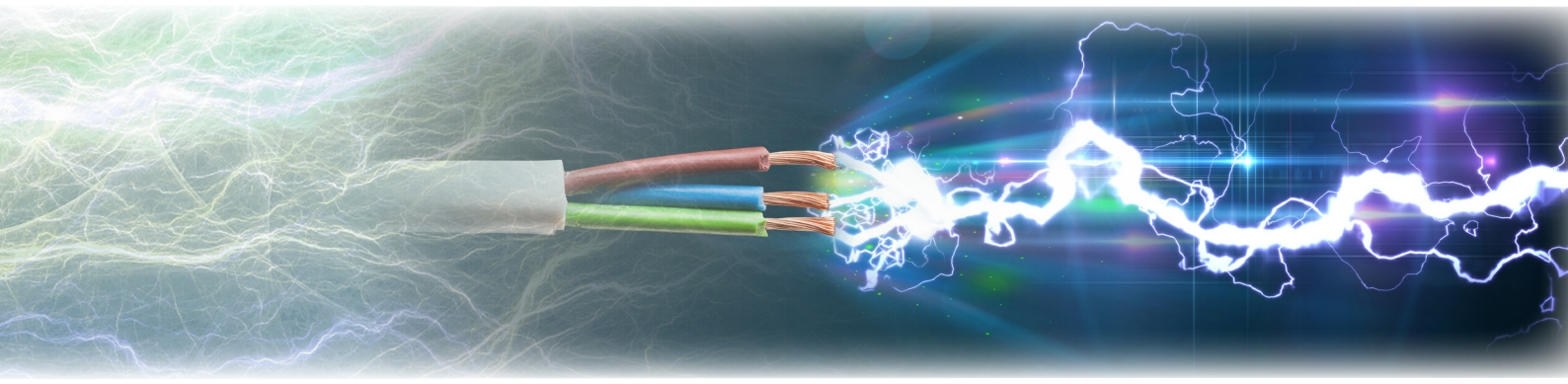
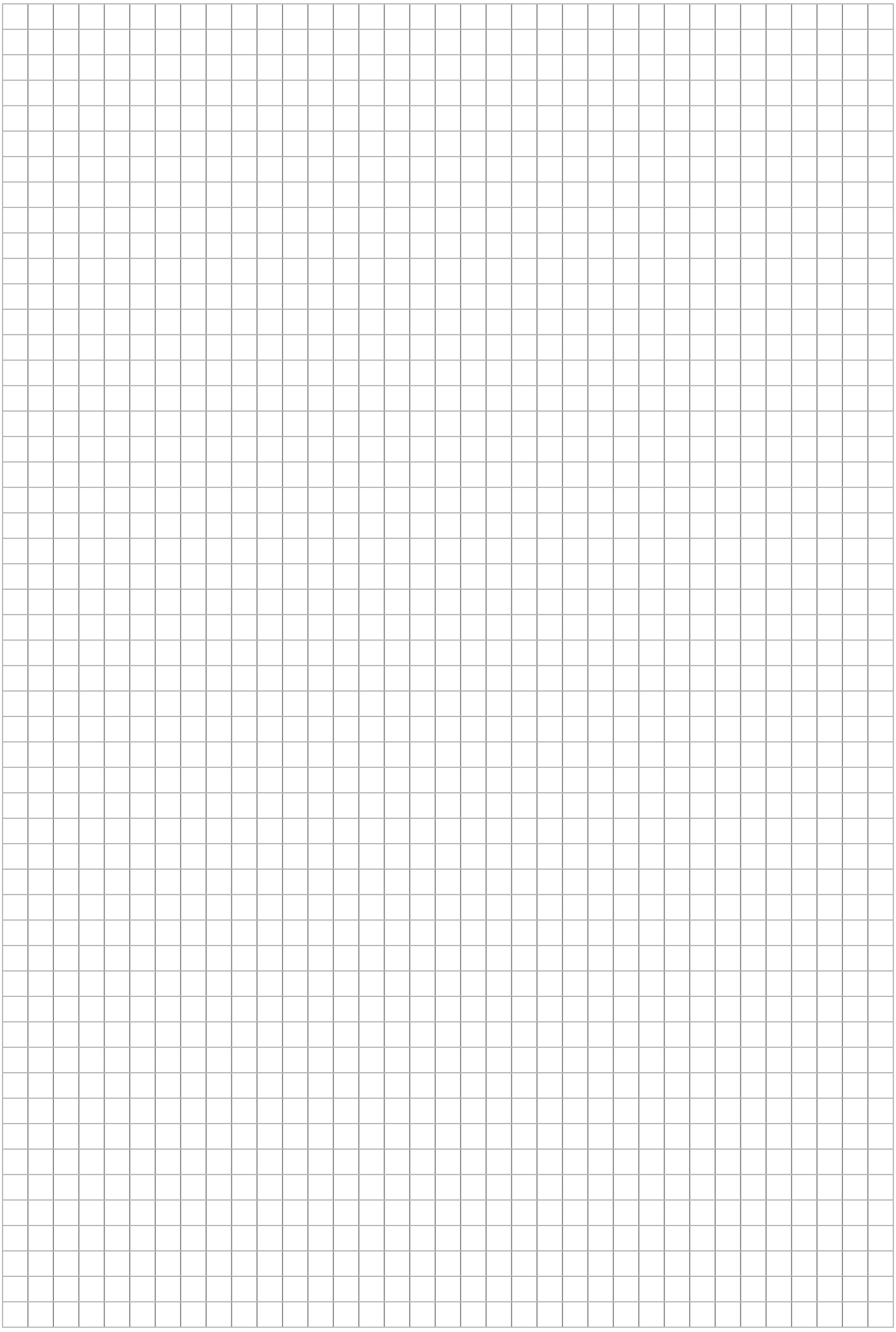
Raycap

Surge Protection for Low Voltage Power Systems



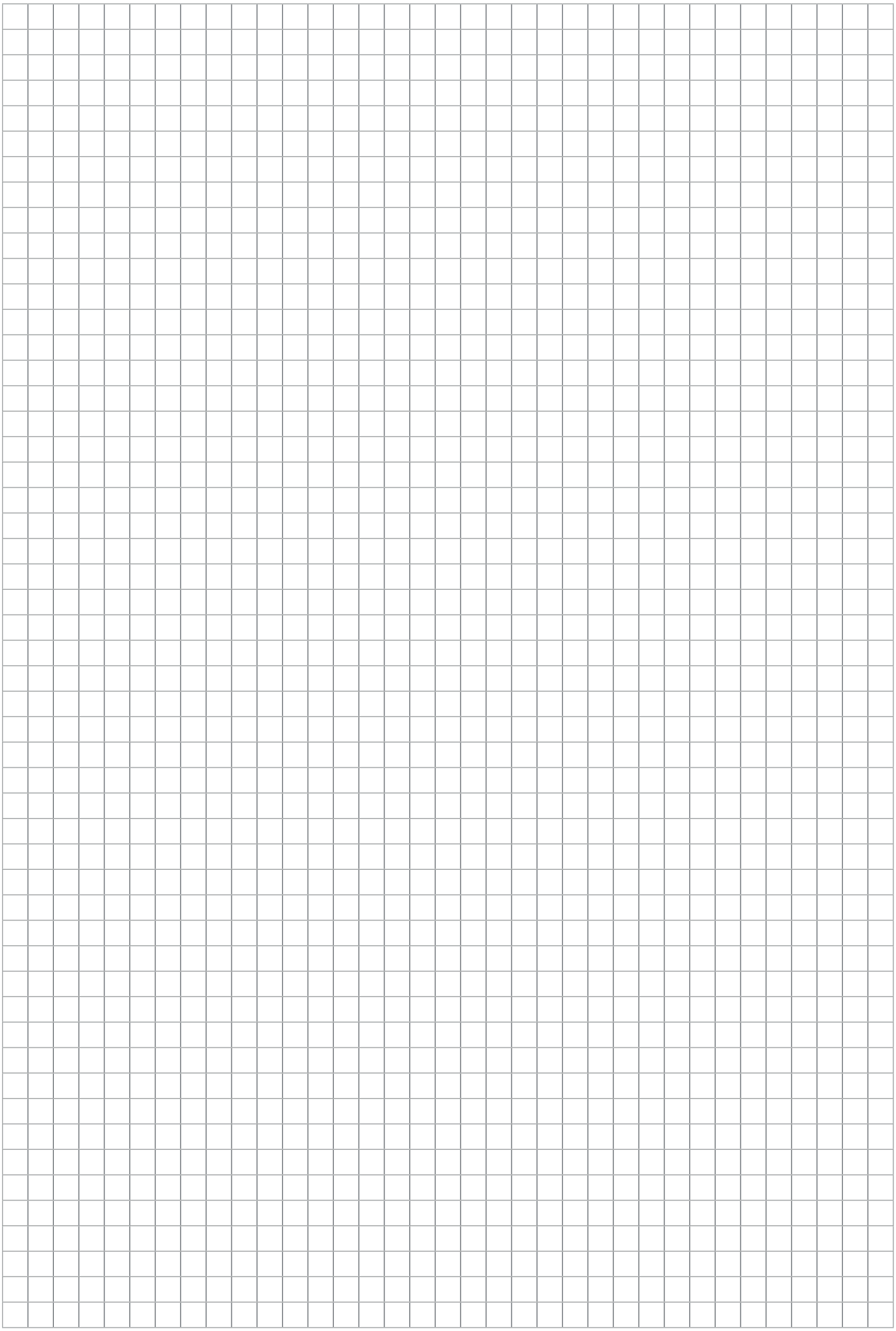
2017
CATALOG

Table of Contents



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 electronics has proliferated into many industrial and commercial environments and appliances. Raycap's products and solutions help protect mission-critical applications worldwide.

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
	European Standards (EN)	
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)
	European Commission on European Standards (EC/EN)	
9	IEC/EN 61326-1: 2012 2LV	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements
	International Electrotechnical Commission (IEC)	
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)
	International Telecommunication Union Standards (ITU-T)	
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
	Harmonization Document (HD)	
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
	Underwriters Laboratory (UL)	
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.

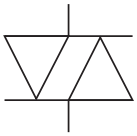
Transient Voltage Suppression (TVS) Diode

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)

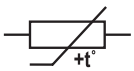
A GDT is an arrangement of electrodes in a gas within an insulating, temperature-resistant ceramic or glass cylinder.



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

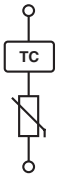
- No problems with follow current I_{fi}
- Quick response time t_A at ≤ 25 ns results in low residual voltage
- Responds well to low overvoltages
- High surge capacity up to 50 kA 10/350 µs

SPD Based on GDT Technology

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

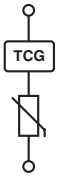
Combination Type SPD Based on Combined MOV and GDT Technology

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



Combination Type SPD with Thermal Control Function (TC)

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

Common Terminology

1.2/50 µs Voltage Impulse

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

8/20 µs Current Impulse

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

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).

Combination Wave

The combination wave is delivered by a generator that applies a 1.2/50 µs voltage impulse across an open circuit and an 8/20 µs 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 µs 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 µs 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_o

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 µs.

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 on 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

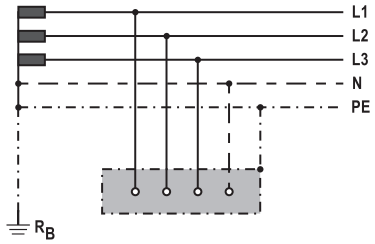
Maximum voltage to be expected at the SPD terminals due to an impulse stress with defined voltage steepness and impulse stress with a discharge current, given amplitude and waveshape.

Low Voltage Power Distribution System Types

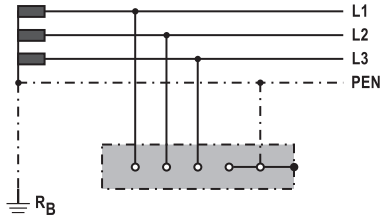
Earthing Systems

System Configuration

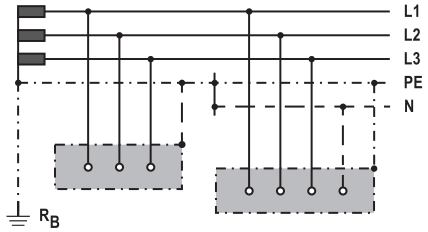
TN-S System



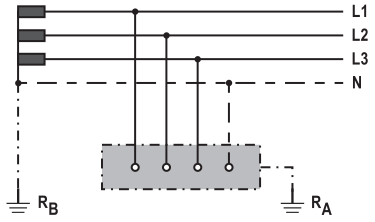
TN-C System



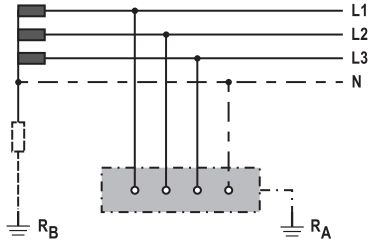
TN-C-S System



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:

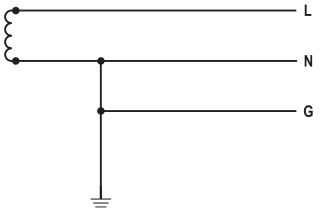
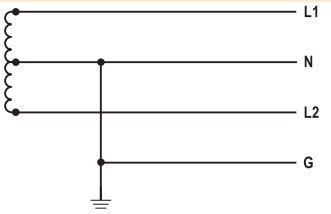
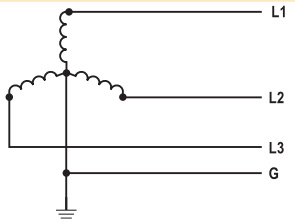
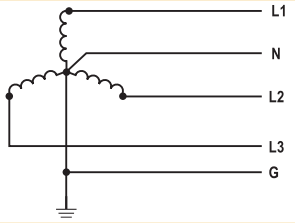
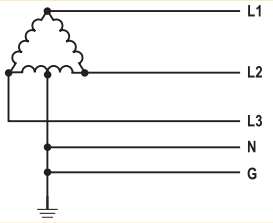
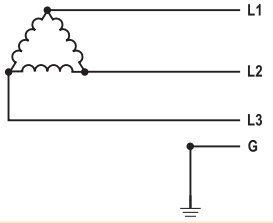
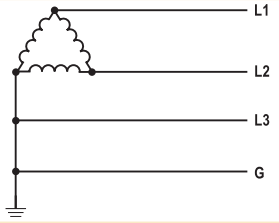
- T Exposed conductive parts are directly grounded independent of the earthing of any point of the power system
- N Exposed conductive parts are directly connected to the earthed point of the power system

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
	**Single Phase** System Voltage: 110V • 120V • 220V • 240V • 277V Circuit Type: 1ϕ, 2W + G Protection Modes: Line-Neutral
	**Single Phase (Split Phase)** System Voltage: 120V/240V • 240V/480V Circuit Type: 1ϕ, 3W + G Protection Modes: Line-Neutral/Line-Line
	**Three Phase WYE without Neutral** System Voltage: 480V Circuit Type: 3ϕ WYE, 3W + G Protection Modes: Line-Line
	**Three Phase WYE with Neutral** System Voltage: 120V/208V • 220V/380V • 230V/400V • 240V/415V • 277V/480V • 347V/600V Circuit Type: 3ϕ WYE, 4W + G Protection Modes: Line-Neutral/Line-Line
	**Delta High Leg** System Voltage: 120V/240V Circuit Type: 3ϕΔ, 4W + G Protection Modes: Line-Neutral/Line-Line
	**Delta Ungrounded** System Voltage: 120V • 240V • 480V Circuit Type: 3ϕΔ, 3W + G Protection Modes: Line-Line
	**Delta Grounded Corner** System Voltage: 120V • 240V • 480V • 600V Circuit Type: 3ϕΔ, 3W + G Protection Modes: Line-Line

Quick Product Selector

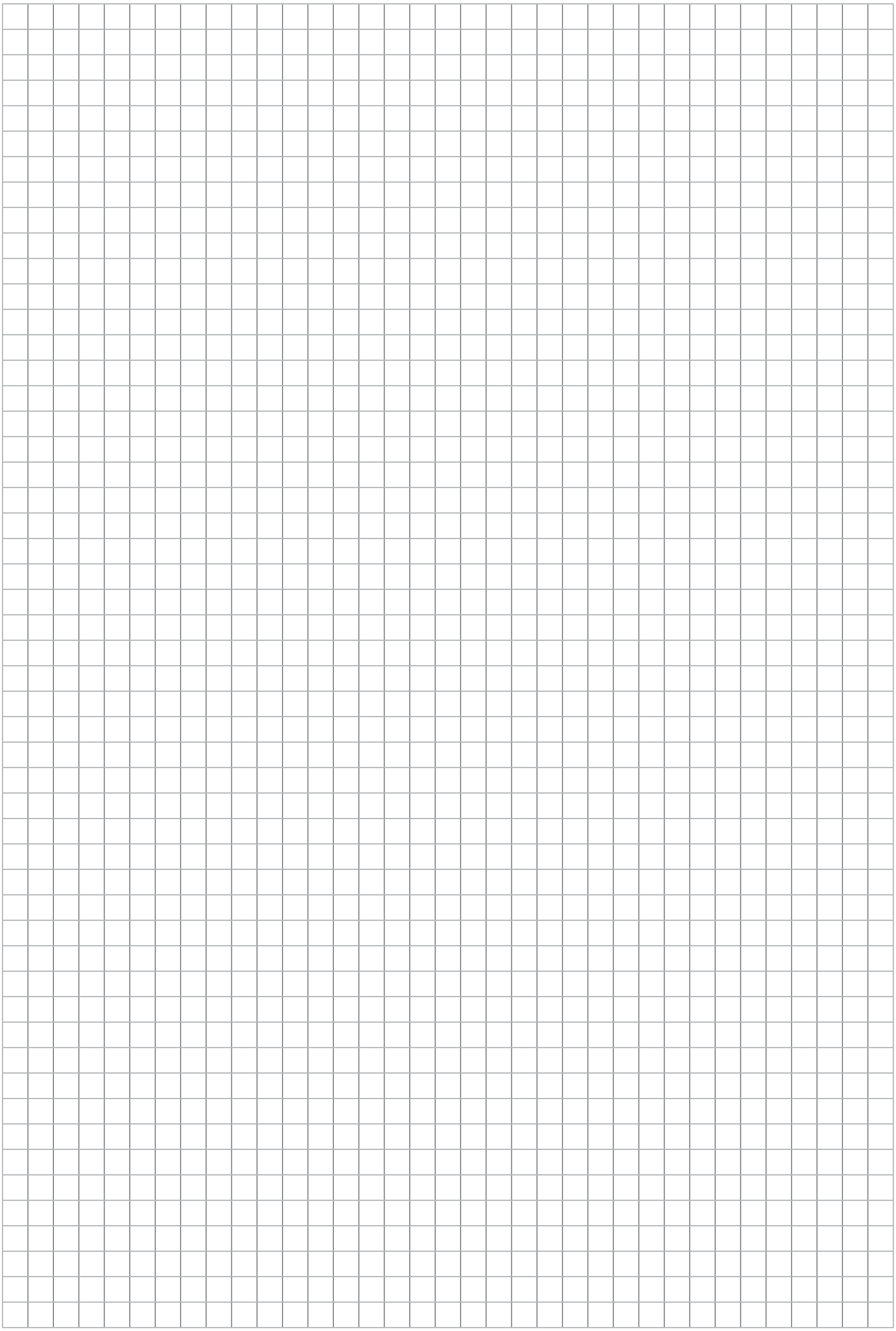
AC Industrial Applications

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

RoHS COMPLIANT CE

Compact Single Pole SPD

SafeBloc B(R) 12.5 (1+0) TCG

12.5kA Series

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} = 12.5kA (10/350µs)
I_n = 20kA (8/20µs)
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

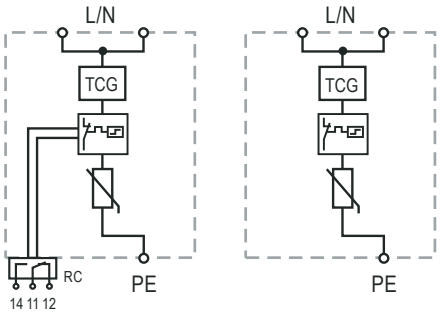
Technical Data

SafeBloc B(R) 12.5/xxx (1+0) TCG		150	275
Electrical			
Nominal AC Voltage (50/60Hz)	U_o	120V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V
Nominal Discharge Current (8/20µs)	I_n	20kA	
Maximum Discharge Current (8/20µs)	I_{max}	50kA	
Impulse Discharge Current (10/350µs)	I_{imp}	12.5kA	
Specific Energy	W/R	39kJ/Ω	
Charge	Q	6.25As	
Voltage Protection Level	U_p	< 1.2kV	< 1.5kV
Response Time	t_A	< 25ns	
Back-Up Fuse (if mains > 250A)		250A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}	50kA	
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}	3.0Nm	
Conductor Cross Section (max)		35mm² (solid) / 25mm² (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)		1.5mm²	
RC Terminal Screw Torque	M_{max}	0.25Nm	
Order Information			
Order Code		**150**	**275**
SAFEBLOC B 12.5/xxx (1+0) TCG		54.0500	54.0502
SAFEBLOC BR 12.5/xxx (1+0) TCG (with remote contacts)		54.0501	54.0503

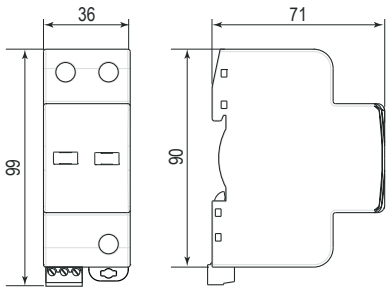
Internal Configuration

Legend

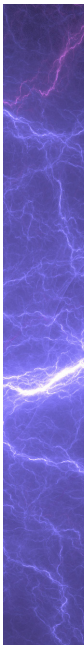
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional
TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



Dimensions & Packaging		
SafeBloc B 12.5/xxx (1+0) TCG	**150**	**275**
Single Unit Weight	175 g	205 g
Single Unit DIN 43880 Dimension	2 TE	
Packaging Dimensions (H × W × L)	109 × 77 × 42 mm	
Minimum Order Quantity	7 Units	
SafeBloc BR 12.5/xxx (1+0) TCG	**150**	**275**
Single Unit Weight	180 g	210 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 56-57.

Compact Multi-pole SPD

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

12.5kA Series

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} = 12.5kA (10/350µs)
I_n = 20kA (8/20µs)
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

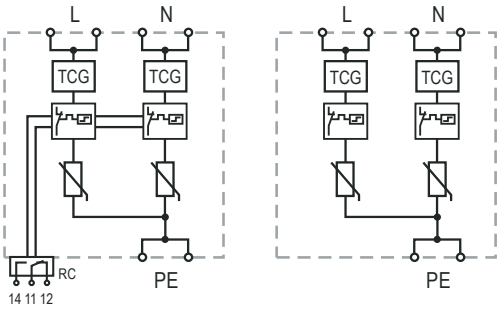
Technical Data

SafeBloc B(R) 25/xxx (2+0) TCG		150	275
Electrical			
Nominal AC Voltage (50/60Hz)	U_o	120V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V
Nominal Discharge Current (8/20µs)	I_n	20kA	
Maximum Discharge Current (8/20µs)	I_{max}	50kA	
Impulse Discharge Current (10/350µs)	I_{imp}	12.5kA	
Total Discharge Current (10/350µs)	I_{total}	25 kA	
Specific Energy	W/R	39kJ/Ω	
Charge	Q	6.25As	
Voltage Protection Level	U_p	< 1.2kV	< 1.5kV
Response Time	t_A	< 25ns	
Back-Up Fuse (if mains > 250A)		250A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}	50kA	
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}	3.0Nm	
Conductor Cross Section (max)		35mm² (solid) / 25mm² (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)		1.5mm²	
RC Terminal Screw Torque	M_{max}	0.25Nm	
Order Information			
Order Code		**150**	**275**
SAFEBLOC B 25/xxx (2+0) TCG		54.0507	54.0509
SAFEBLOC BR 25/xxx (2+0) TCG (with remote contacts)		54.0508	54.0510

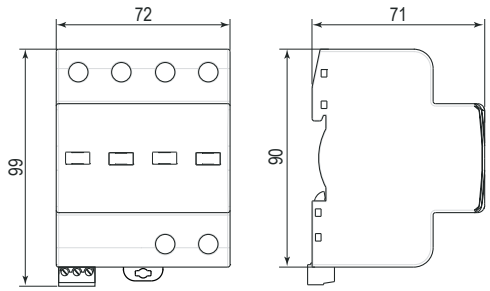
Internal Configuration

Legend

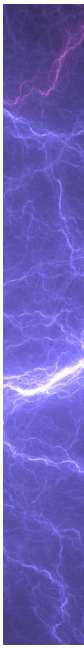
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional
TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



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

Location of Use: Main Distribution Boards
Network Systems: TN-C
Mode of Protection: L - PEN
Surge Ratings: I_{imp} = 12.5kA (10/350µs)
I_n = 20kA (8/20µs)
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

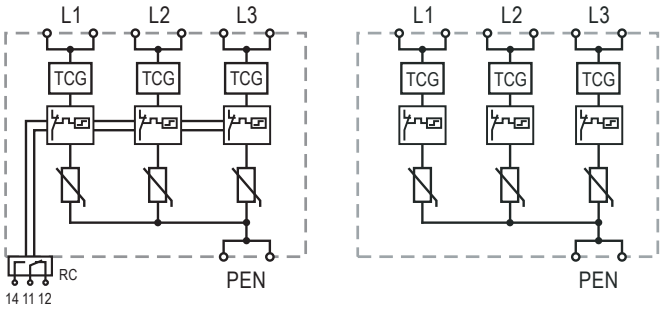
Technical Data

SafeBloc B(R) 37.5/xxx (3+0) TCG		150	275
Electrical			
Nominal AC Voltage (50/60Hz)	U_o	120V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V
Nominal Discharge Current (8/20µs)	I_n	20kA	
Maximum Discharge Current (8/20µs)	I_{max}	50kA	
Impulse Discharge Current (10/350µs)	I_{imp}	12.5kA	
Total Discharge Current (10/350µs)	I_{total}	37.5kA	
Specific Energy	W/R	39kJ/Ω	
Charge	Q	6.25As	
Voltage Protection Level	U_p	< 1.2kV	< 1.5kV
Response Time	t_A	< 25ns	
Back-Up Fuse (if mains > 250A)		250A gG	
Short-Circuit Current Rating (AC)	I_{SCCR}	50kA	
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}	3.0Nm	
Conductor Cross Section (max)		35mm² (solid) / 25mm² (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)		1.5mm²	
RC Terminal Screw Torque	M_{max}	0.25Nm	
Order Information			
Order Code		**150**	**275**
SAFEBLOC B 37.5/xxx (3+0) TCG		54.0513	54.0515
SAFEBLOC BR 37.5/xxx (3+0) TCG (with remote contacts)		54.0514	54.0516

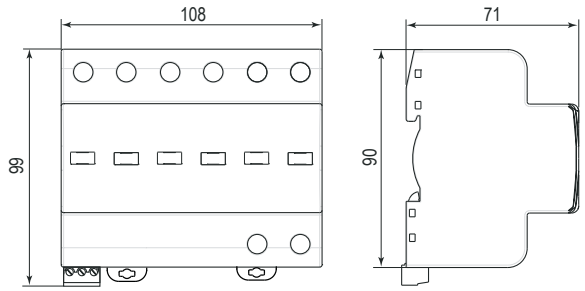
Internal Configuration

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		
SafeBloc B 37.5/xxx (3+0) TCG	**150**	**275**
Single Unit Weight	430 g	530 g
Single Unit DIN 43880 Dimension	6 TE	
Packaging Dimensions (H × W × L)	109 × 77 × 114 mm	
Minimum Order Quantity	2 Units	
SafeBloc BR 37.5/xxx (3+0) TCG	**150**	**275**
Single Unit Weight	440 g	540 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 54.

Compact Multi-pole SPD

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

12.5 kA Series

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 kA (10/350 µs)
I_n = 20 kA (8/20 µs)
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

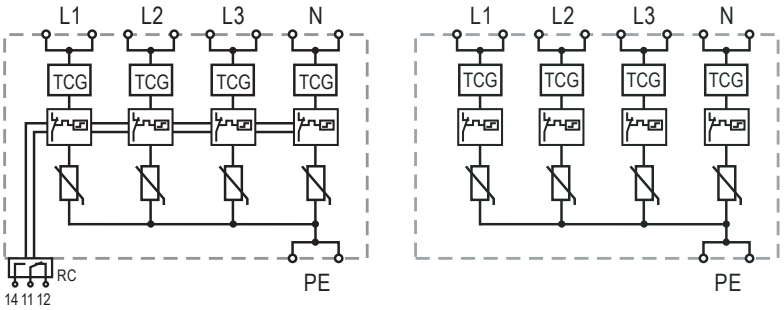
Technical Data

SafeBloc B(R) 50/xxx (4+0) TCG		150	275
Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	
Impulse Discharge Current (10/350 µs)	I_{imp}	12.5 kA	
Total Discharge Current (10/350 µs)	I_{total}	50 kA	
Specific Energy	W/R	39 kJ/Ω	
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	228 V	438 V
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 mm² (solid) / 25 mm² (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 mm²	
RC Terminal Screw Torque	M_{max}	0.25 Nm	
Order Information			
Order Code		**150**	**275**
SAFEBLOC B 50/xxx (4+0) TCG		54.0519	54.0521
SAFEBLOC BR 50/xxx (4+0) TCG (with remote contacts)		54.0520	54.0522

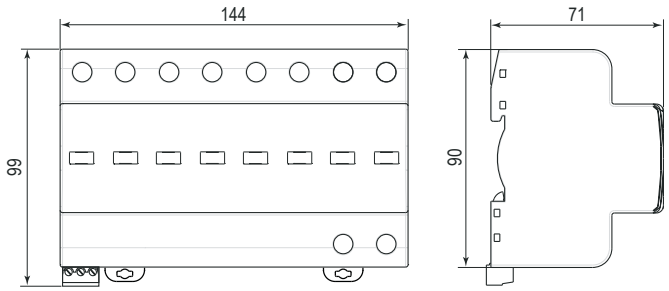
Internal Configuration

Legend

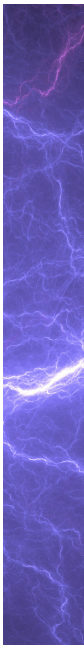
L	*Line*
N	*Neutral*
PE	*Protective Earth*
RC	*Remote Contacts Optional*
TCG	*Thermal Control Function with No Leakage*



Dimensions & Packaging [mm]



Dimensions & Packaging		
SafeBloc B 50/xxx (4+0) TCG	**150**	**275**
Single Unit Weight	800 g	1000 g
Single Unit DIN 43880 Dimension	8 TE	
Packaging Dimensions (H × W × L)	109 × 77 × 148 mm	
Minimum Order Quantity	2 Units	
SafeBloc BR 50/xxx (4+0) TCG	**150**	**275**
Single Unit Weight	815 g	1015 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 54.

