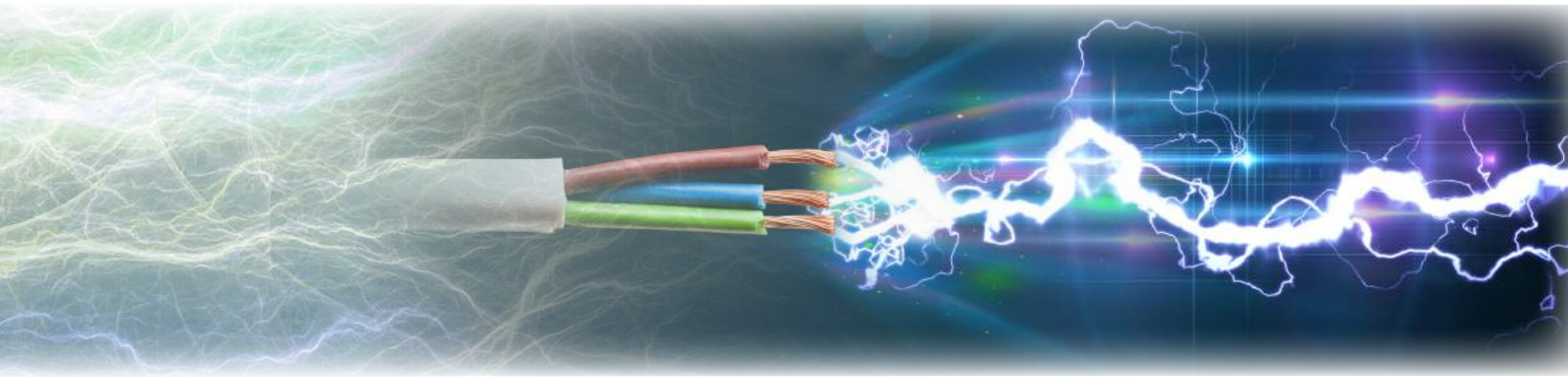



# **Raycap**

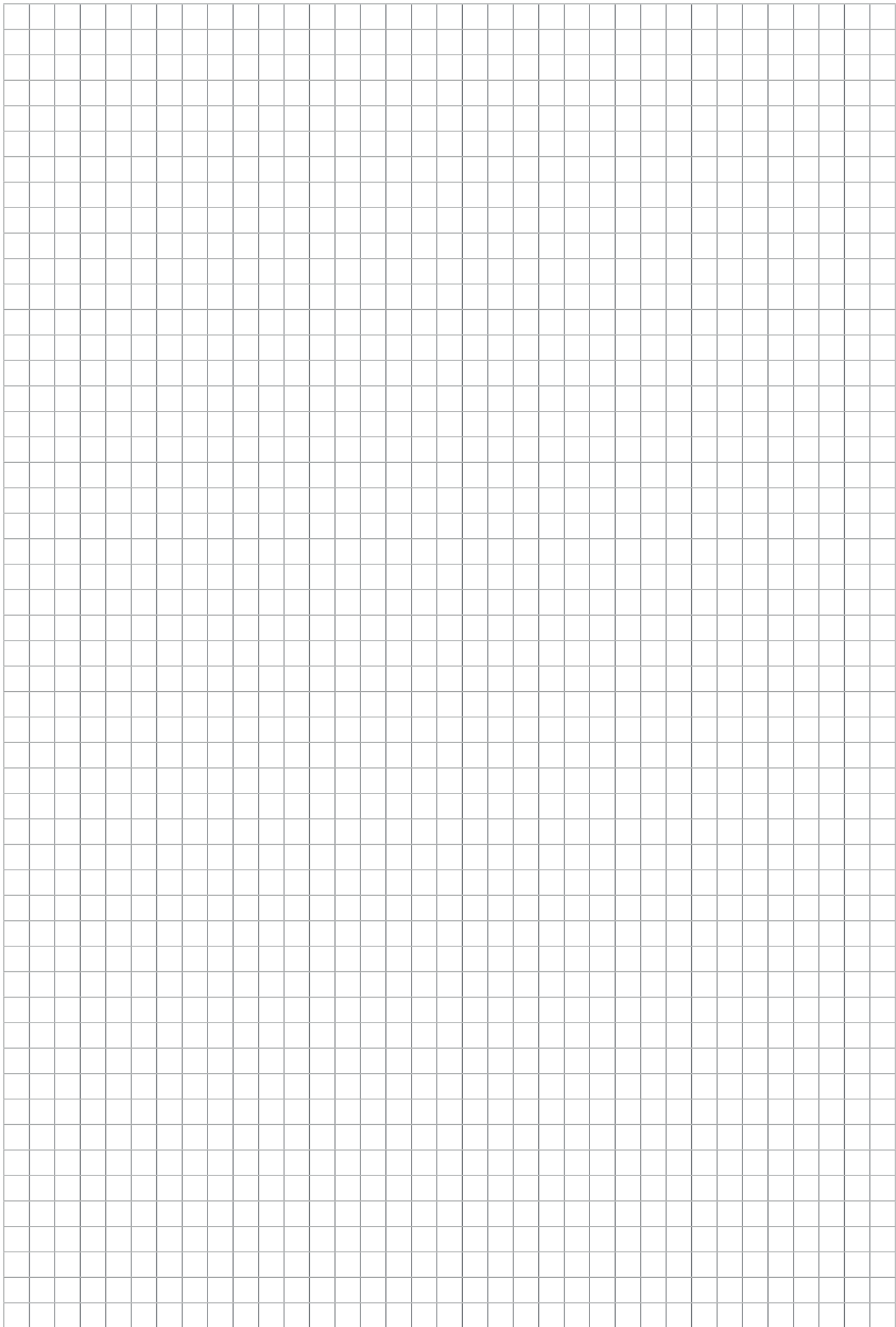
Surge Protection for  
Low Voltage Power Systems



2017  
CATALOG

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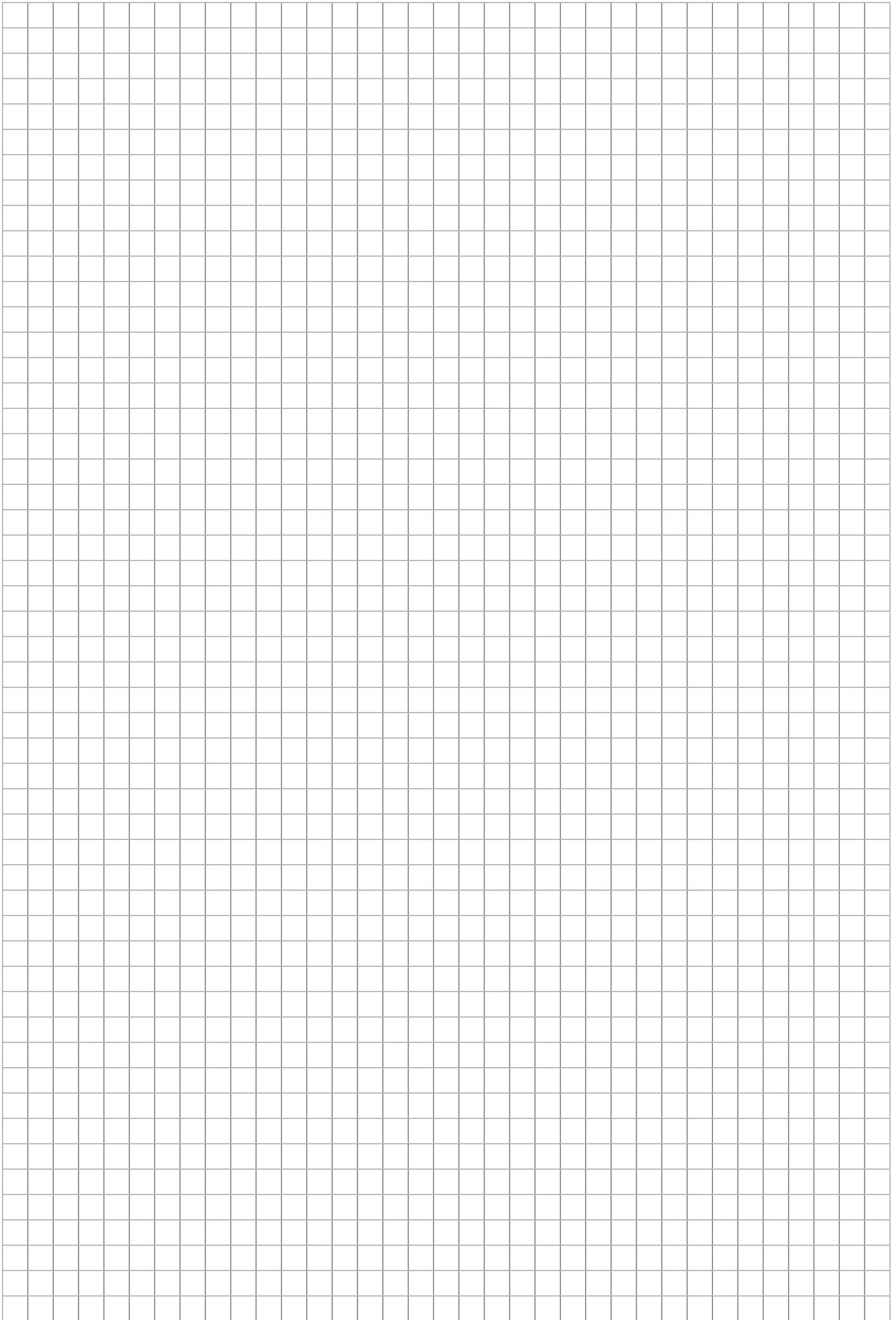


## About Raycap



Raycap was founded in 1987 with a vision of creating and providing solutions that protect the world's infrastructure. 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.





## Introduction



The electrical environment in which today's sensitive electronic systems are required to operate has become increasingly polluted by electrical disturbances, such as voltage surges and transients. At the same time, the susceptibility of these systems to catastrophic failure due to lightning events continues to exist and increase steadily as the use of micro-controlled based electronics has proliferated into many industrial and commercial environments and appliances. The need for effective surge protection drives us to continually update and improve our surge protection technologies.

## Regulatory Standards

Regulations	Description
1 CLC/TS 50539-12: 2012	Low-voltage surge protective devices – Surge protective devices for specific application including DC – Part 12: Selection and application principles – SPDs connected to photovoltaic installations
<b>European Standards (EN)</b>	
2 EN 50122-1: 2011+ A3: 2016	Railway applications – Fixed installations – Part 1: Protective provisions relating to electrical safety and earthing
3 EN 50123-5: 2003	Railway applications – Fixed installations – DC switchgear – Part 5: Surge arresters and low-voltage limiters for specific use in DC systems
4 EN 50526-1: 2012	Railway applications – Fixed installations – DC surge arresters and voltage limiting devices – Part 1: Surge arresters
5 EN 50539-11: 2012	Low-voltage surge protective devices - Surge protective devices for specific application including DC – Part 11: Requirements and tests for SPDs in photovoltaic applications
6 EN 50539-12: 2013+ A1: 2014 EN 61643-11: 2012	Low-voltage surge protective devices – Surge protective devices for specific application including DC – Part 12: Selection and application principles – SPDs connected to photovoltaic installations
7 EN 61173: 2001	Overvoltage protection for photovoltaic (PV) power generating systems – Guide 32. SIST EN 61400-1:2006/A1:2011 Wind turbines – Part 1: Design requirements (IEC 61400-1:2005/A1:2010)
8 EN 62561-3: 2012	Lightning protection system components (LPSC) – Part 3: Requirements for isolating spark gaps (ISG)
<b>European Commission on European Standards (EC/EN)</b>	
9 IEC/EN 61326-1: 2012 2LV	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements
<b>International Electrotechnical Commission (IEC)</b>	
10 IEC 60038: 2009	IEC standard voltages
11 IEC 60099-4: 2014	Surge arresters – Part 4: Metal-oxide surge arresters without gaps for AC systems
12 IEC 60099-5: 2013	Surge arresters – Part 5: Selection and application recommendations
13 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
14 IEC 60364-5-53: 2001+ AMD: 2002+AM2: 2015	Electrical installation of buildings – Part 5-53: Selection and erection of electrical equipment-isolation, switching and control
15 IEC 60364-7-712: 2002	Electrical installations of buildings – Part 7-712: Requirements for special installations or locations – Solar photovoltaic (PV) power supply systems
16 IEC 61000-4-5: 2014	Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test
17 IEC 61400-24: 2010	Wind turbine generator systems – Part 24: Lightning protection

Regulations		Description
18	IEC 61643-11: 2011	Surge protective devices connected to low voltage power distribution systems – Requirements and test methods
19	IEC 61643-12: 2008	Surge protective devices connected to low voltage power distribution systems – Selection and application principles
20	IEC 61643-21: 2012	Low voltage surge protective devices – Part 21: Surge protective devices connected to telecommunications and signaling networks – Performance requirements and testing methods
21	IEC 61643-22: 2015	Low-Voltage Surge Protective Devices – Part 22: Surge protection devices connected to telecommunications and signaling networks – Selection and application principles
22	IEC 61643-311: 2013	Components for low-voltage surge protective devices – Part 311: Performance requirements and test circuits for gas discharge tubes (GDT), Edition 2.0, 2013-04
23	IEC 62305-1: 2010	Protection against lightning – Part 1: General principles
24	IEC 62305-2: 2010	Protection against lightning – Part 2: Risk management
25	IEC 62305-3: 2010	Protection against lightning – Part 3: Physical damage to structures and life hazard
26	IEC 62305-4: 2010	Protection against lightning – Part 4: Electrical and electronic systems within structures
27	IEC 62497-2: 2010	Railway applications – Insulation coordination – Part 2: Overvoltages and related protection
28	IEC 62561-6: 2011	Lightning protection system components (LPSC) – Part 6: Requirements for lightning strike counters (LSC)
<b>International Telecommunication Union Standards (ITU-T)</b>		
29	ITU-T K.20: 2011	Protection against interferences: Resistibility of telecommunication equipment installed in a telecommunications center to overvoltages and overcurrents
30	ITU-T K.21: 2016	Protection against interferences: Resistibility of telecommunication equipment installed in customer premises to overvoltages and overcurrents
31	ITU-T K.44: 2016	Protection against interferences: Resistibility test for telecommunication equipment exposed to overvoltages and overcurrents – Basic Recommendation
<b>Harmonization Document (HD)</b>		
32	HD 60364-4-443: 2016	Low voltage electrical installations – 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.
33	HD 60364-7-712: 2016	Low voltage electrical installations – Part 7-712: Requirements for special installations or locations – Photovoltaic (PV) systems
<b>Underwriters Laboratory (UL)</b>		
34	UL 1449 4th Edition	Standard for Surge Protective Devices



# Surge Protective Device (SPD) Components & Terminology



## Typical Technologies Used in SPDs

### Voltage-limiting Type SPD



#### Metal Oxide Varistor (MOV)

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



#### Transient Voltage Suppression (TVS) Diode

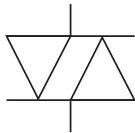
A TVS diode is a clamping device that limits voltage spikes by the low impedance avalanche breakdown of the PN junction. TVS diode contains a PN junction similar to a Zener diode but with a larger cross section, which is proportional to its surge power rating.

### Voltage-switching Type SPD



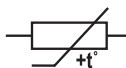
#### Gas Discharge Tube (GDT)

A GDT is an arrangement of electrodes in a gas within an insulating, temperature-resistant ceramic or glass cylinder.



#### Thyristor Surge Suppressor (TSS)

A Thyristor surge suppressor is voltage-switching device, when above a certain breakdown current, the NPNP structure regenerates and switches to a low voltage condition. The multiple PN junctions of the TSS reduce the overall capacitance.



### Current Limiting Devices

#### Positive Temperature Coefficient Thermistor (PTC Thermistor)

PTC resistors are ceramic components whose electrical resistance rapidly increases when a certain temperature is exceeded. An overcurrent condition causes the devices to increase their resistance, thus reducing current flow.



## Typical SPD Technologies



### SPD Based on MOV Technology

- No problems with follow current  $I_{fi}$
- Quick response time  $t_A$  at  $\leq 25$  ns results in low residual voltage
- Responds well to low overvoltages
- High surge capacity up to 50 kA 10/350  $\mu$ s



### SPD Based on GDT Technology

- High surge capacity up to 100 kA 10/350  $\mu$ s
- No exhausting of ionized gases
- For TT systems as galvanic separator between N-PE conductors



### Combination Type SPD Based on Combined MOV and GDT Technology

- No follow current  $I_{fi}$
- Quick response time  $t_A$  at  $\leq 25$  ns results in low residual voltage
- Responds well to low overvoltages
- High surge capacity up to 25 kA 10/350  $\mu$ s



### Combination Type SPD with Thermal Control Function (TC)

- No follow current  $I_{fi}$
- Quick response time  $t_A$  at  $\leq 25$  ns results in low residual voltage
- Responds well to low overvoltages
- High surge capacity up to 25 kA 10/350  $\mu$ s
- Thermal Control Function (TC)



### Combination Type SPD with Thermal Control Function without Leakage Current (TCG)

- No follow current  $I_{fi}$
- Quick response time  $t_A$  at  $\leq 25$  ns results in low residual voltage
- Responds well to low overvoltages
- High surge capacity up to 25 kA 10/350  $\mu$ s
- Thermal Control Function without Leakage Current (TCG)



## Common Terminology

### 1.2/50 $\mu$ s Voltage Impulse

Voltage impulse with a nominal virtual front time of 1.2 $\mu$ s and a nominal time to half-value of 50 $\mu$ s.

### 8/20 $\mu$ s Current Impulse

Current impulse with a nominal virtual front time of 8 $\mu$ s and a nominal time to half-value of 20 $\mu$ s.

### American Wire Gauge (AWG)

American Wire Gauge (AWG) is a standardized wire gauge system for the diameters of round, solid, nonferrous, electrically conducting wire. The larger the AWG number or wire gauge, the smaller the physical size of the wire. The smallest AWG size is 40 and the largest is 000 (4/0). Table 1 lists the AWG equivalent sizes for electrical cables/conductors.

### Combination Wave

The combination wave is delivered by a generator that applies a 1.2/50 $\mu$ s voltage impulse across an open circuit and an 8/20 $\mu$ s current impulse into a short circuit. The voltage, current amplitude and waveforms that are delivered to the SPD are determined by the generator impedance 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  $U_{oc}$ .

### Environmental Protection Provided by Enclosure--Ingress Protection Rating (IP)

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 per IEC 60529.

### Follow Current Interrupt Rating $I_{fi}$

Prospective short-circuit current that an SPD is able to interrupt without operation of a disconnecter.

### Impulse Discharge Current $I_{imp}$ (10/350 $\mu$ s Current Impulse)

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

### Maximum Continuous Operating Voltages ( $U_C$ or MCOV)

The maximum root-mean square (RMS) or DC voltage, which may be continuously applied to the SPD's mode of protection.

### Maximum Discharge Current $I_{max}$

Crest value of a current through the SPD having an 8/20 $\mu$ s waveshape and magnitude according to the manufacturers specifications:  $I_{max}$  is greater than  $I_n$ .

### Metal Oxide 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.

### Multi-pole Surge Protective Device (SPD)

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

**Nominal AC Voltage  $U_0$** 

In TN and TT Systems: Nominal RMS AC line voltage to earth; in IT Systems: Nominal AC voltage between line conductor and neutral conductor or midpoint conductor.

**Nominal Discharge Current  $I_n$** 

The crest value of the current through the SPD having a current waveshape of 8/20 $\mu$ s.

**Overcurrent Protection**

Overcurrent device such as a circuit-breaker or fuse, which could be part of the electrical installation located externally upstream of the SPD.

**Residual Voltage  $U_{res}$** 

The crest value of voltage that appears between the terminals of an SPD due to the passage of discharge current.

**SPD Disconnecter**

Internal build-in external device required for disconnecting an SPD or part of an SPD from the power system.

**SPD Mode of Protection**

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

**Short-Circuit Current  $I_{SCCR}$  per IEC 61643-11/EN 61643-11**

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

**Short Circuit Current Rating (SCCR) per UL 1449**

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

**Surge Protective Device (SPD)**

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

**Temporary Overvoltage Characteristics TOV**

Is a behavior of a surge device which is exposed to a temporary overvoltage for certain time duration. The time can be between 5 seconds and 120 minutes.

**Total Discharge Current  $I_{Total}$** 

Current which flows through earth conductor of a multi-pole SPD during the total discharge current test.

**Voltage Protection Level  $U_P$** 

Maximum voltage to be expected at the SPD terminals due to an impulse stress with defined voltage steepness and impulse stress with a discharge current, given amplitude and waveshape.

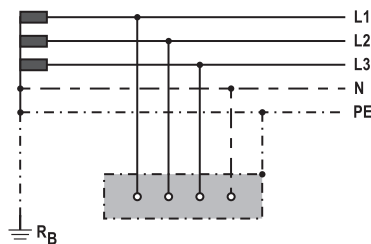
# Low Voltage Power Distribution System Types



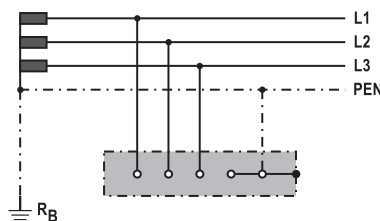
## Earthing Systems

### System Configuration

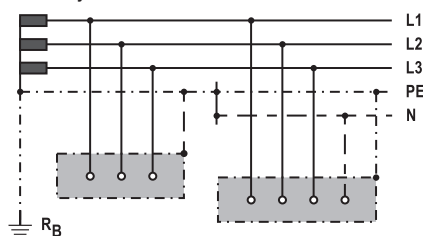
#### TN-S System



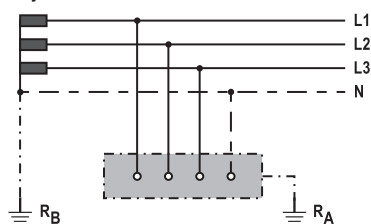
#### TN-C System



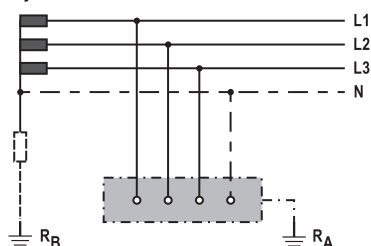
#### TN-C-S System



#### TT System



#### IT System



Low voltage distribution network systems are designated using two letters according to IEC 60364-4-41: 2015. The first letter describes the grounding method used at the source, 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.

The method is used to define three basic systems:

- TN System**
- TT System**
- IT System**

The abbreviations have the following meaning:

**First Letter**—relationship of power system to earth

- T** Direct connection to ground of the power supply source
- I** All live parts isolated from earth, one point connected to earth through an impedance

**Second Letter**—grounding method used at exposed conductive parts in the electrical installation:

- T** Exposed conductive parts are directly grounded independent of the earthing of any point of the power system
- N** Exposed conductive parts are directly connected to the earthed point of the power system

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 combined in a single conductor (PEN conductor)

Therefore, there are three possible TN sub-systems: TN-S, TN-C and TN-C-S



## Live Conductor Systems

Source Configuration	Description
	<p><b>Single Phase</b>  System Voltage: 110V • 120V • 220V • 240V • 277V  Circuit Type: 1<math>\phi</math>, 2W + G  Protection Modes: Line-Neutral</p>
	<p><b>Single Phase (Split Phase)</b>  System Voltage: 120V/240V • 240V/480V  Circuit Type: 1<math>\phi</math>, 3W + G  Protection Modes: Line-Neutral/Line-Line</p>
	<p><b>Three Phase WYE without Neutral</b>  System Voltage: 480V  Circuit Type: 3<math>\phi</math> WYE, 3W + G  Protection Modes: Line-Line</p>
	<p><b>Three Phase WYE with Neutral</b>  System Voltage: 120V/208V • 220V/380V • 230V/400V • 240V/415V • 277V/480V • 347V/600V  Circuit Type: 3<math>\phi</math> WYE, 4W + G  Protection Modes: Line-Neutral/Line-Line</p>
	<p><b>Delta High Leg</b>  System Voltage: 120V/240V  Circuit Type: 3<math>\phi</math> <math>\Delta</math>, 4W + G  Protection Modes: Line-Neutral/Line-Line</p>
	<p><b>Delta Ungrounded</b>  System Voltage: 120V • 240V • 480V  Circuit Type: 3<math>\phi</math> <math>\Delta</math>, 3W + G  Protection Modes: Line-Line</p>
	<p><b>Delta Grounded Corner</b>  System Voltage: 120V • 240V • 480V • 600V  Circuit Type: 3<math>\phi</math> <math>\Delta</math>, 3W + G  Protection Modes: Line-Line</p>

# Quick Product Selector



## AC Industrial Applications

IEC/EN  
Class I, II/Type 1, 2

Pages



SafeBloc B(R) TCG

17-45



ProBloc B(R)

61-89



ProTec B2S(R)

97-111



ProFilt PSF

195-199



IEC/EN  
Class II/Type 2



SafeTec C(R)

115-129



ProTec C(R)

157-169



ProTec CM(R)

170-175



ProTec AQS 40

202



EPZ 100

206



IEC/EN/UL  
Class II/Type 2/Type 1, 2CA



SafeTec C(R) UL

138-147

IEC/EN  
Class III/Type 3



ProTec DMG(R)

182



ProTec DMDR

180



ProLed 275

186



MPE Mini & MPE Mini LED

188



ZE 200-PS

190



## AC Wind Applications

Pages

IEC/EN  
Class I, II/Type1, 2



SafeBloc B(R) WT TCG

46-49

IEC/EN  
Class II/Type 2



SafeTec C(R) WT

130

IEC/EN/UL  
Class II/Type 2/Type 1, 2CA



SafeTec C(R) WT UL

148



## DC Photovoltaic Systems

EN  
Type 1, 2



PV SafeBloc B(R) Y TCG

50-53



PV ProTec B(R) Y TD

110

EN  
Type 2



PV SafeTec C(R) Y TD

132



PVG SafeTec C(R) Y TD

134



PV ProTec C(R) Y TD

176

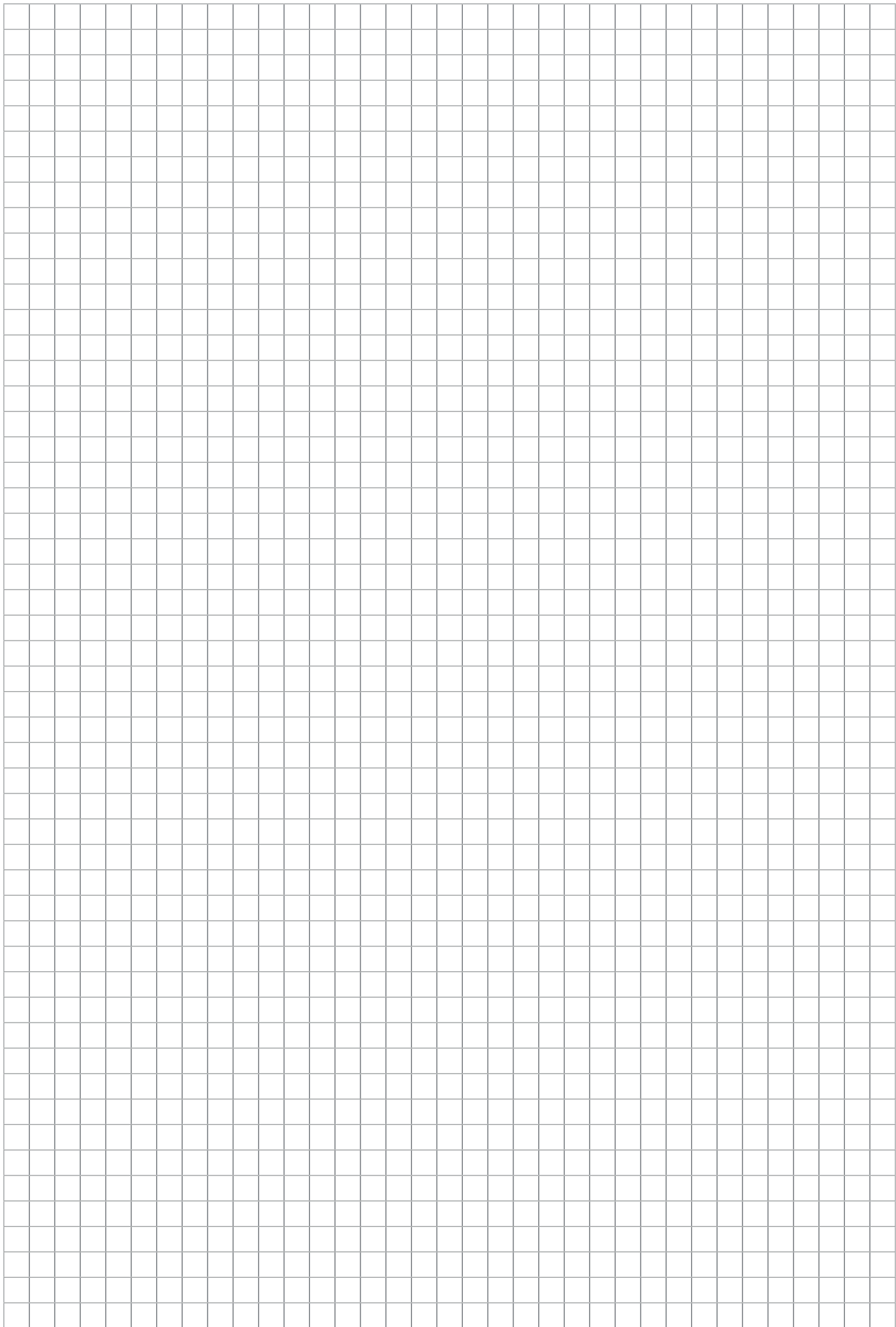
EN/UL  
Type 2/Type 4CA



SafeTec C(R) PV UL

150-153





## Compact Single Pole & Multi-pole Surge Protective Devices (SPDs)



SafeBloc B TCG, SafeBloc BR TCG & SafeTube B

The SafeBloc B TCG and SafeTube B 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, and protect from overvoltages, surges and transients in accordance to IEC/EN 61643-11.

The patented TCG (thermal control function with no leakage current) technology SPDs consist of a high performance varistor and the current limiting TCG circuit, each with a separate disconnection device.

The compact design SafeBloc TCG is suitable for all types of DIN Rail connections and with the TCG patented technology, prevents catastrophic failures caused by temporary overvoltages (TOVs).

SafeTube features a single pole compact housing design with a high energy encapsulated gas discharge tube (GDT) solution. Raycap's GDT technology applications are ideal for galvanic separation between the N and PE conductors in a 1+1 or 3+1 power distribution network.

### For AC Applications

SafeBloc B & BR 12.5 (1+0)

SafeBloc B & BR 25 (2+0)

SafeBloc B & BR 37.5 (3+0)

SafeBloc B & BR 50 (4+0)

SafeBloc B & BR 25 (1+1)

SafeBloc B & BR 50 (3+1)

SafeBloc B & BR 25 (1+0)

SafeBloc B & BR 50 (2+0)

SafeBloc B & BR 75 (3+0)

SafeBloc B & BR 100 (4+0)

SafeBloc B & BR 50 (1+1)

SafeBloc B & BR 100 (3+1)

SafeTube B 50

SafeTube B 100

SafeBloc B & BR 12.5

(1+0) WT

SafeBloc B & BR 25

(1+0) WT

### For DC Applications

PV SafeBloc B & BR 12.5

PV SafeBloc B & BR 12.5 Y



Compact Single Pole SPD  
**SafeBloc B(R) 12.5 (1+0) TCG**  
 Class I • Class II • Type 1 • Type 2

**12.5kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TN-S, TN-C, TT (only L-N)  
 Mode of Protection: L-PE, N-PE, L-PEN, L-N  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

**SafeBloc B(R) 12.5/xxx (1+0) TCG**

**150**

**275**

**Electrical**

		150	275
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	20 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	50 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$	12.5 kA	
Specific Energy	W/R	39 kJ/ $\Omega$	
Charge	Q	6.25 As	
Voltage Protection Level	$U_p$	< 1.2 kV	< 1.5 kV
Response Time	$t_A$	< 25 ns	
Back-Up Fuse (if mains > 250 A)		250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$	50 kA	
TOV withstand 5s	$U_T$	228V	438V
Number of Ports		1	

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	$M_{max}$	3.0 Nm	
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection		Yes	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$	0.25 Nm	

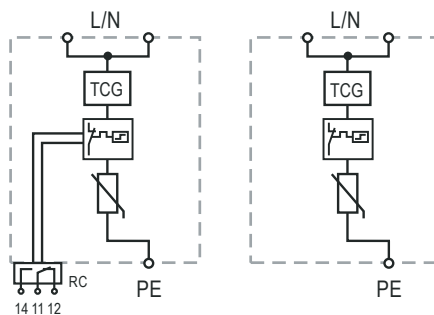
**Order Information**

Order Code	150	275
SAFELOC B 12.5/xxx (1+0) TCG	54.0500	54.0502
SAFELOC BR 12.5/xxx (1+0) TCG (with remote contacts)	54.0501	54.0503

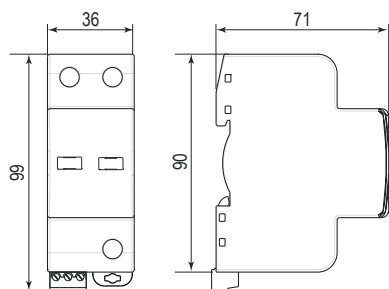
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage

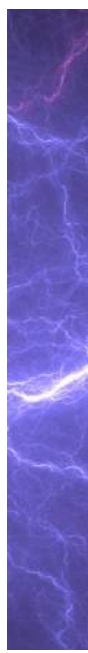


Dimensions & Packaging [mm]



Dimensions & Packaging		
<b>SafeBloc B 12.5/xxx (1+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	175g	205g
Single Unit DIN 43880 Dimension	2 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm	
Minimum Order Quantity	7 Units	
<b>SafeBloc BR 12.5/xxx (1+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	180g	210g
Single Unit DIN 43880 Dimension	2 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm	
Minimum Order Quantity	7 Units	

Applicable connection configurations can be found on pages 56-57.



Compact Multi-pole SPD  
**SafeBloc B(R) 25 (2+0) TCG**  
 Class I • Class II • Type 1 • Type 2

12.5 kA Series



Location of Use: Main Distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

**SafeBloc B(R) 25/xxx (2+0) TCG**

150

275

**Electrical**

Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$		20 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$		50 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$		12.5 kA
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$		25 kA
Specific Energy	W/R		39 kJ/ $\Omega$
Charge	Q		6.25 As
Voltage Protection Level	$U_p$	< 1.2 kV	< 1.5 kV
Response Time	$t_A$		< 25 ns
Back-Up Fuse (if mains > 250 A)			250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$		50 kA
TOV withstand 5s	$U_T$	228V	438V
Number of Ports			1

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	$M_{max}$	3.0 Nm	
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection		Yes	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$	0.25 Nm	

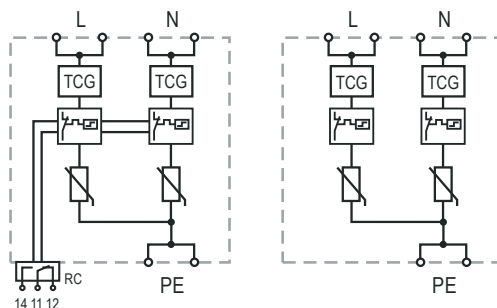
**Order Information**

Order Code	150	275
SAFE BLOC B 25/xxx (2+0) TCG	54.0507	54.0509
SAFE BLOC BR 25/xxx (2+0) TCG (with remote contacts)	54.0508	54.0510

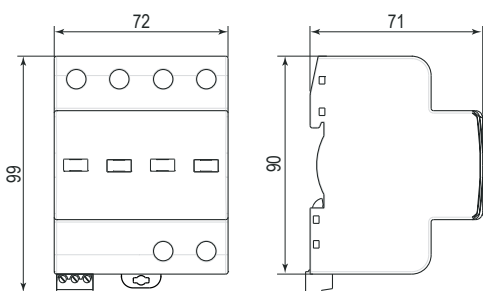
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage

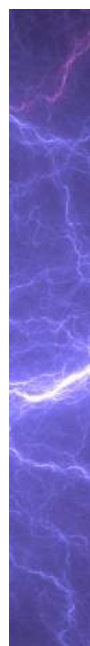


Dimensions & Packaging [mm]



Dimensions & Packaging		
<b>SafeBloc B 25/xxx (2+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	320g	420g
Single Unit DIN 43880 Dimension	4 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm	
Minimum Order Quantity	3 Units	
<b>SafeBloc BR 25/xxx (2+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	330g	430g
Single Unit DIN 43880 Dimension	4 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm	
Minimum Order Quantity	3 Units	

Applicable connection configurations can be found on page 54.



Compact Multi-pole SPD  
**SafeBloc B(R) 37.5 (3+0) TCG**  
 Class I • Class II • Type 1 • Type 2

12.5 kA Series



Location of Use: Main Distribution Boards  
 Network Systems: TN-C  
 Mode of Protection: L - PEN  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

**SafeBloc B(R) 37.5/xxx (3+0) TCG**

150

275

**Electrical**

Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$		20 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$		50 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$		12.5 kA
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$		37.5 kA
Specific Energy	W/R		39 kJ/ $\Omega$
Charge	Q		6.25 As
Voltage Protection Level	$U_p$	< 1.2 kV	< 1.5 kV
Response Time	$t_A$		< 25 ns
Back-Up Fuse (if mains > 250A)			250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$		50 kA
TOV withstand 5s	$U_T$	228V	438V
Number of Ports			1

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	$M_{max}$	3.0 Nm	
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection		Yes	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$	0.25 Nm	

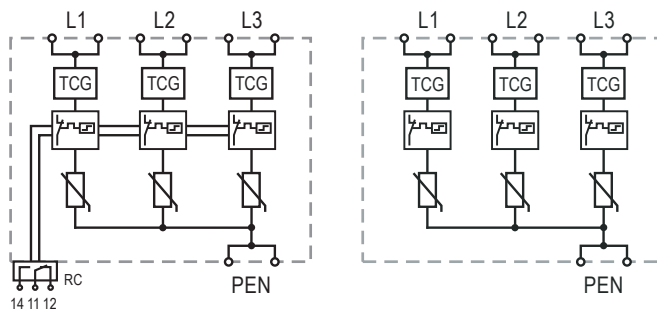
**Order Information**

Order Code	150	275
SAFELOC B 37.5/xxx (3+0) TCG	54.0513	54.0515
SAFELOC BR 37.5/xxx (3+0) TCG (with remote contacts)	54.0514	54.0516

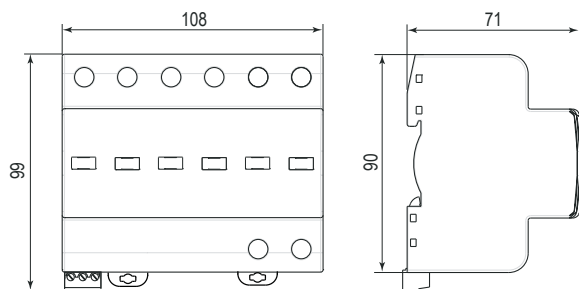
Internal Configuration

Legend

- L Line
- PEN Combined Protective Earth and Neutral
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage

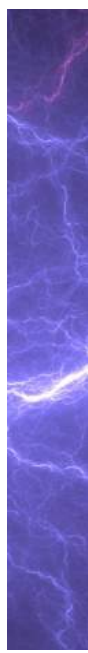


Dimensions & Packaging [mm]



Dimensions & Packaging		
<b>SafeBloc B 37.5/xxx (3+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	430g	530g
Single Unit DIN 43880 Dimension	6 TE	
Packaging Dimensions (H×W×L)	109 × 77 × 114mm	
Minimum Order Quantity	2 Units	
<b>SafeBloc BR 37.5/xxx (3+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	440g	540g
Single Unit DIN 43880 Dimension	6 TE	
Packaging Dimensions (H×W×L)	109 × 77 × 114mm	
Minimum Order Quantity	2 Units	

Applicable connection configurations can be found on page 54.





Compact Multi-pole SPD  
**SafeBloc B(R) 50 (4+0) TCG**  
 Class I • Class II • Type 1 • Type 2

12.5 kA Series



Location of Use: Main Distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

**SafeBloc B(R) 50/xxx (4+0) TCG**

150

275

**Electrical**

Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$		20 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$		50 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$		12.5 kA
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$		50 kA
Specific Energy	W/R		39 kJ/ $\Omega$
Charge	Q		6.25 As
Voltage Protection Level	$U_p$	< 1.2 kV	< 1.5 kV
Response Time	$t_A$		< 25 ns
Back-Up Fuse (if mains > 250 A)			250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$		50 kA
TOV withstand 5s	$U_T$	228V	438V
Number of Ports			1

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	$M_{max}$	3.0 Nm	
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection		Yes	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$	0.25 Nm	

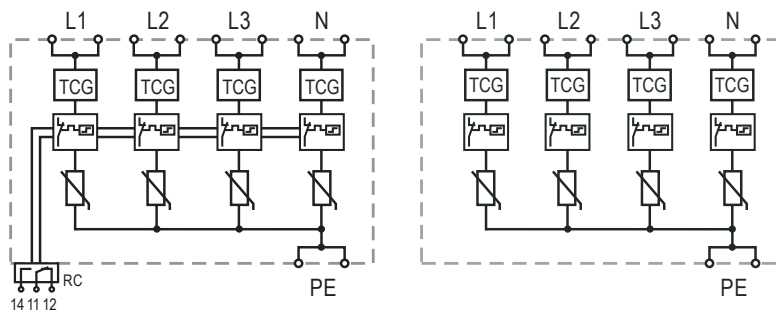
**Order Information**

Order Code	150	275
SAFELOC B 50/xxx (4+0) TCG	54.0519	54.0521
SAFELOC BR 50/xxx (4+0) TCG (with remote contacts)	54.0520	54.0522

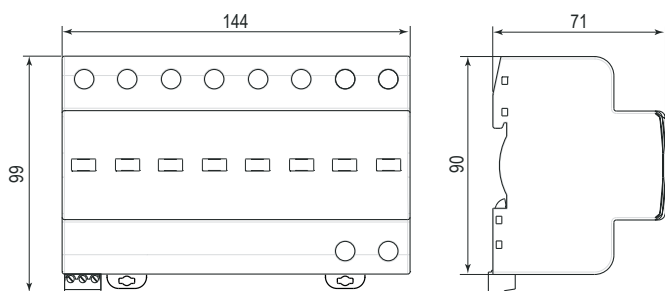
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage

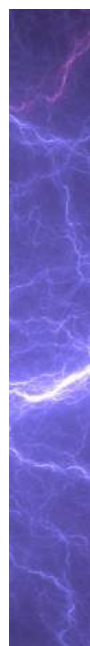


Dimensions & Packaging [mm]



Dimensions & Packaging		
<b>SafeBloc B 50/xxx (4+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	800g	1000g
Single Unit DIN 43880 Dimension	8 TE	
Packaging Dimensions (H×W×L)	109 × 77 × 148 mm	
Minimum Order Quantity	2 Units	
<b>SafeBloc BR 50/xxx (4+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	815g	1015g
Single Unit DIN 43880 Dimension	8 TE	
Packaging Dimensions (H×W×L)	109 × 77 × 148 mm	
Minimum Order Quantity	2 Units	

Applicable connection configurations can be found on page 54.



Compact Multi-pole SPD  
**SafeBloc B(R) 25 (1+1) TCG**  
 Class I • Class II • Type 1 • Type 2

**12.5 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TT  
 Mode of Protection: L-N, N-PE  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA} / 50 \text{ kA} (10/350 \mu\text{s})$   
 $I_n = 20 \text{ kA} / 50 \text{ kA} (8/20 \mu\text{s})$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

**SafeBloc B(R) 25/xxx (1+1) TCG**

**150**

**275**

**Electrical**

Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) $U_c$	150V	275V
	(N-PE) $U_c$	255V	
Nominal Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_n$	20 kA / 50 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{max}$	50 kA / 100 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{imp}$	12.5 kA / 50 kA	
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$	25 kA	
Specific Energy	(L-N)/(N-PE) W/R	39 kJ/ $\Omega$ / 625 kJ/ $\Omega$	
Charge	(L-N)/(N-PE) Q	6.25 As / 25 As	
Voltage Protection Level	(L-N)/(N-PE) $U_p$	< 1.2 kV / < 1.5 kV	< 1.5 kV / < 1.5 kV
Follow Current Interrupt Rating	(N-PE) $I_{fi}$	100 A <sub>RMS</sub>	
Response Time	(L-N)/(N-PE) $t_A$	< 25 ns / < 100 ns	
Thermal Protection	(L-N)/(N-PE)	Yes/No	
Back-Up Fuse (if mains > 250 A)		250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$	50 kA	
TOV withstand 5s	(L-N) $U_T$	228V	438V
TOV withstand 200ms	(N-PE) $U_T$	1200V / 300A	
Number of Ports		1	

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	$M_{max}$	3.0 Nm	
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Fault Indication	(L-N)/(N-PE)	Red Flag/No	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$	0.25 Nm	

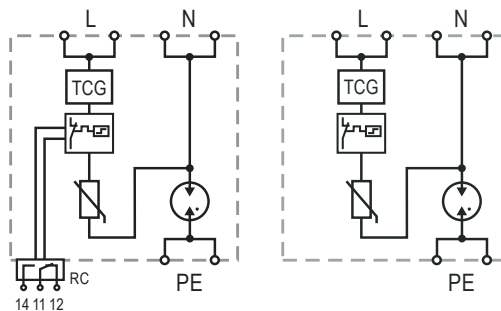
**Order Information**

Order Code		<b>150</b>	<b>275</b>
SAFELOC B 25/xxx (1+1) TCG		54.0525	54.0527
SAFELOC B(R) 25/xxx (1+1) TCG (with remote contacts)		54.0526	54.0528

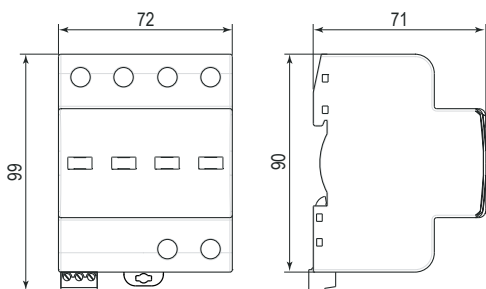
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage

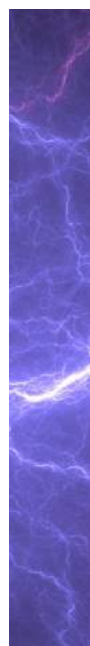


Dimensions & Packaging [mm]



Dimensions & Packaging		
<b>SafeBloc B 25/xxx (1+1) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	280g	315g
Single Unit DIN 43880 Dimension	4 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm	
Minimum Order Quantity	3 Units	
<b>SafeBloc BR 25/xxx (1+1) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	285g	320g
Single Unit DIN 43880 Dimension	4 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm	
Minimum Order Quantity	3 Units	

Applicable connection configurations can be found on page 55.



Compact Multi-pole SPD  
**SafeBloc B(R) 50 (3+1) TCG**  
 Class I • Class II • Type 1 • Type 2

12.5 kA Series



Location of Use: Main Distribution Boards  
 Network Systems: TT  
 Mode of Protection: L-N, N-PE  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA} / 50 \text{ kA} (10/350 \mu\text{s})$   
 $I_n = 20 \text{ kA} / 50 \text{ kA} (8/20 \mu\text{s})$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: NO Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

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

275

**Electrical**

Nominal AC Voltage (50/60 Hz)	$U_o$	230V
Maximum Continuous Operating Voltage (AC)	(L-N) $U_c$	275V
	(N-PE) $U_c$	255V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_n$	20 kA / 50 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{max}$	50 kA / 100 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{imp}$	12.5 kA / 50 kA
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$	50 kA
Specific Energy	(L-N)/(N-PE) W/R	39 kJ/ $\Omega$ / 625 kJ/ $\Omega$
Charge	(L-N)/(N-PE) Q	6.25 As / 25 As
Voltage Protection Level	(L-N)/(N-PE) $U_p$	< 1.5 kV / < 1.5 kV
Follow Current Interrupt Rating	(N-PE) $I_{fi}$	100 A <sub>RMS</sub>
Response Time	(L-N)/(N-PE) $t_A$	< 25 ns / < 100 ns
Back-Up Fuse (if mains > 250 A)		250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$	50 kA
TOV withstand 5s	(L-N) $U_T$	438V
TOV withstand 200ms	(N-PE) $U_T$	1200V / 300 A
Number of Ports		1

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection	(L-N)/(N-PE)	Yes/No
Fault Indication	(L-N)/(N-PE)	Red Flag/NO
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>
RC Terminal Screw Torque	$M_{max}$	0.25 Nm

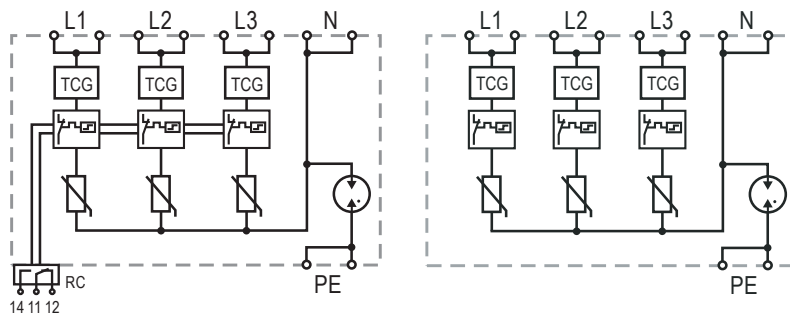
**Order Information**

Order Code	275
SAFELOC B 50/xxx (3+1) TCG	54.0533
SAFELOC B(R) 50/xxx (3+1) TCG (with remote contacts)	54.0534

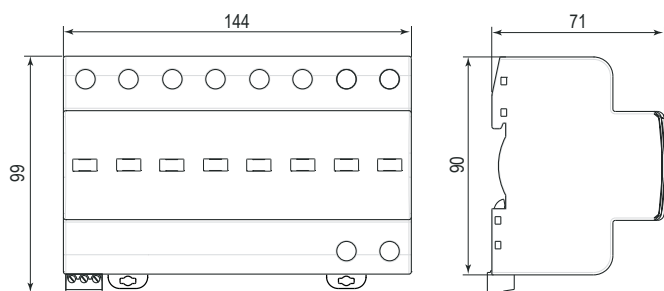
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



Dimensions & Packaging	
<b>SafeBloc B 50/xxx (3+1) TCG</b>	<b>275</b>
Single Unit Weight	900 g
Single Unit DIN 43880 Dimension	8 TE
Packaging Dimensions (H×W×L)	109 × 77 × 148 mm
Minimum Order Quantity	2 Units
<b>SafeBloc BR 50/xxx (3+1) TCG</b>	<b>275</b>
Single Unit Weight	910 g
Single Unit DIN 43880 Dimension	8 TE
Packaging Dimensions (H×W×L)	109 × 77 × 148 mm
Minimum Order Quantity	2 Units

Applicable connection configurations can be found on page 55.

Compact Single Pole SPD  
**SafeBloc B(R) 25 (1+0) TCG**  
 Class I • Class II • Type 1 • Type 2

25kA Series



Location of Use: Main Distribution Boards  
 Network Systems: TN-S, TN-C, TT (only L-N)  
 Mode of Protection: L-PE, N-PE, L-PEN, L-N  
 Surge Ratings:  $I_{imp} = 25 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 25 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

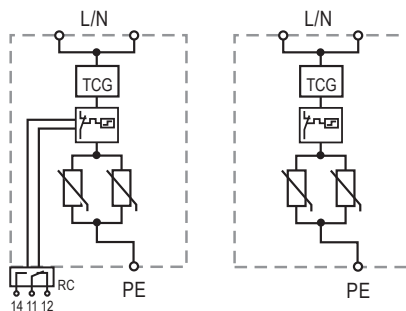
**Technical Data**

SafeBloc B(R) 25/xxx (1+0) TCG	150	275	
<b>Electrical</b>			
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	25 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	100 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$	25 kA	
Specific Energy	W/R	156 kJ/ $\Omega$	
Charge	Q	12.5 As	
Voltage Protection Level	$U_p$	< 1.2 kV	< 1.5 kV
Response Time	$t_A$	< 25 ns	
Back-Up Fuse (if mains > 250 A)		250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$	50 kA	
TOV withstand 5s	$U_T$	228V	438V
Number of Ports		1	
<b>Mechanical &amp; Environmental</b>			
Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	$M_{max}$	3.0 Nm	
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection		Yes	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$	0.25 Nm	
<b>Order Information</b>			
Order Code	150	275	
SAFELOC B 25/xxx (1+0) TCG	54.0537	54.0539	
SAFELOC BR 25/xxx (1+0) TCG (with remote contacts)	54.0538	54.0540	

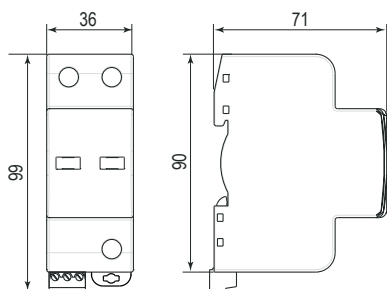
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage

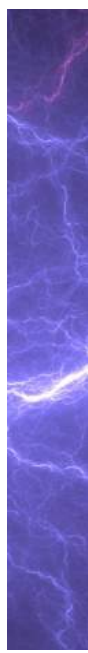


Dimensions & Packaging [mm]



Dimensions & Packaging		
<b>SafeBloc B 25/xxx (1+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	275g	325g
Single Unit DIN 43880 Dimension	2 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm	
Minimum Order Quantity	7 Units	
<b>SafeBloc BR 25/xxx (1+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	280g	330g
Single Unit DIN 43880 Dimension	2 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm	
Minimum Order Quantity	7 Units	

Applicable connection configurations can be found on pages 56-57..





Compact Multi-pole SPD  
**SafeBloc B(R) 50 (2+0) TCG**  
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_{imp} = 25 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 25 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

**SafeBloc B(R) 50/xxx (2+0) TCG**

150

275

**Electrical**

Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$		25 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$		100 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$		25 kA
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$		50 kA
Specific Energy	W/R		156 kJ/ $\Omega$
Charge	Q		12.5 As
Voltage Protection Level	$U_p$	< 1.2 kV	< 1.5 kV
Response Time	$t_A$		< 25 ns
Back-Up Fuse (if mains > 250 A)			250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$		50 kA
TOV withstand 5s	$U_T$	228V	438V
Number of Ports			1

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	$M_{max}$	3.0 Nm	
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection		Yes	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$	0.25 Nm	

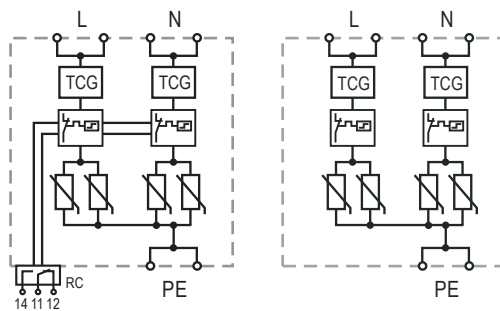
**Order Information**

Order Code		150	275
SAFELOC B 50/xxx (2+0) TCG		54.0544	54.0546
SAFELOC BR 50/xxx (2+0) TCG (with remote contacts)		54.0545	54.0547

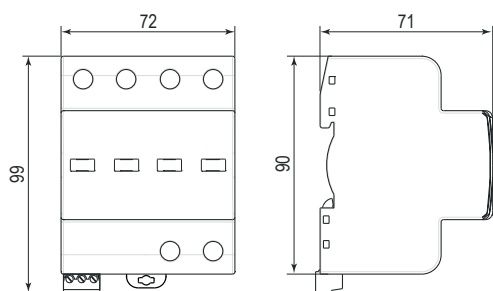
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage

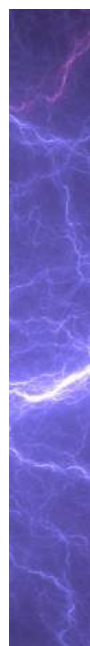


Dimensions & Packaging [mm]



Dimensions & Packaging		
<b>SafeBloc B 50/xxx (2+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	520g	620g
Single Unit DIN 43880 Dimension	4 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm	
Minimum Order Quantity	3 Units	
<b>SafeBloc BR 50/xxx (2+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	530g	630g
Single Unit DIN 43880 Dimension	4 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm	
Minimum Order Quantity	3 Units	

Applicable connection configurations can be found on page 54.



Compact Multi-pole SPD  
**SafeBloc B(R) 75 (3+0) TCG**  
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards  
 Network Systems: TN-C  
 Mode of Protection: L - PEN  
 Surge Ratings:  $I_{imp} = 25 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 25 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

**SafeBloc B(R) 75/xxx (3+0) TCG**

150

275

**Electrical**

Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$		25 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$		100 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$		25 kA
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$		75 kA
Specific Energy	W/R		156 kJ/ $\Omega$
Charge	Q		12.5 As
Voltage Protection Level	$U_p$	< 1.2 kV	< 1.5 kV
Response Time	$t_A$		< 25 ns
Back-Up Fuse (if mains > 250 A)			250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$		50 kA
TOV withstand 5s	$U_T$	228V	438V
Number of Ports			1

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	$M_{max}$	3.0 Nm	
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection		Yes	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$	0.25 Nm	

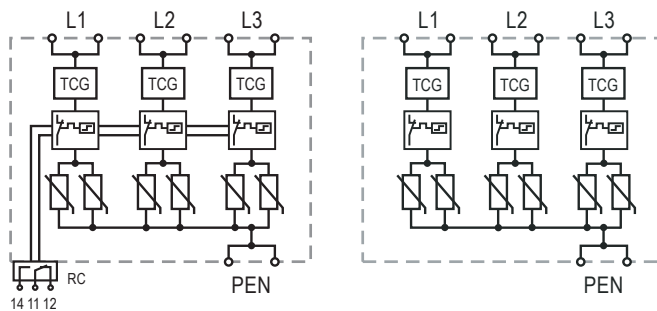
**Order Information**

Order Code		150	275
SAFELOC B 75/xxx (3+0) TCG		54.0550	54.0552
SAFELOC BR 75/xxx (3+0) TCG (with remote contacts)		54.0551	54.0553

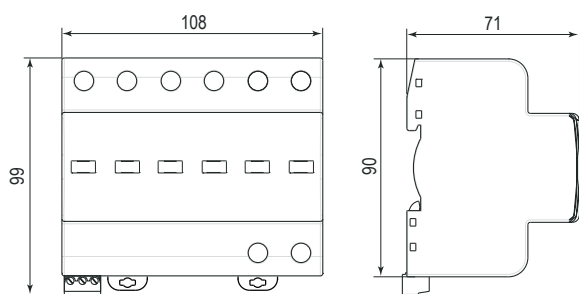
Internal Configuration

Legend

- L Line
- PEN Combined Protective Earth and Neutral
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



Dimensions & Packaging		
<b>SafeBloc B 75/xxx (3+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	780g	930g
Single Unit DIN 43880 Dimension	6 TE	
Packaging Dimensions (H×W×L)	109 × 77 × 114mm	
Minimum Order Quantity	2 Units	
<b>SafeBloc BR 75/xxx (3+0) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	790g	940g
Single Unit DIN 43880 Dimension	6 TE	
Packaging Dimensions (H×W×L)	109 × 77 × 114mm	
Minimum Order Quantity	2 Units	

Applicable connection configurations can be found on page 54.

Compact Multi-pole SPD  
**SafeBloc B(R) 100 (4+0) TCG**  
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_{imp} = 25 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 25 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

**SafeBloc B(R) 100/xxx (4+0) TCG**

150

275

**Electrical**

Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$		25 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$		100 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$		25 kA
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$		100 kA
Specific Energy	W/R		156 kJ/ $\Omega$
Charge	Q		12.5 As
Voltage Protection Level	$U_p$	< 1.2 kV	< 1.5 kV
Response Time	$t_A$		< 25 ns
Back-Up Fuse (if mains > 250 A)			250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$		50 kA
TOV withstand 5s	$U_T$	228	438V
Number of Ports			1

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	$M_{max}$	3.0 Nm	
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection		Yes	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$	0.25 Nm	

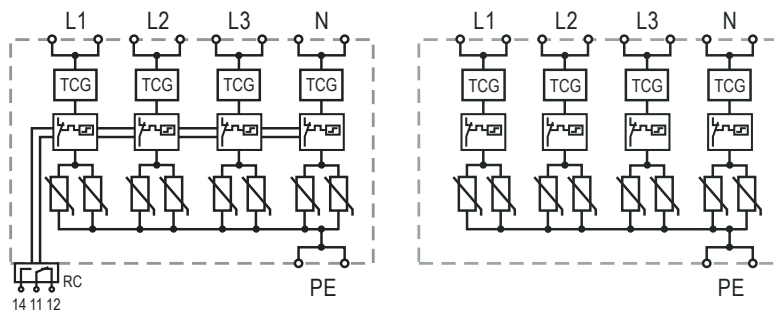
**Order Information**

Order Code		150	275
SAFELOC B 100/xxx (4+0) TCG		54.0556	54.0558
SAFELOC B(R) 100/xxx (4+0) TCG (with remote contacts)		54.0557	54.0559

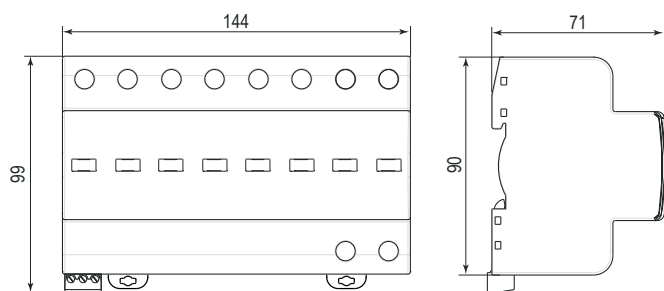
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



Dimensions & Packaging

	150	275
<b>SafeBloc B 100/xxx (4+0) TCG</b>		
Single Unit Weight	1040g	1240g
Single Unit DIN 43880 Dimension	8 TE	
Packaging Dimensions (H×W×L)	109 × 77 × 148mm	
Minimum Order Quantity	2 Units	
<b>SafeBloc BR 100/xxx (4+0) TCG</b>		
Single Unit Weight	1055g	1255g
Single Unit DIN 43880 Dimension	8 TE	
Packaging Dimensions (H×W×L)	109 × 77 × 148mm	
Minimum Order Quantity	2 Units	

Applicable connection configurations can be found on page 54.

Compact Multi-pole SPD  
**SafeBloc B(R) 50 (1+1) TCG**  
 Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards  
 Network Systems: TT  
 Mode of Protection: L-N, N-PE  
 Surge Ratings:  $I_{imp} = 25 \text{ kA} / 50 \text{ kA} (10/350 \mu\text{s})$   
 $I_n = 25 \text{ kA} / 50 \text{ kA} (8/20 \mu\text{s})$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

**SafeBloc B(R) 50/xxx (1+1) TCG**

150

275

**Electrical**

Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) $U_c$	150V	275V
	(N-PE) $U_c$	255V	
Nominal Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_n$	25 kA / 50 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{max}$	100 kA / 100 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{imp}$	25 kA / 50 kA	
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$	50 kA	
Specific Energy	(L-N)/(N-PE) W/R	156 kJ/ $\Omega$ / 625 kJ/ $\Omega$	
Charge	(L-N)/(N-PE) Q	12.5 As / 25 As	
Voltage Protection Level	(L-N)/(N-PE) $U_p$	< 1.2 kV / 1.5 kV	< 1.5 kV / 1.5 kV
Follow Current Interrupt Rating	(N-PE) $I_{fi}$	100 A <sub>RMS</sub>	
Response Time	(L-N)/(N-PE) $t_A$	< 25 ns / < 100 ns	
Back-Up Fuse (if mains > 250 A)		250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$	50 kA	
TOV withstand 5s	(L-N) $U_T$	228V	438V
TOV withstand 200ms	(N-PE) $U_T$	1200V / 300 A	
Number of Ports		1	

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	$M_{max}$	3.0 Nm	
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection	(L-N)/(N-PE)	Yes/No	
Fault Indication	(L-N)/(N-PE)	Red Flag/No	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$	0.25 Nm	

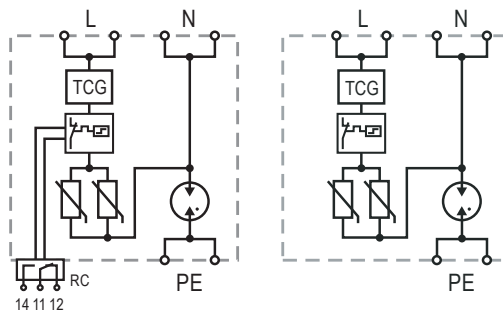
**Order Information**

Order Code		150	275
SAFELOC B 50/xxx (1+1) TCG		54.0562	54.0564
SAFELOC BR 50/xxx (1+1) TCG (with remote contacts)		54.0563	54.0565

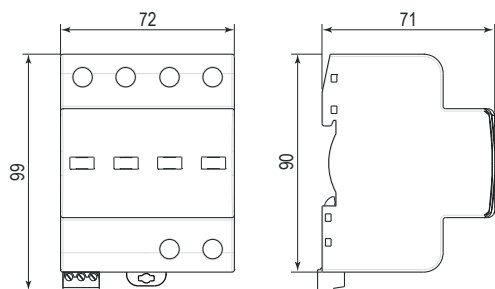
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage

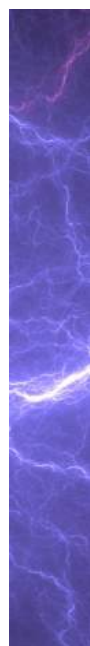


Dimensions & Packaging [mm]



Dimensions & Packaging		
<b>SafeBloc B 50/xxx (1+1) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	475g	515g
Single Unit DIN 43880 Dimension	4 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm	
Minimum Order Quantity	3 Units	
<b>SafeBloc BR 50/xxx (1+1) TCG</b>	<b>150</b>	<b>275</b>
Single Unit Weight	485g	525g
Single Unit DIN 43880 Dimension	4 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm	
Minimum Order Quantity	3 Units	

Applicable connection configurations can be found on page 55.





