR 150/277 (3+0) UL	516.085	3TE	109 x 76.5 x 61.5mm	5 pcs.	430g	91
	SAFETEC CR 150/385 (3+0) UL	516.087	3TE	109 x 76.5 x 61.5mm	5 pcs.	443g	91
	SAFETEC CR 150/440 (3+0) UL	516.089	3TE	109 x 76.5 x 61.5mm	5 pcs.	458g	91
	SAFETEC CR 150/550 (3+0) UL	516.130	3TE	109 x 76.5 x 61.5mm	5 pcs.	467g	91
	SAFETEC CR 60/750 (3+0) UL	516.092	3TE	109 x 76.5 x 61.5mm	5 pcs.	476g	91
	SAFETEC CR 60/880 (3+0) UL	516.591	3TE	109 x 76.5 x 61.5mm	5 pcs.	476g	91
	SAFETEC C 100/150 (2+0) UL	516.070	2TE	109 x 76.5 x 41.5mm	7 pcs.	280g	92
	SAFETEC C 100/277 (2+0) UL	516.072	2TE	109 x 76.5 x 41.5mm	7 pcs.	281g	92
	SAFETEC C 100/385 (2+0) UL	516.074	2TE	109 x 76.5 x 41.5mm	7 pcs.	290g	92
	SAFETEC C 100/440 (2+0) UL	516.076	2TE	109 x 76.5 x 41.5mm	7 pcs.	299g	92
	SAFETEC C 40/750 (2+0) UL	516.080	2TE	109 x 76.5 x 41.5mm	7 pcs.	312g	92
	SAFETEC C 40/880 (2+0) UL	516.588	2TE	109 x 76.5 x 41.5mm	7 pcs.	312g	92
	SAFETEC CR 100/150 (2+0) UL	516.071	2TE	109 x 76.5 x 41.5mm	7 pcs.	288g	92
	SAFETEC CR 100/277 (2+0) UL	516.073	2TE	109 x 76.5 x 41.5mm	7 pcs.	289g	92
	SAFETEC CR 100/385 (2+0) UL	516.075	2TE	109 x 76.5 x 41.5mm	7 pcs.	298g	92
	SAFETEC CR 100/440 (2+0) UL	516.077	2TE	109 x 76.5 x 41.5mm	7 pcs.	307g	92
	SAFETEC CR 40/750 (2+0) UL	516.081	2TE	109 x 76.5 x 41.5mm	7 pcs.	320g	92
	SAFETEC CR 40/880 (2+0) UL	516.589	2TE	109 x 76.5 x 41.5mm	7 pcs.	320g	92
	SAFETEC C 200/150 (4+0) UL	516.093	4TE	109 x 76.5 x 80mm	3 pcs.	560g	93
	SAFETEC C 200/277 (4+0) UL	516.095	4TE	109 x 76.5 x 80mm	3 pcs.	562g	93
	SAFETEC C 200/385 (4+0) UL	516.097	4TE	109 x 76.5 x 80mm	3 pcs.	580g	93
	SAFETEC C 200/440 (4+0) UL	516.099	4TE	109 x 76.5 x 80mm	3 pcs.	598g	93
	SAFETEC C 80/750 (4+0) UL	516.103	4TE	109 x 76.5 x 80mm	3 pcs.	624g	93
	SAFETEC C 80/880 (4+0) UL	516.592	4TE	109 x 76.5 x 80mm	3 pcs.	624g	93
	SAFETEC CR 200/150 (4+0) UL	516.094	4TE	109 x 76.5 x 80mm	3 pcs.	568g	93
	SAFETEC CR 200/277 (4+0) UL	516.096	4TE	109 x 76.5 x 80mm	3 pcs.	570g	93
	SAFETEC CR 200/385 (4+0) UL	516.098	4TE	109 x 76.5 x 80mm	3 pcs.	588g	93
	SAFETEC CR 200/440 (4+0) UL	516.100	4TE	109 x 76.5 x 80mm	3 pcs.	606g	93
	SAFETEC CR 80/750 (4+0) UL	516.104	4TE	109 x 76.5 x 80mm	3 pcs.	632g	93
	SAFETEC CR 80/880 (4+0) UL	516.593	4TE	109 x 76.5 x 80mm	3 pcs.	632g	93
	Module SAFETEC C(R) 50/150 UL	516.201		221 x 64.5 x 48.5mm	12 pcs.	62g	93
	Module SAFETEC C(R) 50/277 UL	516.202		221 x 64.5 x 48.5mm	12 pcs.	66g	93
	Module SAFETEC C(R) 50/385 UL	516.203		221 x 64.5 x 48.5mm	12 pcs.	72g	93
	Module SAFETEC C(R) 50/440 UL	516.204		221 x 64.5 x 48.5mm	12 pcs.	74g	93
	Module SAFETEC C(R) 50/550 UL	516.205		221 x 64.5 x 48.5mm	12 pcs.	76g	93
	Module SAFETEC C(R) 20/750 UL	516.206		221 x 64.5 x 48.5mm	12 pcs.	78g	93
	Module SAFETEC C(R) 20/880 UL	516.585		221 x 64.5 x 48.5mm	12 pcs.	78g	93