Compact Multi-pole SPD

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

12.5 kA Series

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 kA / 50 kA (10/350 µs)
I_n = 20 kA / 50 kA (8/20 µs)
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

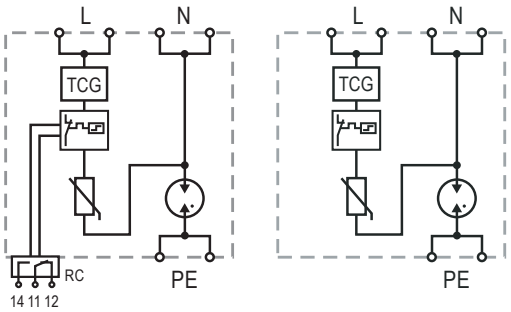
Technical Data

SafeBloc B(R) 25/xxx (1+1) TCG			150	275
Electrical				
Nominal AC Voltage (50/60 Hz)		U_o	120 V	230 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	150 V	275 V
	(N-PE)	U_c	255 V	
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 50 kA	
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}	50 kA / 100 kA	
Impulse Discharge Current (10/350 µs)	(L-N)/(N-PE)	I_{imp}	12.5 kA / 50 kA	
Total Discharge Current (10/350 µs)		I_{total}	25 kA	
Specific Energy	(L-N)/(N-PE)	W/R	39 kJ/Ω / 625 kJ/Ω	
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_{RMS}	
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	228 V	438 V
TOV withstand 200ms	(N-PE)	U_T	1200 V / 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 mm² (solid) / 25 mm² (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: 250 V / 0.5 A; 125 V / 3 A	
RC Terminal Cross Section (max)			1.5 mm²	
RC Terminal Screw Torque		M_{max}	0.25 Nm	
Order Information				
Order Code			**150**	**275**
SAFEBLOC B 25/xxx (1+1) TCG			54.0525	54.0527
SAFEBLOC B(R) 25/xxx (1+1) TCG (with remote contacts)			54.0526	54.0528

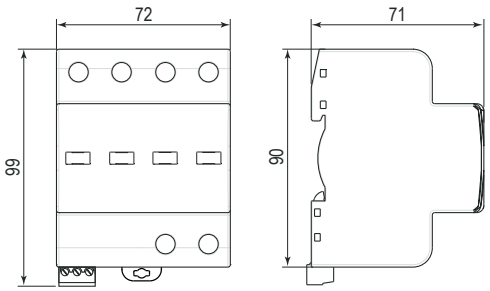
Internal Configuration

Legend

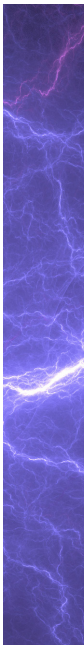
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional
TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



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



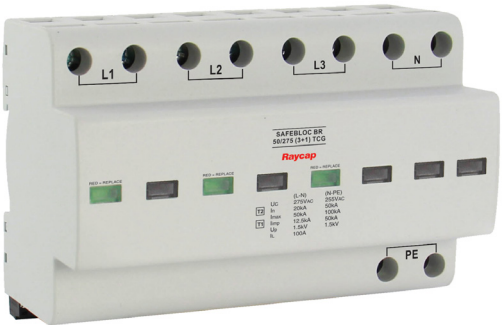
Applicable connection configurations can be found on page 55.

Compact Multi-pole SPD

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

12.5 kA Series

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 kA / 50 kA (10/350 µs)
I_n = 20 kA / 50 kA (8/20 µs)
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

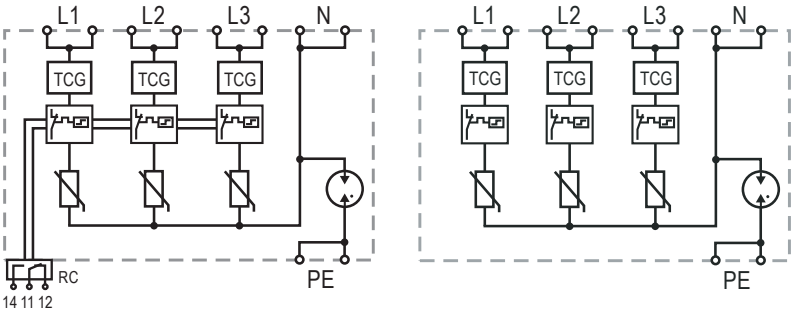
Technical Data

SafeBloc B(R) 50/xxx (3+1) TCG			275
Electrical			
Nominal AC Voltage (50/60 Hz)		U_o	230 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	275 V
	(N-PE)	U_c	255 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA/50 kA
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}	50 kA/100 kA
Impulse Discharge Current (10/350 µs)	(L-N)/(N-PE)	I_{imp}	12.5 kA/50 kA
Total Discharge Current (10/350 µs)		I_{total}	50 kA
Specific Energy	(L-N)/(N-PE)	W/R	39 kJ/Ω/625 kJ/Ω
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_{RMS}
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	438 V
TOV withstand 200ms	(N-PE)	U_T	1200 V/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 mm² (solid) / 25 mm² (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 mm²
RC Terminal Screw Torque		M_{max}	0.25 Nm
Order Information			
Order Code			**275**
SAFEBLOC B 50/xxx (3+1) TCG			54.0533
SAFEBLOC B(R) 50/xxx (3+1) TCG (with remote contacts)			54.0534

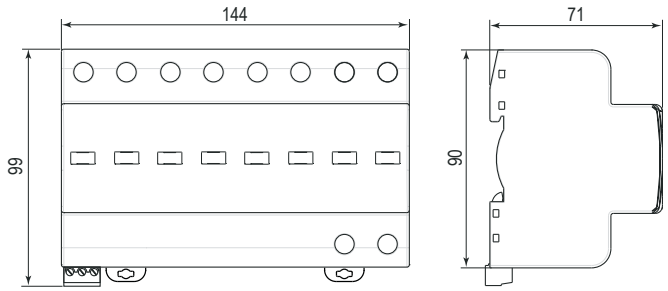
Internal Configuration

Legend

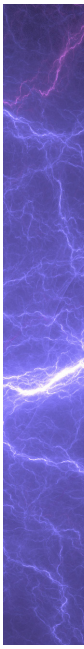
L	*Line*
N	*Neutral*
PE	*Protective Earth*
RC	*Remote Contacts Optional*
TCG	*Thermal Control Function with No Leakage*



Dimensions & Packaging [mm]



Dimensions & Packaging	
SafeBloc B 50/xxx (3+1) TCG	**275**
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
SafeBloc BR 50/xxx (3+1) TCG	**275**
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

25 kA Series

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} = 25 kA (10/350 µs)
I_n = 25 kA (8/20 µs)
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

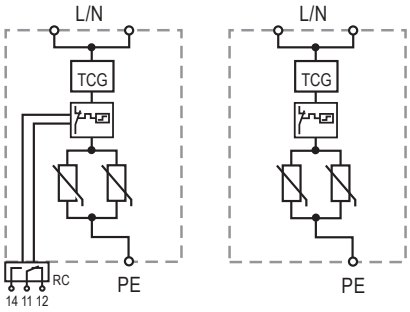
Technical Data

SafeBloc B(R) 25/xxx (1+0) TCG		150	275
Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA	
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA	
Impulse Discharge Current (10/350 µs)	I_{imp}	25 kA	
Specific Energy	W/R	156 kJ/Ω	
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 V	438 V
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 mm² (solid) / 25 mm² (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 mm²	
RC Terminal Screw Torque	M_{max}	0.25 Nm	
Order Information			
Order Code		**150**	**275**
SAFEBLOC B 25/xxx (1+0) TCG		54.0537	54.0539
SAFEBLOC BR 25/xxx (1+0) TCG (with remote contacts)		54.0538	54.0540

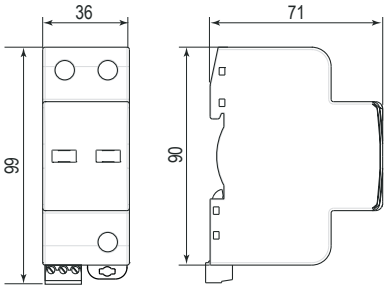
Internal Configuration

Legend

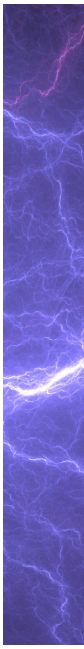
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional
TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



Dimensions & Packaging		
SafeBloc B 25/xxx (1+0) TCG	**150**	**275**
Single Unit Weight	275 g	325 g
Single Unit DIN 43880 Dimension	2 TE	
Packaging Dimensions (H × W × L)	109 × 77 × 42 mm	
Minimum Order Quantity	7 Units	
SafeBloc BR 25/xxx (1+0) TCG	**150**	**275**
Single Unit Weight	280 g	330 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 56-57.

Compact Multi-pole SPD

SafeBloc B(R) 50 (2+0) TCG

25 kA Series

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} = 25 kA (10/350 µs)
I_n = 25 kA (8/20 µs)
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

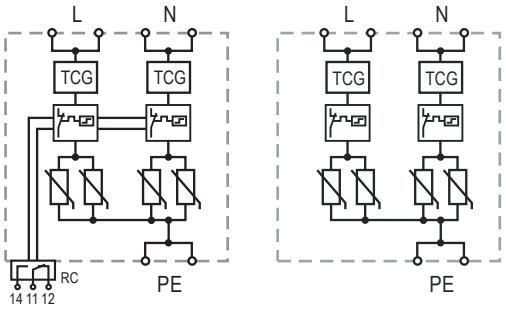
Technical Data

SafeBloc B(R) 50/xxx (2+0) TCG		150	275
Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA	
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA	
Impulse Discharge Current (10/350 µs)	I_{imp}	25 kA	
Total Discharge Current (10/350 µs)	I_{total}	50 kA	
Specific Energy	W/R	156 kJ/Ω	
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 V	438 V
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 mm² (solid) / 25 mm² (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 mm²	
RC Terminal Screw Torque	M_{max}	0.25 Nm	
Order Information			
Order Code		**150**	**275**
SAFEBLOC B 50/xxx (2+0) TCG		54.0544	54.0546
SAFEBLOC BR 50/xxx (2+0) TCG (with remote contacts)		54.0545	54.0547

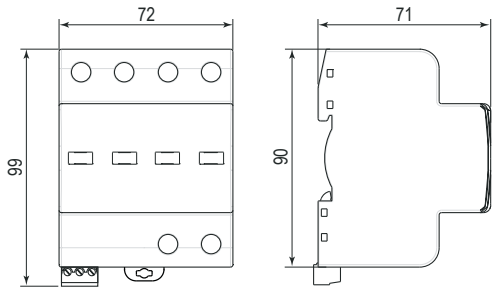
Internal Configuration

Legend

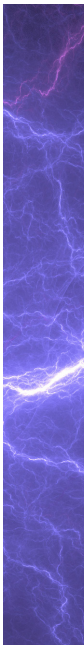
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional
TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



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

Location of Use: Main Distribution Boards
Network Systems: TN-C
Mode of Protection: L - PEN
Surge Ratings: I_{imp} = 25 kA (10/350 µs)
I_n = 25 kA (8/20 µs)
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

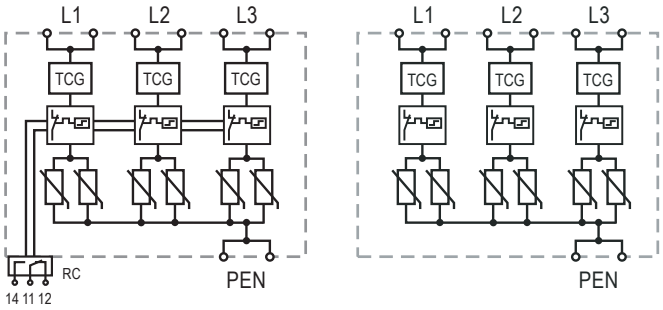
Technical Data

SafeBloc B(R) 75/xxx (3+0) TCG		150	275
Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA	
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA	
Impulse Discharge Current (10/350 µs)	I_{imp}	25 kA	
Total Discharge Current (10/350 µs)	I_{total}	75 kA	
Specific Energy	W/R	156 kJ/Ω	
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 V	438 V
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 mm² (solid) / 25 mm² (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 mm²	
RC Terminal Screw Torque	M_{max}	0.25 Nm	
Order Information			
Order Code		**150**	**275**
SAFEBLOC B 75/xxx (3+0) TCG		54.0550	54.0552
SAFEBLOC BR 75/xxx (3+0) TCG (with remote contacts)		54.0551	54.0553

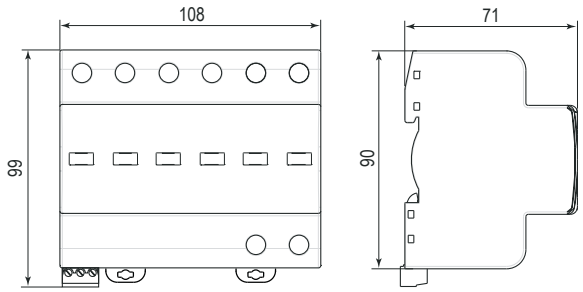
Internal Configuration

Legend

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

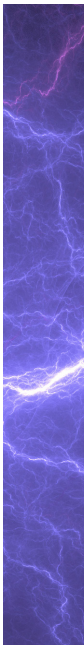


Dimensions & Packaging [mm]



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

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

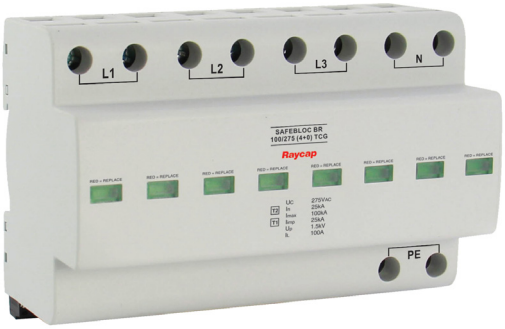


Applicable connection configurations can be found on page 54.

Compact Multi-pole SPD

SafeBloc B(R) 100 (4+0) TCG

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} = 25 kA (10/350 µs)
I_n = 25 kA (8/20 µs)
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

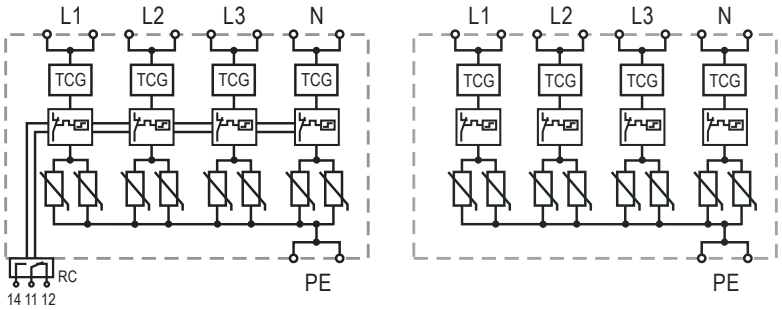
Technical Data

SafeBloc B(R) 100/xxx (4+0) TCG		150	275
Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA	
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA	
Impulse Discharge Current (10/350 µs)	I_{imp}	25 kA	
Total Discharge Current (10/350 µs)	I_{total}	100 kA	
Specific Energy	W/R	156 kJ/Ω	
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	438 V
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 mm² (solid) / 25 mm² (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 mm²	
RC Terminal Screw Torque	M_{max}	0.25 Nm	
Order Information			
Order Code		**150**	**275**
SAFEBLOC B 100/xxx (4+0) TCG		54.0556	54.0558
SAFEBLOC B(R) 100/xxx (4+0) TCG (with remote contacts)		54.0557	54.0559

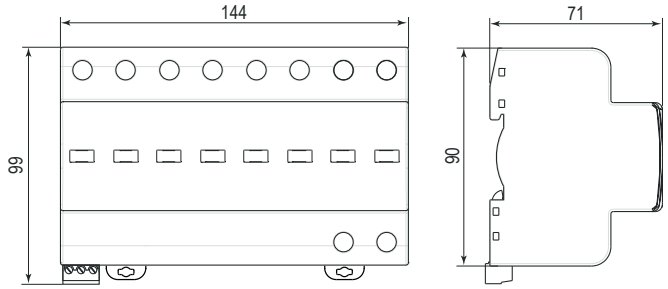
Internal Configuration

Legend

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

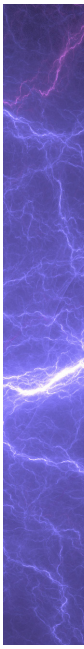


Dimensions & Packaging [mm]



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

SafeBloc BR 100/xxx (4+0) TCG	**150**	**275**
Single Unit Weight	1055 g	1255 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 54.

Compact Multi-pole SPD

SafeBloc B(R) 50 (1+1) TCG

25kA Series

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} = 25kA / 50kA (10/350µs)
I_n = 25kA / 50kA (8/20µs)
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

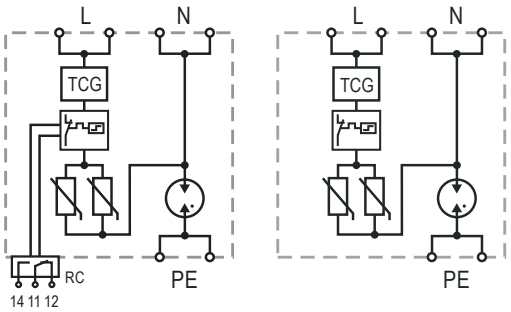
Technical Data

SafeBloc B(R) 50/xxx (1+1) TCG			150	275
Electrical				
Nominal AC Voltage (50/60Hz)		U_o	120V	230V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	150V	275V
	(N-PE)	U_c	255V	
Nominal Discharge Current (8/20µs)	(L-N)/(N-PE)	I_n	25kA/50kA	
Maximum Discharge Current (8/20µs)	(L-N)/(N-PE)	I_{max}	100kA/100kA	
Impulse Discharge Current (10/350µs)	(L-N)/(N-PE)	I_{imp}	25kA/50kA	
Total Discharge Current (10/350µs)		I_{total}	50kA	
Specific Energy	(L-N)/(N-PE)	W/R	156kJ/Ω/625kJ/Ω	
Charge	(L-N)/(N-PE)	Q	12.5As/25As	
Voltage Protection Level	(L-N)/(N-PE)	U_p	< 1.2kV/1.5kV	< 1.5kV/1.5kV
Follow Current Interrupt Rating	(N-PE)	I_{fi}	$100A_{RMS}$	
Response Time	(L-N)/(N-PE)	t_A	< 25ns/< 100ns	
Back-Up Fuse (if mains > 250A)			250A gG	
Short-Circuit Current Rating (AC)		I_{SCCR}	50kA	
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}	3.0Nm	
Conductor Cross Section (max)			35mm² (solid) / 25mm² (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)			1.5mm²	
RC Terminal Screw Torque		M_{max}	0.25Nm	
Order Information				
Order Code			**150**	**275**
SAFEBLOC B 50/xxx (1+1) TCG			54.0562	54.0564
SAFEBLOC BR 50/xxx (1+1) TCG (with remote contacts)			54.0563	54.0565

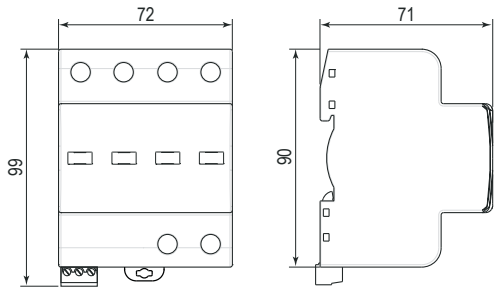
Internal Configuration

Legend

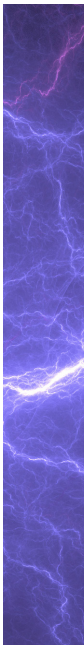
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional
TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



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



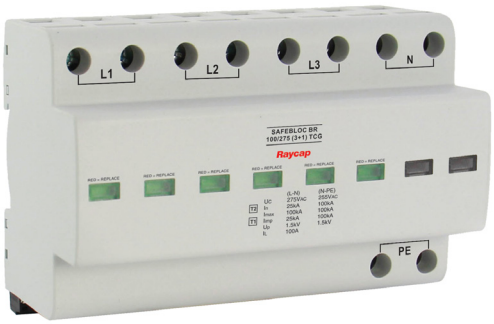
Applicable connection configurations can be found on page 55.

Compact Multi-pole SPD

SafeBloc B(R) 100 (3+1) TCG

25kA Series

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} = 25kA/100kA (10/350µs)
I_n = 25kA/100kA (8/20µs)
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

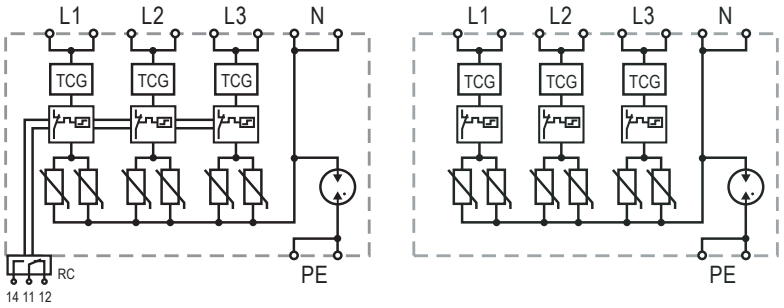
Technical Data

SafeBloc B(R) 100/xxx (3+1) TCG			275
Electrical			
Nominal AC Voltage (50/60Hz)		U_o	230V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	275V
	(N-PE)	U_c	255V
Nominal Discharge Current (8/20µs)	(L-N)/(N-PE)	I_n	25kA/100kA
Maximum Discharge Current (8/20µs)	(L-N)/(N-PE)	I_{max}	100kA/100kA
Impulse Discharge Current (10/350µs)	(L-N)/(N-PE)	I_{imp}	25kA/100kA
Total Discharge Current (10/350µs)		I_{total}	100kA
Specific Energy	(L-N)/(N-PE)	W/R	156kJ/Ω/2.5MJ/Ω
Charge	(L-N)/(N-PE)	Q	12.5As/50As
Voltage Protection Level	(L-N)/(N-PE)	U_p	< 1.5kV/< 1.5kV
Follow Current Interrupt Rating	(N-PE)	I_{fi}	100A_{RMS}
Response Time	(L-N)/(N-PE)	t_A	< 25ns/<100ns
Back-Up Fuse (if mains > 250A)			250A gG
Short-Circuit Current Rating (AC)		I_{SCCR}	50kA
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}	3.0Nm
Conductor Cross Section (max)			35mm² (solid) / 25mm² (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			Red Flag/No
Remote Contacts (RC)			Optional
RC Switching Capacity			AC: 250V/0.5A; 125V/3A
RC Terminal Cross Section (max)			1.5mm²
RC Terminal Screw Torque		M_{max}	0.25Nm
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

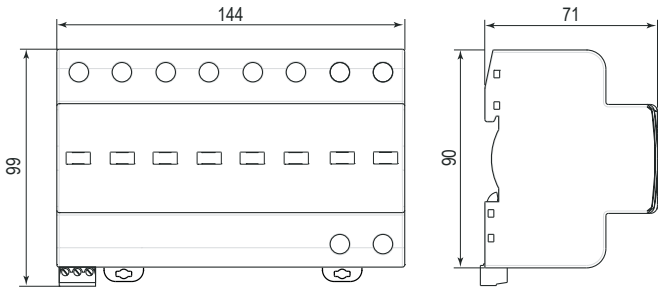
Internal Configuration

Legend

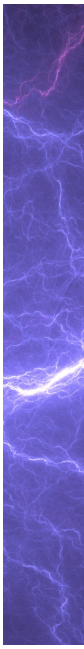
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional
TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



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

SafeTube B 50

Class I • Class II • Type 1 • Type 2

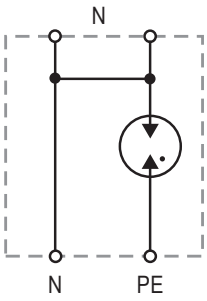
Location of Use: Main Distribution Boards
Network Systems: TT
Mode of Protection: N-PE
Surge Ratings: I_{imp} = 50 kA (10/350 µs)
I_n = 50 kA (8/20 µs)
IEC/EN Category: Class I, II / Type 1, 2
Protective Elements: High Energy GDT
Leakage Current: No Leakage Current
Housing: Compact Design
Compliance: 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	230 V
Maximum Continuous Operating Voltage (AC)	U_c	255 V
Nominal Discharge Current (8/20 µs)	I_n	50 kA
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA
Impulse Discharge Current (10/350 µs)	I_{imp}	50 kA
Specific Energy	W/R	625 kJ/Ω
Charge	Q	25 As
Voltage Protection Level	U_p	< 1.5 kV
Follow Current Interrupt Rating	I_{fi}	100 A_{RMS}
Response Time	t_A	< 100 ns
TOV withstand 200 ms	U_T	1200 V/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 mm² (solid) / 25 mm² (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

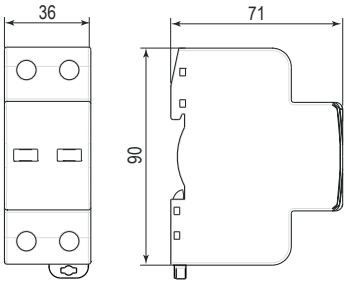
Internal Configuration



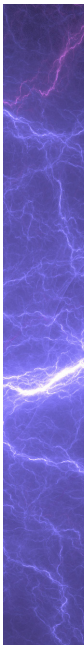
Legend

N Neutral
PE Protective Earth

Dimensions & Packaging [mm]



Dimensions & Packaging	
SafeTube B 50/xxx	**255**
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

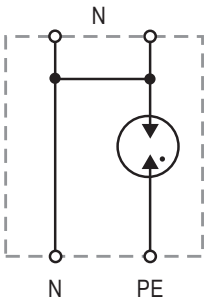
Location of Use: Main Distribution Boards
Network Systems: TT
Mode of Protection: N-PE
Surge Ratings: I_{imp} = 100 kA (10/350 µs)
I_n = 100 kA (8/20 µs)
IEC/EN Category: Class I, II / Type 1, 2
Protective Elements: High Energy GDT
Leakage Current: No Leakage Current
Housing: Compact Design
Compliance: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

Technical Data

SafeTube B 100/xxx		255
Electrical		
Nominal AC Voltage (50/60 Hz)	U_o	230 V
Maximum Continuous Operating Voltage (AC)	U_c	255 V
Nominal Discharge Current (8/20 µs)	I_n	100 kA
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA
Impulse Discharge Current (10/350 µs)	I_{imp}	100 kA
Specific Energy	W/R	2.5 MJ/Ω
Charge	Q	50 As
Voltage Protection Level	U_p	< 1.5 kV
Follow Current Interrupt Rating	I_{fi}	100 A_{RMS}
Response Time	t_A	< 100 ns
TOV withstand 200 ms	U_T	1200 V / 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 mm² (solid) / 25 mm² (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

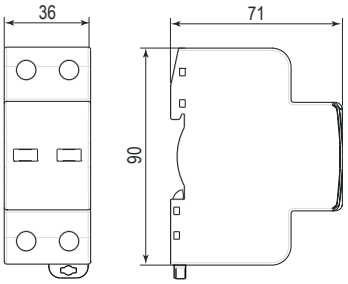
Internal Configuration



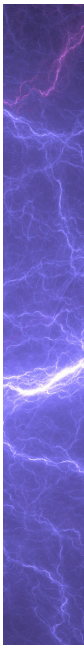
Legend

N Neutral
PE Protective Earth

Dimensions & Packaging [mm]



Dimensions & Packaging	
SafeTube B 100/xxx	**255**
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 page 57.

Compact Single Pole SPD for Wind Turbine Systems **12.5kA Series**

SafeBloc B(R) 12.5 (1+0) WT TCG

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} = 12.5kA (10/350µs)
I_n = 12.5kA (8/20µs)
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

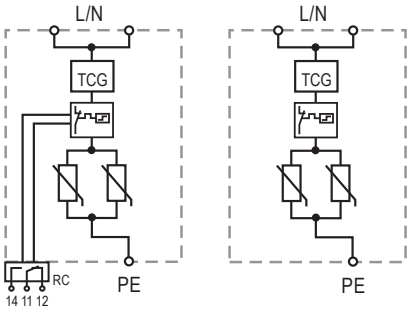
Technical Data

SafeBloc B(R) 12.5/xxx (1+0) WT TCG		750
Electrical		
Nominal AC Voltage (50/60Hz)	U_o	600V
Maximum Continuous Operating Voltage (AC)	U_c	750V
Nominal Discharge Current (8/20µs)	I_n	12.5kA
Maximum Discharge Current (8/20µs)	I_{max}	40kA
Impulse Discharge Current (10/350µs)	I_{imp}	12.5kA
Specific Energy	W/R	39kJ/Ω
Charge	Q	6.25As
Voltage Protection Level	U_p	< 2.6kV
Response Time	t_A	< 25ns
Back-Up Fuse (if mains > 250A)		250A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50kA
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}	3.0Nm
Conductor Cross Section (max)		35mm² (solid) / 25mm² (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)		1.5mm²
RC Terminal Screw Torque	M_{max}	0.25Nm
Order Information		
Order Code		**750**
SAFEBLOC B 12.5/xxx WT TCG		54.0590
SAFEBLOC BR 12.5/xxx WT TCG (with remote contacts)		54.0591

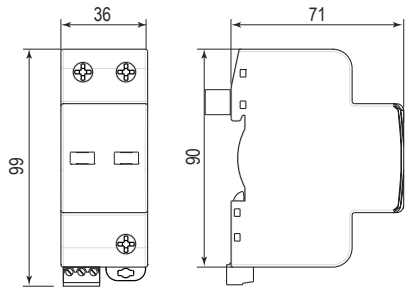
Internal Configuration

Legend

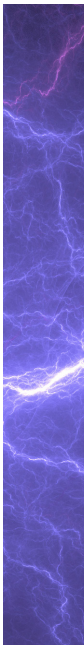
L	*Line*
N	*Neutral*
PE	*Protective Earth*
RC	*Remote Contacts Optional*
TCG	*Thermal Control Function with No Leakage*



Dimensions & Packaging [mm]



Dimensions & Packaging	
SafeBloc B 12.5/xxx (1+0) WT TCG	**750**
Single Unit Weight	435 g
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (H × W × L)	109 × 77 × 42 mm
Minimum Order Quantity	7 Units
SafeBloc BR 12.5/xxx (1+0) WT TCG	**750**
Single Unit Weight	440 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 58.