# Compact Multi-pole SPD SafeBloc B(R) 100 (3+1) TCG

Class I • Class II • Type 1 • Type 2

25 kA Series



Location of Use: Main Distribution Boards  
 Network Systems: TT  
 Mode of Protection: L-N, N-PE  
 Surge Ratings:  $I_{imp} = 25 \text{ kA} / 100 \text{ kA} (10/350 \mu\text{s})$   
 $I_n = 25 \text{ kA} / 100 \text{ kA} (8/20 \mu\text{s})$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

### SafeBloc B(R) 100/xxx (3+1) TCG

275

#### Electrical

Nominal AC Voltage (50/60 Hz)	$U_o$	230V
Maximum Continuous Operating Voltage (AC)	(L-N) $U_c$	275V
	(N-PE) $U_c$	255V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_n$	25 kA/100 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{max}$	100 kA/100 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{imp}$	25 kA/100 kA
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$	100 kA
Specific Energy	(L-N)/(N-PE) W/R	156 kJ/ $\Omega$ /2.5 MJ/ $\Omega$
Charge	(L-N)/(N-PE) Q	12.5 As/50 As
Voltage Protection Level	(L-N)/(N-PE) $U_p$	< 1.5 kV / < 1.5 kV
Follow Current Interrupt Rating	(N-PE) $I_{fi}$	100 A <sub>RMS</sub>
Response Time	(L-N)/(N-PE) $t_A$	< 25 ns / < 100 ns
Back-Up Fuse (if mains > 250 A)		250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$	50 kA
TOV withstand 5s	(L-N) $U_T$	438V
TOV withstand 200ms	(N-PE) $U_T$	1200V/300A
Number of Ports		1

#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection	(L-N)/(N-PE)	Yes/No
Fault Indication		Red Flag/No
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>
RC Terminal Screw Torque	$M_{max}$	0.25 Nm

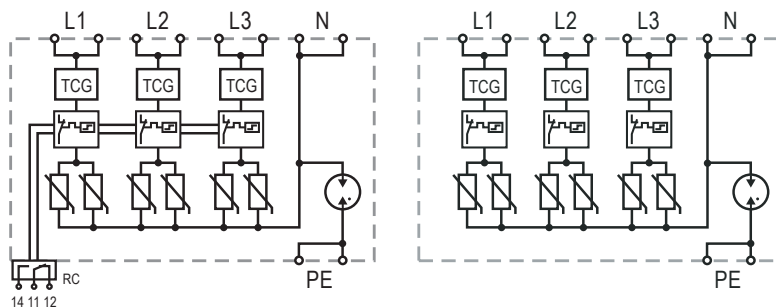
#### Order Information

Order Code	275
SAFEbloc B 100/xxx (3+1) TCG	54.0570
SAFEbloc BR 100/xxx (3+1) TCG (with remote contacts)	54.0571

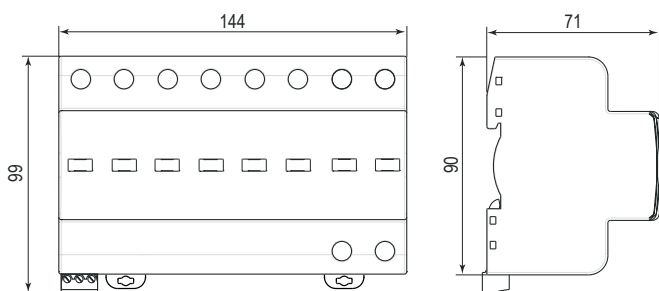
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



Dimensions & Packaging

<b>SafeBloc B 100/xxx (3+1) TCG</b>	<b>275</b>
Single Unit Weight	1135g
Single Unit DIN 43880 Dimension	8 TE
Packaging Dimensions (H×W×L)	109 × 77 × 148mm
Minimum Order Quantity	2 Units
<b>SafeBloc B(R) 100/xxx (3+1) TCG</b>	<b>275</b>
Single Unit Weight	1150g
Single Unit DIN 43880 Dimension	8 TE
Packaging Dimensions (H×W×L)	109 × 77 × 148mm
Minimum Order Quantity	2 Units

Applicable connection configurations can be found on page 55.

Compact Single Pole SPD  
**SafeTube B 50**  
 Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards  
 Network Systems: TT  
 Mode of Protection: N-PE  
 Surge Ratings:  $I_{imp} = 50 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 50 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy GDT  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

SafeTube B 50/xxx

255 V

### Electrical

Nominal AC Voltage (50/60 Hz)	$U_o$	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	255V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	50 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	100 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$	50 kA
Specific Energy	W/R	625 kJ/ $\Omega$
Charge	Q	25 As
Voltage Protection Level	$U_p$	< 1.5 kV
Follow Current Interrupt Rating	$I_{fi}$	100 A <sub>RMS</sub>
Response Time	$t_A$	< 100 ns
TOV withstand 200ms	$U_T$	1200V/300A
Number of Ports		1

### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0

### Order Information

Order Code		255
SAFETUBE B 50/xxx		54.0506

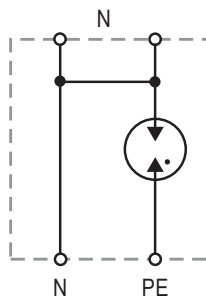
## SafeTube B 50

### Internal Configuration

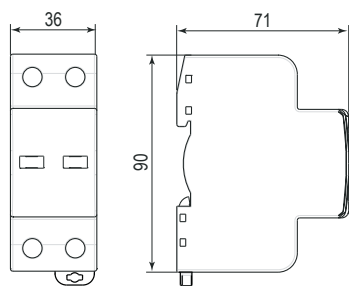
#### Legend

N Neutral

PE Protective Earth



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

<b>SafeTube B 50/xxx</b>	<b>255</b>
Single Unit Weight	180 g
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (H × W × L)	109 × 77 × 42 mm
Minimum Order Quantity	7 Units

Applicable connection configurations can be found on page 57.

Compact Single Pole SPD  
**SafeTube B 100**  
 Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards  
 Network Systems: TT  
 Mode of Protection: N-PE  
 Surge Ratings:  $I_{imp} = 100 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 100 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy GDT  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

SafeTube B 100/xxx

255

### Electrical

Nominal AC Voltage (50/60 Hz)	$U_o$	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	255V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	100 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	100 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$	100 kA
Specific Energy	W/R	2.5 MJ/ $\Omega$
Charge	Q	50 As
Voltage Protection Level	$U_p$	< 1.5 kV
Follow Current Interrupt Rating	$I_{fi}$	100 A <sub>RMS</sub>
Response Time	$t_A$	< 100 ns
TOV withstand 200ms	$U_T$	1200V/300A
Number of Ports		1

### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0

### Order Information

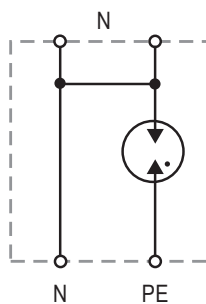
Order Code		255
SAFETUBE B 100/xxx		54.0543

## SafeTube B 100

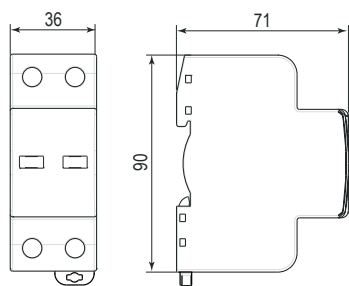
### Internal Configuration

#### Legend

N Neutral  
PE Protective Earth



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

<b>SafeTube B 100/xxx</b>	<b>255</b>
Single Unit Weight	240 g
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm
Minimum Order Quantity	7 Units

Applicable connection configurations can be found on page 57.

Compact Single Pole SPD for Wind Turbine Systems  
**SafeBloc B(R) 12.5 (1+0) WT TCG**  
 Class I • Class II • Type 1 • Type 2

**12.5 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TN-S, TN-C, TT (only L-N)  
 Mode of Protection: L-PE, N-PE, L-PEN, L-N  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA}$  (10/350  $\mu\text{s}$ )  
 $I_n = 12.5 \text{ kA}$  (8/20  $\mu\text{s}$ )  
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

**SafeBloc B(R) 12.5/xxx (1+0) WT TCG**

**750**

**Electrical**

Nominal AC Voltage (50/60 Hz)	$U_o$	600V
Maximum Continuous Operating Voltage (AC)	$U_c$	750V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	12.5 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	40 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$	12.5 kA
Specific Energy	W/R	39 kJ/ $\Omega$
Charge	Q	6.25 As
Voltage Protection Level	$U_p$	< 2.6 kV
Response Time	$t_A$	< 25 ns
Back-Up Fuse (if mains > 250A)		250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$	50 kA
TOV withstand 5s	$U_T$	1000V
Number of Ports		1

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>
RC Terminal Screw Torque	$M_{max}$	0.25 Nm

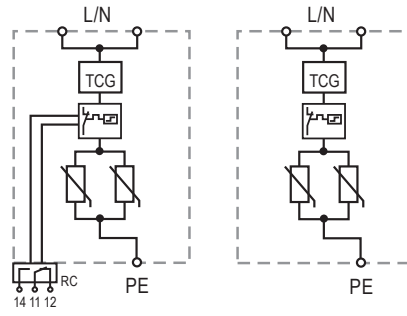
**Order Information**

Order Code		<b>750</b>
SAFELOC B 12.5/xxx WT TCG		54.0590
SAFELOC BR 12.5/xxx WT TCG (with remote contacts)		54.0591

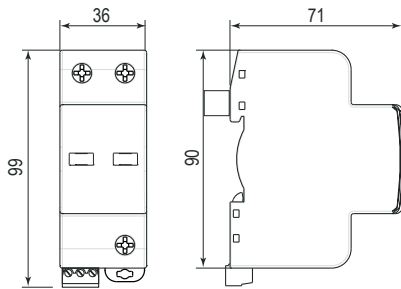
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



Dimensions & Packaging	
<b>SafeBloc B 12.5/xxx (1+0) WT TCG</b>	<b>750</b>
Single Unit Weight	435 g
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm
Minimum Order Quantity	7 Units
<b>SafeBloc BR 12.5/xxx (1+0) WT TCG</b>	<b>750</b>
Single Unit Weight	440 g
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm
Minimum Order Quantity	7 Units

Applicable connection configurations can be found on page 58.





Compact Single Pole SPD for Wind Turbine Systems  
**SafeBloc B(R) 25 (1+0) WT TCG**  
 Class I • Class II • Type 1 • Type 2

**25 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TN-S, TN-C, TT (only L-N)  
 Mode of Protection: L-PE, N-PE, L-PEN, L-N  
 Surge Ratings:  $I_{imp} = 25 \text{ kA}$  (10/350  $\mu\text{s}$ )  
 $I_n = 25 \text{ kA}$  (8/20  $\mu\text{s}$ )  
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: High TOV Immunity  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

**SafeBloc B(R) 25/xxx (1+0) WT TCG**

**750**

**Electrical**

Nominal AC Voltage (50/60 Hz)	$U_o$	600V
Maximum Continuous Operating Voltage (AC)	$U_c$	750V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	25 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	80 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$	25 kA
Specific Energy	W/R	156 kJ/ $\Omega$
Charge	Q	12.5 As
Voltage Protection Level	$U_p$	< 3.0 kV
Response Time	$t_A$	< 25 ns
Back-Up Fuse (if mains > 250 A)		250 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$	50 kA
TOV withstand 5s	$U_T$	1000V
Number of Ports		1

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>
RC Terminal Screw Torque	$M_{max}$	0.25 Nm

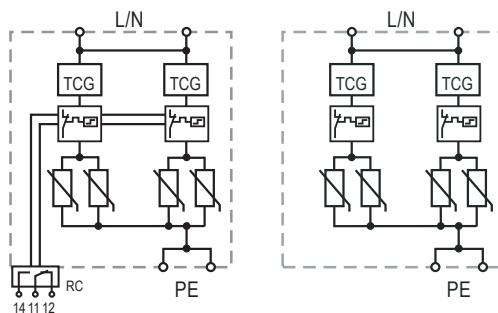
**Order Information**

Order Code		<b>750</b>
SAFE BLOC B 25/xxx (1+0) WT TCG		54.0594
SAFE BLOC BR 25/xxx (1+0) WT TCG (with remote contacts)		54.0595

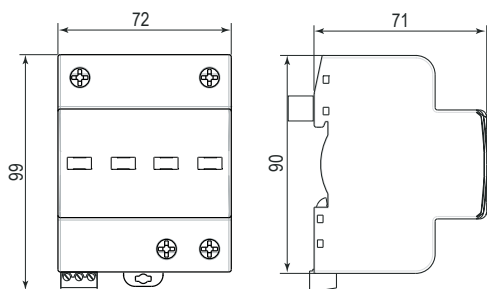
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage



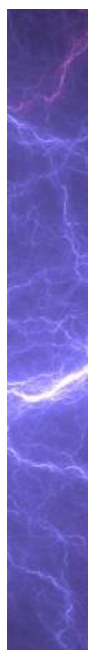
Dimensions & Packaging [mm]



Dimensions & Packaging

SafeBloc B 25/xxx (1+0) WT TCG	
Single Unit Weight	750
Single Unit DIN 43880 Dimension	800 g
Packaging Dimensions (H x W x L)	4 TE
Minimum Order Quantity	109 x 77 x 80 mm
	3 Units
SafeBloc BR 25/xxx (1+0) WT TCG	
Single Unit Weight	750
Single Unit DIN 43880 Dimension	810 g
Packaging Dimensions (H x W x L)	4 TE
Minimum Order Quantity	109 x 77 x 80 mm
	3 Units

Applicable connection configurations can be found on page 58.



# DC Compact Multi-Pole SPD for Photovoltaic Systems **12.5 kA Series**

## **PV SafeBloc B(R) 12.5 TCG**

Type 1 • Type 2



Location of Use: Photovoltaic Systems - DC Side  
 Mode of Protection: (+)-PE, (-)-PE, (+)-(-)  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA (10/350 } \mu\text{s)}$   
 $I_n = 12.5 \text{ kA (8/20 } \mu\text{s)}$   
 EN Category: Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: Patented Current Limiting  
 Leakage Current: No Leakage Current  
 Housing: Compact Design  
 Compliance: EN 50539-11:2013

### Technical Data

PV SafeBloc B(R) 12.5/xxxx TCG

1000

#### Electrical

Open Circuit Voltage	$U_{oc \text{ STC}}$	830V
Maximum Continuous Operating Voltage (DC)	$U_{CPV}$	1000V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	12.5 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	40 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$	12.5 kA
Specific Energy	W/R	39 kJ/ $\Omega$
Charge	Q	6.25 As
Total Discharge Current	(8/20 $\mu\text{s}$ ) $I_{total}$	40 kA
	(10/350 $\mu\text{s}$ ) $I_{total}$	12.5 kA
Voltage Protection Level	(+)-(-) $U_p$	< 5.2 kV
	(+)/(-)-PE $U_p$	< 2.6 kV
Short Circuit Current Rating	$I_{SCPV}$	1000 A
Response Time	$t_A$	< 25 ns
Number of Ports		1

#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>
RC Terminal Screw Torque	$M_{max}$	0.25 Nm

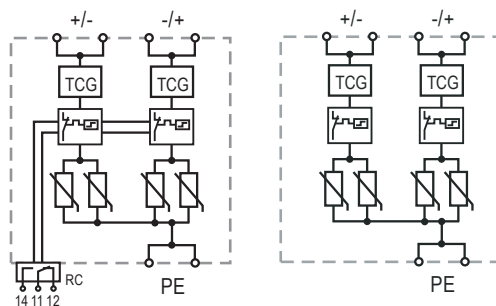
#### Order Information

Order Code		1000
PV SAFE BLOC B 12.5/xxxx TCG		54.0578
PV SAFE BLOC BR 12.5/xxxx TCG (with remote contacts)		54.0579

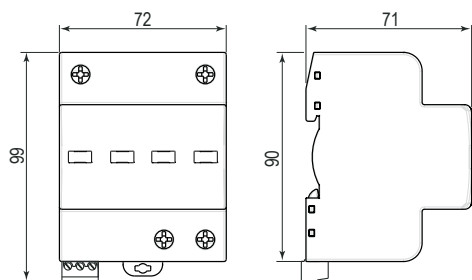
Internal Configuration

Legend

- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



Dimensions & Packaging

<b>PV SafeBloc B12.5/xxxx TCG</b>	<b>1000</b>
Single Unit Weight	800 g
Single Unit DIN 43880 Dimension	4 TE
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm
Minimum Order Quantity	3 Units
<b>PV SafeBloc BR 12.5/xxxx TCG</b>	<b>1000</b>
Single Unit Weight	810 g
Single Unit DIN 43880 Dimension	4 TE
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm
Minimum Order Quantity	3 Units

Applicable connection configurations can be found on page 58.

# DC Compact Multi-Pole SPD for Photovoltaic Systems **12.5 kA Series**

## **PV SafeBloc B(R) 12.5 Y TCG**

### Type 1 • Type 2



**Location of Use:** Photovoltaic Systems - DC Side  
**Mode of Protection:** (+)-PE, (-)-PE, (+)-(-)  
**Surge Ratings:**  $I_{imp} = 12.5 \text{ kA (10/350 } \mu\text{s)}$   
 $I_n = 12.5 \text{ kA (8/20 } \mu\text{s)}$   
**EN Category:** Type 1, 2  
**Protective Elements:** High Energy MOV and GDT  
**Safety:** Patented Current Limiting  
**Leakage Current:** No Leakage Current  
**Housing:** Compact Design  
**Compliance:** EN 50539-11:2013

### Technical Data

**PV SafeBloc B(R) 12.5/xxxx Y TCG**

**1000**

#### Electrical

Open Circuit Voltage	$U_{oc \text{ STC}}$	830V
Maximum Continuous Operating Voltage (DC)	$U_{CPV}$	1000V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	12.5 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	40 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$	12.5 kA
Specific Energy	W/R	39 kJ/ $\Omega$
Charge	Q	6.25 As
Total Discharge Current	(8/20 $\mu\text{s}$ ) $I_{total}$	40 kA
	(10/350 $\mu\text{s}$ ) $I_{total}$	12.5 kA
Voltage Protection Level	(+)-(-) $U_p$	< 4.6 kV
	(+)/(-)-PE $U_p$	< 4.6 kV
Short Circuit Current Rating	$I_{SCPV}$	1000 A
Response Time	$t_A$	< 25 ns
Number of Ports		1

#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>
RC Terminal Screw Torque	$M_{max}$	0.25 Nm

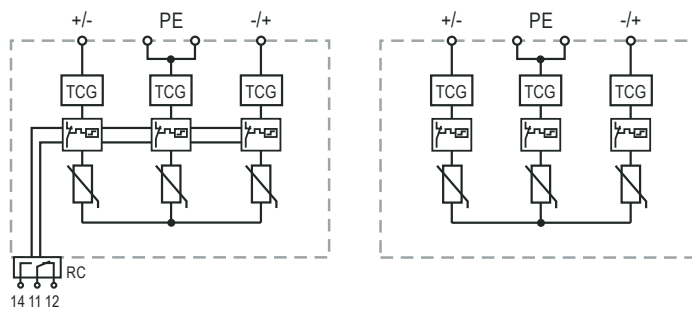
#### Order Information

Order Code	<b>1000</b>
PV SAFEbloc B 12.5/xxxx Y TCG	54.0582
PV SAFEbloc BR 12.5/xxxx Y TCG (with remote contacts)	54.0583

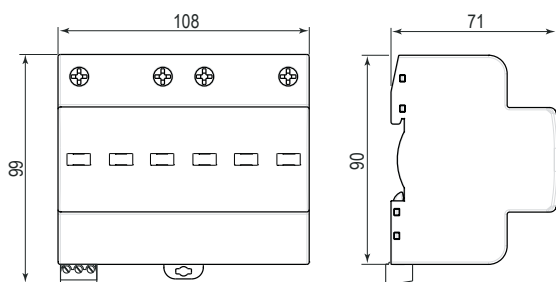
Internal Configuration

Legend

- PE Protective Earth
- RC Remote Contacts Optional
- TCG Thermal Control Function with No Leakage

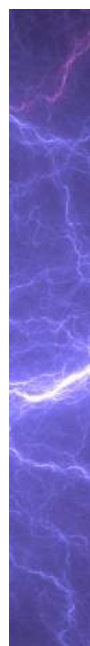


Dimensions & Packaging [mm]



Dimensions & Packaging	
<b>PV SafeBloc B 12.5/xxxx Y TCG</b>	<b>1000</b>
Single Unit Weight	710 g
Single Unit DIN 43880 Dimension	6 TE
Packaging Dimensions (H×W×L)	109 × 77 × 114 mm
Minimum Order Quantity	2 Units
<b>PV SafeBloc BR 12.5/xxxx Y TCG</b>	<b>1000</b>
Single Unit Weight	720 g
Single Unit DIN 43880 Dimension	6 TE
Packaging Dimensions (H×W×L)	109 × 77 × 114 mm
Minimum Order Quantity	2 Units

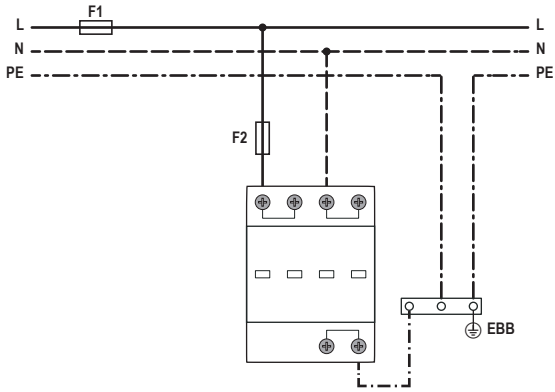
Applicable connection configurations can be found on page 58.



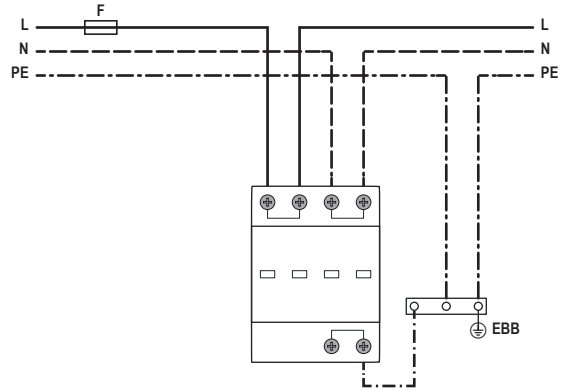
# Compact Multi-pole SPD Connection Configurations

## SafeBloc B(R) TCG 12.5kA & 25kA Series

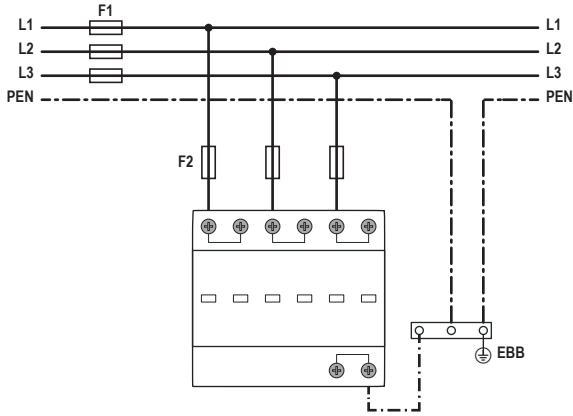
TN-S (Single-phase, 2+0)  
T Connection



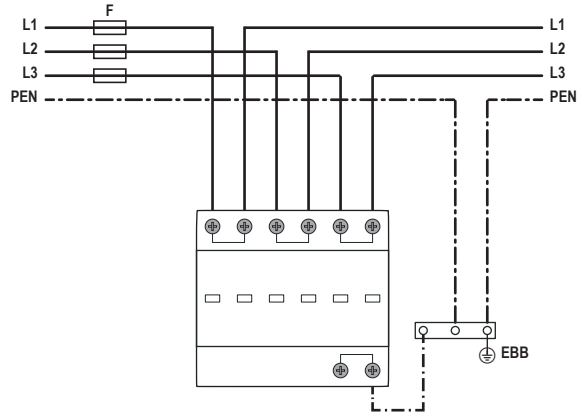
TN-S (Three-phase, 2+0)  
V Connection



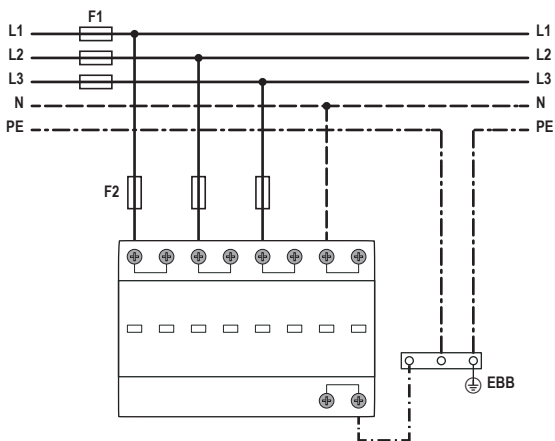
TN-C (Three-phase, 3+0)  
T Connection



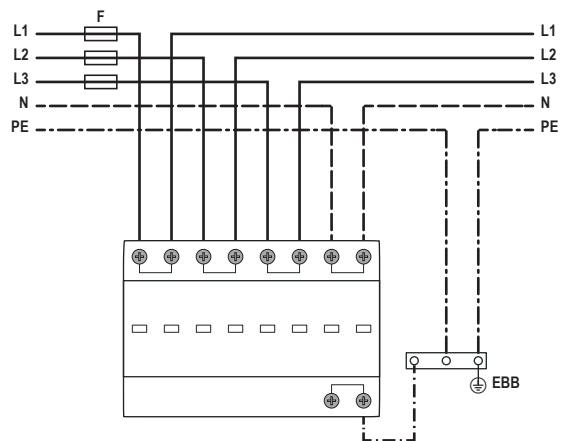
TN-C (Three-phase, 3+0)  
V Connection



TN-S (Three-phase, 4+0)  
T Connection



TN-S (Three-phase, 4+0)  
V Connection



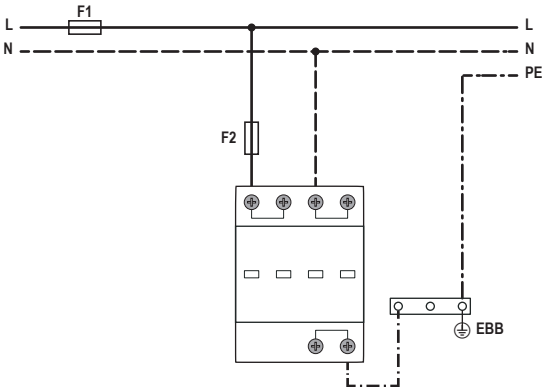
**Back-up Fuse**

- F1 > 250 A gG → — F2 = 250 A gG
- F1 ≤ 250 A gG → ~~— F2~~
- F ≤ 100 A gG

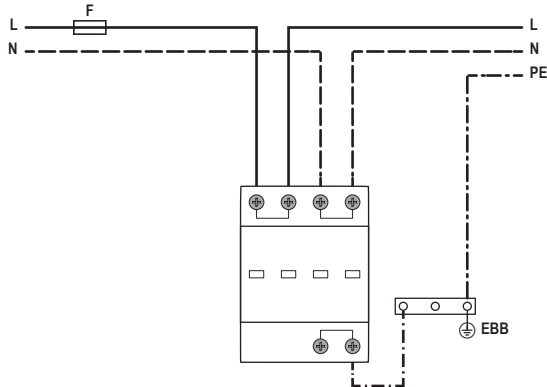
# Compact Multi-pole SPD Connection Configurations

## SafeBloc B(R) TCG 12.5kA & 25kA Series

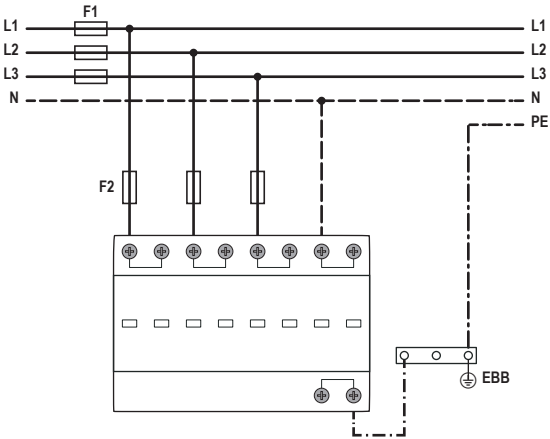
TT (Single-phase, 1+1)  
T Connection



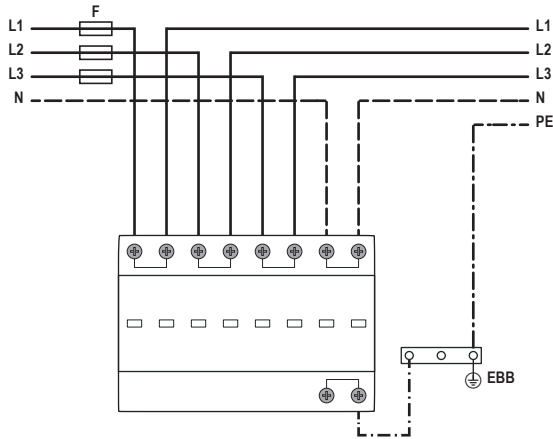
TT (Single-phase, 1+1)  
V Connection



TT (Three-phase, 3+1)  
T Connection

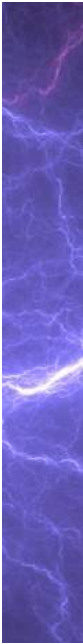


TT (Three-phase, 3+1)  
V Connection



**Back-up Fuse**

- F1 > 250 A gG → — F2 = 250 A gG
- F1 ≤ 250 A gG → ~~— F2~~
- F ≤ 100 A gG



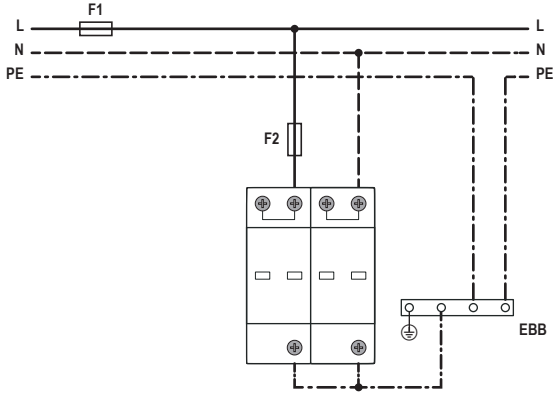


# Compact Single Pole SPD Connection Configurations

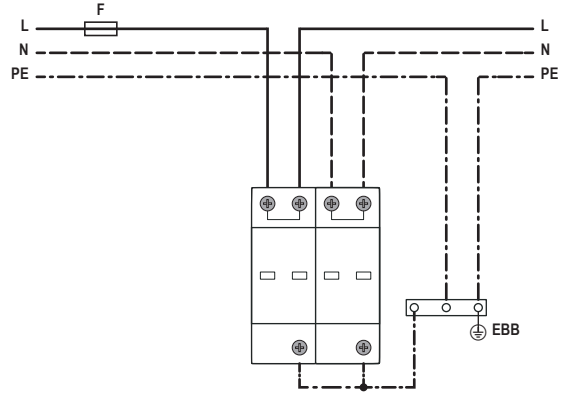
## SafeBloc B(R) TCG 12.5kA & 25kA Series

## SafeTube B 50 & SafeTube B 100 Series

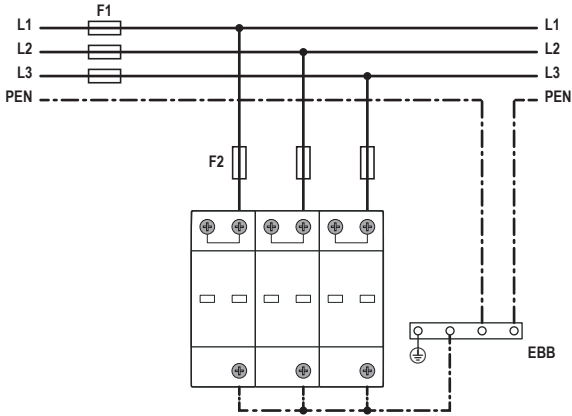
TN-S (Single-phase, 2+0)  
T Connection



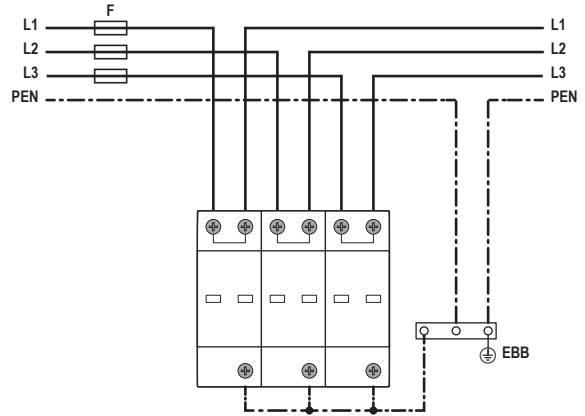
TN-S (Three-phase, 2+0)  
V Connection



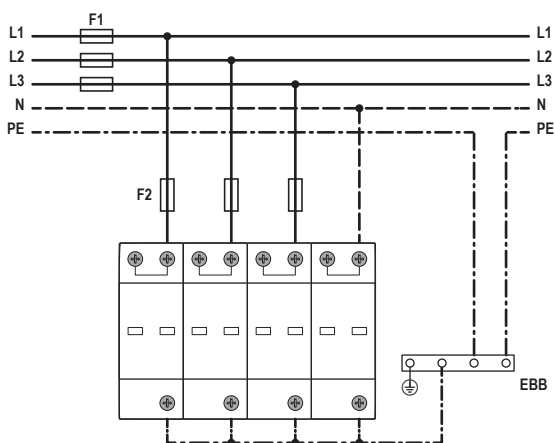
TN-C (Three-phase, 3+0)  
T Connection



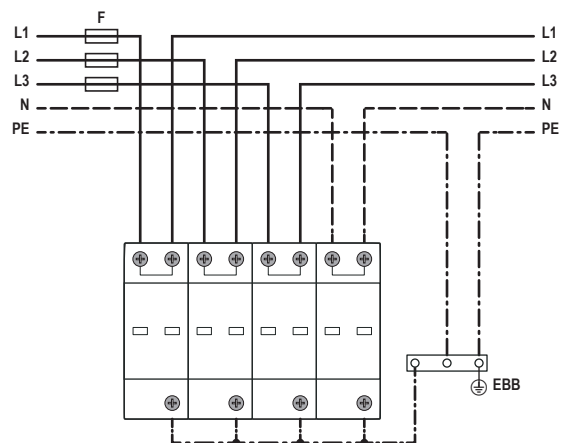
TN-C (Three-phase, 3+0)  
V Connection



TN-S (Three-phase, 4+0)  
T Connection



TT (Three-phase, 4+0)  
V Connection



**Back-up Fuse**

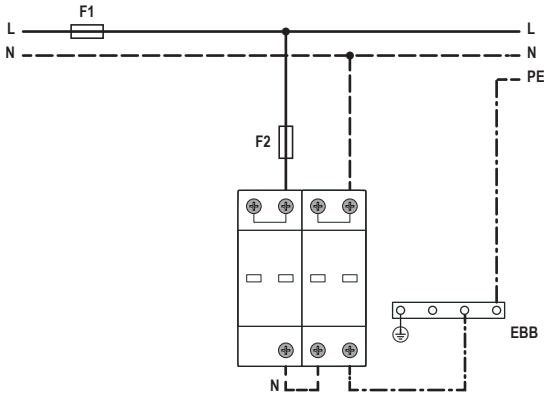
- F1 > 250 A gG → — F2 = 250 A gG
- F1 ≤ 250 A gG → ~~— F2~~
- F ≤ 100 A gG

# Compact Single Pole SPD Connection Configurations

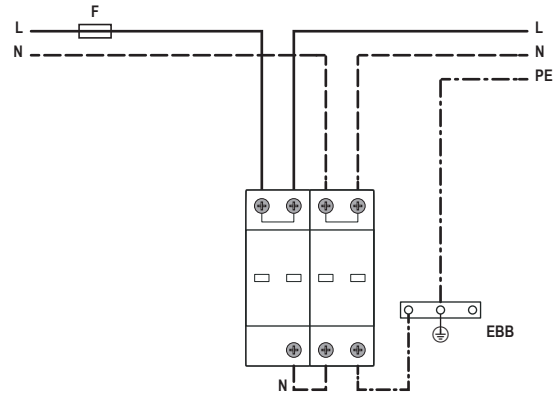
## SafeBloc B(R) TCG 12.5kA & 25kA Series

## SafeTube B 50 & SafeTube B 100 Series

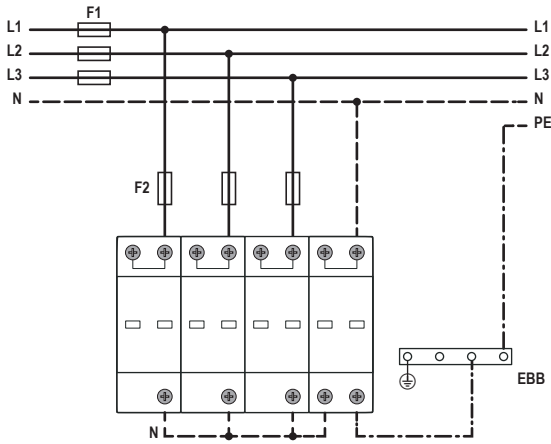
TT (Single-phase, 1+1)  
T Connection



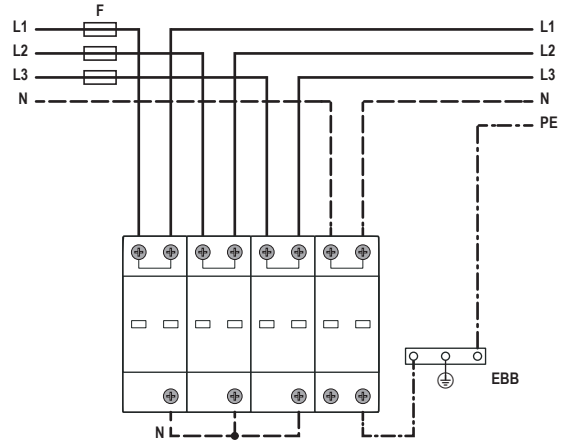
TT (Single-phase, 1+1)  
V Connection



TT (Three-phase, 3+1)  
T Connection



TT (Three-phase, 3+1)  
V Connection



### Back-up Fuse

- F1 > 250 A gG → — F2 = 250 A gG
- F1 ≤ 250 A gG → ~~— F2~~
- F ≤ 100 A gG

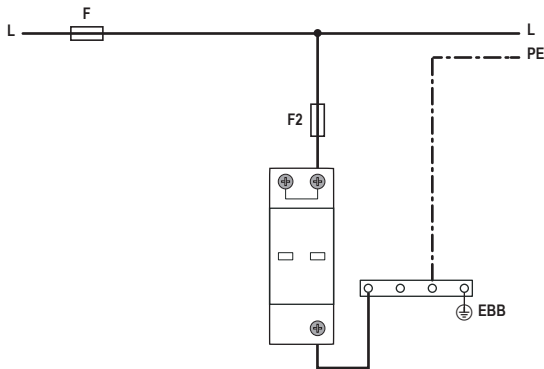


## WT Compact Single Pole SPD Connection Configurations

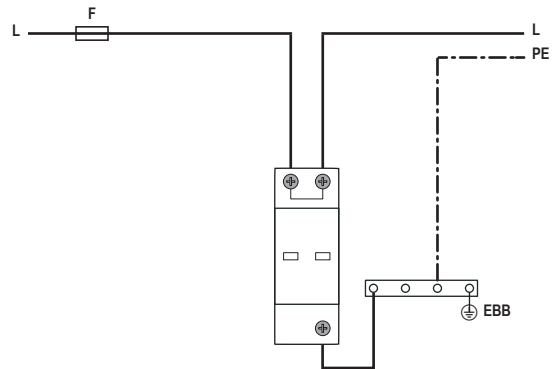
### SafeBloc B(R) WT TCG Series

#### SafeBloc B(R) 12.5 WT TCG

T Connection

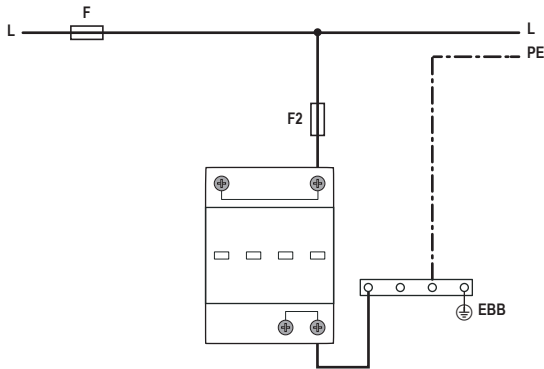


V Connection

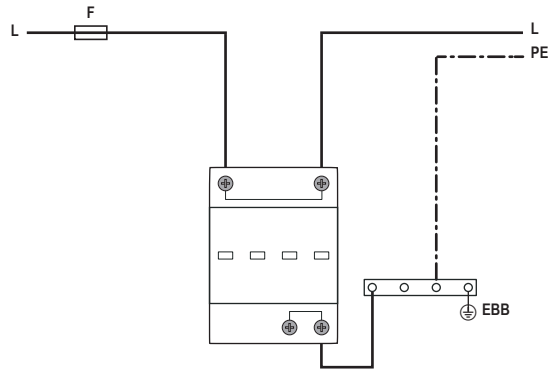


#### SafeBloc B(R) 25 WT TCG

T Connection



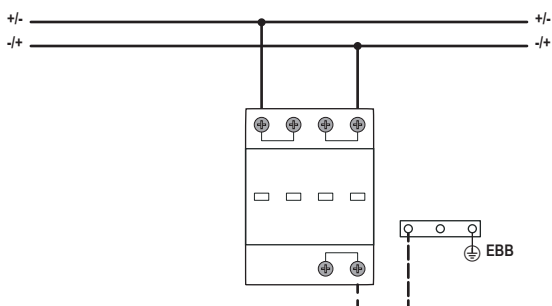
V Connection



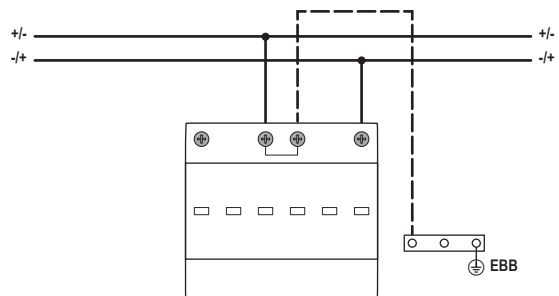
## DC Compact Multi-pole SPD Connection Configurations

### PV SafeBloc B(R) & PV SafeBloc B(R) Y TCG Series

#### PV SafeBloc B(R) 12.5 TCG

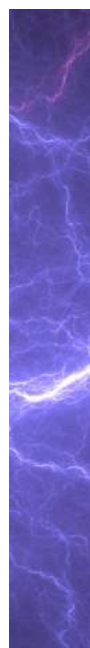
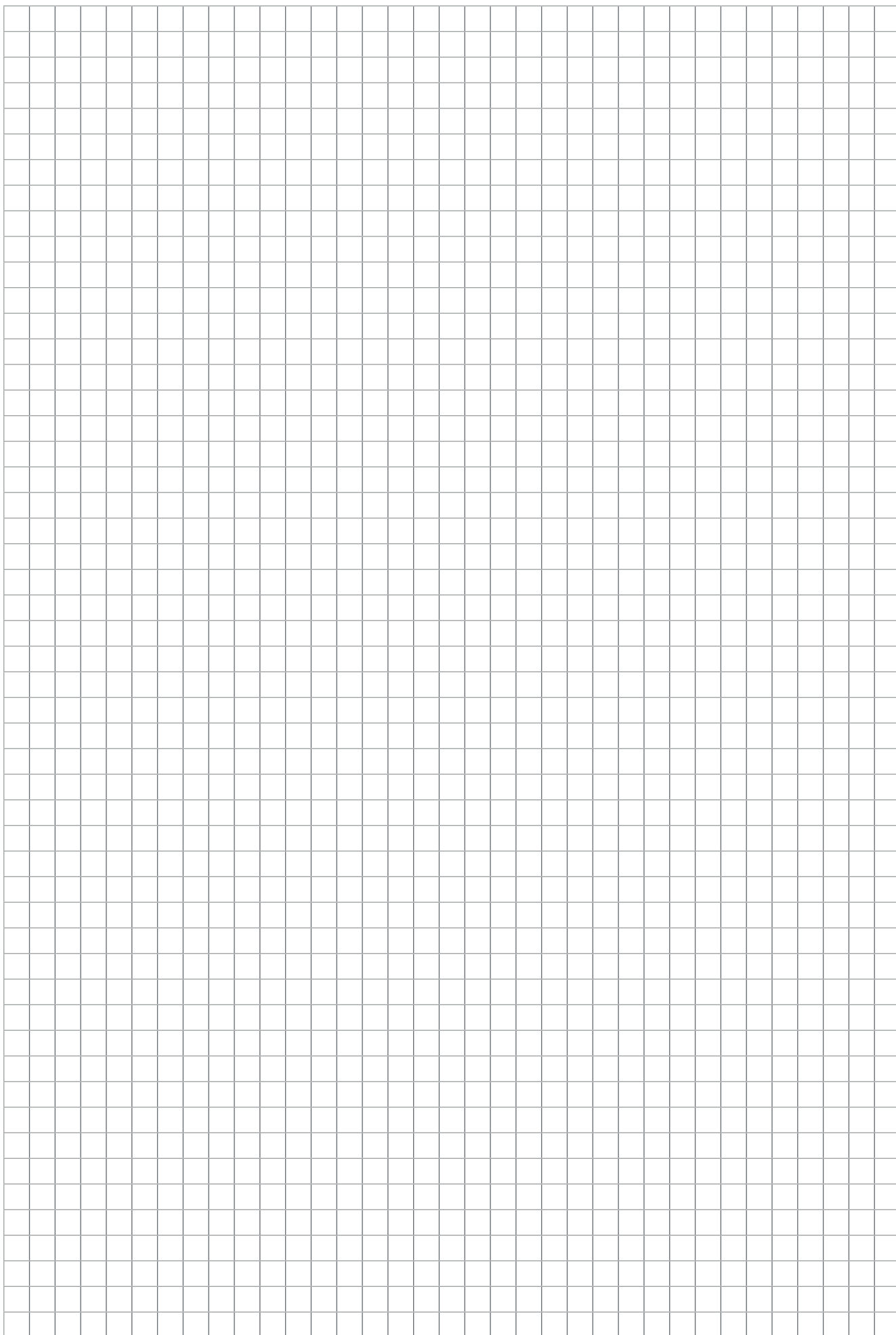


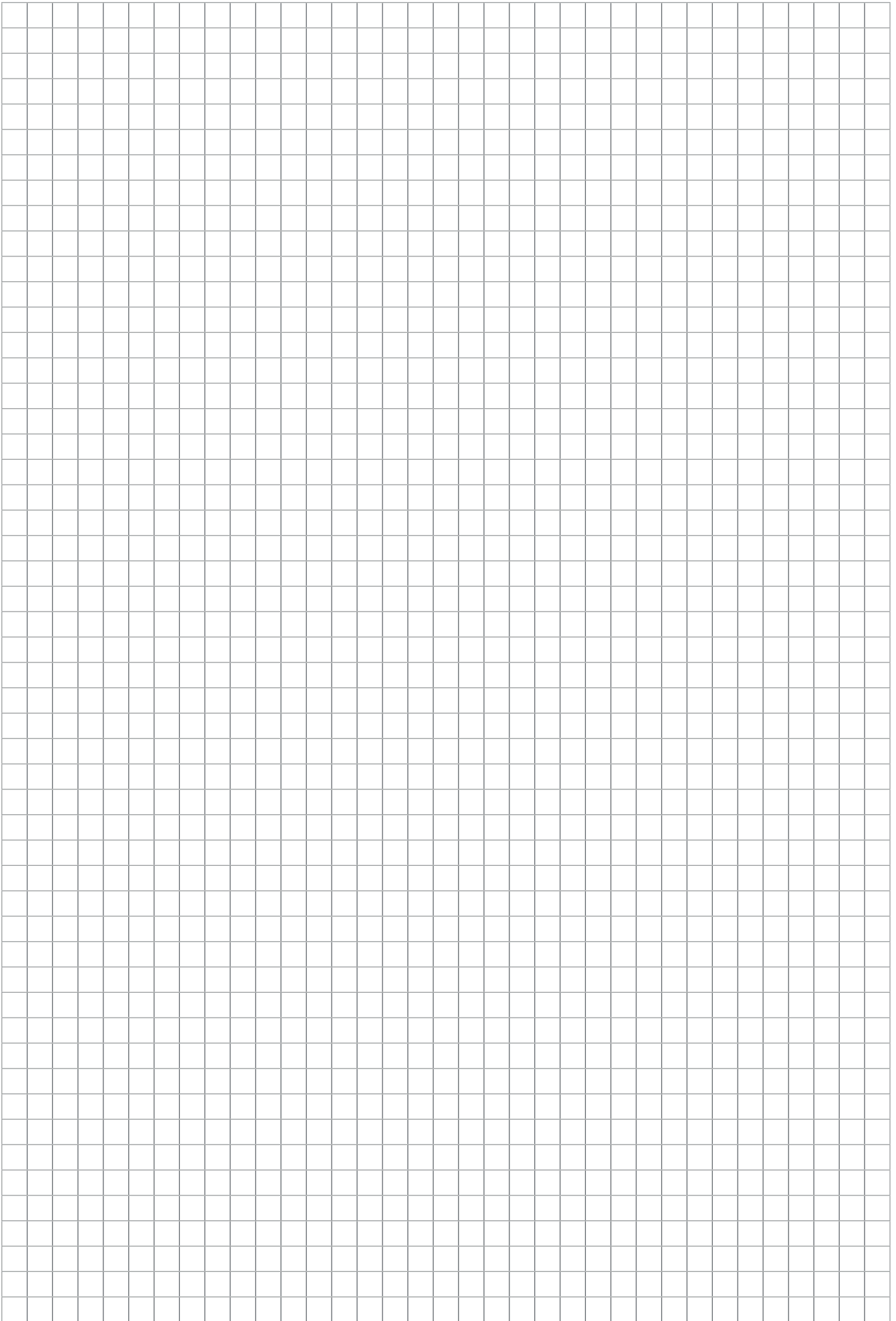
#### PV SafeBloc B(R) 12.5 Y TCG



#### Back-up Fuse

- F1 > 250 A gG → — F2 = 250 A gG
- F1 ≤ 250 A gG → ~~— F2~~
- F ≤ 100 A gG





## Compact Single Pole & Multi-pole Surge Protective Devices (SPDs)



### ProBloc B, ProBloc BR & ProTube B

The ProBloc and ProTube 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 0<sub>A</sub>-2 per IEC 62305, and protect from overvoltages, surges and transients in accordance to IEC/EN 61643-11.

The ProBloc Compact series is available with both single and multi-pole housing designs and consists of a high performance paired varistors combination, each with separate disconnect mechanisms.

ProTube features a single pole compact housing design with a high energy encapsulated gas discharge tube (GDT) solution. Raycap's GDT technology applications are ideal for galvanic separation between the N and PE conductors in a 1+1 or 3+1 power distribution network.

- ProBloc B & BR 12.5 (1+0)
- ProBloc B & BR 25 (2+0)
- ProBloc B & BR 37.5 (3+0)
- ProBloc B & BR 50 (4+0)
- ProBloc B & BR 25 (1+1)
- ProBloc B & BR 50 (3+1)
- ProBloc B & BR 25 (1+0)
- ProBloc B & BR 50 (2+0)
- ProBloc B & BR 75 (3+0)
- ProBloc B & BR 100 (4+0)
- ProBloc B & BR 50 (1+1)
- ProBloc B & BR 100 (3+1)
- ProTube B 50
- ProTube B 100



Compact Single Pole SPD  
**ProBloc B(R) 12.5 (1+0)**  
 Class I • Class II • Type 1 • Type 2

**12.5 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TN-S, TN-C, TT (only L-N)  
 Mode of Protection: L-PE, N-PE, L-PEN, L-N  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

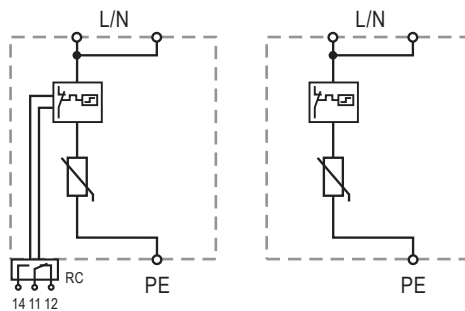
**Technical Data**

ProBloc B(R) 12.5/xxx (1+0)		150	275	320	440
<b>Electrical</b>					
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			20 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$			50 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$			12.5 kA	
Specific Energy	W/R			39 kJ/ $\Omega$	
Charge	Q			6.25 As	
Voltage Protection Level	$U_p$	< 1.0 kV	< 1.5 kV	< 1.5 kV	< 1.98 kV
Response Time	$t_A$			< 25 ns	
Back-Up Fuse (if mains > 250A)				250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$			50 kA	
TOV withstand 5s	$U_T$	174V	335V	335V	585V
Number of Ports			1		
<b>Mechanical &amp; Environmental</b>					
Temperature Range	$T_a$			-40 °C to +85 °C	
Permissible Humidity	RH			5%...95%	
Terminal Screw Torque	$M_{max}$			3.0 Nm	
Conductor Cross Section (max)				35mm <sup>2</sup> (solid) / 25mm <sup>2</sup> (stranded)	
Mounting				35 mm DIN Rail, EN 60715	
Degree of Protection				IP 20	
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection				Yes	
Fault Indication				Red Flag	
Remote Contacts (RC)				Optional	
RC Switching Capacity				AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)				1.5mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$			0.25 Nm	
<b>Order Information</b>					
Order Code		150	275	320	440
PROBLOC B 12.5/xxx (1+0)		56.0500	56.0502	56.0504	56.0508
PROBLOC BR 12.5/xxx (1+0) (with remote contacts)		56.0501	56.0503	56.0505	56.0509

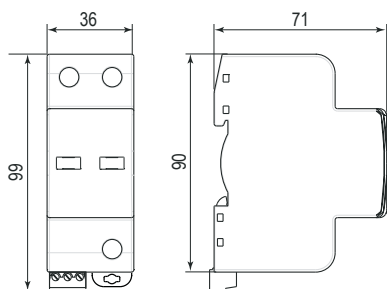
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging				
<b>ProBloc B 12.5/xxx (1+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	150g	200g	200g	300g
Single Unit DIN 43880 Dimension	2 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm			
Minimum Order Quantity	7 Units			
<b>ProBloc BR 12.5/xxx (1+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	155g	205g	205g	305g
Single Unit DIN 43880 Dimension	2 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm			
Minimum Order Quantity	7 Units			

Applicable connection configurations can be found on pages 93-94.





Compact Multi-pole SPD  
**ProBloc B(R) 25 (2+0)**  
 Class I • Class II • Type 1 • Type 2

**12.5 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

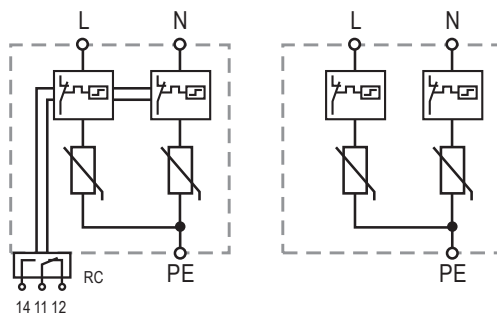
**Technical Data**

ProBloc B(R) 25/xxx (2+0)		150	275	320	440
<b>Electrical</b>					
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			20 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$			50 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$			12.5 kA	
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$			25 kA	
Specific Energy	W/R			39 kJ/ $\Omega$	
Charge	Q			6.25 As	
Voltage Protection Level	$U_p$	< 1.0 kV	< 1.5 kV	< 1.5 kV	< 1.98 kV
Response Time	$t_A$			< 25 ns	
Back-Up Fuse (if mains > 250 A)				250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$			50 kA	
TOV withstand 5s	$U_T$	174V	335V	335V	585V
Number of Ports				1	
<b>Mechanical &amp; Environmental</b>					
Temperature Range	$T_a$			-40 °C to +85 °C	
Permissible Humidity	RH			5%...95%	
Terminal Screw Torque	$M_{max}$			3.0 Nm	
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting				35 mm DIN Rail, EN 60715	
Degree of Protection				IP 20	
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection				Yes	
Fault Indication				Red Flag	
Remote Contacts (RC)				Optional	
RC Switching Capacity				AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$			0.25 Nm	
<b>Order Information</b>					
Order Code		150	275	320	440
PROBLOC B 25/xxx (2+0)		56.0512	56.0514	56.0516	56.0520
PROBLOC BR 25/xxx (2+0) (with remote contacts)		56.0513	56.0515	56.0517	56.0521

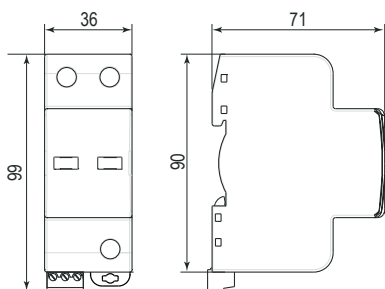
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging				
<b>ProBloc B 25/xxx (2+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	185g	225g	225g	375g
Single Unit DIN 43880 Dimension	2 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm			
Minimum Order Quantity	7 Units			
<b>ProBloc BR 25/xxx (2+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	190g	230g	230g	380g
Single Unit DIN 43880 Dimension	2 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm			
Minimum Order Quantity	7 Units			

Applicable connection configurations can be found on page 93.



Compact Multi-pole SPD  
**ProBloc B(R) 37.5 (3+0)**  
 Class I • Class II • Type 1 • Type 2

**12.5 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TN-C  
 Mode of Protection: L - PEN  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

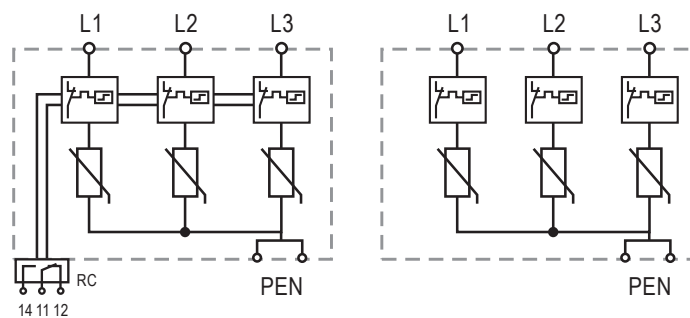
**Technical Data**

ProBloc B(R) 37.5/xxx (3+0)		150	275	320	440
<b>Electrical</b>					
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			20 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$			50 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$			12.5 kA	
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$			37.5 kA	
Specific Energy	W/R			39 kJ/ $\Omega$	
Charge	Q			6.25 As	
Voltage Protection Level	$U_p$	< 1.0 kV	< 1.5 kV	< 1.5 kV	< 1.98 kV
Response Time	$t_A$			< 25 ns	
Back-Up Fuse (if mains > 250 A)				250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$			50 kA	
TOV withstand 5s	$U_T$	174V	335V	335V	585V
Number of Ports				1	
<b>Mechanical &amp; Environmental</b>					
Temperature Range	$T_a$			-40 °C to +85 °C	
Permissible Humidity	RH			5%...95%	
Terminal Screw Torque	$M_{max}$			3.0 Nm	
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting				35 mm DIN Rail, EN 60715	
Degree of Protection				IP 20	
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection				Yes	
Fault Indication				Red Flag	
Remote Contacts (RC)				Optional	
RC Switching Capacity				AC: 250V/0.5 A; 125V/3 A	
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$			0.25 Nm	
<b>Order Information</b>					
Order Code		150	275	320	440
PROBLOC B 37.5/xxx (3+0)		56.0522	56.0524	56.0526	56.0530
PROBLOC BR 37.5/xxx (3+0) (with remote contacts)		56.0523	56.0525	56.0527	56.0531

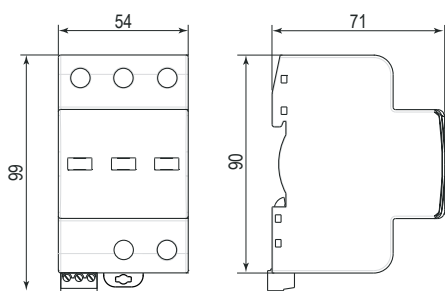
Internal Configuration

Legend

- L Line
- N Neutral
- PEN Combined Protective Earth and Neutral
- RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging				
<b>ProBloc B 37.5/xxx (3+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	290 g	330 g	330 g	480 g
Single Unit DIN 43880 Dimension	3 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 60 mm			
Minimum Order Quantity	5 Units			
<b>ProBloc BR 37.5/xxx (3+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	300 g	330 g	330 g	490 g
Single Unit DIN 43880 Dimension	3 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 60 mm			
Minimum Order Quantity	5 Units			

Applicable connection configurations can be found on page 90.

Compact Multi-pole SPD  
**ProBloc B(R) 50 (4+0)**  
 Class I • Class II • Type 1 • Type 2

**12.5 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

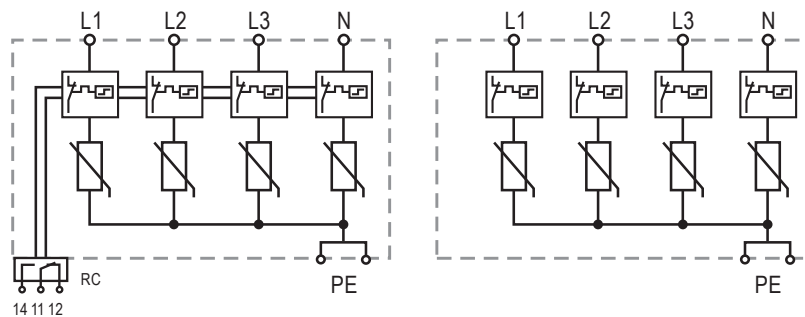
**Technical Data**

ProBloc B(R) 50/xxx (4+0)		150	275	320	440
<b>Electrical</b>					
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			20 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$			50 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$			12.5 kA	
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$			50 kA	
Specific Energy	W/R			39 kJ/ $\Omega$	
Charge	Q			6.25 As	
Voltage Protection Level	$U_p$	< 1.0 kV	< 1.5 kV	< 1.5 kV	< 1.98 kV
Response Time	$t_A$			< 25 ns	
Back-Up Fuse (if mains > 250 A)				250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$			50 kA	
TOV withstand 5s	$U_T$	174V	335V	335V	335V
Number of Ports				1	
<b>Mechanical &amp; Environmental</b>					
Temperature Range	$T_a$			-40 °C to +85 °C	
Permissible Humidity	RH			5%...95%	
Terminal Screw Torque	$M_{max}$			3.0 Nm	
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting				35 mm DIN Rail, EN 60715	
Degree of Protection				IP 20	
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection				Yes	
Fault Indication				Red Flag	
Remote Contacts (RC)				Optional	
RC Switching Capacity				AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$			0.25 Nm	
<b>Order Information</b>					
Order Code		150	275	320	440
PROBLOC B 50/xxx (4+0)		56.0532	56.0534	56.0536	56.0540
PROBLOC BR 50/xxx (4+0) (with remote contacts)		56.0533	56.0535	56.0537	56.0541

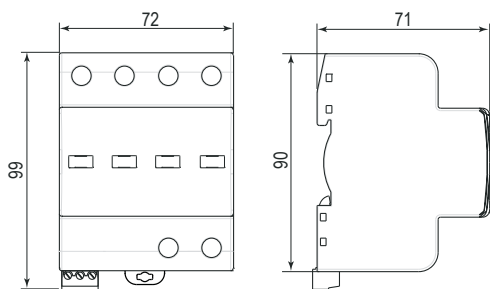
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging				
<b>ProBloc B 50/xxx (4+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	550 g	590 g	590 g	740 g
Single Unit DIN 43880 Dimension	4 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm			
Minimum Order Quantity	3 Units			
<b>ProBloc BR 50/xxx (4+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	560 g	560 g	600 g	750 g
Single Unit DIN 43880 Dimension	4 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm			
Minimum Order Quantity	3 Units			

Applicable connection configurations can be found on page 90.