	Product name	Ordering code	Dimensions DIN 43880	Packaging dimensions (single unit)	Minimum packaging quantity	Weight	Page
Class II Modular Single and Multi-pole SPD 40kA per pole							
	PROTEC C 40/75	50.0001	1TE	110 x 76.5 x 23.5mm	12 pcs.	112g	98
	PROTEC C 40/150	50.0003	1TE	110 x 76.5 x 23.5mm	12 pcs.	122g	98
	PROTEC C 40/275	50.0005	1TE	110 x 76.5 x 23.5mm	12 pcs.	128g	98
	PROTEC C 40/320	50.0007	1TE	110 x 76.5 x 23.5mm	12 pcs.	128g	98
	PROTEC C 40/385	50.0171	1TE	110 x 76.5 x 23.5mm	12 pcs.	129g	98
	PROTEC C 40/440	50.0009	1TE	110 x 76.5 x 23.5mm	12 pcs.	130g	98
	PROTEC CR 40/75	50.0011	1TE	110 x 76.5 x 23.5mm	12 pcs.	117g	98
	PROTEC CR 40/150	50.0013	1TE	110 x 76.5 x 23.5mm	12 pcs.	127g	98
	PROTEC CR 40/275	50.0015	1TE	110 x 76.5 x 23.5mm	12 pcs.	133g	98
	PROTEC CR 40/320	50.0017	1TE	110 x 76.5 x 23.5mm	12 pcs.	133g	98
	PROTEC CR 40/385	50.0175	1TE	110 x 76.5 x 23.5mm	12 pcs.	134g	98
	PROTEC CR 40/440	50.0019	1TE	110 x 76.5 x 23.5mm	12 pcs.	145g	98
	Module PROTEC C(R) 40/75	50.0216		221 x 64.5 x 48.5mm	12 pcs.	44g	98
	Module PROTEC C(R) 40/150	50.0217		221 x 64.5 x 48.5mm	12 pcs.	48g	98
	Module PROTEC C(R) 40/275	50.0219		221 x 64.5 x 48.5mm	12 pcs.	52g	98
	Module PROTEC C(R) 40/320	50.0220		221 x 64.5 x 48.5mm	12 pcs.	56g	98
	Module PROTEC C(R) 40/385	50.0221		221 x 64.5 x 48.5mm	12 pcs.	58g	98
	Module PROTEC C(R) 40/440	50.0222		221 x 64.5 x 48.5mm	12 pcs.	60g	98
Class II Modular Single up to 40kA							
	PROTEC C 20/150	50.0037	1TE	110 x 76.5 x 23.5mm	12 pcs.	119g	99
	PROTEC C 20/275	50.0039	1TE	110 x 76.5 x 23.5mm	12 pcs.	125g	99
	PROTEC C 20/320	50.0041	1TE	110 x 76.5 x 23.5mm	12 pcs.	125g	99
	PROTEC C 20/385	50.0315	1TE	110 x 76.5 x 23.5mm	12 pcs.	126g	99
	PROTEC C 20/440	50.0043	1TE	110 x 76.5 x 23.5mm	12 pcs.	127g	99
	PROTEC CR 20/150	50.0045	1TE	110 x 76.5 x 23.5mm	12 pcs.	124g	99
	PROTEC CR 20/275	50.0047	1TE	110 x 76.5 x 23.5mm	12 pcs.	130g	99
	PROTEC CR 20/320	50.0049	1TE	110 x 76.5 x 23.5mm	12 pcs.	140g	99
	PROTEC CR 20/385	50.0317	1TE	110 x 76.5 x 23.5mm	12 pcs.	131g	99
	PROTEC CR 20/440	50.0051	1TE	110 x 76.5 x 23.5mm	12 pcs.	132g	99
	Module PROTEC C(R) 20/150	50.0479		221 x 64.5 x 48.5mm	12 pcs.	48g	99
	Module PROTEC C(R) 20/275	50.0480		221 x 64.5 x 48.5mm	12 pcs.	56g	99
	Module PROTEC C(R) 20/320	50.0481		221 x 64.5 x 48.5mm	12 pcs.	56g	99
	Module PROTEC C(R) 20/385	50.0482		221 x 64.5 x 48.5mm	12 pcs.	60g	99
	Module PROTEC C(R) 20/440	50.0483		221 x 64.5 x 48.5mm	12 pcs.	58g	99
	PROTUBE C40/255	50.3005	1TE	110 x 76.5 x 23.5mm	12 pcs.	118g	100
	Module PROTUBE C 40/255	50.0234		221 x 64.5 x 48.5mm	12 pcs.	36g	100
	PROTEC C 80/150 (2+0)	50.0073	2TE	109 x 76.5 x 41.5mm	7 pcs.	234g	103
	PROTEC C 80/275 (2+0)	50.0075	2TE	109 x 76.5 x 41.5mm	7 pcs.	244g	103
	PROTEC C 80/320 (2+0)	50.0077	2TE	109 x 76.5 x 41.5mm	7 pcs.	244g	103
	PROTEC C 80/385 (2+0)	50.0179	2TE	109 x 76.5 x 41.5mm	7 pcs.	245g	103
	PROTEC C 80/440 (2+0)	50.0079	2TE	109 x 76.5 x 41.5mm	7 pcs.	247g	103
	PROTEC CR 80/150 (2+0)	50.0081	2TE	109 x 76.5 x 41.5mm	7 pcs.	239g	103
	PROTEC CR 80/275 (2+0)	50.0083	2TE	109 x 76.5 x 41.5mm	7 pcs.	249g	103
	PROTEC CR 80/320 (2+0)	50.0085	2TE	109 x 76.5 x 41.5mm	7 pcs.	249g	103
	PROTEC CR 80/385 (2+0)	50.0183	2TE	109 x 76.5 x 41.5mm	7 pcs.	250g	103
	PROTEC CR 80/440 (2+0)	50.0087	2TE	109 x 76.5 x 41.5mm	7 pcs.	252g	103
	PROTEC C 120/150 (3+0)	50.0105	3TE	109 x 76.5 x 61.5mm	5 pcs.	330g	104
	PROTEC C 120/275 (3+0)	50.0107	3TE	109 x 76.5 x 61.5mm	5 pcs.	352g	104
	PROTEC C 120/320 (3+0)	50.0109	3TE	109 x 76.5 x 61.5mm	5 pcs.	352g	104
	PROTEC C 120/385 (3+0)	50.0195	3TE	109 x 76.5 x 61.5mm	5 pcs.	354g	104
	PROTEC C 120/440 (3+0)	50.0111	3TE	109 x 76.5 x 61.5mm	5 pcs.	356g	104
	PROTEC CR 120/150 (3+0)	50.0113	3TE	109 x 76.5 x 61.5mm	5 pcs.	335g	104
	PROTEC CR 120/275 (3+0)	50.0115	3TE	109 x 76.5 x 61.5mm	5 pcs.	357g	104
	PROTEC CR 120/320 (3+0)	50.0117	3TE	109 x 76.5 x 61.5mm	5 pcs.	357g	104
	PROTEC CR 120/385 (3+0)	50.0199	3TE	109 x 76.5 x 61.5mm	5 pcs.	359g	104
	PROTEC CR 120/440 (3+0)	50.0119	3TE	109 x 76.5 x 61.5mm	5 pcs.	361g	104
	PROTEC C 160/150 (4+0)	50.0121	4TE	109 x 76.5 x 80mm	3 pcs.	432g	105
	PROTEC C 160/275 (4+0)	50.0123	4TE	109 x 76.5 x 80mm	3 pcs.	456g	105
	PROTEC C 160/320 (4+0)	50.0125	4TE	109 x 76.5 x 80mm	3 pcs.	456g	105
	PROTEC C 160/385 (4+0)	50.0203	4TE	109 x 76.5 x 80mm	3 pcs.	460g	105
	PROTEC C 160/440 (4+0)	50.0127	4TE	109 x 76.5 x 80mm	3 pcs.	466g	105
	PROTEC CR 160/150 (4+0)	50.0129	4TE	109 x 76.5 x 80mm	3 pcs.	437g	105
	PROTEC CR 160/275 (4+0)	50.0131	4TE	109 x 76.5 x 80mm	3 pcs.	461g	105
	PROTEC CR 160/320 (4+0)	50.0133	4TE	109 x 76.5 x 80mm	3 pcs.	461g	105
	PROTEC CR 160/385 (4+0)	50.0207	4TE	109 x 76.5 x 80mm	3 pcs.	465g	105
	PROTEC CR 160/440 (4+0)	50.0135	4TE	109 x 76.5 x 80mm	3 pcs.	471g	105
	Module PROTEC C(R) 40/75	50.0216		221 x 64.5 x 48.5mm	12 pcs.	44g	105
	Module PROTEC C(R) 40/150	50.0217		221 x 64.5 x 48.5mm	12 pcs.	48g	105
	Module PROTEC C(R) 40/275	50.0219		221 x 64.5 x 48.5mm	12 pcs.	52g	105