Compact Single Pole SPD for Wind Turbine Systems **25 kA Series**

SafeBloc B(R) 25 (1+0) WT TCG

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} = 25 kA (10/350 µs)
I_n = 25 kA (8/20 µs)
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

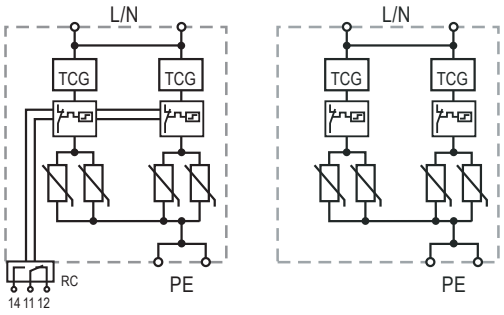
Technical Data

SafeBloc B(R) 25/xxx (1+0) WT TCG		750
Electrical		
Nominal AC Voltage (50/60 Hz)	U_o	600 V
Maximum Continuous Operating Voltage (AC)	U_c	750 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA
Maximum Discharge Current (8/20 µs)	I_{max}	80 kA
Impulse Discharge Current (10/350 µs)	I_{imp}	25 kA
Specific Energy	W/R	156 kJ/Ω
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	1000 V
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 mm² (solid) / 25 mm² (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 mm²
RC Terminal Screw Torque	M_{max}	0.25 Nm
Order Information		
Order Code		**750**
SAFEBLOC B 25/xxx (1+0) WT TCG		54.0594
SAFEBLOC BR 25/xxx (1+0) WT TCG (with remote contacts)		54.0595

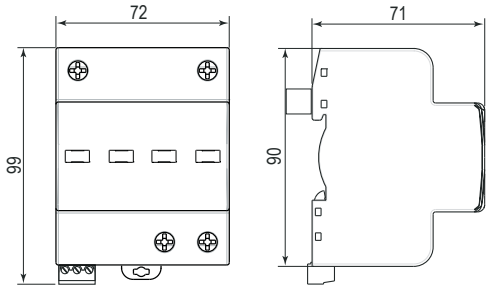
Internal Configuration

Legend

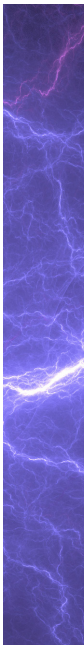
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional
TCG Thermal Control Function with No Leakage



Dimensions & Packaging [mm]



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



Applicable connection configurations can be found on page 58.

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

PV SafeBloc B(R) 12.5 TCG

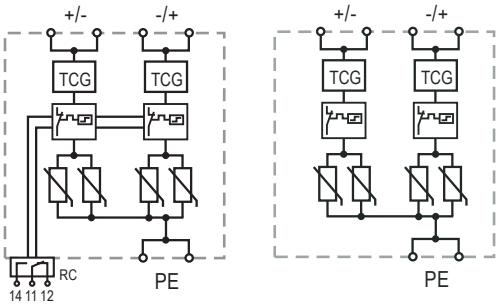
Type 1•Type 2

Location of Use: Photovoltaic Systems - DC Side
Mode of Protection: (+)-PE, (-)-PE, (+)-(-)
Surge Ratings: I_{imp} = 12.5kA (10/350µs)
I_n = 12.5kA (8/20µs)
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		$U_{oc\ STC}$	830V
Maximum Continuous Operating Voltage (DC)		U_{CPV}	1000V
Nominal Discharge Current (8/20µs)		I_n	12.5kA
Maximum Discharge Current (8/20µs)		I_{max}	40kA
Impulse Discharge Current (10/350µs)		I_{imp}	12.5kA
Specific Energy		W/R	39kJ/Ω
Charge		Q	6.25As
Total Discharge Current	(8/20µs)	I_{total}	40kA
	(10/350µs)	I_{total}	12.5kA
Voltage Protection Level	(+)-(-)	U_p	< 5.2kV
	(+)/(-)-PE	U_p	< 2.6kV
Short Circuit Current Rating		I_{SCPV}	1000A
Response Time		t_A	< 25ns
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)			35mm² (solid) / 25mm² (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)			1.5mm²
RC Terminal Screw Torque		M_{max}	0.25Nm
Order Information			
Order Code			**1000**
PV SAFEBLOC B 12.5/xxxx TCG			54.0578
PV SAFEBLOC BR 12.5/xxxx TCG (with remote contacts)			54.0579

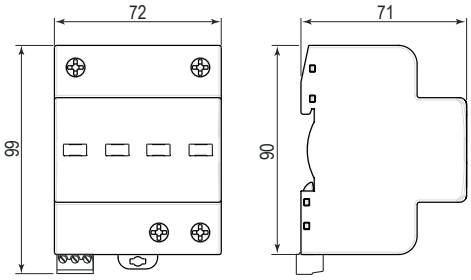
Internal Configuration



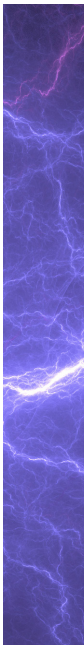
Legend

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

Dimensions & Packaging [mm]



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



Applicable connection configurations can be found on page 58.

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

PV SafeBloc B(R) 12.5 Y TCG

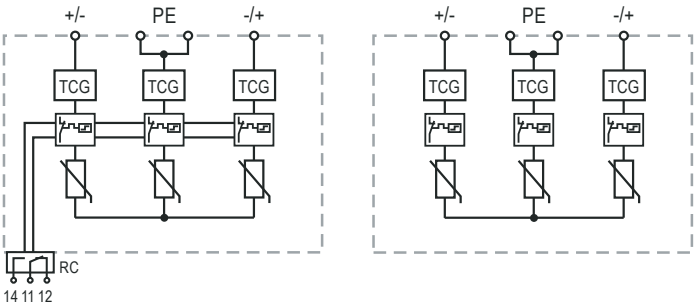
Type 1 • Type 2

Location of Use: Photovoltaic Systems - DC Side
Mode of Protection: (+)-PE, (-)-PE, (+)-(-)
Surge Ratings: I_{imp} = 12.5kA (10/350µs)
I_n = 12.5kA (8/20µs)
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		$U_{oc\ STC}$	830V
Maximum Continuous Operating Voltage (DC)		U_{CPV}	1000V
Nominal Discharge Current (8/20µs)		I_n	12.5kA
Maximum Discharge Current (8/20µs)		I_{max}	40kA
Impulse Discharge Current (10/350µs)		I_{imp}	12.5kA
Specific Energy		W/R	39kJ/Ω
Charge		Q	6.25As
Total Discharge Current	(8/20µs)	I_{total}	40kA
	(10/350µs)	I_{total}	12.5kA
Voltage Protection Level	(+)-(-)	U_p	< 4.6kV
	(+)/(-)-PE	U_p	< 4.6kV
Short Circuit Current Rating		I_{SCPV}	1000A
Response Time		t_A	< 25ns
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)			35mm² (solid) / 25mm² (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)			1.5mm²
RC Terminal Screw Torque		M_{max}	0.25Nm
Order Information			
Order Code			**1000**
PV SAFEBLOC B 12.5/xxxx Y TCG			54.0582
PV SAFEBLOC BR 12.5/xxxx Y TCG (with remote contacts)			54.0583

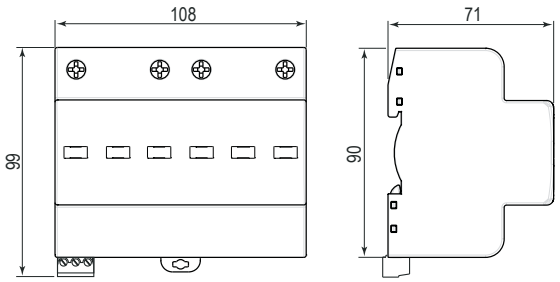
Internal Configuration



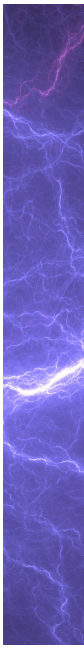
Legend

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

Dimensions & Packaging [mm]

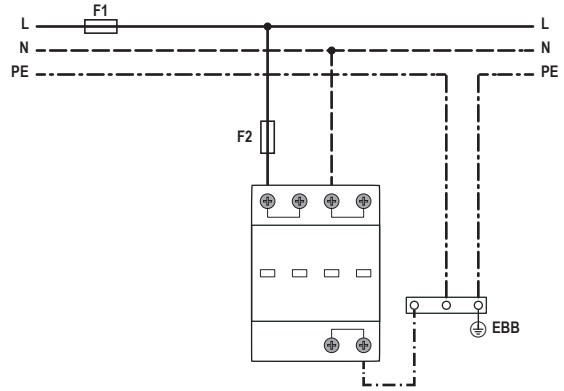


Dimensions & Packaging	
PV SafeBloc B 12.5/xxxx Y TCG	**1000**
Single Unit Weight	710 g
Single Unit DIN 43880 Dimension	6 TE
Packaging Dimensions (H × W × L)	109 × 77 × 114 mm
Minimum Order Quantity	2 Units
PV SafeBloc BR 12.5/xxxx Y TCG	**1000**
Single Unit Weight	720 g
Single Unit DIN 43880 Dimension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

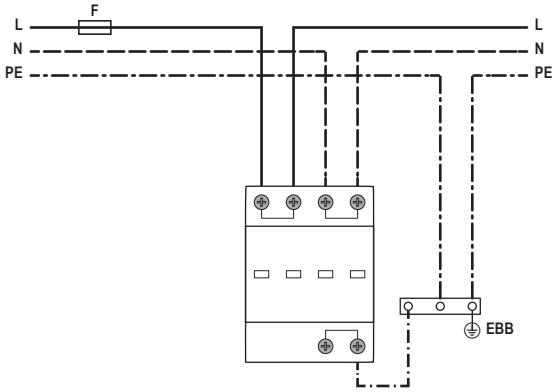


Applicable connection configurations can be found on page 58.

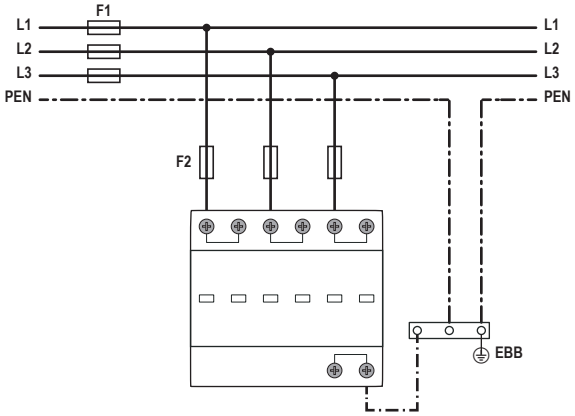
TN-S (Single-phase, 2+0)
T Connection



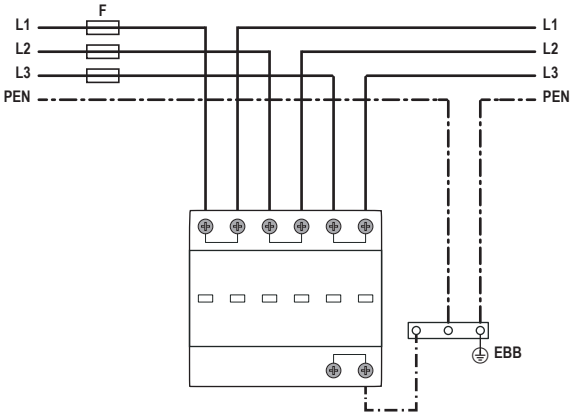
TN-S (Three-phase, 2+0)
V Connection



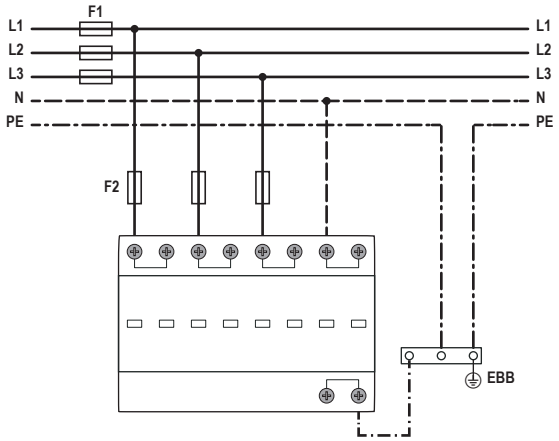
TN-C (Three-phase, 3+0)
T Connection



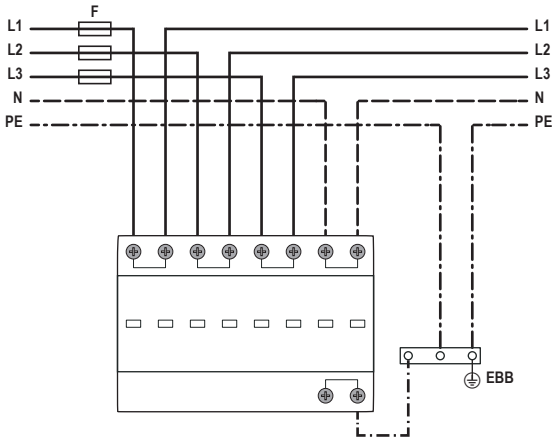
TN-C (Three-phase, 3+0)
V Connection



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



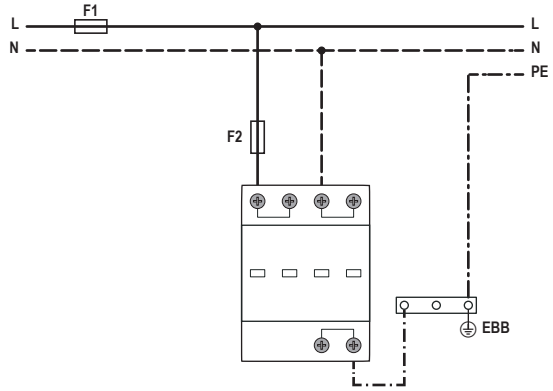
TN-S (Three-phase, 4+0)
V Connection



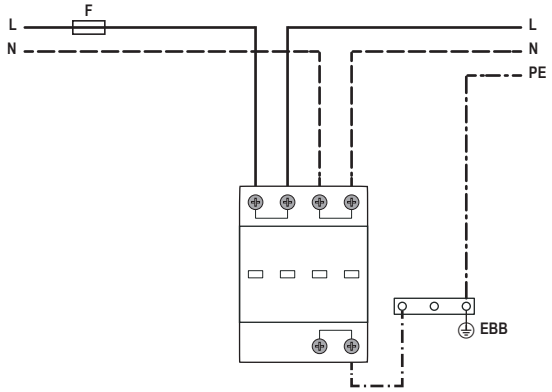
Back-up Fuse

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

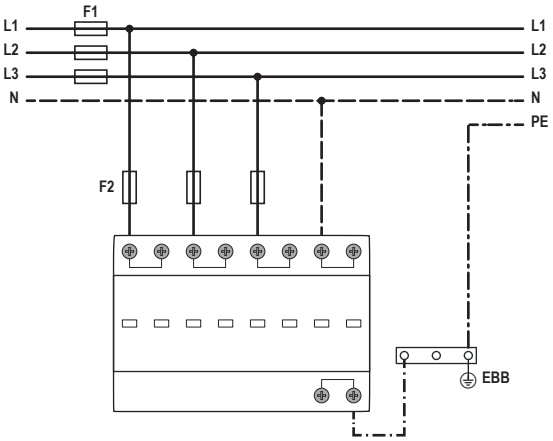
TT (Single-phase, 1+1)
T Connection



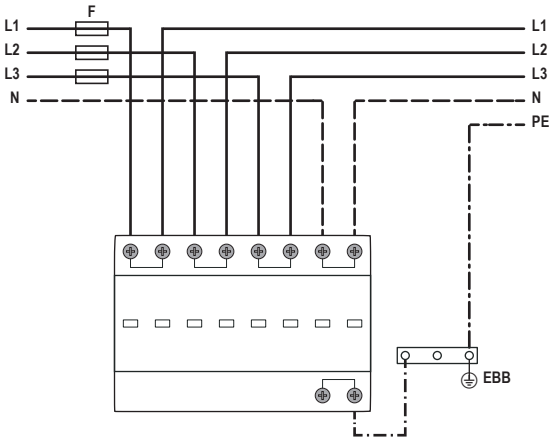
TT (Single-phase, 1+1)
V Connection

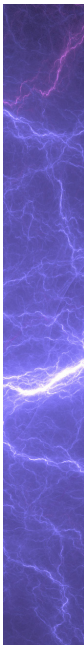


TT (Three-phase, 3+1)
T Connection



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

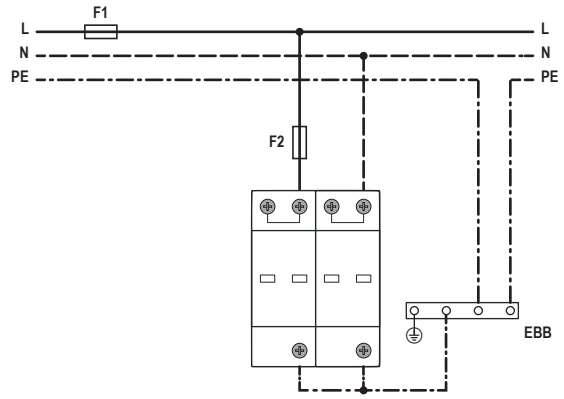




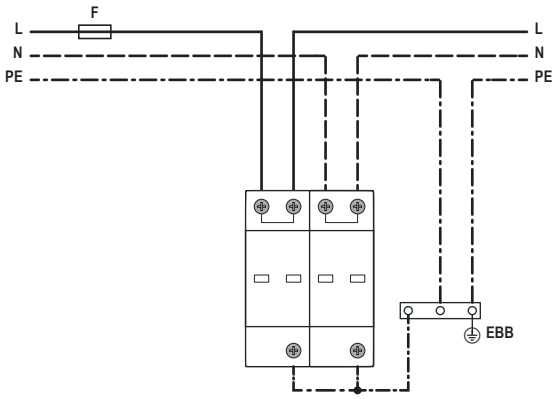
Back-up Fuse

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

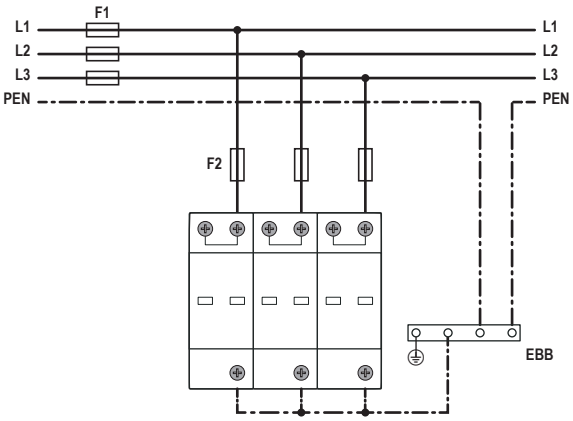
TN-S (Single-phase, 2+0)
T Connection



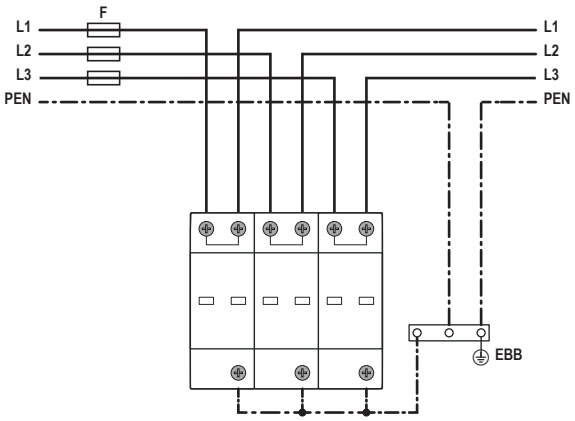
TN-S (Three-phase, 2+0)
V Connection



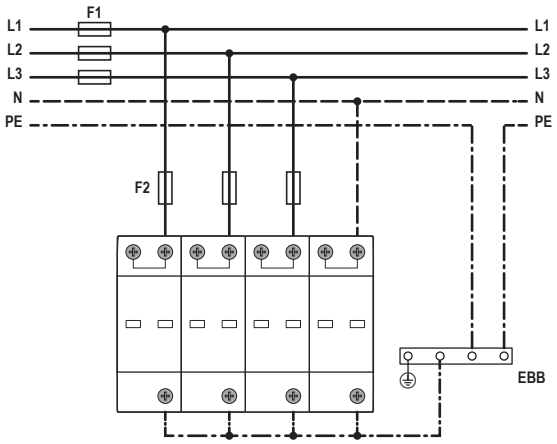
TN-C (Three-phase, 3+0)
T Connection



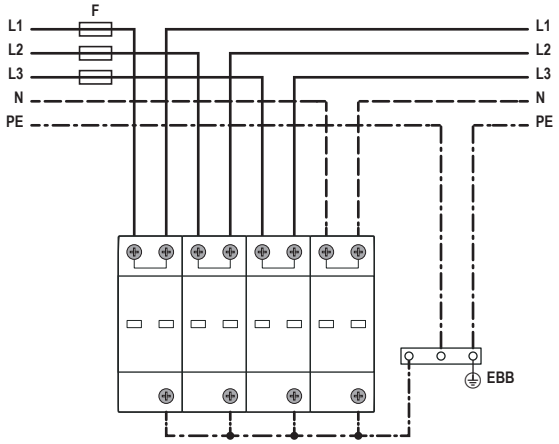
TN-C (Three-phase, 3+0)
V Connection



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



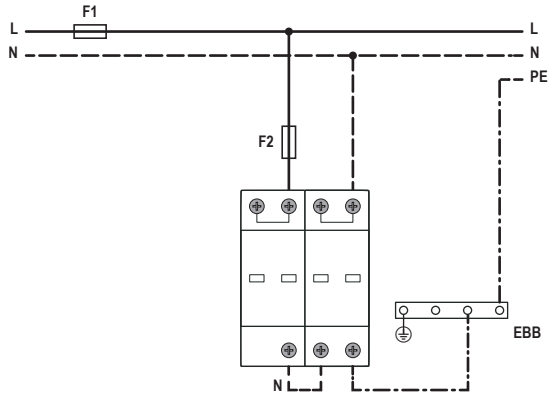
TT (Three-phase, 4+0)
V Connection



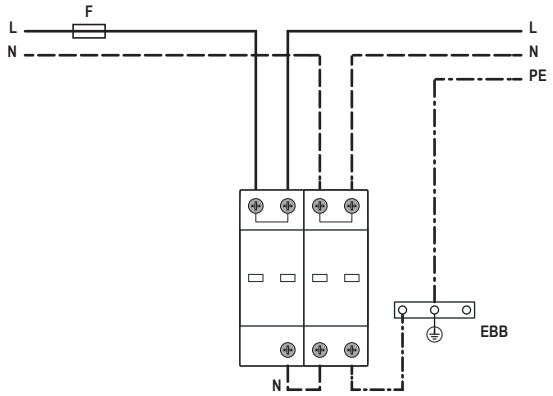
Back-up Fuse

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

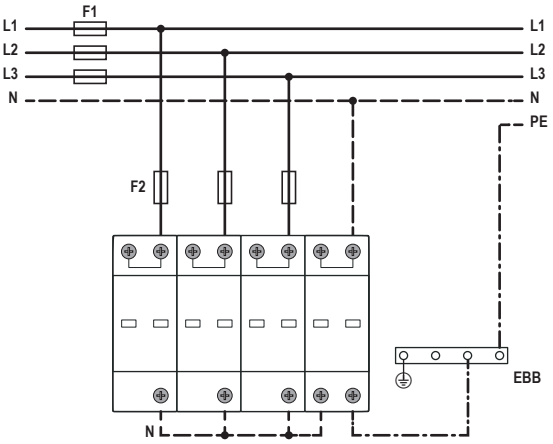
TT (Single-phase, 1+1)
T Connection



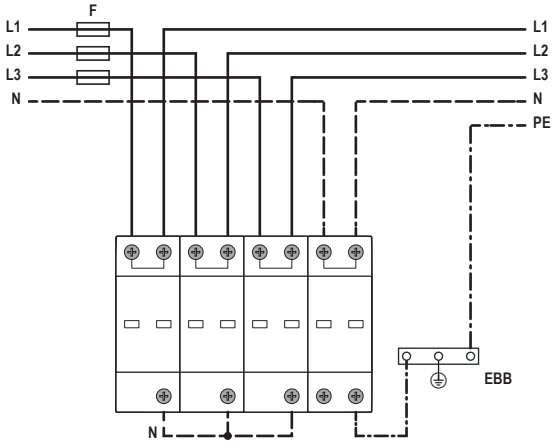
TT (Single-phase, 1+1)
V Connection

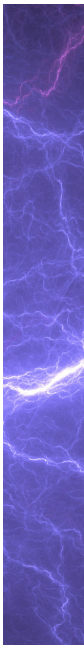


TT (Three-phase, 3+1)
T Connection



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





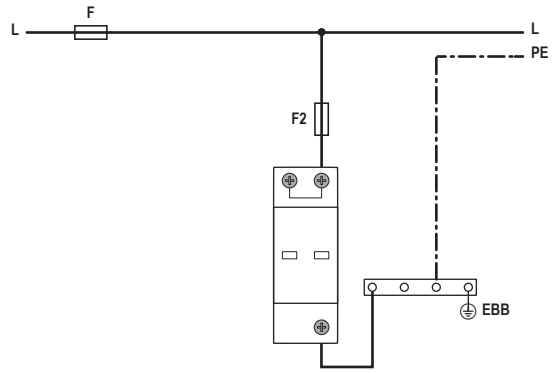
Back-up Fuse

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

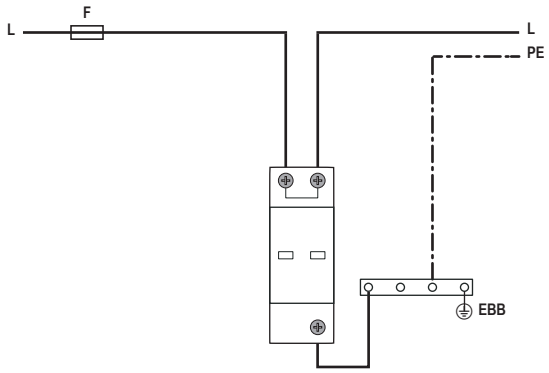
WT Compact Single Pole SPD Connection Configurations
SafeBloc B(R) WT TCG Series

SafeBloc B(R) 12.5 WT TCG

T Connection

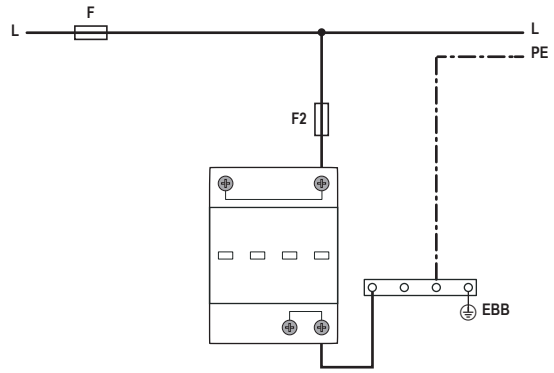


V Connection

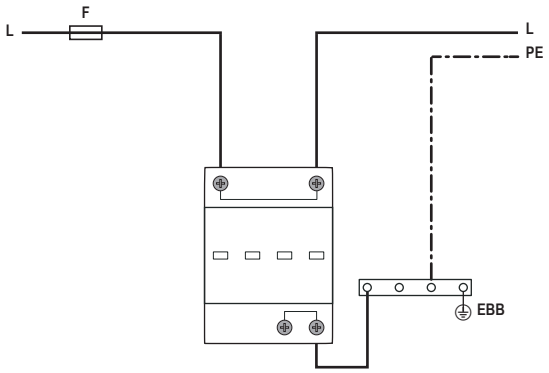


SafeBloc B(R) 25 WT TCG

T Connection

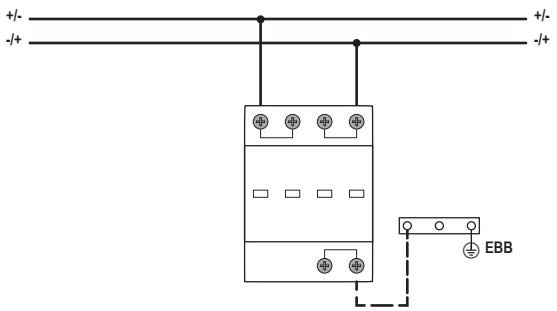


V Connection

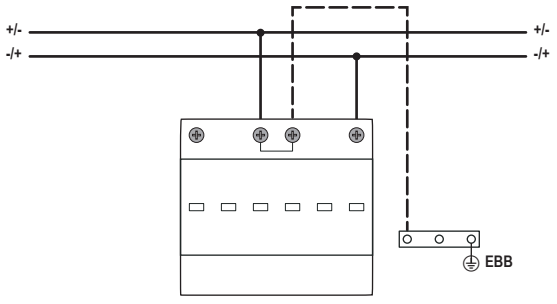


DC Compact Multi-pole SPD Connection Configurations
PV SafeBloc B(R) & PV SafeBloc B(R) Y TCG Series

PV SafeBloc B(R) 12.5 TCG

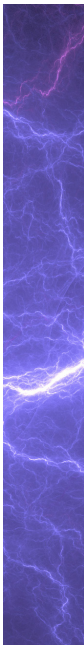


PV SafeBloc B(R) 12.5 Y TCG



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_A-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.