Compact Multi-pole SPD  
**ProBloc B(R) 25 (1+1)**  
 Class I • Class II • Type 1 • Type 2

**12.5 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TT  
 Mode of Protection: L - N, N-PE  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA} / 50 \text{ kA} (10/350 \mu\text{s})$   
 $I_n = 20 \text{ kA} / 50 \text{ kA} (8/20 \mu\text{s})$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

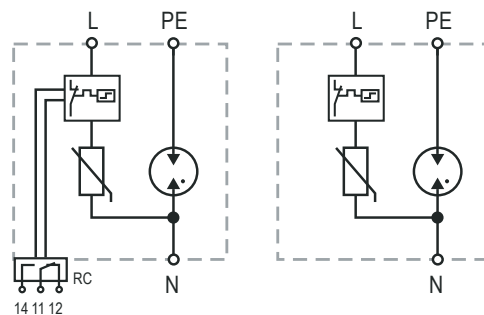
**Technical Data**

ProBloc B(R) 25/xxx (1+1)		150	275	320	440
<b>Electrical</b>					
Nominal AC Voltage (50/60Hz)	$U_o$	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) $U_c$	150V	275V	320V	440V
(N-PE)	$U_c$		255V		
Nominal Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_n$		20 kA / 50 kA		
Maximum Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{max}$		50 kA / 100 kA		
Impulse Discharge Current (10/350 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{imp}$		12.5 kA / 50 kA		
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$		25 kA		
Specific Energy	(L-N)/(N-PE) W/R		39 kJ/ $\Omega$ / 625 kJ/ $\Omega$		
Charge	(L-N)/(N-PE) Q		6.25 As / 25 As		
Voltage Protection Level	(L-N)/(N-PE) $U_p$	< 1.0 kV / < 1.5 kV	< 1.5 kV / < 1.5 kV	< 1.5 kV / < 1.5 kV	< 1.98 kV / < 1.58 kV
Follow Current Interrupt Rating	((N-PE) $I_{fi}$		100 A <sub>RMS</sub>		
Response Time	(L-N)/(N-PE) $t_A$		< 25 ns / < 100 ns		
Back-Up Fuse (if mains > 250 A)			250 A gG		
Short-Circuit Current Rating (AC)	$I_{SCCR}$		50 kA		
TOV withstand 5s	(L-N) $U_T$	174V	335V	335V	585V
TOV withstand 200ms	(N-PE) $U_T$		1200V / 300A		
Number of Ports			1		
<b>Mechanical &amp; Environmental</b>					
Temperature Range	$T_a$	-40 °C to +85 °C			
Permissible Humidity	RH	5%...95%			
Terminal Screw Torque	$M_{max}$	3.0 Nm			
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)			
Mounting		35 mm DIN Rail, EN 60715			
Degree of Protection		IP 20			
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0			
Thermal Protection	(L-N)/(N-PE)	Yes/No			
Fault Indication	(L-N)/(N-PE)	Red Flag/No			
Remote Contacts (RC)		Optional			
RC Switching Capacity		AC: 250V/0.5A; 125V/3A			
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>			
RC Terminal Screw Torque	$M_{max}$	0.25 Nm			
<b>Order Information</b>					
Order Code		150	275	320	440
PROBLOC B 25/xxx (1+1)		56.0542	56.0544	56.0546	56.0550
PROBLOC BR 25/xxx (1+1) (with remote contacts)		56.0543	56.0545	56.0547	56.0551

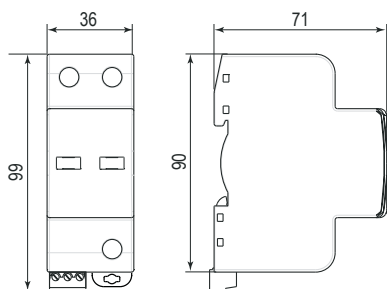
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging				
<b>ProBloc B 25/xxx (1+1)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	110g	150g	150g	300g
Single Unit DIN 43880 Dimension	2 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm			
Minimum Order Quantity	7 Units			
<b>ProBloc BR 25/xxx (1+1)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	115g	155g	155g	305g
Single Unit DIN 43880 Dimension	2 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm			
Minimum Order Quantity	7 Units			

Applicable connection configurations can be found on page 94.



Compact Multi-pole SPD  
**ProBloc B(R) 50 (3+1)**  
 Class I • Class II • Type 1 • Type 2

**12.5 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TT  
 Mode of Protection: L-N, N-PE  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA} / 50 \text{ kA} (10/350 \mu\text{s})$   
 $I_n = 20 \text{ kA} / 50 \text{ kA} (8/20 \mu\text{s})$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

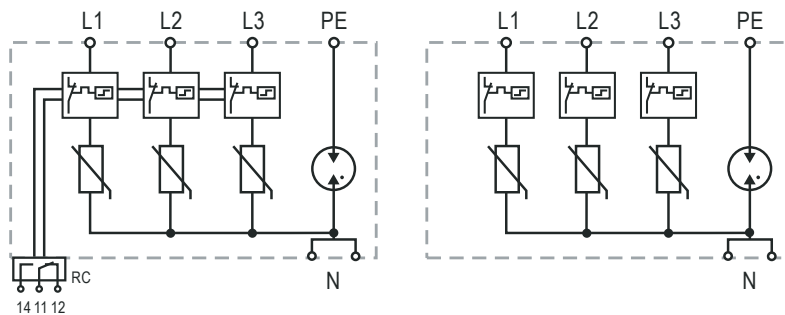
**Technical Data**

ProBloc B(R) 50/xxx (3+1)		275	320	440
<b>Electrical</b>				
Nominal AC Voltage (50/60 Hz)	$U_o$	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) $U_c$	275V	320V	440V
	(N-PE) $U_c$		255V	
Nominal Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_n$		20 kA / 50 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{max}$		50 kA / 100 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{imp}$		12.5 kA / 50 kA	
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$		50 kA	
Specific Energy	(L-N)/(N-PE) W/R		39 kJ/ $\Omega$ / 625 kJ/ $\Omega$	
Charge	(L-N)/(N-PE) Q		6.25 As / 25 As	
Voltage Protection Level	(L-N)/(N-PE) $U_p$	< 1.5 kV / < 1.5 kV	< 1.5 kV / < 1.5 kV	< 1.98 kV / < 1.58 kV
Follow Current Interrupt Rating	(N-PE) $I_{fi}$		100 A <sub>RMS</sub>	
Response Time	(L-N)/(N-PE) $t_A$		< 25 ns / < 100 ns	
Back-Up Fuse (if mains > 250 A)			250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$		50 kA	
TOV withstand 5s	(L-N) $U_T$	335V	335V	585V
TOV withstand 200ms	(N-PE) $U_T$		1200V / 300 A	
Number of Ports			1	
<b>Mechanical &amp; Environmental</b>				
Temperature Range	$T_a$	-40 °C to +85 °C		
Permissible Humidity	RH	5%...95%		
Terminal Screw Torque	$M_{max}$	3.0 Nm		
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Mounting		35 mm DIN Rail, EN 60715		
Degree of Protection		IP 20		
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection	(L-N)/(N-PE)	Yes/No		
Fault Indication	(L-N)/(N-PE)	Red Flag/No		
Remote Contacts (RC)		Optional		
RC Switching Capacity		AC: 250V / 0.5A; 125V / 3A		
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{max}$	0.25 Nm		
<b>Order Information</b>				
Order Code		275	320	440
PROBLOC B 50/xxx (3+1)		56.0554	56.0556	56.0560
PROBLOC BR 50/xxx (3+1) (with remote contacts)		56.0555	56.0557	56.0561

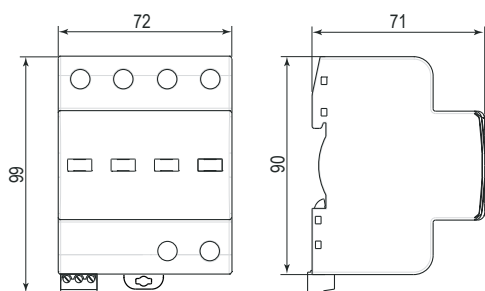
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging

	275	320	440
<b>ProBloc B 50/xxx (3+1)</b>			
Single Unit Weight	595 g	595 g	745 g
Single Unit DIN 43880 Dimension	4 TE		
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm		
Minimum Order Quantity	3 Units		
<b>ProBloc BR 50/xxx (3+1)</b>			
Single Unit Weight	600 g	600 g	750 g
Single Unit DIN 43880 Dimension	4 TE		
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm		
Minimum Order Quantity	3 Units		

Applicable connection configurations can be found on page 90.



Compact Single Pole SPD  
**ProBloc B(R) 25 (1+0)**  
 Class I • Class II • Type 1 • Type 2

**25 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TN-S, TN-C, TT (only L-N)  
 Mode of Protection: L-PE, L-N, N-PE, L-PEN  
 Surge Ratings:  $I_{imp} = 25 \text{ kA}$  (10/350  $\mu\text{s}$ )  
 $I_n = 25 \text{ kA}$  (8/20  $\mu\text{s}$ )  
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

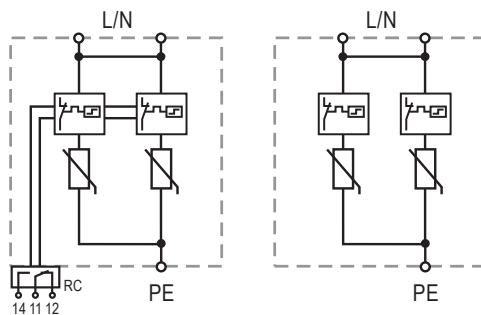
**Technical Data**

ProBloc B(R) 25/xxx (1+0)		150	275	320	440
<b>Electrical</b>					
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			25 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$			100 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$			25 kA	
Specific Energy	W/R			156 kJ/ $\Omega$	
Charge	Q			12.5 As	
Voltage Protection Level	$U_p$	< 1.0 kV	< 1.5 kV	< 1.5 kV	< 1.9 kV
Response Time	$t_A$			< 25 ns	
Back-Up Fuse (if mains > 250 A)				250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$			50 kA	
TOV withstand 5s	$U_T$	174V	335V	335V	585V
Number of Ports				1	
<b>Mechanical &amp; Environmental</b>					
Temperature Range	$T_a$			-40 °C to +85 °C	
Permissible Humidity	RH			5%...95%	
Terminal Screw Torque	$M_{max}$			3.0 Nm	
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting				35 mm DIN Rail, EN 60715	
Degree of Protection				IP 20	
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection				Yes	
Fault Indication				Red Flag	
Remote Contacts (RC)				Optional	
RC Switching Capacity				AC: 250V/0.5 A; 125V/3 A	
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$			0.25 Nm	
<b>Order Information</b>					
Order Code		150	275	320	440
PROBLOC B 25/xxx (1+0)		56.0562	56.0564	56.0566	56.0570
PROBLOC BR 25/xxx (1+0) (with remote contacts)		56.0563	56.0565	56.0567	56.0571

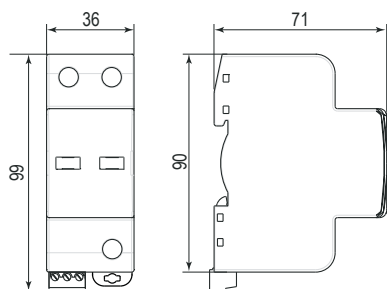
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging				
<b>ProBloc B 25/xxx (1+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440V</b>
Single Unit Weight	245 g	295 g	295 g	345 g
Single Unit DIN 43880 Dimension	2 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm			
Minimum Order Quantity	7 Units			
<b>ProBloc BR 25/xxx (1+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440V</b>
Single Unit Weight	250 g	300 g	300 g	350 g
Single Unit DIN 43880 Dimension	2 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm			
Minimum Order Quantity	7 Units			

Applicable connection configurations can be found on page 93.



Compact Multi-pole SPD  
**ProBloc B(R) 50 (2+0)**  
 Class I • Class II • Type 1 • Type 2

**25 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_{imp} = 25 \text{ kA (10/350 } \mu\text{s)}$   
 $I_n = 25 \text{ kA (8/20 } \mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

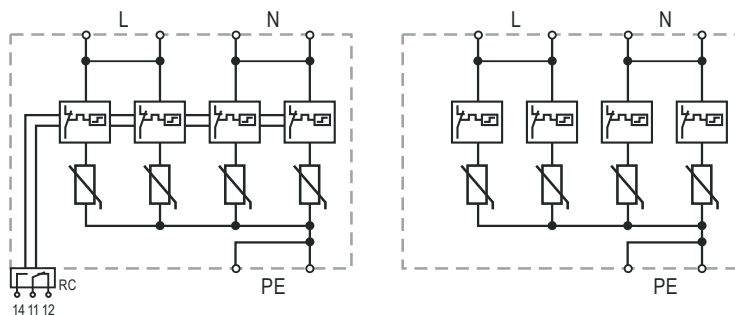
**Technical Data**

ProBloc B(R) 50/xxx (2+0)		150	275	320	440
<b>Electrical</b>					
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			25 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$			100 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$			25 kA	
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$			50 kA	
Specific Energy	W/R			156 kJ/ $\Omega$	
Charge	Q			12.5 As	
Voltage Protection Level	$U_p$	< 1.0 kV	< 1.5 kV	< 1.5 kV	< 1.98 kV
Response Time	$t_A$			< 25 ns	
Back-Up Fuse (if mains > 250 A)				250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$			50 kA	
TOV withstand 5s	$U_T$	174V	335V	335V	585V
Number of Ports				1	
<b>Mechanical &amp; Environmental</b>					
Temperature Range	$T_a$			-40 °C to +85 °C	
Permissible Humidity	RH			5%...95%	
Terminal Screw Torque	$M_{max}$			3.0 Nm	
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting				35 mm DIN Rail, EN 60715	
Degree of Protection				IP 20	
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection				Yes	
Fault Indication				Red Flag	
Remote Contacts (RC)				Optional	
RC Switching Capacity				AC: 250V/0.5 A; 125V/3 A	
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$			0.25 Nm	
<b>Order Information</b>					
Order Code		150	275	320	440
PROBLOC B 50/xxx (2+0)		56.0572	56.0574	56.0576	56.0580
PROBLOC BR 50/xxx (2+0) (with remote contacts)		56.0573	56.0575	56.0577	56.0581

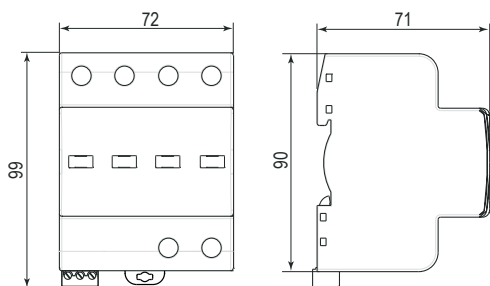
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging				
<b>ProBloc B 50/xxx (2+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	460g	560g	560g	680g
Single Unit DIN 43880 Dimension	4 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm			
Minimum Order Quantity	3 Units			
<b>ProBloc BR 50/xxx (2+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	470g	570g	570g	690g
Single Unit DIN 43880 Dimension	4 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm			
Minimum Order Quantity	3 Units			

Applicable connection configurations can be found on page 91.



Compact Multi-pole SPD  
**ProBloc B(R) 75 (3+0)**  
 Class I • Class II • Type 1 • Type 2

**25 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TN-C  
 Mode of Protection: L - PEN  
 Surge Ratings:  $I_{imp} = 25 \text{ kA (10/350 } \mu\text{s)}$   
 $I_n = 25 \text{ kA (8/20 } \mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

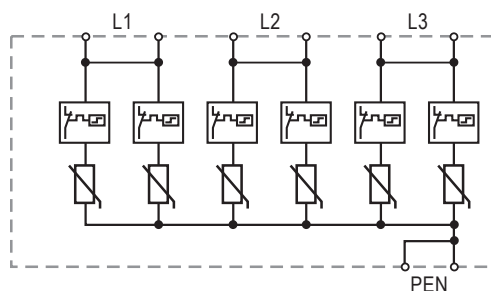
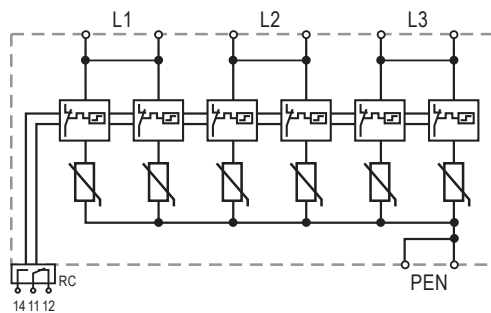
**Technical Data**

ProBloc B(R) 75/xxx (3+0)		150	275	320	440
<b>Electrical</b>					
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			25 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$			100 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$			25 kA	
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$			75 kA	
Specific Energy	W/R			156 kJ/ $\Omega$	
Charge	Q			12.5 As	
Voltage Protection Level	$U_p$	< 1.0 kV	< 1.5 kV	< 1.5 kV	< 1.9 kV
Response Time	$t_A$			< 25 ns	
Back-Up Fuse (if mains > 250 A)				250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$			50 kA	
TOV withstand 5s	$U_T$	174V	335V	335V	585V
Number of Ports				1	
<b>Mechanical &amp; Environmental</b>					
Temperature Range	$T_a$			-40 °C to +85 °C	
Permissible Humidity	RH			5%...95%	
Terminal Screw Torque	$M_{max}$			3.0 Nm	
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting				35 mm DIN Rail, EN 60715	
Degree of Protection				IP 20	
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection				Yes	
Fault Indication				Red Flag	
Remote Contacts (RC)				Optional	
RC Switching Capacity				AC: 250V/0.5 A; 125V/3 A	
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$			0.25 Nm	
<b>Order Information</b>					
Order Code		150	275	320	440
PROBLOC B 75/xxx (3+0)		56.0582	56.0584	56.0586	56.0590
PROBLOC BR 75/xxx (3+0) (with remote contacts)		56.0583	56.0585	56.0587	56.0591

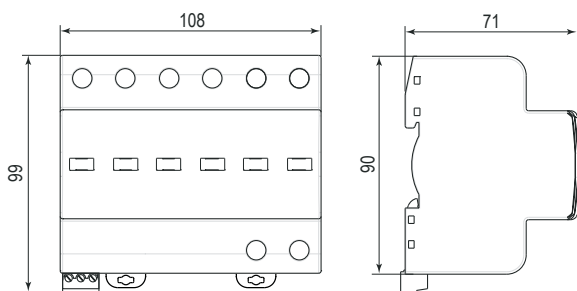
Internal Configuration

Legend

- L Line
- N Neutral
- PEN Combined Protective Earth and Neutral
- RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging				
<b>ProBloc B 75/xxx (3+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	690 g	840 g	840 g	1005 g
Single Unit DIN 43880 Dimension	6 TE			
Packaging Dimensions (H×W×L)	109 × 77 × 114 mm			
Minimum Order Quantity	3 Units			
<b>ProBloc BR 75/xxx (3+0)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	705 g	855 g	855 g	1020 g
Single Unit DIN 43880 Dimension	6 TE			
Packaging Dimensions (H×W×L)	109 × 77 × 114 mm			
Minimum Order Quantity	3 Units			

Applicable connection configurations can be found on page 91.



Compact Multi-pole SPD  
**ProBloc B(R) 100 (4+0)**  
 Class I • Class II • Type 1 • Type 2

**25 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_{imp} = 25 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 25 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

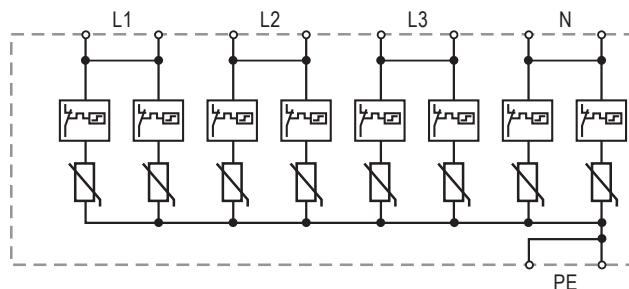
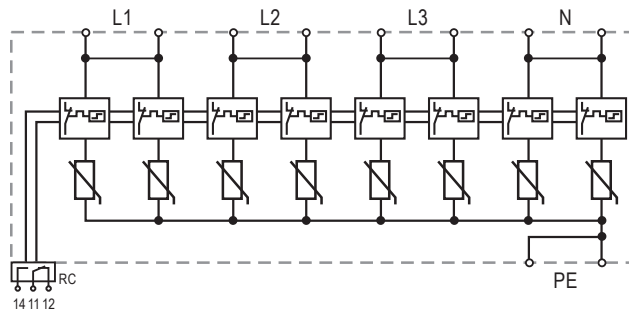
**Technical Data**

ProBloc B(R) 100/xxx (4+0)		150	275	320	440
<b>Electrical</b>					
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			25 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$			100 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$			25 kA	
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$			100 kA	
Specific Energy	W/R			156 kJ/ $\Omega$	
Charge	Q			12.5 As	
Voltage Protection Level	$U_p$	< 1.0kV	< 1.5kV	< 1.5kV	< 1.9kV
Response Time	$t_A$			< 25 ns	
Back-Up Fuse (if mains > 250 A)				250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$			50 kA	
TOV withstand 5s	$U_T$	174V	335V	335V	585V
Number of Ports				1	
<b>Mechanical &amp; Environmental</b>					
Temperature Range	$T_a$			-40 °C to +85 °C	
Permissible Humidity	RH			5%...95%	
Terminal Screw Torque	$M_{max}$			3.0Nm	
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting				35 mm DIN Rail, EN 60715	
Degree of Protection				IP 20	
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection				Yes	
Fault Indication				Red Flag	
Remote Contacts (RC)				Optional	
RC Switching Capacity				AC: 250V/0.5 A; 125V/3A	
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$			0.25Nm	
<b>Order Information</b>					
Order Code		150	275	320	440
PROBLOC B 100/xxx (4+0)		56.0592	56.0594	56.0596	56.0600
PROBLOC BR 100/xxx (4+0) (with remote contacts)		56.0593	56.0595	56.0597	56.0601

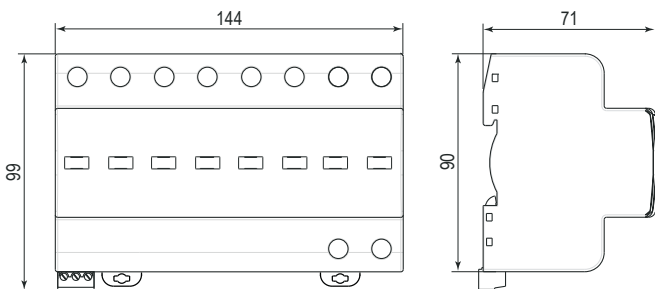
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging

ProBloc B 100/xxx (4+0)	150	275	320	440
Single Unit Weight	920g	1120g	1120g	1345g
Single Unit DIN 43880 Dimension	8 TE			
Packaging Dimensions (H×W×L)	109 × 77 × 148mm			
Minimum Order Quantity	2 Units			
ProBloc BR 100/xxx (4+0)	150	275	320	440
Single Unit Weight	990g	1190g	1190g	1360g
Single Unit DIN 43880 Dimension	8 TE			
Packaging Dimensions (H×W×L)	109 × 77 × 148mm			
Minimum Order Quantity	2 Units			

Applicable connection configurations can be found on page 91.

Compact Single & Multi-pole SPD  
**ProBloc B(R) 50 (1+1)**  
 Class I • Class II • Type 1 • Type 2

**25 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TT  
 Mode of Protection: L-N, N-PE  
 Surge Ratings:  $I_{imp} = 25 \text{ kA} / 50 \text{ kA} (10/350 \mu\text{s})$   
 $I_n = 25 \text{ kA} / 50 \text{ kA} (8/20 \mu\text{s})$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

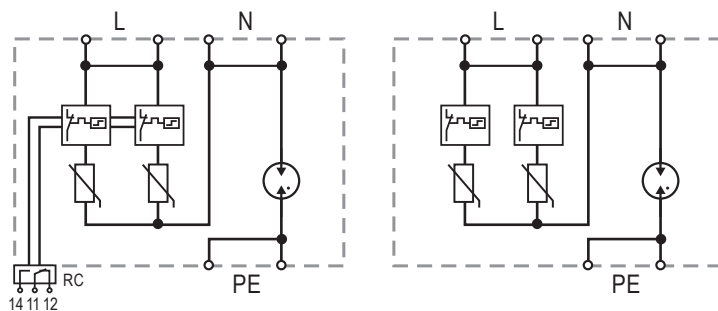
**Technical Data**

ProBloc B(R) 50/xxx (1+1)		150	275	320	440
<b>Electrical</b>					
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) $U_c$	150V	275V	320V	440V
	(N-PE) $U_c$			255V	
Nominal Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_n$			25 kA / 50 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{max}$			100 kA / 100 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{imp}$			25 kA / 50 kA	
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$			50 kA	
Specific Energy	(L-N)/(N-PE) W/R			156 kJ/ $\Omega$ / 625 kJ/ $\Omega$	
Charge	(L-N)/(N-PE) Q			12.5 As / 25 As	
Voltage Protection Level	(L-N)/(N-PE) $U_p$	< 1.0 kV / < 1.5 kV	< 1.5 kV / < 1.5 kV	< 1.5 kV / < 1.5 kV	< 1.98 kV / < 1.58 kV
Follow Current Interrupt Rating	(N-PE) $I_{fi}$			100 A <sub>RMS</sub>	
Response Time	(L-N)/(N-PE) $t_A$			< 25 ns / < 100 ns	
Back-Up Fuse (if mains > 250 A)				250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$			50 kA	
TOV withstand 5s	(L-N) $U_T$	174V	335V	335V	585V
TOV withstand 200ms	(N-PE) $U_T$			1200V / 300A	
Number of Ports				1	
<b>Mechanical &amp; Environmental</b>					
Temperature Range	$T_a$			-40 °C to +85 °C	
Permissible Humidity	RH			5%...95%	
Terminal Screw Torque	$M_{max}$			3.0 Nm	
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting				35 mm DIN Rail, EN 60715	
Degree of Protection				IP 20	
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection	(L-N)/(N-PE)			Yes/No	
Fault Indication	(L-N)/(N-PE)			Red Flag/No	
Remote Contacts (RC)				Optional	
RC Switching Capacity				AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>	
RC Terminal Screw Torque	$M_{max}$			0.25 Nm	
<b>Order Information</b>					
Order Code		150	275	320	440
PROBLOC B 50/xxx (1+1)		56.0602	56.0604	56.0606	56.0610
PROBLOC BR 50/xxx (1+1) (with remote contacts)		56.0603	56.0605	56.0607	56.0611

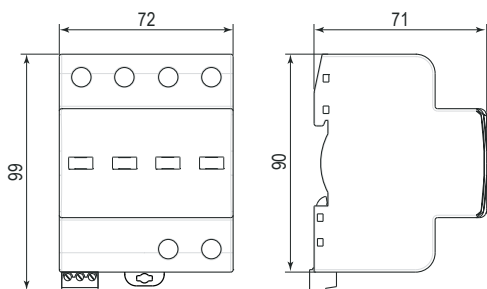
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging				
<b>ProBloc B 50/xxx (1+1)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	445 g	485 g	485 g	895 g
Single Unit DIN 43880 Dimension	4 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm			
Minimum Order Quantity	3 Units			
<b>ProBloc BR 50/xxx (1+1)</b>	<b>150</b>	<b>275</b>	<b>320</b>	<b>440</b>
Single Unit Weight	450 g	490 g	490 g	910 g
Single Unit DIN 43880 Dimension	4 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm			
Minimum Order Quantity	3 Units			

Applicable connection configurations can be found on page 92.

Compact Multi-pole SPD  
**ProBloc B(R) 100 (3+1)**  
 Class I • Class II • Type 1 • Type 2

**25 kA Series**



Location of Use: Main Distribution Boards  
 Network Systems: TT  
 Mode of Protection: L - N, N - PE  
 Surge Ratings:  $I_{imp} = 25 \text{ kA} / 100 \text{ kA} (10/350 \mu\text{s})$   
 $I_n = 25 \text{ kA} / 100 \text{ kA} (8/20 \mu\text{s})$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

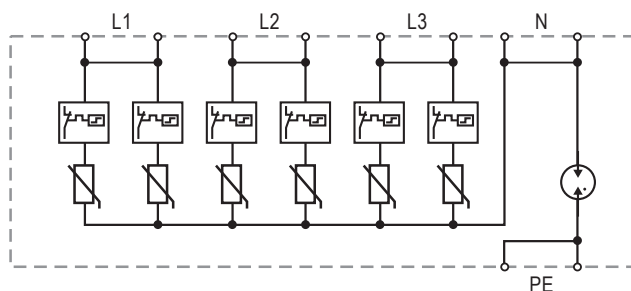
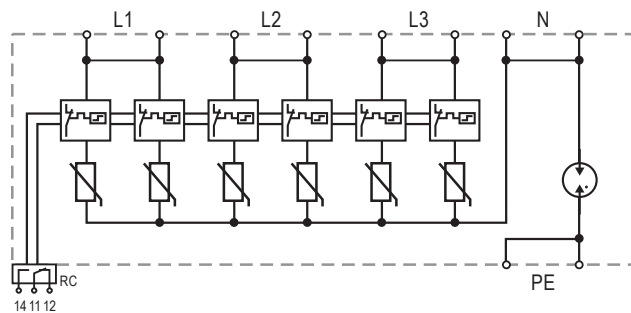
**Technical Data**

ProBloc B(R) 100/xxx (3+1)		275	320	440
<b>Electrical</b>				
Nominal AC Voltage (50/60 Hz)	$U_o$	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	(L - N) $U_c$	275 V	320 V	440 V
	(N - PE) $U_c$		255 V	
Nominal Discharge Current (8/20 $\mu\text{s}$ )	(L - N)/(N - PE) $I_n$		25 kA / 100 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	(L - N)/(N - PE) $I_{max}$		100 kA / 100 kA	
Impulse Discharge Current (10/350 $\mu\text{s}$ )	(L - N)/(N - PE) $I_{imp}$		25 kA / 100 kA	
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$		100 kA	
Specific Energy	(L - N)/(N - PE) W/R		156 kJ/ $\Omega$ / 2.5 MJ/ $\Omega$	
Charge	(L - N)/(N - PE) Q		12.5 As / 50 As	
Voltage Protection Level	(L - N)/(N - PE) $U_p$	< 1.5 kV / < 1.5 kV	< 1.5 kV / < 1.5 kV	< 1.98 kV / < 1.58 kV
Follow Current Interrupt Rating	(N - PE) $I_{fi}$		100 A <sub>RMS</sub>	
Response Time	(L - N)/(N - PE) $t_A$		< 25 ns / < 100 ns	
Back-Up Fuse (if mains > 250 A)	(L - N)		250 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$		50 kA	
TOV withstand 5s	(L - N) $U_T$	335 V	335 V	585 V
TOV withstand 200ms	(N - PE) $U_T$		1200 V / 300 A	
Number of Ports			1	
<b>Mechanical &amp; Environmental</b>				
Temperature Range	$T_a$	-40 °C to +85 °C		
Permissible Humidity	RH	5%...95%		
Terminal Screw Torque (max)	$M_{max}$	3.0 Nm		
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Mounting		35 mm DIN Rail, EN 60715		
Degree of Protection		IP 20		
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection	(L - N)/(N - PE)	Yes/No		
Fault Indication	(L - N)/(N - PE)	Red Flag/No		
Remote Contacts (RC)		Optional		
RC Switching Capacity		AC: 250 V / 0.5 A; 125 V / 3 A		
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{max}$	0.25 Nm		
<b>Order Information</b>				
Order Code		275	320	440
PROBLOC B 100/xxx (3+1)		56.0614	56.0616	56.0620
PROBLOC BR 100/xxx (3+1) (with remote contacts)		56.0615	56.0617	56.0621

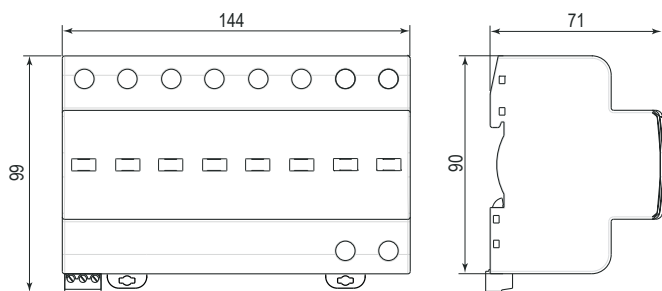
Internal Configuration

Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging

	275	320	440
<b>ProBloc B 100/xxx (3+1)</b>			
Single Unit Weight	1135g	1135g	1285g
Single Unit DIN 43880 Dimension	8 TE		
Packaging Dimensions (H×W×L)	109 × 77 × 148mm		
Minimum Order Quantity	2 Units		
<b>ProBloc BR 100/xxx (3+1)</b>			
Single Unit Weight	1150g	1150g	1300g
Single Unit DIN 43880 Dimension	8 TE		
Packaging Dimensions (H×W×L)	109 × 77 × 148mm		
Minimum Order Quantity	2 Units		

Applicable connection configurations can be found on page 92.

Compact Single Pole SPD  
**ProTube B 50**  
 Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards  
 Network Systems: TT  
 Mode of Protection: N-PE  
 Surge Ratings:  $I_{imp} = 50 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 50 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy GDT  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

ProTube B 50/xxx

255

### Electrical

Nominal AC Voltage (50/60 Hz)	$U_o$	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	255V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	50 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	100 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$	50 kA
Specific Energy	W/R	625 kJ/ $\Omega$
Charge	Q	25 As
Voltage Protection Level	$U_p$	< 1.5 kV
Follow Current Interrupt Rating	$I_{fi}$	100 A <sub>RMS</sub>
Response Time	$t_A$	< 100 ns
TOV withstand 200ms	$U_T$	1200V/300A
Number of Ports		1

### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0

### Order Information

Order Code		255
SAFETUBE B 50/xxx		56.0510

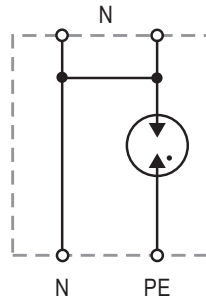
## ProTube B 50

### Internal Configuration

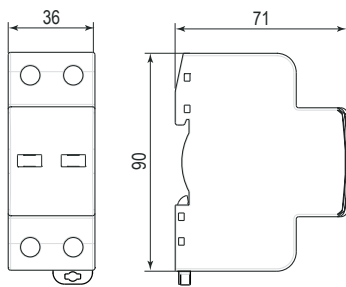
#### Legend

N Neutral

PE Protective Earth



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

ProTube B 50/xxx	255
Single Unit Weight	180 g
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm
Minimum Order Quantity	7 Units

Applicable connection configurations can be found on pages 93-94.



Compact Single Pole SPD  
**ProTube B 100**  
 Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards  
 Network Systems: TT  
 Mode of Protection: N-PE  
 Surge Ratings:  $I_{imp} = 100 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 100 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy GDT  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

ProTube B 100/xxx

255

### Electrical

Nominal AC Voltage (50/60 Hz)	$U_o$	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	255V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	100 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	100 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$	100 kA
Specific Energy	W/R	2.5 MJ/ $\Omega$
Charge	Q	50 As
Voltage Protection Level	$U_p$	< 1.5 kV
Follow Current Interrupt Rating	$I_{fi}$	100 A <sub>RMS</sub>
Response Time	$t_A$	< 100 ns
TOV withstand 200ms	$U_T$	1200V/300A
Number of Ports		1

### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0

### Order Information

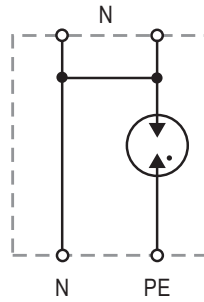
Order Code		255
SAFETUBE B 100/xxx		56.0511

## ProTube B 100

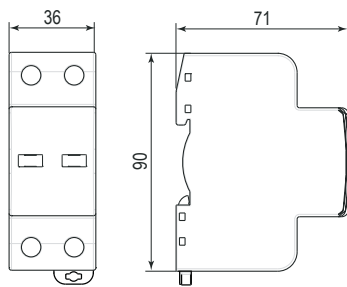
### Internal Configuration

#### Legend

N Neutral  
PE Protective Earth



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

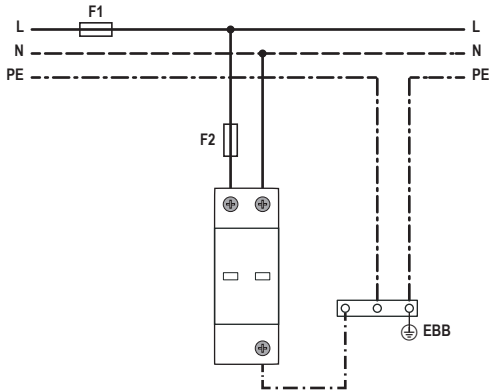
<b>ProTube B 100/xxx</b>	<b>255</b>
Single Unit Weight	240 g
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (H×W×L)	109 × 77 × 42 mm
Minimum Order Quantity	7 Units

Applicable connection configurations can be found on pages 93-94.

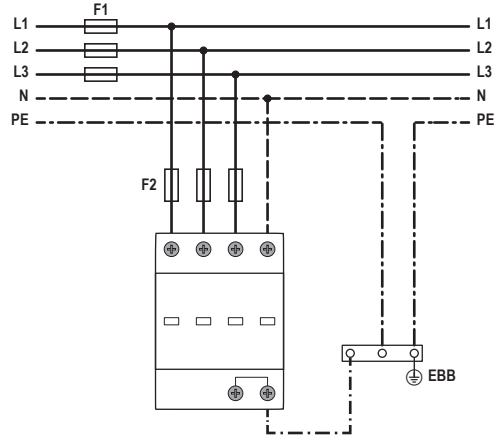
# Compact Multi-pole SPD Connection Configurations

## ProBloc B(R) TCG 12.5kA Series

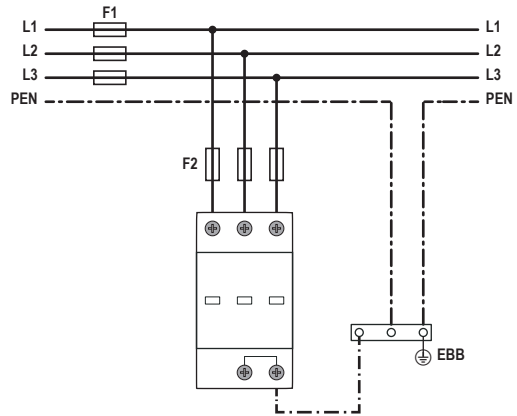
TN-S (Single-phase, 2+0)



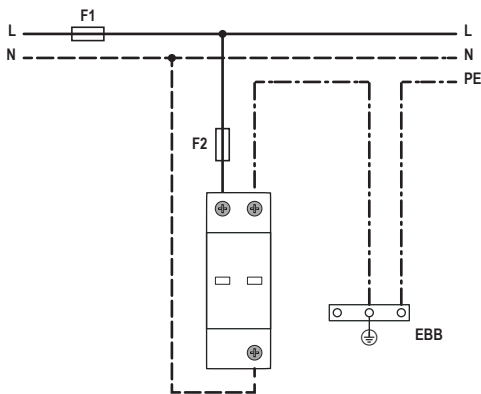
TN-S (Three-phase, 4+0)



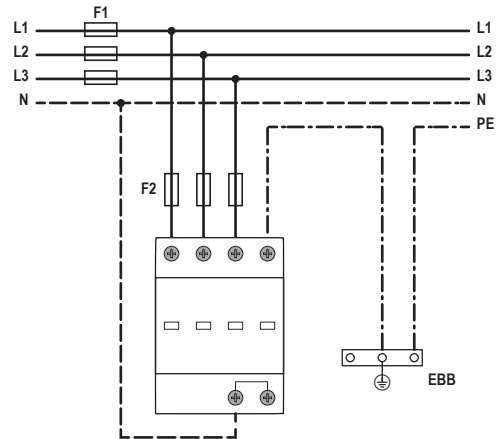
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



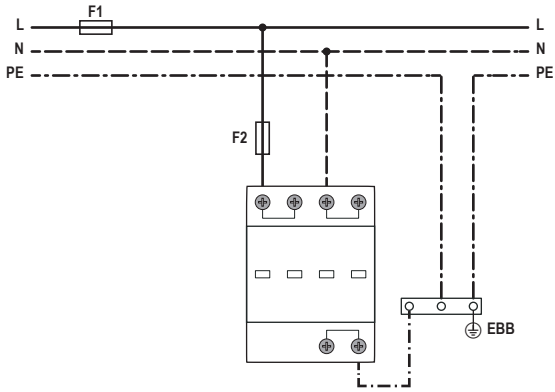
### Back-up Fuse

- F1 > 250 A gG → F2 = 250 A gG
- F1 ≤ 250 A gG → F2
- F ≤ 100 A gG

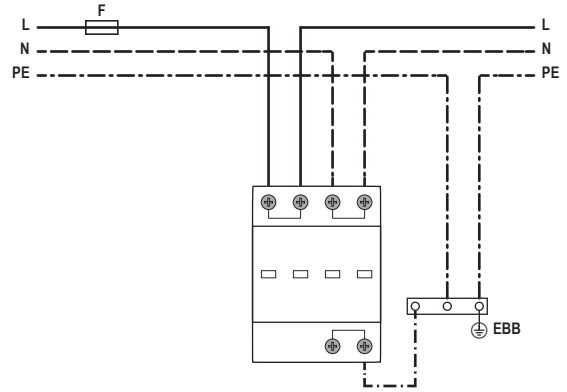
# Compact Multi-pole SPD Connection Configurations

## ProBloc B(R) TCG 25kA Series

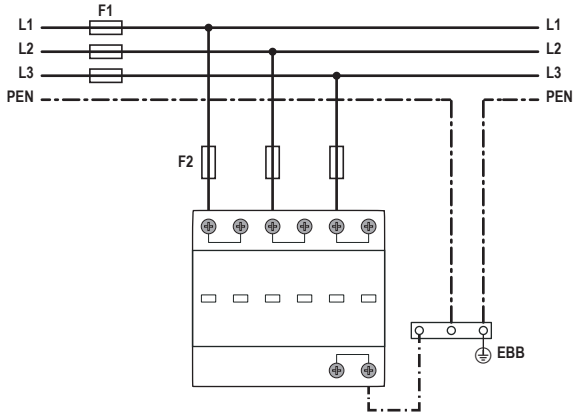
TN-S (Single-phase, 2+0)  
T Connection



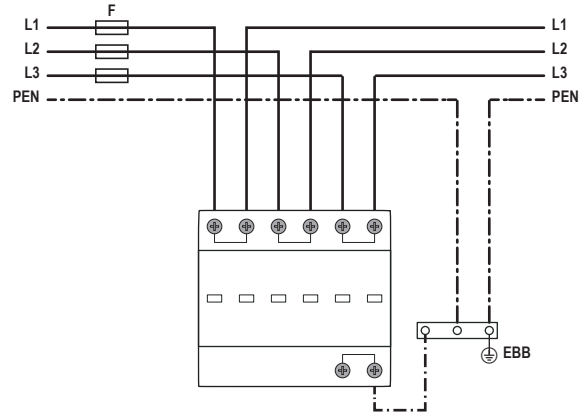
TN-S (Three-phase, 2+0)  
V Connection



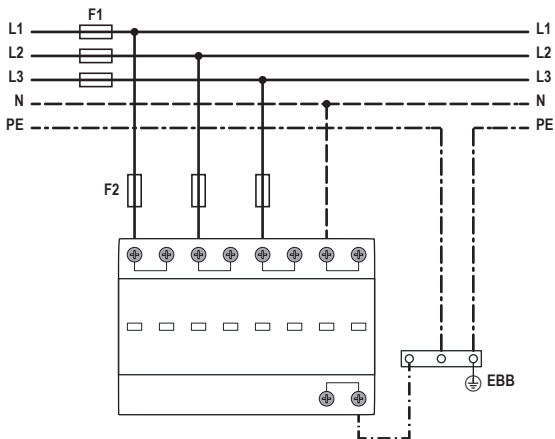
TN-C (Three-phase, 3+0)  
T Connection



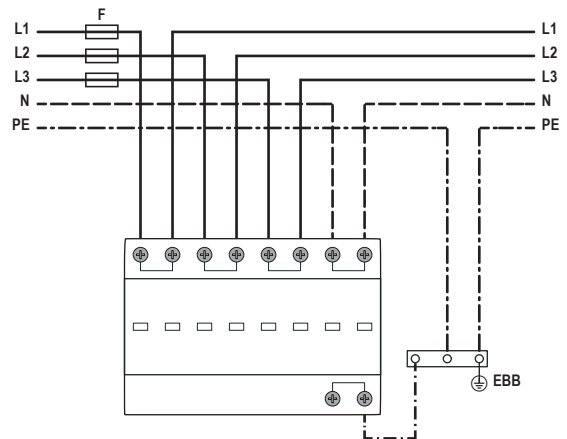
TN-C (Three-phase, 3+0)  
V Connection



TN-S (Three-phase, 4+0)  
T Connection



TT (Three-phase, 4+0)  
V Connection



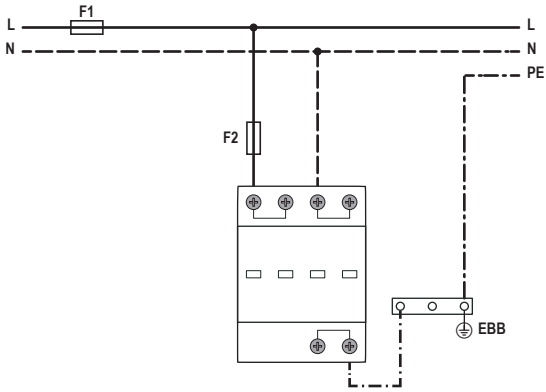
**Back-up Fuse**

- F1 > 250 A gG → — F2 = 250 A gG
- F1 ≤ 250 A gG → ~~— F2~~
- F ≤ 100 A gG

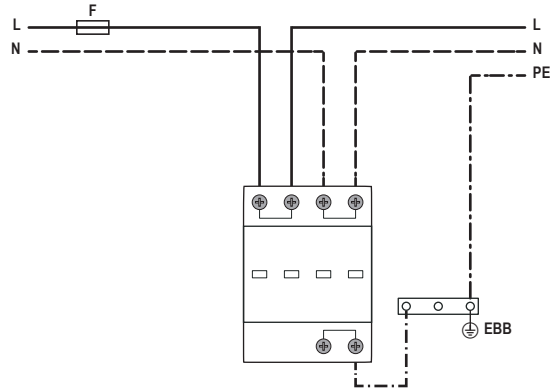
# Compact Multi-pole SPD Connection Configurations

## ProBloc B(R) TCG 25kA Series

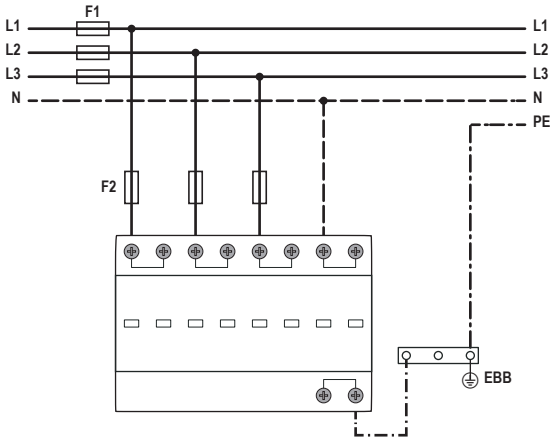
TT (Single-phase, 1+1)  
T Connection



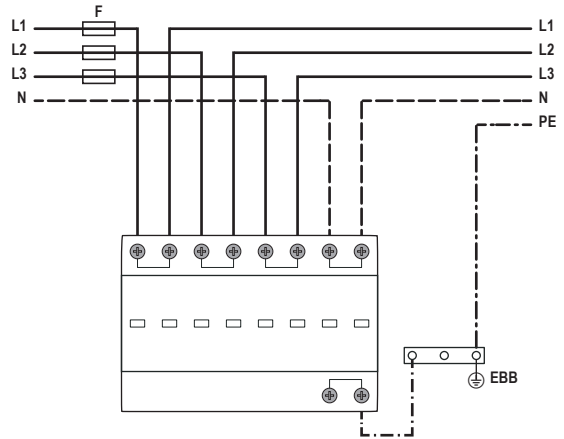
TT (Single-phase, 1+1)  
V Connection



TT (Three-phase, 3+1)  
T Connection



TT (Three-phase, 3+1)  
V Connection



### Back-up Fuse

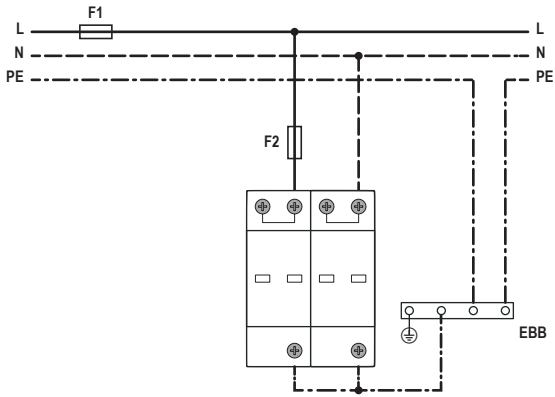
- F1 > 250 A gG → F2 = 250 A gG
- F1 ≤ 250 A gG → F2
- F ≤ 100 A gG

# Compact Single Pole SPD Connection Configurations

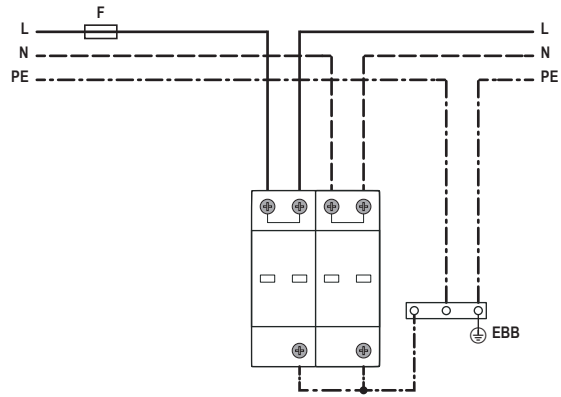
## ProBloc B(R) TCG 12.5kA & 25kA Series

### ProTube B 50 & ProTube B 100 Series

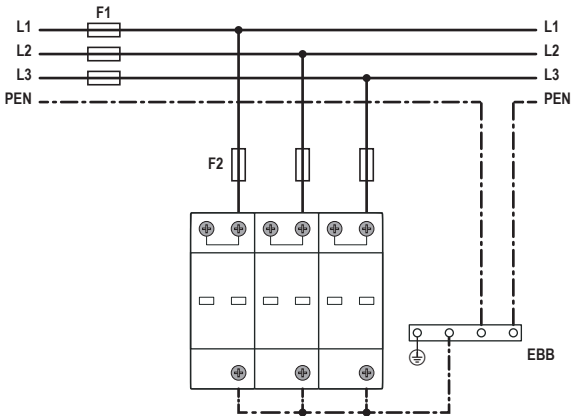
TN-S (Single-phase, 2+0)  
T Connection



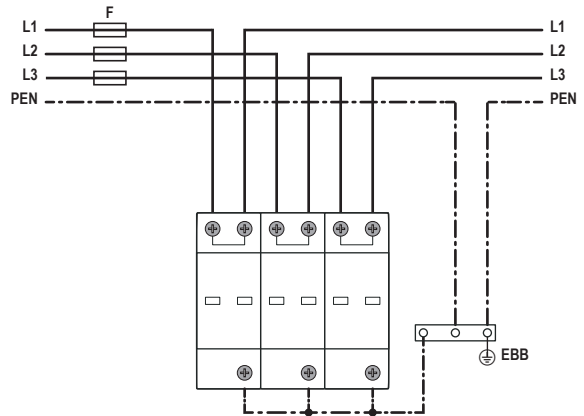
TN-S (Three-phase, 2+0)  
V Connection



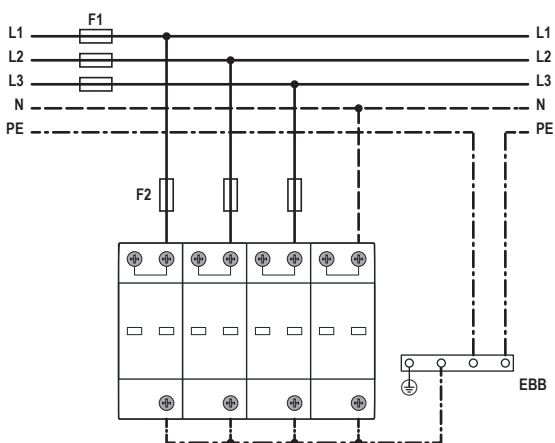
TN-C (Three-phase, 3+0)  
T Connection



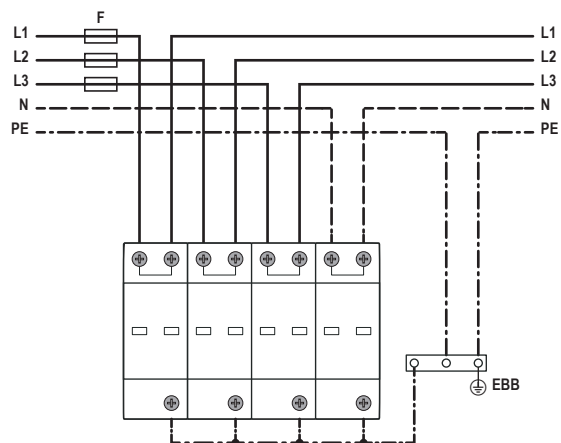
TN-C (Three-phase, 3+0)  
V Connection



TN-S (Three-phase, 4+0)  
T Connection



TT (Three-phase, 4+0)  
V Connection



**Back-up Fuse**

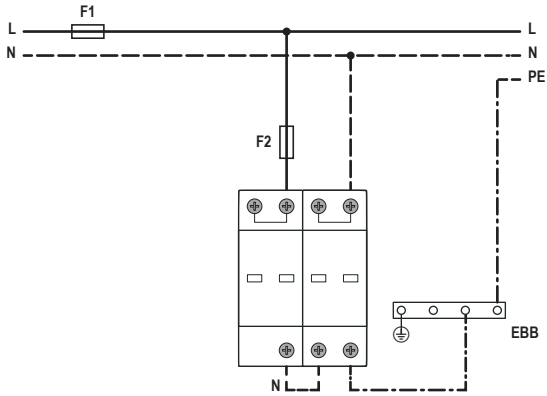
- F1 > 250 A gG → — F2 = 250 A gG
- F1 ≤ 250 A gG → ~~— F2~~
- F ≤ 100 A gG



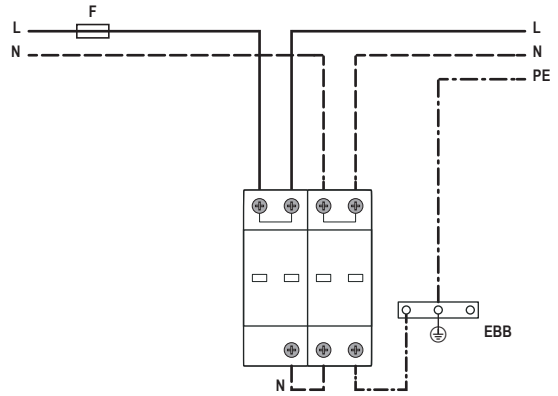
# Compact Single Pole SPD Connection Configurations

## ProBloc B(R) TCG 12.5kA & 25kA Series ProTube B 50 & ProTube B 100 Series

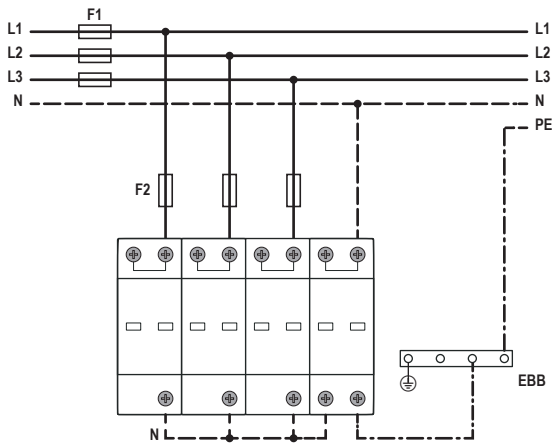
TT (Single-phase, 1+1)  
T Connection



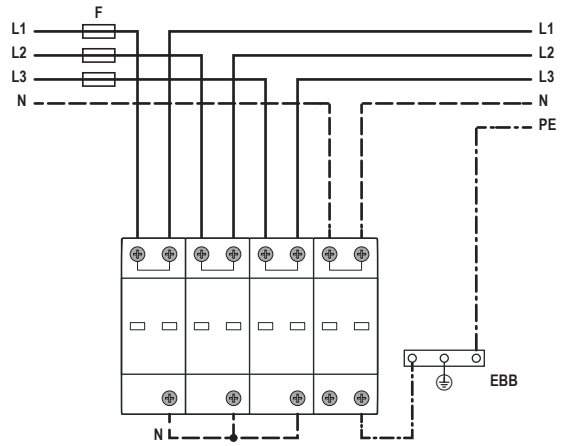
TT (Single-phase, 1+1)  
V Connection



TT (Three-phase, 3+1)  
T Connection

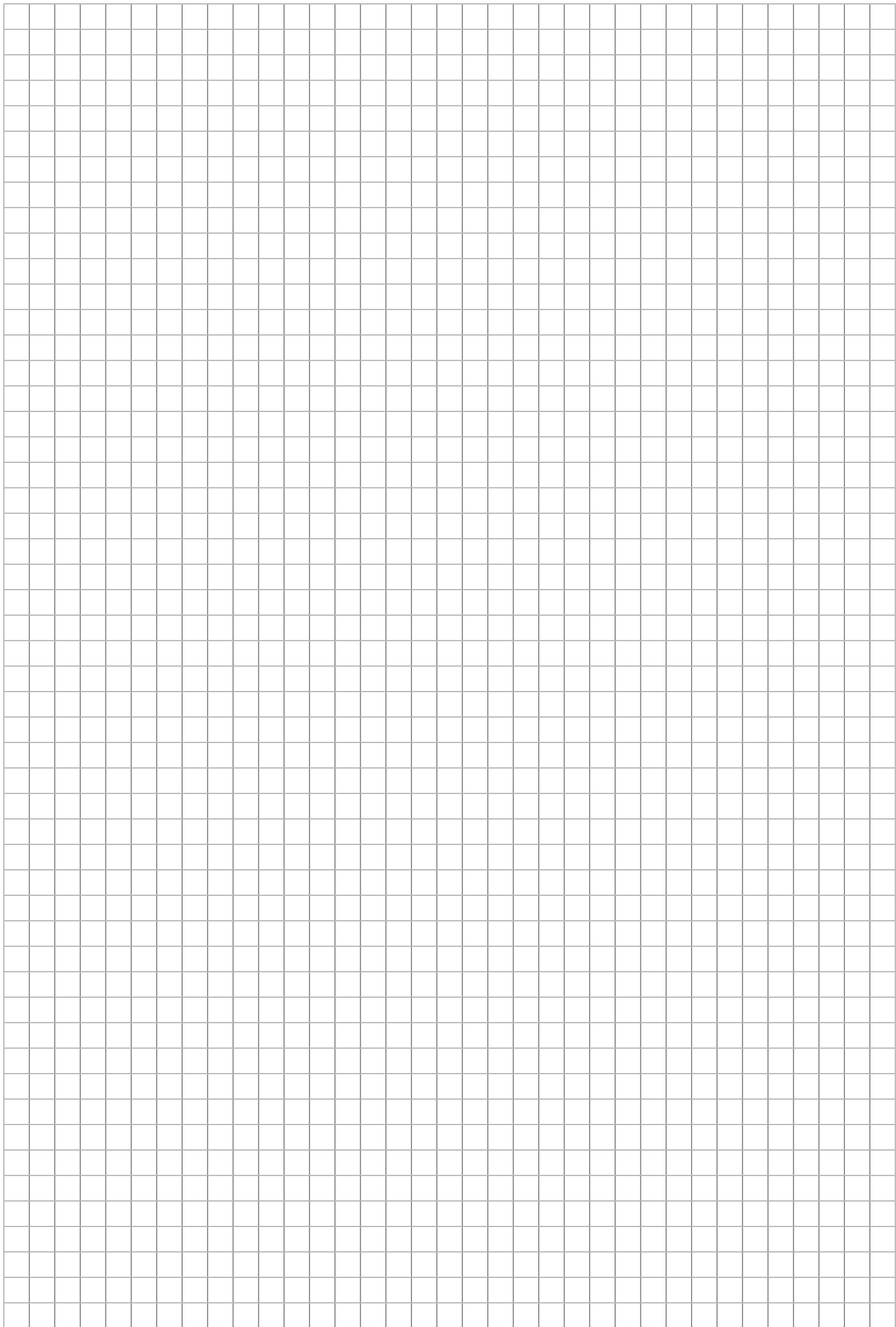


TT (Three-phase, 3+1)  
V Connection

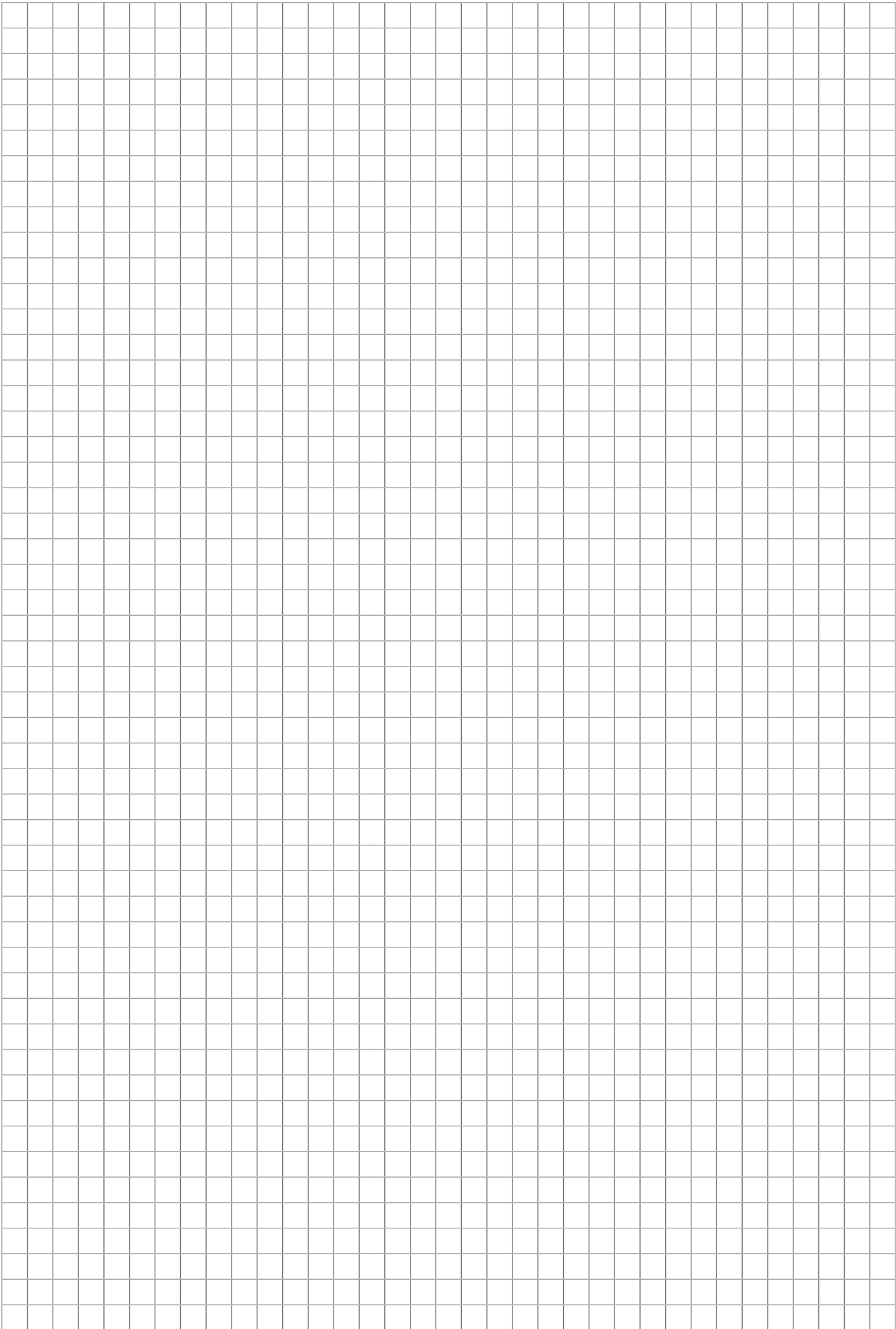


**Back-up Fuse**

- F1 > 250 A gG → — F2 = 250 A gG
- F1 ≤ 250 A gG → ~~— F2~~
- F ≤ 100 A gG







## Modular Single Pole & Multi-pole Surge Protective Devices (SPDs)

 ProTec B2S, ProTec B2SR,  
PV ProTec B Y TD & PV ProTec BR Y TD

The ProTec B2S and ProTec B2S(R) 12.5kA per pole series of overvoltage surge protective devices have been developed to protect against partial direct and indirect lightning discharges and are intended to provide protection for power supply installations in Zones 0<sub>A</sub>-2 per IEC 62305.