Product Index



	Product name	Ordering code	Dimensions DIN 43880	Packaging dimensions (single unit)	Minimum packaging quantity	Weight	Page
	Module PROTEC C(R) 40/320	50.0220		221 x 64.5 x 48.5mm	12 pcs.	56g	105
	Module PROTEC C(R) 40/385	50.0221		221 x 64.5 x 48.5mm	12 pcs.	58g	105
	Module PROTEC C(R) 40/440	50.0222		221 x 64.5 x 48.5mm	12 pcs.	60g	105
	PROTEC C 80/150 (1+1)	50.0089	2TE	109 x 76.5 x 41.5mm	7 pcs.	221g	107
	PROTEC C 80/275 (1+1)	50.0091	2TE	109 x 76.5 x 41.5mm	7 pcs.	225g	107
	PROTEC C 80/320 (1+1)	50.0093	2TE	109 x 76.5 x 41.5mm	7 pcs.	225g	107
	PROTEC C 80/385 (1+1)	50.0187	2TE	109 x 76.5 x 41.5mm	7 pcs.	226g	107
	PROTEC C 80/440 (1+1)	50.0095	2TE	109 x 76.5 x 41.5mm	7 pcs.	227g	107
	PROTEC CR 80/150 (1+1)	50.0097	2TE	109 x 76.5 x 41.5mm	7 pcs.	226g	107
	PROTEC CR 80/275 (1+1)	50.0099	2TE	109 x 76.5 x 41.5mm	7 pcs.	230g	107
	PROTEC CR 80/320 (1+1)	50.0101	2TE	109 x 76.5 x 41.5mm	7 pcs.	230g	107
	PROTEC CR 80/385 (1+1)	50.0191	2TE	109 x 76.5 x 41.5mm	7 pcs.	231g	107
	PROTEC CR 80/440 (1+1)	50.0103	2TE	109 x 76.5 x 41.5mm	7 pcs.	232g	107
	PROTEC C 160/150 (3+1)	50.0137	4TE	109 x 76.5 x 80mm	3 pcs.	423g	108
	PROTEC C 160/275 (3+1)	50.0139	4TE	109 x 76.5 x 80mm	3 pcs.	441g	108
	PROTEC C 160/320 (3+1)	50.0141	4TE	109 x 76.5 x 80mm	3 pcs.	441g	108
	PROTEC C 160/385 (3+1)	50.0211	4TE	109 x 76.5 x 80mm	3 pcs.	445g	108
	PROTEC C 160/440 (3+1)	50.0143	4TE	109 x 76.5 x 80mm	3 pcs.	447g	108
	PROTEC CR 160/150 (3+1)	50.0145	4TE	109 x 76.5 x 80mm	3 pcs.	428g	108
	PROTEC CR 160/275 (3+1)	50.0147	4TE	109 x 76.5 x 80mm	3 pcs.	446g	108
	PROTEC CR 160/320 (3+1)	50.0149	4TE	109 x 76.5 x 80mm	3 pcs.	446g	108
	PROTEC CR 160/385 (3+1)	50.0215	4TE	109 x 76.5 x 80mm	3 pcs.	450g	108
	PROTEC CR 160/440 (3+1)	50.0151	4TE	109 x 76.5 x 80mm	3 pcs.	452g	108
	Module PROTEC C(R) 40/75	50.0216		221 x 64.5 x 48.5mm	12 pcs.	44g	105
	Module PROTEC C(R) 40/150	50.0217		221 x 64.5 x 48.5mm	12 pcs.	48g	105
	Module PROTEC C(R) 40/275	50.0219		221 x 64.5 x 48.5mm	12 pcs.	52g	105
	Module PROTEC C(R) 40/320	50.0220		221 x 64.5 x 48.5mm	12 pcs.	56g	105
	Module PROTEC C(R) 40/385	50.0221		221 x 64.5 x 48.5mm	12 pcs.	58g	105
	Module PROTEC C(R) 40/440	50.0222		221 x 64.5 x 48.5mm	12 pcs.	60g	105
	Module PROTUBE C 40/255	50.0234		221 x 64.5 x 48.5mm	12 pcs.	36g	108
Class II Modular and Multi-pole SPD up to 40kA per pole							
	PROTEC CMG 40/150 (2+0)	508.197	1TE	110 x 76.5 x 23.5mm	12 pcs.	130g	112
	PROTEC CMG 40/275 (2+0)	508.198	1TE	110 x 76.5 x 23.5mm	12 pcs.	146g	112
	PROTEC CMGR 40/150 (2+0)	508.199	1TE	110 x 76.5 x 23.5mm	12 pcs.	135g	112
	PROTEC CMGR 40/275 (2+0)	508.200	1TE	110 x 76.5 x 23.5mm	12 pcs.	151g	112