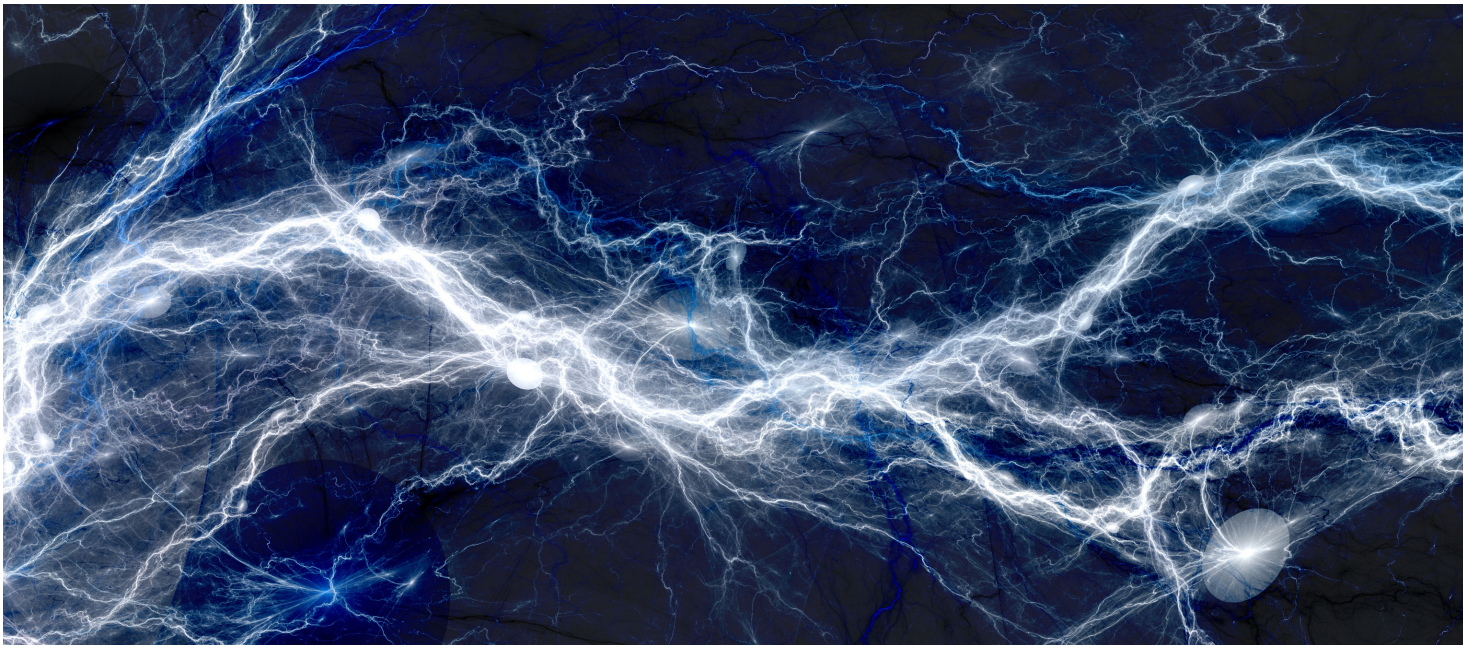
ProBloc B & BR 12.5 (1+0)
ProBloc B & BR 25 (2+0)
ProBloc B & BR 37.5 (3+0)
ProBloc B & BR 50 (4+0)

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



RoHS COMPLIANT CE

Compact Single Pole SPD

ProBloc B(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} = 12.5kA (10/350µs)
I_n = 20kA (8/20µs)
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

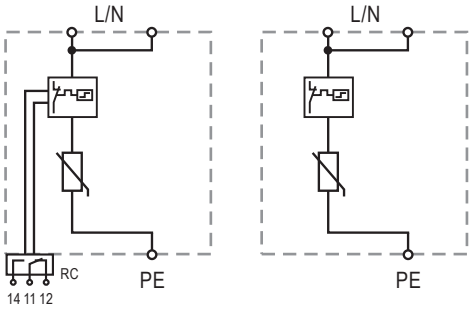
Technical Data

ProBloc B(R) 12.5/xxx (1+0)		150	275	320	440
Electrical					
Nominal AC Voltage (50/60Hz)	U_o	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V	440V
Nominal Discharge Current (8/20µs)	I_n		20kA		
Maximum Discharge Current (8/20µs)	I_{max}		50kA		
Impulse Discharge Current (10/350µs)	I_{imp}		12.5kA		
Specific Energy	W/R		39kJ/Ω		
Charge	Q		6.25As		
Voltage Protection Level	U_p	< 1.0kV	< 1.5kV	< 1.5kV	< 1.9kV
Response Time	t_A		< 25ns		
Back-Up Fuse (if mains > 250A)			250A gG		
Short-Circuit Current Rating (AC)	I_{SCCR}		50kA		
TOV withstand 5s	U_T	174V	335V	335V	585V
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)			35mm² (solid) / 25mm² (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)			1.5mm²		
RC Terminal Screw Torque	M_{max}		0.25Nm		
Order Information					
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

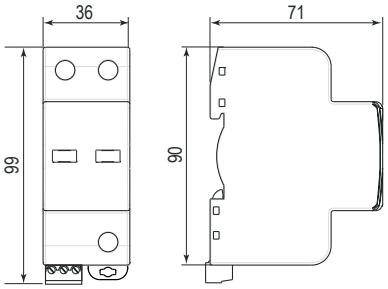
Internal Configuration

Legend

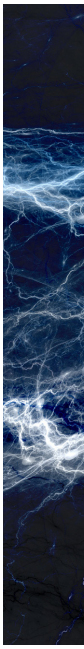
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging [mm]



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

ProBloc B(R) 25 (2+0)

12.5kA Series

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} = 12.5kA (10/350µs)
I_n = 20kA (8/20µs)
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

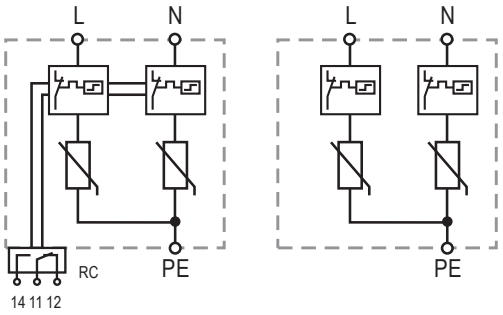
Technical Data

ProBloc B(R) 25/xxx (2+0)		150	275	320	440
Electrical					
Nominal AC Voltage (50/60Hz)	U_o	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V	440V
Nominal Discharge Current (8/20µs)	I_n		20kA		
Maximum Discharge Current (8/20µs)	I_{max}		50kA		
Impulse Discharge Current (10/350µs)	I_{imp}		12.5kA		
Total Discharge Current (10/350µs)	I_{total}		25kA		
Specific Energy	W/R		39kJ/Ω		
Charge	Q		6.25As		
Voltage Protection Level	U_p	< 1.0kV	< 1.5kV	< 1.5kV	< 1.9kV
Response Time	t_A		< 25ns		
Back-Up Fuse (if mains > 250A)			250A gG		
Short-Circuit Current Rating (AC)	I_{SCCR}		50kA		
TOV withstand 5s	U_T	174V	335V	335V	585V
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)			35mm² (solid) / 25mm² (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)			1.5mm²		
RC Terminal Screw Torque	M_{max}		0.25Nm		
Order Information					
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

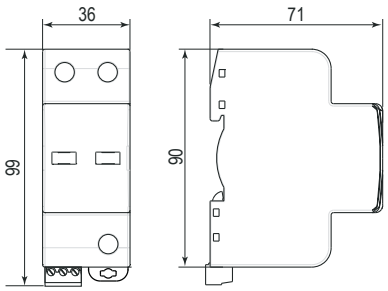
Internal Configuration

Legend

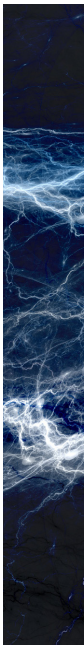
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging [mm]



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

12.5kA Series

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} = 12.5kA (10/350µs) I_n = 20kA (8/20µs)
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

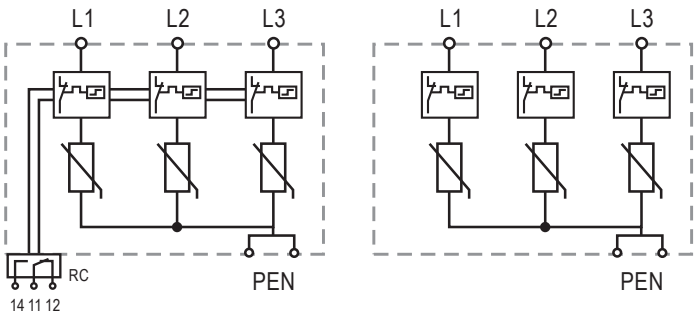
Technical Data

ProBloc B(R) 37.5/xxx (3+0)		150	275	320	440
Electrical					
Nominal AC Voltage (50/60Hz)	U_o	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V	440V
Nominal Discharge Current (8/20µs)	I_n	20kA			
Maximum Discharge Current (8/20µs)	I_{max}	50kA			
Impulse Discharge Current (10/350µs)	I_{imp}	12.5kA			
Total Discharge Current (10/350µs)	I_{total}	37.5kA			
Specific Energy	W/R	39kJ/Ω			
Charge	Q	6.25As			
Voltage Protection Level	U_p	< 1.0kV	< 1.5kV	< 1.5kV	< 1.9kV
Response Time	t_A	< 25ns			
Back-Up Fuse (if mains > 250A)		250A gG			
Short-Circuit Current Rating (AC)	I_{SCCR}	50kA			
TOV withstand 5s	U_T	174V	335V	335V	585V
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)		35mm² (solid) / 25mm² (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)		1.5mm²			
RC Terminal Screw Torque	M_{max}	0.25Nm			
Order Information					
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

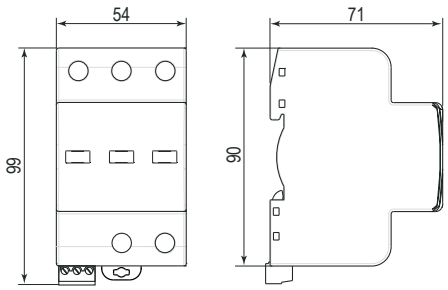
Internal Configuration

Legend

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



Dimensions & Packaging [mm]



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

12.5kA Series

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} = 12.5kA (10/350µs)
I_n = 20kA (8/20µs)
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

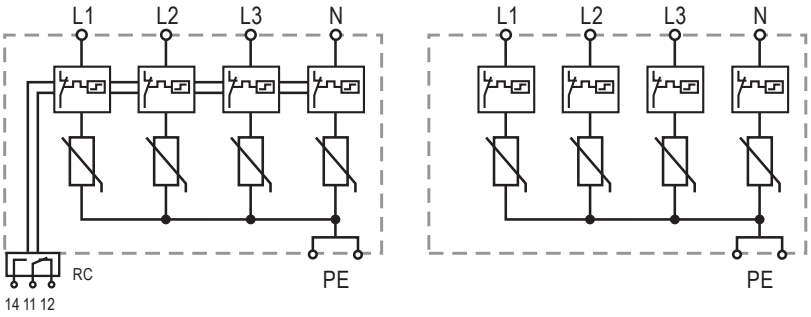
Technical Data

ProBloc B(R) 50/xxx (4+0)		150	275	320	440
Electrical					
Nominal AC Voltage (50/60Hz)	U_o	120V	230V	230V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V	440V
Nominal Discharge Current (8/20µs)	I_n		20kA		
Maximum Discharge Current (8/20µs)	I_{max}		50kA		
Impulse Discharge Current (10/350µs)	I_{imp}		12.5kA		
Total Discharge Current (10/350µs)	I_{total}		50kA		
Specific Energy	W/R		39kJ/Ω		
Charge	Q		6.25As		
Voltage Protection Level	U_p	< 1.0kV	< 1.5kV	< 1.5kV	< 1.9kV
Response Time	t_A		< 25ns		
Back-Up Fuse (if mains > 250A)			250A gG		
Short-Circuit Current Rating (AC)	I_{SCCR}		50kA		
TOV withstand 5s	U_T	174V	335V	335V	585V
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)			35mm² (solid) / 25mm² (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)			1.5mm²		
RC Terminal Screw Torque	M_{max}		0.25Nm		
Order Information					
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

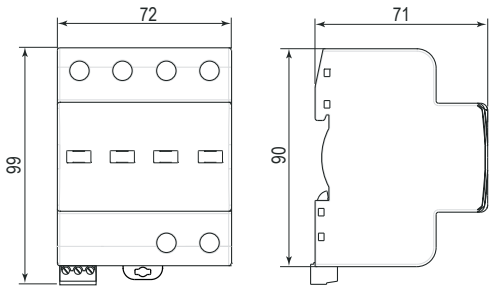
Internal Configuration

Legend

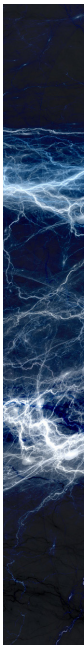
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging [mm]



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

12.5kA Series

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} = 12.5kA / 50kA (10/350µs)
I_n = 20kA / 50kA (8/20µs)
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

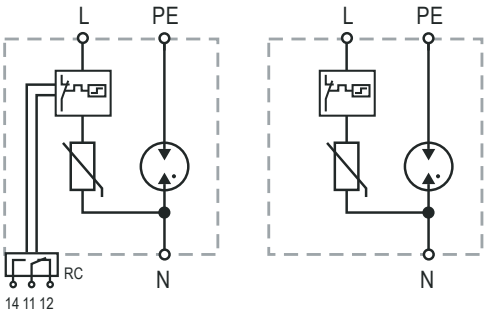
Technical Data

ProBloc B(R) 25/xxx (1+1)			150	275	320	440
Electrical						
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 (8/20µs)	(L-N)/(N-PE)	I_n		20kA/50kA		
Maximum Discharge Current (8/20µs)	(L-N)/(N-PE)	I_{max}		50kA/100kA		
Impulse Discharge Current (10/350µs)	(L-N)/(N-PE)	I_{imp}		12.5kA/50kA		
Total Discharge Current (10/350µs)		I_{total}		25kA		
Specific Energy	(L-N)/(N-PE)	W/R		39kJ/Ω/625kJ/Ω		
Charge	(L-N)/(N-PE)	Q		6.25As/25As		
Voltage Protection Level	(L-N)/(N-PE)	U_p	< 1.0kV/< 1.5kV	< 1.5kV/< 1.5kV	< 1.5kV/< 1.5kV	< 1.9kV/< 1.5kV
Follow Current Interrupt Rating	((N-PE)	I_{fi}		100A_{RMS}		
Response Time	(L-N)/(N-PE)	t_A		< 25ns/< 100ns		
Back-Up Fuse (if mains > 250A)				250A gG		
Short-Circuit Current Rating (AC)		I_{SCCR}		50kA		
TOV withstand 5s	(L-N)	U_T	174V	335V	335V	585V
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)				35mm² (solid) / 25mm² (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)				1.5mm²		
RC Terminal Screw Torque		M_{max}		0.25Nm		
Order Information						
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

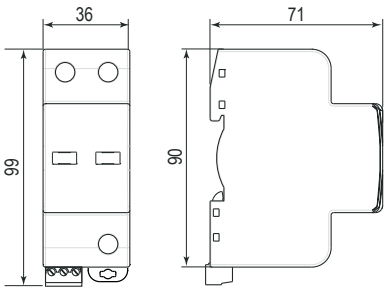
Internal Configuration

Legend

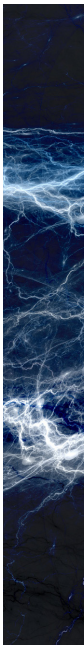
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging				
ProBloc B 25/xxx (1+1)	**150**	**275**	**320**	**440**
Single Unit Weight	110 g	150 g	150 g	300 g
Single Unit DIN 43880 Dimension	2 TE			
Packaging Dimensions (H × W × L)	109 × 77 × 42 mm			
Minimum Order Quantity	7 Units			
ProBloc BR 25/xxx (1+1)	**150**	**275**	**320**	**440**
Single Unit Weight	115 g	155 g	155 g	305 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 90.

Compact Multi-pole SPD

ProBloc B(R) 50 (3+1)

12.5kA Series

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} = 12.5kA / 50kA (10/350µs)
I_n = 20kA / 50kA (8/20µs)
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

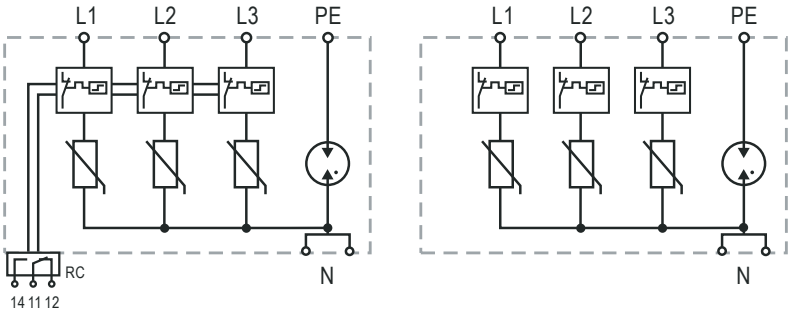
Technical Data

ProBloc B(R) 50/xxx (3+1)			275	320	440
Electrical					
Nominal AC Voltage (50/60Hz)		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 (8/20µs)	(L-N)/(N-PE)	I_n		20kA/50kA	
Maximum Discharge Current (8/20µs)	(L-N)/(N-PE)	I_{max}		50kA/100kA	
Impulse Discharge Current (10/350µs)	(L-N)/(N-PE)	I_{imp}		12.5kA/50kA	
Total Discharge Current (10/350µs)		I_{total}		50kA	
Specific Energy	(L-N)/(N-PE)	W/R		39kJ/Ω/625kJ/Ω	
Charge	(L-N)/(N-PE)	Q		6.25As/25As	
Voltage Protection Level	(L-N)/(N-PE)	U_p	< 1.5kV/< 1.5kV	< 1.5kV/< 1.5kV	< 1.9kV/< 1.5kV
Follow Current Interrupt Rating	(N-PE)	I_{fi}		100A_{RMS}	
Response Time	(L-N)/(N-PE)	t_A		< 25ns/< 100ns	
Back-Up Fuse (if mains > 250A)				250A gG	
Short-Circuit Current Rating (AC)		I_{SCCR}		50kA	
TOV withstand 5s	(L-N)	U_T	335V	335V	585V
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)				35mm² (solid) / 25mm² (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)				1.5mm²	
RC Terminal Screw Torque		M_{max}		0.25Nm	
Order Information					
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

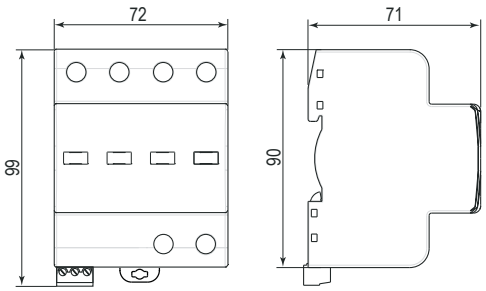
Internal Configuration

Legend

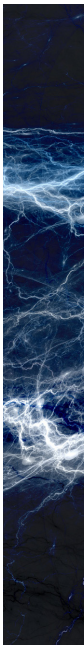
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging [mm]



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

25 kA Series

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, L-N, N-PE, L-PEN
Surge Ratings: I_{imp} = 25 kA (10/350 µs)
I_n = 25 kA (8/20 µs)
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

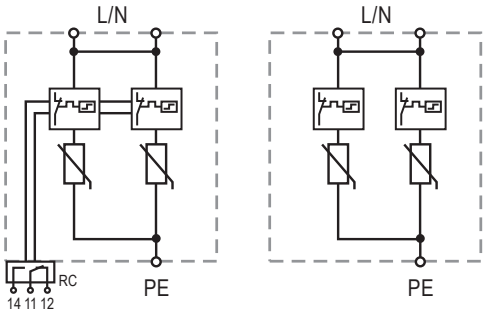
Technical Data

ProBloc B(R) 25/xxx (1+0)		150	275	320	440
Electrical					
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V	320 V	440 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA			
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA			
Impulse Discharge Current (10/350 µs)	I_{imp}	25 kA			
Specific Energy	W/R	156 kJ/Ω			
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	174 V	335 V	335 V	585 V
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 mm² (solid) / 25 mm² (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 mm²			
RC Terminal Screw Torque	M_{max}	0.25 Nm			
Order Information					
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

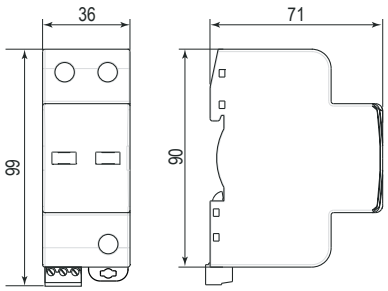
Internal Configuration

Legend

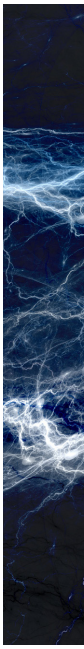
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging [mm]



Dimensions & Packaging				
ProBloc B 25/xxx (1+0)	**150**	**275**	**320**	**440V**
Single Unit Weight	245 g	295 g	295 g	345 g
Single Unit DIN 43880 Dimension	2 TE			
Packaging Dimensions (H × W × L)	109 × 77 × 42 mm			
Minimum Order Quantity	7 Units			
ProBloc BR 25/xxx (1+0)	**150**	**275**	**320**	**440V**
Single Unit Weight	250 g	300 g	300 g	350 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 93.

Compact Multi-pole SPD

ProBloc B(R) 50 (2+0)

25 kA Series

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} = 25 kA (10/350 µs)
I_n = 25 kA (8/20 µs)
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

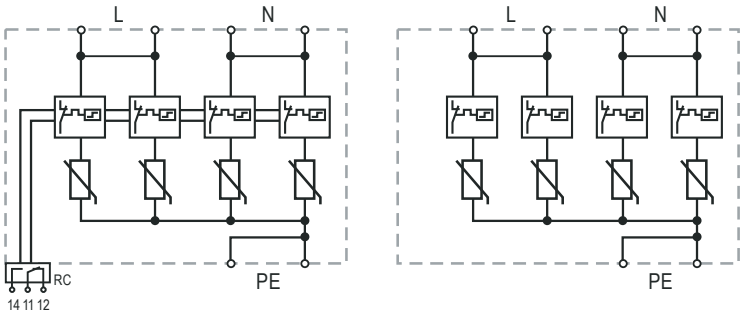
Technical Data

ProBloc B(R) 50/xxx (2+0)		150	275	320	440
Electrical					
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V	320 V	440 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA			
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA			
Impulse Discharge Current (10/350 µs)	I_{imp}	25 kA			
Total Discharge Current (10/350 µs)	I_{total}	50 kA			
Specific Energy	W/R	156 kJ/Ω			
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	174 V	335 V	335 V	585 V
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 mm² (solid) / 25 mm² (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 mm²			
RC Terminal Screw Torque	M_{max}	0.25 Nm			
Order Information					
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

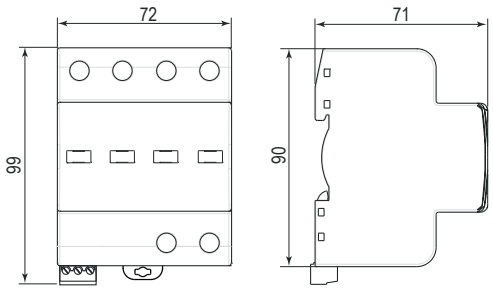
Internal Configuration

Legend

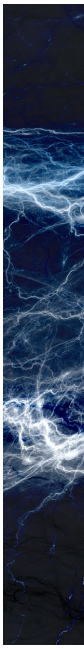
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging [mm]



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

25 kA Series

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} = 25 kA (10/350 µs)
I_n = 25 kA (8/20 µs)
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

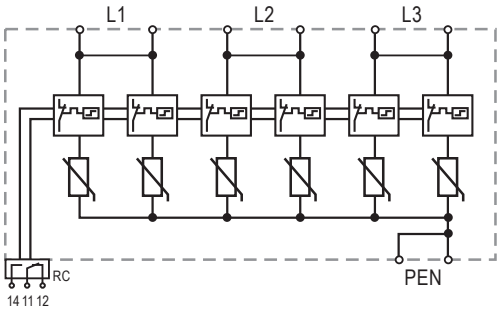
Technical Data

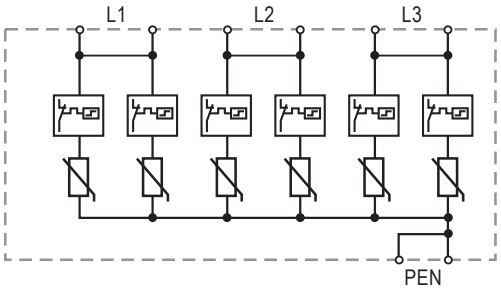
ProBloc B(R) 75/xxx (3+0)		150	275	320	440
Electrical					
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V	320 V	440 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA			
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA			
Impulse Discharge Current (10/350 µs)	I_{imp}	25 kA			
Total Discharge Current (10/350 µs)	I_{total}	75 kA			
Specific Energy	W/R	156 kJ/Ω			
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	174 V	335 V	335 V	585 V
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 mm² (solid) / 25 mm² (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 mm²			
RC Terminal Screw Torque	M_{max}	0.25 Nm			
Order Information					
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

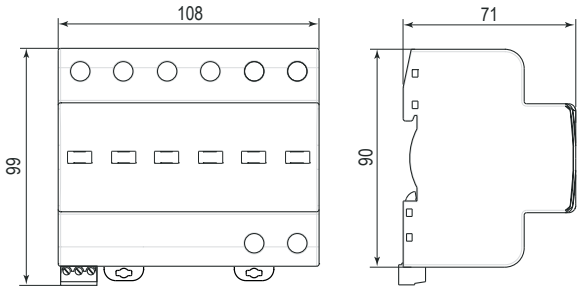
Legend

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





Dimensions & Packaging [mm]



Dimensions & Packaging				
ProBloc B 75/xxx (3+0)	**150**	**275**	**320**	**440**
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			
ProBloc BR 75/xxx (3+0)	**150**	**275**	**320**	**440**
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)

25 kA Series

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} = 25 kA (10/350 µs)
I_n = 25 kA (8/20 µs)
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

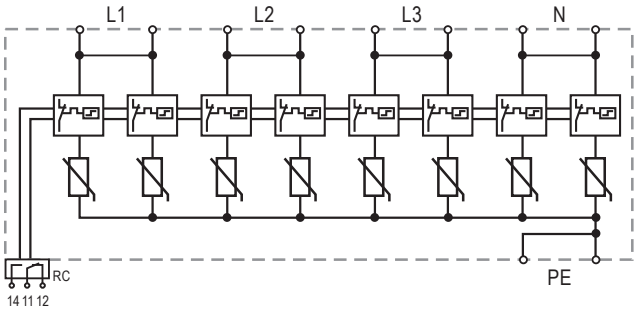
Technical Data

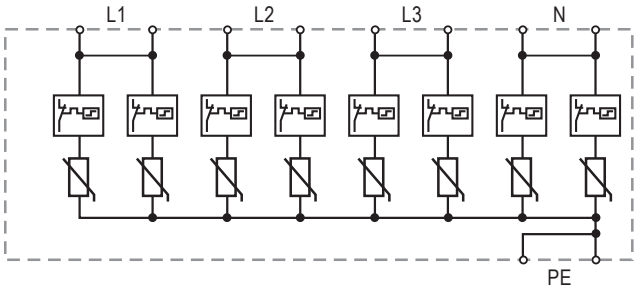
ProBloc B(R) 100/xxx (4+0)		150	275	320	440
Electrical					
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V	320 V	440 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA			
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA			
Impulse Discharge Current (10/350 µs)	I_{imp}	25 kA			
Total Discharge Current (10/350 µs)	I_{total}	100 kA			
Specific Energy	W/R	156 kJ/Ω			
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	174 V	335 V	335 V	585 V
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 mm² (solid) / 25 mm² (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 mm²			
RC Terminal Screw Torque	M_{max}	0.25 Nm			
Order Information					
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

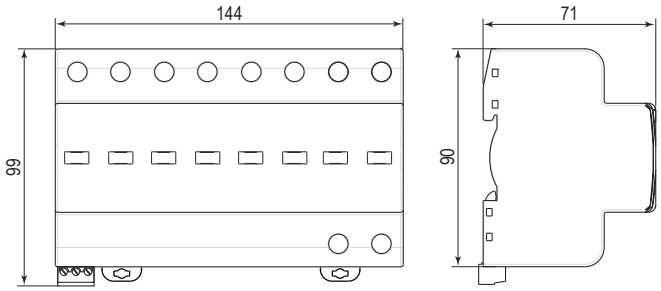
Legend

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 Multi-pole SPD

ProBloc B(R) 50 (1+1)

25 kA Series

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} = 25 kA / 50 kA (10/350 µs)
I_n = 25 kA / 50 kA (8/20 µs)
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

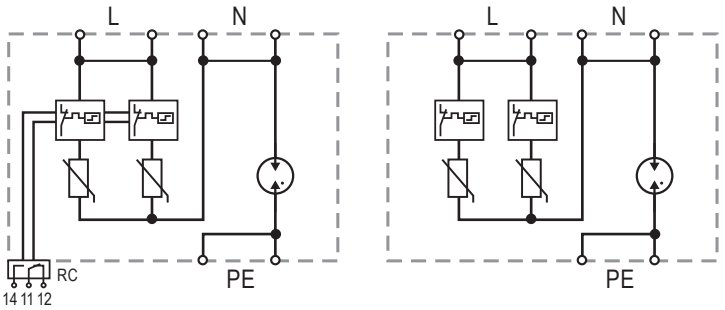
Technical Data

ProBloc B(R) 50/xxx (1+1)			150	275	320	440
Electrical						
Nominal AC Voltage (50/60 Hz)		U_o	120 V	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	150 V	275 V	320 V	440 V
	(N-PE)	U_c		255 V		
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n		25 kA / 50 kA		
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}		100 kA / 100 kA		
Impulse Discharge Current (10/350 µs)	(L-N)/(N-PE)	I_{imp}		25 kA / 50 kA		
Total Discharge Current (10/350 µs)		I_{total}		50 kA		
Specific Energy	(L-N)/(N-PE)	W/R		156 kJ/Ω / 625 kJ/Ω		
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	< 1.9 kV / < 1.5 kV
Follow Current Interrupt Rating	(N-PE)	I_{fi}		100 A_{RMS}		
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	174 V	335 V	335 V	585 V
TOV withstand 200ms	(N-PE)	U_T		1200 V / 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 mm² (solid) / 25 mm² (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 mm²		
RC Terminal Screw Torque		M_{max}		0.25 Nm		
Order Information						
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