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

The ProTec B2S(R) Modular series consists of a high performance paired varistors combination for each pole, equipped with separate thermal disconnection mechanisms.

ProTec B2S and B2S(R) series comply with IEC/EN 61643-11 standards and are compatible to TN and TT network connection configurations.

For AC Applications

ProTec B2S 12.5 (1+0)  
ProTec B2SR 12.5 (1+0)

ProTec B2S 25 (2+0)  
ProTec B2SR 25 (2+0)

ProTec B2S 37.5 (3+0)  
ProTec B2SR 37.5 (3+0)

ProTec B2S 50 (4+0)  
ProTec B2SR 50 (4+0)

ProTec B2S 25 (1+1)  
ProTec B2SR 25 (1+1)

ProTec B2S 50 (3+1)  
ProTec B2SR 50 (3+1)

For DC Applications

PV ProTec B & BR 5 Y



Modular Single Pole SPD  
**ProTec B2S(R) 12.5 (1+0)**  
 Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards  
 Network Systems: TN-S, TN-C, TT (only L-N)  
 Mode of Protection: L-PE, N-PE, L-PEN, L-N  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 25 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

### Technical Data

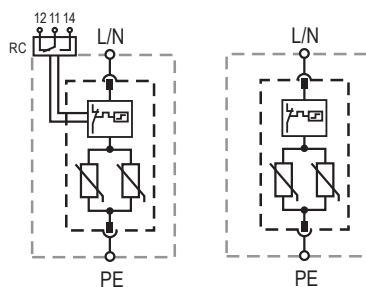
ProTec B2S(R) 12.5/xxx (1+0)		150	275	320	385	440
<b>Electrical</b>						
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	385V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			25 kA		
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$			60 kA		
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$			12.5 kA		
Specific Energy	W/R			39 kJ/ $\Omega$		
Charge	Q			6.25 As		
Voltage Protection Level	$U_p$	< 1.0 kV	< 1.4 kV	< 1.5 kV	< 1.7 kV	< 2.0 kV
Response Time	$t_A$			< 25 ns		
Back-Up Fuse (if mains > 160 A)				160 A gG		
Short-Circuit Current Rating (AC)	$I_{SCCR}$			25 kA		
TOV withstand 5s	$U_T$	174V	335V	335V	403V	580V
Number of Ports				1		
<b>General</b>						
Temperature Range	$T_a$			-40 °C to +85 °C		
Permissible Humidity	RH			5%...95%		
Terminal Screw Torque	$M_{max}$			3.0 Nm		
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Mounting				35 mm DIN Rail, EN 60715		
Degree of Protection				IP 20		
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection				Yes		
Fault Indication				Red Flag		
Remote Contacts (RC)				Optional		
RC Switching Capacity				AC: 250V/0.5 A; 125V/3A		
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{max}$			0.25 Nm		
<b>Order Information</b>						
Order Code		150	275	320	385	440
PROTEC B2S 12.5/xxx (1+0)		506.423	506.424	506.425	506.426	506.427
PROTEC B2SR 12.5/xxx (1+0) (with remote contacts)		506.428	506.429	506.430	506.431	506.432
Module PROTEC B2S(R) 12.5/xxx		506.471	506.472	506.473	506.474	506.475

## ProTec B2S(R) 12.5 (1+0)

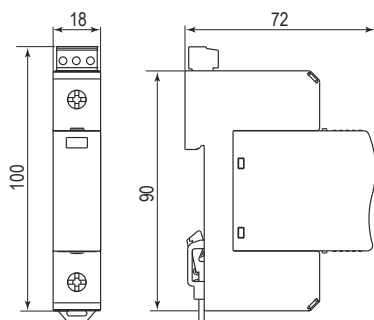
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

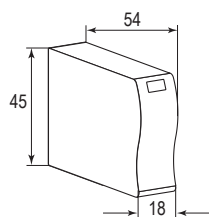
ProTec B2S 12.5/xxx (1+0)					
	150	275	320	385	440
Single Unit Weight	124 g	150 g	150 g	143 g	146 g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 24 mm				
Minimum Order Quantity	12 Units				
ProTec B2SR 12.5/xxx (1+0)					
	150	275	320	385	440
Single Unit Weight	129 g	155 g	155 g	146 g	151 g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 24 mm				
Minimum Order Quantity	12 Units				

### Module Internal Configuration

#### Module ProTec B2S(R) 12.5/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec B2S(R) 12.5/xxx					
	150	275	320	385	440
Single Unit Weight	78 g	88 g	102 g	116 g	128 g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm				
Minimum Order Quantity	12 Units				

Applicable connection configurations can be found on page 112.

# Modular Multi-pole SPD

## ProTec B2S(R) 25 (2+0)

Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 25 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

### Technical Data

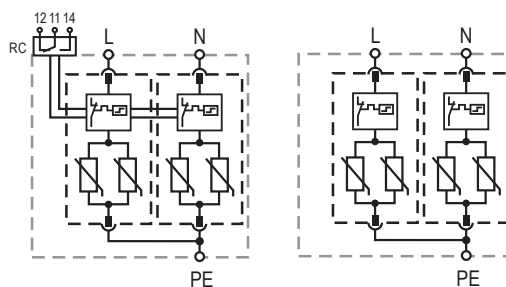
ProTec B2S(R) 25/xxx (2+0)		150	275	320	385	440
<b>Electrical</b>						
Nominal AC Voltage (50/60 Hz)	$U_o$	120 V	230 V	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	$U_c$	150 V	275 V	320 V	385 V	440 V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			25 kA		
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$			60 kA		
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$			12.5 kA		
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$			25 kA		
Specific Energy	W/R			39 kJ/ $\Omega$		
Charge	Q			6.25 As		
Voltage Protection Level	$U_p$	< 1.0 kV	< 1.4 kV	< 1.5 kV	< 1.7 kV	< 2.0 kV
Response Time	$t_A$			< 25 ns		
Back-Up Fuse (if mains > 160A)				160 A gG		
Short-Circuit Current Rating (AC)	$I_{SCCR}$			25 kA		
TOV withstand 5s	$U_T$	174 V	335 V	335 V	403 V	580 V
Number of Ports				1		
<b>Mechanical &amp; Environmental</b>						
Temperature Range	$T_a$			-40 °C to +85 °C		
Permissible Humidity	RH			5%...95%		
Terminal Screw Torque	$M_{max}$			3.0 Nm		
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Mounting				35 mm DIN Rail, EN 60715		
Degree of Protection				IP 20		
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection				Yes		
Fault Indication				Red Flag		
Remote Contacts (RC)				Optional		
RC Switching Capacity				AC: 250V/0.5 A; 125V/3 A		
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{max}$			0.25 Nm		
<b>Order Information</b>						
Order Code		150	275	320	385	440
PROTEC B2S 25/xxx (2+0)		506.433	506.409	506.434	506.410	506.435
PROTEC B2SR 25/xxx (2+0) (with remote contacts)		506.436	506.411	506.437	506.412	506.438
Module PROTEC B2S(R) 12.5/xxx		506.471	506.472	506.473	506.474	506.475

## ProTec B2S(R) 25 (2+0)

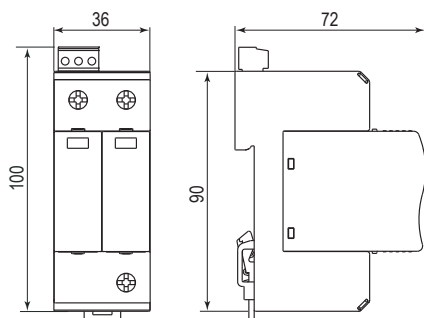
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

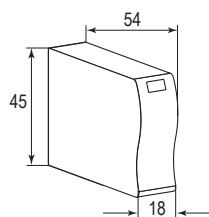
ProTec B2S 25/xxx (2+0)	150	275	320	385	440
Single Unit Weight	198 g	251 g	251 g	267 g	283 g
Single Unit DIN 43880 Dimension	2 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm				
Minimum Order Quantity	7 Units				
ProTec B2SR 25/xxx (2+0)	150	275	320	385	440
Single Unit Weight	203 g	256 g	256 g	272 g	288 g
Single Unit DIN 43880 Dimension	2 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm				
Minimum Order Quantity	7 Units				

### Module Internal Configuration

#### Module ProTec B2S(R) 12.5/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec B2S(R) 12.5/xxx	150	275	320	385	440
Single Unit Weight	78 g	88 g	102 g	116 g	128 g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm				
Minimum Order Quantity	12 Units				

Applicable connection configurations can be found on page 112.

Modular Multi-pole SPD  
**ProTec B2S(R) 37.5 (3+0)**  
 Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards  
 Network Systems: TN-C  
 Mode of Protection: L - PEN  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 25 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

### Technical Data

#### ProTec B2S(R) 37.5/xxx (3+0)

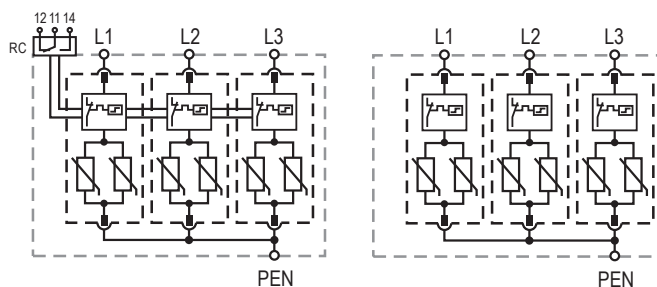
		150	275	320	385	440
<b>Electrical</b>						
Nominal AC Voltage (50/60 Hz)	$U_o$	120 V	230 V	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	$U_c$	150 V	275 V	320 V	385 V	440 V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			25 kA		
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$			60 kA		
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$			12.5 kA		
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$			37.5 kA		
Specific Energy	W/R			39 kJ/ $\Omega$		
Charge	Q			6.25 As		
Voltage Protection Level	$U_p$	< 1.0 kV	< 1.4 kV	< 1.5 kV	< 1.7 kV	< 2.0 kV
Response Time	$t_A$			< 25 ns		
Back-Up Fuse (if mains > 160 A)				160 A gG		
Short-Circuit Current Rating (AC)	$I_{SCCR}$			25 kA		
TOV withstand 5s	$U_T$	174 V	335 V	335 V	403 V	580 V
Number of Ports				1		
<b>Mechanical &amp; Environmental</b>						
Temperature Range	$T_a$			-40 °C to +85 °C		
Permissible Humidity	RH			5%...95%		
Terminal Screw Torque	$M_{max}$			3.0 Nm		
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Mounting				35 mm DIN Rail, EN 60715		
Degree of Protection				IP 20		
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection				Yes		
Fault Indication				Red Flag		
Remote Contacts (RC)				Optional		
RC Switching Capacity				AC: 250 V/0.5 A; 125 V/3 A		
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{max}$			0.25 Nm		
<b>Order Information</b>						
Order Code		150	275	320	385	440
PROTEC B2S 37.5/xxx (3+0)		506.439	506.413	506.440	506.414	506.441
PROTEC B2SR 37.5/xxx (3+0) (with remote contacts)		506.442	506.415	506.443	506.416	506.444
Module PROTEC B2S(R) 12.5/xxx		506.471	506.472	506.473	506.474	506.475

## ProTec B2S(R) 37.5 (3+0)

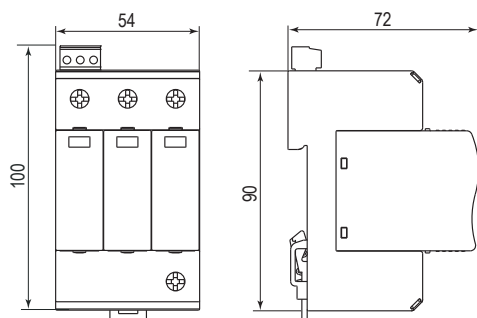
### Internal Configuration

#### Legend

- L Line
- PEN Combined Protective Earth and Neutral
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

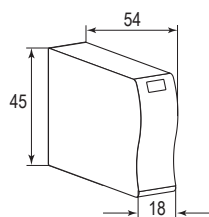
ProTec B2S 37.5/xxx (3+0)	150	275	320	385	440
Single Unit Weight	300 g	382 g	382 g	394 g	432 g
Single Unit DIN 43880 Dimension	3 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 62 mm				
Minimum Order Quantity	5 Units				
ProTec B2SR 37.5/xxx (3+0)	150	275	320	385	440
Single Unit Weight	305 g	387 g	387 g	399 g	437 g
Single Unit DIN 43880 Dimension	3 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 62 mm				
Minimum Order Quantity	5 Units				

### Module Internal Configuration

#### Module ProTec B2S(R) 12.5/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec B2S(R) 12.5/xxx	150	275	320	385	440
Single Unit Weight	78 g	88 g	102 g	116 g	128 g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm				
Minimum Order Quantity	12 Units				

Applicable connection configurations can be found on page 112.



Modular Multi-pole SPD  
**ProTec B2S(R) 50 (4+0)**  
 Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 25 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

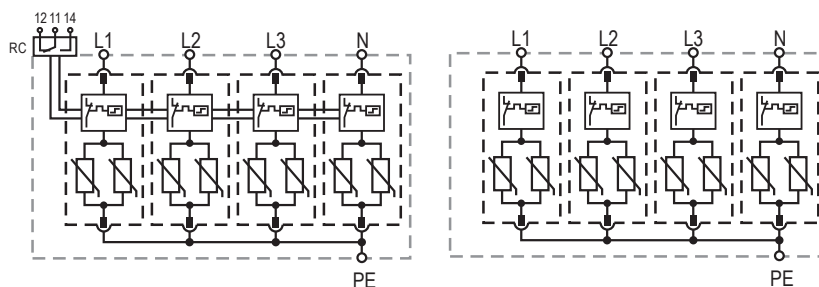
ProTec B2S(R) 50/xxx (4+0)		150	275	320	385	440
<b>Electrical</b>						
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	385V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			25 kA		
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$			60 kA		
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$			12.5 kA		
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$			50 kA		
Specific Energy	W/R			39 kJ/ $\Omega$		
Charge	Q			6.25 As		
Voltage Protection Level	$U_p$	< 1.0 kV	< 1.4 kV	< 1.5 kV	< 1.7 kV	< 2.0 kV
Response Time	$t_A$			< 25 ns		
Back-Up Fuse (if mains > 160 A)				160 A gG		
Short-Circuit Current Rating (AC)	$I_{SCCR}$			25 kA		
TOV withstand 5s	$U_T$	174V	335V	335V	403V	580V
Number of Ports				1		
<b>Mechanical &amp; Environmental</b>						
Temperature Range	$T_a$			-40 °C to +85 °C		
Permissible Humidity	RH			5%...95%		
Terminal Screw Torque	$M_{max}$			3.0 Nm		
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Mounting				35 mm DIN Rail, EN 60715		
Degree of Protection				IP 20		
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection				Yes		
Fault Indication				Red Flag		
Remote Contacts (RC)				Optional		
RC Switching Capacity				AC: 250V/0.5 A; 125V/3 A		
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{max}$			0.25 Nm		
<b>Order Information</b>						
Order Code		150	275	320	385	440
PROTEC B2S 50/xxx (4+0)		506.445	506.417	506.446	506.418	506.447
PROTEC B2SR 50/xxx (4+0) (with remote contacts)		506.448	506.419	506.449	506.420	506.450
Module PROTEC B2S(R) 12.5/xxx		506.471	506.472	506.473	506.474	506.475

## ProTec B2S(R) 50 (4+0)

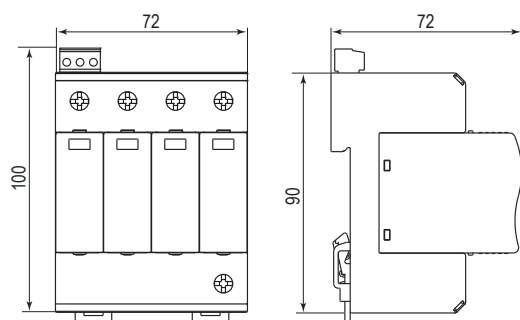
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

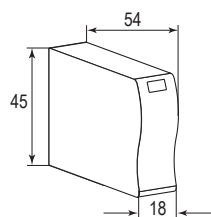
ProTec B2S 50/xxx (4+0)	150	275	320	385	440
Single Unit Weight	366 g	462 g	462 g	494 g	526 g
Single Unit DIN 43880 Dimension	4 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm				
Minimum Order Quantity	3 Units				
ProTec B2SR 50/xxx (4+0)	150	275	320	385	440
Single Unit Weight	371 g	467 g	467 g	499 g	531 g
Single Unit DIN 43880 Dimension	4 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm				
Minimum Order Quantity	3 Units				

### Module Internal Configuration

#### Module ProTec B2S(R) 12.5/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec B2S(R) 12.5/xxx	150	275	320	385	440
Single Unit Weight	78 g	88 g	102 g	116 g	128 g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm				
Minimum Order Quantity	12 Units				

Applicable connection configurations can be found on page 112.

# Modular Multi-pole SPD

## ProTec B2S(R) 25 (1+1)

### Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards  
 Network Systems: TT  
 Mode of Protection: L-N, N-PE  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA} / 50 \text{ kA} (10/350 \mu\text{s})$   
 $I_n = 25 \text{ kA} / 30 \text{ kA} (8/20 \mu\text{s})$   
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

### ProTec B2S(R) 25/xxx (1+1)

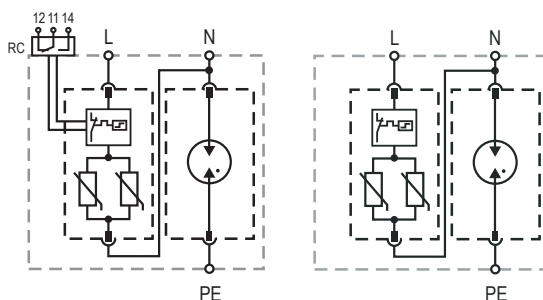
		150	275	320	385	440
<b>Electrical</b>						
Nominal AC Voltage (50/60 Hz)	$U_o$	120 V	230 V	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	(L-N) $U_c$	150 V	275 V	320 V	385 V	440 V
	(N-PE) $U_c$			255 V		
Nominal Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_n$			25 kA/30 kA		
Maximum Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{max}$			60 kA/50 kA		
Impulse Discharge Current (10/350 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{imp}$			12.5 kA/50 kA		
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$			25 kA		
Specific Energy	(L-N)/(N-PE) W/R			39 kJ/ $\Omega$ /625 kJ/ $\Omega$		
Charge	(L-N)/(N-PE) Q			6.25 As/25 As		
Voltage Protection Level	(L-N) $U_p$	< 1.0 kV	< 1.4 kV	< 1.5 kV	< 1.7 kV	< 2.0 kV
	(N-PE) $U_p$			< 1.7 kV		
Follow Current Interrupt Rating	(N-PE) $I_{fi}$			100 A <sub>RMS</sub>		
Response Time	(L-N)/(N-PE) $t_A$			< 25 ns / < 100 ns		
Back-Up Fuse (if mains > 160 A)	(L-N)			160 A gG		
Short-Circuit Current Rating (AC)	$I_{SCCR}$			25 kA		
TOV withstand 5s	(L-N) $U_T$	174 V	335 V	335 V	403 V	580 V
TOV withstand 200ms	(N-PE) $U_T$			1200 V/300 A		
Number of Ports				1		
<b>Mechanical &amp; Environmental</b>						
Temperature Range	$T_a$			-40 °C to +85 °C		
Permissible Humidity	RH			5%...95%		
Terminal Screw Torque	$M_{max}$			3.0 Nm		
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Degree of Protection				IP 20		
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection	(L-N)/(N-PE)			Yes/No		
Fault Indication	(L-N)/(N-PE)			Red Flag/No		
Remote Contacts (RC)				Optional		
RC Switching Capacity				AC: 250 V/0.5 A; 125 V/3 A		
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{max}$			0.25 Nm		
<b>Order Information</b>						
Order Code		150	275	320	385	440
PROTEC B2S 25/xxx (1+1)		506.451	506.452	506.453	506.454	506.455
PROTEC B2SR 25/xxx (1+1) (with remote contacts)		506.456	506.457	506.458	506.459	506.460
Module PROTEC B2S(R) 12.5/xxx		506.471	506.472	506.473	506.474	506.475
Module PROTUBE B2S 50/255		506.476	506.476	506.476	506.476	506.476

## ProTec B2S(R) 25 (1+1)

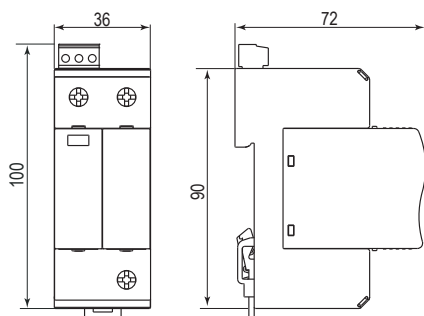
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

ProTec B2S 25/xxx (1+1)	150	275	320	385	440
Single Unit Weight	270 g	310 g	342 g	366 g	370 g
Single Unit DIN 43880 Dimension	2 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm				
Minimum Order Quantity	7 Units				
ProTec B2SR 25/xxx (1+1)	150	275	320	385	440
Single Unit Weight	275 g	315 g	347 g	371 g	375 g
Single Unit DIN 43880 Dimension	2 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm				
Minimum Order Quantity	7 Units				

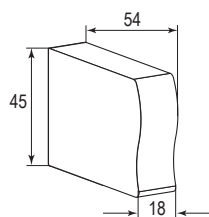
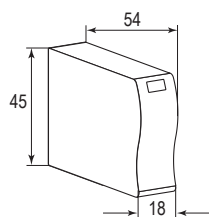
### Module Internal Configuration

#### Module ProTec B2S(R) 12.5/xxx

#### Module ProTube B2S 50/255



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec B2S(R) 12.5/xxx	150	275	320	385	440
Single Unit Weight	78 g	88 g	102 g	116 g	128 g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm				
Minimum Order Quantity	12 Units				

#### Dimensions & Packaging

Module ProTube B2S 50/255	255
Single Unit Weight	129 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm
Minimum Order Quantity	12 Units

Applicable connection configurations can be found on page 112.

# Modular Multi-pole SPD

## ProTec B2S(R) 50 (3+1)

Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards  
 Network Systems: TT, TN-S  
 Mode of Protection: L-N, N-PE  
 Surge Ratings:  $I_{imp} = 12.5 \text{ kA} / 50 \text{ kA} (10/350 \mu\text{s})$   
 $I_n = 25 \text{ kA} / 30 \text{ kA} (8/20 \mu\text{s})$   
 MOV Withstand: 100 kA (8/20  $\mu\text{s}$ )  
 IEC/EN Category: Class I, II / Type 1, 2  
 Protective Elements: High Energy MOV and GDT  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

### Technical Data

#### ProTec B2S(R) 50/xxx (3+1)

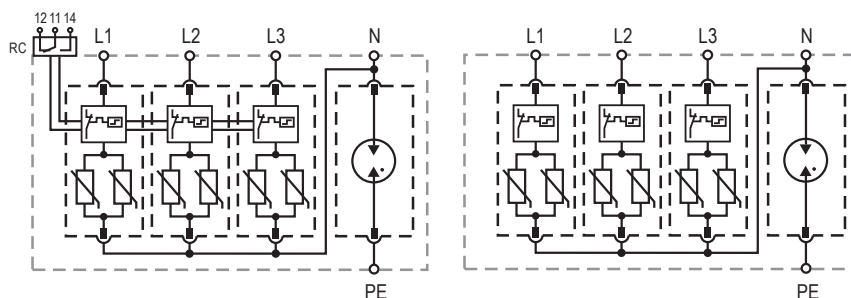
		275	320	385	440
<b>Electrical</b>					
Nominal AC Voltage (50/60 Hz)	$U_o$	230V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) $U_c$	275V	320V	385V	440V
	(N-PE) $U_c$			255V	
Nominal Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_n$		25 kA/30 kA		
Maximum Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{max}$		60 kA/50 kA		
Impulse Discharge Current (10/350 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{imp}$		12.5 kA/50 kA		
Total Discharge Current (10/350 $\mu\text{s}$ )	$I_{total}$		50 kA		
Specific Energy	(L-N)/(N-PE) W/R		39 kJ/ $\Omega$ /625 kJ/ $\Omega$		
Charge	(L-N)/(N-PE) Q		6.25 As/25 As		
Voltage Protection Level	(L-N) $U_p$	< 1.4 kV	< 1.5 kV	< 1.7 kV	< 2.0 kV
	(N-PE) $U_p$		< 1.7 kV		
Follow Current Interrupt Rating	(N-PE) $I_{fi}$		100 A <sub>RMS</sub>		
Response Time	(L-N)/(N-PE) $t_A$		< 25 ns / < 100 ns		
Back-Up Fuse (if mains > 160 A)			160 A gG		
Short-Circuit Current Rating	$I_{SCCR}$		25 kA		
TOV withstand 5s	(L-N) $U_T$	335V	335V	403V	580V
TOV withstand 200ms	(N-PE) $U_T$		1200V/300 A		
Number of Ports			1		
<b>Mechanical &amp; Environmental</b>					
Temperature Range	$T_a$		-40 °C to +85 °C		
Permissible Humidity	RH		5%...95%		
Terminal Screw Torque	$M_{max}$		3.0 Nm		
Conductor Cross Section (max)			35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Mounting			35 mm DIN Rail, EN 60715		
Degree of Protection			IP 20		
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection	(L-N)/(N-PE)		Yes/No		
Fault Indication	(L-N)/(N-PE)		Red Flag/No		
Remote Contacts (RC)			Optional		
RC Switching Capacity			AC: 250V/0.5 A; 125V/3 A		
RC Terminal Cross Section (max)			1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{max}$		0.25 Nm		
<b>Order Information</b>					
Order Code		275	320	385	440
PROTEC B2S 50/xxx (3+1)		506.462	506.463	506.464	506.465
PROTEC B2SR 50/xxx (3+1) (with remote contacts)		506.467	506.468	506.469	506.470
Module PROTEC B2S(R) 12.5/xxx		506.472	506.473	506.474	506.475
Module PROTUBE B2S 50/255		506.476	506.476	506.476	506.476

## ProTec B2S(R) 50 (3+1)

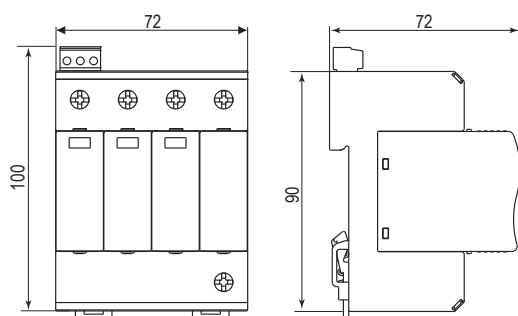
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

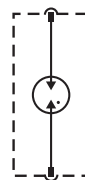
ProTec B2S 50/xxx (3+1)	275	320	385	440
Single Unit Weight	578g	642g	690g	698g
Single Unit DIN 43880 Dimension	4 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm			
Minimum Order Quantity	3 Units			
ProTec B2SR 50/xxx (3+1)	275	320	385	440
Single Unit Weight	583g	647g	695g	703g
Single Unit DIN 43880 Dimension	4 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm			
Minimum Order Quantity	3 Units			

### Module Internal Configuration

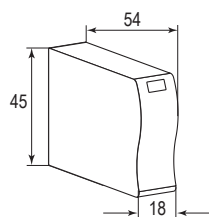
#### Module ProTec B2S(R) 12.5/xxx



#### Module ProTube B2S 50/255

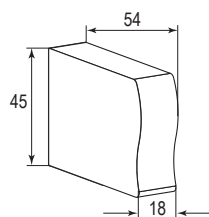


### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec B2S(R) 12.5/xxx	275	320	385	440
Single Unit Weight	88g	102g	116g	128g
Single Unit DIN 43880 Dimension	1 TE			
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm			
Minimum Order Quantity	12 Units			



#### Dimensions & Packaging

Module ProTube B2S 50/255	255
Single Unit Weight	129g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm
Minimum Order Quantity	12 Units

Applicable connection configurations can be found on page 112.

# DC Modular Multi-pole SPD for Photovoltaic Systems

## PV ProTec B(R) 5/1000 Y TD

### Type 1 • Type 2



Location of Use: Photovoltaic System - DC Side  
 Mode of Protection: (+)-PE, (-)-PE, (+) - (-)  
 Surge Ratings:  $I_{imp} = 5 \text{ kA (10/350}\mu\text{s)}$   
 $I_n = 15 \text{ kA (8/20}\mu\text{s)}$   
 EN Category: Type 1, 2  
 Protective Elements: High Energy MOV  
 Housing: Modular Design  
 Compliance: EN 50539-11:2013 + A1:2014

### Technical Data

PV ProTec B(R) 5/xxxx Y TD

1000

#### Electrical

Open Circuit Voltage	$U_{oc\ STC}$	830V
Maximum Continuous Operating Voltage (DC)	$U_{CPV}$	1000V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	15 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	40 kA
Impulse Discharge Current (10/350 $\mu\text{s}$ )	$I_{imp}$	5 kA
Specific Energy	W/R	6.25 kJ/ $\Omega$
Charge	Q	2.5 As
Total Discharge Current	(8/20 $\mu\text{s}$ ) $I_{total}$	30 kA
	(10/350 $\mu\text{s}$ ) $I_{total}$	5 kA
Voltage Protection Level	(+)-(-) $U_p$	< 3.5 kV
	(+)/(-)-PE $U_p$	< 3.5 kV
Short Circuit Current Rating	$I_{SCPV}$	1000 A
Response Time	$t_A$	< 25 ns
Number of Ports		1

#### Mechanical

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>
RC Terminal Screw Torque	$M_{max}$	0.25 Nm

#### Order Information

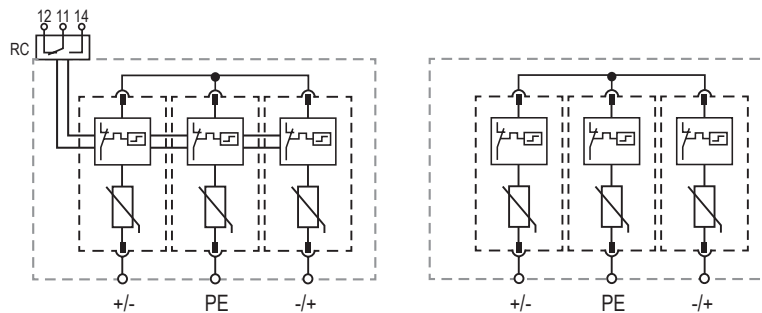
Order Code	1000
PV PROTEC B 5/xxxx Y TD	501.795
PV PROTEC BR 5/xxxx Y TD (with remote contacts)	501.796
Module PV PROTEC B 5/xxxx Y	501.797

## PV ProTec B(R) 5/1000 Y TD

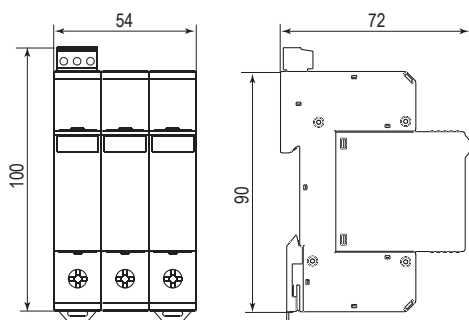
### Internal Configuration

#### Legend

- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]

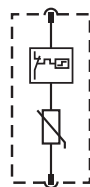


#### Dimensions & Packaging

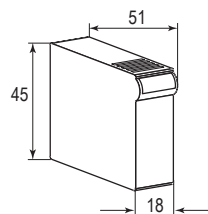
PV ProTec B 5/xxxx Y TD	
Single Unit Weight	1000
Single Unit DIN 43880 Dimension	398 g
Packaging Dimensions (H x W x L)	3 TE
Minimum Order Quantity	109 x 77 x 62 mm
	5 Units
PV ProTec BR 5/xxxx Y TD	
Single Unit Weight	1000
Single Unit DIN 43880 Dimension	403 g
Packaging Dimensions (H x W x L)	3 TE
Minimum Order Quantity	109 x 77 x 62 mm
	5 Units

### Module Internal Configuration

#### Module ProTec B 5/xxxx Y TD



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec B 5/xxxx Y TD	
Single Unit Weight	1000
Single Unit DIN 43880 Dimension	58 g
Packaging Dimensions (H x W x L)	1 TE
Minimum Order Quantity	98 x 77 x 110 mm
	12 Units

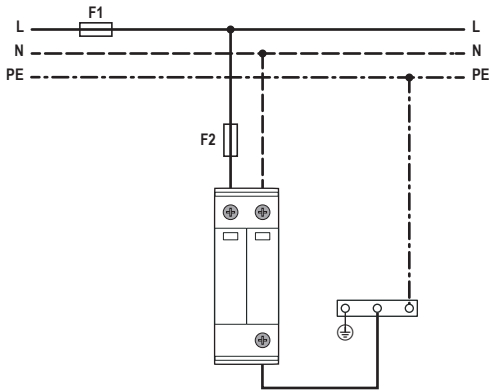
Applicable connection configurations can be found on page 113.



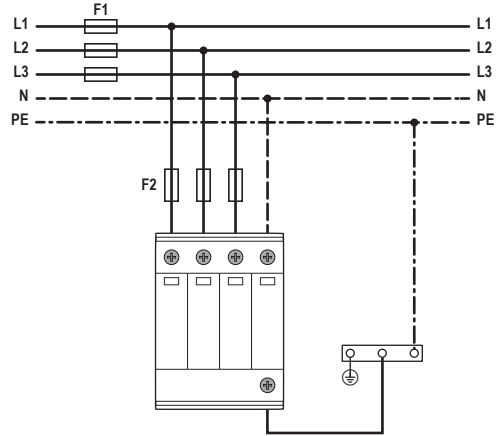
# Modular Multi-pole SPD Connection Configurations

## ProTec B2S(R) Series

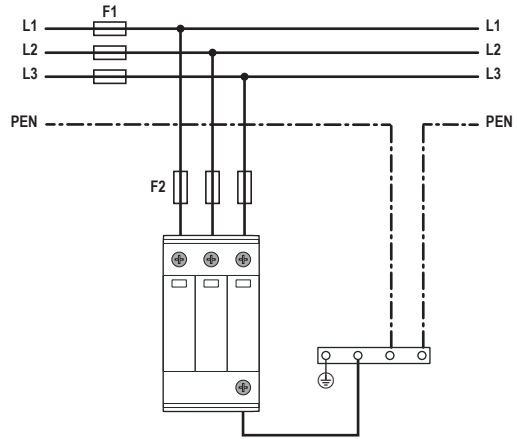
TN-S (Single-phase, 2+0)



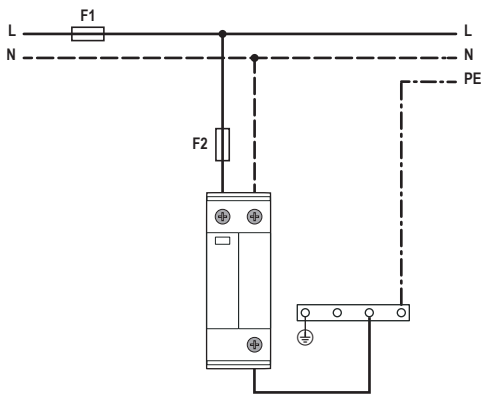
TN-S (Three-phase, 4+0)



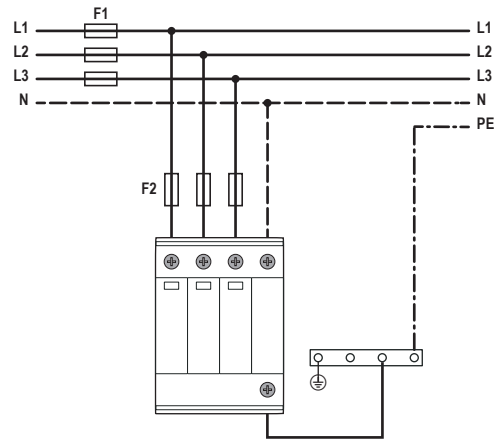
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)

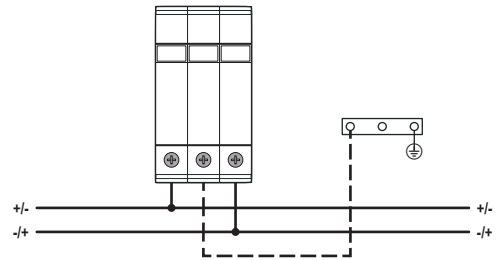


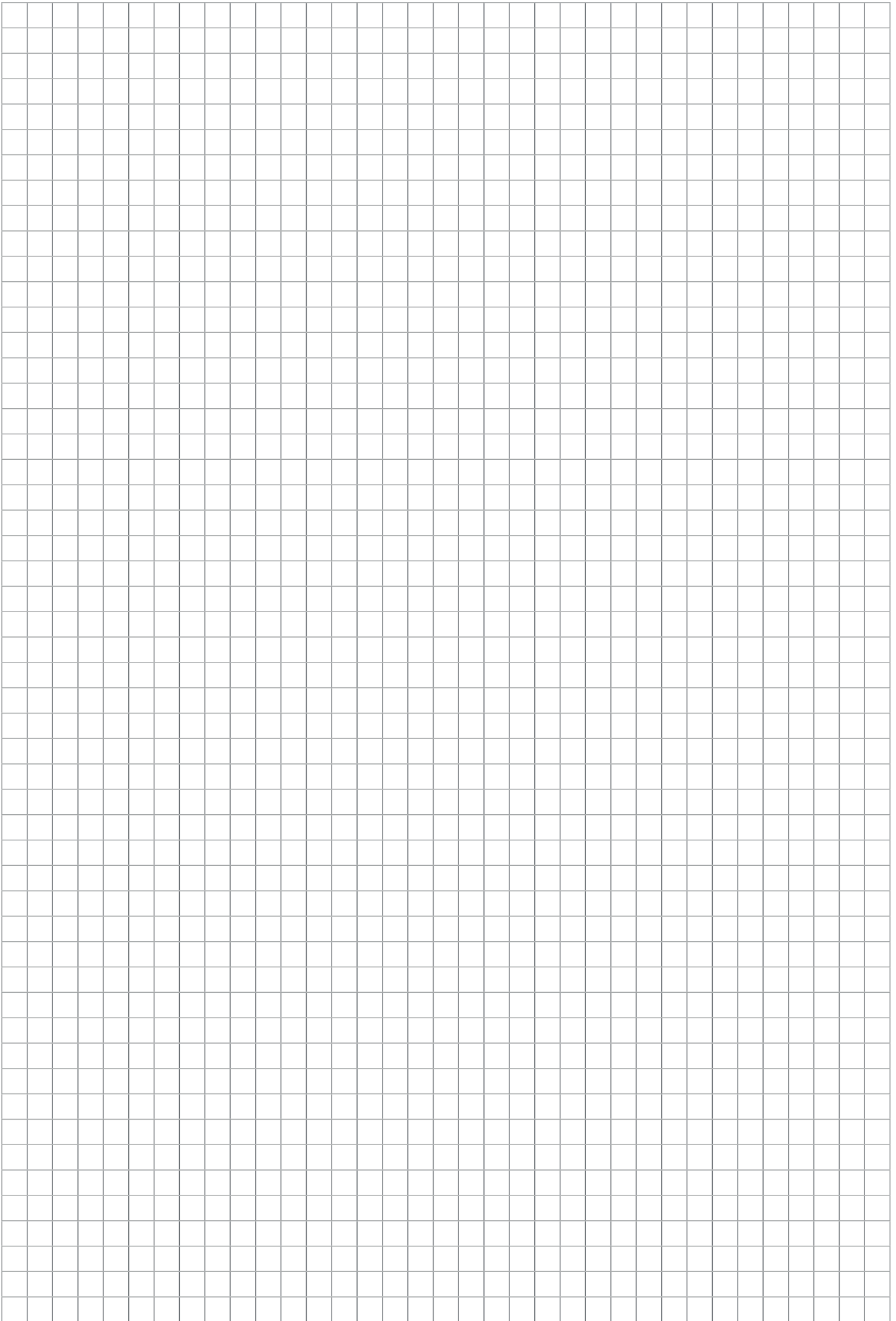
**Back-up Fuse**

- F1 > 160 A gG → — F2 = 160 A gG
- F1 ≤ 160 A gG → ~~— F2~~

DC Modular Multi-pole SPD Connection Configurations  
**PV ProTec B(R) Y TD Series**

PV ProTec B(R) 5/1000 Y TD





## Modular Single Pole & Multi-pole Surge Protective Devices (SPDs)



### SafeTec C, SafeTec CR & SafeTube C

The modular SafeTec C and CR series are suitable for all types of connections.

The patented thermal control (TC) function technology prevents catastrophic failures in case of temporary overvoltages (TOVs).

This all-in-one technology provides protection from overvoltage surges and transients. It has been developed to protect against partial direct and indirect lightning discharges and is intended to provide protection for sub-distribution board installations in Zones 0<sub>B</sub>-2 per IEC 62305.

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

The SafeTec Modular series consists of a patented current limiting varistors combination for each pole, equipped with separate thermal disconnection mechanisms.

SafeTec C and CR series comply with IEC/EN 61643-11 standards and are compatible to TN and TT network connection configurations.

For AC Applications

SafeTec C & CR (1+0)

SafeTec C & CR (2+0)

SafeTec C & CR (3+0)

SafeTec C & CR (4+0)

SafeTec C & CR (1+1)

SafeTec C & CR (3+1)

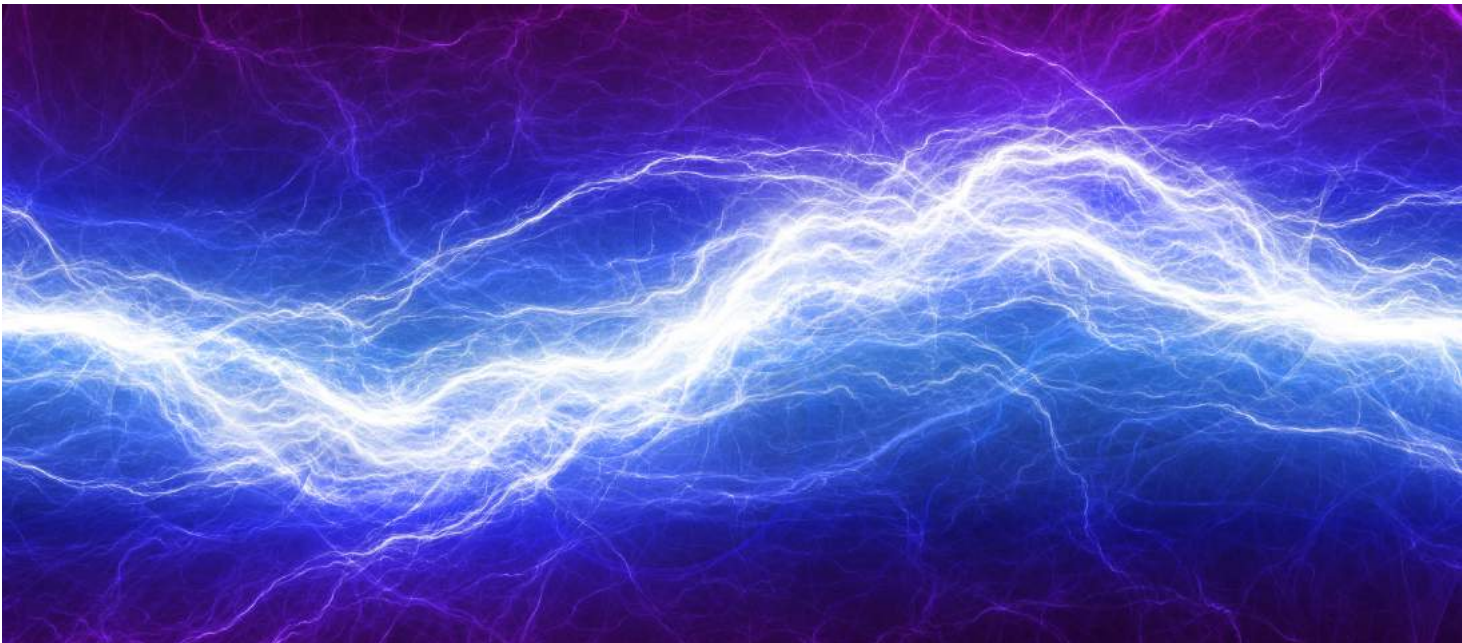
SafeTube C 40

SafeTec C & CR (3+0) WT

For DC Applications

PV SafeTec C & CR Y TD

PVG SafeTec C & CR Y



# Modular Single Pole SPD

## SafeTec C(R) (1+0)

### Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TN-S, TN-C, TT (only L-N)  
 Mode of Protection: L-PE, N-PE, L-PEN, L-N  
 Surge Ratings:  $I_n$  = up to 20 kA (8/20  $\mu$ s)  
 $I_{max}$  = up to 50 kA (8/20  $\mu$ s)  
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: TOV Withstand  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

SafeTec C(R) yy/xxx (1+0)		75	150	275	385	440	750	880
<b>Electrical</b>								
Nominal AC Voltage (50/60Hz)	$U_o$	48V	120V	230V	230V	230V	400V	400V
Maximum Continuous Operating Voltage (AC)	$U_c$	75V	150V	275V	385V	440V	750V	880V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	10 kA	20 kA	20 kA	20 kA	20 kA	12.5 kA	12.5 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	20 kA	50 kA	50 kA	50 kA	50 kA	25 kA	25 kA
Voltage Protection Level	$U_p$	< 0.8 kV	< 1.1 kV	< 1.5 kV	< 2.2 kV	< 2.3 kV	< 2.8 kV	< 3.0 kV
Response Time	$t_A$	< 25 ns						
Back-Up Fuse (if mains > 125A)		125A gG						
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25 kA						
TOV withstand 5s	$U_T$	92V	228V	438V	520V	594V	1000V	1100V
Number of Ports		1						
<b>Mechanical &amp; Environmental</b>								
Temperature Range	$T_a$	-40 °C to +85 °C						
Permissible Humidity	RH	5%...95%						
Terminal Screw Torque	$M_{max}$	3.0 Nm						
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)						
Mounting		35 mm DIN Rail, EN 60715						
Degree of Protection		IP 20						
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0						
Thermal Protection		Yes						
Fault Indication		Red Flag						
Remote Contacts (RC)		Optional						
RC Switching Capacity		AC: 250V/0.5A; 125V/3A						
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>						
RC Terminal Screw Torque	$M_{max}$	0.25 Nm						
<b>Order Information</b>								
Order Code		75	150	275	385	440	750	880
SAFETEC C 20/xx (1+0)		516.853						
SAFETEC CR 20/xx (1+0) (with remote contacts)		516.859						
SAFETEC C 40/xxx (1+0)			516.854	516.855	516.856	516.857		
SAFETEC CR 40/xxx (1+0)(with remote contacts)			516.860	516.861	516.862	516.863		
SAFETEC C 25/xxx (1+0)*							516.858	516.A66
SAFETEC CR 25/xxx (1+0)(with remote contacts)*							516.864	516.A67
Module SAFETEC C(R) 20/xx		516.865						
Module SAFETEC C(R) 40/xxx			516.866	516.867	516.868	516.869		
Module SAFETEC C(R) 25/xxx*							516.870	516.A68

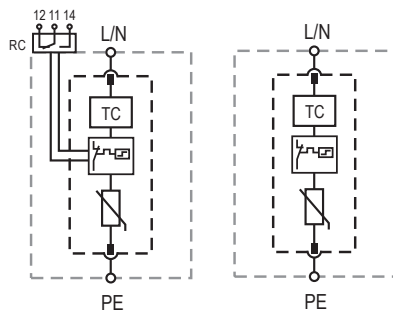
\*Product also available with UL certification.

## SafeTec C(R) (1+0)

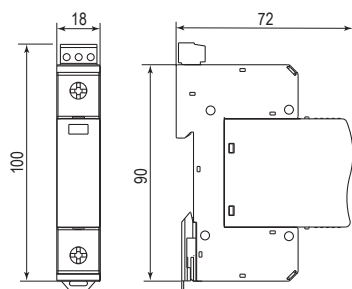
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TC Thermal Control Function



### Dimensions & Packaging [mm]

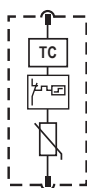


#### Dimensions & Packaging

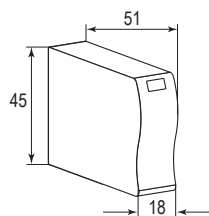
<b>SafeTec C 20/xx (1+0)</b>	<b>75</b>			
Single Unit Weight	125 g			
<b>SafeTec C 40/xxx (1+0)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Single Unit Weight	140 g	140 g	148 g	150 g
<b>SafeTec C 25/xxx (1+0)</b>			<b>750</b>	<b>880</b>
Single Unit Weight			156 g	156 g
<b>SafeTec CR 20/xx (1+0)</b>	<b>75</b>			
Single Unit Weight	130 g			
<b>SafeTec CR 40/xxx (1+0)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Single Unit Weight	148 g	148 g	156 g	158 g
<b>SafeTec CR 25/xxx (1+0)</b>			<b>750</b>	<b>880</b>
Single Unit Weight			164 g	164 g
Single Unit DIN 43880 Dimension	1 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 24 mm			
Minimum Order Quantity	12 Units			

### Module Internal Configuration

#### Module SafeTec C(R) yy/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

<b>Module SafeTec C(R) 20/xx</b>	<b>75</b>			
Single Unit Weight	58 g			
<b>Module SafeTec C(R) 40/xxx</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Single Unit Weight	62 g	66 g	72 g	74 g
<b>Module SafeTec C(R) 25/xxx</b>			<b>750</b>	<b>880</b>
Single Unit Weight			78 g	78 g
Single Unit DIN 43880 Dimension	1 TE			
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm			
Minimum Order Quantity	12 Units			

Applicable connection configurations can be found on page 136.

# Modular Multi-pole SPD SafeTec C(R) (2+0) Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_n$  = up to 20 kA (8/20 $\mu$ s)  
 $I_{max}$  = up to 50 kA (8/20 $\mu$ s)  
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: TOV Withstand  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

SafeTec C(R) yy/xxx (2+0)		75	150	275	385	440	750	880
<b>Electrical</b>								
Nominal AC Voltage (50/60 Hz)	$U_o$	48V	120V	230V	230V	230V	400V	400V
Maximum Continuous Operating Voltage (AC)	$U_c$	75V	150V	275V	385V	440V	750V	880V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	10 kA	20 kA	20 kA	20 kA	20 kA	12.5 kA	12.5 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	20 kA	50 kA	50 kA	50 kA	50 kA	25 kA	25 kA
Voltage Protection Level	$U_p$	< 0.8 kV	< 1.1 kV	< 1.5 kV	< 2.2 kV	< 2.3 kV	< 2.8 kV	< 3.0 kV
Response Time	$t_A$	< 25 ns						
Back-Up Fuse (if mains > 125 A)		125 A gG						
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25 kA						
TOV withstand 5s	$U_T$	92V	228V	438V	520V	594V	1000V	1100V
Number of Ports		1						

## Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C						
Permissible Humidity	RH	5%...95%						
Terminal Screw Torque	$M_{max}$	3.0 Nm						
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)						
Mounting		35 mm DIN Rail, EN 60715						
Degree of Protection		IP 20						
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0						
Thermal Protection		Yes						
Fault Indication		Red Flag						
Remote Contacts (RC)		Optional						
RC Switching Capacity		AC: 250V/0.5 A; 125V/3 A						
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>						
RC Terminal Screw Torque	$M_{max}$	0.25 Nm						

## Order Information

Order Code	75	150	275	385	440	750	880
SAFETEC C 40/xx (2+0)	516.873						
SAFETEC CR 40/xx (2+0) (with remote contacts)	516.879						
SAFETEC C 80/xxx (2+0)		516.874	516.875	516.876	516.877		
SAFETEC CR 80/xxx (2+0) (with remote contacts)		516.880	516.881	516.882	516.883		
SAFETEC C 50/xxx (2+0)*						516.878	516.A69
SAFETEC CR 50/xxx (2+0) (with remote contacts)*						516.884	516.A70
Module SAFETEC C(R) 20/xx	516.865						
Module SAFETEC C(R) 40/xxx		516.866	516.867	516.868	516.869		
Module SAFETEC C(R) 25/xxx*						516.870	516.A68

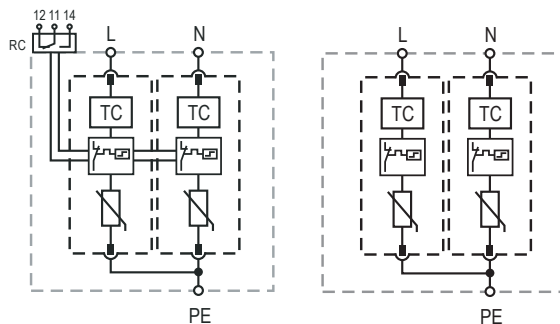
\*Product also available with UL certification.

## SafeTec C(R) (2+0)

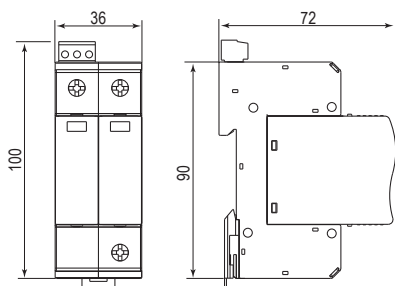
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TC Thermal Control Function



### Dimensions & Packaging [mm]

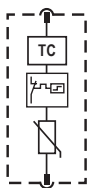


#### Dimensions & Packaging

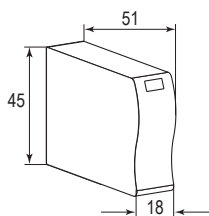
<b>SafeTec C 40/xx (2+0)</b>	<b>75</b>			
Single Unit Weight	250 g			
<b>SafeTec C 80/xxx (2+0)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Single Unit Weight	280 g	281 g	284 g	286 g
<b>SafeTec C 50/xxx (2+0)</b>				<b>750</b> <b>880</b>
Single Unit Weight				288 g   288 g
<b>SafeTec CR 40/xx (2+0)</b>	<b>75</b>			
Single Unit Weight	260 g			
<b>SafeTec CR 80/xxx (2+0)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Single Unit Weight	288 g	289 g	292 g	294 g
<b>SafeTec CR 50/xxx (2+0)</b>				<b>750</b> <b>880</b>
Single Unit Weight				296 g   296 g
Single Unit DIN 43880 Dimension	2 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm			
Minimum Order Quantity	7 Units			

### Module Internal Configuration

#### Module SafeTec C(R) yy/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

<b>Module SafeTec C(R) 20/xx</b>	<b>75</b>			
Single Unit Weight	58 g			
<b>Module SafeTec C(R) 40/xxx</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Single Unit Weight	62 g	66 g	72 g	74 g
<b>Module SafeTec C(R) 25/xxx</b>				<b>750</b> <b>880</b>
Single Unit Weight				78 g   78 g
Single Unit DIN 43880 Dimension	1 TE			
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm			
Minimum Order Quantity	12 Units			

Applicable connection configurations can be found on page 136.



# Modular Multi-pole SPD SafeTec C(R) (3+0) Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TN-C  
 Mode of Protection: L - PEN  
 Surge Ratings:  $I_n$  = up to 20 kA (8/20 $\mu$ s)  
 $I_{max}$  = up to 50 kA (8/20 $\mu$ s)  
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: TOV Withstand  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

SafeTec C(R) yy/xxx (3+0)		75	150	275	385	440	750	880
<b>Electrical</b>								
Nominal AC Voltage (50/60 Hz)	$U_o$	48V	120V	230V	230V	230V	400V	400V
Maximum Continuous Operating Voltage (AC)	$U_c$	75V	150V	275V	385V	440V	750V	880V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	10 kA	20 kA	20 kA	20 kA	20 kA	12.5 kA	12.5 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	20 kA	50 kA	50 kA	50 kA	50 kA	25 kA	25 kA
Voltage Protection Level	$U_p$	< 0.8 kV	< 1.1 kV	< 1.5 kV	< 2.2 kV	< 2.3 kV	< 2.8 kV	< 3.0 kV
Response Time	$t_A$	< 25 ns						
Back-Up Fuse (if mains > 125 A)		125 A gG						
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25 kA						
TOV withstand 5s	$U_T$	92V	228V	438V	520V	594V	1000V	1100V
Number of Ports		1						
<b>Mechanical &amp; Environmental</b>								
Temperature Range	$T_a$	-40 °C to +85 °C						
Permissible Humidity	RH	5%...95%						
Terminal Screw Torque	$M_{max}$	3.0 Nm						
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)						
Mounting		35 mm DIN Rail, EN 60715						
Degree of Protection		IP 20						
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0						
Thermal Protection		Yes						
Fault Indication		Red Flag						
Remote Contacts (RC)		Optional						
RC Switching Capacity		AC: 250V/0.5 A; 125V/3 A						
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>						
RC Terminal Screw Torque	$M_{max}$	0.25 Nm						
<b>Order Information</b>								
Order Code		75	150	275	385	440	750	880
SAFETEC C 60/xx (3+0)		516.885						
SAFETEC CR 60/xx (3+0) (with remote contacts)		516.891						
SAFETEC C 120/xxx (3+0)			516.886	516.887	516.888	516.889		
SAFETEC CR 120/xxx (3+0) (with remote contacts)			516.892	516.893	516.894	516.895		
SAFETEC C 75/xxx (3+0)*							516.890	516.A71
SAFETEC CR 75/xxx (3+0) (with remote contacts)*							516.896	516.A72
Module SAFETEC C(R) 20/xx		516.865						
Module SAFETEC C(R) 40/xxx			516.866	516.867	516.868	516.869		
Module SAFETEC C(R) 25/xxx*							516.870	516.A68

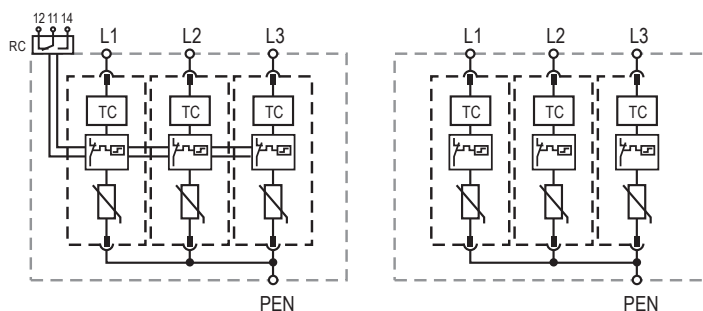
\*Product also available with UL certification.

## SafeTec C(R) (3+0)

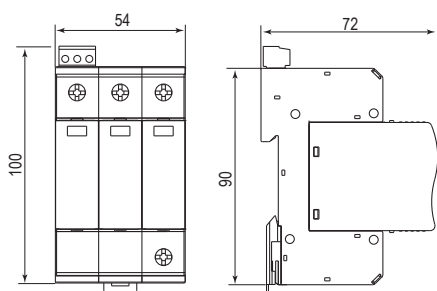
### Internal Configuration

#### Legend

- L Line
- PEN Combined Protective Earth and Neutral
- RC Remote Contacts Optional
- TC Thermal Control Function



### Dimensions & Packaging [mm]

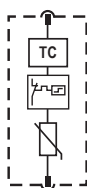


#### Dimensions & Packaging

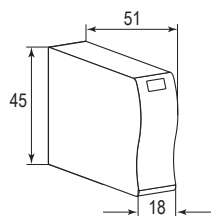
<b>SafeTec C 60/xx (3+0)</b>	<b>75</b>				
Single Unit Weight	375 g				
<b>SafeTec C 120/xxx (3+0)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>	
Single Unit Weight	420 g	422 g	448 g	450 g	
<b>SafeTec C 75/xxx (3+0)</b>				<b>750</b>	<b>750</b>
Single Unit Weight				468 g	468 g
<b>SafeTec CR 60/xx (3+0)</b>	<b>75</b>				
Single Unit Weight	490 g				
<b>SafeTec CR 120/xxx (3+0)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>	
Single Unit Weight	428 g	430 g	456 g	458 g	
<b>SafeTec CR 60/xxx (3+0)</b>				<b>750</b>	<b>750</b>
Single Unit Weight				476 g	476 g
Single Unit DIN 43880 Dimension	3 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 62 mm				
Minimum Order Quantity	5 Units				

### Module Internal Configuration

#### Module SafeTec C(R) yy/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

<b>Module SafeTec C(R) 20/xx</b>	<b>75</b>				
Single Unit Weight	58 g				
<b>Module SafeTec C(R) 40/xxx</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>	
Single Unit Weight	62 g	66 g	72 g	74 g	
<b>Module SafeTec C(R) 25/xxx</b>				<b>750</b>	<b>880</b>
Single Unit Weight				78 g	78 g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm				
Minimum Order Quantity	12 Units				

Applicable connection configurations can be found on page 136.

# Modular Multi-pole SPD

## SafeTec C(R) (4+0)

### Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_n$  = up to 20 kA (8/20 $\mu$ s)  
 $I_{max}$  = up to 50 kA (8/20 $\mu$ s)  
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: TOV Withstand  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

### SafeTec C(R) yyy/xxx (4+0)

150      275      385      440      750      880

#### Electrical

Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V	400V	400V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	385V	440V	750V	880V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20 kA	20 kA	20 kA	20 kA	12.5 kA	12.5 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	50 kA	50 kA	50 kA	50 kA	25 kA	25 kA
Voltage Protection Level	$U_p$	< 1.1 kV	< 1.5 kV	< 2.2 kV	< 2.3 kV	< 2.8 kV	< 3.0 kV
Response Time	$t_A$	< 25 ns					
Back-Up Fuse (if mains > 125 A)		125 A gG					
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25 kA					
TOV withstand 5s	$U_T$	228V	438V	520V	594V	1000V	1100V
Number of Ports		1					

#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C					
Permissible Humidity	RH	5%...95%					
Terminal Screw Torque	$M_{max}$	3.0 Nm					
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)					
Mounting		35 mm DIN Rail, EN 60715					
Degree of Protection		IP 20					
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0					
Thermal Protection		Yes					
Fault Indication		Red Flag					
Remote Contacts (RC)		Optional					
RC Switching Capacity		AC: 250V/0.5A; 125V/3A					
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>					
RC Terminal Screw Torque	$M_{max}$	0.25 Nm					

#### Order Information

Order Code	150	275	385	440	750	880
SAFETEC C 160/xxx (4+0)	516.898	516.899	516.900	516.901		
SAFETEC CR 160/xxx (4+0) (with remote contacts)	516.904	516.905	516.906	516.907		
SAFETEC C 100/xxx (4+0)*					516.902	516.A73
SAFETEC CR 100/xxx (4+0) (with remote contacts)*					516.908	516.A74
Module SAFETEC C(R) 40/xxx	516.866	516.867	516.868	516.869		
Module SAFETEC C(R) 25/xxx*					516.870	516.A68

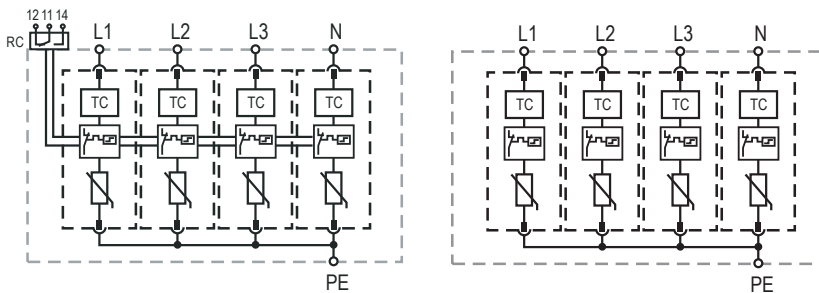
\*Product also available with UL certification.