	Module PROTEC CMG(R) 40/150 (2+0)	508.201		221 x 64.5 x 48.5mm	12 pcs.	63g	112
	Module PROTEC CMG(R) 40/275 (2+0)	508.202		221 x 64.5 x 48.5mm	12 pcs.	79g	112
	PROTEC CM 80/150 (2+0)	508.001	1TE	110 x 76.5 x 23.5mm	12 pcs.	134g	113
	PROTEC CM 80/275 (2+0)	508.003	1TE	110 x 76.5 x 23.5mm	12 pcs.	144g	113
	PROTEC CM 80/320 (2+0)	508.005	1TE	110 x 76.5 x 23.5mm	12 pcs.	144g	113
	PROTEC CM 80/385 (2+0)	508.109	1TE	110 x 76.5 x 23.5mm	12 pcs.	150g	113
	PROTEC CM 80/440 (2+0)	508.007	1TE	110 x 76.5 x 23.5mm	12 pcs.	152g	113
	PROTEC CMR 80/150 (2+0)	508.009	1TE	110 x 76.5 x 23.5mm	12 pcs.	139g	113
	PROTEC CMR 80/275 (2+0)	508.011	1TE	110 x 76.5 x 23.5mm	12 pcs.	149g	113
	PROTEC CMR 80/320 (2+0)	508.013	1TE	110 x 76.5 x 23.5mm	12 pcs.	149g	113
	PROTEC CMR 80/385 (2+0)	508.111	1TE	110 x 76.5 x 23.5mm	12 pcs.	155g	113
	PROTEC CMR 80/440 (2+0)	508.015	1TE	110 x 76.5 x 23.5mm	12 pcs.	147g	113
	Module PROTEC CM(R) 80/150 (2+0)	508.174		221 x 64.5 x 48.5mm	12 pcs.	67g	113
	Module PROTEC CM(R) 80/275 (2+0)	508.164		221 x 64.5 x 48.5mm	12 pcs.	78g	113
	Module PROTEC CM(R) 80/320 (2+0)	508.175		221 x 64.5 x 48.5mm	12 pcs.	78g	113
	Module PROTEC CM(R) 80/385 (2+0)	508.146		221 x 64.5 x 48.5mm	12 pcs.	83g	113
	Module PROTEC CM(R) 80/440 (2+0)	508.147		221 x 64.5 x 48.5mm	12 pcs.	85g	113
	PROTEC CM 80/150 (1+1)	508.045	1TE	110 x 76.5 x 23.5mm	12 pcs.	124g	114
	PROTEC CM 80/275 (1+1)	508.047	1TE	110 x 76.5 x 23.5mm	12 pcs.	126g	114
	PROTEC CM 80/320 (1+1)	508.049	1TE	110 x 76.5 x 23.5mm	12 pcs.	126g	114
	PROTEC CM 80/385 (1+1)	508.117	1TE	110 x 76.5 x 23.5mm	12 pcs.	129g	114
	PROTEC CM 80/440 (1+1)	508.051	1TE	110 x 76.5 x 23.5mm	12 pcs.	130g	114
	PROTEC CMR 80/150 (1+1)	508.053	1TE	110 x 76.5 x 23.5mm	12 pcs.	129g	114
	PROTEC CMR 80/275 (1+1)	508.055	1TE	110 x 76.5 x 23.5mm	12 pcs.	131g	114
	PROTEC CMR 80/320 (1+1)	508.057	1TE	110 x 76.5 x 23.5mm	12 pcs.	131g	114
	PROTEC CMR 80/385 (1+1)	508.119	1TE	110 x 76.5 x 23.5mm	12 pcs.	134g	114
	PROTEC CMR 80/440 (1+1)	508.059	1TE	110 x 76.5 x 23.5mm	12 pcs.	135g	114
	Module PROTEC CM(R) 80/150 (1+1)	508.186		221 x 64.5 x 48.5mm	12 pcs.	57g	114
	Module PROTEC CM(R) 80/275 (1+1)	508.187		221 x 64.5 x 48.5mm	12 pcs.	59g	114
	Module PROTEC CM(R) 80/320 (1+1)	508.188		221 x 64.5 x 48.5mm	12 pcs.	59g	114
	Module PROTEC CM(R) 80/385 (1+1)	508.189		221 x 64.5 x 48.5mm	12 pcs.	62g	114
	Module PROTEC CM(R) 80/440 (1+1)	508.190		221 x 64.5 x 48.5mm	12 pcs.	63g	114
	PROTEC CM 80A/150 (1+1)	508.120	1TE	110 x 76.5 x 23.5mm	12 pcs.	124g	115
	PROTEC CM 80A/275 (1+1)	508.122	1TE	110 x 76.5 x 23.5mm	12 pcs.	126g	115