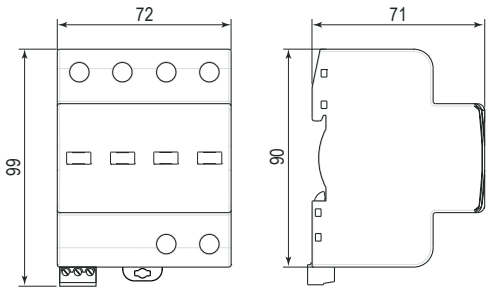
Internal Configuration

Legend

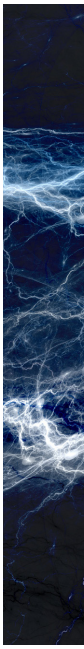
L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging [mm]



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

25 kA Series

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} = 25 kA / 100 kA (10/350 µs)
I_n = 25 kA / 100 kA (8/20 µs)
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

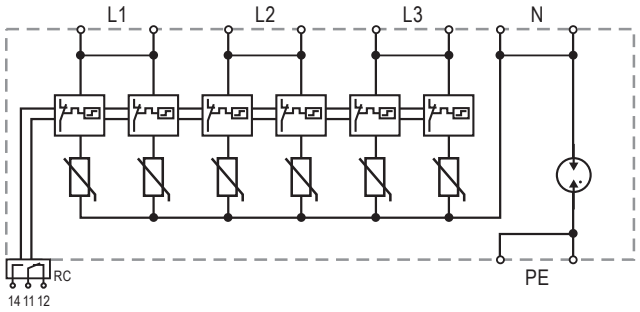
Technical Data

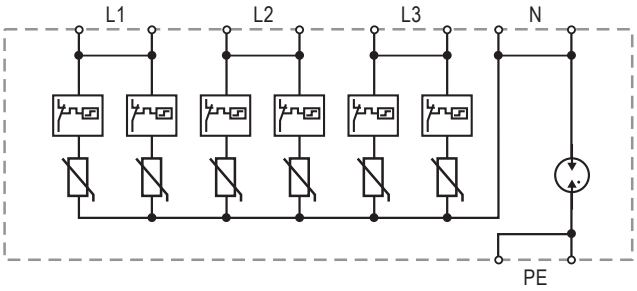
ProBloc B(R) 100/xxx (3+1)			275	320	440
Electrical					
Nominal AC Voltage (50/60 Hz)		U_o	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	275 V	320 V	440 V
	(N-PE)	U_c		255 V	
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n		25 kA / 100 kA	
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}		100 kA / 100 kA	
Impulse Discharge Current (10/350 µs)	(L-N)/(N-PE)	I_{imp}		25 kA / 100 kA	
Total Discharge Current (10/350 µs)		I_{total}		100 kA	
Specific Energy	(L-N)/(N-PE)	W/R		156 kJ/Ω / 2.5 MJ/Ω	
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	< 1.9 kV / < 1.5 kV
Follow Current Interrupt Rating	(N-PE)	I_{fi}		100 A_{RMS}	
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 200 ms	(N-PE)	U_T		1200 V / 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 (max)		M_{max}		3.0 Nm	
Conductor Cross Section (max)				35 mm^2 (solid) / 25 mm^2 (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^2	
RC Terminal Screw Torque		M_{max}		0.25 Nm	
Order Information					
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

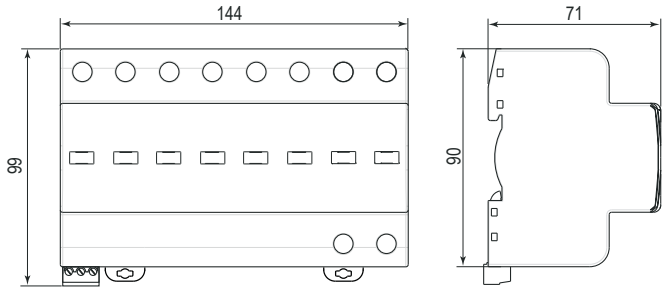
Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional





Dimensions & Packaging [mm]



Dimensions & Packaging			
ProBloc B 100/xxx (3+1)	**275**	**320**	**440**
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	
ProBloc BR 100/xxx (3+1)	**275**	**320**	**440**
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

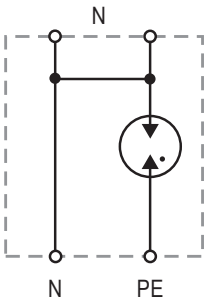
Location of Use: Main Distribution Boards
Network Systems: TT
Mode of Protection: N-PE
Surge Ratings: I_{imp} = 50 kA (10/350 µs)
I_n = 50 kA (8/20 µs)
IEC/EN Category: Class I, II / Type 1, 2
Protective Elements: High Energy GDT
Housing: Compact Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTube B 50/xxx		255
Electrical		
Nominal AC Voltage (50/60 Hz)	U_o	230 V
Maximum Continuous Operating Voltage (AC)	U_c	255 V
Nominal Discharge Current (8/20 µs)	I_n	50 kA
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA
Impulse Discharge Current (10/350 µs)	I_{imp}	50 kA
Specific Energy	W/R	625 kJ/Ω
Charge	Q	25 As
Voltage Protection Level	U_p	< 1.5 kV
Follow Current Interrupt Rating	I_{fi}	100 A_{RMS}
Response Time	t_A	< 100 ns
TOV withstand 200ms	U_T	1200 V / 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 mm² (solid) / 25 mm² (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

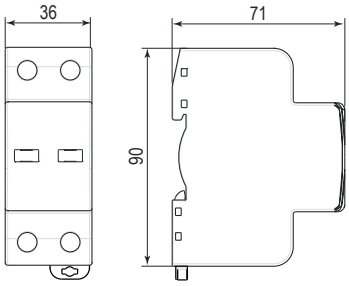
Internal Configuration



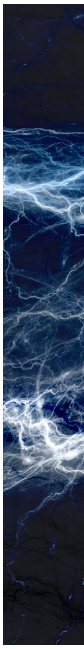
Legend

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 × W × L)	109 × 77 × 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

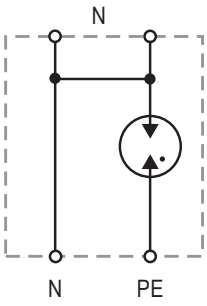
Location of Use: Main Distribution Boards
Network Systems: TT
Mode of Protection: N - PE
Surge Ratings: I_{imp} = 100 kA (10/350 µs)
I_n = 100 kA (8/20 µs)
IEC/EN Category: Class I, II / Type 1, 2
Protective Elements: High Energy GDT
Housing: Compact Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTube B 100/xxx		255
Electrical		
Nominal AC Voltage (50/60 Hz)	U_o	230 V
Maximum Continuous Operating Voltage (AC)	U_c	255 V
Nominal Discharge Current (8/20 µs)	I_n	100 kA
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA
Impulse Discharge Current (10/350 µs)	I_{imp}	100 kA
Specific Energy	W/R	2.5 MJ/Ω
Charge	Q	50 As
Voltage Protection Level	U_p	< 1.5 kV
Follow Current Interrupt Rating	I_{fi}	100 A_{RMS}
Response Time	t_A	< 100 ns
TOV withstand 200 ms	U_T	1200 V / 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^2 (solid) / 25 mm^2 (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

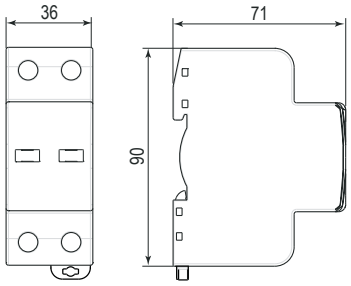
Internal Configuration



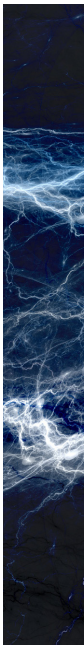
Legend

N Neutral
PE Protective Earth

Dimensions & Packaging [mm]

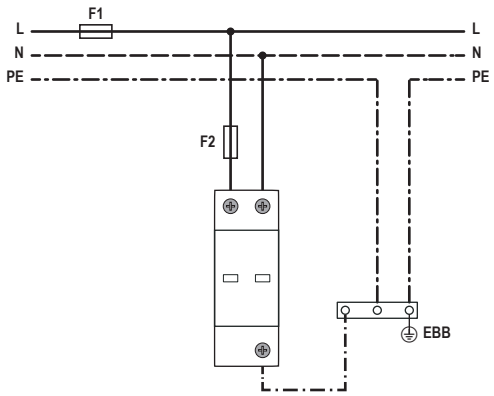


Dimensions & Packaging	
ProTube B 100/xxx	**255**
Single Unit Weight	240 g
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (H × W × L)	109 × 77 × 42 mm
Minimum Order Quantity	7 Units

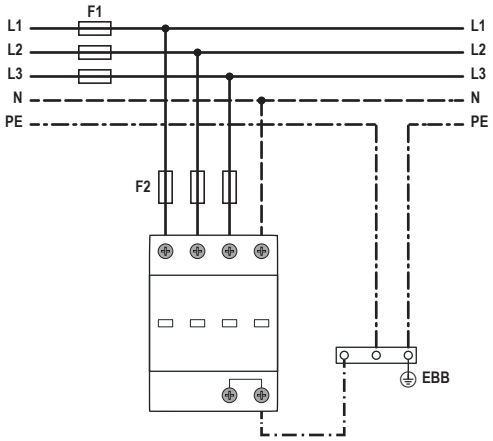


Applicable connection configurations can be found on pages 93-94.

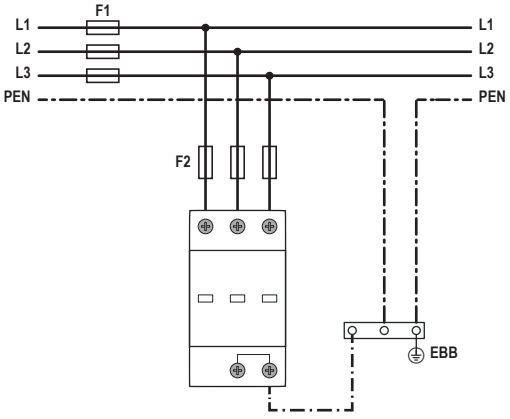
TN-S (Single-phase, 2+0)



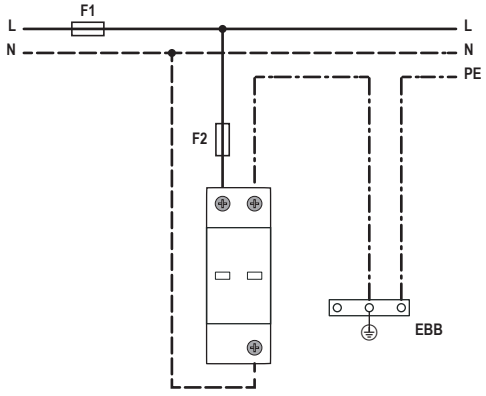
TN-S (Three-phase, 4+0)



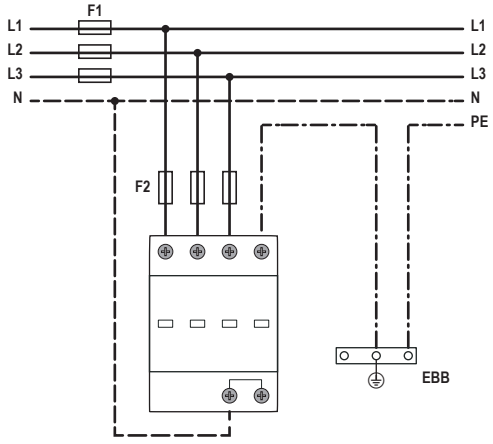
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



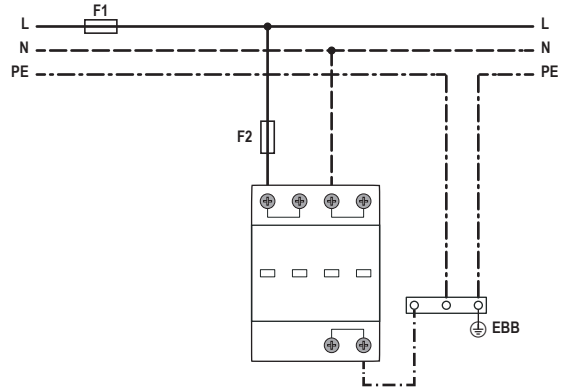
TT (Three-phase, 3+1)



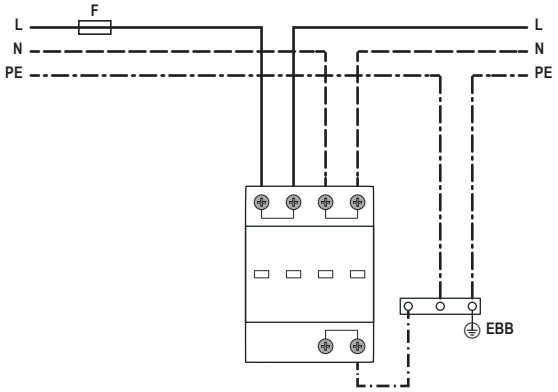
Back-up Fuse

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

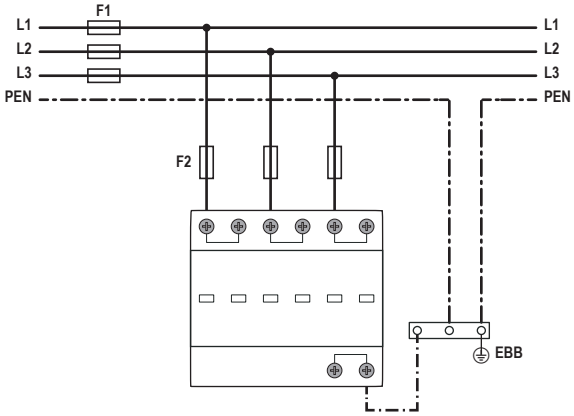
TN-S (Single-phase, 2+0)
T Connection



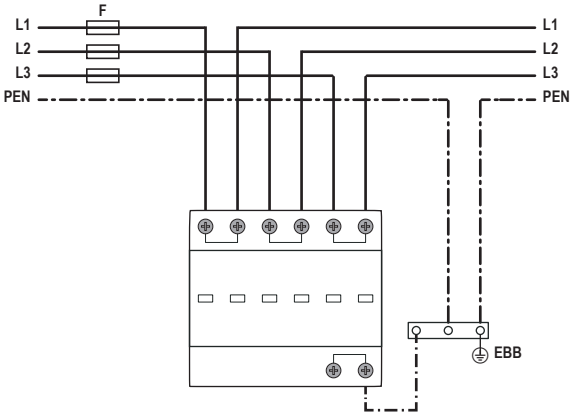
TN-S (Three-phase, 2+0)
V Connection



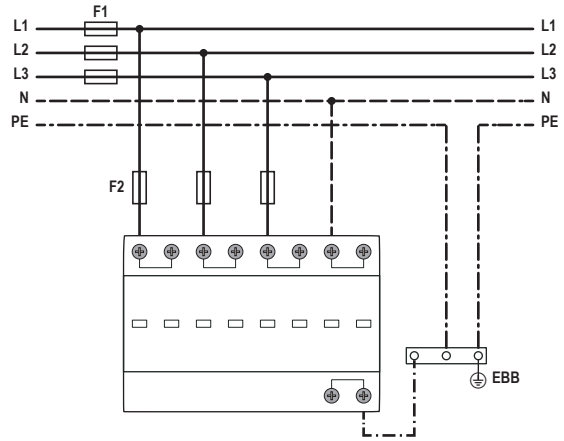
TN-C (Three-phase, 3+0)
T Connection



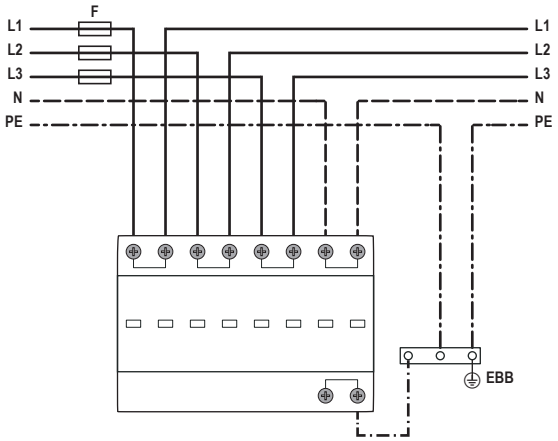
TN-C (Three-phase, 3+0)
V Connection

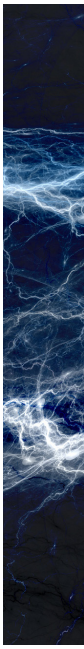


TN-S (Three-phase, 4+0)
T Connection



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

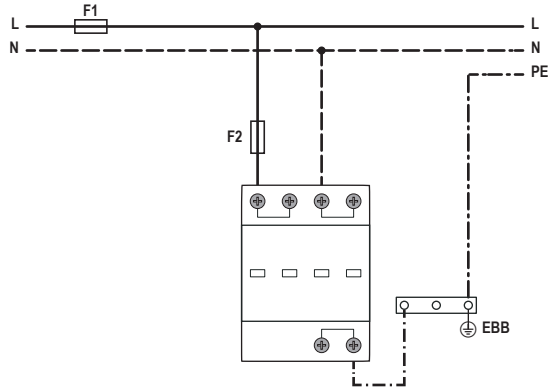




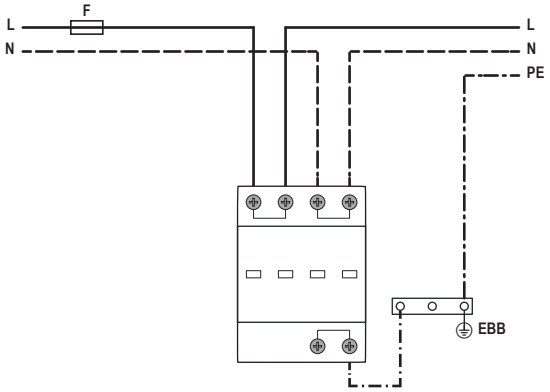
Back-up Fuse

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

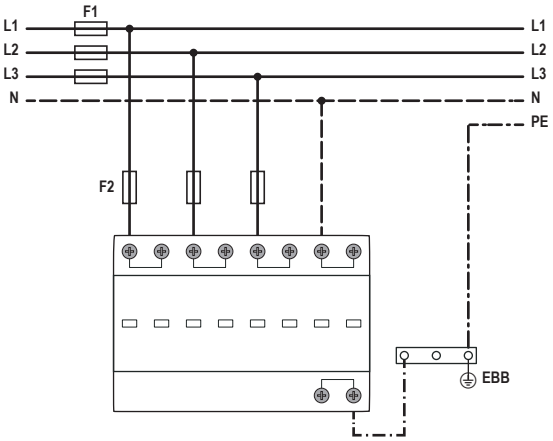
TT (Single-phase, 1+1)
T Connection



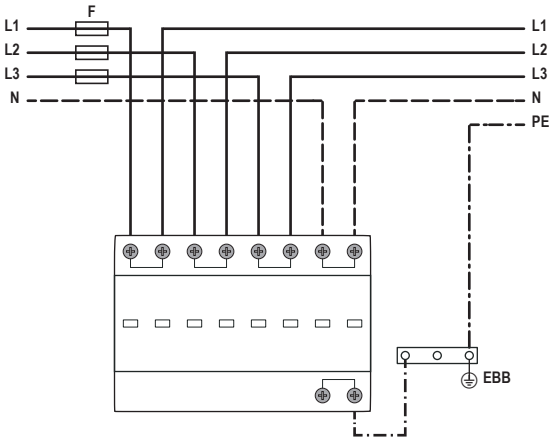
TT (Single-phase, 1+1)
V Connection



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



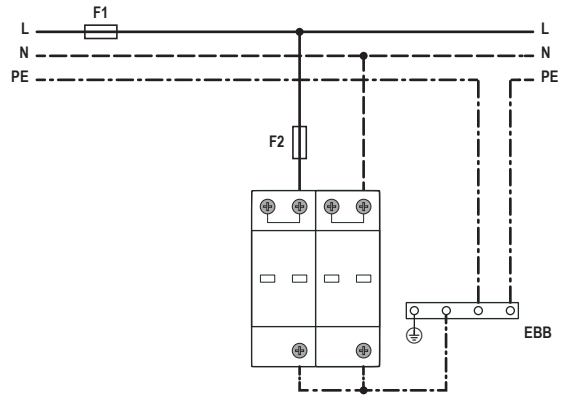
TT (Three-phase, 3+1)
V Connection



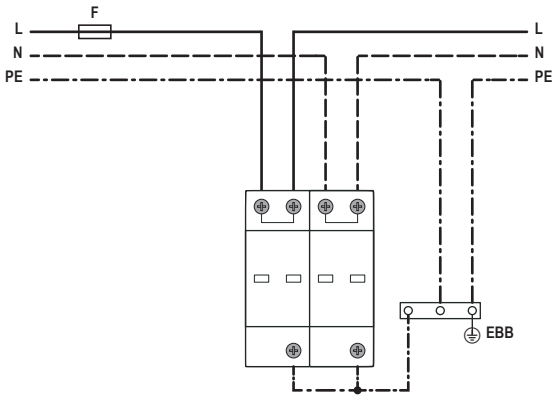
Back-up Fuse

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

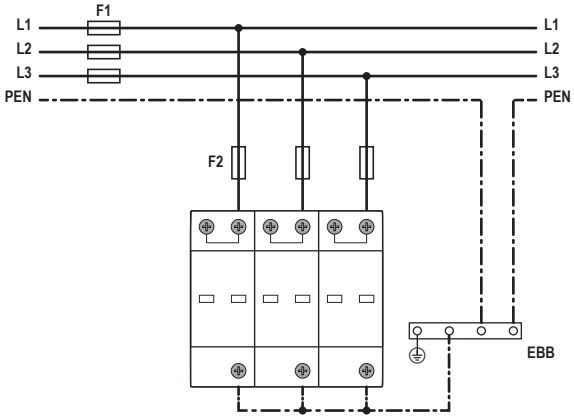
TN-S (Single-phase, 2+0)
T Connection



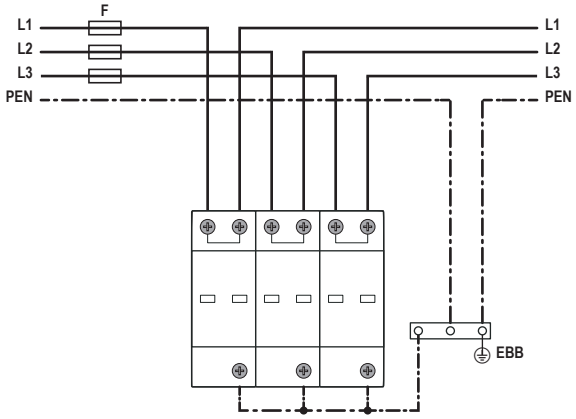
TN-S (Three-phase, 2+0)
V Connection



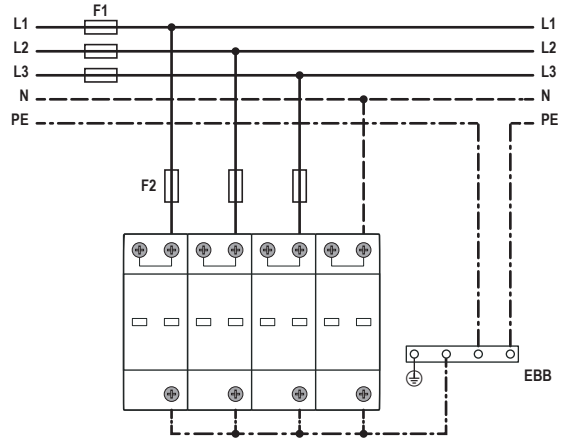
TN-C (Three-phase, 3+0)
T Connection



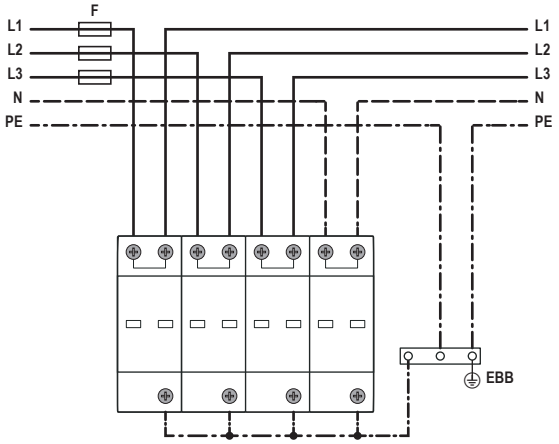
TN-C (Three-phase, 3+0)
V Connection

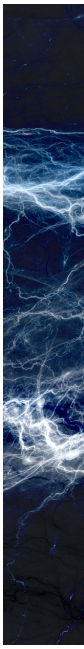


TN-S (Three-phase, 4+0)
T Connection



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

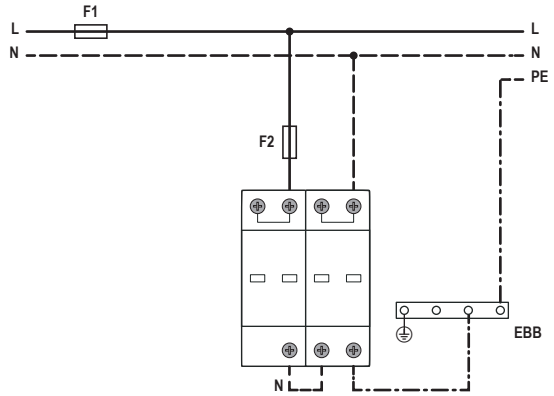




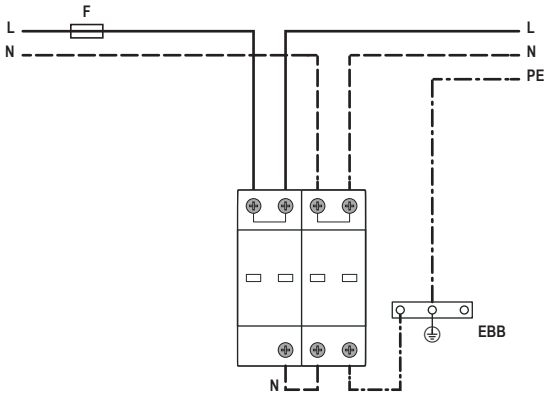
Back-up Fuse

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

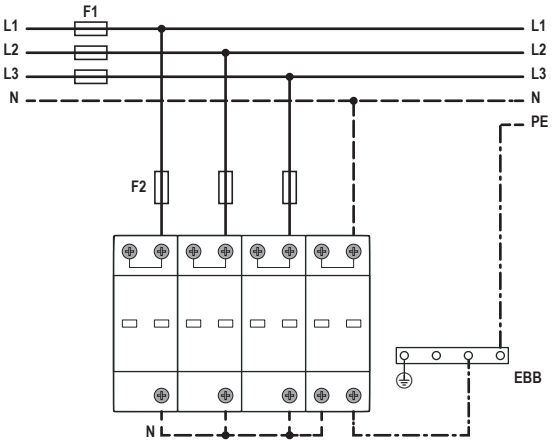
TT (Single-phase, 1+1)
T Connection



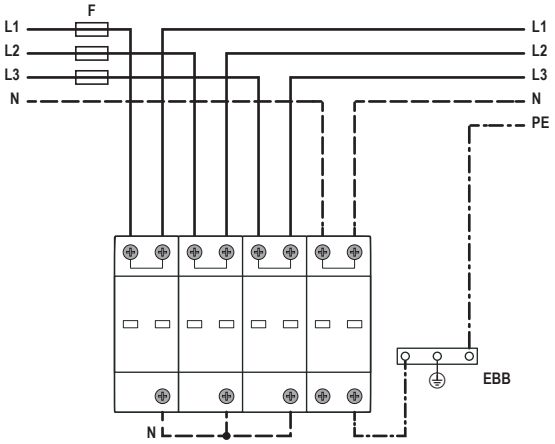
TT (Single-phase, 1+1)
V Connection



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) 12.5 kA 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_A-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

RoHS COMPLIANT CE

Modular Single Pole SPD

ProTec B2S(R) 12.5 (1+0)

Class I • Class II • Type 1 • Type 2

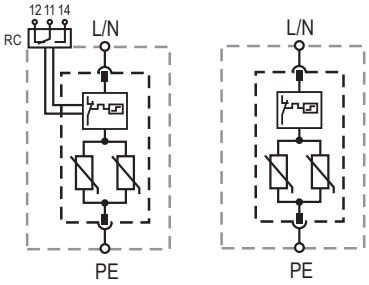
Location of Use: Main Distribution Boards
Network Systems: TN-S, TN-C, TT (only L-N)
Mode of Protection: L-PE, N-PE, L-PEN, L-N
Surge Ratings: I_{imp} = 12.5 kA (10/350 µs)
I_n = 25 kA (8/20 µs)
IEC/EN Category: Class I, II / Type 1, 2
Protective Elements: High Energy MOV
Housing: Modular Design
Compliance: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

Technical Data

ProTec B2S(R) 12.5/xxx (1+0)		150	275	320	385	440
Electrical						
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 µs)	I_n			25 kA		
Maximum Discharge Current (8/20 µs)	I_{max}			60 kA		
Impulse Discharge Current (10/350 µs)	I_{imp}			12.5 kA		
Specific Energy	W/R			39 kJ/Ω		
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		
General						
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 mm² (solid) / 25 mm² (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 mm²		
RC Terminal Screw Torque	M_{max}			0.25 Nm		
Order Information						
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)