## SafeTec C(R) (4+0)

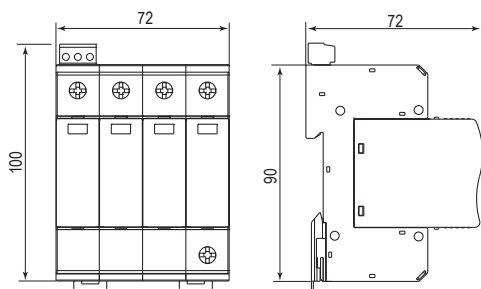
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TC Thermal Control Function



### Dimensions & Packaging [mm]

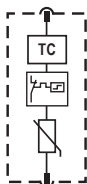


#### Dimensions & Packaging

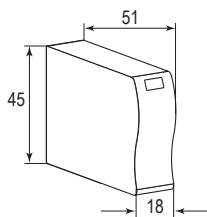
<b>SafeTec C 160/xxx (4+0)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Single Unit Weight	560 g	562 g	595 g	598 g
<b>SafeTec C 100/xxx (4+0)</b>			<b>750</b>	<b>880</b>
Single Unit Weight			602 g	602 g
<b>SafeTec CR 160/xxx (4+0)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Single Unit Weight	568 g	570 g	603 g	606 g
<b>SafeTec CR 100/xxx (4+0)</b>			<b>750</b>	<b>880</b>
Single Unit Weight			610 g	610 g
Single Unit DIN 43880 Dimension	4 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm			
Minimum Order Quantity	3 Units			

### Module Internal Configuration

#### Module SafeTec C(R) yy/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

<b>Module SafeTec C(R) 40/xxx</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Single Unit Weight	62 g	66 g	72 g	74 g
<b>Module SafeTec C(R) 25/xxx</b>			<b>750</b>	<b>880</b>
Single Unit Weight			78 g	78 g
Single Unit DIN 43880 Dimension	1 TE			
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm			
Minimum Order Quantity	12 Units			

Applicable connection configurations can be found on page 136.

# Modular Multi-pole SPD

## SafeTec C(R) (1+1)

### Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TT, TN-S  
 Mode of Protection: L-N, N-PE  
 Surge Ratings:  $I_n =$  up to 20 kA (8/20 $\mu$ s)  
 $I_{max} =$  up to 50 kA (8/20 $\mu$ s)  
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: TOV Withstand  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

### SafeTec C(R) yy/xxx (1+1)

75      150      275      385      440

#### Electrical

Nominal AC Voltage (50/60Hz)	$U_o$	48V	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) $U_c$	75V	150V	275V	385V	440V
	(N-PE) $U_c$			255V		
Nominal Discharge Current (8/20 $\mu$ s)	(L-N)/(N-PE) $I_n$	10kA/20kA	20kA/20kA	20kA/20kA	20kA/20kA	20kA/20kA
Maximum Discharge Current (8/20 $\mu$ s)	(L-N)/(N-PE) $I_{max}$	20kA/40kA	50kA/40kA	50kA/40kA	50kA/40kA	50kA/40kA
Voltage Protection Level	(L-N) $U_p$	< 0.8kV	< 1.0kV	< 1.5kV	< 2.2kV	< 2.3kV
	(N-PE) $U_p$			< 1.5kV		
Follow Current Interrupt Rating	(N-PE) $I_{fi}$			100A <sub>RMS</sub>		
Response Time	(L-N)/(N-PE) $t_A$			< 25ns / < 100ns		
Back-Up Fuse (if mains > 125A)				125A gG		
Short-Circuit Current Rating (AC)	$I_{SCCR}$			25kA		
TOV withstand 5s	(L-N) $U_T$	92V	228V	438V	520V	594V
TOV withstand 200ms	(N-PE) $U_T$			1200V/300A		
Number of Ports				1		

#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C				
Permissible Humidity	RH	5%...95%				
Terminal Screw Torque	$M_{max}$	3.0Nm				
Conductor Cross Section (max)		35mm <sup>2</sup> (solid) / 25mm <sup>2</sup> (stranded)				
Mounting		35mm DIN Rail, EN 60715				
Degree of Protection		IP 20				
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0				
Thermal Protection	(L-N)/(N-PE)	Yes/No				
Fault Indication	(L-N)/(N-PE)	Red Flag/No				
Remote Contacts (RC)		Optional				
RC Switching Capacity		AC: 250V/0.5A; 125V/3A				
RC Terminal Cross Section (max)		1.5mm <sup>2</sup>				
RC Terminal Screw Torque	$M_{max}$	0.25Nm				

#### Order Information

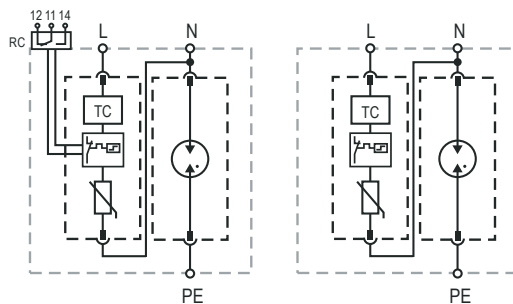
Order Code	75	150	275	385	440
SAFETEC C 40/xx (1+1)	516.909				
SAFETEC CR 40/xx (1+1) (with remote contacts)	516.915				
SAFETEC C 80/xxx (1+1)		516.910	516.911	516.912	516.913
SAFETEC CR 80/xxx (1+1) (with remote contacts)		516.916	516.917	516.918	516.919
Module SAFETEC C(R) 20/xx	516.865				
Module SAFETEC C(R) 40/xxx		516.866	516.867	516.868	516.869
Module SAFETUBE C 40/255	516.872	516.872	516.872	516.872	516.872

## SafeTec C(R) (1+1)

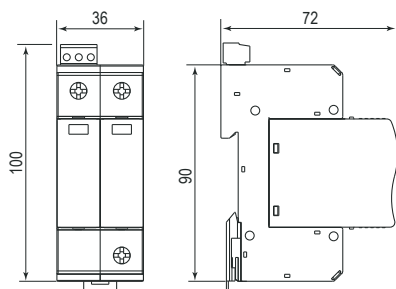
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TC Thermal Control Function



### Dimensions & Packaging [mm]



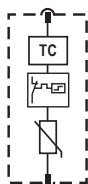
#### Dimensions & Packaging

<b>SafeTec C 40/xx (1+1)</b>	<b>75</b>			
Single Unit Weight	253 g			
<b>SafeTec C 80/xxx (1+1)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Single Unit Weight	258 g	258 g	265 g	268 g
<b>SafeTec CR 40/xx (1+1)</b>	<b>75</b>			
Single Unit Weight	261 g			
<b>SafeTec CR 80/xxx (1+1)</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Single Unit Weight	266 g	266 g	274 g	276 g
Single Unit DIN 43880 Dimension	2 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm			
Minimum Order Quantity	7 Units			

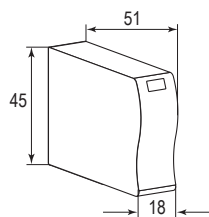
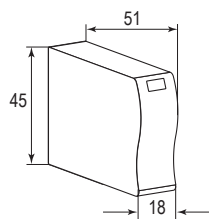
### Module Internal Configuration

#### Module SafeTec C(R) yy/xxx

#### Module SafeTube C 40/255



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

<b>Module SafeTec C(R) 20/xx</b>	<b>75</b>			
Single Unit Weight	58 g			
<b>Module SafeTec C(R) 40/xxx</b>	<b>150</b>	<b>275</b>	<b>385</b>	<b>440</b>
Single Unit Weight	62 g	66 g	72 g	74 g
Single Unit DIN 43880 Dimension	1 TE			
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm			
Minimum Order Quantity	12 Units			

#### Dimensions & Packaging

<b>Module SafeTube C 40/255</b>	<b>255</b>			
Single Unit Weight	34 g			
Single Unit DIN 43880 Dimension	1 TE			
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm			
Minimum Order Quantity	12 Units			

Applicable connection configurations can be found on page 136.

# Modular Multi-pole SPD

## SafeTec C(R) 160 (3+1)

### Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TT, TN-S  
 Mode of Protection: L-N, N-PE  
 Surge Ratings:  $I_n =$  up to 20 kA (8/20  $\mu$ s)  
 $I_{max} =$  up to 50 kA (8/20  $\mu$ s)  
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV and GDT  
 Safety: TOV Withstand  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

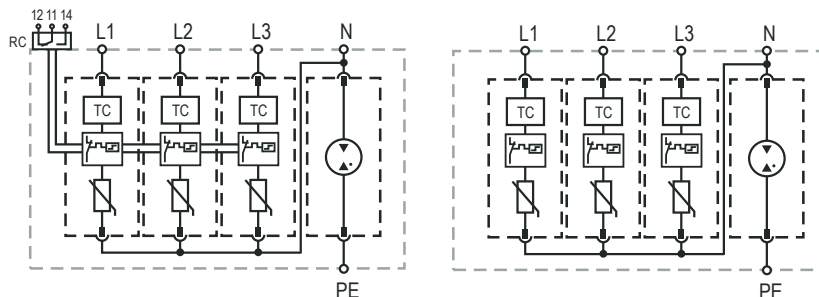
SafeTec C(R) 160/xxx (3+1)		275	385	440
<b>Electrical</b>				
Nominal AC Voltage (50/60 Hz)	$U_o$	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) $U_c$	275V	385V	440V
	(N-PE) $U_c$		255V	
Nominal Discharge Current (8/20 $\mu$ s)	(L-N)/(N-PE) $I_n$	20 kA/20 kA	20 kA/20 kA	20 kA/20 kA
Maximum Discharge Current (8/20 $\mu$ s)	(L-N)/(N-PE) $I_{max}$	50 kA/40 kA	50 kA/40 kA	50 kA/40 kA
Voltage Protection Level	(L-N) $U_p$	< 1.5 kV	< 2.2 kV	< 2.3 kV
	(N-PE) $U_p$		< 1.5 kV	
Follow Current Interrupt Rating	(N-PE) $I_{fi}$		100 A <sub>RMS</sub>	
Response Time	(L-N)/(N-PE) $t_A$		< 25 ns / < 100 ns	
Back-Up Fuse (if mains > 125 A)			125 A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$		25 kA	
TOV withstand 5s	(L-N) $U_T$	438 V	520 V	594 V
TOV withstand 200ms	(N-PE) $U_T$		1200 V/300 A	
Number of Ports			1	
<b>Mechanical &amp; Environmental</b>				
Temperature Range	$T_a$	-40 °C to +85 °C		
Permissible Humidity	RH	5%...95%		
Terminal Screw Torque	$M_{max}$	3.0 Nm		
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Mounting		35 mm DIN Rail, EN 60715		
Degree of Protection		IP 20		
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection	(L-N)/(N-PE)	Yes/No		
Fault Indication	(L-N)/(N-PE)	Red Flag/No		
Remote Contacts (RC)		Optional		
RC Switching Capacity		AC: 250V/0.5 A; 125V/3 A		
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{max}$	0.25 Nm		
<b>Order Information</b>				
Order Code		275	385	440
SAFETEC C 160/xxx (3+1)		516.923	516.924	516.925
SAFETEC CR 160/xxx (3+1) (with remote contacts)		516.929	516.930	516.931
Module SAFETEC C(R) 40/xxx		516.867	516.868	516.869
Module SAFETUBE C 40/255		516.872	516.872	516.872

## SafeTec C(R) (3+1)

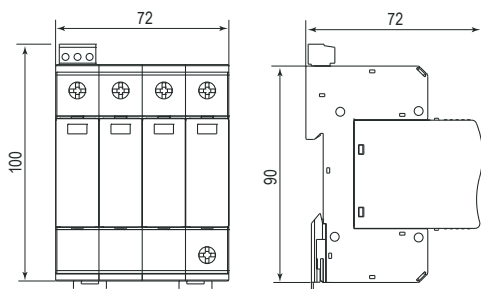
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TC Thermal Control Function



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

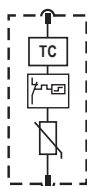
SafeTec C 160/xxx (3+1)	275	385	440
Single Unit Weight	540 g	565 g	568 g
Single Unit DIN 43880 Dimension	4 TE		
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm		
Minimum Order Quantity	3 Units		

SafeTec CR 160/xxx (3+1)	275	385	440
Single Unit Weight	548 g	574 g	576 g
Single Unit DIN 43880 Dimension	4 TE		
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm		
Minimum Order Quantity	3 Units		

### Module Internal Configuration

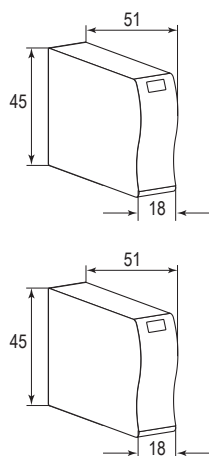
#### Module SafeTec C(R) 40/xxx



#### Module SafeTube C 40/255



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module SafeTec C(R) 40/xxx	275	385	440
Single Unit Weight	66 g	72 g	74 g
Single Unit DIN 43880 Dimension	1 TE		
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm		
Minimum Order Quantity	12 Units		

#### Dimensions & Packaging

Module SafeTube C 40/255	255
Single Unit Weight	34 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm
Minimum Order Quantity	12 Units

Applicable connection configurations can be found on page 136.



Modular Single Pole SPD  
**SafeTube C 40**  
 Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TT  
 Mode of Protection: N-PE  
 Surge Ratings:  $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 $I_{max} = 40 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy GDT  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

SafeTube C 40/xxx

255

### Electrical

Nominal AC Voltage (50/60 Hz)	$U_o$	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	255V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	20 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	40 kA
Voltage Protection Level	$U_p$	< 1.5 kV
Follow Current Interrupt Rating	$I_{fi}$	100 A <sub>RMS</sub>
Response Time	$t_A$	< 100 ns
TOV withstand 200ms	$U_T$	1200V/300A
Number of Ports		1

### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0

### Order Information

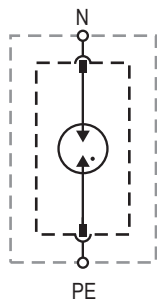
Order Code		255
SAFETUBE C 40/xxx		516.871
Module SAFETUBE C 40/xxx		516.872

## SafeTube C 40

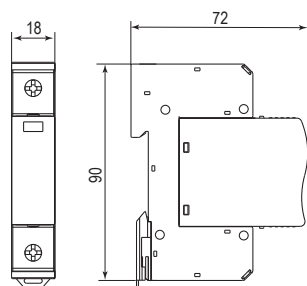
### Internal Configuration

#### Legend

N Neutral  
PE Protective Earth



### Dimensions & Packaging [mm]

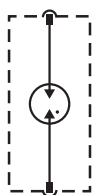


#### Dimensions & Packaging

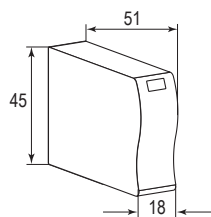
SafeTube C 40/xxx	255
Single Unit Weight	118 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H x W x L)	110 x 77 x 24 mm
Minimum Order Quantity	12 Units

### Module Internal Configuration

#### Module SafeTube C 40/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module SafeTube C 40/xxx	255
Single Unit Weight	34 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm
Minimum Order Quantity	12 Units

Applicable connection configurations can be found on page 136.

# Modular Multi-pole SPD for Wind Turbine Systems

## SafeTec C(R) (3+0) WT

### Class II • Type 2



Location of Use: Wind Turbine Systems  
Sub-distribution Boards

Network Systems: TN-C

Mode of Protection: L - PEN

Surge Ratings:  $I_n = 12.5 \text{ kA (8/20}\mu\text{s)}$   
 $I_{\text{max}} = 25 \text{ kA (8/20}\mu\text{s)}$

IEC/EN Category: Class II / Type 2

Protective Elements: High Energy MOV

Safety: TOV Withstand

Housing: Modular Design

Compliance: IEC 61643-11:2011  
EN 61643-11:2012

## Technical Data

### SafeTec C(R) xxx (3+0) WT

750

880

#### Electrical

Nominal AC Voltage (50/60 Hz)	$U_o$	690V	690V
Maximum Continuous Operating Voltage (AC)	$U_c$	750V	880V
Nominal Discharge Current (8/20 $\mu\text{s}$ ) per pole	$I_n$	12.5 kA	12.5 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ ) per pole	$I_{\text{max}}$	25 kA	25 kA
Voltage Protection Level	$U_p$	2.8 kV	3.0 kV
Response Time	$t_A$	< 25 ns	
Back-Up Fuse (if mains > 125 A)		125 A gG	
Short-Circuit Current Rating (AC) (50 Hz)	$I_{\text{SCCR}}$	25 kA	
TOV withstand 5s	$U_T$	1000V	1100V
Number of Ports		1	

#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	$M_{\text{max}}$	3.0 Nm	
Conductor Cross Section		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection		Yes	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5 A; 125V/3 A	
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>	
RC Terminal Screw Torque		0.25 Nm	

#### Order Information

Order Code	750	880
SAFETEC C xxx (3+0) WT*	516.A47	516.A48
SAFETEC CR xxx (3+0) WT (with remote contacts)*	516.A50	516.A51
Module SAFETEC C(R) xxx WT*	516.A53	516.A54

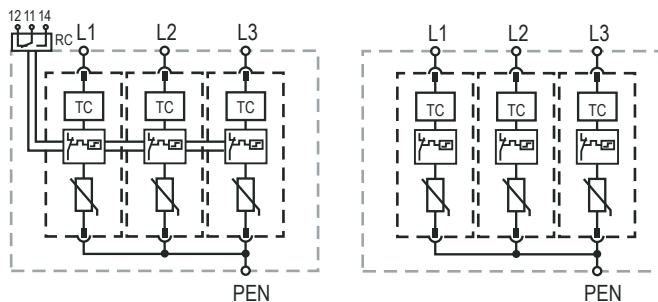
\*Product also available with UL certification.

## SafeTec C(R) (3+0) WT

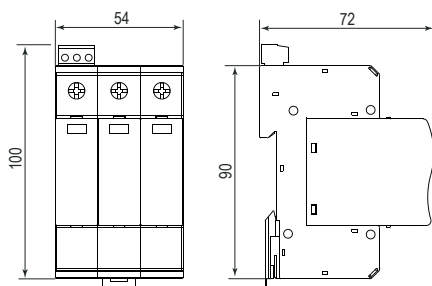
### Internal Configuration

#### Legend

- L Line
- PEN Combined Protective Earth and Neutral
- RC Remote Contacts Optional
- TC Thermal Control Function



### Dimensions & Packaging [mm]

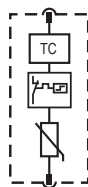


#### Dimensions & Packaging

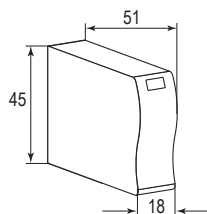
	750	880
<b>SafeTec C xxx (3+0) WT</b>		
Single Unit Weight	364 g	364 g
Single Unit DIN 43880 Dimension	3 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 62 mm	
Minimum Order Quantity	5 Units	
<b>SafeTec CR xxx (3+0) WT</b>		
Single Unit Weight	369 g	369 g
Single Unit DIN 43880 Dimension	3 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 62 mm	
Minimum Order Quantity	5 Units	

### Module Internal Configuration

#### Module SafeTec C(R) xxx WT



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

	750	880
<b>Module SafeTec C(R) xxx WT</b>		
Single Unit Weight	78 g	78 g
Single Unit DIN 43880 Dimension	1 TE	
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm	
Minimum Order Quantity	12 Units	

Applicable connection configurations can be found on page 137.

# DC Modular Multi-pole SPD for Photovoltaic Systems

## PV SafeTec C(R) 50 Y TD

### Type 2



**Location of Use:** Photovoltaic System - DC Side  
**Mode of Protection:** (+)-PE, (-)-PE, (+)-(-)  
**Surge Ratings:**  $I_n = 20\text{ kA (8/20}\mu\text{s)}$   
 $I_{max} = 50\text{ kA (8/20}\mu\text{s)}$   
**EN Category:** Type 2  
**Protective Elements:** High Energy MOV and GDT  
**Safety:** Patented Current Limiting  
**Housing:** Modular Design  
**Compliance:** EN 50539-11:2013 + A1:2014

### Technical Data

PV SafeTec C(R) 50/xxxx Y TD

1000

#### Electrical

Open Circuit Voltage	$U_{oc\text{ STC}}$	830V
Maximum Continuous Operating Voltage (DC)	$U_{CPV}$	1000V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	20 kA
Total Discharge Current (8/20 $\mu\text{s}$ )	$I_{total}$	40 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	50 kA
Voltage Protection Level	(+)-(-) $U_p$	< 4.6 kV
	(+)/(-)-PE $U_p$	< 4.6 kV
Short Circuit Current Rating	$I_{SCPV}$	1000 A
Response Time	$t_A$	< 25 ns
Number of Ports		1

#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5 A; 125V/3 A
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>
RC Terminal Screw Torque	$M_{max}$	0.25 Nm

#### Order Information

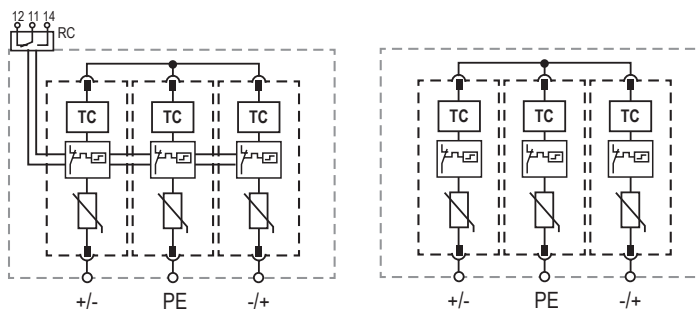
Order Code		1000
PV SAFETEC C 50/xxxx Y TD		516.A92
PV SAFETEC CR 50/xxxx Y TD (with remote contacts)		516.A94
Module PV SAFETEC C 50/xxxx Y		516.A19

## PV SafeTec C(R) 50 Y TD

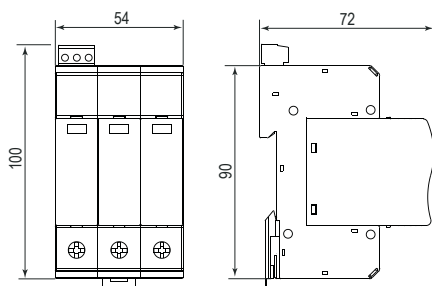
### Internal Configuration

#### Legend

- PE Protective Earth
- RC Remote Contacts Optional
- TC Thermal Control Function



### Dimensions & Packaging [mm]

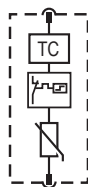


#### Dimensions & Packaging

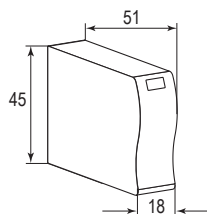
<b>PV SafeTec C 50/xxxx Y TD</b>	<b>1000</b>
Single Unit Weight	396 g
Single Unit DIN 43880 Dimension	3 TE
Packaging Dimensions (H x W x L)	109 x 77 x 62 mm
Minimum Package Quantity	5 Units
<b>PV SafeTec CR 50/xxxx Y TD</b>	<b>1000</b>
Single Unit Weight	402 g
Single Unit DIN 43880 Dimension	3 TE
Packaging Dimensions (H x W x L)	109 x 77 x 62 mm
Minimum Order Quantity	5 Units

### Module Internal Configuration

#### Module SafeTec C 50/xxxx Y



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

<b>Module PV SafeTec C 50/xxxx Y TD</b>	<b>1000</b>
Single Unit Weight	74 g
Single Unit DIN 43880 Dimension	1TE
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm
Minimum Order Quantity	12 Units

Applicable connection configurations can be found on page 137.

# DC Modular Multi-pole SPD for Photovoltaic Systems

## PVG SafeTec C(R) 25 Y TD

### Type 2



**Location of Use:** Photovoltaic System - DC Side  
**Mode of Protection:** (+)-PE, (-)-PE, (+)-(-)  
**Surge Ratings:**  $I_n = 12.5 \text{ kA (8/20}\mu\text{s)}$   
 $I_{max} = 25 \text{ kA (8/20}\mu\text{s)}$   
**EN Category:** Type 2  
**Protective Elements:** High Energy MOV and GDT  
**Leakage Current:** No Leakage Current (+)/(-)-PE  
**Safety:** Patented Current Limiting  
**Housing:** Modular Design  
**Compliance:** EN 50539-11:2013 + A1:2014

### Technical Data

PVG SafeTec C(R) 25/xxxx Y TD

1000

#### Electrical

Open Circuit Voltage	$U_{oc\ STC}$	830V
Maximum Continuous Operating Voltage (DC)	$U_{CPV}$	1000V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	12.5 kA
Total Discharge Current (8/20 $\mu\text{s}$ )	$I_{total}$	25 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	25 kA
Voltage Protection Level	(+)-(-) $U_p$	< 6.0 kV
	(+)/(-)-PE $U_p$	< 3.2 kV
Short Circuit Current Rating	$I_{SCPV}$	1000 A
Response Time	$t_A$	< 25 ns
Number of Ports		1

#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5 A; 125V/3 A
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>
RC Terminal Screw Torque	$M_{max}$	0.25 Nm

#### Order Information

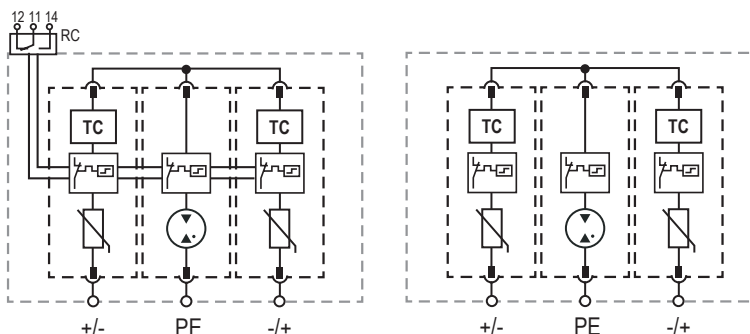
Order Code		1000
PVG SAFETEC C 25/xxxx Y TD		516.A97
PVG SAFETEC CR 25/xxxx Y TD (with remote contacts)		516.A98
Module PVG SAFETEC C 25/xxxx Y		516.A99
Module PVG SAFETUBE C 25/xxxx Y		516.B01

## PVG SafeTec C(R) 25 Y TD

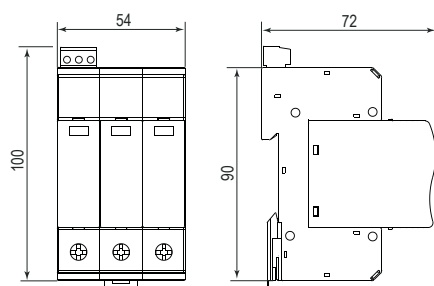
### Internal Configuration

#### Legend

- PE Protective Earth
- RC Remote Contacts Optional
- TC Thermal Control Function



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

PVG SafeTec C 25/xxxx Y TD	
Quantity	1000
Single Unit Weight	396 g
Single Unit DIN 43880 Dimension	3 TE
Packaging Dimensions (H x W x L)	109 x 77 x 62 mm
Minimum Package Quantity	5 Units

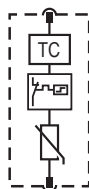
  

PVG SafeTec CR 25/xxxx Y TD	
Quantity	1000
Single Unit Weight	402 g
Single Unit DIN 43880 Dimension	3 TE
Packaging Dimensions (H x W x L)	109 x 77 x 62 mm
Minimum Order Quantity	5 Units

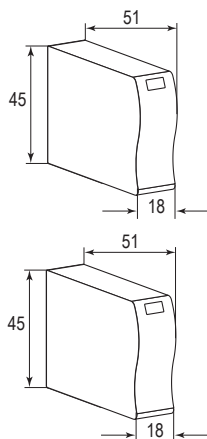
### Module Internal Configuration

#### Module PVG SafeTec C 25/xxxx Y

#### Module PVG SafeTube C 25/xxxx Y



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module PVG SafeTec C 25/xxxx Y	
Quantity	1000
Single Unit Weight	74 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm
Minimum Order Quantity	12 Units

#### Dimensions & Packaging

Module PVG SafeTube C 25/xxxx Y	
Quantity	1000
Single Unit Weight	34 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm
Minimum Order Quantity	12 Units

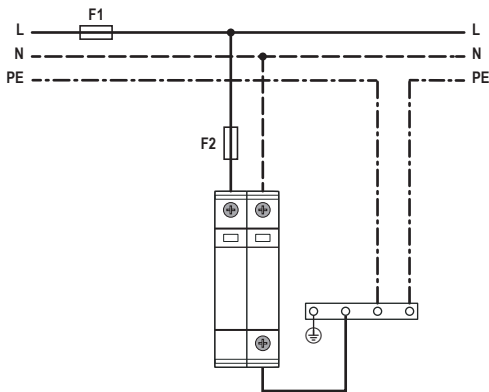
Applicable connection configurations can be found on page 137.



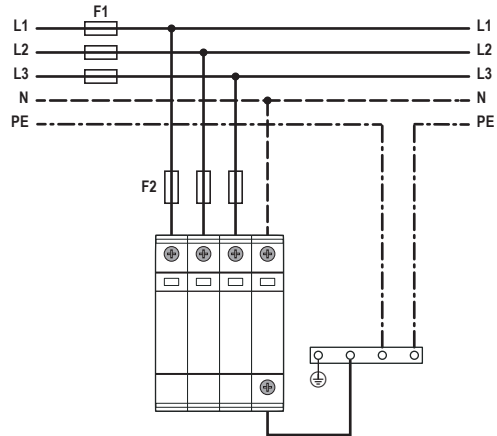
# Modular Multi-pole SPD Connection Configurations

## SafeTec C(R) Series

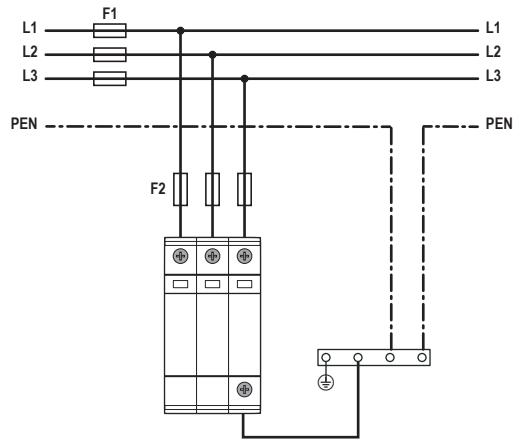
TN-S (Single-phase, 2+0)



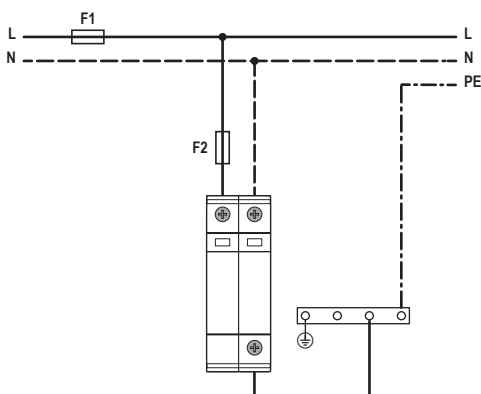
TN-S (Three-phase, 4+0)



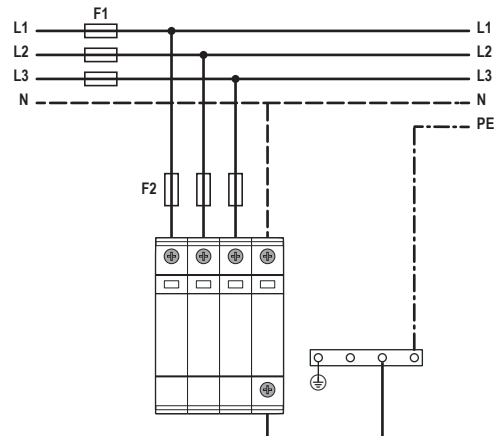
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



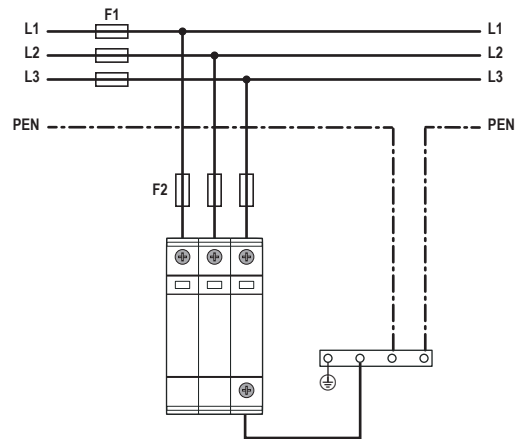
**Back-up Fuse**

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

## WT Modular Multi-pole SPD Connection Configurations

### SafeTec C(R) WT Series

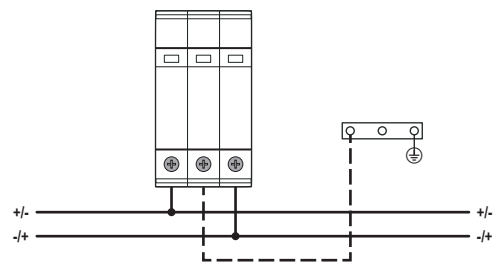
TN-C (Three-phase, 3+0)



## DC Modular Multi-pole SPD Connection Configurations

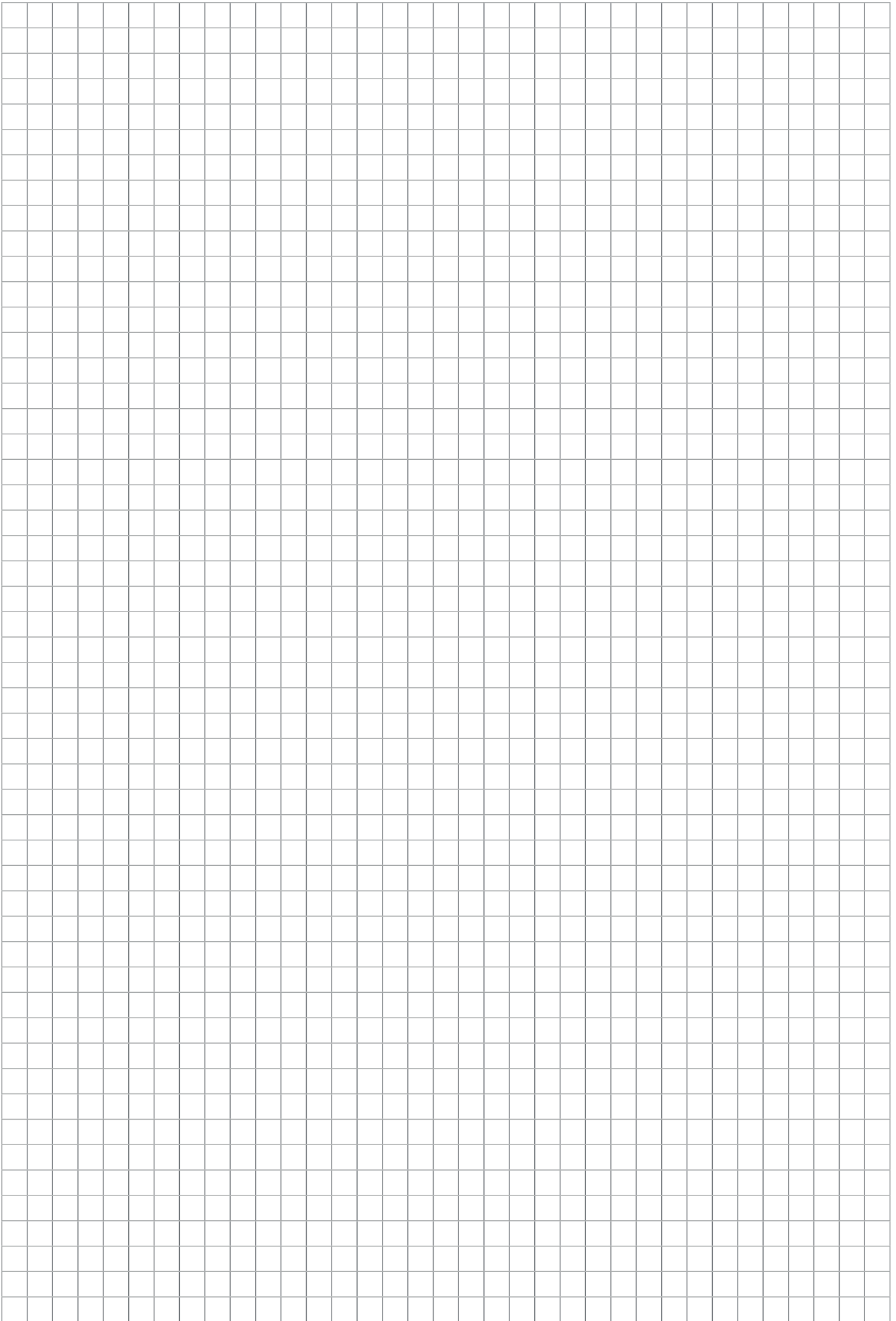
### PV SafeTec C(R) & PVG SafeTec C(R) Series

PV SafeTec C(R) 50 Y TD & PVG SafeTec C(R) 25 Y TD



#### Back-up Fuse

- F1 > 125 A gG → F2 = 125 A gG
- F1 ≤ 125 A gG → F2



## Modular Single Pole & Multi-pole Surge Protective Devices (SPDs)



SafeTec C UL, SafeTec CR UL,  
SafeTec C PV UL & SafeTec CR PV UL

The modular SafeTec C UL and SafeTec CR UL series are UL approved and suitable for all types of connections.

The patented thermal control (TC) function technology prevents catastrophic failures in case of temporary overvoltages (TOVs).

This all-in-one technology provides protection from overvoltage surges and transients. It has been developed to protect against partial direct and indirect lightning discharges and is intended to provide protection for sub-distribution board installations in Zones 0<sub>B</sub>-2 per IEC 62305.

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

The SafeTec Modular series consists of a patented current limiting varistors combination for each pole, equipped with separate thermal disconnection mechanisms.

SafeTec C UL and SafeTec CR UL series comply with UL 1449 4th Edition standards and are compatible to TN-S and TN-C network connection configurations.

For AC Applications

SafeTec C & CR (1+0) UL

SafeTec C & CR (2+0) UL

SafeTec C & CR (3+0) UL

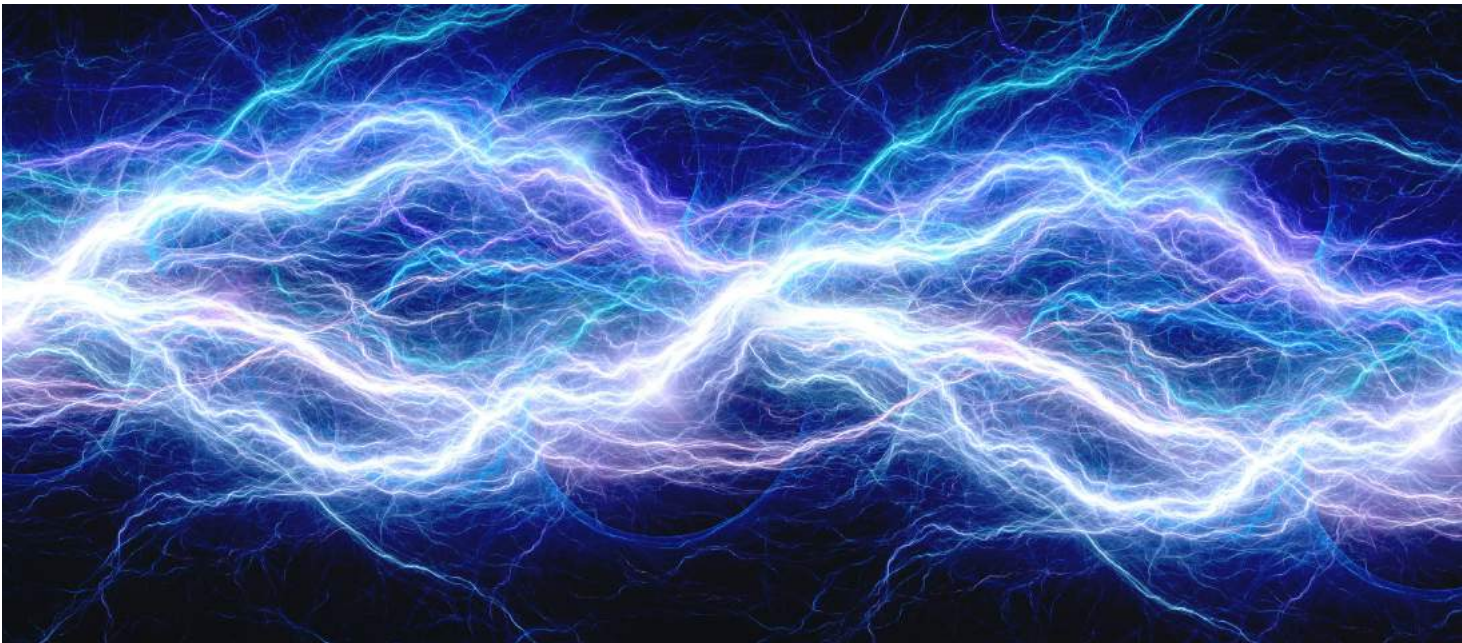
SafeTec C & CR (4+0) UL

SafeTec C & CR (3+0) WT UL

For DC Applications

SafeTec C & CR PV (2+0) UL

SafeTec C & CR PV (3+0) UL



# Modular Single Pole SPD SafeTec C(R) (1+0) UL Class II • Type 2 • Type 1, 2 CA

UL Listed



Location of Use: Sub-distribution Boards  
 Network Systems IEC/UL: TN-C, TN-S/Single Phase  
 Mode of Protection: L-PE(G), L-N, N-PE(G), L-L  
 Surge Ratings:  $I_n$  = up to 20 kA (8/20  $\mu$ s)  
 $I_{max}$  = up to 50 kA (8/20  $\mu$ s)  
 IEC/EN/UL Category: Class II / Type 2 / Type 1, 2 CA  
 Protective Elements: High Energy MOV and GDT  
 Safety: TOV Withstand  
 Housing: Modular Design  
 Compliance: UL 1449 4th Edition  
 EN 61643-11:2012

## Technical Data

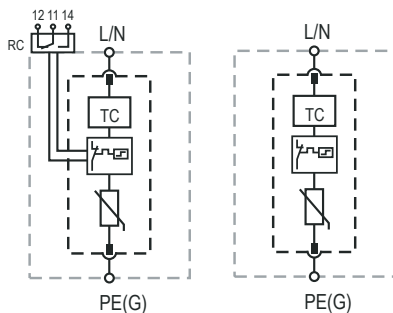
SafeTec C(R) yy/xxx (1+0)	150	277	385	440	550	750	880	
<b>IEC Electrical</b>								
Nominal AC Voltage (50/60Hz)	$U_o$	120 V	230 V	230 V	230 V	400 V	400 V	400 V
Maximum Continuous Operating Voltage (AC)	$U_c$	150 V	300 V	385 V	440 V	550 V	750 V	880 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20 kA	20 kA	20 kA	20 kA	20 kA	12.5 kA	12.5 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	50 kA	50 kA	50 kA	50 kA	50 kA	25 kA	25 kA
Voltage Protection Level	$U_p$	1.1 kV	1.5 kV	2.2 kV	2.3 kV	2.7 kV	2.8 kV	3.0 kV
Response Time	$t_A$	< 25 ns						
Back-up Fuse (if mains > 125 A)		125 A gG						
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25 kA						
TOV Withstands 5s	$U_T$	228 V	438 V	520 V	594 V	742 V	1000 V	1100 V
Number of Ports		1						
<b>UL Electrical</b>								
Nominal AC Voltage Rating (50/60Hz)		120 V	277 V	347 V	440 V	480 V	690 V	690 V
Maximum Continuous Operating Voltage (AC)	MCOV	150 V	300 V	385 V	440 V	550 V	750 V	880 V
Voltage Protection Rating	VPR	1200 V	1800 V	1800 V	2000 V	2500 V	2500 V	3000 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20 kA	20 kA	20 kA	20 kA	20 kA	10 kA	10 kA
Short-Circuit Current Rating (AC)	SCCR	200 kA						
<b>Mechanical &amp; Environmental</b>								
Temperature Range	$T_a$	-40 °F to +185 °F [-40 °C to +85 °C]						
Permissible Humidity	RH	5%...95%						
Terminal Screw Torque	$M_{max}$	26.5 lbf-in [3.0 Nm]						
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded) 2 AWG (solid) / 4 AWG (stranded)						
Mounting		35 mm DIN Rail, EN 60715						
Degree of Protection		IP 20						
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0						
Thermal Protection		Yes						
Fault Indication		Red Flag						
Remote Contacts (RC)		Optional						
RC Switching Capacity		AC: 250V/0.5A; 125V/3A						
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup> 16 AWG						
RC Terminal Screw Torque	$M_{max}$	2.2 lbf-in [0.25 Nm]						
<b>Order Information</b>								
Order Code		150	277	385	440	550	750	880
SAFETEC C 50/xxx		516.828	516.933	516.934	516.935	516.936		
SAFETEC CR 50/xxx (with remote contacts)		516.829	516.939	516.940	516.941	516.942		
SAFETEC C 25/xxx							516.937	516.938
SAFETEC CR 25/xxx (with remote contacts)							516.943	516.944
Module SAFETEC C(R) 50/xxx		516.983	516.984	516.985	516.986	516.987		
Module SAFETEC C(R) 25/xxx							516.988	516.989

AWG=American Wire Gauge

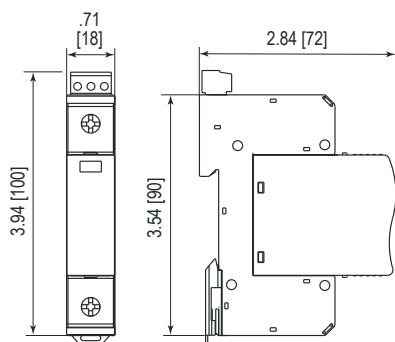
Internal Configuration

Legend

- G Ground
- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TC Thermal Control Function



Dimensions & Packaging

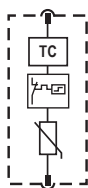


Dimensions & Packaging

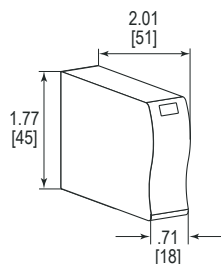
		150	277	385	440	550
<b>SafeTec C 50/xxx (1+0)</b>						
Single Unit Weight	pounds	.309	.309	.320	.331	.337
	grams	140	140	145	150	153
<b>SafeTec CR 50/xxx (1+0)</b>						
		<b>150V</b>	<b>277V</b>	<b>385V</b>	<b>440V</b>	<b>550V</b>
Single Unit Weight	pounds	.326	.326	.337	.348	.355
	grams	148	148	153	158	161
<b>SafeTec C 25/xxx (1+0)</b>					<b>750V</b>	<b>880V</b>
Single Unit Weight	pounds				.344	.344
	grams				156	156
<b>SafeTec CR 25/xxx (1+0)</b>					<b>750V</b>	<b>880V</b>
Single Unit Weight	pounds				.362	.362
	grams				164	164
Single Unit DIN 43880 Dimension		1 TE				
Packaging Dimensions (H x W x L)		4.30" x 3.03" x 0.94" [109 x 77 x 24 mm]				
Minimum Order Quantity		12 Units				

Module Internal Configuration

Module SafeTec C(R) yy/xxx



Dimensions & Packaging



Dimensions & Packaging

		150	277	385	440	550
<b>Module SafeTec C(R) 50/xxx</b>						
Single Unit Weight	pounds	.137	.146	.159	.163	.168
	grams	62	66	72	74	76
<b>Module SafeTec C(R) 25/xxx</b>					<b>750</b>	<b>880</b>
Single Unit Weight	pounds				.172	.172
	grams				78	78
Packaging Dimensions (H x W x L)		3.86" x 3.03" x 4.33" [98 x 77 x 110 mm]				
Minimum Order Quantity		12 Units				

inches  
[mm]

Applicable connection configurations can be found on page 154.

Modular Multi-pole SPD  
**SafeTec C(R) (2+0) UL**  
 Class II • Type 2 • Type 1, 2 CA

UL Listed



Location of Use: Sub-distribution Boards  
 Network Systems IEC/UL: TN-C, TN-S/Single Phase  
 Mode of Protection: L-PE(G), N-PE(G)  
 Surge Ratings:  $I_n$  = up to 20kA (8/20 $\mu$ s)  
 $I_{max}$  = up to 50kA (8/20 $\mu$ s)  
 IEC/EN/UL Category: Class II / Type 2 / Type 1, 2 CA  
 Protective Elements: High Energy MOV and GDT  
 Safety: TOV Withstand  
 Housing: Modular Design  
 Compliance: UL 1449 4th Edition  
 EN 61643-11:2012

**Technical Data**

SafeTec C(R) yyy/xxx (2+0)		150	277	385	440	750	880
<b>IEC Electrical</b>							
Nominal AC Voltage (50/60Hz)	$U_o$	120 V	230 V	230 V	230 V	400 V	400 V
Maximum Continuous Operating Voltage (AC)	$U_c$	150 V	300 V	385 V	440 V	750 V	880 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20 kA	20 kA	20 kA	20 kA	12.5 kA	12.5 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	50 kA	50 kA	50 kA	50 kA	25 kA	25 kA
Voltage Protection Level	$U_p$	1.1 kV	1.5 kV	2.2 kV	2.3 kV	2.8 kV	3.0 kV
Response Time	$t_A$	< 25 ns					
Back-up Fuse (if mains > 125A)		125 A gG					
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25 kA					
TOV Withstands 5s	$U_T$	228 V	438 V	520 V	594 V	1000 V	1100 V
Number of Ports		1					

<b>UL Electrical</b>							
Nominal AC Voltage Rating (50/60Hz)		120 V	277 V	347 V	440 V	690 V	690 V
Maximum Continuous Operating Voltage (AC)	MCOV	150 V	300 V	385 V	440 V	750 V	880 V
Voltage Protection Rating	VPR	1200 V	1800 V	1800 V	2000 V	2500 V	2500 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20 kA	20 kA	20 kA	20 kA	10 kA	12.5 kA
Short-Circuit Current Rating (AC)	SCCR	200 kA					

<b>Mechanical &amp; Environmental</b>							
Temperature Range	$T_a$	40 °F to +185 °F [-40 °C to +85 °C]					
Permissible Humidity	RH	5%...95%					
Terminal Screw Torque	$M_{max}$	26.5 lbf-in [3.0 Nm]					
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded) 2 AWG (solid) / 4 AWG (stranded)					
Mounting		35 mm DIN Rail, EN 60715					
Degree of Protection		IP 20					
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0					
Thermal Protection		Yes					
Fault Indication		Red Flag					
Remote Contacts (RC)		Optional					
RC Switching Capacity		AC: 250V/0.5 A; 125V/3 A					
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup> 16 AWG					
RC Terminal Screw Torque	$M_{max}$	2.2 lbf-in [0.25 Nm]					

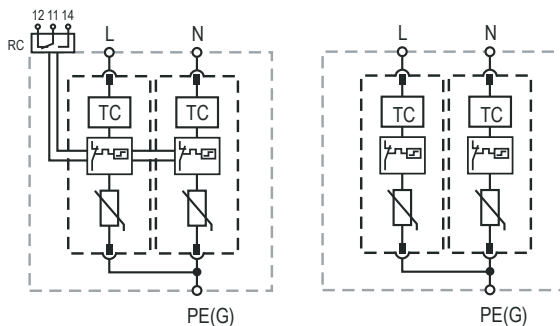
Order Code	150	277	385	440	750	880
SAFETEC C 100/xxx (2+0)	516.959	516.960	516.961	516.962		
SAFETEC CR 100/xxx (2+0) (with remote contacts)	516.965	516.966	516.967	516.968		
SAFETEC C 50/xxx (2+0)					516.963	516.964
SAFETEC CR 50/xxx (2+0) (with remote contacts)					516.969	516.970
Module SAFETEC C(R) 50/xxx	516.983	516.984	516.985	516.986		
Module SAFETEC C(R) 25/xxx					516.988	516.989

AWG=American Wire Gauge

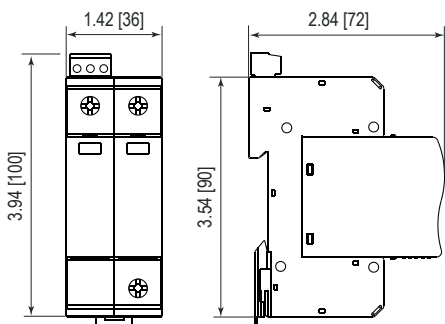
Internal Configuration

Legend

- G Ground
- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TC Thermal Control Function



Dimensions & Packaging

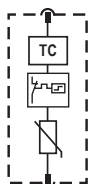


Dimensions & Packaging

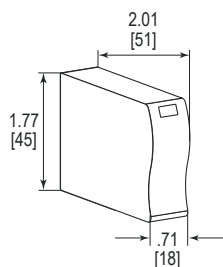
		150	277	385	440
<b>SafeTec C 100/xxx (2+0)</b>					
Single Unit Weight	pounds	.617	.619	.639	.659
	grams	280	281	290	299
<b>SafeTec CR 100/xxx (2+0)</b>					
Single Unit Weight	pounds	.635	.637	.657	.677
	grams	288	289	298	307
<b>SafeTec C 50/xxx (2+0)</b>					
Single Unit Weight	pounds			.750	.880
	grams			312	312
<b>SafeTec CR 50/xxx (2+0)</b>					
Single Unit Weight	pounds			.705	.705
	grams			320	320
Single Unit DIN 43880 Dimension		2 TE			
Packaging Dimensions (H x W x L)		4.30" x 3.03" x 1.65" [109 x 77 x 42 mm]			
Minimum Order Quantity		7 Units			

Module Internal Configuration

Module SafeTec C(R) yy/xxx



Dimensions & Packaging



Dimensions & Packaging

		150	277	385	440	550
<b>Module SafeTec C(R) 50/xxx</b>						
Single Unit Weight	pounds	.137	.146	.159	.163	.168
	grams	62	66	72	74	76
<b>Module SafeTec C(R) 25/xxx</b>						
Single Unit Weight	pounds				.750	.880
	grams				78	78
Packaging Dimensions (H x W x L)		3.86" x 3.03" x 4.33" [98 x 77 x 110 mm]				
Minimum Order Quantity		12 Units				

inches  
[mm]

Applicable connection configurations can be found on page 154.



# Modular Multi-pole SPD SafeTec C(R) (3+0) UL

## Class II • Type 2 • Type 1, 2 CA

UL Listed



Location of Use: Sub-distribution Boards  
 Network Systems IEC/UL: TN-C/Split Phase, 3 WYE  
 Mode of Protection: L - PEN(G)  
 Surge Ratings:  $I_n$  = up to 20 kA (8/20  $\mu$ s)  
 $I_{max}$  = up to 50 kA (8/20  $\mu$ s)  
 IEC/EN/UL Category: Class II / Type 2 / Type 1, 2CA  
 Protective Elements: High Energy MOV and GDT  
 Safety: TOV Withstand  
 Housing: Modular Design  
 Compliance: UL 1449 4th Edition  
 EN 61643-11:2012

### Technical Data

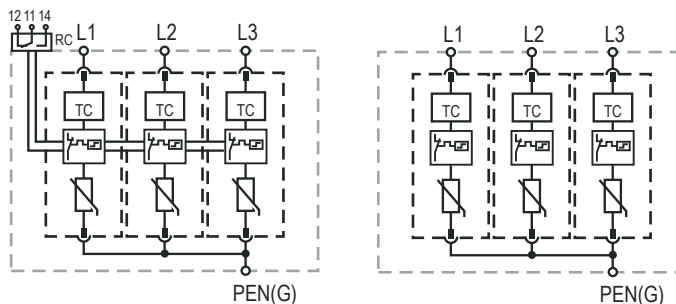
SafeTec C(R) yy/xxx (3+0)	150	277	385	440	550	750	880
<b>IEC Electrical</b>							
Nominal AC Voltage (50/60Hz)	$U_o$	120 V	230 V	230 V	230 V	400 V	400 V
Maximum Continuous Operating Voltage (AC)	$U_c$	150 V	300 V	385 V	440 V	550 V	880 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20 kA	20 kA	20 kA	20 kA	20 kA	12.5 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	50 kA	50 kA	50 kA	50 kA	50 kA	25 kA
Voltage Protection Level	$U_p$	1.1 kV	1.5 kV	2.2 kV	2.3 kV	2.7 kV	2.8 kV
Response Time	$t_A$	< 25 ns					
Back-up Fuse (if mains > 125 A)		125 A gG					
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25 kA					
TOV Withstands 5s	$U_T$	228 V	438 V	520 V	594 V	742 V	1000 V
Number of Ports		1					
<b>UL Electrical</b>							
Nominal AC Voltage Rating (50/60Hz)		120 V/240 V	277 V/480 V	347 V/600 V	254 V/440 V	254 V/440 V	400 V/690 V
Maximum Continuous Operating Voltage (AC)	MCOV	150 V	300 V	385 V	440 V	550 V	880 V
Voltage Protection Rating	VPR	1200 V	1800 V	1800 V	2000 V	2500 V	3000 V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20 kA	20 kA	20 kA	20 kA	20 kA	10 kA
Short-Circuit Current Rating (AC)	SCCR	200 kA					
<b>Mechanical &amp; Environmental</b>							
Temperature Range	$T_a$	-40 °F to +185 °F [-40 °C to +85 °C]					
Permissible Humidity	RH	5%...95%					
Terminal Screw Torque	$M_{max}$	26.5 lbf-in [3.0 Nm]					
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded) 2 AWG (solid) / 4 AWG (stranded)					
Mounting		35 mm DIN Rail, EN 60715					
Degree of Protection		IP 20					
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0					
Thermal Protection		Yes					
Fault Indication		Red Flag					
Remote Contacts (RC)		Optional					
RC Switching Capacity		AC: 250V/0.5A; 125V/3A					
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup> 16 AWG					
RC Terminal Screw Torque	$M_{max}$	2.2 lbf-in [0.25 Nm]					
<b>Order Information</b>							
Order Code		150	277	385	440	550	880
SAFETEC C 50/xxx (3+0)		516.945	516.946	516.947	516.948	516.949	
SAFETEC CR 50/xxx (3+0) (with remote contacts)		516.952	516.953	516.954	516.955	516.956	
SAFETEC C 75/xxx (3+0)						516.950	516.951
SAFETEC CR 75/xxx (3+0) (with remote contacts)						516.957	516.958
Module SAFETEC C(R) 50/xxx		516.983	516.984	516.985	516.986	516.987	
Module SAFETEC C(R) 25/xxx						516.988	516.989

AWG=American Wire Gauge

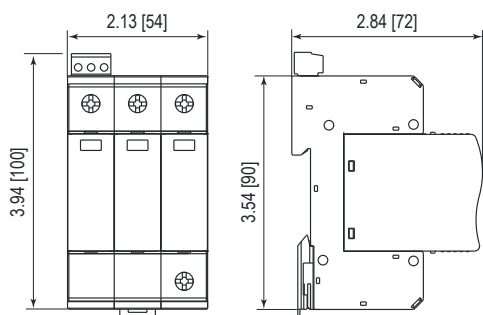
Internal Configuration

Legend

- G Ground
- L Line
- PEN Combined Protective Earth and Neutral
- RC Remote Contacts Optional
- TC Thermal Control Function



Dimensions & Packaging

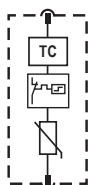


Dimensions & Packaging

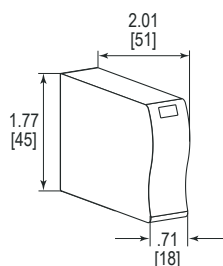
		150	277	385	440	550			
<b>SafeTec C 150/xxx (3+0)</b>		<b>150</b>	<b>277</b>	<b>385</b>	<b>440</b>	<b>550</b>			
Single Unit Weight	pounds	.926	.930	.959	.992	1.012			
	grams	420	422	435	450	459			
<b>SafeTec CR 150/xxx (3+0)</b>		<b>150</b>	<b>277</b>	<b>385</b>	<b>440</b>	<b>550</b>			
Single Unit Weight	pounds	.944	.948	.977	1.01	1.03			
	grams	428	430	443	458	467			
<b>SafeTec C 75/xxx (3+0)</b>						<b>750</b>	<b>880</b>		
Single Unit Weight	pounds					1.032	1.032		
	grams					468	468		
<b>SafeTec CR 75/xxx (3+0)</b>						<b>750</b>	<b>880</b>		
Single Unit Weight	pounds					1.049	1.049		
	grams					476	476		
Single Unit DIN 43880 Dimension						3 TE			
Packaging Dimensions (H x W x L)						4.30" x 3.03" x 2.44" [109 x 77 x 62 mm]			
Minimum Order Quantity						5 Units			

Module Internal Configuration

Module SafeTec C(R) yy/xxx



Dimensions & Packaging



Dimensions & Packaging

		150	277	385	440	550			
<b>Module SafeTec C(R) 50/xxx</b>		<b>150</b>	<b>277</b>	<b>385</b>	<b>440</b>	<b>550</b>			
Single Unit Weight	pounds	.137	.146	.159	.163	.168			
	grams	62	66	72	74	76			
<b>Module SafeTec C(R) 25/xxx</b>						<b>750</b>	<b>880</b>		
Single Unit Weight	pounds					.172	.172		
	grams					78	78		
Packaging Dimensions (H x W x L)						3.86" x 3.03" x 4.33" [98 x 77 x 110 mm]			
Minimum Order Quantity						12 Units			

inches  
[mm]

Applicable connection configurations can be found on page 154.