	Product name	Ordering code	Dimensions DIN 43880	Packaging dimensions (single unit)	Minimum packaging quantity	Weight	Page
	PROTEC CM 80A/320 (1+1)	508.124	1TE	110 x 76.5 x 23.5mm	12 pcs.	126g	115
	PROTEC CM 80A/385 (1+1)	508.126	1TE	110 x 76.5 x 23.5mm	12 pcs.	129g	115
	PROTEC CM 80A/440 (1+1)	508.128	1TE	110 x 76.5 x 23.5mm	12 pcs.	130g	115
	PROTEC CMR 80A/150 (1+1)	508.130	1TE	110 x 76.5 x 23.5mm	12 pcs.	129g	115
	PROTEC CMR 80A/275 (1+1)	508.132	1TE	110 x 76.5 x 23.5mm	12 pcs.	131g	115
	PROTEC CMR 80A/320 (1+1)	508.134	1TE	110 x 76.5 x 23.5mm	12 pcs.	131g	115
	PROTEC CMR 80A/385 (1+1)	508.136	1TE	110 x 76.5 x 23.5mm	12 pcs.	134g	115
	PROTEC CMR 80A/440 (1+1)	508.138	1TE	110 x 76.5 x 23.5mm	12 pcs.	135g	115
	Module PROTEC CM(R) 80A/150 (1+1)	508.176		221 x 64.5 x 48.5mm	12 pcs.	57g	115
	Module PROTEC CM(R) 80A/275 (1+1)	508.143		221 x 64.5 x 48.5mm	12 pcs.	59g	115
	Module PROTEC CM(R) 80A/320 (1+1)	508.177		221 x 64.5 x 48.5mm	12 pcs.	59g	115
	Module PROTEC CM(R) 80A/385 (1+1)	508.144		221 x 64.5 x 48.5mm	12 pcs.	62g	115
	Module PROTEC CM(R) 80A/440 (1+1)	508.145		221 x 64.5 x 48.5mm	12 pcs.	63g	115
Class III Modular and Compact Single and Multi-pole SPD							
	PROTEC D 10/150	508.601	1TE	110 x 76.5 x 23.5mm	12 pcs.	124g	120
	PROTEC D 10/275	508.603	1TE	110 x 76.5 x 23.5mm	12 pcs.	130g	120
	PROTEC D 10/320	508.605	1TE	110 x 76.5 x 23.5mm	12 pcs.	130g	120
	PROTEC D 10/385	508.617	1TE	110 x 76.5 x 23.5mm	12 pcs.	131g	120
	PROTEC D 10/440	508.607	1TE	110 x 76.5 x 23.5mm	12 pcs.	132g	120
	PROTEC DR 10/150	508.609	1TE	110 x 76.5 x 23.5mm	12 pcs.	129g	120
	PROTEC DR 10/275	508.611	1TE	110 x 76.5 x 23.5mm	12 pcs.	135g	120
	PROTEC DR 10/320	508.613	1TE	110 x 76.5 x 23.5mm	12 pcs.	135g	120
	PROTEC DR 10/385	508.619	1TE	110 x 76.5 x 23.5mm	12 pcs.	136g	120
	PROTEC DR 10/440	508.615	1TE	110 x 76.5 x 23.5mm	12 pcs.	137g	120
	Module PROTEC D(R) 10/150	508.620		221 x 64.5 x 48.5mm	12 pcs.	52g	120
	Module PROTEC D(R) 10/275	508.621		221 x 64.5 x 48.5mm	12 pcs.	58g	120
	Module PROTEC D(R) 10/320	508.622		221 x 64.5 x 48.5mm	12 pcs.	59g	120
	Module PROTEC D(R) 10/385	508.623		221 x 64.5 x 48.5mm	12 pcs.	60g	120
	Module PROTEC D(R) 10/440	508.624		21 x 64.5 x 48.5mm	12 pcs.	60g	120
	PROTEC DM 20/150 (2+0)	508.029	1TE	110 x 76.5 x 23.5mm	12 pcs.	136g	121
	PROTEC DM 20/275 (2+0)	508.031	1TE	110 x 76.5 x 23.5mm	12 pcs.	140g	121
	PROTEC DM 20/320 (2+0)	508.033	1TE	110 x 76.5 x 23.5mm	12 pcs.	150g	121
	PROTEC DM 20/385 (2+0)	508.113	1TE	110 x 76.5 x 23.5mm	12 pcs.	153g	121
	PROTEC DM 20/440 (2+0)	508.035	1TE	110 x 76.5 x 23.5mm	12 pcs.	155g	121
	PROTEC DMR 20/150 (2+0)	508.037	1TE	110 x 76.5 x 23.5mm	12 pcs.	141g	121
	PROTEC DMR 20/275 (2+0)	508.039	1TE	110 x 76.5 x 23.5mm	12 pcs.	145g	121
	PROTEC DMR 20/320 (2+0)	508.041	1TE	110 x 76.5 x 23.5mm	12 pcs.	155g	121
	PROTEC DMR 20/385 (2+0)	508.115	1TE	110 x 76.5 x 23.5mm	12 pcs.	158g	121
	PROTEC DMR 20/440 (2+0)	508.043	1TE	110 x 76.5 x 23.5mm	12 pcs.	160g	121
	Module PROTEC DM(R) 20/150 (2+0)	508.191		221 x 64.5 x 48.5mm	12 pcs.	69g	121
	Module PROTEC DM(R) 20/275 (2+0)	508.192		221 x 64.5 x 48.5mm	12 pcs.	73g	121
	Module PROTEC DM(R) 20/320 (2+0)	508.193		221 x 64.5 x 48.5mm	12 pcs.	83g	121
	Module PROTEC DM(R) 20/385 (2+0)	508.194		221 x 64.5 x 48.5mm	12 pcs.	86g	121
	Module PROTEC DM(R) 20/440 (2+0)	508.195		221 x 64.5 x 48.5mm	12 pcs.	88g	121
	PROTEC DMG 20/320 (2+0)	508.021	1TE	110 x 76.5 x 23.5mm	12 pcs.	118g	122
	PROTEC DMGR 20/320 (2+0)	508.027	1TE	110 x 76.5 x 23.5mm	12 pcs.	123g	122
	Module PROTEC DMG(R) 20/320 (2+0)	508.196		221 x 64.5 x 48.5mm	12 pcs.	52g	122
	PROLED 275 (3+1) 16A	130 302	4TE	109 x 76.5 x 80mm	3 pcs.	164g	125
	PROLED 275 (4+0) 16A	130 301	4TE	109 x 76.5 x 80mm	3 pcs.	164g	125
	MPE-MINI	121 501		305 x 116 x 83mm	30 pcs.	52g	127
	MPE-MINI LED	130 331		305 x 116 x 83mm	30 pcs.	52g	127
	ZE 200-PS	121 532		151.5 x 96 x 79.5mm	1 pc	182g	129
	PROFILT D 8A	130 061	2TE	109 x 76.5 x 41.5mm	7 pcs.	94g	131
	PROFILT D 10A	130 051	5TE	112 x 76.5 x 100mm	3 pcs.	420g	133
	PROFILT D 16A	130 052	5TE	112 x 76.5 x 100mm	3 pcs.	420g	133
	PROFILT D 25A	130 053	5TE	112 x 76.5 x 100mm	3 pcs.	420g	133
	PROFILT D 30A	130 050	5TE	112 x 76.5 x 100mm	3 pcs.	420g	133
Modular and Compact SPD for DC Power Systems							
	DC PROTEC B 10/24	510 598	4TE	109 x 76.5 x 80mm	3 pcs.	246g	136
	DC PROTEC B 10/48	510 600	4TE	109 x 76.5 x 80mm	3 pcs.	280g	136
	DC PROTEC BR 10/24	510 599	4TE	109 x 76.5 x 80mm	3 pcs.	251g	136
	DC PROTEC BR 10/48	510 601	4TE	109 x 76.5 x 80mm	3 pcs.	288g	136
	DC PROTEC C 40/24	510 564	2TE	109 x 76.5 x 41.5mm	3 pcs.	204g	138
	DC PROTEC C 40/48	510 566	2TE	109 x 76.5 x 41.5mm	3 pcs.	204g	138
	DC PROTEC CR 40/24	510 565	2TE	109 x 76.5 x 41.5mm	3 pcs.	208g	138
	DC PROTEC CR 40/48	510 567	2TE	109 x 76.5 x 41.5mm	3 pcs.	208g	138