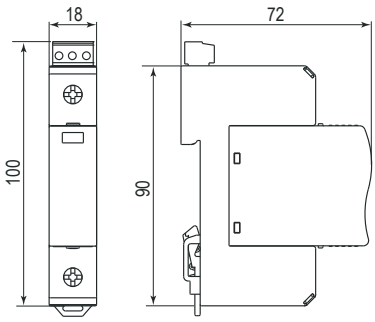
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

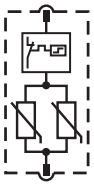
Dimensions & Packaging [mm]



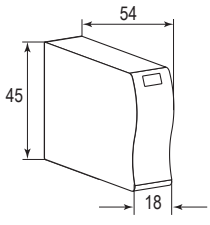
Dimensions & Packaging					
ProTec B2S 12.5/xxx (1+0)	**150**	**275**	**320**	**385**	**440**
Single Unit Weight	124 g	150 g	150 g	143 g	146 g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H × W × L)	109 × 77 × 24 mm				
Minimum Order Quantity	12 Units				
ProTec B2SR 12.5/xxx (1+0)	**150**	**275**	**320**	**385**	**440**
Single Unit Weight	129 g	155 g	155 g	146 g	151 g
Single Unit DIN 43880 Dimension	1TE				
Packaging Dimensions (H × W × L)	109 × 77 × 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 × W × L)	98 × 77 × 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

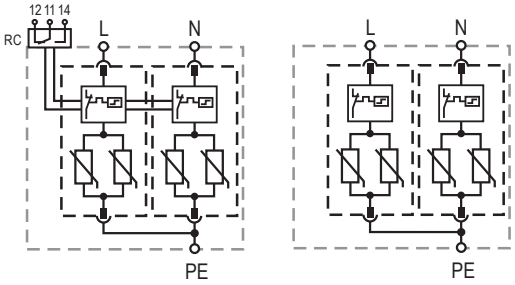
Location of Use: Main Distribution Boards
Network Systems: TN-S
Mode of Protection: L-PE, N-PE
Surge Ratings: I_{imp} = 12.5 kA (10/350 µs)
I_n = 25 kA (8/20 µs)
IEC/EN Category: Class I, II / Type 1, 2
Protective Elements: High Energy MOV
Housing: Modular Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec B2S(R) 25/xxx (2+0)		150	275	320	385	440
Electrical						
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 µs)	I_n			25 kA		
Maximum Discharge Current (8/20 µs)	I_{max}			60 kA		
Impulse Discharge Current (10/350 µs)	I_{imp}			12.5 kA		
Total Discharge Current (10/350 µs)	I_{total}			25 kA		
Specific Energy	W/R			39 kJ/Ω		
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		
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 mm² (solid) / 25 mm² (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 mm²		
RC Terminal Screw Torque	M_{max}			0.25 Nm		
Order Information						
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)

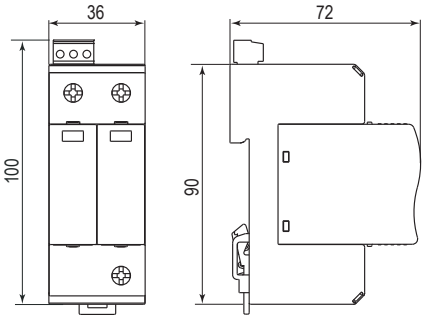
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

Dimensions & Packaging [mm]

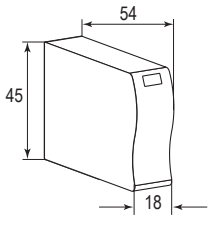


Dimensions & Packaging					
ProTec B2S 25/xxx (2+0)	**150**	**275**	**320**	**385**	**440**
Single Unit Weight	198 g	251 g	251 g	267 g	283 g
Single Unit DIN 43880 Dimension	2 TE				
Packaging Dimensions (H × W × L)	109 × 77 × 42 mm				
Minimum Order Quantity	7 Units				
ProTec B2SR 25/xxx (2+0)	**150**	**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 × W × L)	109 × 77 × 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 × W × L)	98 × 77 × 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

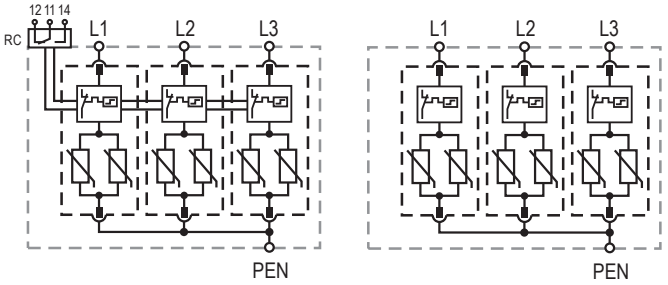
Location of Use: Main Distribution Boards
Network Systems: TN-C
Mode of Protection: L - PEN
Surge Ratings: I_{imp} = 12.5 kA (10/350 µs)
I_n = 25 kA (8/20 µs)
IEC/EN Category: Class I, II / Type 1, 2
Protective Elements: High Energy MOV
Housing: Modular Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec B2S(R) 37.5/xxx (3+0)		150	275	320	385	440
Electrical						
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 µs)	I_n			25 kA		
Maximum Discharge Current (8/20 µs)	I_{max}			60 kA		
Impulse Discharge Current (10/350 µs)	I_{imp}			12.5 kA		
Total Discharge Current (10/350 µs)	I_{total}			37.5 kA		
Specific Energy	W/R			39 kJ/Ω		
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		
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 mm² (solid) / 25 mm² (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 mm²		
RC Terminal Screw Torque	M_{max}			0.25 Nm		
Order Information						
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)

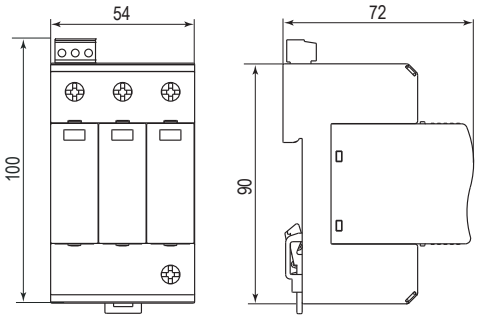
Internal Configuration



Legend

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

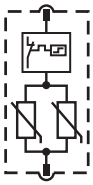
Dimensions & Packaging [mm]



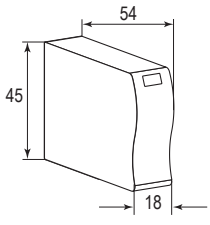
Dimensions & Packaging					
ProTec B2S 37.5/xxx (3+0)	**150**	**275**	**320**	**385**	**440**
Single Unit Weight	300 g	382 g	382 g	394 g	432 g
Single Unit DIN 43880 Dimension	3 TE				
Packaging Dimensions (H × W × L)	109 × 77 × 62 mm				
Minimum Order Quantity	5 Units				
ProTec B2SR 37.5/xxx (3+0)	**150**	**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 × W × L)	109 × 77 × 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 × W × L)	98 × 77 × 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

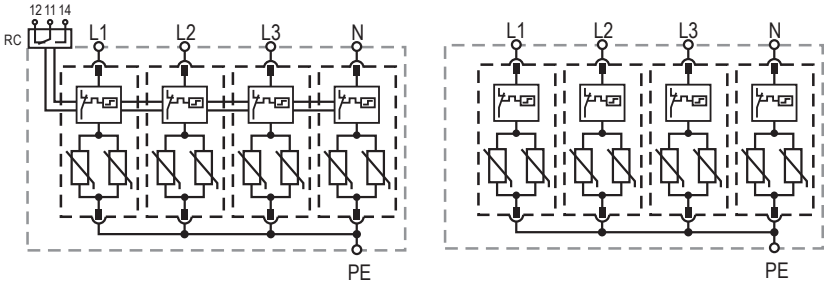
Location of Use: Main Distribution Boards
Network Systems: TN-S
Mode of Protection: L-PE, N-PE
Surge Ratings: I_{imp} = 12.5 kA (10/350 µs)
I_n = 25 kA (8/20 µs)
IEC/EN Category: Class I, II / Type 1, 2
Protective Elements: High Energy MOV
Housing: Modular Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec B2S(R) 50/xxx (4+0)		150	275	320	385	440
Electrical						
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 µs)	I_n			25 kA		
Maximum Discharge Current (8/20 µs)	I_{max}			60 kA		
Impulse Discharge Current (10/350 µs)	I_{imp}			12.5 kA		
Total Discharge Current (10/350 µs)	I_{total}			50 kA		
Specific Energy	W/R			39 kJ/Ω		
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		
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 mm² (solid) / 25 mm² (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 mm²		
RC Terminal Screw Torque	M_{max}			0.25 Nm		
Order Information						
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)

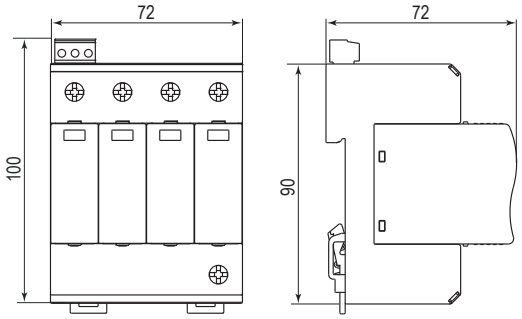
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

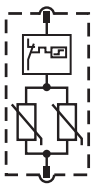
Dimensions & Packaging [mm]



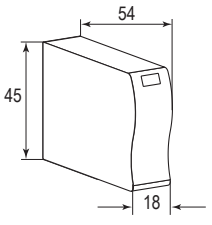
Dimensions & Packaging					
ProTec B2S 50/xxx (4+0)	**150**	**275**	**320**	**385**	**440**
Single Unit Weight	366 g	462 g	462 g	494 g	526 g
Single Unit DIN 43880 Dimension	4 TE				
Packaging Dimensions (H × W × L)	109 × 77 × 80 mm				
Minimum Order Quantity	3 Units				
ProTec B2SR 50/xxx (4+0)	**150**	**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 × W × L)	109 × 77 × 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	78g	88 g	102 g	116g	128g
Single Unit DIN 43880 Dimension	1 TE				
Packaging Dimensions (H × W × L)	98 × 77 × 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 kA / 50 kA (10/350 µs)
I_n = 25 kA / 30 kA (8/20 µs)
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

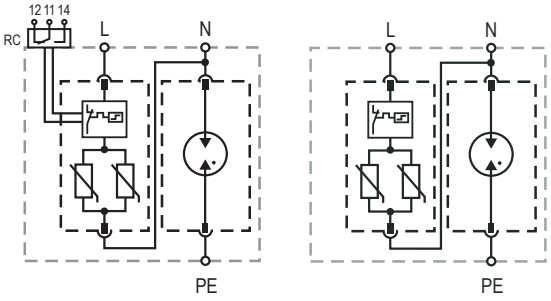
ProTec B2S(R) 25/xxx (1+1)			150	275	320	385	440
Electrical							
Nominal AC Voltage (50/60 Hz)		U_o	120 V	230 V	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	150 V	275 V	320 V	385 V	440 V
	(N-PE)	U_c			255 V		
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n			25 kA / 30 kA		
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}			60 kA / 50 kA		
Impulse Discharge Current (10/350 µs)	(L-N)/(N-PE)	I_{imp}			12.5 kA / 50 kA		
Total Discharge Current (10/350 µs)		I_{total}			25 kA		
Specific Energy	(L-N)/(N-PE)	W/R			39 kJ/Ω / 625 kJ/Ω		
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_{RMS}		
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		
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 mm² (solid) / 25 mm² (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 mm²		
RC Terminal Screw Torque		M_{max}			0.25 Nm		

Order Information

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)

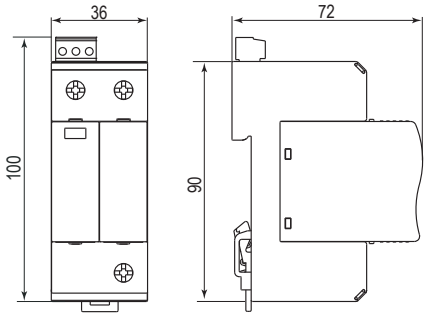
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

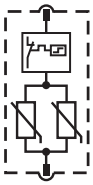
Dimensions & Packaging [mm]



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 × W × L)	109 × 77 × 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 × W × L)	109 × 77 × 42 mm				
Minimum Order Quantity	7 Units				

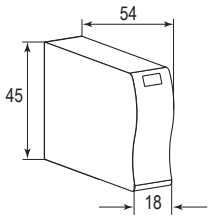
Module Internal Configuration

Module ProTec B2S(R) 12.5/xxx

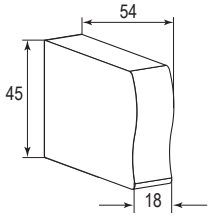


Module ProTube B2S 50/255

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 × W × L)	98 × 77 × 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 × W × L)	98 × 77 × 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

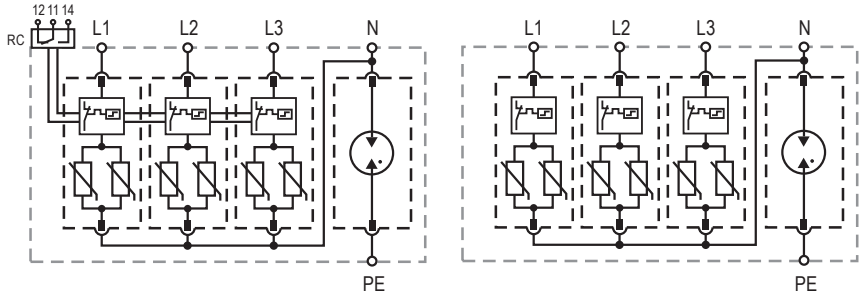
Location of Use: Main Distribution Boards
Network Systems: TT, TN-S
Mode of Protection: L-N, N-PE
Surge Ratings: I_{imp} = 12.5 kA / 50 kA (10/350 µs)
I_n = 25 kA / 30 kA (8/20 µs)
MOV Withstand: 100 kA (8/20 µs)
IEC/EN Category: Class I, II / Type 1, 2
Protective Elements: High Energy MOV and GDT
Housing: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

Technical Data

ProTec B2S(R) 50/xxx (3+1)			275	320	385	440
Electrical						
Nominal AC Voltage (50/60 Hz)		U_o	230 V	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	275 V	320 V	385 V	440 V
	(N-PE)	U_c		255 V		
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n		25 kA / 30 kA		
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}		60 kA / 50 kA		
Impulse Discharge Current (10/350 µs)	(L-N)/(N-PE)	I_{imp}		12.5 kA / 50 kA		
Total Discharge Current (10/350 µs)		I_{total}		50 kA		
Specific Energy	(L-N)/(N-PE)	W/R		39 kJ/Ω / 625 kJ/Ω		
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_{RMS}		
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	335 V	335 V	403 V	580 V
TOV withstand 200 ms	(N-PE)	U_T		1200 V / 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 mm² (solid) / 25 mm² (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 mm²		
RC Terminal Screw Torque		M_{max}		0.25 Nm		
Order Information						
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)

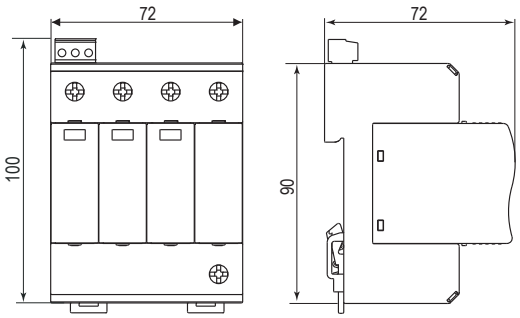
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

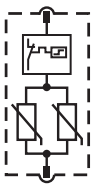
Dimensions & Packaging [mm]



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

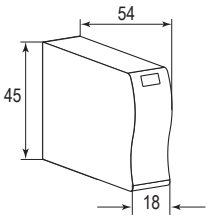
Module Internal Configuration

Module ProTec B2S(R) 12.5/xxx

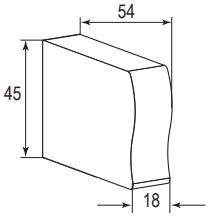


Module ProTube B2S 50/255

Dimensions & Packaging [mm]



Dimensions & Packaging				
Module ProTec B2S(R) 12.5/xxx	**275**	**320**	**385**	**440**
Single Unit Weight	88 g	102 g	116 g	128 g
Single Unit DIN 43880 Dimension	1 TE			
Packaging Dimensions (H × W × L)	98 × 77 × 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 × W × L)	98 × 77 × 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

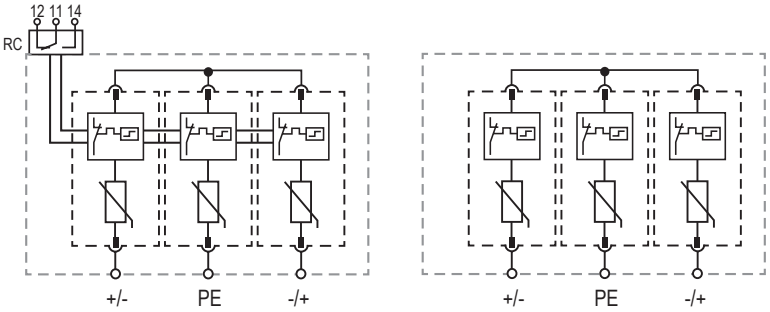
Location of Use: Photovoltaic System - DC Side
Mode of Protection: (+)-PE, (-)-PE, (+)-(-)
Surge Ratings: I_{imp} = 5 kA (10/350 µs)
I_n = 15 kA (8/20 µs)
EN Category: Type 1, 2
Protective Elements: High Energy MOV
Housing: Modular Design
Compliance: EN 50539-11:2013 + A1:2014

Technical Data

PV ProTec B(R) 5/xxxx Y TD			1000
Electrical			
Open Circuit Voltage		$U_{oc\ STC}$	830 V
Maximum Continuous Operating Voltage (DC)		U_{CPV}	1000 V
Nominal Discharge Current (8/20 µs)		I_n	15 kA
Maximum Discharge Current (8/20 µs)		I_{max}	40 kA
Impulse Discharge Current (10/350 µs)		I_{imp}	5 kA
Specific Energy		W/R	6.25 kJ/Ω
Charge		Q	2.5 As
Total Discharge Current	(8/20µs)	I_{total}	30 kA
	(10/350 µs)	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 mm² (solid) / 25 mm² (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 mm²
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

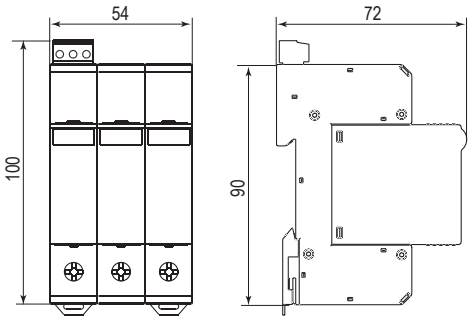
Internal Configuration



Legend

PE Protective Earth
RC Remote Contacts Optional

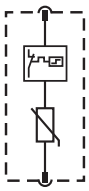
Dimensions & Packaging [mm]



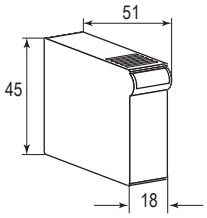
Dimensions & Packaging	
PV ProTec B 5/xxxx Y TD	**1000**
Single Unit Weight	398 g
Single Unit DIN 43880 Dimension	3 TE
Packaging Dimensions (H × W × L)	109 × 77 × 62 mm
Minimum Order Quantity	5 Units
PV ProTec BR 5/xxxx Y TD	**1000**
Single Unit Weight	403 g
Single Unit DIN 43880 Dimension	3 TE
Packaging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

Module Internal Configuration

Module ProTec B 5/xxxx Y TD



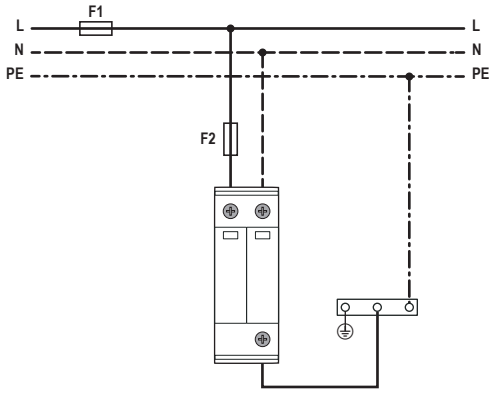
Dimensions & Packaging [mm]



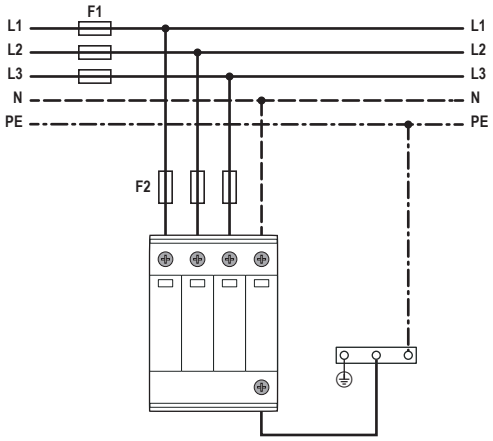
Dimensions & Packaging	
Module ProTec B 5/xxxx Y TD	**1000**
Single Unit Weight	58 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H × W × L)	98 × 77 × 110 mm
Minimum Order Quantity	12 Units

Applicable connection configurations can be found on page 113.

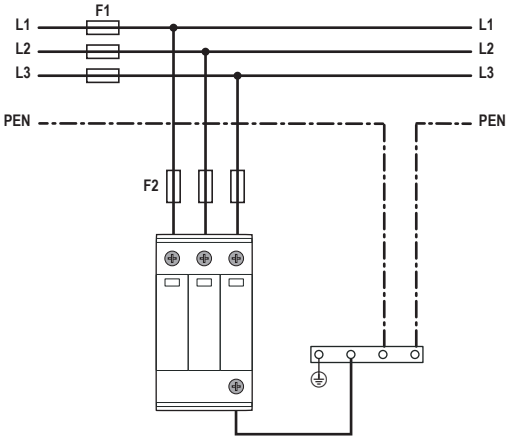
TN-S (Single-phase, 2+0)



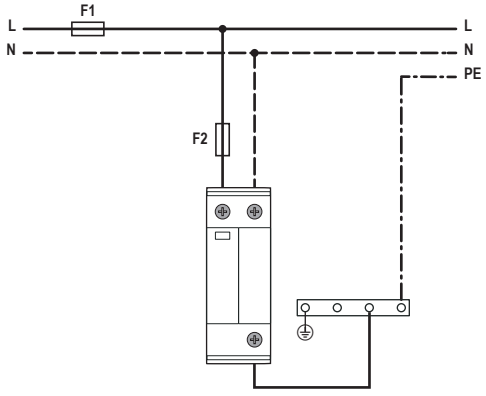
TN-S (Three-phase, 4+0)



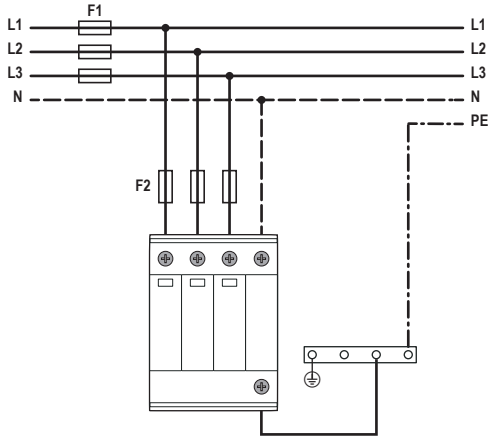
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



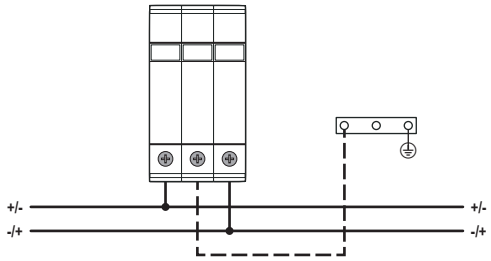
Back-up Fuse

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_B-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.

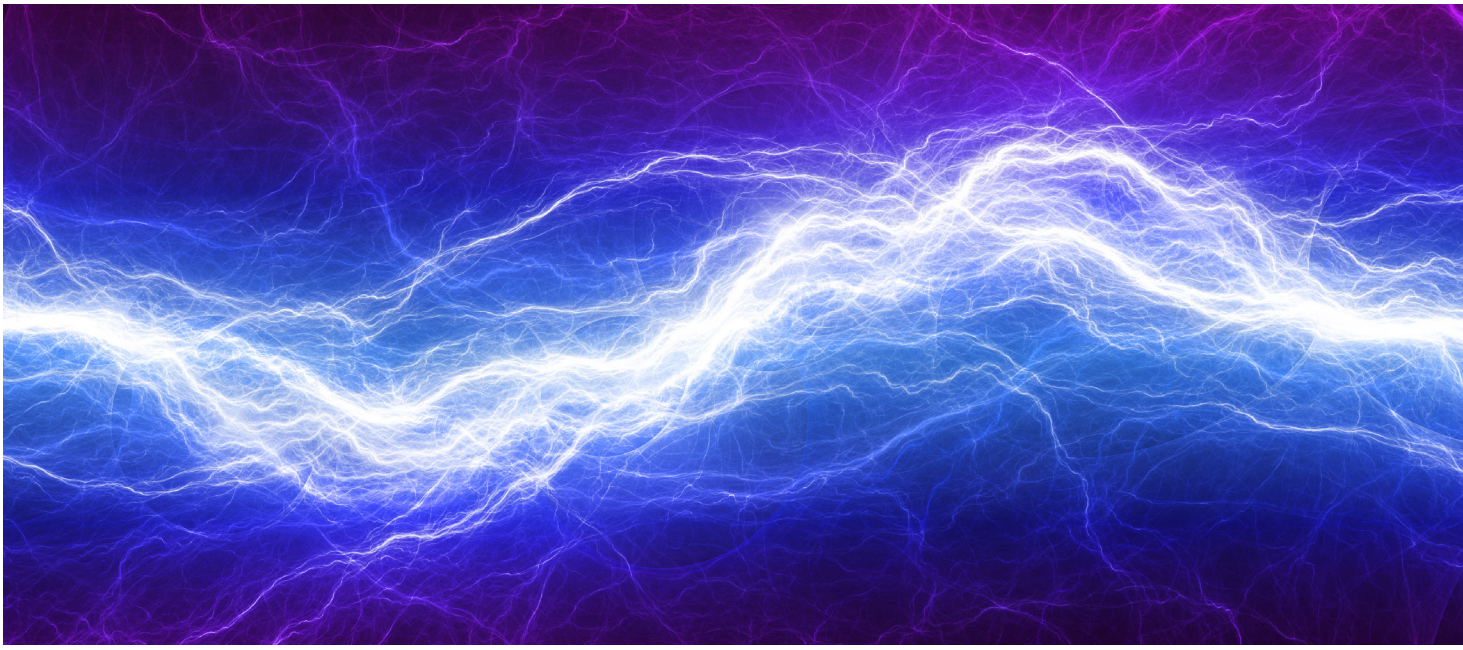
SafeTec C and CR series comply with IEC/EN 61643-11 standards and are compatible to TN and TT network connection configurations.