Modular Multi-pole SPD  
**SafeTec C(R) (4+0) UL**  
 Class II • Type 2 • Type 1, 2 CA

UL Listed



Location of Use: Sub-distribution Boards  
 Network Systems IEC/UL: TN-S/3 WYE  
 Mode of Protection: L-PE(G), N-PE(G)  
 Surge Ratings:  $I_n$  = up to 20kA (8/20 $\mu$ s)  
 $I_{max}$  = up to 50kA (8/20 $\mu$ s)  
 IEC/EN/UL Category: Class II / Type 2 / Type 1, 2 CA  
 Protective Elements: High Energy MOV and GDT  
 Safety: TOV Withstand  
 Housing: Modular Design  
 Compliance: UL 1449 4th Edition  
 EN 61643-11:2012

**Technical Data**

SafeTec C(R) yyy/xxx (4+0)	150	277	385	440	550	750	880
----------------------------	-----	-----	-----	-----	-----	-----	-----

IEC Electrical								
Nominal AC Voltage (50/60Hz)	$U_o$	120V	230V	230V	230V	400V	400V	400V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	300V	385V	440V	550V	750V	880V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20kA	20kA	20kA	20kA	20kA	12.5kA	12.5kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	50kA	50kA	50kA	50kA	50kA	25kA	25kA
Voltage Protection Level	$U_p$	1.1kV	1.5kV	2.2kV	2.3kV	2.7kV	2.8kV	3.0kV
Response Time	$t_A$	< 25 ns						
Back-up Fuse (if mains > 125A)		125 A gG						
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25kA						
TOV Withstands 5s	$U_T$	228V	438V	520V	594V	742V	1000V	1100V
Number of Ports		1						

UL Electrical								
Nominal AC Voltage Rating (50/60Hz)		120V/208V	277V/480V	347V/600V	254V/440V	254V/440V	400V/690V	400V/690V
Maximum Continuous Operating Voltage (AC)	MCOV	150V	300V	385V	440V	550V	750V	880V
Voltage Protection Rating	VPR	1200V	1800V	1800V	2000V	2500V	2500V	3000V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	20kA	20kA	20kA	20kA	20kA	10kA	10kA
Short-Circuit Current Rating (AC)	SCCR	200kA						

Mechanical & Environmental								
Temperature Range	$T_a$	-40 °F to +185 °F [-40 °C to +85 °C]						
Permissible Humidity	RH	5%...95%						
Terminal Screw Torque	$M_{max}$	26.5lbf-in [3.0Nm]						
Conductor Cross Section (max)		35mm <sup>2</sup> (solid) / 25mm <sup>2</sup> (stranded) 2 AWG (solid) / 4 AWG (stranded)						
Mounting		35 mm DIN Rail, EN 60715						
Degree of Protection		IP 20						
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0						
Thermal Protection		Yes						
Fault Indication		Red Flag						
Remote Contacts (RC)		Optional						
RC Switching Capacity		AC: 250V/0.5A; 125V/3A						
RC Terminal Cross Section (max)		1.5mm <sup>2</sup> 16 AWG						
RC Terminal Screw Torque	$M_{max}$	2.2lbf-in [0.25Nm]						

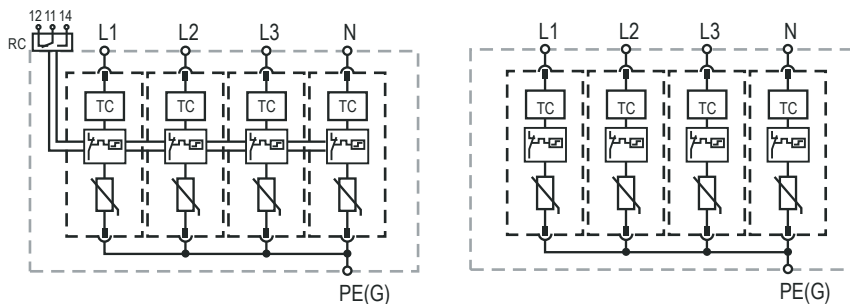
Order Information								
Order Code		150	277	385	440	550	750	880
SAFETEC C 200/xxx (4+0)		516.971	516.972	516.973	516.974	516.A96		
SAFETEC CR 200/xxx (4+0) (with remote contacts)		516.977	516.978	516.979	516.980	516.A64		
SAFETEC C 100/xxx (4+0)							516.975	516.976
SAFETEC CR 100/xxx (4+0) (with remote contacts)							516.981	516.982
Module SAFETEC C(R) 50/xxx		516.983	516.984	516.985	516.986	516.987		
Module SAFETEC C(R) 25/xxx							516.988	516.989

AWG=American Wire Gauge

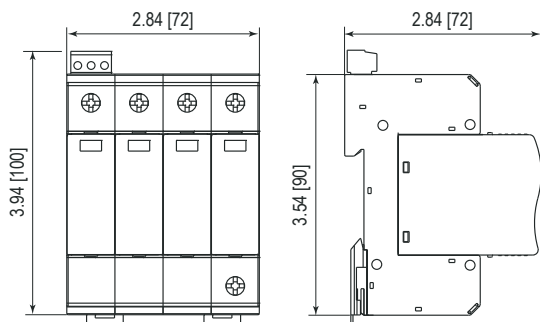
Internal Configuration

Legend

- G Ground
- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional
- TC Thermal Control Function



Dimensions & Packaging

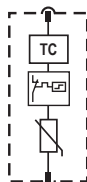


Dimensions & Packaging

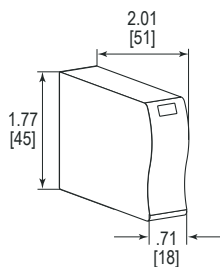
		150	277	385	440	550
<b>SafeTec C 200/xxx (4+0)</b>						
Single Unit Weight	pounds	1.235	1.239	1.279	1.318	1.349
	grams	560	562	580	598	612
<b>SafeTec CR 200/xxx (4+0)</b>						
Single Unit Weight	pounds	1.252	1.257	1.296	1.336	1.367
	grams	568	570	588	606	620
<b>SafeTec C 100/xxx (4+0)</b>						
Single Unit Weight	pounds				1.376	1.376
	grams				624	624
<b>SafeTec CR 100/xxx (4+0)</b>						
Single Unit Weight	pounds				1.393	1.393
	grams				632	632
Single Unit DIN 43880 Dimension		4 TE				
Packaging Dimensions (H x W x L)		4.30" x 3.03" x 3.15" [109 x 77 x 80 mm]				
Minimum Order Quantity		3 Units				

Module Internal Configuration

Module SafeTec C(R) yy/xxx



Dimensions & Packaging



Dimensions & Packaging

		150	277	385	440	550
<b>Module SafeTec C(R) 50/xxx</b>						
Single Unit Weight	pounds	.137	.146	.159	.163	.168
	grams	62	66	72	74	76
<b>Module SafeTec C(R) 25/xxx</b>						
Single Unit Weight	pounds				.172	.172
	grams				78	78
Packaging Dimensions (H x W x L)		3.86" x 3.03" x 4.33" [98 x 77 x 110 mm]				
Minimum Order Quantity		12 Units				

inches  
[mm]

Applicable connection configurations can be found on page 154.

Modular Multi-pole SPD  
**SafeTec C(R) (3+0) WT UL**  
 Class II • Type 2 • Type 1, 2 CA

UL Listed



Location of Use: Sub-distribution Boards  
 Network Systems IEC/UL: TN-C/3 WYE  
 Mode of Protection: L - PEN(G)  
 Surge Ratings:  $I_n = 10 \text{ kA (8/20 } \mu\text{s)}$  per UL  
 $I_{max} = 25 \text{ kA (8/20 } \mu\text{s)}$   
 IEC/EN/UL Category: Class II / Type 2 / Type 1, 2 CA  
 Protective Elements: High Energy MOV and GDT  
 Safety: TOV Withstand  
 Housing: Modular Design  
 Compliance: UL 1449 4th Edition  
 EN 61643-11:2012

**Technical Data**

**SafeTec C(R) xxx (3+0) WT**

750

880

**IEC Electrical**

		750	880
Nominal AC Voltage (50/60Hz)	$U_o$	690V	690V
Maximum Continuous Operating Voltage (AC)	$U_c$	750V	880V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	12.5kA	12.5kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	25kA	25kA
Voltage Protection Level	$U_p$	2.8kV	3.0kV
Response Time	$t_A$	< 25 ns	
Back-up Fuse (if mains > 125A)		125A gG	
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25kA	
TOV Withstands 5s	$U_T$	1000V	1100V
Number of Ports		1	

**UL Electrical**

		400V/690V	400V/690V
Nominal AC Voltage Rating (50/60Hz)		400V/690V	400V/690V
Maximum Continuous Operating Voltage (AC)	MCOV	750V	880V
Voltage Protection Rating	VPR	2500V	3000V
Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	10kA	10kA
Short-Circuit Current Rating (AC)	SCCR	200kA	

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	26.5lbf-in [3.0Nm]
Conductor Cross Section (max)		35mm <sup>2</sup> (solid) / 25mm <sup>2</sup> (stranded) 2 AWG (solid) / 4 AWG (stranded)
Mounting		35mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5mm <sup>2</sup> 16 AWG
RC Terminal Screw Torque	$M_{max}$	2.2lbf-in [0.25Nm]

**Order Information**

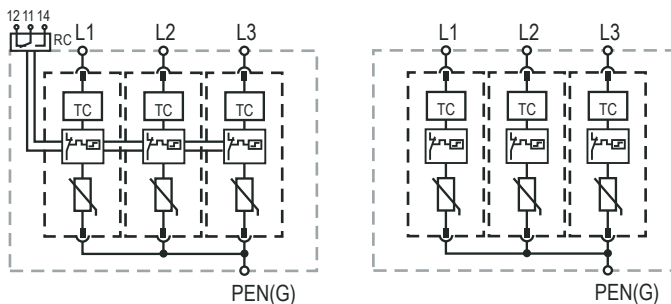
Order Code	750	880
SAFETEC C xxx (3+0) WT	516.A57	516.A88
SAFETEC CR xxx (3+0) WT (with remote contacts)	516.A60	516.A89
Module SAFETEC C(R) xxx WT	516.A63	516.A90

AWG=American Wire Gauge

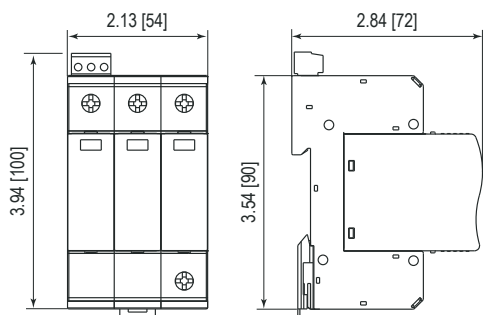
Internal Configuration

Legend

- G Ground
- L Line
- N Neutral
- PEN Combined Protective Earth and Neutral
- RC Remote Contacts Optional
- TC Thermal Control Function



Dimensions & Packaging

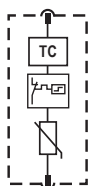


Dimensions & Packaging

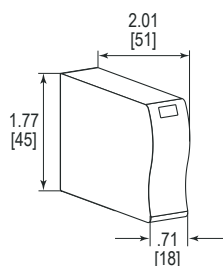
SafeTec C xxx (3+0) WT			
		750	880
Single Unit Weight	pounds [grams]	1.032 [468]	1.032 [468]
SafeTec CR xxx (3+0) WT			
		750	880
Single Unit Weight	pounds [grams]	1.049 [476]	1.049 [476]
Single Unit DIN 43880 Dimension		3 TE	
Packaging Dimensions (H x W x L)		4.30" x 3.03" x 2.44" [109 x 77 x 62 mm]	
Minimum Order Quantity		5 Units	

Module Internal Configuration

Module SafeTec C(R) xxx WT



Dimensions & Packaging



Dimensions & Packaging

Module PV SafeTec C(R) xxx WT			
		750	880
Single Unit Weight	pounds [grams]	.172 [78]	.172 [78]
Packaging Dimensions (H x W x L)		3.86" x 3.03" x 4.33" [98 x 77 x 110 mm]	
Minimum Order Quantity		12 Units	

inches  
[mm]

Applicable connection configurations can be found on page 155.

# DC Modular Multi-pole SPD for Photovoltaic Systems

## SafeTec C(R) 1000 PV (2+0) UL

### Type 2 • Type 4 CA

UL Listed



Location of Use: Photovoltaic Systems – DC Side  
 Mode of Protection: (+) - PE, (-) - PE, (+) - (-)  
 Surge Ratings:  $I_n = 10 \text{ kA (8/20}\mu\text{s)}$  per UL  
 $I_{\text{max}} = 25 \text{ kA (8/20}\mu\text{s)}$   
 EN/UL Category: Type 2 / Type 4 CA  
 Protective Elements: High Energy MOV and GDT  
 Safety: Patented Current Limiting Function  
 Housing: Modular Design  
 Compliance: UL 1449 4th Edition  
 EN 50539-11:2013+A1:2014

## Technical Data

SafeTec C(R) 1000 PV (2+0)

1000

### IEC Electrical

Open Circuit Voltage	$U_{\text{oc STC}}$	830 V
Maximum Continuous Operating Voltage (DC)	$U_{\text{CPV}}$	1000 V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	12.5 kA
Total Discharge Current (8/20 $\mu\text{s}$ )	$I_{\text{total}}$	25 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{\text{max}}$	25 kA
Voltage Protection Level	(+) - (-) $U_p$	5.6 kV
	(+) / (-) - PE(G) $U_p$	2.8 kV
Short-Circuit Current Rating	$I_{\text{SCPV}}$	1000 A
Response Time	$t_A$	< 25 ns
Number of Ports		1

### UL Electrical

Maximum Continuous Operating Voltage (DC)	$V_{\text{PVDC}}$	1000 V
Voltage Protection Rating	(+) - (-) MLV	5140 V
	(+) / (-) - PE(G) MLV	2680 V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	10 kA

### Mechanical & Environmental

Temperature Range	$T_a$	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{\text{max}}$	26.5 lbf-in [3.0 Nm]
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
		2 AWG (solid) / 4 AWG (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250 V / 0.5 A; 125 V / 3 A
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>
		16 AWG
RC Terminal Screw Torque	$M_{\text{max}}$	2.2 lbf-in [0.25 Nm]

### Order Information

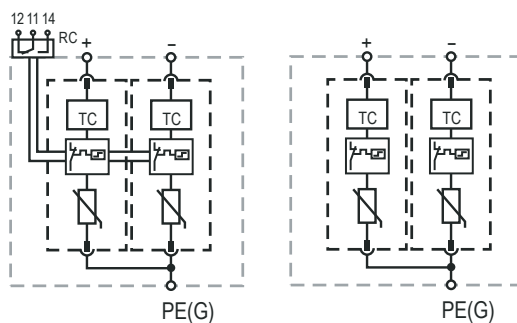
Order Code	1000
SAFETEC C xxxx PV (2+0)	516.A24
SAFETEC CR xxxx PV (2+0) (with remote contacts)	516.A27
Module SAFETEC C(R) xxxx PV (2+0)	516.A30

AWG=American Wire Gauge

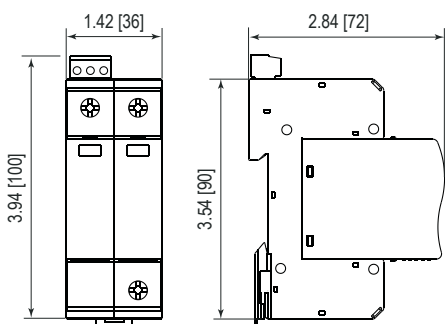
Internal Configuration

Legend

- G Ground
- PE Protective Earth
- RC Remote Contacts Optional
- TC Thermal Control Function



Dimensions & Packaging

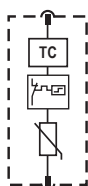


Dimensions & Packaging

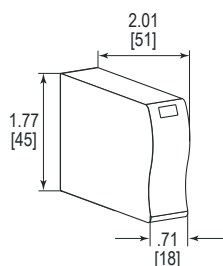
SafeTec C xxxx PV (2+0)		1000
Single Unit Weight	pounds [grams]	.659 [299]
SafeTec CR xxxx PV (2+0)		1000
Single Unit Weight	pounds [grams]	.677 [307]
Single Unit DIN 43880 Dimension		2 TE
Packaging Dimensions (H x W x L)		4.30" x 3.03" x 1.65" [109 x 77 x 42 mm]
Minimum Order Quantity		7 Units

Module Internal Configuration

Module SafeTec C(R) xxxx PV (2+0)



Dimensions & Packaging



Dimensions & Packaging

Module SafeTec C(R) xxxx PV (2+0)		1000
Single Unit Weight	pounds [grams]	.172 [78]
Packaging Dimensions (H x W x L)		3.86" x 3.03" x 4.33" [98 x 77 x 110 mm]
Minimum Order Quantity		12 Units

inches  
[mm]

Applicable connection configurations can be found on page 155.



# DC Modular Multi-pole SPD for Photovoltaic Systems

## SafeTec C(R) 1000 PV (3+0) UL

### Type 2 • Type 4 CA

UL Listed



Location of Use: Photovoltaic Systems – DC Side  
 Mode of Protection: (+) - PE, (-) - PE, (+) - (-)  
 Surge Ratings:  $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 $I_{max} = 50 \text{ kA (8/20}\mu\text{s)}$   
 EN/UL Category: Type 2 / Type 4 CA  
 Protective Elements: High Energy MOV and GDT  
 Safety: Ground Fault Withstand  
 Housing: Modular Design  
 Compliance: UL 1449 4th Edition  
 EN 50539-11:2013+A1:2014

## Technical Data

SafeTec C(R) 1000 PV (3+0)

1000

### IEC Electrical

Open Circuit Voltage	$U_{oc \text{ STC}}$	830 V
Maximum Continuous Operating Voltage (DC)	$U_{CPV}$	1000V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	20 kA
Total Discharge Current (8/20 $\mu\text{s}$ )	$I_{total}$	40 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	50 kA
Voltage Protection Level	(+) - (-) $U_p$	4.6 kV
	(+) / (-) - PE(G) $U_p$	4.6 kV
Short-Circuit Current Rating	$I_{SCPV}$	1000 A
Response Time	$t_A$	< 25 ns
Number of Ports		1

### UL Electrical

Maximum Continuous Operating Voltage (DC)	$V_{PVDC}$	1000V
Voltage Protection Rating	MLV	3980V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	20 kA

### Mechanical & Environmental

Temperature Range	$T_a$	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	26.5 lbf-in [3.0 Nm]
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Conductor Cross Section (max)		2 AWG (solid) / 4 AWG (stranded)
		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>
		16 AWG
RC Terminal Screw Torque	$M_{max}$	2.2 lbf-in [0.25 Nm]

### Order Information

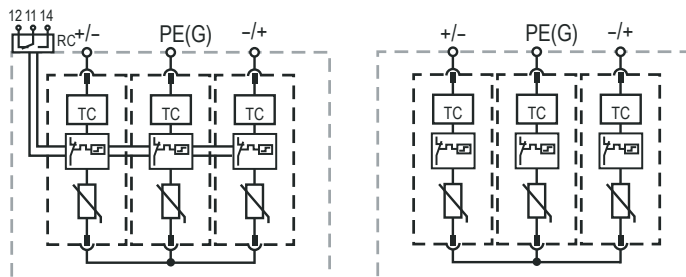
Order Code		1000
SAFETEC C xxxx PV (3+0)		516.A33
SAFETEC CR xxxx PV (3+0) (with remote contacts)		516.A38
Module SAFETEC C(R) xxxx PV (3+0)		516.A43

AWG=American Wire Gauge

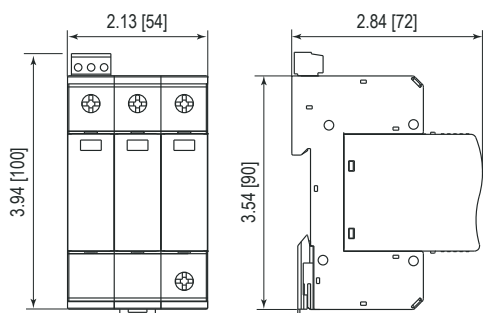
Internal Configuration

Legend

- G Ground
- PE Protective Earth
- RC Remote Contacts Optional
- TC Thermal Control Function



Dimensions & Packaging

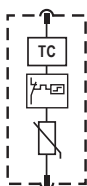


Dimensions & Packaging

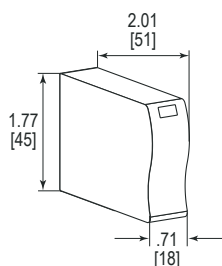
SafeTec C xxxx PV (3+0)		1000
Single Unit Weight	pounds [grams]	.873 [396]
SafeTec CR xxxx PV (3+0)		1000
Single Unit Weight	pounds [grams]	.886 [402]
Single Unit DIN 43880 Dimension		3 TE
Packaging Dimensions (H x W x L)		4.30" x 3.03" x 2.44" [109 x 77 x 62 mm]
Minimum Order Quantity		5 Units

Module Internal Configuration

Module SafeTec C(R) xxxx PV (3+0)



Dimensions & Packaging



Dimensions & Packaging

Module SafeTec C(R) xxxx PV (3+0)		1000
Single Unit Weight	pounds [grams]	.172 [78]
Packaging Dimensions (H x W x L)		3.86" x 3.03" x 4.33" [98 x 77 x 110 mm]
Minimum Order Quantity		12 Units

inches  
[mm]

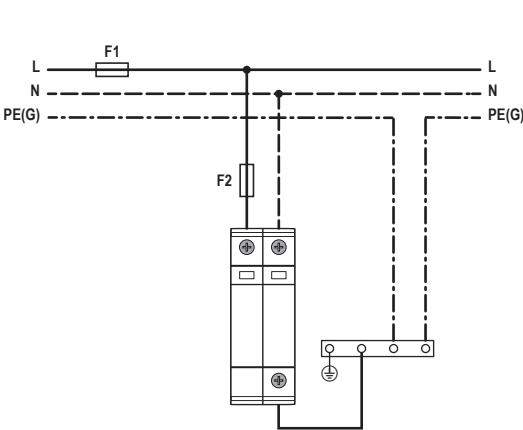
Applicable connection configurations can be found on page 155.

# Modular Multi-pole SPD Connection Configurations

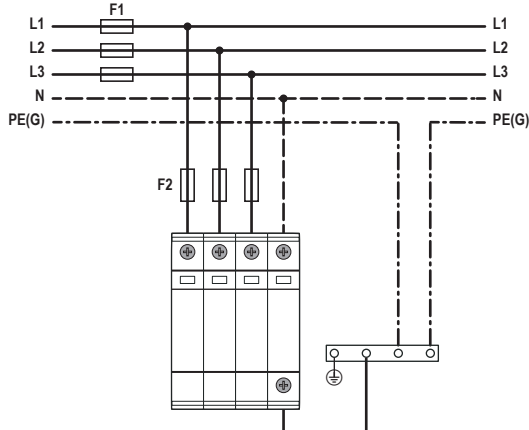
## SafeTec C(R) UL Series

UL Listed

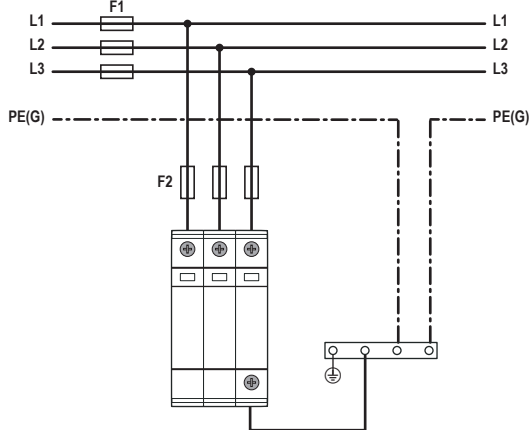
TN-S (Single-phase, 2+0)



TN-S (Three-phase/3 WYE, 4+0)



TN-C (Three-phase/3 WYE, 3+0)



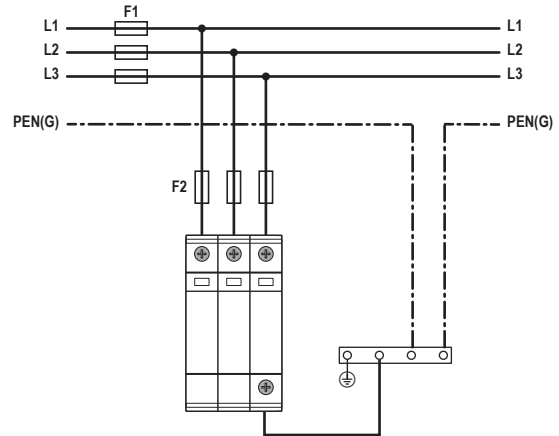
**Back-up Fuse**

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

WT Modular Multi-pole SPD Connection Configurations  
**SafeTec C(R) WT UL Series**

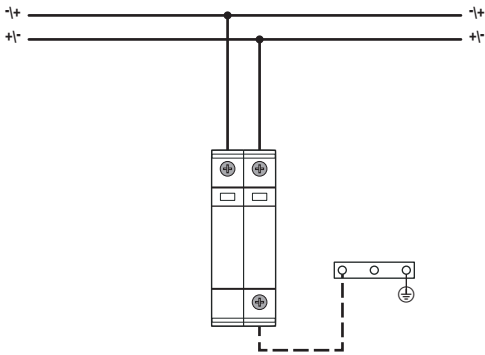
UL Listed

TN-C (Three-phase/3 WYE, 3+0)

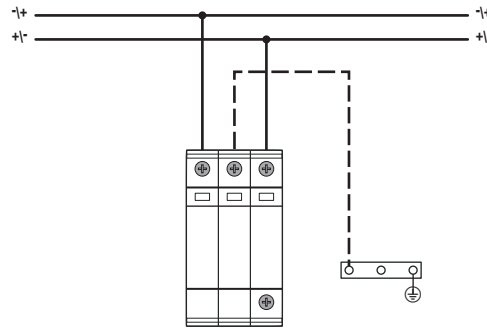


DC Modular Multi-pole SPD Connection Configurations  
**SafeTec C(R) PV UL Series**

SafeTec C(R) 1000 PV (2+0)



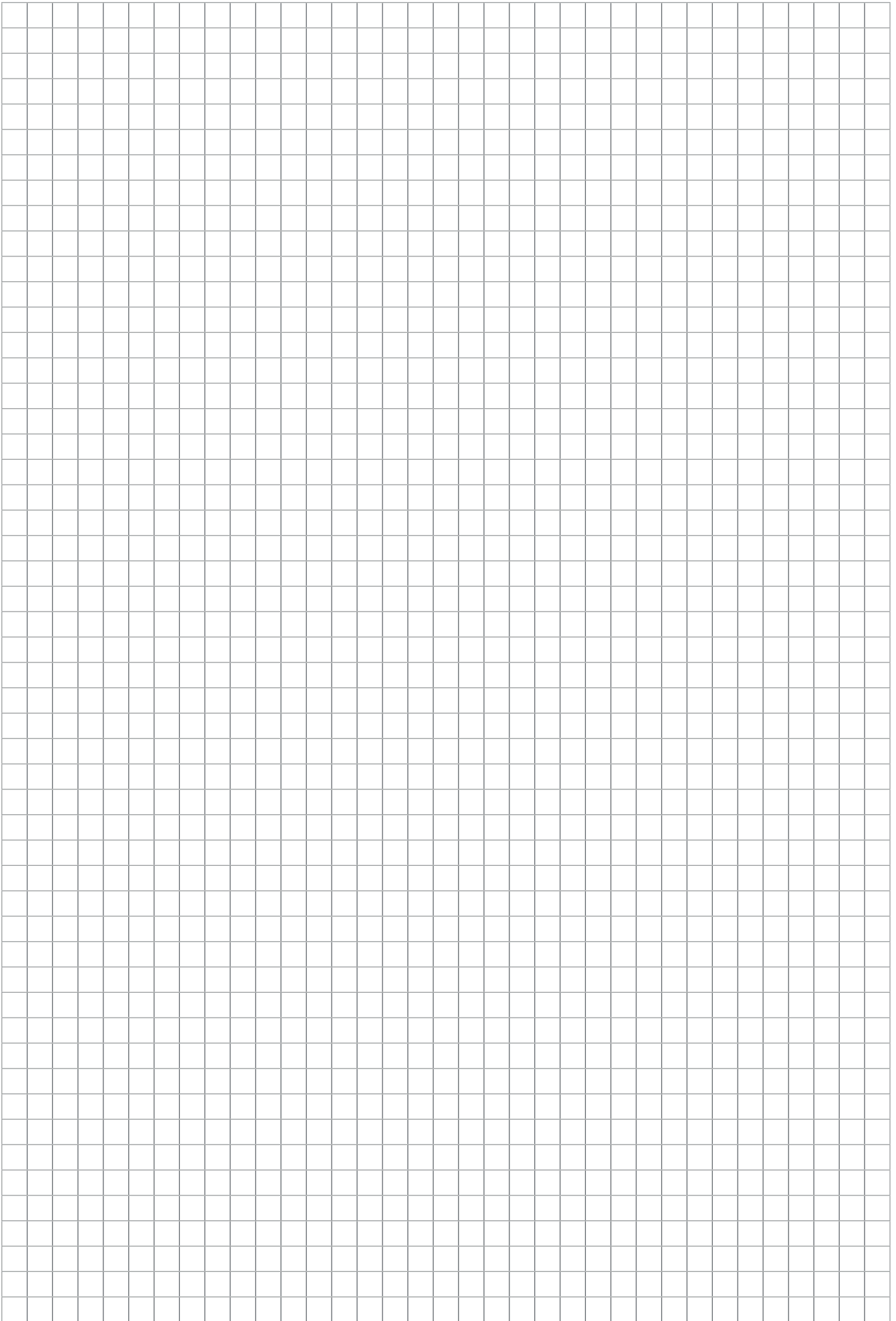
SafeTec C(R) 1000 PV (3+0)



Back-up Fuse

- F1 > 125 A gG → F2 = 125 A gG
- F1 ≤ 125 A gG → ~~F2~~





## Modular Single Pole & Multi-pole Surge Protective Devices (SPDs)



### ProTec C & ProTec CR

The ProTec C and ProTec CR series of overvoltage surge protective devices have been developed to protect against surges and effects of indirect lightning discharges and induced voltages and are intended to protect low-voltage consumer installations in Zones 0<sub>B</sub>-2 per IEC 62305.

The ProTec C and CR Modular series consists of a high performance varistors for each pole, with separate thermal disconnection mechanisms.

The ProTec CM and CMR is available in two configurations, with or without the encapsulated gas discharge tube in place of the high performance varistor.

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

ProTube C is a modular, single pole compact housing design with a high energy encapsulated gas discharge tube (GDT). Raycap's GDT technology applications are ideal for galvanic separation between the N and PE conductors in a 1+1 or 3+1 power distribution network.

ProTec C Modular series comply with IEC/EN 61643-11 standards and are compatible to TN-S, TN-C and TT network connection configurations.

For AC Applications

ProTec C & CR 40 (1+0)

ProTec C & CR 80 (2+0)

ProTec C & CR 120 (3+0)

ProTec C & CR 160 (4+0)

ProTec C & CR 80 (1+1)

ProTec C & CR 160 (3+1)

ProTec CM & CMR 80 (2+0)

ProTec CM & CMR 80 (1+1)

ProTube C 40

For DC Applications

PV ProTec C & CR 40 Y



# Modular Single Pole SPD

## ProTec C(R) 40 (1+0)

### Class II • Type 2



**Location of Use:** Sub-distribution Boards  
**Network Systems:** TN-S, TN-C, TT (only L-N)  
**Mode of Protection:** L-PE, N-PE, L-PEN, L-N  
**Surge Ratings:**  $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 $I_{max} = 40 \text{ kA (8/20}\mu\text{s)}$   
**IEC/EN Category:** Class II / Type 2  
**Protective Elements:** High Energy MOV  
**Housing:** Modular Design  
**Compliance:** IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

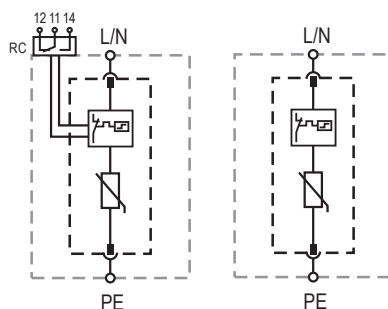
ProTec C(R) 40/xxx (1+0)		75	150	275	320	385	440
<b>Electrical</b>							
Nominal AC Voltage (50/60 Hz)	$U_o$	60V	120V	230V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	75V	150V	275V	320V	385V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	20 kA					
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	40 kA					
Voltage Protection Level	$U_p$	< 0.7 kV	< 1.0 kV	< 1.5 kV	< 1.5 kV	< 1.9 kV	< 2.0 kV
Response Time	$t_A$	< 25 ns					
Back-Up Fuse (if mains > 125 A)		125 A gG					
Short-Circuit Current Rating (AC)	$I_{SCCR}$	25 kA					
TOV Withstand 5s	$U_T$	87V	174V	335V	335V	438V	438V
Number of Ports		1					
<b>Mechanical &amp; Environmental</b>							
Temperature Range	$T_a$	-40 °C to +85 °C					
Permissible Humidity	RH	5%...95%					
Terminal Screw Torque	$M_{max}$	3.0 Nm					
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)					
Mounting		35 mm DIN Rail, EN 60715					
Degree of Protection		IP 20					
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0					
Thermal Protection		Yes					
Fault Indication		Red Flag					
Remote Contacts (RC)		Optional					
RC Switching Capacity		AC: 250V/0.5A; 125V/3A					
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>					
RC Terminal Screw Torque	$M_{max}$	0.25 Nm					
<b>Order Information</b>							
Order Code		75	150	275	320	385	440
PROTEC C 40/xxx (1+0)		50.A063	50.A064	50.A065	50.A045	50.A066	50.A067
PROTEC CR 40/xxx (1+0) (with remote contacts)		50.A068	50.A069	50.A070	50.A046	50.A071	50.A072
Module PROTEC C(R) 40/xxx		50.A073	50.A074	50.A075	50.A049	50.A076	50.A077

## ProTec C(R) 40 (1+0)

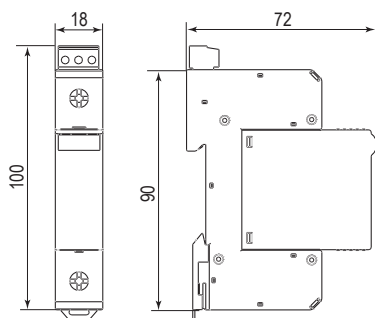
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]

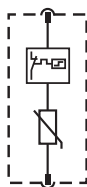


#### Dimensions & Packaging

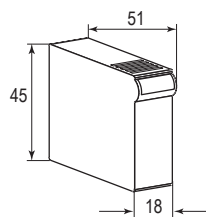
ProTec C 40/xxx (1+0)	75	150	275	320	385	440
Single Unit Weight	112g	122g	128g	128g	129g	130g
Single Unit DIN 43880 Dimension	1 TE					
Packaging Dimensions (H x W x L)	110 x 77 x 24 mm					
Minimum Order Quantity	12 Units					
ProTec CR 40/xxx (1+0)	75	150	275	320	385	440
Single Unit Weight	117g	127g	133g	133g	134g	135g
Single Unit DIN 43880 Dimension	1 TE					
Packaging Dimensions (H x W x L)	109 x 77 x 24 mm					
Minimum Order Quantity	12 Units					

### Module Internal Configuration

#### Module ProTec C(R) 40/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec C(R) 40/xxx	75	150	275	320	385	440
Weight per Unit	44g	48g	52g	56g	58g	60g
Packaging Dimensions	98 x 77 x 110 mm					
Minimum Order Quantity	12 Units					

Applicable connection configurations can be found on page 178.



# Modular Multi-pole SPD ProTec C(R) 80 (2+0) Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 $I_{max} = 40 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

### ProTec C(R) 80/xxx (2+0)

150      275      320      385      440

#### Electrical

Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	385V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			20kA		
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$			40kA		
Voltage Protection Level	$U_p$	< 1.0kV	< 1.5kV	< 1.5kV	< 1.9kV	< 2.0kV
Response Time	$t_A$			< 25 ns		
Back-Up Fuse (if mains > 125 A)				125 A gG		
Short-Circuit Current Rating (AC)	$I_{SCCR}$			25kA		
TOV Withstand 5s	$U_T$	174V	335V	335V	438V	438V
Number of Ports				1		

#### Mechanical & Environmental

Temperature Range	$T_a$			-40 °C to +85 °C		
Permissible Humidity	RH			5%...95%		
Terminal Screw Torque	$M_{max}$			3.0Nm		
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Mounting				35 mm DIN Rail, EN 60715		
Degree of Protection				IP 20		
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection				Yes		
Fault Indication				Red Flag		
Remote Contacts (RC)				Optional		
RC Switching Capacity				AC: 250V/0.5 A; 125V/3 A		
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{max}$			0.25Nm		

#### Order Information

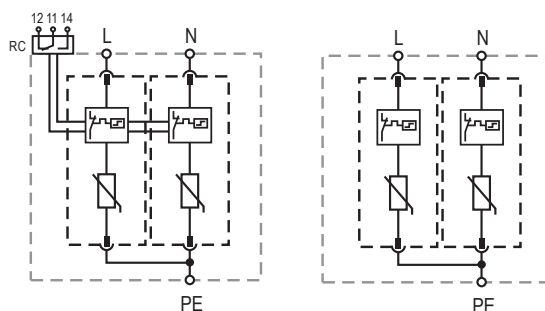
Order Code	150	275	385	440	750
PROTEC C 80/xxx (2+0)	50.A094	50.A051	50.A095	50.A058	50.A096
PROTEC CR 80/xxx (2+0) (with remote contacts)	50.A097	50.A098	50.A099	50.A100	50.A101
Module PROTEC C(R) 40/xxx	50.A074	50.A075	50.A049	50.A076	50.A077

## ProTec C(R) 80 (2+0)

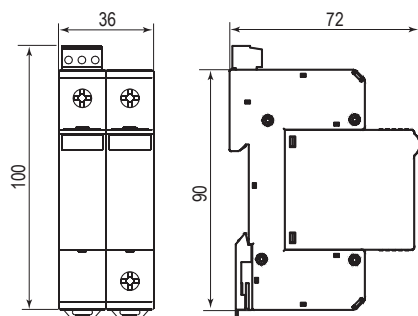
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]

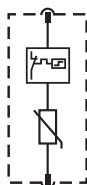


#### Dimensions & Packaging

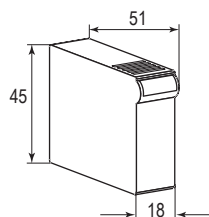
ProTec C 80/xxx (2+0)	150	275	320	385	440
Single Unit Weight	234 g	244 g	244 g	245 g	247 g
Single Unit DIN 43880 Dimension	2 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm				
Minimum Order Quantity	7 Units				
ProTec CR 80/xxx (2+0)	150	275	320	385	440
Single Unit Weight	239 g	249 g	249 g	250 g	252 g
Single Unit DIN 43880 Dimension	2 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm				
Minimum Order Quantity	7 Units				

### Module Internal Configuration

#### Module ProTec C(R) 40/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec C(R) 40/xxx	150	275	320	385	440
Single Unit Weight	48 g	52 g	56 g	58 g	60 g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm				
Minimum Order Quantity	12 Units				

Applicable connection configurations can be found on page 178.

# Modular Multi-pole SPD

## ProTec C(R) 120 (3+0)

### Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TN-C  
 Mode of Protection: L - PEN  
 Surge Ratings:  $I_n = 20 \text{ kA}$  (8/20  $\mu\text{s}$ )  
 $I_{\text{max}} = 40 \text{ kA}$  (8/20  $\mu\text{s}$ )  
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

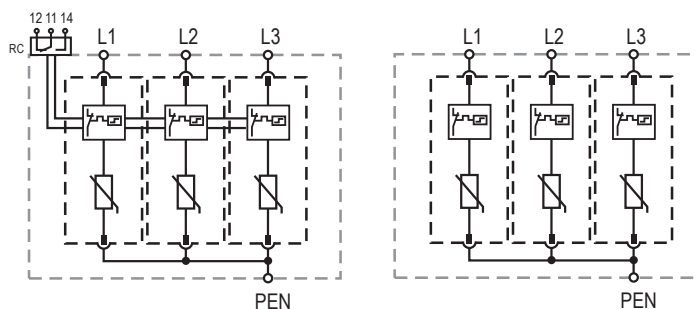
ProTec C(R) 120/xxx (3+0)		150	275	320	385	440
<b>Electrical</b>						
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	385V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			20kA		
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{\text{max}}$			40kA		
Voltage Protection Level	$U_p$	< 1.0kV	< 1.5kV	< 1.5kV	< 1.9kV	< 2.0kV
Response Time	$t_A$			< 25 ns		
Back-Up Fuse (if mains > 125 A)				125 A gG		
Short-Circuit Current Rating (AC)	$I_{\text{SCCR}}$			25kA		
TOV Withstand 5s	$U_T$	174V	335V	335V	438V	438V
Number of Ports				1		
<b>Mechanical &amp; Environmental</b>						
Temperature Range	$T_a$			-40 °C to +85 °C		
Permissible Humidity	RH			5%...95%		
Terminal Screw Torque	$M_{\text{max}}$			3.0Nm		
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Mounting				35 mm DIN Rail, EN 60715		
Degree of Protection				IP 20		
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection				Yes		
Fault Indication				Red Flag		
Remote Contacts (RC)				Optional		
RC Switching Capacity				AC: 250V/0.5 A; 125V/3 A		
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{\text{max}}$			0.25Nm		
<b>Order Information</b>						
Order Code		150	275	320	385	440
PROTEC C 120/xxx (3+0)		50.A102	50.A052	50.A103	50.A059	50.A104
PROTEC CR 120/xxx (3+0) (with remote contacts)		50.A105	50.A053	50.A106	50.A060	50.A107
Module PROTEC C(R) 40/xxx		50.A074	50.A075	50.A049	50.A076	50.A077

## ProTec C(R) 120 (3+0)

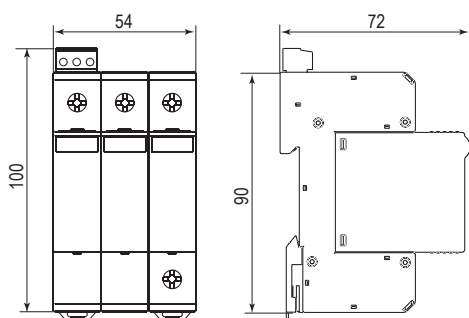
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PEN Combined Protective Earth and Neutral
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]

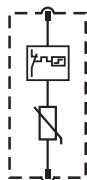


#### Dimensions & Packaging

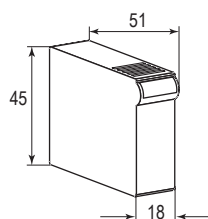
ProTec C 120/xxx (3+0)	150	275	320	385	440
Single Unit Weight	330 g	352 g	352 g	354 g	356 g
Single Unit DIN 43880 Dimension	3 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 62 mm				
Minimum Order Quantity	5 Units				
ProTec CR 120/xxx (3+0)	150	275	320	385	440
Single Unit Weight	335 g	357 g	357 g	359 g	361 g
Single Unit DIN 43880 Dimension	3 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 62 mm				
Minimum Order Quantity	5 Units				

### Module Internal Configuration

#### Module ProTec C(R) 40/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec C(R) 40/xxx	150	275	320	385	440
Single Unit Weight	48 g	52 g	56 g	58 g	60 g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm				
Minimum Order Quantity	12 Units				

Applicable connection configurations can be found on page 178.

# Modular Multi-pole SPD

## ProTec C(R) 160 (4+0)

### Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 $I_{\text{max}} = 40 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

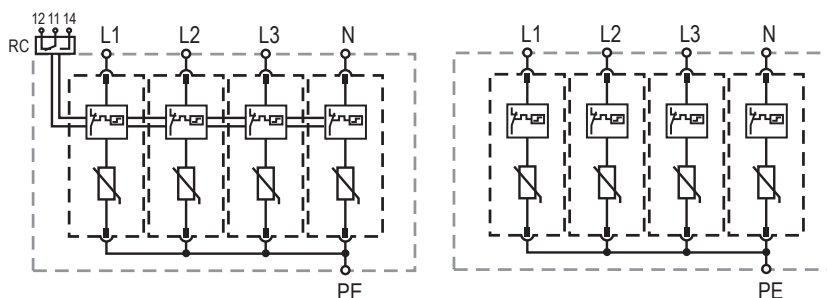
ProTec C(R) 160/xxx (4+0)		150	275	320	385	440
<b>Electrical</b>						
Nominal AC Voltage (50/60Hz)	$U_o$	120V	230V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	385V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$			20kA		
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{\text{max}}$			40kA		
Voltage Protection Level	$U_p$	< 1.0kV	< 1.5kV	< 1.5kV	< 1.9kV	< 2.0kV
Response Time	$t_A$			< 25 ns		
Back-Up Fuse (if mains > 12A)				125 A gG		
Short-Circuit Current Rating (AC)	$I_{\text{SCCR}}$			25kA		
TOV Withstand 5s	$U_T$	174V	335V	335V	438V	438V
Number of Ports				1		
<b>Mechanical &amp; Environmental</b>						
Temperature Range	$T_a$			-40 °C to +85 °C		
Permissible Humidity	RH			5%...95%		
Terminal Screw Torque	$M_{\text{max}}$			3.0Nm		
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Mounting				35 mm DIN Rail, EN 60715		
Degree of Protection				IP 20		
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection				Yes		
Fault Indication				Red Flag		
Remote Contacts (RC)				Optional		
RC Switching Capacity				AC: 250V/0.5 A; 125V/3 A		
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{\text{max}}$			0.25Nm		
<b>Order Information</b>						
Order Code		150	275	320	385	440
PROTEC C 160/xxx (4+0)		50.A108	50.A054	50.A109	50.A110	50.A111
PROTEC CR 160/xxx (4+0) (with remote contacts)		50.A112	50.A055	50.A113	50.A114	50.A115
Module PROTEC C(R) 40/xxx		50.A074	50.A075	50.A049	50.A076	50.A077

## ProTec C(R) 160 (4+0)

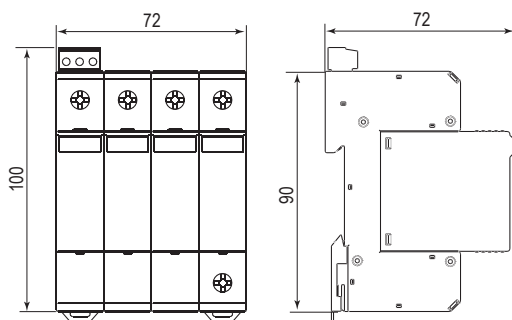
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]

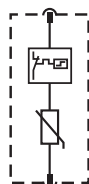


#### Dimensions & Packaging

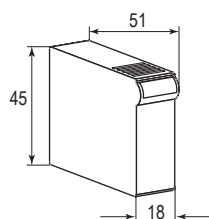
ProTec C 160/xxx (4+0)	150	275	320	385	440
Single Unit Weight	432 g	456 g	456 g	460 g	466 g
Single Unit DIN 43880 Dimension	4 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm				
Minimum Order Quantity	3 Units				
ProTec CR 160/xxx (4+0)	150	275	320	385	440
Single Unit Weight	437 g	461 g	461 g	465 g	471 g
Single Unit DIN 43880 Dimension	4 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm				
Minimum Order Quantity	3 Units				

### Module Internal Configuration

#### Module ProTec C(R) 40/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec C(R) 40/xxx	150	275	320	385	440
Single Unit Weight	48 g	52 g	56 g	58 g	60 g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm				
Minimum Order Quantity	12 Units				

Applicable connection configurations can be found on page 178.

# Modular Multi-pole SPD

## ProTec C(R) 80 (1+1)

### Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TT, TN-S  
 Mode of Protection: L-N, N-PE  
 Surge Ratings:  $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 $I_{max} = 40 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV and GDT  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

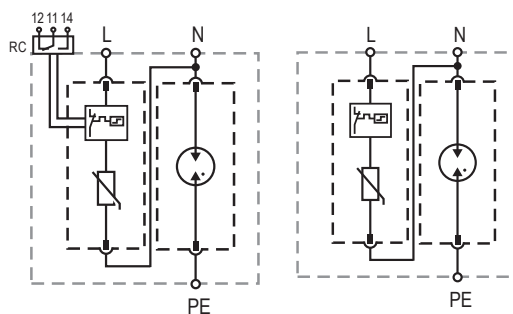
ProTec C(R) 80/xxx (1+1)		150	275	320	385	440
<b>Electrical</b>						
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) $U_c$	150V	275V	320V	385V	440V
	(N-PE) $U_c$			255V		
Nominal Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_n$			20 kA/20 kA		
Maximum Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{max}$			40 kA/40 kA		
Voltage Protection Level	(L-N) $U_p$	< 1.0 kV	< 1.5 kV	< 1.5 kV	< 1.9 kV	< 2.0 kV
	(N-PE) $U_p$			< 1.5 kV		
Follow Current Interrupt Rating	(N-PE) $I_{fi}$			100 A <sub>RMS</sub>		
Response Time	(L-N)/(N-PE) $t_A$			< 25 ns / < 100 ns		
Back-Up Fuse (if mains > 125 A)				125 A gG		
Short-Circuit Current Rating (AC)	$I_{SCCR}$			25 kA		
TOV Withstand 5s	(L-N) $U_T$	174V	335V	335V	438V	438V
TOV Withstand 200ms	(N-PE) $U_T$			1200V/300A		
Number of Ports				1		
<b>Mechanical &amp; Environmental</b>						
Temperature Range	$T_a$			-40 °C to +85 °C		
Permissible Humidity	RH			5%...95%		
Terminal Screw Torque	$M_{max}$			3.0 Nm		
Conductor Cross Section (max)				35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Mounting				35 mm DIN Rail, EN 60715		
Degree of Protection				IP 20		
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection	(L-N)/(N-PE)			Yes/No		
Fault Indication	(L-N)/(N-PE)			Red Flag/No		
Remote Contacts (RC)				Optional		
RC Switching Capacity				AC: 250V/0.5 A; 125V/3 A		
RC Terminal Cross Section (max)				1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{max}$			0.25 Nm		
<b>Order Information</b>						
Order Code		150	275	320	385	440
PROTEC C 80/xxx (1+1)		50.A116	50.A117	50.A118	50.A119	50.A120
PROTEC CR 80/xxx (1+1) (with remote contacts)		50.A121	50.A122	50.A123	50.A124	50.A125
Module PROTEC C(R) 40/xxx		50.A074	50.A075	50.A049	50.A076	50.A077
Module PROTUBE C 40/255		50.A050	50.A050	50.A050	50.A050	50.A050

## ProTec C(R) 80 (1+1)

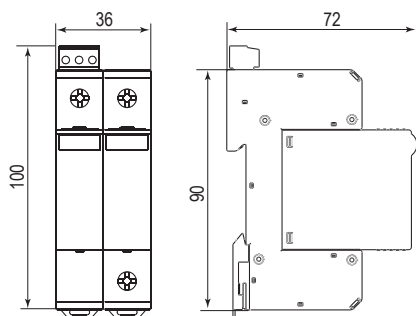
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]

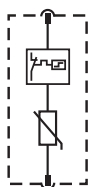


#### Dimensions & Packaging

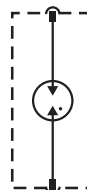
ProTec C 80/xxx (1+1)	150	275	320	385	440
Single Unit Weight	221 g	225 g	225 g	226 g	227 g
Single Unit DIN 43880 Dimension	2 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm				
Minimum Order Quantity	7 Units				
ProTec CR 80/xxx (1+1)	150	275	320	385	440
Single Unit Weight	226 g	230 g	230 g	231 g	232 g
Single Unit DIN 43880 Dimension	2 TE				
Packaging Dimensions (H x W x L)	109 x 77 x 42 mm				
Minimum Order Quantity	7 Units				

### Module Internal Configuration

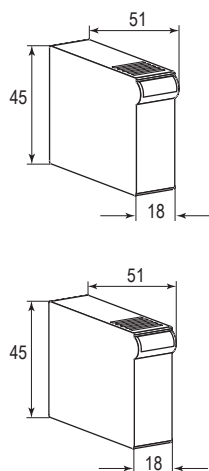
#### Module ProTec C(R) 40/xxx



#### Module ProTube C 40/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec C(R) 40/xxx	150	275	320	385	440
Single Unit Weight	48 g	52 g	56 g	58 g	60 g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm				
Minimum Order Quantity	12 Units				

#### Dimensions & Packaging

Module ProTube C 40/xxx	255
Single Unit Weight	34 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm
Minimum Order Quantity	12 Units

Applicable connection configurations can be found on page 178.



# Modular Multi-pole SPD

## ProTec C(R) 160 (3+1)

### Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TT, TN-S  
 Mode of Protection: L-N, N-PE  
 Surge Ratings:  $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 $I_{max} = 40 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV and GDT  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

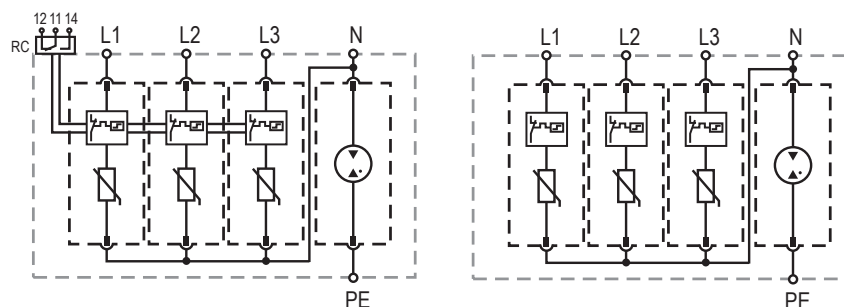
ProTec C(R) 160/xxx (3+1)		275	320	385	440
<b>Electrical</b>					
Nominal AC Voltage (50/60 Hz)	$U_o$	230V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N) $U_c$	275V	320V	385V	440V
	(N-PE) $U_c$			255V	
Nominal Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_n$		20 kA/20 kA		
Maximum Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{max}$		40 kA/40 kA		
Voltage Protection Level	(L-N) $U_p$	< 1.5 kV	< 1.5 kV	< 1.9 kV	< 2.0 kV
	(N-PE) $U_p$			< 1.5 kV	
Follow Current Interrupt Rating	(N-PE) $I_{fi}$		100 A <sub>RMS</sub>		
Response Time	(L-N)/(N-PE) $t_A$		< 25 ns / < 100 ns		
Back-Up Fuse (if mains > 125 A)			125 A gG		
Short-Circuit Current Rating (AC)	$I_{SCCR}$		25 kA		
TOV Withstand 5s	(L-N) $U_T$	335V	335V	438V	438V
TOV Withstand 200ms	(N-PE) $U_T$			1200V/300 A	
Number of Ports			1		
<b>Mechanical &amp; Environmental</b>					
Temperature Range	$T_a$		-40 °C to +85 °C		
Permissible Humidity	RH		5%...95%		
Terminal Screw Torque	$M_{max}$		3.0 Nm		
Conductor Cross Section (max)			35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)		
Degree of Protection			IP 20		
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection	(L-N)/(N-PE)		Yes/No		
Fault Indication	(L-N)/(N-PE)		Red Flag/No		
Remote Contacts (RC)			Optional		
RC Switching Capacity			AC: 250V/0.5 A; 125V/3 A		
RC Terminal Cross Section (max)			1.5 mm <sup>2</sup>		
RC Terminal Screw Torque	$M_{max}$		0.25 Nm		
<b>Order Information</b>					
Order Code		275	320	385	440
PROTEC C 160/xxx (3+1)		50.A127	50.A047	50.A128	50.A056
PROTEC CR 160/xxx (3+1) (with remote contacts)		50.A130	50.A048	50.A061	50.A057
Module PROTEC C(R) 40/xxx		50.A075	50.A049	50.A076	50.A077
Module PROTUBE C 40/255		50.A050	50.A050	50.A050	50.A050

## ProTec C(R) 160 (3+1)

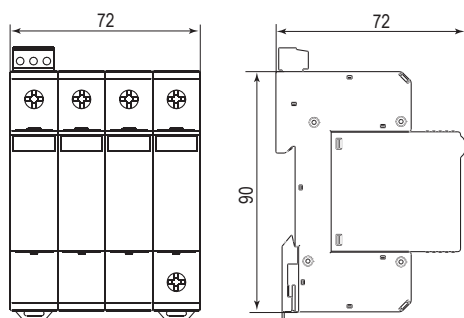
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]



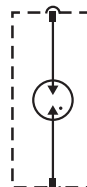
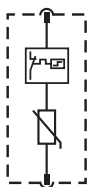
#### Dimensions & Packaging

ProTec C 160/xxx (3+1)	275	320	385	440
Single Unit Weight	441 g	441 g	445 g	447 g
Single Unit DIN 43880 Dimension	4 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm			
Minimum Order Quantity	3 Units			
ProTec CR 160/xxx (3+1)	275	385	385	440
Single Unit Weight	446 g	446 g	450 g	452 g
Single Unit DIN 43880 Dimension	4 TE			
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm			
Minimum Order Quantity	3 Units			

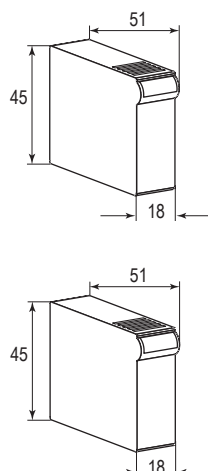
### Module Internal Configuration

#### Module ProTec C(R) 40/xxx

#### Module ProTube C 40/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec C(R) 40/xxx	275	320	385	440
Single Unit Weight	52 g	56 g	58 g	60 g
Single Unit DIN 43880 Dimension	1 TE			
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm			
Minimum Order Quantity	12 Units			

#### Dimensions & Packaging

Module ProTube C 40/xxx	255
Single Unit Weight	34 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm
Minimum Order Quantity	12 Units

Applicable connection configurations can be found on page 178.

# Modular Multi-pole SPD

## ProTec CM(R) 80 (2+0)

### Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L - PE, N - PE  
 Surge Ratings:  $I_n = 15 \text{ kA (8/20}\mu\text{s)}$   
 $I_{max} = 40 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

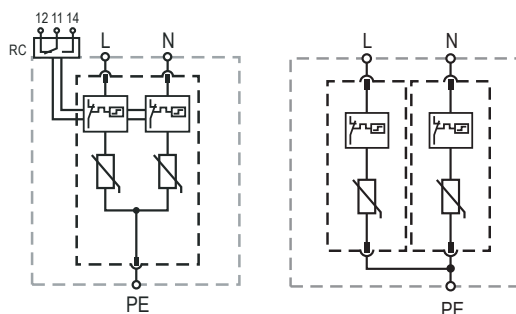
ProTec CM(R) 80/xxx (2+0)		275	320
<b>Electrical</b>			
Nominal AC Voltage (50/60 Hz)	$U_o$	230V	230V
Maximum Continuous Operating Voltage (AC/DC)	$U_c$	275V	320V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	15 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	40 kA	
Voltage Protection Level	$U_p$	< 1.5 kV	< 1.5 kV
Response Time	$t_A$	< 25 ns	
Back-Up Fuse (if mains > 125A)		100 A gG/gL	
Short-Circuit Current Rating	$I_{SCCR}$	25 kA/50 Hz	
TOV Withstand 5s	$U_T$	335V	335V
Number of Ports		1	
<b>Mechanical &amp; Environmental</b>			
Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	L, N $M_{max}$	2.0 Nm	
	PE $M_{max}$	3.0 Nm	
Conductor Cross Section	L, N	6 mm <sup>2</sup> (solid) / 4 mm <sup>2</sup> (stranded)	
	PE	35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Degree of Protection		IP 20	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection		Yes	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>	
RC Terminal Screw Torque		0.25 Nm	
<b>Order Information</b>			
Order Code		275	320
PROTEC CM 80/xxx (2+0)		508.315	508.316
PROTEC CMR 80/xxx (2+0) (with remote contacts)		508.320	508.321
Module PROTEC CM(R) 80/xxx (2+0)		508.325	508.326

## ProTec CM(R) 80 (2+0)

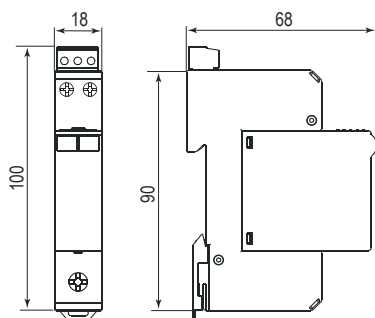
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

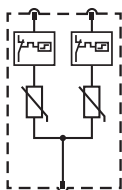
ProTec CM 80/xxx (2+0)	275	320
Single Unit Weight	144 g	144 g
Single Unit DIN 43880 Dimension	1 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 24 mm	
Minimum Order Quantity	12 Units	

#### ProTec CMR 80/xxx (2+0)

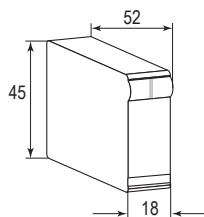
ProTec CMR 80/xxx (2+0)	275	320
Single Unit Weight	149 g	149 g
Single Unit DIN 43880 Dimension	1 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 24 mm	
Minimum Order Quantity	12 Units	

### Module Internal Configuration

#### Module ProTec CM(R) 80/xxx (2+0)



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec CM(R) 80/xxx (2+0)	275	320
Single Unit Weight	63 g	79 g
Single Unit DIN 43880 Dimension	1 TE	
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm	
Minimum Order Quantity	12 Units	

Applicable connection configurations can be found on page 179.

# Modular Multi-pole SPD

## ProTec CM(R) 80 (1+1)

### Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TT, TN-S  
 Mode of Protection: L-N, N-PE  
 Surge Ratings:  $I_n = 15 \text{ kA}/20 \text{ kA}$  (8/20 $\mu\text{s}$ )  
 $I_{max} = 40 \text{ kA}/40 \text{ kA}$  (8/20 $\mu\text{s}$ )  
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV and GDT  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

### ProTec CM(R) 80/xxx (1+1)

275

320

#### Electrical

Nominal AC Voltage (50/60 Hz)	(L-N) $U_o$	230V	230V
	(N-PE) $U_o$	230V	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	275V	320V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_n$	15 kA/20 kA	
Maximum Discharge Current (8/20 $\mu\text{s}$ )	(L-N)/(N-PE) $I_{max}$	40 kA/40 kA	
Voltage Protection Level	(L-N) $U_p$	1.5 kV	1.5 kV
	(N-PE) $U_p$	1.5 kV	1.5 kV
Follow Current Interrupt Rating	(N-PE) $I_{fi}$	100 A <sub>RMS</sub>	
Response Time	(L-N)/(N-PE) $t_A$	< 25 ns / < 100 ns	
Back-Up Fuse (if mains > 125 A)		63 A gG	
Short-Circuit Current Rating	$I_{SCCR}$	25 kA	
TOV Withstand 5s	(L-N) $U_T$	335V	335V
TOV Withstand 200 ms	(N-PE) $U_T$	1200V/300A	
Number of Ports		1	

#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	L, N $M_{max}$	2.0 Nm	
	PE $M_{max}$	3.0 Nm	
Conductor Cross Section	L, N	6 mm <sup>2</sup> (solid) / 4 mm <sup>2</sup> (stranded)	
	PE	35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection		Yes	
Fault Indication		Red Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250V/0.5A; 125V/3A	
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>	
RC Terminal Screw Torque		0.25 Nm	

#### Order Information

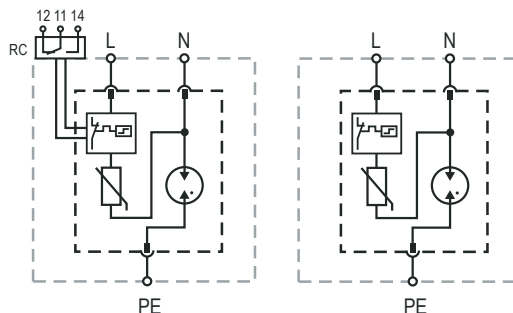
Order Code	275	320
PROTEC CM 80/xxx (1+1)	508.330	508.331
PROTEC CMR 80/xxx (1+1) (with remote contacts)	508.335	508.336
Module PROTEC CM(R) 80/xxx (1+1)	508.340	508.341

## ProTec CM(R) 80 (1+1)

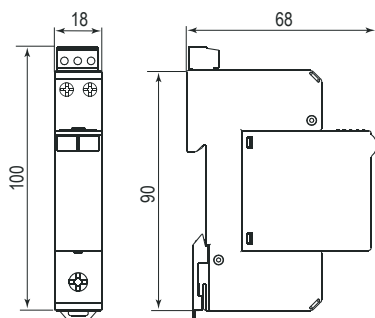
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

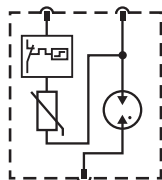
ProTec CM 80/xxx (1+1)	275	320
Single Unit Weight	126 g	126 g
Single Unit DIN 43880 Dimension	1 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 24 mm	
Minimum Order Quantity	12 Units	

#### ProTec CMR 80/xxx (1+1)

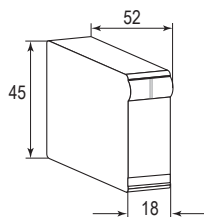
ProTec CMR 80/xxx (1+1)	275	320
Single Unit Weight	131 g	131 g
Single Unit DIN 43880 Dimension	1 TE	
Packaging Dimensions (H x W x L)	109 x 77 x 24 mm	
Minimum Order Quantity	12 Units	

### Module Internal Configuration

#### Module ProTec CM(R) 80/xxx (1+1)



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec CM(R) 80/xxx (1+1)	275	320
Single Unit Weight	59 g	59 g
Single Unit DIN 43880 Dimension	1 TE	
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm	
Minimum Order Quantity	12 Units	

Applicable connection configurations can be found on page 179.