Product Index

	Product name	Ordering code	Dimensions DIN 43880	Packaging dimensions (single unit)	Minimum packaging quantity	Weight	Page
	PROTEC C 40/75	50.0001	1TE	110 x 76.5 x 23.5mm	12 pcs.	112g	140
	PROTEC CR 40/75	50.0011	1TE	110 x 76.5 x 23.5mm	12 pcs.	117g	140
	Module PROTEC C(R) 40/75	50.0216	1TE	110 x 76.5 x 48.5mm	12 pcs.	44g	140
	PROTEC DMDR 20/24	515 051	1TE	110 x 76.5 x 23.5mm	12 pcs.	96g	142
	PROTEC DMDR 20/48	515 053	1TE	110 x 76.5 x 23.5mm	12 pcs.	96g	142
	PROTEC DMDR 20/60	515 054	1TE	110 x 76.5 x 23.5mm	12 pcs.	96g	142
	PROTEC DMDR 20/120	515 055	1TE	110 x 76.5 x 23.5mm	12 pcs.	96g	142
	Module PROTEC DMDR 20/24	515 086		61 x 49 x 21mm	24 pcs.	32g	142
	Module PROTEC DMDR 20/48	515 087		61 x 49 x 21mm	24 pcs.	32g	142
	Module PROTEC DMDR 20/60	515 088		61 x 49 x 21mm	24 pcs.	32g	142
	Module PROTEC DMDR 20/120	515 089		61 x 49 x 21mm	24 pcs.	32g	142
Class I, II SPD for Photovoltaic Systems							
	SAFETEC B 12.5/300 PV TCG	54.0096	4TE	109 x 76.5 x 80mm	3 pcs.	440g	146
	SAFETEC BR 12.5/300 PV TCG	54.0097	4TE	109 x 76.5 x 80mm	3 pcs.	445g	146
	SAFETEC B 12.5/600 PV TCG	54.0098	4TE	109 x 76.5 x 80mm	3 pcs.	460g	146
	SAFETEC BR 12.5/600 PV TCG	54.0099	4TE	109 x 76.5 x 80mm	3 pcs.	465g	146
	SAFETEC B 12.5/1000 PV TCG	54.0102	4TE	109 x 76.5 x 80mm	3 pcs.	800g	146
	SAFETEC BR 12.5/1000 PV TCG	54.0103	4TE	109 x 76.5 x 80mm	3 pcs.	805g	146
	SAFETEC B 12.5/600 Y PV TCG	54.0100	6TE	109 x 76.5 x 114mm	2 pcs.	590g	147
	SAFETEC BR 12.5/600 Y PV TCG	54.0101	6TE	109 x 76.5 x 114mm	2 pcs.	600g	147
	SAFETEC B 12.5/1000 Y PV TCG	54.0104	6TE	109 x 76.5 x 114mm	2 pcs.	630g	147
	SAFETEC BR 12.5/1000 Y PV TCG	54.0105	6TE	109 x 76.5 x 114mm	2 pcs.	640g	147
	SAFETEC B 12.5/1200 Y PV TCG	54.0106	6TE	109 x 76.5 x 114mm	2 pcs.	1100g	147
	SAFETEC BR 12.5/1200 Y PV TCG	54.0107	6TE	109 x 76.5 x 114mm	2 pcs.	1110g	147
	SAFETEC B 12.5/1500 Y PV TCG	54.0108	6TE	109 x 76.5 x 114mm	2 pcs.	1160g	147
	SAFETEC BR 12.5/1500 Y PV TCG	54.0109	6TE	109 x 76.5 x 114mm	2 pcs.	1170g	147
	SAFETEC C 75 PV	516.040	2TE	109 x 76.5 x 41.5mm	7 pcs.	246g	149
	SAFETEC C 300 PV	516.042	2TE	109 x 76.5 x 41.5mm	7 pcs.	280g	149
	SAFETEC C 600 PV	516.044	2TE	109 x 76.5 x 41.5mm	7 pcs.	290g	149
	SAFETEC C 1000 PV	516.046	2TE	109 x 76.5 x 41.5mm	7 pcs.	299g	149
	SAFETEC CR 75 PV	516.041	2TE	109 x 76.5 x 41.5mm	7 pcs.	251g	149
	SAFETEC CR 300 PV	516.043	2TE	109 x 76.5 x 41.5mm	7 pcs.	288g	149
	SAFETEC CR 600 PV	516.045	2TE	109 x 76.5 x 41.5mm	7 pcs.	298g	149
	SAFETEC CR 1000 PV	516.047	2TE	109 x 76.5 x 41.5mm	7 pcs.	307g	149
	Module SAFETEC C(R) 75 PV	516.050		221 x 64.5 x 48.5mm	12 pcs.	45g	149
	Module SAFETEC C(R) 300 PV	516.051		221 x 64.5 x 48.5mm	12 pcs.	68g	149
	Module SAFETEC C(R) 600 PV	516.052		221 x 64.5 x 48.5mm	12 pcs.	74g	149
	Module SAFETEC C(R) 1000 PV	516.053		221 x 64.5 x 48.5mm	12 pcs.	78g	149
	SAFETEC C 1000Y PV	516.242	3TE	109 x 76.5 x 61.5mm	5 pcs.	396g	150
	SAFETEC C 1200Y PV	516.048	3TE	109 x 76.5 x 61.5mm	5 pcs.	390g	150
	SAFETEC C 1500Y PV	516.271	3TE	109 x 76.5 x 61.5mm	5 pcs.	400g	150
	SAFETEC CR 1000Y PV	516.243	3TE	109 x 76.5 x 61.5mm	5 pcs.	402g	150
	SAFETEC CR 1200Y PV	516.049	3TE	109 x 76.5 x 61.5mm	5 pcs.	396g	150
	SAFETEC CR 1500Y PV	516.272	3TE	109 x 76.5 x 61.5mm	5 pcs.	406g	150
	Module SAFETEC C(R) 1000Y PV	516.244		221 x 64.5 x 48.5mm	12 pcs.	74g	150
	Module SAFETEC C(R) 1200Y PV	516.054		221 x 64.5 x 48.5mm	12 pcs.	74g	150
	Module SAFETEC C(R) 1500Y PV	516.273		221 x 64.5 x 48.5mm	12 pcs.	76g	150
	SAFETEC C 300 PV (2+0) UL	516.105	2TE	109 x 76.5 x 41.5mm	7 pcs.	280g	153
	SAFETEC C 600 PV (2+0) UL	516.107	2TE	109 x 76.5 x 41.5mm	7 pcs.	290g	153
	SAFETEC C 1000 PV (2+0) UL	516.199	2TE	109 x 76.5 x 41.5mm	7 pcs.	299g	153
	SAFETEC CR 300 PV (2+0) UL	516.106	2TE	109 x 76.5 x 41.5mm	7 pcs.	288g	153
	SAFETEC CR 600 PV (2+0) UL	516.108	2TE	109 x 76.5 x 41.5mm	7 pcs.	298g	153
	SAFETEC CR 1000 PV (2+0) UL	516.200	2TE	109 x 76.5 x 41.5mm	7 pcs.	307g	153
	Module SAFETEC C(R) 300 PV UL	516.207		221 x 64.5 x 48.5mm	12 pcs.	68g	153
	Module SAFETEC C(R) 600 PV UL	516.208		221 x 64.5 x 48.5mm	12 pcs.	74g	153
	Module SAFETEC C(R) 1000 PV UL	516.209		221 x 64.5 x 48.5mm	12 pcs.	78g	153
	SAFETEC C 1000 PV (3+0) UL	516.600	3TE	109 x 76.5 x 61.5mm	5 pcs.	396g	154
	SAFETEC C 1200 PV (3+0) UL	516.109	3TE	109 x 76.5 x 61.5mm	5 pcs.	390g	154
	SAFETEC CR 1000 PV (3+0) UL	516.596	3TE	109 x 76.5 x 61.5mm	5 pcs.	402g	154
	SAFETEC CR 1200 PV (3+0) UL	516.110	3TE	109 x 76.5 x 61.5mm	5 pcs.	392g	154
	Module SAFETEC C(R) 1000 PV UL	516.604		221 x 64.5 x 48.5mm	12 pcs.	62g	154
	Module SAFETEC C(R) 1200 PV UL	516.210		221 x 64.5 x 48.5mm	12 pcs.	66g	154