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



RoHS COMPLIANT CE

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 µs)
I_{max} = up to 50 kA (8/20 µs)
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

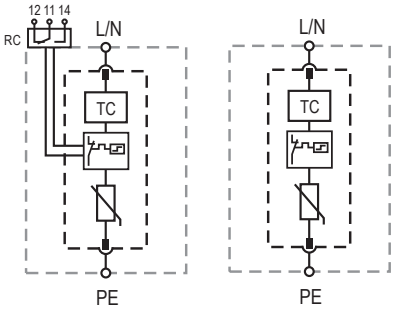
Technical Data

SafeTec C(R) yy/xxx (1+0)		75	150	275	385	440	750	880
Electrical								
Nominal AC Voltage (50/60 Hz)	U_o	48 V	120 V	230 V	230 V	230 V	400 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	75 V	150 V	275 V	385 V	440 V	750 V	880 V
Nominal Discharge Current (8/20 µs)	I_n	10 kA	20 kA	20 kA	20 kA	20 kA	12.5 kA	12.5 kA
Maximum Discharge Current (8/20 µs)	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	92 V	228 V	438 V	520 V	594 V	1000 V	1100 V
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 mm² (solid) / 25 mm² (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 mm²						
RC Terminal Screw Torque	M_{max}	0.25 Nm						
Order Information								
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)

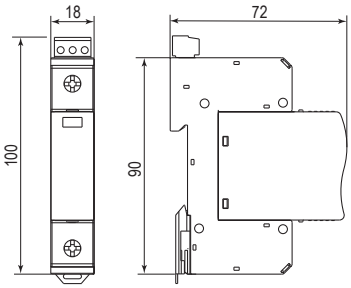
Internal Configuration



Legend

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

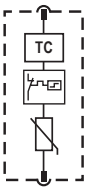
Dimensions & Packaging [mm]



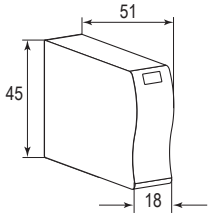
Dimensions & Packaging							
SafeTec C 20/xx (1+0)	**75**						
Single Unit Weight	125 g						
SafeTec C 40/xxx (1+0)		**150**	**275**	**385**	**440**		
Single Unit Weight		140 g	140 g	148 g	150 g		
SafeTec C 25/xxx (1+0)						**750**	**880**
Single Unit Weight						156 g	156 g
SafeTec CR 20/xx (1+0)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

Module Internal Configuration

Module SafeTec C(R) yy/xxx



Dimensions & Packaging [mm]



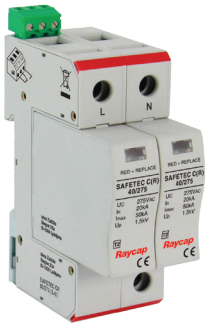
Dimensions & Packaging							
Module SafeTec C(R) 20/xx	**75**						
Single Unit Weight	58 g						
Module SafeTec C(R) 40/xxx		**150**	**275**	**385**	**440**		
Single Unit Weight		62 g	66 g	72 g	74 g		
Module SafeTec C(R) 25/xxx						**750**	**880**
Single Unit Weight						78 g	78 g
Single Unit DIN 43880 Dimension				1 TE			
Packaging Dimensions (H × W × L)				98 × 77 × 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 µs)
I_{max} = up to 50 kA (8/20 µs)
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

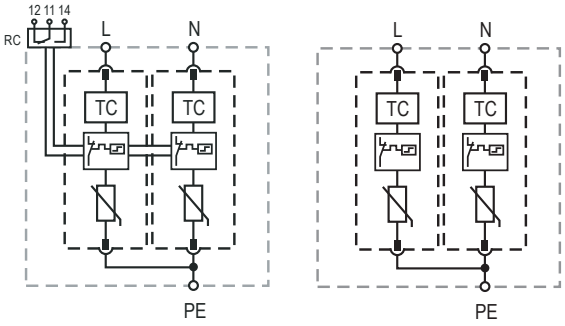
Technical Data

SafeTec C(R) yy/xxx (2+0)		75	150	275	385	440	750	880
Electrical								
Nominal AC Voltage (50/60 Hz)	U_o	48 V	120 V	230 V	230 V	230 V	400 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	75 V	150 V	275 V	385 V	440 V	750 V	880 V
Nominal Discharge Current (8/20 µs)	I_n	10 kA	20 kA	20 kA	20 kA	20 kA	12.5 kA	12.5 kA
Maximum Discharge Current (8/20 µs)	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	92 V	228 V	438 V	520 V	594 V	1000 V	1100 V
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 mm² (solid) / 25 mm² (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 mm²						
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)

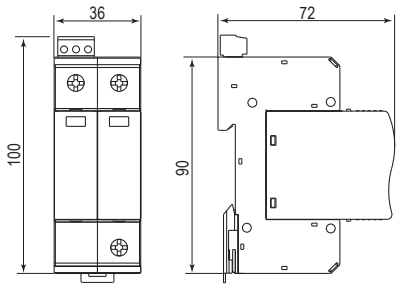
Internal Configuration



Legend

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

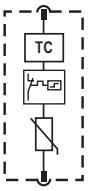
Dimensions & Packaging [mm]



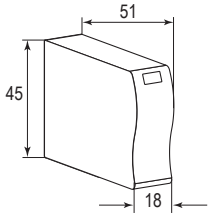
Dimensions & Packaging							
SafeTec C 40/xx (2+0)	**75**						
Single Unit Weight	250 g						
SafeTec C 80/xxx (2+0)		**150**	**275**	**385**	**440**		
Single Unit Weight		280 g	281 g	284 g	286 g		
SafeTec C 50/xxx (2+0)						**750**	**880**
Single Unit Weight						288 g	288 g
SafeTec CR 40/xx (2+0)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

Module Internal Configuration

Module SafeTec C(R) yy/xxx



Dimensions & Packaging [mm]



Dimensions & Packaging							
Module SafeTec C(R) 20/xx	**75**						
Single Unit Weight	58 g						
Module SafeTec C(R) 40/xxx		**150**	**275**	**385**	**440**		
Single Unit Weight		62 g	66 g	72 g	74 g		
Module SafeTec C(R) 25/xxx						**750**	**880**
Single Unit Weight						78 g	78 g
Single Unit DIN 43880 Dimension				1 TE			
Packaging Dimensions (H × W × L)				98 × 77 × 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 µs)
I_{max} = up to 50 kA (8/20 µs)
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

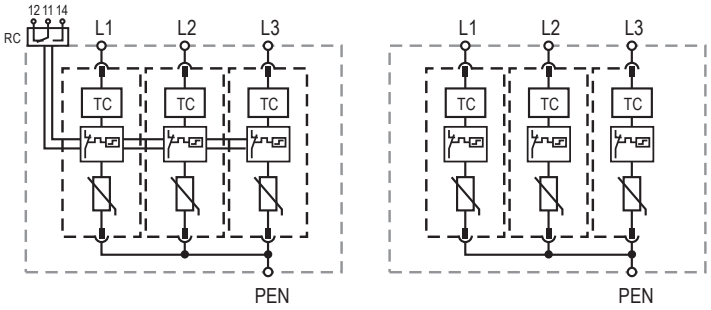
Technical Data

SafeTec C(R) yy/xxx (3+0)		75	150	275	385	440	750	880
Electrical								
Nominal AC Voltage (50/60 Hz)	U_o	48 V	120 V	230 V	230 V	230 V	400 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	75 V	150 V	275 V	385 V	440 V	750 V	880 V
Nominal Discharge Current (8/20 µs)	I_n	10 kA	20 kA	20 kA	20 kA	20 kA	12.5 kA	12.5 kA
Maximum Discharge Current (8/20 µs)	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	92 V	228 V	438 V	520 V	594 V	1000 V	1100 V
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 mm² (solid) / 25 mm² (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 mm²						
RC Terminal Screw Torque	M_{max}	0.25 Nm						
Order Information								
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)

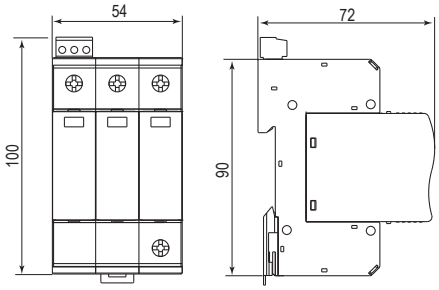
Internal Configuration



Legend

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

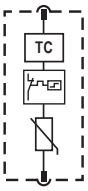
Dimensions & Packaging [mm]



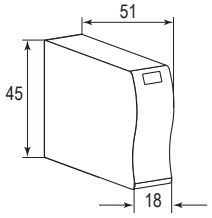
Dimensions & Packaging							
SafeTec C 60/xx (3+0)	**75**						
Single Unit Weight	375 g						
SafeTec C 120/xxx (3+0)		**150**	**275**	**385**	**440**		
Single Unit Weight		420 g	422 g	448 g	450 g		
SafeTec C 75/xxx (3+0)						**750**	**750**
Single Unit Weight						468 g	468 g
SafeTec CR 60/xx (3+0)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

Module Internal Configuration

Module SafeTec C(R) yy/xxx



Dimensions & Packaging [mm]



Dimensions & Packaging							
Module SafeTec C(R) 20/xx	**75**						
Single Unit Weight	58 g						
Module SafeTec C(R) 40/xxx		**150**	**275**	**385**	**440**		
Single Unit Weight		62 g	66 g	72 g	74 g		
Module SafeTec C(R) 25/xxx						**750**	**880**
Single Unit Weight						78 g	78 g
Single Unit DIN 43880 Dimension				1 TE			
Packaging Dimensions (H × W × L)				98 × 77 × 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 µs)
I_{max} = up to 50 kA (8/20 µs)
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	120 V	230 V	230 V	230 V	400 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V	385 V	440 V	750 V	880 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	12.5 kA	12.5 kA
Maximum Discharge Current (8/20 µs)	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	228 V	438 V	520 V	594 V	1000 V	1100 V
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 mm² (solid) / 25 mm² (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 mm²					
RC Terminal Screw Torque	M_{max}	0.25 Nm					

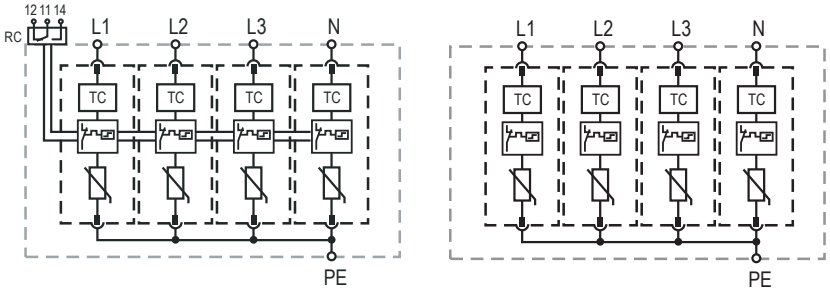
Order Information

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)

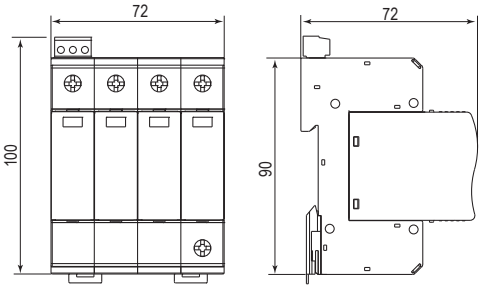
Internal Configuration



Legend

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

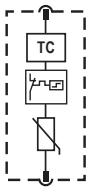
Dimensions & Packaging [mm]



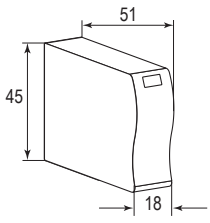
Dimensions & Packaging						
SafeTec C 160/xxx (4+0)	**150**	**275**	**385**	**440**		
Single Unit Weight	560 g	562 g	595 g	598 g		
SafeTec C 100/xxx (4+0)					**750**	**880**
Single Unit Weight					602 g	602 g
SafeTec CR 160/xxx (4+0)	**150**	**275**	**385**	**440**		
Single Unit Weight	568 g	570 g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

Module Internal Configuration

Module SafeTec C(R) yy/xxx



Dimensions & Packaging [mm]



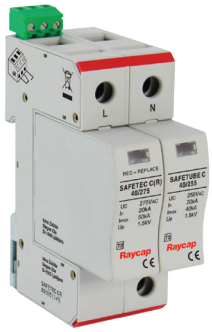
Dimensions & Packaging						
Module SafeTec C(R) 40/xxx	**150**	**275**	**385**	**440**		
Single Unit Weight	62 g	66 g	72 g	74 g		
Module SafeTec C(R) 25/xxx					**750**	**880**
Single Unit Weight					78 g	78 g
Single Unit DIN 43880 Dimension			1 TE			
Packaging Dimensions (H × W × L)			98 × 77 × 110 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



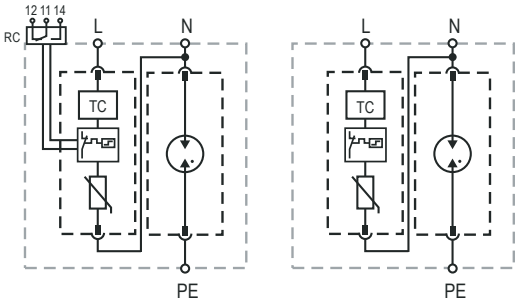
Location of Use: Sub-distribution Boards
Network Systems: TT, TN-S
Mode of Protection: L-N, N-PE
Surge Ratings: I_n = up to 20kA (8/20µs)
I_{max} = up to 50kA (8/20µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV and GDT
Safety: TOV Withstand
Housing: Modular Design
Compliance: 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 (8/20µs)	(L-N)/(N-PE)	I_n	10kA/20kA	20kA/20kA	20kA/20kA	20kA/20kA	20kA/20kA
Maximum Discharge Current (8/20µs)	(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_{RMS}		
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)					35mm² (solid) / 25mm² (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)					1.5mm²		
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)

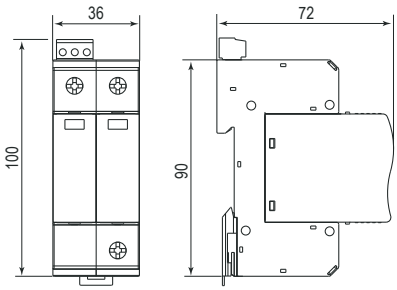
Internal Configuration



Legend

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

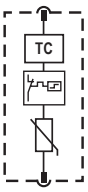
Dimensions & Packaging [mm]



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

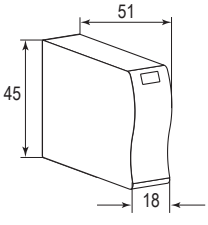
Module Internal Configuration

Module SafeTec C(R) yy/xxx

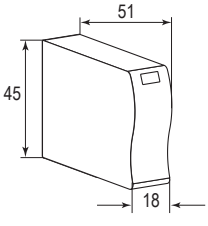


Module SafeTube C 40/255

Dimensions & Packaging [mm]



Dimensions & Packaging					
Module SafeTec C(R) 20/xx	**75**				
Single Unit Weight	58 g				
Module SafeTec C(R) 40/xxx		**150**	**275**	**385**	**440**
Single Unit Weight		62 g	66 g	72 g	74 g
Single Unit DIN 43880 Dimension			1 TE		
Packaging Dimensions (H × W × L)			98 × 77 × 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 × W × L)	98 × 77 × 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 µs)
I_{max} = up to 50 kA (8/20 µs)
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

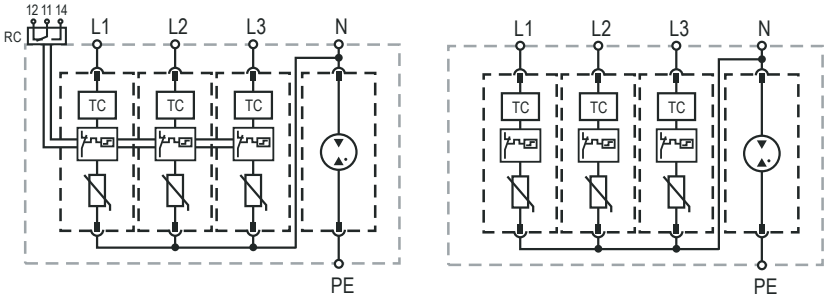
SafeTec C(R) 160/xxx (3+1)			275	385	440
Electrical					
Nominal AC Voltage (50/60 Hz)		U_o	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	275 V	385 V	440 V
	(N-PE)	U_c		255 V	
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA/20 kA	20 kA/20 kA	20 kA/20 kA
Maximum Discharge Current (8/20 µs)	(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_{RMS}	
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 200 ms	(N-PE)	U_T		1200 V / 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^2 (solid) / 25mm^2 (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^2	
RC Terminal Screw Torque		M_{max}		0.25 Nm	
Order Information					
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)

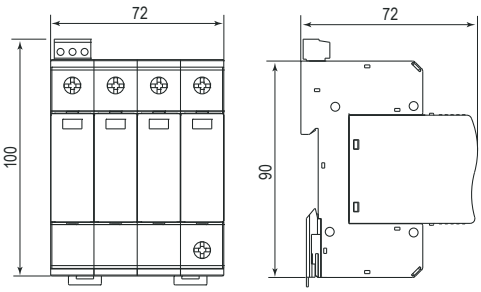
Internal Configuration

Legend

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



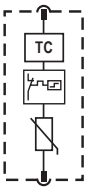
Dimensions & Packaging [mm]



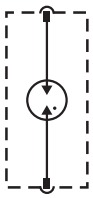
Dimensions & Packaging			
SafeTec C 160/xxx (3+1)	**275**	**385**	**440**
Single Unit Weight	540 g	565 g	568 g
SafeTec CR 160/xxx (3+1)	**275**	**385**	**440**
Single Unit Weight	548 g	574 g	576 g
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (H × W × L)		109 × 77 × 80 mm	
Minimum Order Quantity		3 Units	

Module Internal Configuration

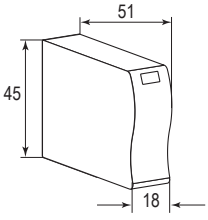
Module SafeTec C(R) 40/xxx

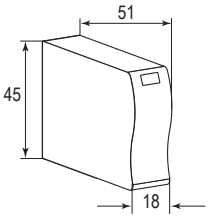


Module SafeTube C 40/255



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 × W × L)		98 × 77 × 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 × W × L)		98 × 77 × 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

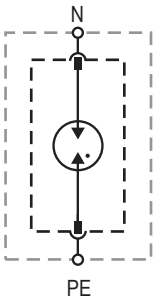
Location of Use: Sub-distribution Boards
Network Systems: TT
Mode of Protection: N-PE
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 40 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy GDT
Housing: Modular Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

SafeTube C 40/xxx		255
Electrical		
Nominal AC Voltage (50/60 Hz)	U_o	230 V
Maximum Continuous Operating Voltage (AC)	U_c	255 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	40 kA
Voltage Protection Level	U_p	< 1.5 kV
Follow Current Interrupt Rating	I_{fi}	100 A_{RMS}
Response Time	t_A	< 100 ns
TOV withstand 200 ms	U_T	1200 V / 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 mm² (solid) / 25mm² (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

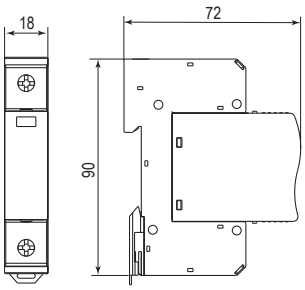
Internal Configuration



Legend

N Neutral
PE Protective Earth

Dimensions & Packaging [mm]

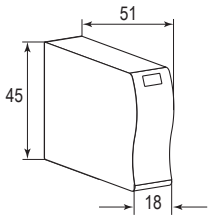


Dimensions & Packaging	
SafeTube C 40/xxx	**255**
Single Unit Weight	118 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H × W × L)	110 × 77 × 24 mm
Minimum Order Quantity	12 Units

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 × W × L)	98 × 77 × 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 kA (8/20 µs)
I_{max} = 25 kA (8/20 µs)
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

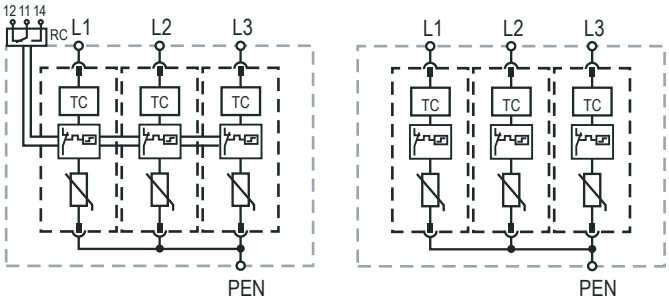
Technical Data

SafeTec C(R) xxx (3+0) WT		750	880
Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	690 V	690 V
Maximum Continuous Operating Voltage (AC)	U_c	750 V	880 V
Nominal Discharge Current (8/20 µs) per pole	I_n	12.5 kA	12.5 kA
Maximum Discharge Current (8/20 µs) per pole	I_{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_{SCCR}	25 kA	
TOV withstand 5s	U_T	1000 V	1100 V
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		35 mm² (solid) / 25 mm² (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 mm²	
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

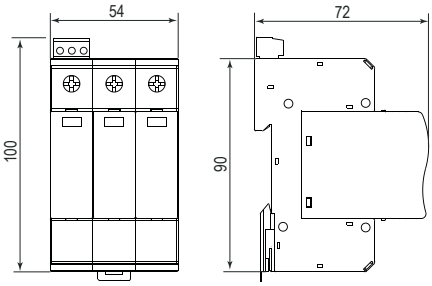
Internal Configuration



Legend

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

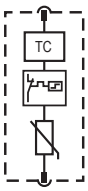
Dimensions & Packaging [mm]



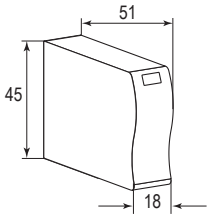
Dimensions & Packaging		
SafeTec C xxx (3+0) WT	**750**	**880**
Single Unit Weight	364 g	364 g
Single Unit DIN 43880 Dimension	3 TE	
Packaging Dimensions (H × W × L)	109 × 77 × 62 mm	
Minimum Order Quantity	5 Units	
SafeTec CR xxx (3+0) WT	**750**	**880**
Single Unit Weight	369 g	369 g
Single Unit DIN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

Module Internal Configuration

Module SafeTec C(R) xxx WT



Dimensions & Packaging [mm]



Dimensions & Packaging		
Module SafeTec C(R) xxx WT	**750**	**880**
Single Unit Weight	78 g	78 g
Single Unit DIN 43880 Dimension	1 TE	
Packaging Dimensions (H × W × L)	98 × 77 × 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

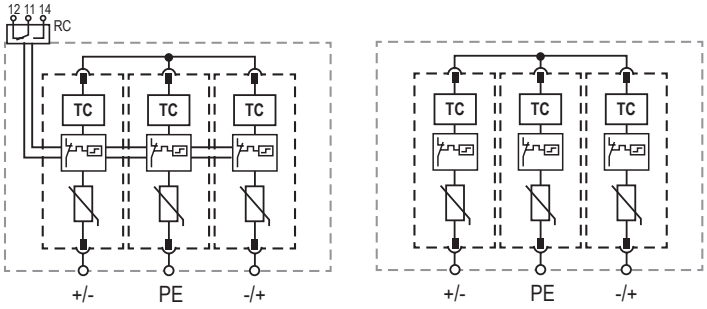
Location of Use: Photovoltaic System - DC Side
Mode of Protection: (+)-PE, (-)-PE, (+)-(-)
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 50 kA (8/20 µs)
EN Category: Type 2
Protective Elements: High Energy MOV and GDT
Safety: Patented Current Limiting
Housing: Modular Design
Compliance: EN 50539-11:2013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

Technical Data

PV SafeTec C(R) 50/xxxx Y TD			1000
Electrical			
Open Circuit Voltage		$U_{oc\ STC}$	830 V
Maximum Continuous Operating Voltage (DC)		U_{CPV}	1000 V
Nominal Discharge Current (8/20 µs)		I_n	20 kA
Total Discharge Current (8/20 µs)		I_{total}	40 kA
Maximum Discharge Current (8/20 µs)		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 mm² (solid) / 25 mm² (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 mm²
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

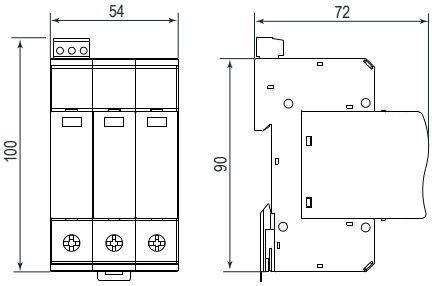
Internal Configuration



Legend

PE Protective Earth
RC Remote Contacts Optional
TC Thermal Control Function

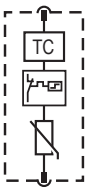
Dimensions & Packaging [mm]



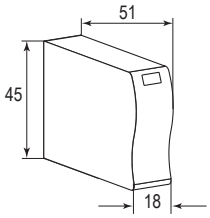
Dimensions & Packaging	
PV SafeTec C 50/xxxx Y TD	**1000**
Single Unit Weight	396 g
Single Unit DIN 43880 Dimension	3 TE
Packaging Dimensions (H × W × L)	109 × 77 × 62 mm
Minimum Package Quantity	5 Units
PV SafeTec CR 50/xxxx Y TD	**1000**
Single Unit Weight	402 g
Single Unit DIN 43880 Dimension	3 TE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

Module Internal Configuration

Module SafeTec C 50/xxxx Y



Dimensions & Packaging [mm]



Dimensions & Packaging	
Module PV SafeTec C 50/xxxx Y TD	**1000**
Single Unit Weight	74 g
Single Unit DIN 43880 Dimension	1TE
Packaging Dimensions (H × W × L)	98 × 77 × 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 kA (8/20 µs)
I_{max} = 25 kA (8/20 µs)
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

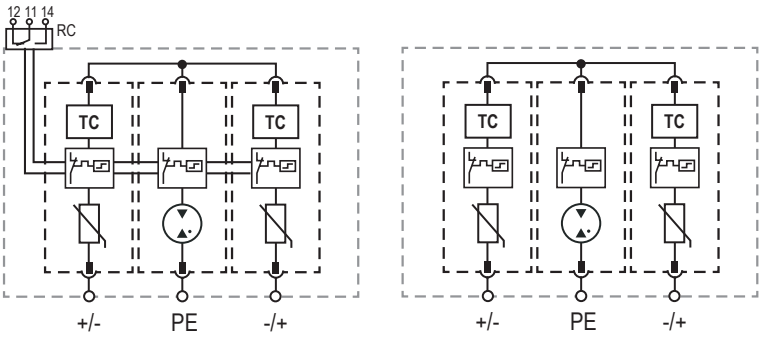
PVG SafeTec C(R) 25/xxxx Y TD			1000
Electrical			
Open Circuit Voltage		$U_{oc\ STC}$	830 V
Maximum Continuous Operating Voltage (DC)		U_{CPV}	1000 V
Nominal Discharge Current (8/20 µs)		I_n	12.5 kA
Total Discharge Current (8/20 µs)		I_{total}	25 kA
Maximum Discharge Current (8/20 µs)		I_{max}	25 kA
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 mm² (solid) / 25 mm² (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 mm²
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

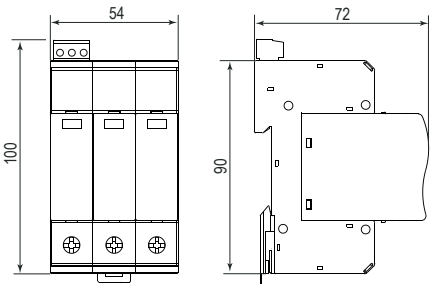
Internal Configuration

Legend

PE Protective Earth
RC Remote Contacts Optional
TC Thermal Control Function



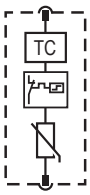
Dimensions & Packaging [mm]



Dimensions & Packaging	
PVG SafeTec C 25/xxxx Y TD	**1000**
Single Unit Weight	396 g
Single Unit DIN 43880 Dimension	3 TE
Packaging Dimensions (H × W × L)	109 × 77 × 62 mm
Minimum Package Quantity	5 Units
PVG SafeTec CR 25/xxxx Y TD	**1000**
Single Unit Weight	402 g
Single Unit DIN 43880 Dimension	3 TE
Packaging Dimensions (H × W × L)	109 × 77 × 62 mm
Minimum Order Quantity	5 Units

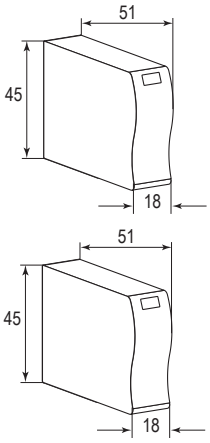
Module Internal Configuration

Module PVG SafeTec C 25/xxxx Y



Module PVG SafeTube C 25/xxxx Y

Dimensions & Packaging [mm]

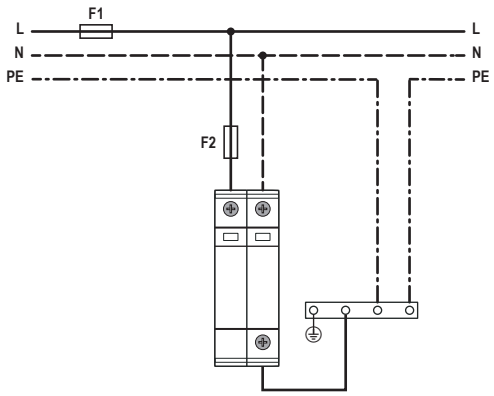


Dimensions & Packaging	
Module PVG SafeTec C 25/xxxx Y	**1000**
Single Unit Weight	74 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H × W × L)	98 × 77 × 110 mm
Minimum Order Quantity	12 Units

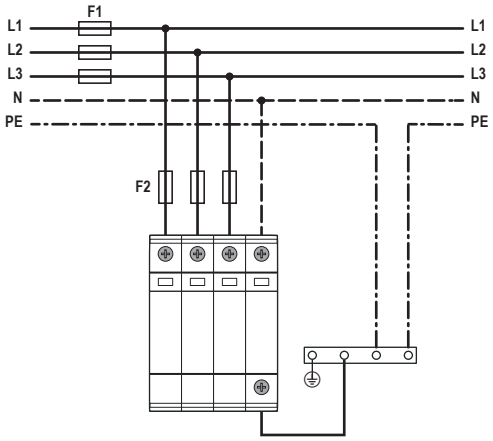
Dimensions & Packaging	
Module PVG SafeTube C 25/xxxx Y	**1000**
Single Unit Weight	34 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H × W × L)	98 × 77 × 110 mm
Minimum Order Quantity	12 Units

Applicable connection configurations can be found on page 137.

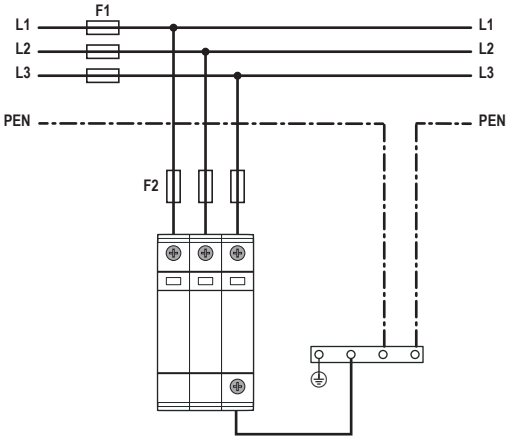
TN-S (Single-phase, 2+0)



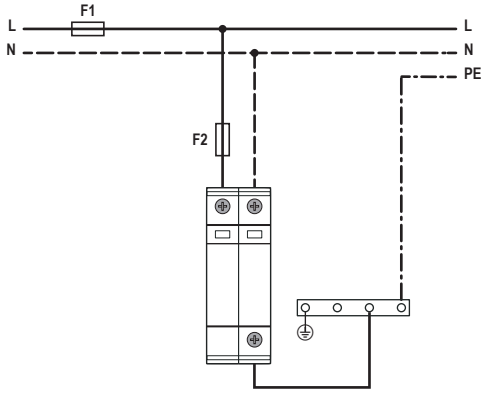
TN-S (Three-phase, 4+0)



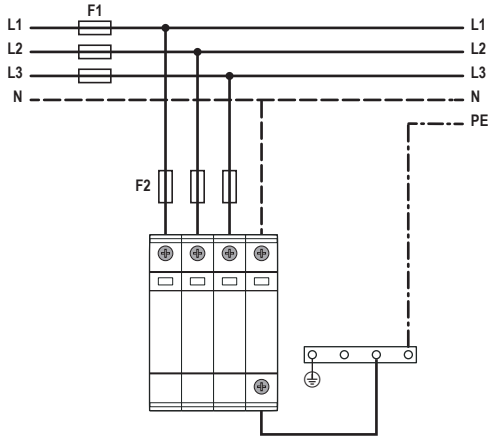
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



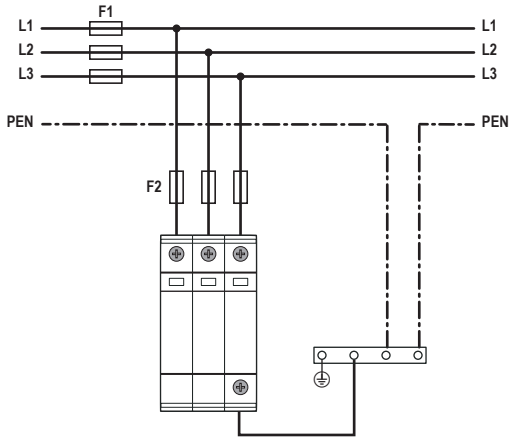
Back-up Fuse

F1 > 125 A gG → F2 = 125 A gG

F1 ≤ 125 A gG → ~~F2~~

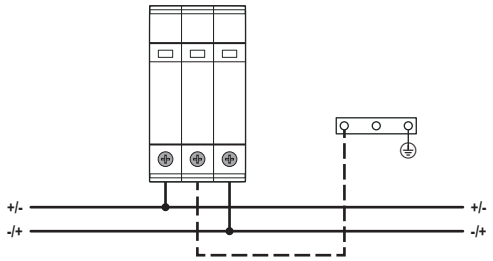
WT Modular Multi-pole SPD Connection Configurations
SafeTec C(R) WT Series

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 SafeTect 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_B-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.