Modular Single Pole SPD  
**ProTube C 40/255**  
 Class II • Type 2



Location of Use: Sub-distribution Boards  
 Network Systems: TT  
 Mode of Protection: N-PE  
 Surge Ratings:  $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 $I_{max} = 40 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy GDT  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

**ProTube C 40/255**

**255**

**Electrical**

Nominal AC Voltage (50/60 Hz)	$U_o$	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	255V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	20 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	40 kA
Voltage Protection Level	$U_p$	< 1.5 kV
Follow Current Interrupt Rating	$I_{fi}$	100 A <sub>RMS</sub>
Response Time	$t_A$	100 ns
TOV Withstand 200ms	$U_T$	1200V/300A
Number of Ports		1

**Mechanical & Environmental**

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0 Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0

**Order Information**

Order Code		<b>255</b>
PROTUBE C 40/xxx		50.A093
Module PROTUBE C 40/xxx		50.A050

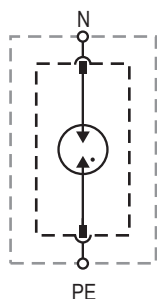
## ProTube C 40/255

### Internal Configuration

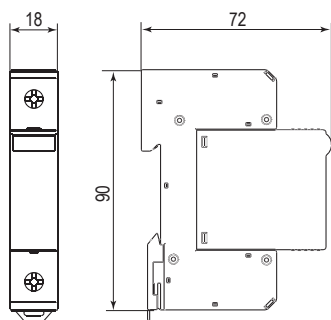
#### Legend

N Neutral

PE Protective Earth



### Dimensions & Packaging [mm]

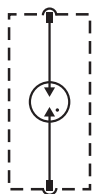


#### Dimensions & Packaging

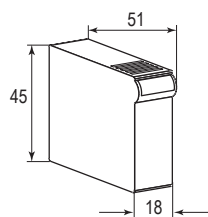
ProTube C 40/255	255
Single Unit Weight	118 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H x W x L)	110 x 77 x 24 mm
Minimum Order Quantity	12 Units

### Module Internal Configuration

#### Module ProTube C 40/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTube C 40/xxx	255
Single Unit Weight	36 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm
Minimum Order Quantity	12 Units

Applicable connection configurations can be found on page 178.



# DC Modular Multi-pole SPD for Photovoltaic Systems

## PV ProTec C(R) 40 Y TD

### Type 2



Location of Use: Photovoltaic Systems – PV Module Side  
 Mode of Protection: (+)-PE, (-)-PE, (+)-(-)  
 Surge Ratings:  $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 $I_{max} = 40 \text{ kA (8/20}\mu\text{s)}$   
 EN Category: Type 2  
 Protective Elements: High Energy MOV  
 Housing: Modular Design  
 Compliance: EN 50539-11:2013 + A1:2014

### Technical Data

PV ProTec C(R) 40/xxxx Y TD

1000

#### Electrical

Open Circuit Voltage	$U_{OC \text{ STC}}$	830V
Maximum Continuous Operating Voltage (DC)	$U_{CPV}$	1000V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	20 kA
Total Discharge Current (8/20 $\mu\text{s}$ )	$I_{total}$	40 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	40 kA
Voltage Protection Level	(+)-(-) $U_p$	< 4.0kV
	(+)/(-)-PE $U_p$	< 4.0kV
Short Circuit Current Rating	$I_{SCPV}$	1000 A
Response Time	$t_A$	< 25 ns
Number of Ports		1

#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	$M_{max}$	3.0Nm
Conductor Cross Section (max)		35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5 A; 125V/3 A
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>
RC Terminal Screw Torque		0.25 Nm

#### Order Information

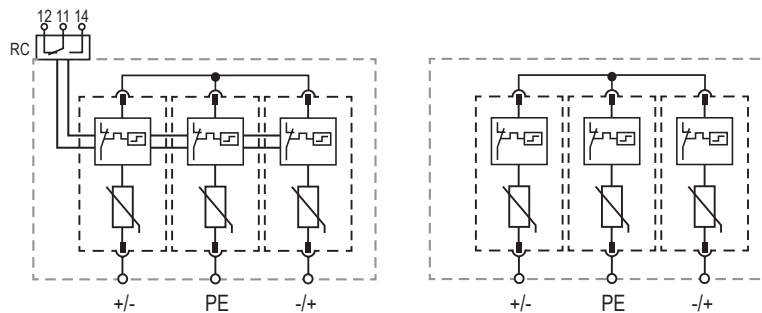
Order Code		1000
PV PROTEC C 40/xxxx Y TD		501.793
PV PROTEC CR 40/xxxx Y TD (with remote contacts)		501.794
Module PV PROTEC C(R) 40/xxxx Y TD		501.776

## PV ProTec C(R) 40 Y TD

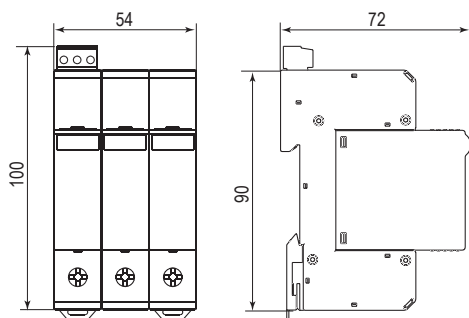
### Internal Configuration

#### Legend

- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]

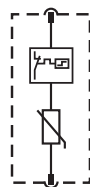


#### Dimensions & Packaging

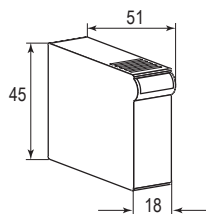
PV ProTec C 40/xxxx Y TD	
Single Unit Weight	1000
Single Unit DIN 43880 Dimension	398 g
Packaging Dimensions (H x W x L)	3 TE
Minimum Package Quantity	109 x 77 x 62 mm
	5 Units
PV ProTec CR 40/xxxx Y TD	
Single Unit Weight	1000
Single Unit DIN 43880 Dimension	403 g
Packaging Dimensions (H x W x L)	3 TE
Minimum Package Quantity	109 x 77 x 62 mm
	5 Units

### Module Internal Configuration

#### Module ProTec C(R) 40/xxxx Y TD



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

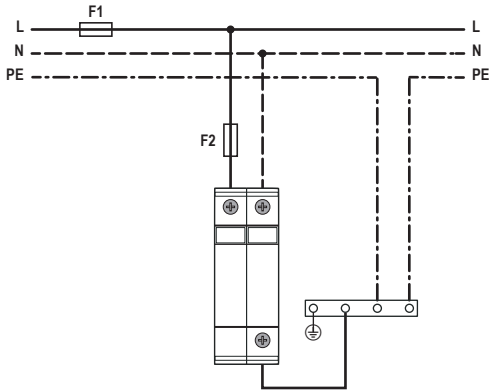
Module ProTec B(R) 5/xxxx Y	
Single Unit Weight	1000
Single Unit DIN 43880 Dimension	58 g
Packaging Dimensions (H x W x L)	1 TE
Minimum Order Quantity	98 x 77 x 110 mm
	12 Units

Applicable connection configurations can be found on page 179.

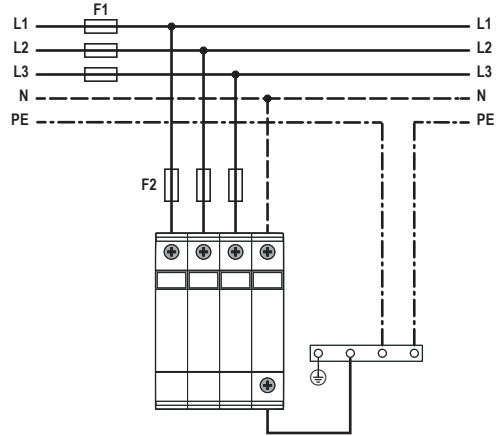
# Modular Multi-pole SPD Connection Configurations

## ProTec C(R) & ProTube C Series

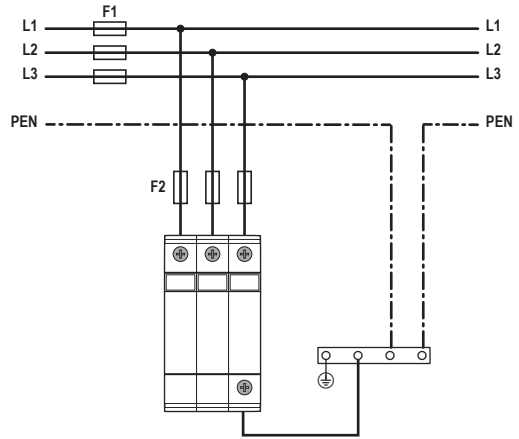
TN-S (Single-phase, 2+0)



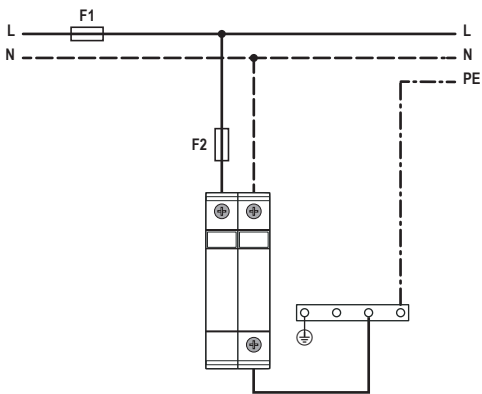
TN-S (Three-phase, 4+0)



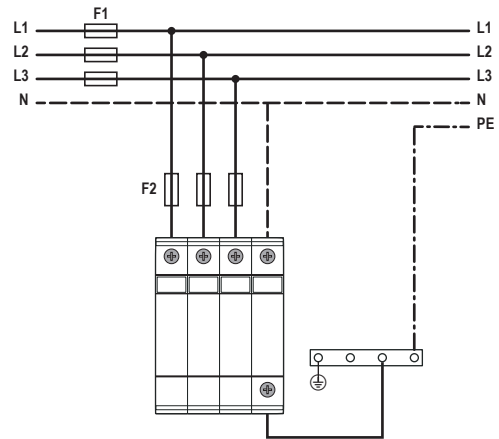
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)

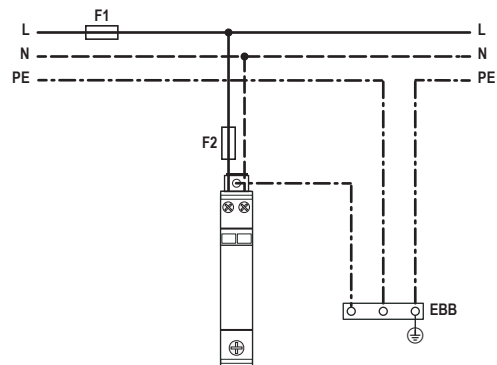


**Back-up Fuse**

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

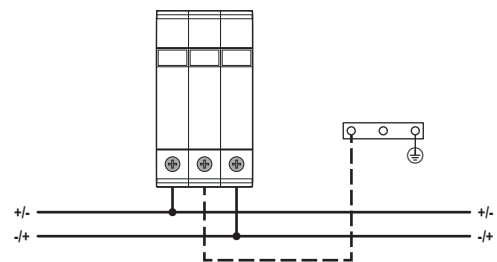
## Modular Multi-pole SPD Connection Configurations ProTec CM(R) Series

TN-S (Single-phase, 2+0)



## DC Modular Multi-pole SPD Connection Configurations PV ProTec C(R) Y TD Series

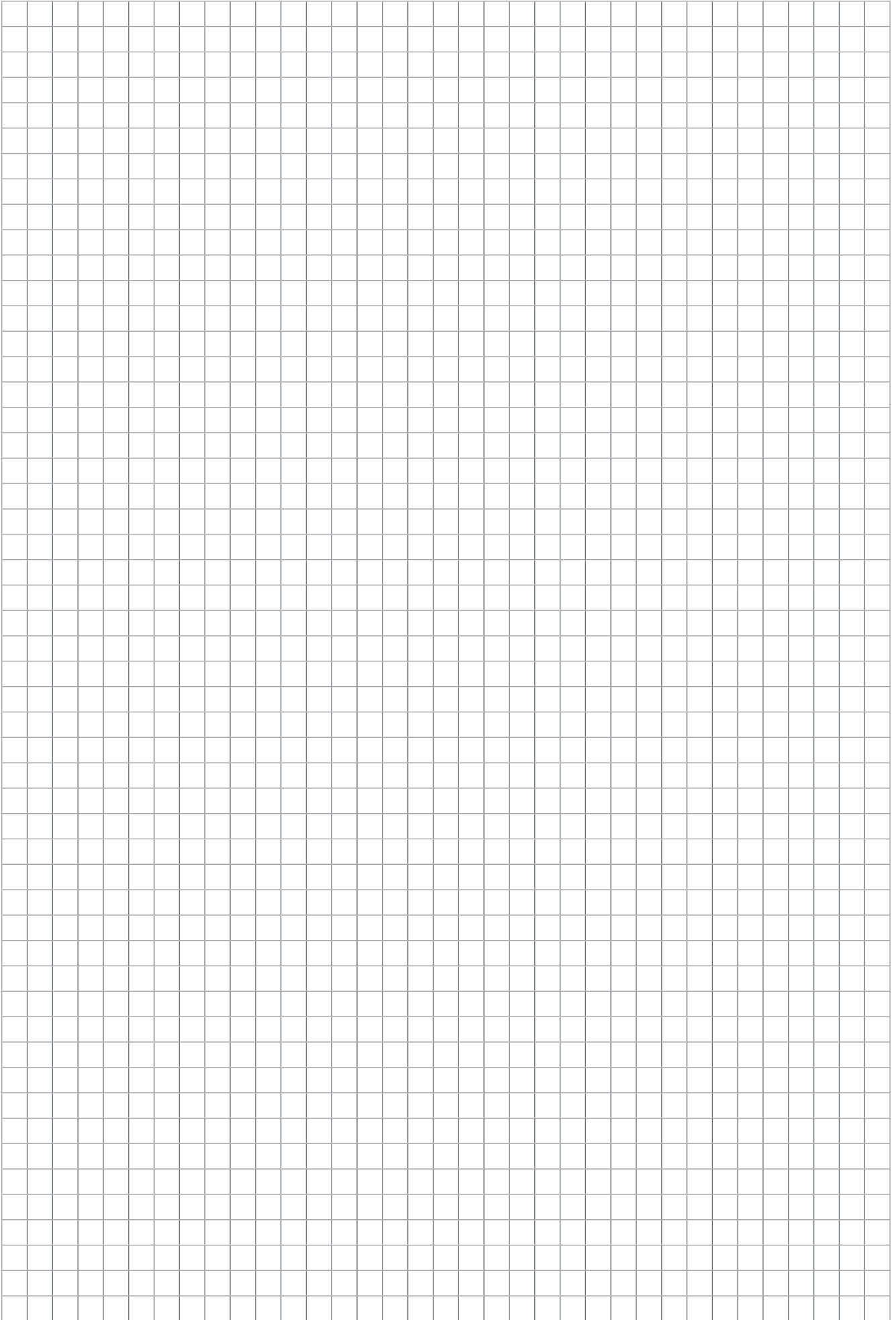
PV ProTec C(R) 40 Y TD




### Back-up Fuse

- F1 > 100 A gG/32 A gG → - F2 = 100 A gG/32 A gG
- F1 ≤ 100 A gG/32 A gG → ~~- F2~~





## Compact & Modular Single Pole & Multi-pole Surge Protective Devices (SPDs)

 ProTec DMDR, ProTec DMG, ProLed, MPE Mini & ZE 200

Class I and Class II SPDs are not enough to protect sensitive electronic elements. Overvoltage waves are slowly increasing at greater frequency, reoccurring and threatening devices. Incidence of low value surges are still too high for electronic elements and are common in the object itself, often caused by activation switching of major appliances, inductive devices and motors, or industrial system operation failures. SPDs in this classification are intended to protect sensitive electronic installations in Zones 2-3 per IEC 62305.

The ProTec DMG and DMGR modular series consist of a high performance varistors for each pole and a high energy encapsulated gas discharge tube (GDT), with separate thermal disconnect mechanisms.

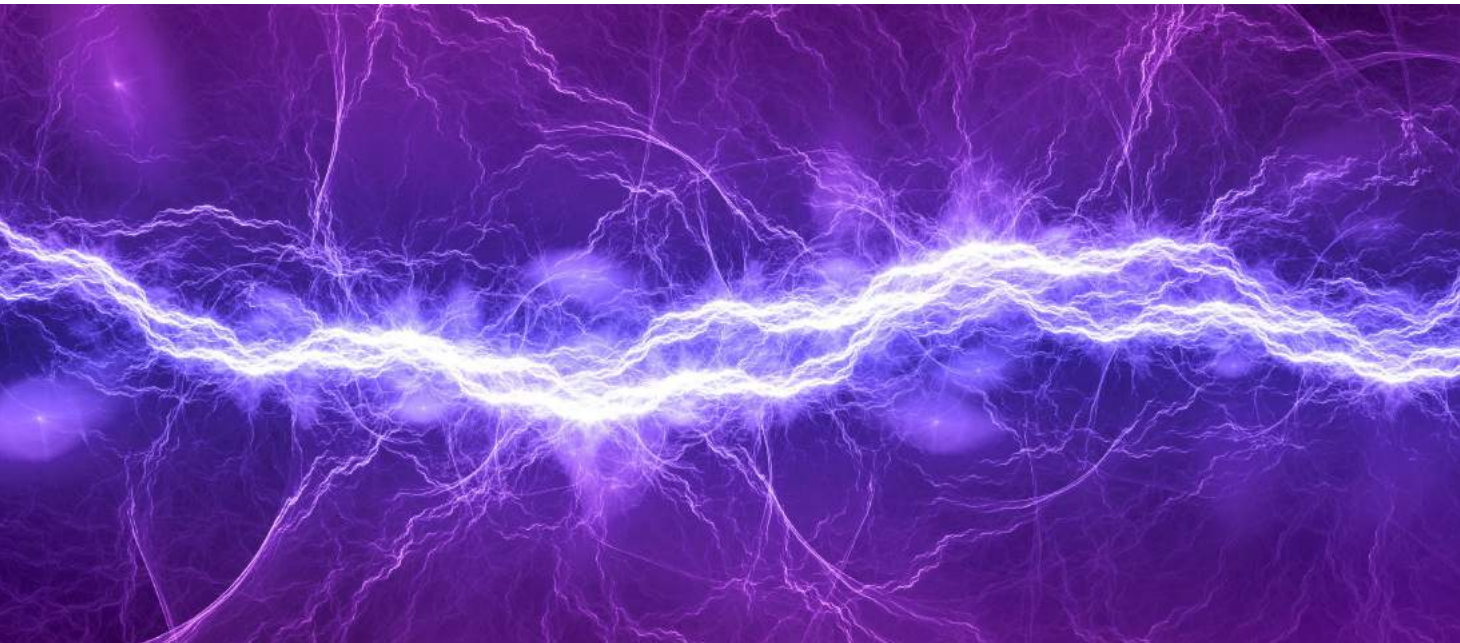
The plug-in module and base design facilitates replacement of a failed module *in situ* without the need to remove system wiring.

ProLed 275 series is for advanced three phase devices, equipment and systems up to 16A/230VAC per phase.

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

ZE 200-PS is designed to plug into a power outlet.

ProTec DMDR  
ProTec DMG &  
DMGR 20 (2+0)  
ProLed 275 (3+1)  
MPE-Mini  
MPE-Mini LED  
ZE 200-PS



# DC Modular Multi-pole SPD

## ProTec DMDR 20 Series

### Class III • Type 3



Location of Use: Sub-distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE, L-N  
 Surge Ratings:  $U_{oc}/I_{cw} =$  up to 6kV/3kA  
 $I_{max} =$  up to 4kA (8/20  $\mu$ s)  
 IEC/EN Category: Class III / Type 3  
 Protective Elements: High Energy MOV and GDT  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

### ProTec DMDR 20/xxx

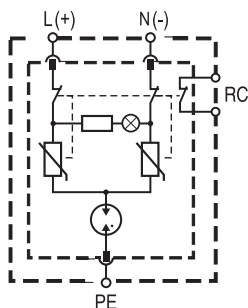
		24	48	60	120	
<b>Electrical</b>						
Nominal AC/DC Voltage	$U_o$	17V/24V	34V/48V	43V/60V	85V/120V	
Maximum Continuous Operating Voltage (AC/DC)	$U_c$	24V/34V	48V/60V	60V/75V	120V/150V	
Open Circuit Voltage of the Combination Wave Generator (1.2/50 $\mu$ s)	$U_{oc}$	2.4kV	2.4kV	6kV	6kV	
Short Circuit Current of the Combination Wave Generator (8/20 $\mu$ s)	$I_{cw}$	1.2kA	1.2kA	3kA	3kA	
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	2kA	2kA	4kA	4kA	
Voltage Protection Level	(L-N)	$U_p$	< 250V	< 500V	< 600V	< 1100V
	(L-PE)/(N-PE)		< 700V	< 800V	< 850V	< 1200V
Response Time of Overvoltage Protection	(L-N)	$t_A$		< 25 ns		
	(L-PE)/(N-PE)			< 100 ns		
Back-Up Fuse (if mains > 32A)				32 A gG		
Short-Circuit Current Rating (AC)	$I_{SCCR}$		2kA			
TOV Withstand 5s (AC)	$U_T$	115V	148V	163V	225V	
Number of Ports				1		
<b>Mechanical &amp; Environmental</b>						
Temperature Range	$T_a$		-40 °C to +85 °C			
Permissible Humidity	RH		5%...95%			
Terminal Screw Torque	$M_{max}$		0.5Nm			
Conductor Cross Section			Multi-strand to 6mm <sup>2</sup>			
Mounting			35mm DIN Rail, EN 60715			
Degree Of Protection			IP 20			
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0			
Thermal Protection			Yes			
Operating Status Indication			Green LED			
<b>Order Information</b>						
Order Code		24	48	60	120	
PROTEC DMDR 20/xxx		510 783	510 833	510 834	510 835	
Module PROTEC DMDR 20/xxx		510 784	510 836	510 837	510 838	

## ProTec DMDR 20 Series

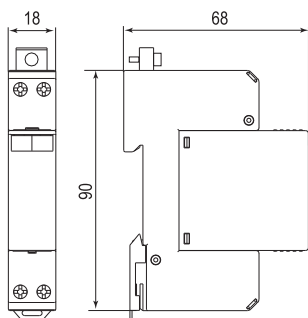
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]

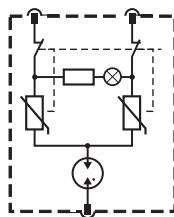


#### Dimensions & Packaging

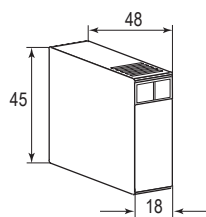
ProTec DMDR 20/xxx	24	48	60	120
Single Unit Weight	96 g	96 g	96 g	96 g
Single Unit DIN 43880 Dimension	1 TE			
Packaging Dimensions (H x W x L)	110 x 77 x 24 mm			
Minimum Order Quantity	12 Units			

### Module Internal Configuration

#### Module ProTec DMDR 20/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

Module ProTec DMDR 20/xxx	24	48	60	120
Single Unit Weight	32 g	32 g	32 g	32 g
Single Unit DIN 43880 Dimension	1 TE			
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm			
Minimum Order Quantity	12 Units			

Applicable connection configurations can be found on page 192.



Modular Multi-pole SPD  
**ProTec DMG(R) 20 (2+0)**  
 Class III • Type 3



Location of Use: Sub-distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $U_{oc}/I_{cw} = 10\text{ kV}/5\text{ kA}$   
 $I_{max} = 10\text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class III/Type 3  
 Protective Elements: MOV and GDT  
 Housing: Modular Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

### Technical Data

ProTec DMG(R) 20/xxx (2+0)

320

#### Electrical

Nominal AC Voltage (50/60 Hz)	$U_o$	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	320V
Open Circuit Voltage of the Combination Wave Generator (1.2/50 $\mu\text{s}$ )	$U_{oc}$	10kV
Short Circuit Current of Combination Wave Generator (8/20 $\mu\text{s}$ )	$I_{cw}$	5 kA
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	10 kA
Voltage Protection Level	$U_p$	< 1.6kV
Response Time	$t_A$	< 100 ns
Back-Up Fuse (if mains > 63 A)		63 A gG
Short-Circuit Current Rating (AC)	$I_{SCCR}$	10 kA
TOV Withstand 5s	$U_T$	337V
Number of Ports		1

#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	L, N $M_{max}$	0.5 Nm
Terminal Screw Torque	PE $M_{max}$	3.0 Nm
Conductor Cross Section	L, N	6 mm <sup>2</sup> (solid) / 4 mm <sup>2</sup> (stranded)
Conductor Cross Section	PE	35 mm <sup>2</sup> (solid) / 25 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Fault Indication		Red Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/0.5 A; 125V/3 A
RC Terminal Cross Section (max)		1.5 mm <sup>2</sup>
RC Terminal Screw Torque		0.25 Nm

#### Order Information

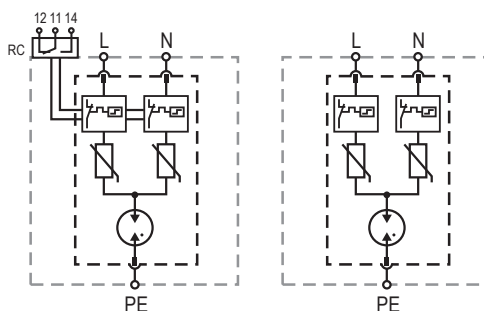
Order Code	320
PROTEC DMG 20/xxx (2+0)	508.369
PROTEC DMGR 20/xxx (2+0) (with remote contacts)	508.370
Module PROTEC DMG(R) 20/xxx	508.371

## ProTec DMG(R) 20 (2+0)

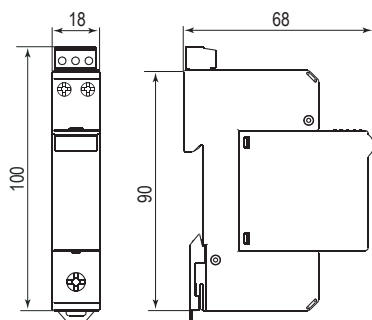
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts Optional



### Dimensions & Packaging [mm]

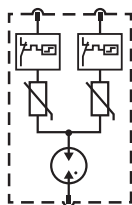


#### Dimensions & Packaging

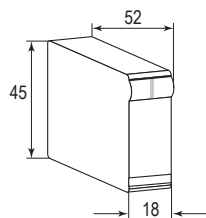
<b>ProTec DMG 20/xxx (2+0)</b>	<b>320</b>
Single Unit Weight	118 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H x W x L)	110 x 77 x 24 mm
Minimum Order Quantity	12 Units
<b>ProTec DMGR 20/xxx (2+0)</b>	<b>320</b>
Single Unit Weight	123 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H x W x L)	110 x 77 x 24 mm
Minimum Order Quantity	12 Units

### Module Internal Configuration

#### Module ProTec DMG(R) 20/xxx



### Dimensions & Packaging [mm]



#### Dimensions & Packaging

<b>Module ProTec DMG(R) 20/xxx</b>	<b>320</b>
Single Unit Weight	51 g
Packaging Dimensions (H x W x L)	98 x 77 x 110 mm
Minimum Order Quantity	12 Units

Applicable connection configurations can be found on page 192.

Compact SPD  
**ProLed 275 (3+1) 16A**  
 Class III • Type 3



Location of Use: Sub-distribution Boards  
 Network Systems: TN-S  
 Mode of Protection: L-N,N-PE  
 Surge Ratings:  $U_{oc}/I_{cw} = 6\text{ kV}/3\text{ kA}$   
 IEC/EN Category: Class III / Type 3  
 Protective Elements: MOV and GDT  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

### ProLed 275 (3+1) 16A

275

#### Electrical

Nominal AC Voltage (50/60 Hz)	$U_o$	230 V
Maximum Continuous Operating Voltage (AC)	$U_c$	275 V
Maximum Rated Load Current	$I_L$	16 A
Open Circuit Voltage of the Combination Wave Generator (1.2/50 $\mu$ s)	$U_{oc}$	6 kV
Short-Circuit Current of the Combination Wave Generator (8/20 $\mu$ s)	$I_{cw}$	3 kA
Voltage Protection Level	(L-N) $U_p$	1.2 kV
	(N-PE) $U_p$	1.8 kV
Response Time	(L-N)/(N-PE) $t_A$	< 25 ns / < 100 ns
Back-Up Fuse (if mains > 16 A)		MCB/B 16 A
Short-Circuit Current Rating (50 Hz)	$I_{SCCR}$	1.5 kA
TOV Withstand 5s	$U_T$	337 V
Number of Ports		2

#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Conductor Cross Section		2.5 mm <sup>2</sup> (stranded)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operation Status Fault Indication		Green / Red LED
Remote Contacts (RC)		Yes
RC Switching Capacity		10 A/230 V AC
RC Terminal Cross Section (max)		2.5 mm <sup>2</sup>
RC Terminal Screw Torque		0.5 Nm

#### Order Information

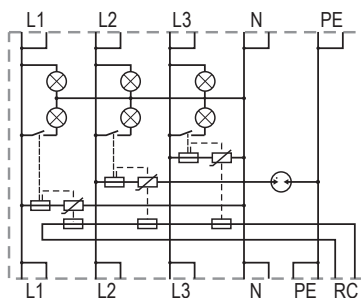
Order Code		275
ProLed 275 (3+1) 16A		130 304

## ProLed 275 (3+1) 16A

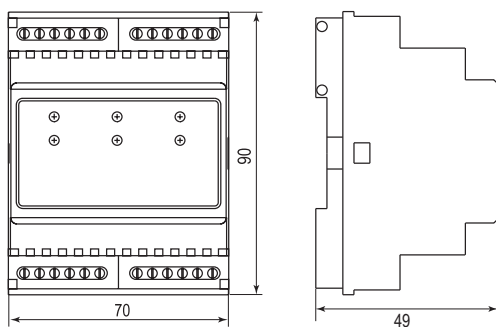
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth
- RC Remote Contacts



### Dimensions & Packaging [mm]



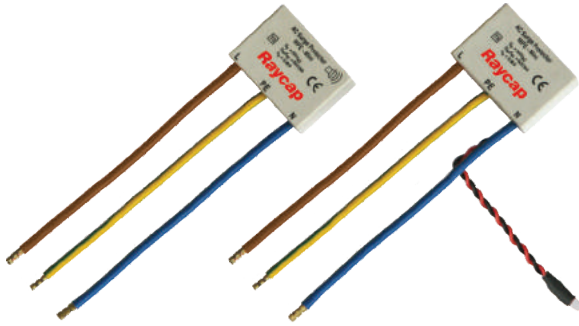
#### Dimensions & Packaging

ProLed 275 (3+1) 16A	275
Single Unit Weight	164 g
Single Unit DIN 43880 Dimension	4 TE
Packaging Dimensions (H x W x L)	109 x 77 x 80 mm
Minimum Order Quantity	3 Units

Applicable connection configurations can be found on page 193.

# Compact Multi-pole SPD MPE Mini & MPE Mini LED

## Class III • Type 3



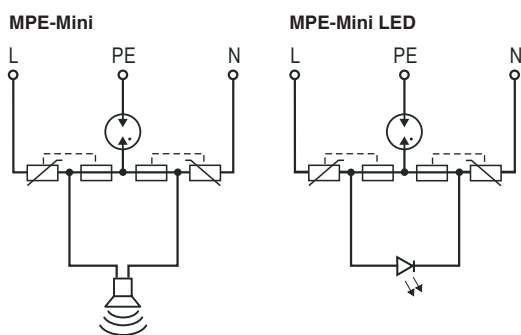
Location of Use: Cable Ducts & Wiring Outlets  
 Network Systems: TN-S  
 Mode of Protection: L-PE, L-N, N-PE  
 Surge Ratings:  $U_{oc}/I_{cw} = 6\text{ kV}/3\text{ kA}$   
 $I_{max} = 3\text{ kA} (8/20\ \mu\text{s})$   
 IEC/EN Category: Class III / Type 3  
 Protective Elements: MOV and GDT  
 Safety: Buzzer; LED  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

### Technical Data

	MPE-Mini	MPE-Mini LED
<b>Electrical</b>		
Nominal AC Voltage (50/60 Hz)	$U_o$	230V
Maximum Continuous Operating Voltage (AC)	$U_c$	275V
Open Circuit Voltage of the Combination Wave Generator (1.2/50 $\mu\text{s}$ )	$U_{oc}$	6 kV
Short-Circuit Current of the Combination Wave Generator (8/20 $\mu\text{s}$ )	$I_{cw}$	3 kA
Voltage Protection Level	(L-N) $U_p$	1.5 kV
	(L-PE)/(N-PE) $U_p$	1.7 kV
Response Time	$t_A$	< 100 ns
Back-Up Fuse (if mains > 16 A)		MCB/B 16 A
Short-Circuit Current Rating	$I_{SCCR}$	1 kA
TOV withstand 5s	$U_T$	337 V
Number of Ports		1
<b>Mechanical &amp; Environmental</b>		
Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Conductor Cross Section		1.0 mm <sup>2</sup> (stranded)
Mounting		Cable Ducts
Degree of Protection		IP 20
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Fault Indication	Buzzer	LED
<b>Order Information</b>		
Order Code	MPE-Mini	MPE-Mini LED
MPE-MINI	121 280	
MPE-MINI LED		121 282

## MPE Mini & MPE Mini LED

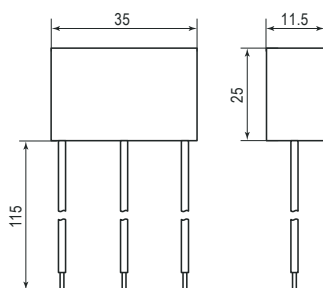
### Internal Configuration



### Legend

- L Line
- N Neutral
- PE Protective Earth

### Dimensions & Packaging [mm]



### Dimensions & Packaging

#### MPE-Mini & MPE-Mini LED

Single Unit Weight	52g
Packaging Dimensions (H x W x L)	305 x 116 x 83 mm
Minimum Order Quantity	30 Units

Compact Multi-pole SPD  
**ZE 200-PS**  
 Class III • Type 3



Location of Use: Power Outlets  
 Network Systems: TN-S  
 Mode of Protection: L-PE, L-N, N-PE  
 Surge Ratings:  $U_{oc}/I_{cw} = 10\text{ kV}/5\text{ kA}$   
 IEC/EN Category: Class III / Type 3  
 Protective Elements: MOV and GDT  
 Safety: Green and Red Light  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

## Technical Data

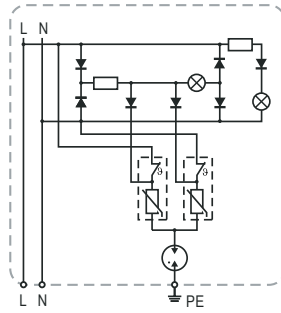
ZE 200-PS		275
<b>Electrical</b>		
Nominal AC Voltage (50/60 Hz)	$U_o$	230 V
Maximum Continuous Operating AC Voltage	$U_c$	275 V
Open Circuit Voltage of the Combination Wave Generator (1.2/50 $\mu$ s)	$U_{oc}$	10 kV
Short-Circuit Current of the Combination Wave Generator (8/20 $\mu$ s)	$I_{cw}$	5 kA
Voltage Protection Level	(L-N) $U_p$	< 1.2 kV
	(L-PE), (N-PE) $U_p$	< 1.75 kV
Response Time	(L-N) $t_A$	< 25 ns
	(N-PE) $t_A$	< 100 ns
Back-Up Fuse (if mains > 16 A)		MCB/B 16 A
Short-Circuit Current Rating	$I_{SCCR}$	1 kA
TOV withstand 5s	$U_T$	334 V
Number of Ports		1
<b>Mechanical &amp; Environmental</b>		
Temperature Range	$T_a$	-40 °C to +85 °C
Permissible Humidity	RH	5%...95%
Mounting		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
Thermal Protection		Yes
Fault Indication		Green and Red Light
<b>Order Information</b>		
Order Code		275
ZE 200-PS		121 601

## ZE 200-PS

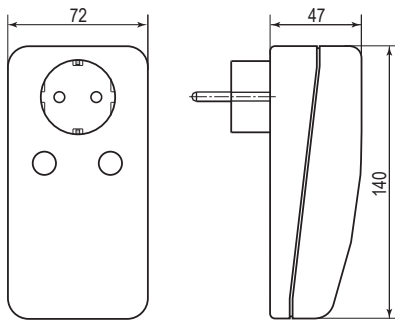
### Internal Configuration

#### Legend

- L Line/Inductor
- N Neutral
- PE Protective Earth



### Dimensions & Packaging [mm]



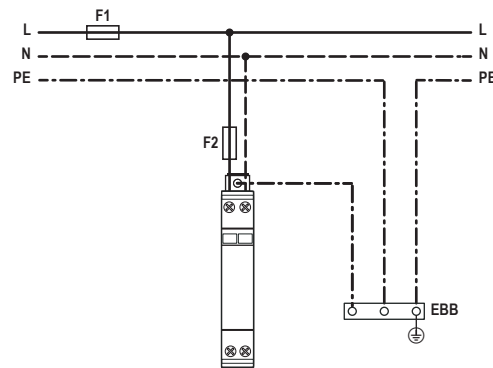
#### Dimensions & Packaging

ZE 200-PS	275
Single Unit Weight	182 g
Packaging Dimensions (H × W × L)	152 × 96 × 80 mm
Minimum Order Quantity	1 Units



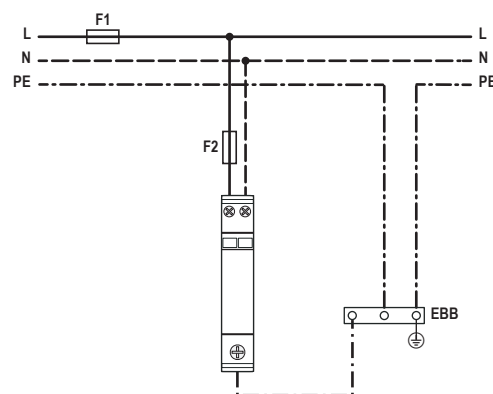
## Modular Multi-pole SPD Connection Configuration **ProTec DMDR(R) 20 Series**

TN-S (Single-phase, 2+0)



## Modular Multi-pole SPD Connection Configuration **ProTec DMG(R) 20**

TN-S (Single-phase, 2+0)



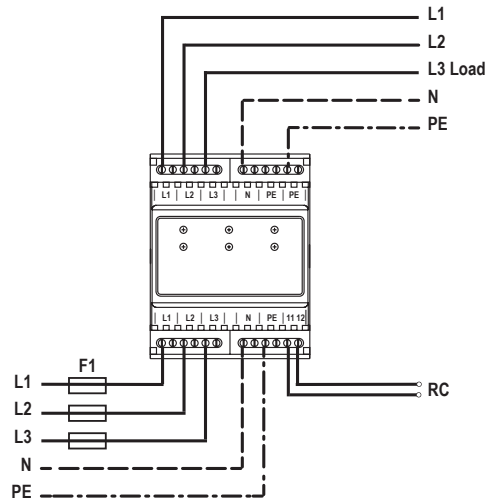
### Back-up Fuse

- F1 > 63A gG → — F2 = 63A gG
- F1 ≤ 63A gG → ~~— F2~~

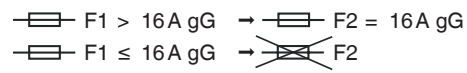
# Compact Multi-pole SPD Connection Configuration

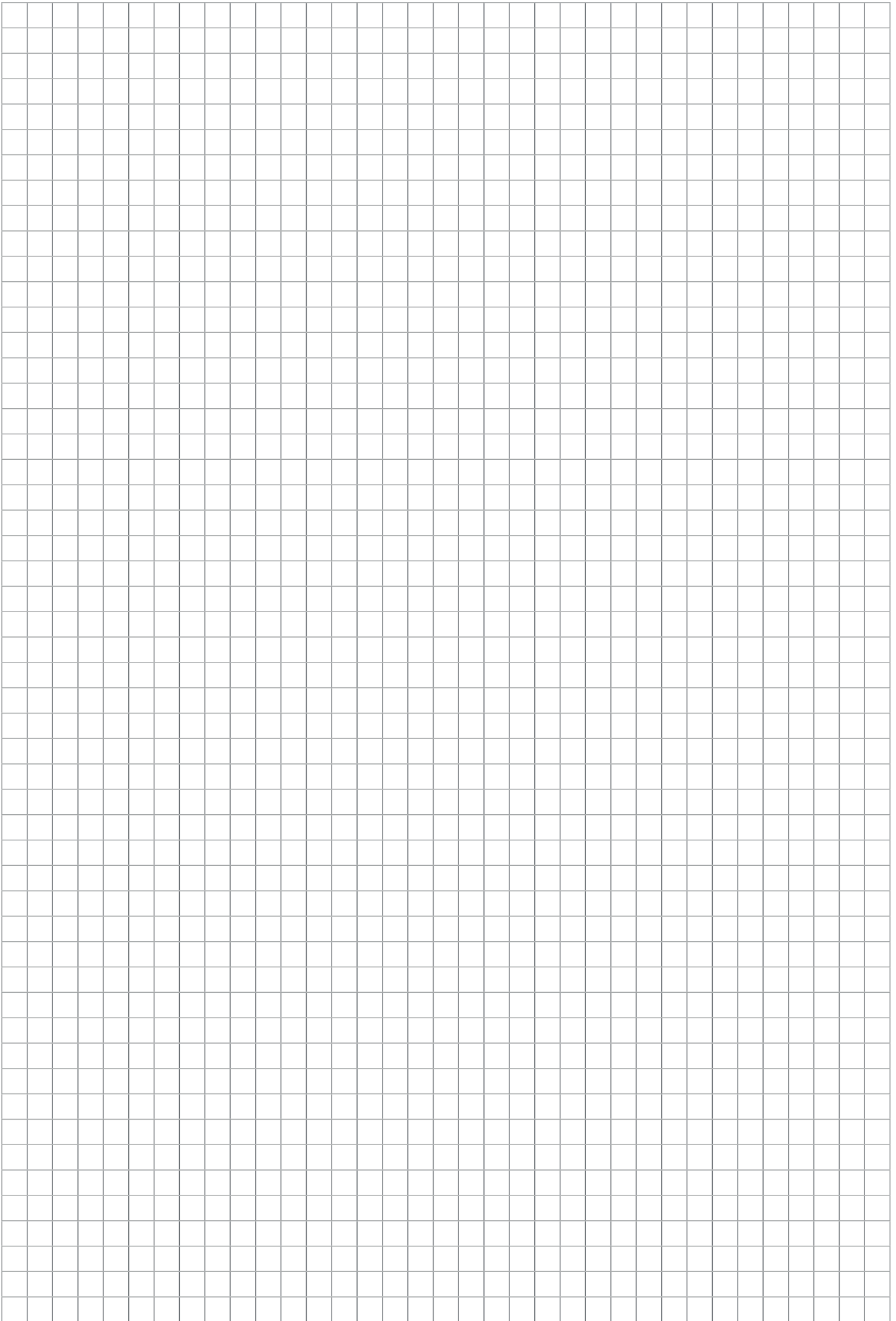
## ProLed 275

TN-S (Three-phase, 3+1)



### Back-up Fuse





## AC Power Boxes



### ProFilt PSF

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.

These moisture and water resistant enclosures have an ingress protection (IP) rating of IP65.

The ProFilt PSF series AC boxes comply with IEC/EN 61643-11 standards and are compatible to TN-S and TT network configurations.

ProFilt PSF  
Single Phase  
Three Phase



# AC Indoor/Outdoor Combination SPD Enclosures

## ProFilt PSF Series

Class I • Class II • Type 1 • Type 2

Single Phase



Location of Use: Close Proximity to Protected Equipment  
 Network Systems: TT  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_{imp} =$  up to 50 kA (10/350 $\mu$ s)  
 $I_L =$  up to 63 A  
 $I_{max} =$  100 kA (8/20 $\mu$ s)  
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV, GDT and Surge Filter  
 Housing: Waterproof Metal Enclosure  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

### Technical Data

ProFilt PSF Series 1/xx/320/25 kA

40

63

#### Electrical

		40	63
Nominal AC Voltage (50/60 Hz)	$U_o$	230V	230V
Maximum Continuous Operating AC Voltage	$U_c$	320V	320V
Maximum Load Current	$I_L$	40 A	63 A
Maximum Discharge Current (8/20 $\mu$ s)	(L-N)/(N-PE) $I_{max}$	100 kA / 100 kA	100 kA / 100 kA
Impulse Current (10/350 $\mu$ s)	(L-N)/(N-PE) $I_{imp}$	25 kA / 50 kA	25 kA / 50 kA
Voltage Protection Level at 20 kA (8/20 $\mu$ s)	$U_p$	< 670 kV	< 670 kV
Voltage Protection Level at 25 kA (8/20 $\mu$ s)	$U_p$	< 780 kV	< 780 kV
Maximum Voltage Drop	$\Delta U$	< 1%	< 1%

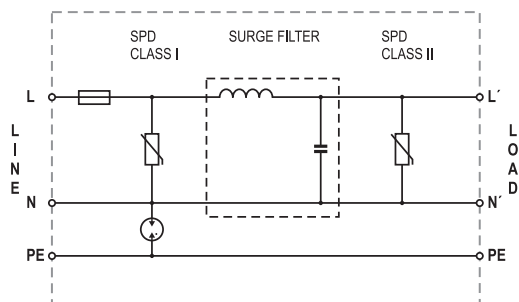
#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Mounting		Wall Mount	
Degree of Protection		IP 65	
Housing Material		Metal	
Thermal Protection		Yes	
SPD Fault Indication		Red Flag	

#### Order Information

	40	63
Single Phase		
PROFILT PSF 1/xx/320/25 kA	130 440	130 441

Internal Configuration

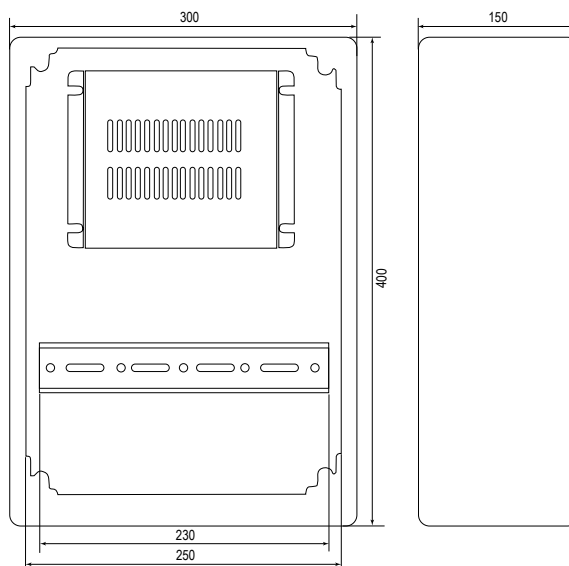


Legend

- L Line
- N Neutral
- PE Protective Earth

Dimensions & Packaging [mm]

Dimensions & Packaging		
ProFilt PSF 1/xx/yyy/25 kA	40	63
	25 kA	25 kA
Single Unit Weight	9 kg	9 kg
Single Unit Dimension (H x W x L)	400 x 150 x 300 mm	
Minimum Order Quantity	1 Units	



Additional solution configurations available upon request.

# AC Indoor/Outdoor Combination SPD Enclosures

## ProFilt PSF Series

Class I • Class II • Type 1 • Type 2

Three Phase



Location of Use: Close Proximity to Protected Equipment  
 Network Systems: TT  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_{imp} =$  up to 100 kA (10/350 $\mu$ s)  
 $I_L =$  up to 63 A  
 $I_{max} =$  100 kA (8/20 $\mu$ s)  
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV, GDT and Surge Filter  
 Housing: Waterproof Metal Enclosure  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

### Technical Data

ProFilt PSF Series 3/xx/320/25 kA

40

63

#### Electrical

		40	63
Nominal AC Voltage (50/60 Hz)	$U_o$	230V	230V
Maximum Continuous Operating AC Voltage	$U_c$	320V	320V
Maximum Load Current	$I_L$	40 A	63 A
Maximum Discharge Current (8/20 $\mu$ s)	(L-N)/(N-PE) $I_{max}$	100 kA / 100 kA	100 kA / 100 kA
Impulse Current (10/350 $\mu$ s)	(L-N)/(N-PE) $I_{imp}$	25 kA / 100 kA	25 kA / 100 kA
Voltage Protection Level at 20 kA (8/20 $\mu$ s)	$U_p$	< 670 kV	< 670 kV
Voltage Protection Level at 25 kA (8/20 $\mu$ s)	$U_p$	< 780 kV	< 780 kV
Maximum Voltage Drop	$\Delta U$	< 1%	< 1%

#### Mechanical & Environmental

Temperature Range	$T_a$	-40 °C to +85 °C	
Permissible Humidity	RH	5%...95%	
Mounting		Wall Mount	
Degree of Protection		IP 65	
Housing Material		Metal	
Thermal Protection		Yes	
SPD Fault Indication		Red Flag	

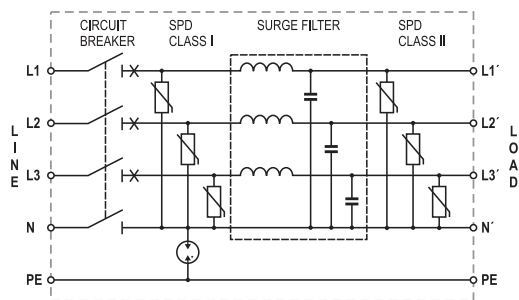
#### Order Information

	40	63
Three Phase		
PROFILT PSF 3/xx/320/25 kA	130 492	130 493

Internal Configuration

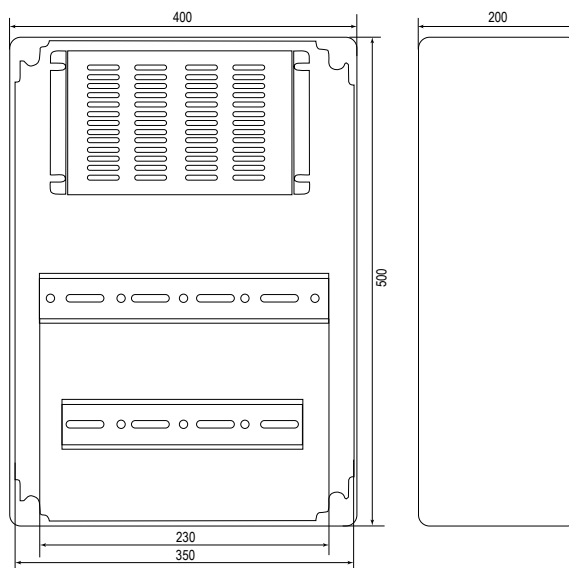
Legend

- L Line
- N Neutral
- PE Protective Earth



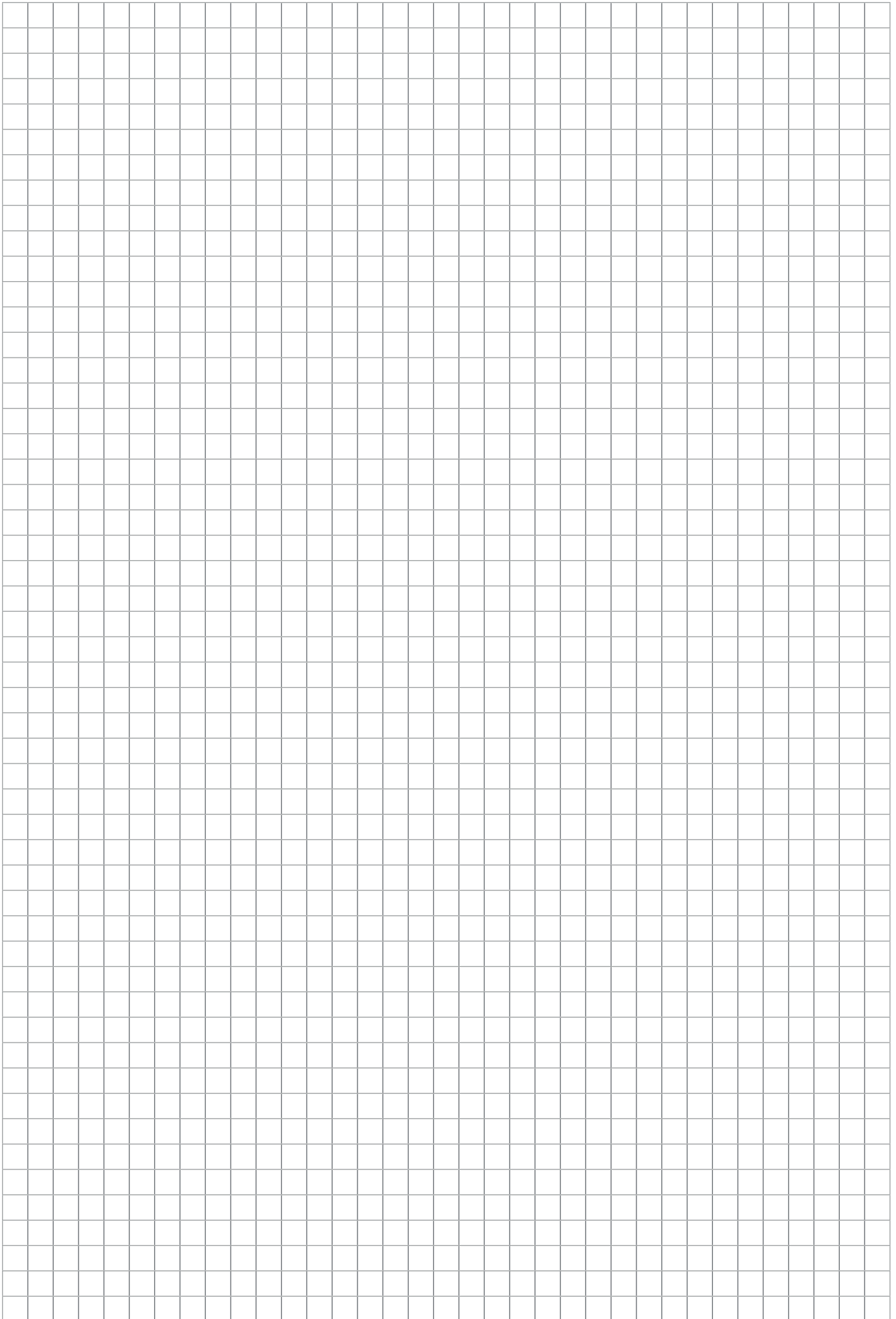
Dimensions & Packaging [mm]

Dimensions & Packaging		
ProFilt PSF 3/xx/yyy/25 kA	40	63
	25 kA	25 kA
Single Unit Weight	9 kg	9 kg
Single Unit Dimension (H x W x L)	500 x 200 x 400 mm	
Minimum Order Quantity	1 Units	



Additional solution configurations available upon request.





## Overhead Power Lines Surge Protective Devices SPDs

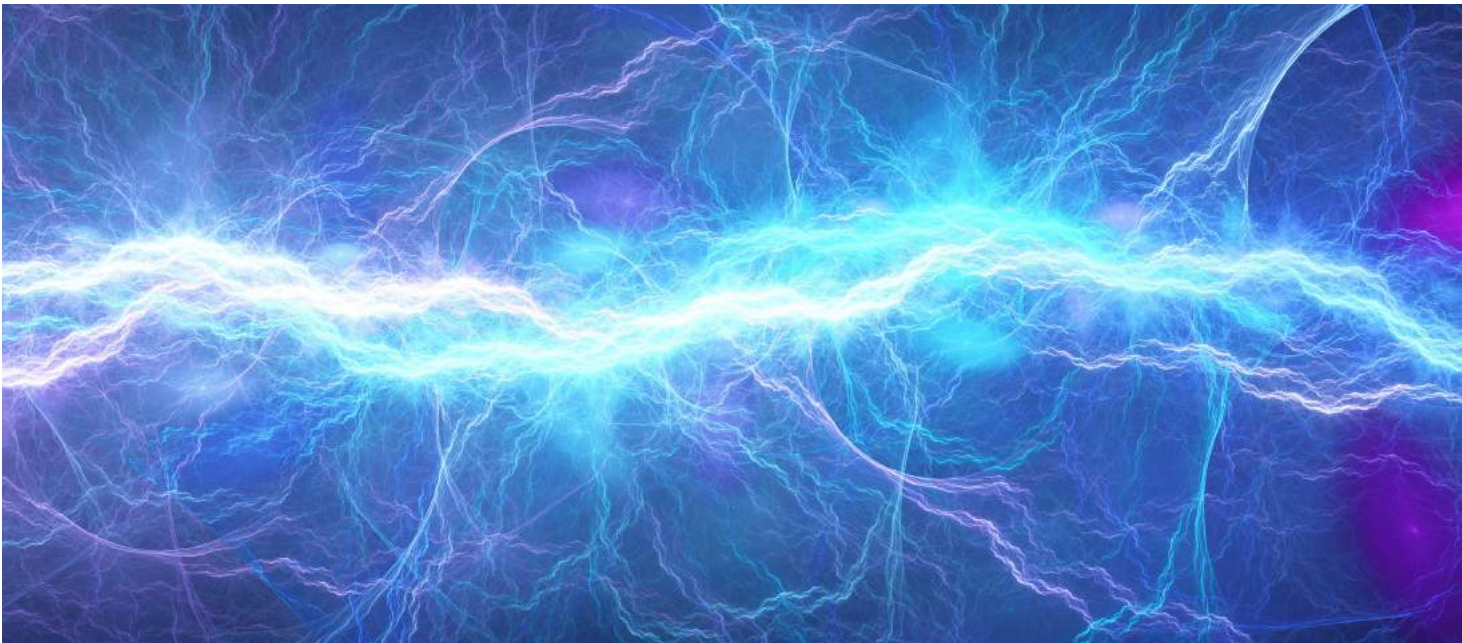


### ProTec AQS

The ProTec AQS series of overvoltage surge protective devices has been developed to protect against indirect lightning discharges on overhead power lines. The Class II SPD consists of a high performance varistor with disconnection device which protects against short circuit conditions.

The ProTec AQS series comply with IEC/EN 61643-12 standards and features a silicon jacket for greater hermetic sealing properties.

### ProTec AQS 40



Compact Single Pole SPD  
**ProTec AQS 40 Series**  
 Class II • Type 2



Location of Use: Overhead Power Lines  
 Network Systems: TN, TT (only L-PE)  
 Mode of Protection: L-PE, N-PE  
 Surge Ratings:  $I_n = 20 \text{ kA (8/20}\mu\text{s)}$   
 $I_{max} = 40 \text{ kA (8/20}\mu\text{s)}$   
 IEC/EN Category: Class II / Type 2  
 Protective Elements: High Energy MOV  
 Housing: Compact Design  
 Compliance: IEC 61643-11:2011  
 EN 61643-11:2012

**Technical Data**

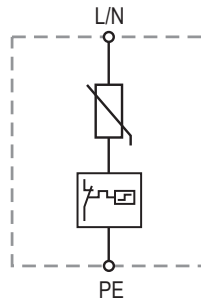
ProTec AQS 40/xxx		150	275	320	440
<b>Electrical</b>					
Nominal AC Voltage (50/60 Hz)	$U_o$	120V	230V	230V	440V
Maximum Continuous Operating Voltage (AC)	$U_c$	150V	275V	320V	440V
Nominal Discharge Current (8/20 $\mu\text{s}$ )	$I_n$	20 kA			
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	40 kA			
Voltage Protection Level	$U_p$	< 0.9 kV	< 1.38 kV	< 1.4 kV	< 2.0 kV
Response Time	$t_A$	< 25 ns			
TOV Withstand 5s	$U_T$	216V	393V	393V	682V
Number of Ports		1			
<b>Mechanical &amp; Environmental</b>					
Temperature Range	$T_a$	-40 °C to +85 °C			
Permissible Humidity	RH	5%...95%			
Connection Screw Torque	$M_{max}$	3.5 Nm			
Connection Thread	(L/N)	M8			
Conductor Cross Section (max)	(PE)	6 mm <sup>2</sup> (stranded)			
Mounting		Connection Accessories			
Degree of Protection		up to IP 67			
Housing Material		Silicon			
Thermal Protection		Yes			
Fault Indication		Disconnected Cable			
<b>Order Information</b>					
Order Code		150	275	320	440
PROTEC AQS 40/xxx		509.210	509.211	509.212	509.213

## ProTec AQS 40 Series

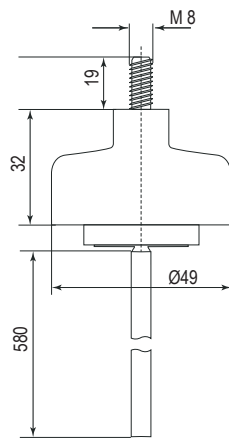
### Internal Configuration

#### Legend

- L Line
- N Neutral
- PE Protective Earth

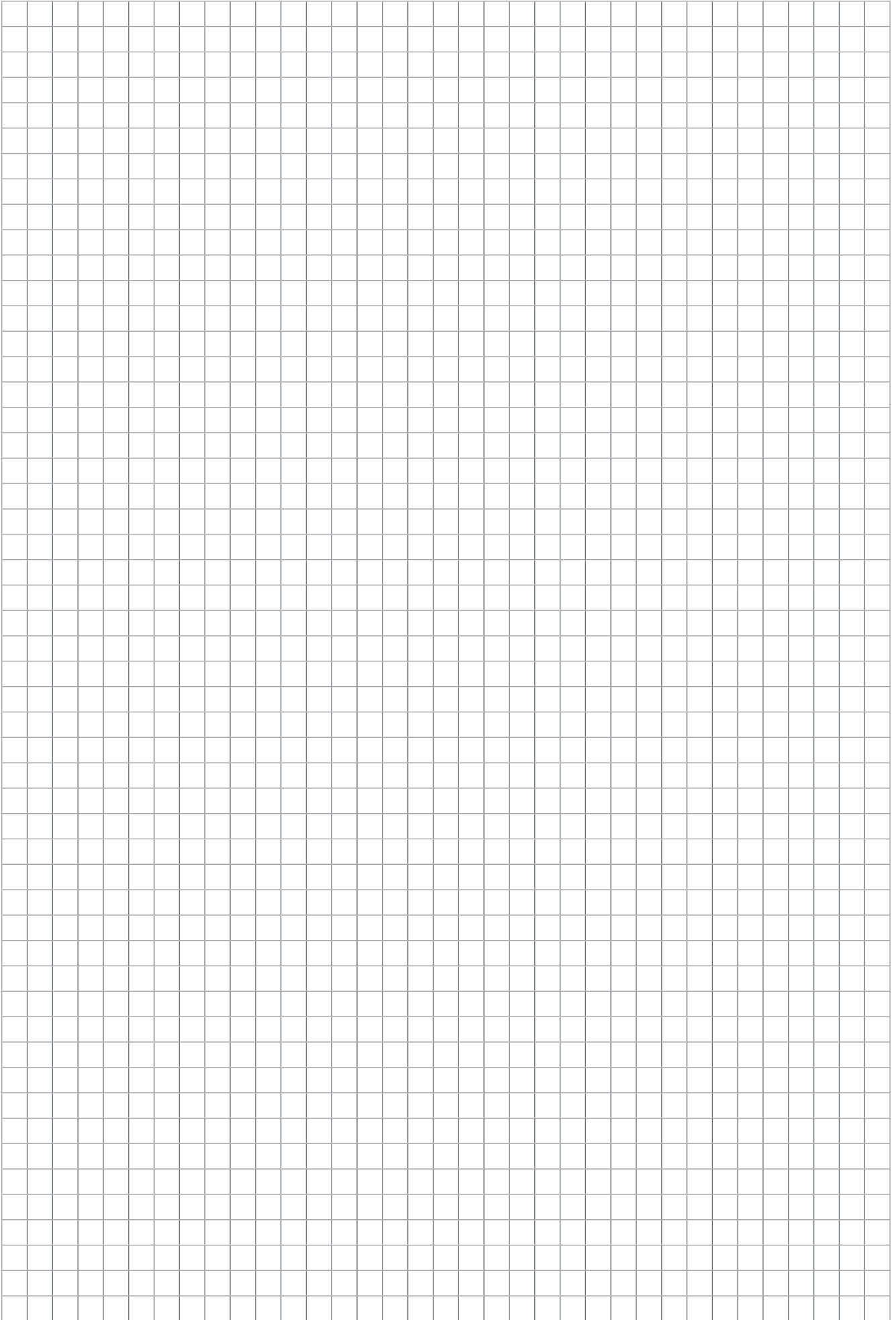


### Dimensions & Packaging [mm]



#### Dimensions & Packaging

ProTec AQS 40/xxx	150	275	320	440
Single Unit Weight	122g	126g	130g	134g
Packaging Dimensions (H x W x L)	390 x 380 x 280 mm			
Minimum Order Quantity	100 Units			



## Isolating Spark Gap (ISG) Surge Protective Devices SPDs



### EPZ 100

The EPZ series of isolating spark gaps has been developed to prevent unsafe potential gradients from establishing between adjacent metallic structures or surfaces during a lightning discharge event. This is achieved by an internal voltage switching component which establishes equipotential equalization when its predetermined spark-over voltage is reached, thereby preventing damage to equipment or eliminating unsafe conditions.