Product Index

	Product name	Ordering code	Dimensions DIN 43880	Packaging dimensions (single unit)	Minimum packaging quantity	Weight	Page
	PV PROTEC C 40/100	501.521	2TE	109 x 76.5 x 41.5mm	7 pcs.	274g	157
	PV PROTEC C 40/550	501.527	2TE	109 x 76.5 x 41.5mm	7 pcs.	302g	157
	PV PROTEC CR 40/100	501.531	3TE	109 x 76.5 x 61.5mm	5 pcs.	329g	157
	PV PROTEC CR 40/550	501.537	3TE	109 x 76.5 x 61.5mm	5 pcs.	398g	157
	PV PROTEC C 40/600	501.709	2TE	109 x 76.5 x 41.5mm	7 pcs.	279g	158
	PV PROTEC C 40/1000	501.543	2TE	109 x 76.5 x 41.5mm	7 pcs.	307g	158
	PV PROTEC CR 40/600	501.710	3TE	109 x 76.5 x 61.5mm	5 pcs.	334g	158
	PV PROTEC CR 40/1000	501.547	3TE	109 x 76.5 x 61.5mm	5 pcs.	403g	158
	Module PV PROTEC C(R) 40/100	50.0496		221 x 64.5 x 48.5mm	12 pcs.	46g	157
	Module PV PROTEC C(R) 40/550	50.0497		221 x 64.5 x 48.5mm	12 pcs.	58g	157
	Module PV PROTEC C(R) 40/600	501.711		221 x 64.5 x 48.5mm	12 pcs.	52g	158
	Module PV PROTEC C(R) 40/1000	50.0498		221 x 64.5 x 48.5mm	12 pcs.	58g	158






Class I, II SPD for Wind Systems

	SAFETEC B 12.5/440 WT TCG	54.0320	2TE	109 x 76.5 x 41.5mm	7 pcs.	371g	162
	SAFETEC BR 12.5/440 WT TCG	54.0321	2TE	109 x 76.5 x 41.5mm	7 pcs.	376g	162
	SAFETEC B 12.5/750 WT TCG	54.0078	2TE	109 x 76.5 x 41.5mm	7 pcs.	400g	162
	SAFETEC BR 12.5/750 WT TCG	54.0079	2TE	109 x 76.5 x 41.5mm	7 pcs.	405g	162
	SAFETEC B 25/440 WT TCG	54.0322	4TE	109 x 76.5 x 80mm	3 pcs.	692g	163
	SAFETEC BR 25/440 WT TCG	54.0323	4TE	109 x 76.5 x 80mm	3 pcs.	697g	163
	SAFETEC B 25/750 WT TCG	54.0080	4TE	109 x 76.5 x 80mm	3 pcs.	800g	163
	SAFETEC BR 25/750 WT TCG	54.0081	4TE	109 x 76.5 x 80mm	3 pcs.	805g	163
	SAFETEC C 440 (3+0) WT	516.652	3TE	109 x 76.5 x 61.5mm	5 pcs.	397g	165
	SAFETEC C 750 (3+0) WT	516.055	3TE	109 x 76.5 x 61.5mm	5 pcs.	364g	165
	SAFETEC C 880 (3+0) WT	516.369	3TE	109 x 76.5 x 61.5mm	5 pcs.	364g	165
	SAFETEC CR 440 (3+0) WT	516.653	3TE	109 x 76.5 x 61.5mm	5 pcs.	402g	165
	SAFETEC CR 750 (3+0) WT	516.056	3TE	109 x 76.5 x 61.5mm	5 pcs.	369g	165
	SAFETEC CR 880 (3+0) WT	516.370	3TE	109 x 76.5 x 61.5mm	5 pcs.	369g	165
	Module SAFETEC C(R) 440 WT	516.654		221 x 64.5 x 48.5mm	12 pcs.	74g	165
	Module SAFETEC C(R) 750 WT	516.057		221 x 64.5 x 48.5mm	12 pcs.	78g	165
	Module SAFETEC C(R) 880 WT	516.371		221 x 64.5 x 48.5mm	12 pcs.	78g	165
	SAFETEC C 440 (3+0) WT UL	516.225	3TE	109 x 76.5 x 61.5mm	5 pcs.	397g	167
	SAFETEC C 690 (3+0) WT UL	516.227	3TE	109 x 76.5 x 61.5mm	5 pcs.	364g	167
	SAFETEC C 750 (3+0) WT UL	516.229	3TE	109 x 76.5 x 61.5mm	5 pcs.	364g	167
	SAFETEC CR 440 (3+0) WT UL	516.226	3TE	109 x 76.5 x 61.5mm	5 pcs.	402g	167
	SAFETEC CR 690 (3+0) WT UL	516.228	3TE	109 x 76.5 x 61.5mm	5 pcs.	369g	167
	SAFETEC CR 750 (3+0) WT UL	516.230	3TE	109 x 76.5 x 61.5mm	5 pcs.	369g	167
	Module SAFETEC C(R) 440 WT UL	516.262		221 x 64.5 x 48.5mm	12 pcs.	74g	167
	Module SAFETEC C(R) 690 WT UL	516.263		221 x 64.5 x 48.5mm	12 pcs.	78g	167
	Module SAFETEC C(R) 750 WT UL	516.264		221 x 64.5 x 48.5mm	12 pcs.	78g	167