The EPZ is recommended for use in applications such as lightning protection grounding, where circumstances may dictate that a "clean" signal ground can not be directly connected to a "dirty" power system ground. It has wide application in the petrochemical industry for 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 enclosure for direct burial applications.

The EPZ has been developed to comply with the EN 62561:1.0 Edition-Requirements for Lightning Protection Components (LPC), Part 3.

### EPZ 100



# Isolating Spark Gaps (ISG) SPD EPZ 100



Location of Use: Exposed Environments and Direct Burial  
 Surge Ratings:  $I_{imp} = 25 \text{ kA}$   
 $I_{max} = 100 \text{ kA (8/20}\mu\text{s)}$   
 Protective Elements: High Energy GDT  
 Safety: TOV Withstand  
 Housing: Equipotential Bonding  
 Compliance: IEC 62561-3:2012

Corrosion resistant enclosure with hermetic environmental seal and flying leads for ease of connection.

## Technical Data

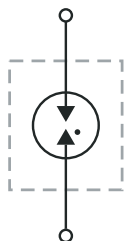
EPZ 100/xxx		350
<b>Electrical</b>		
Rated DC Withstand Voltage	$U_{WDC}$	350V
Rated Impulse Sparkover Voltage	$U_{r \text{ imp}}$	1000V
Maximum Discharge Current (8/20 $\mu\text{s}$ )	$I_{max}$	100 kA
Impulse Discharge Current	$I_{imp}$	25 kA
Residual Voltage at 5 kA (8/20 $\mu\text{s}$ )	$U_{res}$	1.6 kV
Class Lightning Current Carrying Capability		1 L
Capacitance at 1 MHz	C	< 10 pf
<b>Mechanical &amp; Environmental</b>		
Temperature Range	$T_a$	-30 °C to +70 °C
Nominal Outer Diameter		28 mm
Nominal Length		140 mm
Length With Cables (approx)		1 m
Length (approx)		450 mm
Cross Sectional Area		16 mm <sup>2</sup>
Number of Conductors		$\geq 465/0.21$
Insulation		Double Insulated
Environmental Protection		UV Stabilized, Flame Retardant
Resistant		Acids, Solvents and Oils
Connection		Suitable for Screw or Lug Termination
Degree of Protection		IP 67
Housing Material		Plastic Sheath
Location		Indoor/Outdoor

Specifications for Use		
Environmental		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.
Wiring		Connection of the internal cables must be in accordance with the applicable requirement of IEC 60079-0 and IEC 60079-15 for field wiring connections.
Safety		EPZ has an external non-metallic heat shrink sleeve which may provide a potential electrostatic charging hazard. See installation instructions for further information.

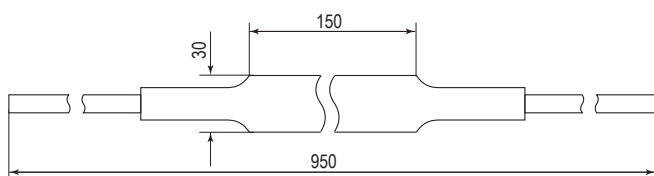
Order Information	
Order Code	350
EPZ 100/xxx	509 520

## EPZ 100

### Internal Configuration



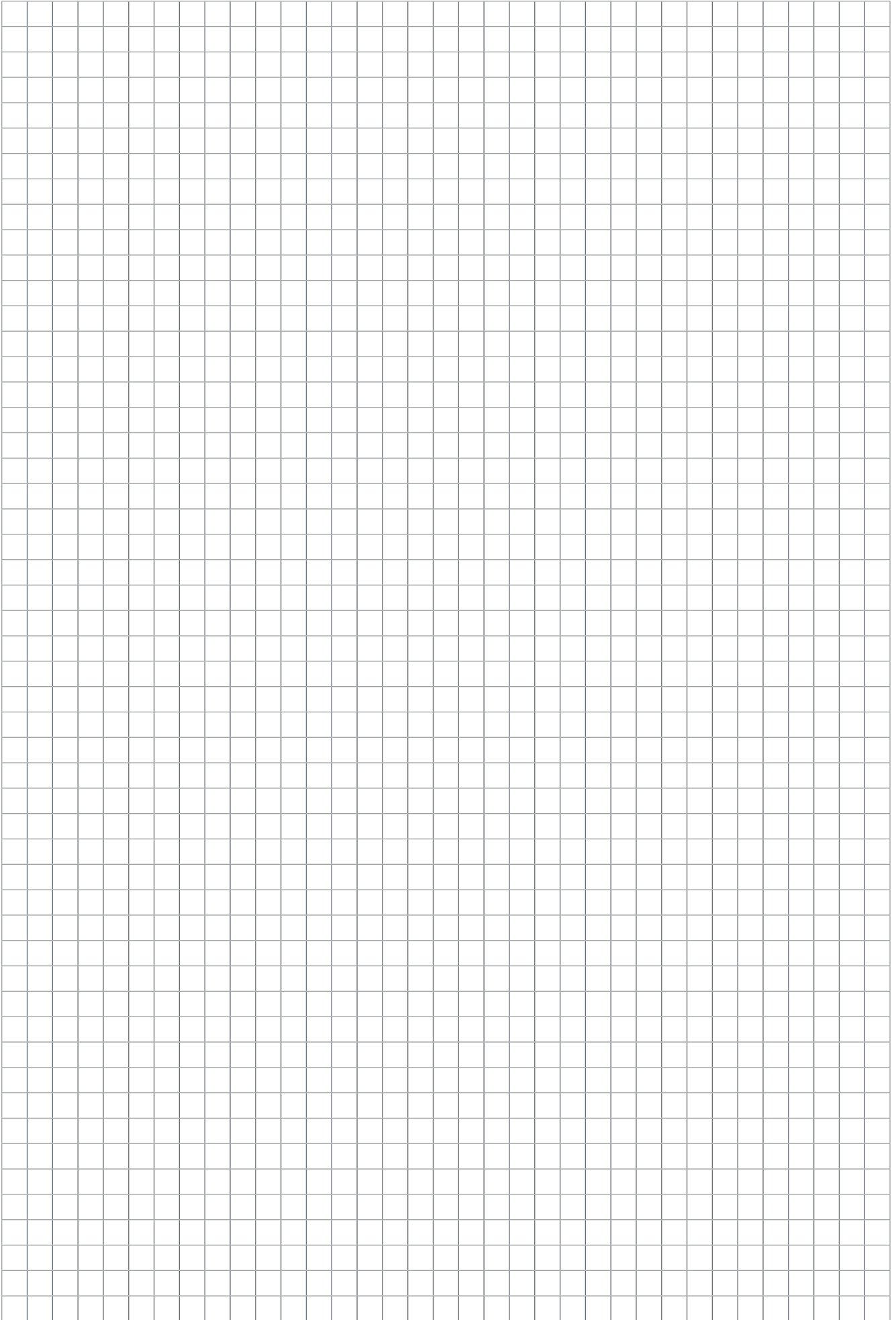
### Dimensions & Packaging [mm]



#### Dimensions & Packaging

<b>EPZ 100/xxx</b>	<b>350</b>
Single Unit Weight	500 g
Packaging Dimensions (H×W×L)	350 × 125 × 55 mm
Minimum Order Quantity	27 Units





## Surge Protective Devices Connection Accessories



### ProBar & ProTec AQS Accessories

The ProBar series of insulated busbar interconnects is for use with Single, Two and Three phase busbar DIN rail products.

Fixing cable and fixing hooks are used as fastening devices for ProTec AQS overhead power lines.

ProBar Single Phase

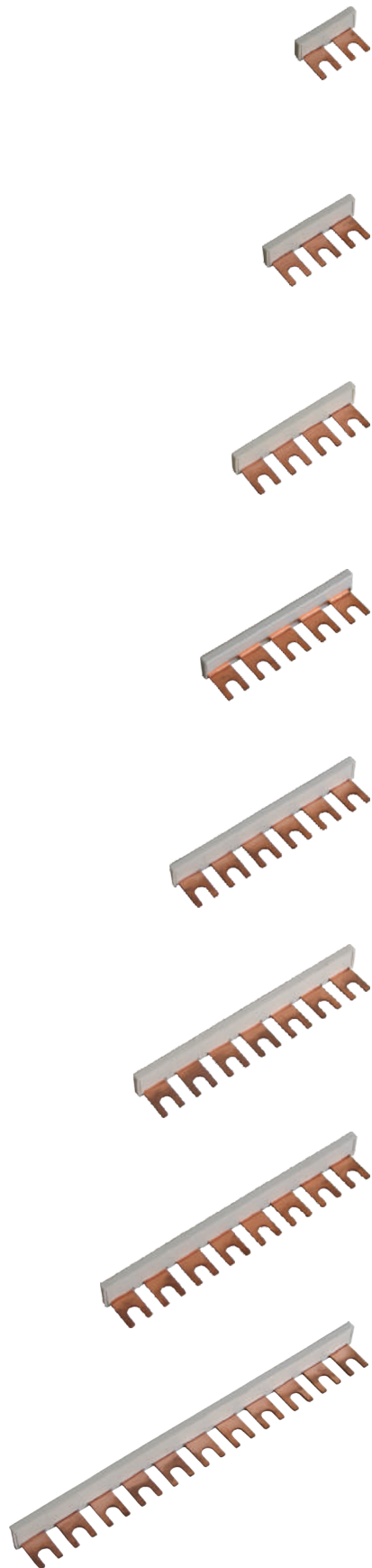
ProBar Two Phase

ProBar Three Phase

PB Single Phase

ProTec AQS Accessories

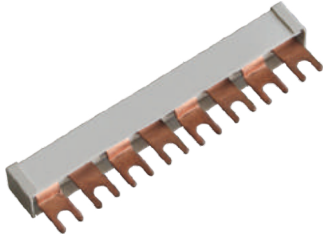




<b>ProBar</b>	<b>1-2</b>
<b>Mechanical</b>	
Number of Poles	2
Busbar Cross Section	16mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 338
<b>ProBar</b>	<b>1-3</b>
<b>Mechanical</b>	
Number of Poles	3
Busbar Cross Section	16mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 339
<b>ProBar</b>	<b>1-4</b>
<b>Mechanical</b>	
Number of Poles	4
Busbar Cross Section	16mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 340
<b>ProBar</b>	<b>1-5</b>
<b>Mechanical</b>	
Number of Poles	5
Busbar Cross Section	16mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 341
<b>ProBar</b>	<b>1-6</b>
<b>Mechanical</b>	
Number of Poles	6
Busbar Cross Section	16mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 342
<b>ProBar</b>	<b>1-7</b>
<b>Mechanical</b>	
Number of Poles	7
Busbar Cross Section	16mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 343
<b>ProBar</b>	<b>1-8</b>
<b>Mechanical</b>	
Number of Poles	8
Busbar Cross Section	16mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 344
<b>ProBar</b>	<b>1-11</b>
<b>Mechanical</b>	
Number of Poles	11
Busbar Cross Section	16mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 345

Modular Wiring Systems  
**ProBar Busbar**

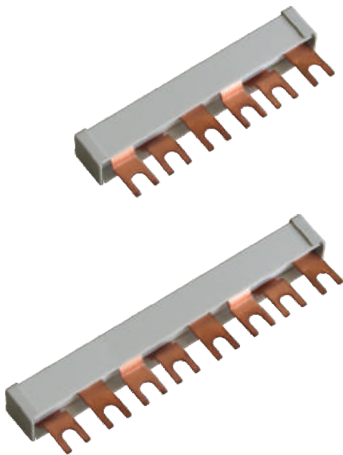
**Two Phase Series**



<b>ProBar</b>	<b>2-8</b>
<b>Mechanical</b>	
Number of Poles	8
Busbar Cross Section	16 mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 346

Modular Wiring Systems  
**ProBar Busbars**

**Three Phase Series**



<b>ProBar</b>	<b>3-6</b>
<b>Mechanical</b>	
Number of Poles	6
Busbar Cross Section	16 mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 347

<b>ProBar</b>	<b>3-8</b>
<b>Mechanical</b>	
Number of Poles	8
Busbar Cross Section	16 mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 348

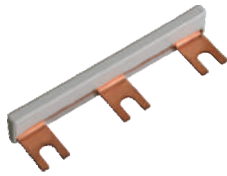


**PB 1 Busbars**

ProTec B(R) 2 TE • SafeTec B(R) 2 TE



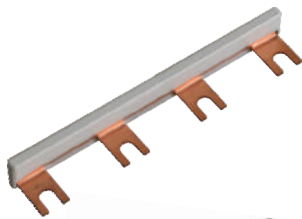
<b>PB 1 (2+0)</b>	<b>1 (2+0)</b>
<b>Mechanical</b>	
Number of Poles	2
Busbar Cross Section	16 mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 349



<b>PB 1 (3+0)</b>	<b>1 (3+0)</b>
<b>Mechanical</b>	
Number of Poles	3
Busbar Cross Section	16 mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 350



<b>PB 1 (2+1)</b>	<b>1 (2+1)</b>
<b>Mechanical</b>	
Number of Poles	2
Busbar Cross Section	16 mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 351



<b>PB 1 (4+0)</b>	<b>1 (4+0)</b>
<b>Mechanical</b>	
Number of Poles	4
Busbar Cross Section	16 mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 352



<b>PB 1 (3+1)</b>	<b>1 (3+1)</b>
<b>Mechanical</b>	
Number of Poles	4
Busbar Cross Section	16 mm <sup>2</sup>
<b>Order Information</b>	
Ordering Code	501 353

Compact Single Pole Overhead Power Lines  
**Connection Accessories**  
ProTec AQS Series



**Fixing Cable**

**Order Information**

Ordering Code 509 522



**Fixing Hook**

**Order Information**

Ordering Code 509 523



**PSN**

**Connection clamp for the non-insulated conductor.**

**Order Information**

Ordering Code 509 524



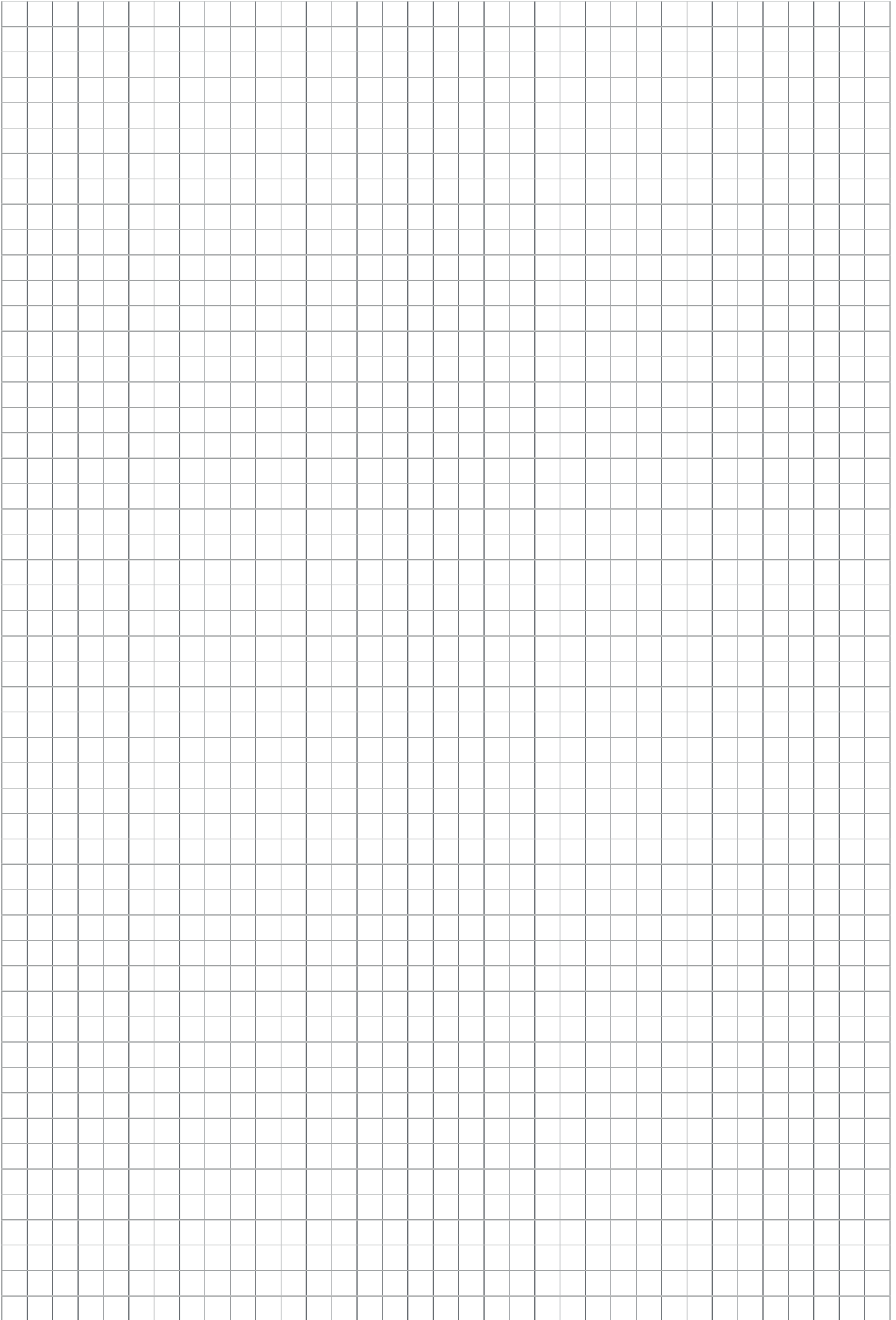
**PSI**

**Connection clamp for the insulated conductor.**













**Order Information**

Ordering Code 509 525
























## Product Index





	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
	Class I • Class II • Type 1 • Type 2 Compact Single Pole & Multi-pole Surge Protective Devices			
	<b>SafeBloc B(R) 12.5 (1+0) TCG</b>	SafeBloc B 12.5/150 (1+0) TCG SafeBloc BR 12.5/150 (1+0) TCG SafeBloc B 12.5/275 (1+0) TCG SafeBloc BR 12.5/275 (1+0) TCG	2 TE 2 TE 2 TE 2 TE	18 18 18 18
				
<b>SafeBloc B(R) 25 (2+0) TCG</b>	SafeBloc B 25/150 (2+0) TCG SafeBloc BR 25/150 (2+0) TCG SafeBloc B 25/275 (2+0) TCG SafeBloc BR 25/275 (2+0) TCG	54.0507 54.0508 54.0509 54.0510	4 TE 4 TE 4 TE 4 TE	20 20 20 20
				
<b>SafeBloc B(R) 37.5 (3+0) TCG</b>	SafeBloc B 37.5/150 (3+0) TCG SafeBloc BR 37.5/150 (3+0) TCG SafeBloc B 37.5/275 (3+0) TCG SafeBloc BR 37.5/275 (3+0) TCG	54.0513 54.0514 54.0515 54.0516	6 TE 6 TE 6 TE 6 TE	22 22 22 22
				
<b>SafeBloc B(R) 50 (4+0) TCG</b>	SafeBloc B 50/150 (4+0) TCG SafeBloc BR 50/150 (4+0) TCG SafeBloc B 50/275 (4+0) TCG SafeBloc BR 50/275 (4+0) TCG	54.0519 54.0520 54.0521 54.0522	8 TE 8 TE 8 TE 8 TE	24 24 24 24
				
<b>SafeBloc B(R) 25 (1+1) TCG</b>	SafeBloc B 25/150 (1+1) TCG SafeBloc BR 25/150 (1+1) TCG SafeBloc B 25/275 (1+1) TCG SafeBloc BR 25/275 (1+1) TCG	54.0525 54.0526 54.0527 54.0528	4 TE 4 TE 4 TE 4 TE	26 26 26 26
				
<b>SafeBloc B(R) 50 (3+1) TCG</b>	SafeBloc B 50/275 (3+1) TCG SafeBloc BR 50/275 (3+1) TCG	54.0533 54.0534	8 TE 8 TE	28 28
				
<b>SafeBloc B(R) 25 (1+0) TCG</b>	SafeBloc B 25/150 (1+0) TCG SafeBloc BR 25/150 (1+0) TCG SafeBloc B 25/275 (1+0) TCG SafeBloc BR 25/275 (1+0) TCG	54.0537 54.0538 54.0539 54.0540	2 TE 2 TE 2 TE 2 TE	30 30 30 30
				
<b>SafeBloc B(R) 50 (2+0) TCG</b>	SafeBloc B 50/150 (2+0) TCG SafeBloc BR 50/150 (2+0) TCG SafeBloc B 50/275 (2+0) TCG SafeBloc BR 50/275 (2+0) TCG	54.0544 54.0545 54.0546 54.0547	4 TE 4 TE 4 TE 4 TE	32 32 32 32
				
<b>SafeBloc B(R) 75 (3+0) TCG</b>	SafeBloc B 75/150 (3+0) TCG SafeBloc BR 75/150 (3+0) TCG SafeBloc B 75/275 (3+0) TCG SafeBloc BR 75/275 (3+0) TCG	54.0550 54.0551 54.0552 54.0553	6 TE 6 TE 6 TE 6 TE	34 34 34 34
				
<b>SafeBloc B(R) 100 (4+0) TCG</b>	SafeBloc B 100/150 (4+0) TCG SafeBloc BR 100/150 (4+0) TCG SafeBloc B 100/275 (4+0) TCG SafeBloc BR 100/275 (4+0) TCG	54.0556 54.0557 54.0558 54.0559	8 TE 8 TE 8 TE 8 TE	36 36 36 36
				
<b>SafeBloc B(R) 50 (1+1) TCG</b>	SafeBloc B 50/150 (1+1) TCG SafeBloc BR 50/150 (1+1) TCG SafeBloc B 50/275 (1+1) TCG SafeBloc BR 50/275 (1+1) TCG	54.0562 54.0563 54.0564 54.0565	4 TE 4 TE 4 TE 4 TE	38 38 38 38
				















	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
	SafeBloc B 100/275 (3+1) TCG	54.0570	8 TE	40
	SafeBloc BR 100/275 (3+1) TCG	54.0571	8 TE	40
	SafeTube B 50/255	54.0506	2 TE	42
	SafeTube B 100/255	54.0543	2 TE	44
	SafeBloc B 12.5/750 WT TCG	54.0590	2 TE	46
	SafeBloc BR 12.5/750 WT TCG	54.0591	2 TE	46
	SafeBloc B 25/750 WT TCG	54.0594	4 TE	48
	SafeBloc BR 25/750 WT TCG	54.0595	4 TE	48
	PV SafeBloc B 12.5/1000 TCG	54.0578	4 TE	50
	PV SafeBloc BR 12.5/1000 TCG	54.0579	4 TE	50
	PV SafeBloc B 12.5/1000 Y TCG	54.0582	6 TE	52
	PV SafeBloc BR 12.5/1000 Y TCG	54.0583	6 TE	52
				
	ProBloc B 12.5/150 (1+0)	56.0500	2 TE	62
	ProBloc BR 12.5/150 (1+0)	56.0501	2 TE	62
	ProBloc B 12.5/275 (1+0)	56.0502	2 TE	62
	ProBloc BR 12.5/275 (1+0)	56.0503	2 TE	62
	ProBloc B 12.5/320 (1+0)	56.0504	2 TE	62
	ProBloc BR 12.5/320 (1+0)	56.0505	2 TE	62
	ProBloc B 12.5/440 (1+0)	56.0508	2 TE	62
	ProBloc BR 12.5/440 (1+0)	56.0509	2 TE	62
	ProBloc B 25/150 (2+0)	56.0512	2 TE	64
	ProBloc BR 25/150 (2+0)	56.0513	2 TE	64
	ProBloc B 25/275 (2+0)	56.0514	2 TE	64
	ProBloc BR 25/275 (2+0)	56.0515	2 TE	64
	ProBloc B 25/320 (2+0)	56.0516	2 TE	64
	ProBloc BR 25/320 (2+0)	56.0517	2 TE	64
	ProBloc B 12.5/440 (1+0)	56.0520	2 TE	62
	ProBloc BR 12.5/440 (1+0)	56.0521	2 TE	62
	ProBloc B 37.5/150 (3+0)	56.0522	3 TE	66
	ProBloc BR 37.5/150 (3+0)	56.0523	3 TE	66
	ProBloc B 37.5/275 (3+0)	56.0524	3 TE	66
	ProBloc BR 37.5/275 (3+0)	56.0525	3 TE	66
	ProBloc B 37.5/320 (3+0)	56.0526	3 TE	66
	ProBloc BR 37.5/320 (3+0)	56.0527	3 TE	66
	ProBloc B 37.5/440 (3+0)	56.0530	3 TE	66
	ProBloc BR 37.5/440 (3+0)	56.0531	3 TE	66

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
<b>ProBloc B(R) 50 (4+0)</b> 	ProBloc B 50/150 (4+0)	56.0532	4 TE	68
	ProBloc BR 50/150 (4+0)	56.0533	4 TE	68
	ProBloc B 50/275 (4+0)	56.0534	4 TE	68
	ProBloc BR 50/275 (4+0)	56.0535	4 TE	68
	ProBloc B 50/320 (4+0)	56.0536	4 TE	68
	ProBloc BR 50/320 (4+0)	56.0537	4 TE	68
	ProBloc B 50/440 (4+0)	56.0540	4 TE	68
	ProBloc BR 50/440 (4+0)	56.0541	4 TE	68
<b>ProBloc B(R) 25 (1+1)</b> 	ProBloc B 25/150 (1+1)	56.0542	2 TE	70
	ProBloc BR 25/150 (1+1)	56.0543	2 TE	70
	ProBloc B 25/275 (1+1)	56.0544	2 TE	70
	ProBloc BR 25/275 (1+1)	56.0545	2 TE	70
	ProBloc B 25/320 (1+1)	56.0546	2 TE	70
	ProBloc BR 25/320 (1+1)	56.0547	2 TE	70
	ProBloc B 25/440 (1+1)	56.0550	2 TE	70
	ProBloc BR 25/440 (1+1)	56.0551	2 TE	70
<b>ProBloc B(R) 50 (3+1)</b> 	ProBloc B 50/275 (3+1)	56.0554	4 TE	72
	ProBloc BR 50/275 (3+1)	56.0555	4 TE	72
	ProBloc B 50/320 (3+1)	56.0556	4 TE	72
	ProBloc BR 50/320 (3+1)	56.0557	4 TE	72
	ProBloc B 50/440 (3+1)	56.0560	4 TE	72
	ProBloc BR 50/440 (3+1)	56.0561	4 TE	72
<b>ProBloc B(R) 25 (1+0)</b> 	ProBloc B 25/150 (1+0)	56.0562	2 TE	74
	ProBloc BR 25/150 (1+0)	56.0563	2 TE	74
	ProBloc B 25/275 (1+0)	56.0564	2 TE	74
	ProBloc BR 25/275 (1+0)	56.0565	2 TE	74
	ProBloc B 25/320 (1+0)	56.0566	2 TE	74
	ProBloc BR 25/320 (1+0)	56.0567	2 TE	74
	ProBloc B 25/440 (1+0)	56.0570	2 TE	74
	ProBloc BR 25/440 (1+0)	56.0571	2 TE	74
<b>ProBloc B(R) 50 (2+0)</b> 	ProBloc B 50/150 (2+0)	56.0572	4 TE	76
	ProBloc BR 50/150 (2+0)	56.0573	4 TE	76
	ProBloc B 50/275 (2+0)	56.0574	4 TE	76
	ProBloc BR 50/275 (2+0)	56.0575	4 TE	76
	ProBloc B 50/320 (2+0)	56.0576	4 TE	76
	ProBloc BR 50/320 (2+0)	56.0577	4 TE	76
	ProBloc B 50/440 (2+0)	56.0580	4 TE	76
	ProBloc BR 50/440 (2+0)	56.0581	4 TE	76
<b>ProBloc B(R) 75 (3+0)</b> 	ProBloc B 75/150 (3+0)	56.0582	6 TE	78
	ProBloc BR 75/150 (3+0)	56.0583	6 TE	78
	ProBloc B 75/275 (3+0)	56.0584	6 TE	78
	ProBloc BR 75/275 (3+0)	56.0585	6 TE	78
	ProBloc B 75/320 (3+0)	56.0586	6 TE	78
	ProBloc BR 75/320 (3+0)	56.0587	6 TE	78
	ProBloc B 75/440 (3+0)	56.0590	6 TE	78
	ProBloc BR 75/440 (3+0)	56.0591	6 TE	78
<b>ProBloc B(R) 100 (4+0)</b> 	ProBloc B 100/150 (4+0)	56.0592	8 TE	80
	ProBloc BR 100/150 (4+0)	56.0593	8 TE	80
	ProBloc B 100/275 (4+0)	56.0594	8 TE	80
	ProBloc BR 100/275 (4+0)	56.0595	8 TE	80
	ProBloc B 100/320 (4+0)	56.0596	8 TE	80
	ProBloc BR 100/320 (4+0)	56.0597	8 TE	80
	ProBloc B 100/440 (4+0)	56.0600	8 TE	80
	ProBloc BR 100/440 (4+0)	56.0601	8 TE	80
<b>ProBloc B(R) 50 (1+1)</b> 	ProBloc B 50/150 (1+1)	56.0602	4 TE	82
	ProBloc BR 50/150 (1+1)	56.0603	4 TE	82
	ProBloc B 50/275 (1+1)	56.0604	4 TE	82
	ProBloc BR 50/275 (1+1)	56.0605	4 TE	82
	ProBloc B 50/320 (1+1)	56.0606	4 TE	82
	ProBloc BR 50/320 (1+1)	56.0607	4 TE	82
	ProBloc B 50/440 (1+1)	56.0610	4 TE	82
	ProBloc BR 50/440 (1+1)	56.0611	4 TE	82





	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
	ProBloc B 100/275 (3+1)	56.0614	8 TE	84
	ProBloc BR 100/275 (3+1)	56.0615	8 TE	84
	ProBloc B 100/320 (3+1)	56.0616	8 TE	84
	ProBloc BR 100/320 (3+1)	56.0617	8 TE	84
	ProBloc B 100/440 (3+1)	56.0620	8 TE	84
	ProBloc BR 100/440 (3+1)	56.0621	8 TE	84
	ProTube B(R) 50	ProTube B 50/255	56.0510	2 TE
	ProTube B 100/255	56.0511	2 TE	88
				
	ProTec B2S 12.5/150 (1+0)	506.423	1 TE	98
	ProTec B2S 12.5/275 (1+0)	506.424	1 TE	98
	ProTec B2S 12.5/320 (1+0)	506.425	1 TE	98
	ProTec B2S 12.5/385 (1+0)	506.426	1 TE	98
	ProTec B2S 12.5/440 (1+0)	506.427	1 TE	98
	ProTec B2SR 12.5/150 (1+0)	506.428	1 TE	98
	ProTec B2SR 12.5/275 (1+0)	506.429	1 TE	98
	ProTec B2SR 12.5/320 (1+0)	506.430	1 TE	98
	ProTec B2SR 12.5/385 (1+0)	506.431	1 TE	98
	ProTec B2SR 12.5/440 (1+0)	506.432	1 TE	98
	ProTec B2S 25/150 (2+0)	506.433	2 TE	100
	ProTec B2S 25/275 (2+0)	506.409	2 TE	100
	ProTec B2S 25/320 (2+0)	506.434	2 TE	100
	ProTec B2S 25/385 (2+0)	506.410	2 TE	100
	ProTec B2S 25/440 (2+0)	506.435	2 TE	100
	ProTec B2SR 25/150 (2+0)	506.436	2 TE	100
	ProTec B2SR 25/275 (2+0)	506.411	2 TE	100
	ProTec B2SR 25/320 (2+0)	506.437	2 TE	100
	ProTec B2SR 25/385 (2+0)	506.412	2 TE	100
	ProTec B2SR 25/440 (2+0)	506.438	2 TE	100
	ProTec B2S 37.5/150 (3+0)	506.439	3 TE	102
	ProTec B2S 37.5/275 (3+0)	506.413	3 TE	102
	ProTec B2S 37.5/320 (3+0)	506.440	3 TE	102
	ProTec B2S 37.5/385 (3+0)	506.414	3 TE	102
	ProTec B2S 37.5/440 (3+0)	506.441	3 TE	102
	ProTec B2SR 37.5/150 (3+0)	506.442	3 TE	102
	ProTec B2SR 37.5/275 (3+0)	506.415	3 TE	102
	ProTec B2SR 37.5/320 (3+0)	506.443	3 TE	102
	ProTec B2SR 37.5/385 (3+0)	506.416	3 TE	102
	ProTec B2SR 37.5/440 (3+0)	506.444	3 TE	102
	ProTec B2S 50/150 (4+0)	506.445	4 TE	104
	ProTec B2S 50/275 (4+0)	506.417	4 TE	104
	ProTec B2S 50/320 (4+0)	506.446	4 TE	104
	ProTec B2S 50/385 (4+0)	506.418	4 TE	104
	ProTec B2S 50/440 (4+0)	506.447	4 TE	104
	ProTec B2SR 50/150 (4+0)	506.448	4 TE	104
	ProTec B2SR 50/275 (4+0)	506.419	4 TE	104
	ProTec B2SR 50/320 (4+0)	506.449	4 TE	104
	ProTec B2SR 50/385 (4+0)	506.420	4 TE	104
	ProTec B2SR 50/440 (4+0)	506.450	4 TE	104

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
<b>ProTec B2S(R) 25 (1+1)</b> 	ProTec B2S 25/150 (1+1)	506.451	2 TE	106
	ProTec B2S 25/275 (1+1)	506.452	2 TE	106
	ProTec B2S 25/320 (1+1)	506.453	2 TE	106
	ProTec B2S 25/385 (1+1)	506.454	2 TE	106
	ProTec B2S 25/440 (1+1)	506.455	2 TE	106
	ProTec B2SR 25/150 (1+1)	506.456	2 TE	106
	ProTec B2SR 25/275 (1+1)	506.457	2 TE	106
	ProTec B2SR 25/320 (1+1)	506.458	2 TE	106
	ProTec B2SR 25/385 (1+1)	506.459	2 TE	106
	ProTec B2SR 25/440 (1+1)	506.460	2 TE	106
	<b>ProTec B2S(R) 50 (3+1)</b> 	ProTec B2S 50/275 (3+1)	506.462	4 TE
ProTec B2S 50/320 (3+1)		506.463	4 TE	108
ProTec B2S 50/385 (3+1)		506.464	4 TE	108
ProTec B2S 50/440 (3+1)		506.465	4 TE	108
ProTec B2SR 50/275 (3+1)		506.467	4 TE	108
ProTec B2SR 50/320 (3+1)		506.468	4 TE	108
ProTec B2SR 50/385 (3+1)		506.469	4 TE	108
<b>Module ProTec B2S 12.5/xxx</b>	Module ProTec B2S 12.5/150	506.471	1 TE	98-106
	Module ProTec B2S 12.5/275	506.472	1 TE	98-108
	Module ProTec B2S 12.5/320	506.473	1 TE	98-108
	Module ProTec B2S 12.5/385	506.474	1 TE	98-108
	Module ProTec B2S 12.5/440	506.475	1 TE	98-108
<b>Module ProTube B2S 50/xxx</b>	Module ProTube B2S 50/255	506.476	1 TE	106-108
<b>PV ProTec B(R) 5/1000 Y TD</b> 	PV ProTec B 5/1000 Y TD	501.795	3 TE	110
	PV ProTec BR 5/1000 Y TD	501.796	3 TE	110
<b>Module ProTec B 5/1000 Y</b>	Module ProTec B 5/1000 Y	501.797	1 TE	110
<b>Class II • Type 2 Modular Single Pole &amp; Multi-pole Surge Protective Devices</b>				
<b>SafeTec C(R) (1+0)</b> 	SafeTec C 20/75 (1+0)	516.853	1 TE	116
	SafeTec C 40/150 (1+0)	516.854	1 TE	116
	SafeTec C 40/275 (1+0)	516.855	1 TE	116
	SafeTec C 40/385 (1+0)	516.856	1 TE	116
	SafeTec C 40/440 (1+0)	516.857	1 TE	116
	SafeTec C 25/750 (1+0)	516.858	1 TE	116
	SafeTec C 25/880 (1+0)	516.A66	1 TE	116
	SafeTec CR 20/75 (1+0)	516.859	1 TE	116
	SafeTec CR 40/150 (1+0)	516.860	1 TE	116
	SafeTec CR 40/275 (1+0)	516.861	1 TE	116
	SafeTec CR 40/385 (1+0)	516.862	1 TE	116
	SafeTec CR 40/440 (1+0)	516.863	1 TE	116
	SafeTec CR 25/750 (1+0)	516.864	1 TE	116
SafeTec CR 25/880 (1+0)	516.A67	1 TE	116	
<b>SafeTec C(R) (2+0)</b> 	SafeTec C 40/75 (2+0)	516.873	2 TE	118
	SafeTec C 80/150 (2+0)	516.874	2 TE	118
	SafeTec C 80/275 (2+0)	516.875	2 TE	118
	SafeTec C 80/385 (2+0)	516.876	2 TE	118
	SafeTec C 80/440 (2+0)	516.877	2 TE	118
	SafeTec C 50/750 (2+0)	516.878	2 TE	118
	SafeTec C 50/880 (2+0)	516.A69	2 TE	118
	SafeTec CR 40/75 (2+0)	516.879	2 TE	118
	SafeTec CR 80/150 (2+0)	516.880	2 TE	118
	SafeTec CR 80/275 (2+0)	516.881	2 TE	118
	SafeTec CR 80/385 (2+0)	516.882	2 TE	118
	SafeTec CR 80/440 (2+0)	516.883	2 TE	118
	SafeTec CR 50/750 (2+0)	516.884	2 TE	118
	SafeTec CR 50/880 (2+0)	516.A70	2 TE	118

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
<b>SafeTec C(R) (3+0)</b> 	SafeTec C 60/75 (3+0)	516.885	3 TE	120
	SafeTec C 120/150 (3+0)	516.886	3 TE	120
	SafeTec C 120/275 (3+0)	516.887	3 TE	120
	SafeTec C 120/385 (3+0)	516.888	3 TE	120
	SafeTec C 120/440 (3+0)	516.889	3 TE	120
	SafeTec C 75/750 (3+0)	516.890	3 TE	120
	SafeTec C 75/880 (3+0)	516.A71	3 TE	120
	SafeTec CR 60/75 (3+0)	516.891	3 TE	120
	SafeTec CR 120/150 (3+0)	516.892	3 TE	120
	SafeTec CR 120/275 (3+0)	516.893	3 TE	120
	SafeTec CR 120/385 (3+0)	516.894	3 TE	120
	SafeTec CR 120/440 (3+0)	516.895	3 TE	120
	SafeTec CR 75/750 (3+0)	516.896	3 TE	120
	SafeTec CR 75/880 (3+0)	516.A72	3 TE	120
<b>SafeTec C(R) (4+0)</b> 	SafeTec C 160/150 (4+0)	516.898	4 TE	122
	SafeTec C 160/275 (4+0)	516.899	4 TE	122
	SafeTec C 160/385 (4+0)	516.900	4 TE	122
	SafeTec C 160/440 (4+0)	516.901	4 TE	122
	SafeTec C 100/750 (4+0)	516.902	4 TE	122
	SafeTec C 100/880 (4+0)	516.A73	4 TE	122
	SafeTec CR 160/150 (4+0)	516.904	4 TE	122
	SafeTec CR 160/275 (4+0)	516.905	4 TE	122
	SafeTec CR 160/385 (4+0)	516.906	4 TE	122
	SafeTec CR 160/440 (4+0)	516.907	4 TE	122
	SafeTec CR 100/750 (4+0)	516.908	4 TE	122
	SafeTec CR 100/880 (4+0)	516.A74	4 TE	122
<b>SafeTec C(R) (1+1)</b> 	SafeTec C 40/75 (1+1)	516.909	2 TE	124
	SafeTec C 80/150 (1+1)	516.910	2 TE	124
	SafeTec C 80/275 (1+1)	516.911	2 TE	124
	SafeTec C 80/385 (1+1)	516.912	2 TE	124
	SafeTec C 80/440 (1+1)	516.913	2 TE	124
	SafeTec CR 40/75 (1+1)	516.915	2 TE	124
	SafeTec CR 80/150 (1+1)	516.916	2 TE	124
	SafeTec CR 80/275 (1+1)	516.917	2 TE	124
	SafeTec CR 80/385 (1+1)	516.918	2 TE	124
	SafeTec CR 80/440 (1+1)	516.919	2 TE	124
<b>SafeTec C(R) (3+1)</b> 	SafeTec C 160/275 (3+1)	516.923	4 TE	126
	SafeTec C 160/385 (3+1)	516.924	4 TE	126
	SafeTec C 160/440 (3+1)	516.925	4 TE	126
	SafeTec CR 160/275 (3+1)	516.929	4 TE	126
	SafeTec CR 160/385 (3+1)	516.930	4 TE	126
	SafeTec CR 160/440 (3+1)	516.931	4 TE	126
<b>Module SafeTec C(R) xx/yyy</b>	Module SafeTec C(R) 20/75	516.865	1 TE	116-120, 124
	Module SafeTec C(R) 40/150	516.866	1 TE	116-124
	Module SafeTec C(R) 40/275	516.867	1 TE	116-126
	Module SafeTec C(R) 40/385	516.868	1 TE	116-126
	Module SafeTec C(R) 40/440	516.869	1 TE	116-126
	Module SafeTec C(R) 25/750	516.870	1 TE	116-122
	Module SafeTec C(R) 25/880	516.A68	1 TE	116-122
<b>SafeTube C(R) 40</b> 	SafeTube C40/255	516.871	1 TE	128
	Module SafeTube C 40/xxx	Module SafeTube C 40/255	516.872	1 TE
<b>SafeTec C(R) (3+0) WT</b> 	SafeTec C 750 (3+0) WT	516.A47	3 TE	130
	SafeTec C 880 (3+0) WT	516.A48	3 TE	130
	SafeTec CR 750 (3+0) WT	516.A50	3 TE	130
	SafeTec CR 880 (3+0) WT	516.A51	3 TE	130
<b>Module SafeTec C(R) xxx WT</b>	Module SafeTec C(R) 750 WT	516.A53	1 TE	130
	Module SafeTec C(R) 880 WT	516.A54	1 TE	130
















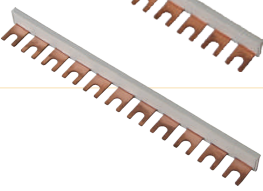
	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
PV SafeTec C(R) 50 Y TD 	PV SafeTec C 50/1000 Y TD	516.A92	3 TE	132
	PV SafeTec CR 50/1000 Y TD	516.A94	3 TE	132
Module PV SafeTec C 50/xxxx Y	Module PV SafeTec C(R) 50/1000 Y	516.A19	1 TE	132
PVG SafeTec C(R) 25 Y TD 	PVG SafeTec C 25/1000 Y TD	516.A97	3 TE	134
	PVG SafeTec CR 25/1000 Y TD	516.A98	3 TE	134
Module PVG SafeTec C 25/xxxx Y TD	Module PVG SafeTec C 25/1000 Y TD	516.A99	1 TE	134
Module PVG SafeTube C 25/xxxx Y TD	Module PVG SafeTube C 25/1000 Y TD	5516.B01	1 TE	134
 Class II • Type 2 • UL Type 1 CA • Type 2CA • Type 4CA Modular Single Pole & Multi-pole Surge Protective Devices				
SafeTec C(R) (1+0) UL 	SafeTec C 50/150 (1+0)	516.828	1 TE	140
	SafeTec C 50/277 (1+0)	516.933	1 TE	140
	SafeTec C 50/385 (1+0)	516.934	1 TE	140
	SafeTec C 50/440 (1+0)	516.935	1 TE	140
	SafeTec C 50/550 (1+0)	516.936	1 TE	140
	SafeTec C 25/750 (1+0)	516.937	1 TE	140
	SafeTec C 25/880 (1+0)	516.938	1 TE	140
	SafeTec CR 50/150 (1+0)	516.829	1 TE	140
	SafeTec CR 50/277 (1+0)	516.939	1 TE	140
	SafeTec CR 50/385 (1+0)	516.940	1 TE	140
	SafeTec CR 50/440 (1+0)	516.941	1 TE	140
	SafeTec CR 50/550 (1+0)	516.942	1 TE	140
	SafeTec CR 25/750 (1+0)	516.943	1 TE	140
SafeTec CR 25/880 (1+0)	516.944	1 TE	140	
SafeTec C(R) (2+0) UL 	SafeTec C 100/150 (2+0)	516.959	2 TE	142
	SafeTec C 100/277 (2+0)	516.960	2 TE	142
	SafeTec C 100/385 (2+0)	516.961	2 TE	142
	SafeTec C 100/440 (2+0)	516.962	2 TE	142
	SafeTec C 50/750 (2+0)	516.963	2 TE	142
	SafeTec C 50/880 (2+0)	516.964	2 TE	142
	SafeTec CR 100/150 (2+0)	516.965	2 TE	142
	SafeTec CR 100/277 (2+0)	516.966	2 TE	142
	SafeTec CR 100/385 (2+0)	516.967	2 TE	142
	SafeTec CR 100/440 (2+0)	516.968	2 TE	142
	SafeTec CR 50/750 (2+0)	516.969	2 TE	142
SafeTec CR 50/880 (2+0)	516.970	2 TE	142	
SafeTec C(R) (3+0) UL 	SafeTec C 150/150 (3+0)	516.945	3 TE	144
	SafeTec C 150/277 (3+0)	516.946	3 TE	144
	SafeTec C 150/385 (3+0)	516.947	3 TE	144
	SafeTec C 150/440 (3+0)	516.948	3 TE	144
	SafeTec C 150/550 (3+0)	516.949	3 TE	144
	SafeTec C 75/750 (3+0)	516.950	3 TE	144
	SafeTec C 75/880 (3+0)	516.951	3 TE	144
	SafeTec CR 150/150 (3+0)	516.952	3 TE	144
	SafeTec CR 150/277 (3+0)	516.953	3 TE	144
	SafeTec CR 150/385 (3+0)	516.954	3 TE	144
	SafeTec CR 150/440 (3+0)	516.955	3 TE	144
	SafeTec CR 150/550 (3+0)	516.956	3 TE	144
	SafeTec CR 75/750 (3+0)	516.957	3 TE	144
	SafeTec CR 75/880 (3+0)	516.958	3 TE	144

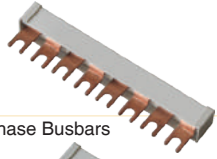
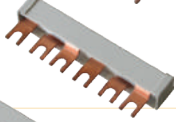
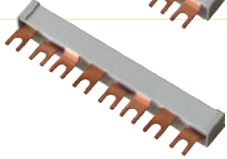

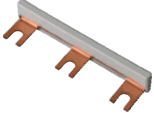

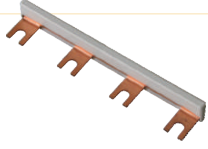
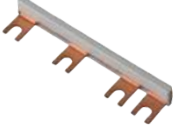




	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)	
<b>SafeTec C(R) (4+0) UL</b> 	SafeTec C 200/150 (4+0)	516.971	4 TE	146	
	SafeTec C 200/277 (4+0)	516.972	4 TE	146	
	SafeTec C 200/385 (4+0)	516.973	4 TE	146	
	SafeTec C 200/440 (4+0)	516.974	4 TE	146	
	SafeTec C 100/750 (4+0)	516.975	4 TE	146	
	SafeTec C 100/880 (4+0)	516.976	4 TE	146	
	SafeTec CR 200/150 (4+0)	516.977	4 TE	146	
	SafeTec CR 200/277 (4+0)	516.978	4 TE	146	
	SafeTec CR 200/385 (4+0)	516.979	4 TE	146	
	SafeTec CR 200/440 (4+0)	516.980	4 TE	146	
	SafeTec CR 100/750 (4+0)	516.981	4 TE	146	
	SafeTec CR 100/880 (4+0)	516.982	4 TE	146	
	<b>Module SafeTec C(R) xx/yyy UL</b>	Module SafeTec C(R) 50/150	516.983	1 TE	140-146
		Module SafeTec C(R) 50/277	516.984	1 TE	140-146
Module SafeTec C(R) 50/385		516.985	1 TE	140-146	
Module SafeTec C(R) 50/440		516.986	1 TE	140-146	
Module SafeTec C(R) 50/550		516.987	1 TE	140-146	
Module SafeTec C(R) 25/750		516.988	1 TE	140-146	
Module SafeTec C(R) 25/880		516.989	1 TE	140-146	
<b>SafeTec C(R) (3+0) WT UL</b> 		SafeTec C 750 (3+0) WT	516.A57	3 TE	148
	SafeTec C 880 (3+0) WT	516.A88	3 TE	148	
	SafeTec CR 750 (3+0) WT	516.A60	3 TE	148	
	SafeTec CR 880 (3+0) WT	516.A89	3 TE	148	
<b>Module SafeTec C(R) xxx WT UL</b>	Module SafeTec C(R) 750 WT	516.A63	1 TE	148	
	Module SafeTec C(R) 880 WT	516.A90	1 TE	148	
<b>SafeTec C(R) 1000 PV (2+0) UL</b> 	SafeTec C 1000 PV (2+0)	516.A24	2 TE	150	
	SafeTec CR 1000 PV (2+0)	516.A27	2 TE	150	
<b>Module SafeTec C(R) 1000 PV</b>	Module SafeTec C(R) 1000 PV	516.A30	1 TE	150	
<b>SafeTec C(R) 1000 PV (3+0) UL</b> 	SafeTec C 1000 PV (3+0)	516.A33	3 TE	152	
	SafeTec CR 1000 PV (3+0)	516.A38	3 TE	152	
<b>Module SafeTec C(R) 1000 PV</b>	Module SafeTec C(R) 1000 PV	516.A43	1 TE	152	
 <b>Class II • Type 2 Modular Single Pole &amp; Multi-pole Surge Protective Devices</b>					
<b>ProTec C(R) 40 (1+0)</b> 	ProTec C 40/75 (1+0)	50.A063	1 TE	158	
	ProTec C 40/150 (1+0)	50.A064	1 TE	158	
	ProTec C 40/275 (1+0)	50.A065	1 TE	158	
	ProTec C 40/320 (1+0)	50.A045	1 TE	158	
	ProTec C 40/385 (1+0)	50.A066	1 TE	158	
	ProTec C 40/440 (1+0)	50.A067	1 TE	158	
	ProTec CR 40/75 (1+0)	50.A068	1 TE	158	
	ProTec CR 40/150 (1+0)	50.A069	1 TE	158	
	ProTec CR 40/275 (1+0)	50.A070	1 TE	158	
	ProTec CR 40/320 (1+0)	50.A046	1 TE	158	
	ProTec CR 40/385 (1+0)	50.A071	1 TE	158	
	ProTec CR 40/440 (1+0)	50.A072	1 TE	158	

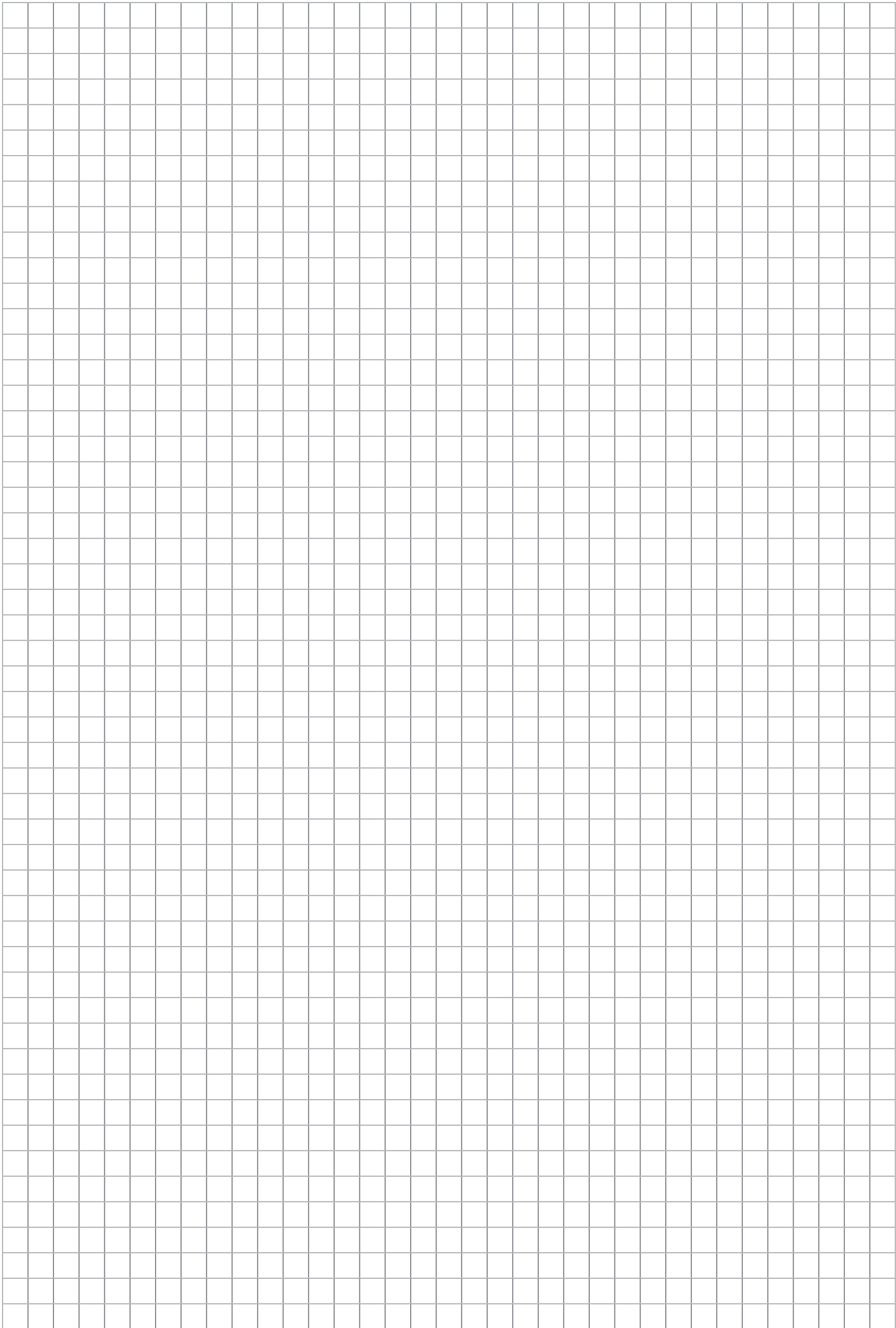
	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
<b>ProTec C(R) 80 (2+0)</b> 	ProTec C 80/150 (2+0)	50.A094	2 TE	160
	ProTec C 80/275 (2+0)	50.A051	2 TE	160
	ProTec C 80/320 (2+0)	50.A095	2 TE	160
	ProTec C 80/385 (2+0)	50.A058	2 TE	160
	ProTec C 80/440 (2+0)	50.A096	2 TE	160
	ProTec CR 80/150 (2+0)	50.A097	2 TE	160
	ProTec CR 80/275 (2+0)	50.A098	2 TE	160
	ProTec CR 80/320 (2+0)	50.A099	2 TE	160
	ProTec CR 80/385 (2+0)	50.A100	2 TE	160
	ProTec CR 80/440 (2+0)	50.A101	2 TE	160
<b>ProTec C(R) 120 (3+0)</b> 	ProTec C 120/150 (3+0)	50.A102	3 TE	162
	ProTec C 120/275 (3+0)	50.A052	3 TE	162
	ProTec C 120/320 (3+0)	50.A103	3 TE	162
	ProTec C 120/385 (3+0)	50.A059	3 TE	162
	ProTec C 120/440 (3+0)	50.A104	3 TE	162
	ProTec CR 120/150 (3+0)	50.A105	3 TE	162
	ProTec CR 120/275 (3+0)	50.A053	3 TE	162
	ProTec CR 120/320 (3+0)	50.A106	3 TE	162
	ProTec CR 120/385 (3+0)	50.A060	3 TE	162
	ProTec CR 120/440 (3+0)	50.A107	3 TE	162
<b>ProTec C(R) 160 (4+0)</b> 	ProTec C 160/150 (4+0)	50.A108	4 TE	164
	ProTec C 160/275 (4+0)	50.A054	4 TE	164
	ProTec C 160/320 (4+0)	50.A109	4 TE	164
	ProTec C 160/385 (4+0)	50.A110	4 TE	164
	ProTec C 160/440 (4+0)	50.A111	4 TE	164
	ProTec CR 160/150 (4+0)	50.A112	4 TE	164
	ProTec CR 160/275 (4+0)	50.A055	4 TE	164
	ProTec CR 160/320 (4+0)	50.A113	4 TE	164
	ProTec CR 160/385 (4+0)	50.A114	4 TE	164
	ProTec CR 160/440 (4+0)	50.A115	4 TE	164
<b>ProTec C(R) 80 (1+1)</b> 	ProTec C 80/150 (1+1)	50.A116	2 TE	166
	ProTec C 80/275 (1+1)	50.A117	2 TE	166
	ProTec C 80/320 (1+1)	50.A118	2 TE	166
	ProTec C 80/385 (1+1)	50.A119	2 TE	166
	ProTec C 80/440 (1+1)	50.A120	2 TE	166
	ProTec CR 80/150 (1+1)	50.A121	2 TE	166
	ProTec CR 80/275 (1+1)	50.A122	2 TE	166
	ProTec CR 80/320 (1+1)	50.A123	2 TE	166
	ProTec CR 80/385 (1+1)	50.A124	2 TE	166
	ProTec CR 80/440 (1+1)	50.A125	2 TE	166
<b>ProTec C(R) 160 (3+1)</b> 	ProTec C 160/275 (3+1)	50.A127	4 TE	168
	ProTec C 160/320 (3+1)	50.A047	4 TE	168
	ProTec C 160/385 (3+1)	50.A128	4 TE	168
	ProTec C 160/440 (3+1)	50.A056	4 TE	168
	ProTec CR 160/275 (3+1)	50.A130	4 TE	168
	ProTec CR 160/320 (3+1)	50.A048	4 TE	168
	ProTec CR 160/385 (3+1)	50.A061	4 TE	168
	ProTec CR 160/440 (3+1)	50.A057	4 TE	168
<b>Module ProTec C(R) 40/xxx</b>	Module ProTec C(R) 40/75	50.A073	1 TE	158
	Module ProTec C(R) 40/150	50.A074	1 TE	158-166
	Module ProTec C(R) 40/275	50.A075	1 TE	158-168
	Module ProTec C(R) 40/320	50.A049	1 TE	158-168
	Module ProTec C(R) 40/385	50.A076	1 TE	158-168
	Module ProTec C(R) 40/440	50.A077	1 TE	158-168
<b>ProTec CM(R) 80 (2+0)</b> 	ProTec CM 80/275 (2+0)	508.315	1 TE	170
	ProTec CM 80/320 (2+0)	508.316	1 TE	170
	ProTec CMR 80/275 (2+0)	508.320	1 TE	170
	ProTec CMR 80/320 (2+0)	508.321	1 TE	170
<b>Module ProTec CM(R) 80 (2+0)</b>	Module ProTec CM(R) 80/275 (2+0)	508.325	1 TE	170
	Module ProTec CM(R) 80/320 (2+0)	508.326	1 TE	170



	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)	
ProTec CM(R) 80 (1+1) 	ProTec CM 80/275 (1+1)	508.330	1 TE	172	
	ProTec CM 80/320 (1+1)	508.331	1 TE	172	
	ProTec CMR 80/275 (1+1)	508.335	1 TE	172	
	ProTec CMR 80/320 (1+1)	508.336	1 TE	172	
	Module ProTec CM(R) 80 (1+1)	Module ProTec CM(R) 80/275 (1+1)	508.340	1 TE	172
	Module ProTec CM(R) 80/320 (1+1)	508.341	1 TE	172	
ProTube C(R) 40	ProTube C40/255	50.A093	1 TE	174	
	Module ProTube C(R) 40	Module ProTube C 40/255	50.A050	1 TE	166-174
PV ProTec C(R) 40 Y TD 	PV ProTec C 40/1000 Y TD	501.793	3 TE	176	
	PV ProTec CR 40/1000 Y TD	501.794	3 TE	176	
	Module PV ProTec C(R) 40 Y TD	Module PV ProTec C(R) 40/1000	501.776	1 TE	176
 Class III • Type 3 Compact & Modular Single Pole & Multi-pole Surge Protective Devices ProTec DMDR 20 	ProTec DMDR 20/24	510 783	1 TE	182	
	ProTec DMDR 20/48	510 833	1 TE	182	
	ProTec DMDR 20/60	510 834	1 TE	182	
	ProTec DMDR 20/120	510 835	1 TE	182	
	Module ProTec DMDR 20	Module ProTec DMDR 20/24	510 784	1 TE	182
	Module ProTec DMDR 20/48	510 836	1 TE	182	
	Module ProTec DMDR 20/60	510 837	1 TE	182	
	Module ProTec DMDR 20/120	510 838	1 TE	182	
ProTec DMG(R) 20 (2+0) 	ProTec DMG 20/320 (2+0)	508.369	1 TE	184	
	ProTec DMGR 20/320 (2+0)	508.370	1 TE	184	
	Module ProTec DMG(R) 20	Module ProTec DMG(R) 20/320	508.371	1 TE	184
ProLed 275 (3+1)	ProLed 275 (3+1) 16 A	130 304	4 TE	186	
MPE-Mini & MPE-Mini LED 	MPE-Mini	121 280		188	
	MPE-Mini LED	121 282		188	
ZE 200-PS	ZE 200-PS	121 601		190	
					

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)	
 Class I • Class II • Type 1 • Type 2 AC Power Boxes	ProFilt PSF Single Phase	ProFilt PSF - 1/40/320/TT 25 kA ProFilt PSF - 1/63/320/TT 25 kA	130 440 130 441	196 196	
	 ProFilt PSF Single Phase				
ProFilt PSF Three Phase	ProFilt PSF - 3/40/320/TT 25 kA ProFilt PSF - 3/63/320/TT 25 kA	130 492 130 493	198 198		
	 ProFilt PSF Three Phase				
 Class II • Type 2 Overhead Power Lines Surge Protective Devices	ProTec AQS 40	ProTec AQS 40/150 ProTec AQS 40/275 ProTec AQS 40/320 ProTec AQS 40/440	509.210 509.211 509.212 509.213	202 202 202 202	
	 ProTec AQS 40				
	 Isolating Spark Gap Surge Protective Devices	EPZ 100	EPZ 100/350	50 9520	206
		 EPZ 100			
		 Surge Protective Devices Connection Accessories	ProBar Single Phase Busbars	ProBar 1-2	501 338
 ProBar 1-2					
ProBar 1-3	501 339		210		
 ProBar 1-3					
ProBar 1-4	501 340		210		
 ProBar 1-4					
ProBar 1-5	501 341		210		
 ProBar 1-5					
ProBar 1-6	501 342	210			
 ProBar 1-6					
ProBar 1-7	501 343	210			
 ProBar 1-7					
ProBar 1-8	501 344	210			
 ProBar 1-8					
ProBar 1-11	501 345	210			
 ProBar 1-11					

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProBar Two Phase Busbars	ProBar 2-8	501 346		211
				
ProBar Three Phase Busbars	ProBar 3-6	501 347		211
				
	ProBar 3-8	501 348		211
				
PB Single Phase Busbars	PB 1-(2+0)	501 349		212
				
	PB 1-(3+0)	501 350		212
				
	PB 1-(2+1)	501 351		212
				
	PB 1-(4+0)	501 352		212
				
	PB 1-(3+1)	501 353		212
				
ProTec AQS Accessories	Fixing cable	509 522		213
				
	Fixing hook	509 523		213
				
	PSN	509 524		213
				
	PSI	509 525		213
				





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# Raycap Worldwide Locations



**Raycap GmbH**  
Parkring 11  
85748 Garching Munich  
Germany

**Raycap S.A.**  
Telou & Petroussou 14  
15124 Maroussi Athens  
Greece

**Raycap S.A. Manufacturing**  
Industrial Area of Drama  
66100 Drama  
Greece

**Raycap Inc.**  
806 South Clearwater Loop  
Post Falls, ID 83854  
United States of America

**Raycap Corporation SRL**  
Soseaua de Centura 27-28  
077040 Chiajna Ilfov  
Romania

**Raycap Cyprus Ltd.**  
46 Lefkosias Street  
Industrial Area of Dali  
2540 Nicosia  
Cyprus

**Iskra Zaščite d.o.o.**  
Stegne 23 A  
1000 Ljubljana  
Slovenia

**Raycap (Suzhou) Co. Ltd.**  
Block B, Phase II  
of New Sea Union  
No. 58 Heshun Road  
SIP, Suzhou 215021  
Jiangsu Province  
China



# Raycap

raycap.com • info@raycap.com

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