PV Combiner Boxes for Photovoltaic Systems

	Product name	Ordering code	Page	Product name	Ordering code	Page
	PVCB I 2-0.6	130 130	170	PVCB II 2-0.6	130 154	171
	PVCB I 4-0.6	130 131	170	PVCB II 4-0.6	130 155	171
	PVCB I 6-0.6	130 132	170	PVCB II 6-0.6	130 156	171
	PVCB I 2-1	130 133	170	PVCB II 2-1	130 157	171
	PVCB I 4-1	130 134	170	PVCB II 4-1	130 158	171
	PVCB I 6-1	130 135	170	PVCB II 6-1	130 159	171
	PVCB I 2-0.6-F	130 136	170	PVCB II 2-0.6-F	130 160	171
	PVCB I 4-0.6-F	130 137	170	PVCB II 4-0.6-F	130 161	171
	PVCB I 6-0.6-F	130 138	170	PVCB II 6-0.6-F	130 162	171
	PVCB I 2-1-F	130 139	170	PVCB II 2-1-F	130 163	171
	PVCB I 4-1-F	130 140	170	PVCB II 4-1-F	130 164	171
	PVCB I 6-1-F	130 141	170	PVCB II 6-1-F	130 165	171
	PVCB I 2-0.6-MS-F	130 142	170	PVCB II 2-0.6-MS F	130 166	171
	PVCB I 4-0.6-MS-F	130 143	170	PVCB II 4-0.6-MS F	130 167	171
	PVCB I 6-0.6-MS-F	130 144	170	PVCB II 6-0.6-MS-F	130 168	171
	PVCB I 2-1-MS-F	130 145	170	PVCB II 2-1-MS-F	130 169	171
	PVCB I 4-1-MS-F	130 146	170	PVCB II 4-1-MS-F	130 170	171
	PVCB I 6-1-MS-F	130 147	170	PVCB II 6-1-MS-F	130 171	171
	PVCB I 2-0.6-MS-D	130 148	170	PVCB II 2-0.6-MS-D	130 172	171
	PVCB I 4-0.6-MS-D	130 149	170	PVCB II 4-0.6-MS-D	130 173	171
	PVCB I 6-0.6-MS-D	131 150	170	PVCB II 6-0.6-MS-D	130 174	171
	PVCB I 2-1-MS-D	132 151	170	PVCB II 2-1-MS-D	130 175	171
	PVCB I 4-1-MS-D	133 152	170	PVCB II 4-1-MS-D	130 176	171
	PVCB I 6-1-MS-D	134 153	170	PVCB II 6-1-MS-D	130 177	171

Product Index

Product name	Ordering code	Dimensions DIN 43880	Packaging dimensions (single unit)	Minimum packaging quantity	Weight	Page
AC Boxes						
	PBS-C80 (2+0)-F16	130 021				174
	PBS-C80 (1+1)-F16	130 022				174
	PBS-D10 (2+0)-F16	130 023				174
	PBL-C160 (4+0)-F16	130 024				174
	PBL-C160 (3+1)-F16	130 025				174
	PBL-D40 (4+0)-F16	130 026				174
	PROFILT PSF - 1/40/320/TT 25 kA	130 086				175
	PROFILT PSF - 1/40/320/TT 50 kA	130 046				175
	PROFILT PSF - 1/63/320/TT 25 kA	130 079				175
	PROFILT PSF - 1/63/320/TT 50 kA	130 070				175
	PROFILT PSF - 3/40/320/TT 25 kA	130 083				175
	PROFILT PSF - 3/40/320/TT 50 kA	130 048				175
	PROFILT PSF - 3/63/320/TT 25 kA	130 044				175
	PROFILT PSF - 3/63/320/TT 50 kA	130 056				175
Class II SPD for Overhead Power Supply						
	PROTEC AQ 25/150	509.017				178
	PROTEC AQ 25/275	509.019	390 x 380 x 280mm	100 pcs.	104g	178
	PROTEC AQ 25/320	509.021	390 x 380 x 280mm	100 pcs.	108g	178
	PROTEC AQ 25/385	509.045	390 x 380 x 280mm	100 pcs.	110g	178
	PROTEC AQ 25/440	509.023	390 x 380 x 280mm	100 pcs.	112g	178
	PROTEC AQ 40/150	509.029	390 x 380 x 280mm	100 pcs.	144g	179
	PROTEC AQ 40/275	509.031	390 x 380 x 280mm	100 pcs.	146g	179
	PROTEC AQ 40/320	509.033	390 x 380 x 280mm	100 pcs.	149g	179
	PROTEC AQ 40/385	509.047	390 x 380 x 280mm	100 pcs.	154g	179
	PROTEC AQ 40/440	509.035	390 x 380 x 280mm	100 pcs.	157g	179
	PROTEC AQS 40/150	509.049	390 x 380 x 280mm	100 pcs.	122g	180
	PROTEC AQS 40/275	509.051	390 x 380 x 280mm	100 pcs.	126g	180
	PROTEC AQS 40/320	509.053	390 x 380 x 280mm	100 pcs.	130g	180
	PROTEC AQS 40/440	509.055	390 x 380 x 280mm	100 pcs.	134g	180
Isolating Spark Gap (ISG) for Equipotential Bonding						
	EPZ-100/350	509.509	390 x 330 x 312 x 160mm	20 pcs.	500g	182
	EPZ-100/350 Ex	322.973	330 x 312 x 160mm	20 pcs.	500g	183
Connection Accessories						
	PROBAR 1-2	501 301				186
	PROBAR 1-3	501 303				186
	PROBAR 1-4	501 305				186
	PROBAR 1-5	501 307				186
	PROBAR 1-6	501 309				186
	PROBAR 1-7	501 311				186
	PROBAR 1-8	501 313				186
	PROBAR 1-11	501 315				186
	PROBAR 2-8	501 317				187
	PROBAR 3-6	501 319				187
	PROBAR 3-8	501 321				187
	PB 1-(2+0)	501 331				187
	PB 1-(3+0)	501 332				187
	PB 1-(4+0)	501 335				187
	PB 1-(3+1)	501 334				187
	Fixing cable	509 507				188
	Fixing hook	509 501				188
	PSN	509 503				188
	PSI	509 505				188



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March 2016

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G29-00-006 160301