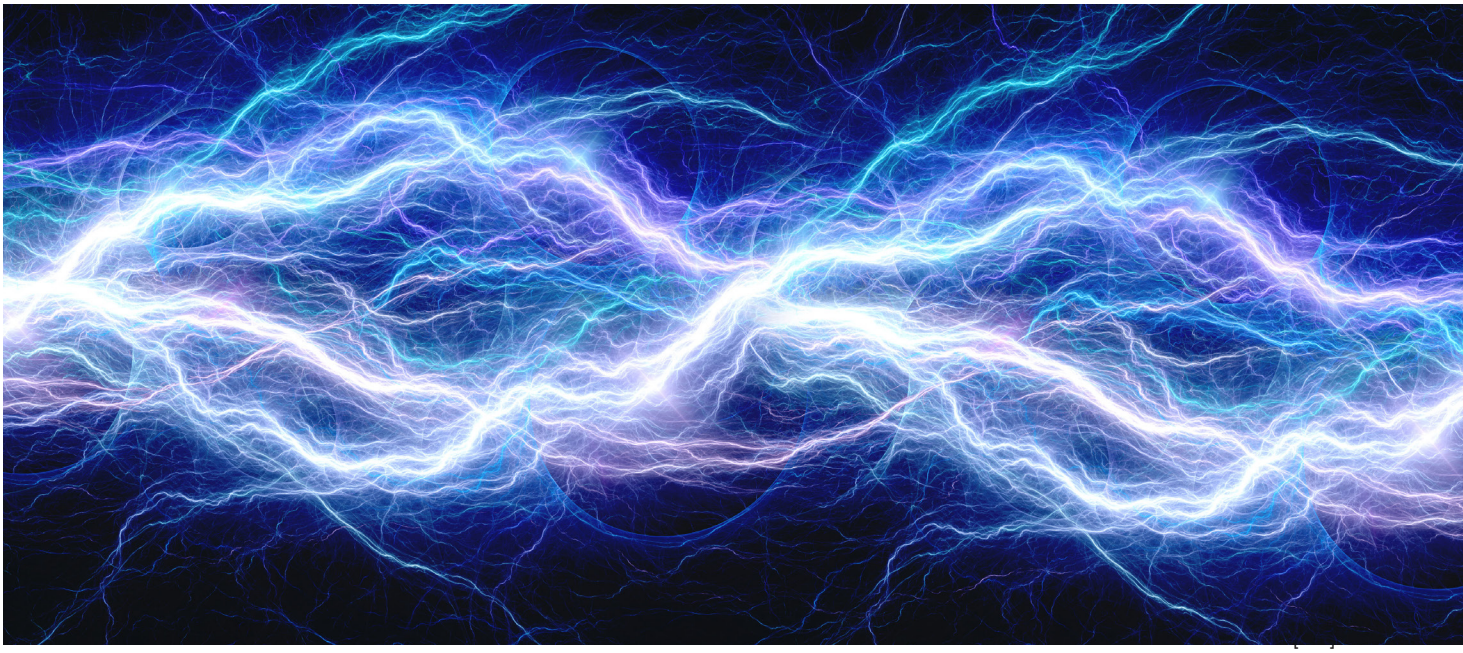
SafeTec C UL and SafeTec CR UL series comply with UL 1449 4th Edition standards and are compatible to TN-S and TN-C network connection configurations.

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



RoHS COMPLIANT

Modular Single Pole SPD

SafeTec C(R) (1+0) UL

UL Listed

Class II•Type 2•Type 1, 2CA

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 20kA (8/20µs)
I_{max} = up to 50kA (8/20µs)
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 (1+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 (8/20µs)	I_n	20kA	20kA	20kA	20kA	20kA	12.5kA	12.5kA
Maximum Discharge Current (8/20µs)	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	< 25ns						
Back-up Fuse (if mains > 125A)		125A 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	277V	347V	440V	480V	690V	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 (8/20µs)	I_n	20kA	20kA	20kA	20kA	20kA	10kA	10kA
Short-Circuit Current Rating (AC)	SCCR	200kA						
Mechanical & Enviornmental								
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)		35mm² (solid) / 25mm² (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)		1.5mm²						
		16 AWG						
RC Terminal Screw Torque	M_{max}	2.2lbf·in [0.25Nm]						

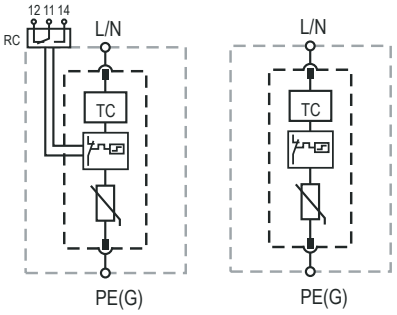
Order Information								
Order Code		150	277	385	440	550	750	880
SAFETEC C 50/xxx		516.828	516.933	516.934	516.935	516.936		
SAFETEC CR 50/xxx (with remote contacts)		516.829	516.939	516.940	516.941	516.942		
SAFETEC C 25/xxx							516.937	516.938
SAFETEC CR 25/xxx (with remote contacts)							516.943	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

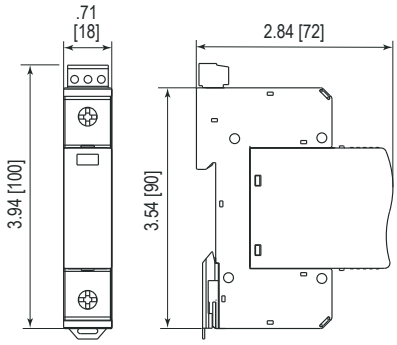
Internal Configuration

Legend

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



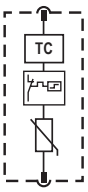
Dimensions & Packaging



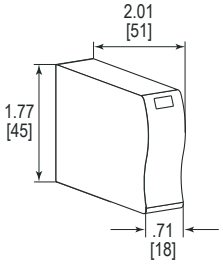
Dimensions & Packaging								
SafeTec C 50/xxx (1+0)		**150**	**277**	**385**	**440**	**550**		
Single Unit Weight	pounds	.309	.309	.320	.331	.337		
	grams	140	140	145	150	153		
SafeTec CR 50/xxx (1+0)		**150V**	**277V**	**385V**	**440V**	**550V**		
Single Unit Weight	pounds	.326	.326	.337	.348	.355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

Module Internal Configuration

Module SafeTec C(R) yy/xxx



Dimensions & Packaging



Dimensions & Packaging								
Module SafeTec C(R) 50/xxx		**150**	**277**	**385**	**440**	**550**		
Single Unit Weight	pounds	.137	.146	.159	.163	.168		
	grams	62	66	72	74	76		
Module SafeTec C(R) 25/xxx							**750**	**880**
Single Unit Weight	pounds						.172	.172
	grams						78	78
Packaging Dimensions (H × W × L)		3.86" × 3.03" × 4.33" [98 × 77 × 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

UL Listed

Class II•Type 2•Type 1, 2CA

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 (8/20µs)
I_{max} = up to 50kA (8/20µs)
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) yyy/xxx (2+0)		150	277	385	440	750	880
IEC Electrical							
Nominal AC Voltage (50/60Hz)	U_o	120V	230V	230V	230V	400V	400V
Maximum Continuous Operating Voltage (AC)	U_c	150V	300V	385V	440V	750V	880V
Nominal Discharge Current (8/20µs)	I_n	20kA	20kA	20kA	20kA	12.5kA	12.5kA
Maximum Discharge Current (8/20µs)	I_{max}	50kA	50kA	50kA	50kA	25kA	25kA
Voltage Protection Level	U_p	1.1kV	1.5kV	2.2kV	2.3kV	2.8kV	3.0kV
Response Time	t_A	< 25ns					
Back-up Fuse (if mains > 125A)		125A gG					
Short-Circuit Current Rating (AC)	I_{SCCR}	25kA					
TOV Withstands 5s	U_T	228V	438V	520V	594V	1000V	1100V
Number of Ports		1					
UL Electrical							
Nominal AC Voltage Rating (50/60Hz)		120V	277V	347V	440V	690V	690V
Maximum Continuous Operating Voltage (AC)	MCOV	150V	300V	385V	440V	750V	880V
Voltage Protection Rating	VPR	1200V	1800V	1800V	2000V	2500V	2500V
Nominal Discharge Current (8/20µs)	I_n	20kA	20kA	20kA	20kA	10kA	12.5kA
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)		35mm² (solid) / 25mm² (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)		1.5mm²					
		16 AWG					
RC Terminal Screw Torque	M_{max}	2.2lbf·in [0.25Nm]					

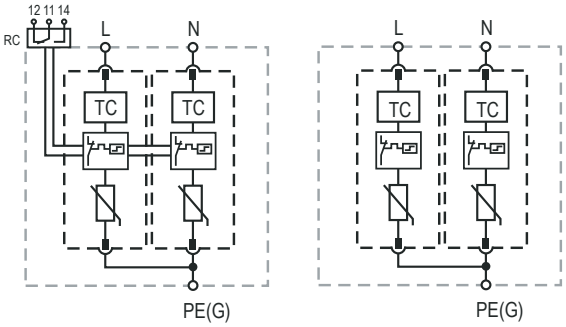
Order Information							
Order Code		150	277	385	440	750	880
SAFETEC C 100/xxx (2+0)		516.959	516.960	516.961	516.962		
SAFETEC CR 100/xxx (2+0) (with remote contacts)		516.965	516.966	516.967	516.968		
SAFETEC C 50/xxx (2+0)						516.963	516.964
SAFETEC CR 50/xxx (2+0) (with remote contacts)						516.969	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

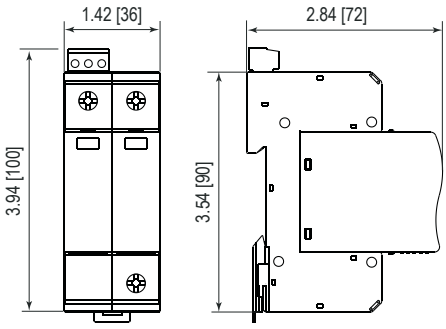
Internal Configuration

Legend

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



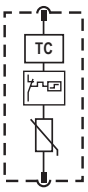
Dimensions & Packaging



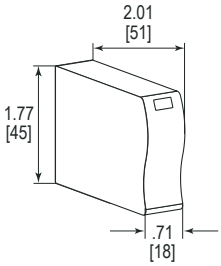
Dimensions & Packaging							
SafeTec C 100/xxx (2+0)		**150**	**277**	**385**	**440**		
Single Unit Weight	pounds	.617	.619	.639	.659		
	grams	280	281	290	299		
SafeTec CR 100/xxx (2+0)		**150**	**277**	**385**	**440**		
Single Unit Weight	pounds	.635	.637	.657	.677		
	grams	288	289	298	307		
SafeTec C 50/xxx (2+0)						**750**	**880**
Single Unit Weight	pounds					.688	.688
	grams					312	312
SafeTec CR 50/xxx (2+0)						**750**	**880**
Single Unit Weight	pounds					.705	.705
	grams					320	320
Single Unit DIN 43880 Dimension		2 TE					
Packaging Dimensions (H × W × L)		4.30" × 3.03" × 1.65" [109 × 77 × 42 mm]					
Minimum Order Quantity		7 Units					

Module Internal Configuration

Module SafeTec C(R) yy/xxx



Dimensions & Packaging



Dimensions & Packaging							
Module SafeTec C(R) 50/xxx		**150**	**277**	**385**	**440**	**550**	
Single Unit Weight	pounds	.137	.146	.159	.163	.168	
	grams	62	66	72	74	76	
Module SafeTec C(R) 25/xxx						**750**	**880**
Single Unit Weight	pounds					.172	.172
	grams					78	78
Packaging Dimensions (H × W × L)		3.86" × 3.03" × 4.33" [98 × 77 × 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

UL Listed

Class II•Type 2•Type 1, 2CA

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 µs)
I_{max} = up to 50 kA (8/20 µs)
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
IEC Electrical								
Nominal AC Voltage (50/60 Hz)	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 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	12.5 kA	12.5 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA	50kA	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						
UL Electrical								
Nominal AC Voltage Rating (50/60 Hz)		120 V/240 V	277 V/480 V	347 V/600 V	254 V/440 V	254 V/440 V	400 V/690 V	400 V/690 V
Maximum Continuous Operating Voltage (AC)	MCOV	150V	300V	385V	440V	550V	750V	880V
Voltage Protection Rating	VPR	1200 V	1800 V	1800 V	2000 V	2500 V	2500 V	3000 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	10 kA	10 kA
Short-Circuit Current Rating (AC)	SCCR	200 kA						
Mechanical & Enviornmental								
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 mm² (solid) / 25 mm² (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 / 0.5A; 125 V / 3 A						
RC Terminal Cross Section (max)		1.5 mm²						
		16 AWG						
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [0.25 Nm]						

Order Information

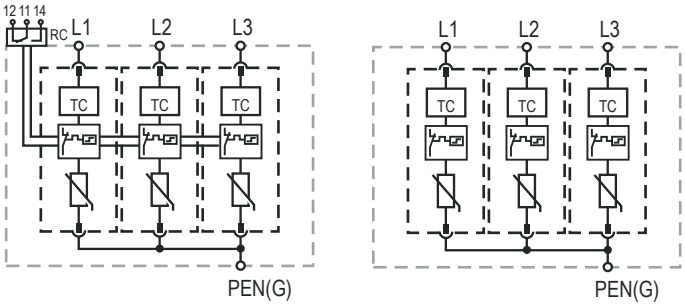
Order Code	150	277	385	440	550	750	880
SAFETEC C 150/xxx (3+0)	516.945	516.946	516.947	516.948	516.949		
SAFETEC CR 150/xxx (3+0) (with remote contacts)	516.952	516.953	516.954	516.955	516.956		
SAFETEC C 75/xxx (3+0)						516.950	516.951
SAFETEC CR 75/xxx (3+0) (with remote contacts)						516.957	516.958
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

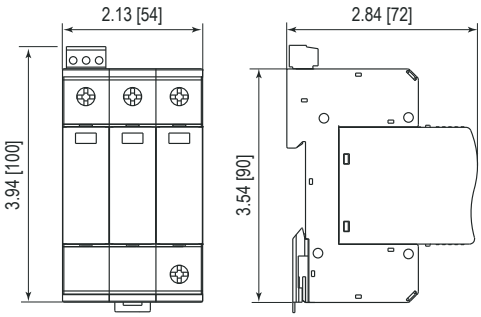
Internal Configuration

Legend

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



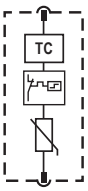
Dimensions & Packaging



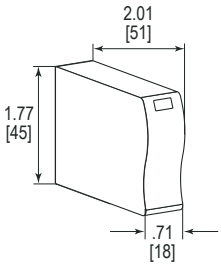
Dimensions & Packaging								
SafeTec C 150/xxx (3+0)		**150**	**277**	**385**	**440**	**550**		
Single Unit Weight	pounds	.926	.930	.959	.992	1.012		
	grams	420	422	435	450	459		
SafeTec CR 150/xxx (3+0)		**150**	**277**	**385**	**440**	**550**		
Single Unit Weight	pounds	.944	.948	.977	1.01	1.03	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

Module Internal Configuration

Module SafeTec C(R) yy/xxx



Dimensions & Packaging



Dimensions & Packaging								
Module SafeTec C(R) 50/xxx		**150**	**277**	**385**	**440**	**550**		
Single Unit Weight	pounds	.137	.146	.159	.163	.168		
	grams	62	66	72	74	76		
Module SafeTec C(R) 25/xxx							**750**	**880**
Single Unit Weight	pounds						.172	.172
	grams						78	78
Packaging Dimensions (H × W × L)		3.86" × 3.03" × 4.33" [98 × 77 × 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

UL Listed

Class II•Type 2•Type 1, 2CA

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 (8/20µs)
I_{max} = up to 50kA (8/20µs)
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) 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 (8/20µs)	I_n	20kA	20kA	20kA	20kA	20kA	12.5kA	12.5kA
Maximum Discharge Current (8/20µs)	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	< 25ns						
Back-up Fuse (if mains > 125A)		125A 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 (8/20µs)	I_n	20kA	20kA	20kA	20kA	20kA	10kA	10kA
Short-Circuit Current Rating (AC)	SCCR	200kA						
Mechanical & Enviornmental								
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)		35mm² (solid) / 25mm² (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)		1.5mm²						
		16 AWG						
RC Terminal Screw Torque	M_{max}	2.2lbf·in [0.25Nm]						

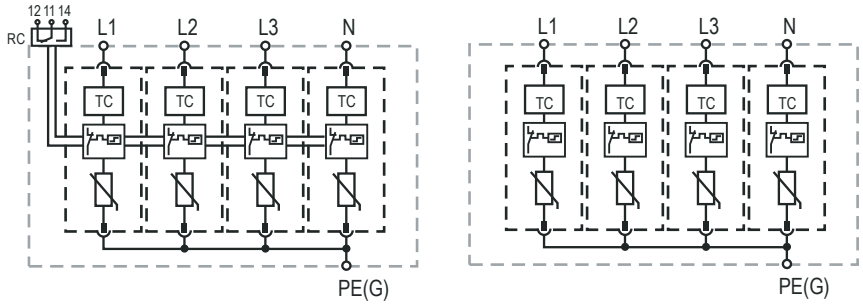
Order Information								
Order Code		150	277	385	440	550	750	880
SAFETEC C 200/xxx (4+0)		516.971	516.972	516.973	516.974	516.A96		
SAFETEC CR 200/xxx (4+0) (with remote contacts)		516.977	516.978	516.979	516.980	516.A64		
SAFETEC C 100/xxx (4+0)							516.975	516.976
SAFETEC CR 100/xxx (4+0) (with 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

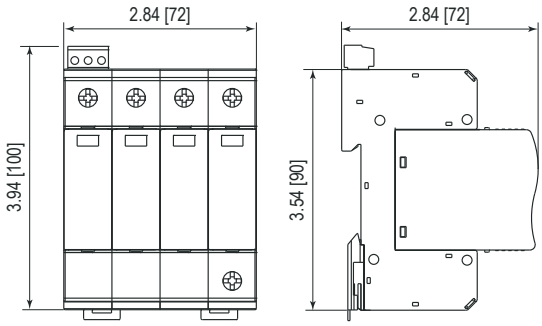
Internal Configuration

Legend

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



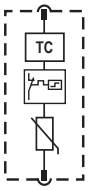
Dimensions & Packaging



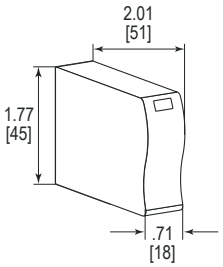
Dimensions & Packaging								
SafeTec C 200/xxx (4+0)		**150**	**277**	**385**	**440**	**550**		
Single Unit Weight	pounds	1.235	1.239	1.279	1.318	1.349		
	grams	560	562	580	598	612		
SafeTec CR 200/xxx (4+0)		**150**	**277**	**385**	**440**			
Single Unit Weight	pounds	1.252	1.257	1.296	1.336	1.367		
	grams	568	570	588	606	620		
SafeTec C 100/xxx (4+0)							**750**	**880**
Single Unit Weight	pounds						1.376	1.376
	grams						624	624
SafeTec CR 100/xxx (4+0)							**750**	**880**
Single Unit Weight	pounds						1.393	1.393
	grams						632	632
Single Unit DIN 43880 Dimension		4 TE						
Packaging Dimensions (H×W×L)		4.30" × 3.03" × 3.15" [109 × 77 × 80 mm]						
Minimum Order Quantity		3 Units						

Module Internal Configuration

Module SafeTec C(R) yy/xxx



Dimensions & Packaging



Dimensions & Packaging								
Module SafeTec C(R) 50/xxx		**150**	**277**	**385**	**440**	**550**		
Single Unit Weight	pounds	.137	.146	.159	.163	.168		
	grams	62	66	72	74	76		
Module SafeTec C(R) 25/xxx							**750**	**880**
Single Unit Weight	pounds						.172	.172
	grams						78	78
Packaging Dimensions (H×W×L)		3.86" × 3.03" × 4.33" [98 × 77 × 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

UL Listed

Class II•Type 2•Type 1, 2CA

Location of Use: Sub-distribution Boards
Network Systems IEC/UL: TN-C/3 WYE
Mode of Protection: L-PEN(G)
Surge Ratings: I_n = 10kA (8/20µs) per UL
I_{max} = 25kA (8/20µs)
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

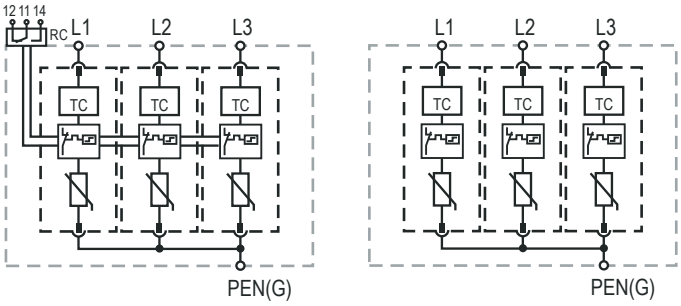
SafeTec C(R) xxx (3+0) WT		750	880
IEC Electrical			
Nominal AC Voltage (50/60Hz)	U_o	690V	690V
Maximum Continuous Operating Voltage (AC)	U_c	750V	880V
Nominal Discharge Current (8/20µs)	I_n	12.5kA	12.5kA
Maximum Discharge Current (8/20µs)	I_{max}	25kA	25kA
Voltage Protection Level	U_p	2.8kV	3.0kV
Response Time	t_A	< 25ns	
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			
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 (8/20µs)	I_n	10kA	10kA
Short-Circuit Current Rating (AC)	SCCR	200kA	
Mechanical & Enviornmental			
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)		35mm² (solid) / 25mm² (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)		1.5mm²	
		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

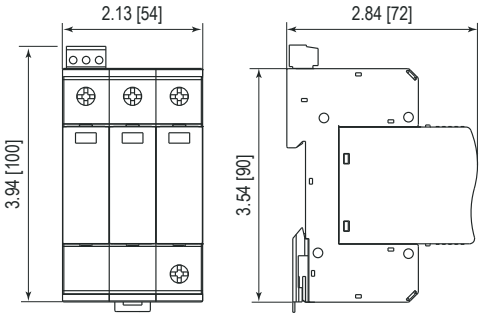
Internal Configuration

Legend

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



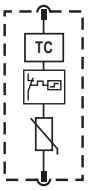
Dimensions & Packaging



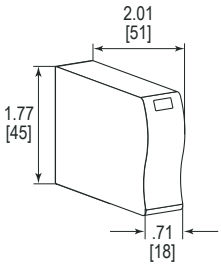
Dimensions & Packaging			
SafeTec C xxx (3+0) WT		**750**	**880**
Single Unit Weight	pounds [grams]	1.032 [468]	1.032 [468]
SafeTec CR xxx (3+0) WT		**750**	**880**
Single Unit Weight	pounds [grams]	1.049 [476]	1.049 [476]
Single Unit DIN 43880 Dimension		3 TE	
Packaging Dimensions (H × W × L)		4.30" × 3.03" × 2.44" [109 × 77 × 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 × W × L)		3.86" × 3.03" × 4.33" [98 × 77 × 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 **UL Listed**

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

Type 2 • Type 4 CA

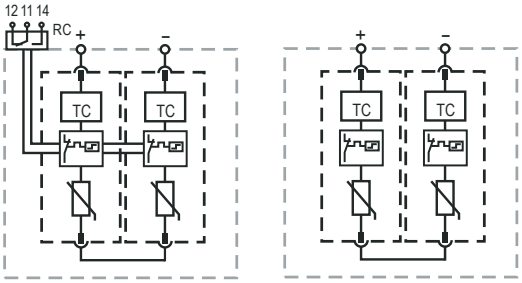
Location of Use: Photovoltaic Systems – DC Side
Mode of Protection: (+)-PE, (-)-PE, (+)-(-)
Surge Ratings: I_n = 10 kA (8/20 µs) per UL
I_{max} = 25 kA (8/20 µs)
EN/UL Category: Type 2 / Type 4 CA
Protective Elements: High Energy MOV and GDT
Safety: Patented Current Limiting Function
Housing: Modular 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		$U_{oc\ STC}$	830 V
Maximum Continuous Operating Voltage (DC)		U_{CPV}	1000 V
Nominal Discharge Current (8/20 µs)		I_n	12.5 kA
Total Discharge Current (8/20 µs)		I_{total}	25 kA
Maximum Discharge Current (8/20 µs)		I_{max}	25 kA
Voltage Protection Level	(+)-(-)	U_p	5.6 kV
	(+)/(-)-PE(G)	U_p	2.8 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}	1000 V
Voltage Protection Rating	(+)-(-)	MLV	5140 V
	(+)/(-)-PE(G)	MLV	2680 V
Nominal Discharge Current (8/20 µs)		I_n	10 kA
Mechanical & Enviornmental			
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 mm² (solid) / 25 mm² (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 / 0.5A; 125 V / 3 A
RC Terminal Cross Section (max)			1.5 mm²
			16 AWG
RC Terminal Screw Torque		M_{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

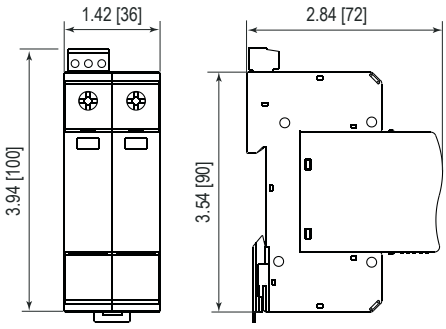
Internal Configuration



Legend

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

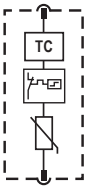
Dimensions & Packaging



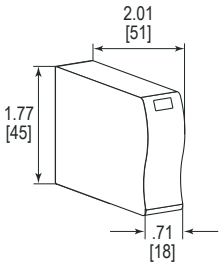
Dimensions & Packaging		
SafeTec C xxxx PV (2+0)		**1000**
Single Unit Weight	pounds [grams]	.659 [299]
SafeTec CR xxxx PV (2+0)		**1000**
Single Unit Weight	pounds [grams]	.677 [307]
Single Unit DIN 43880 Dimension		2 TE
Packaging Dimensions (H × W × L)		4.30" × 3.03" × 1.65" [109 × 77 × 42 mm]
Minimum 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 × W × L)		3.86" × 3.03" × 4.33" [98 × 77 × 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

UL Listed

Type 2 • Type 4 CA

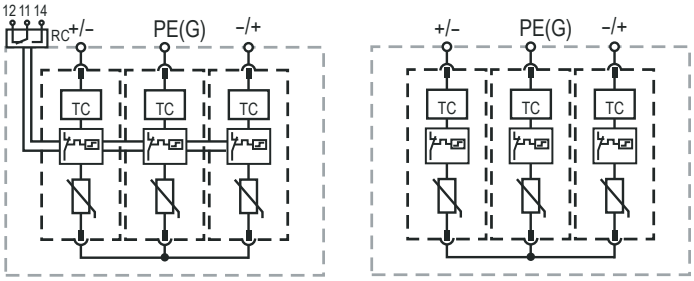
Location of Use: Photovoltaic Systems – DC Side
Mode of Protection: (+)-PE, (-)-PE, (+)-(-)
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 50 kA (8/20 µs)
EN/UL Category: Type 2 / Type 4 CA
Protective Elements: High Energy MOV and GDT
Safety: Ground Fault Withstand
Housing: Modular Design
Compliance: 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		$U_{oc\ STC}$	830 V
Maximum Continuous Operating Voltage (DC)		U_{CPV}	1000 V
Nominal Discharge Current (8/20 µs)		I_n	20 kA
Total Discharge Current (8/20 µs)		I_{total}	40 kA
Maximum Discharge Current (8/20 µs)		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}	1000 V
Voltage Protection Rating		MLV	3980 V
Nominal Discharge Current (8/20 µs)		I_n	20 kA
Mechanical & Enviornmental			
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 mm² (solid) / 25 mm² (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: 250 V / 0.5A; 125 V / 3 A
RC Terminal Cross Section (max)			1.5 mm²
			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

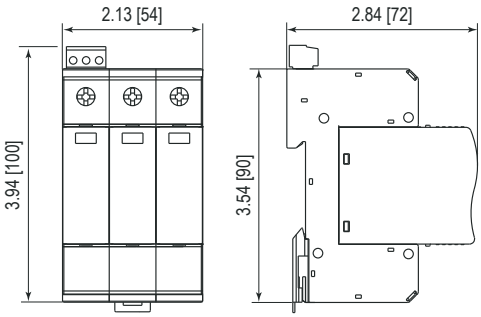
Internal Configuration



Legend

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

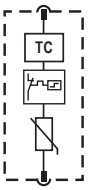
Dimensions & Packaging



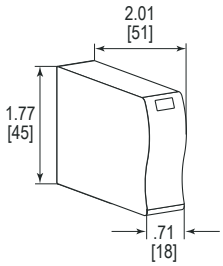
Dimensions & Packaging		
SafeTec C xxxx PV (3+0)		**1000**
Single Unit Weight	pounds [grams]	.873 [396]
SafeTec CR xxxx PV (3+0)		**1000**
Single Unit Weight	pounds [grams]	.886 [402]
Single Unit DIN 43880 Dimension		3 TE
Packaging Dimensions (H × W × L)		4.30" × 3.03" × 2.44" [109 × 77 × 62 mm]
Minimum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

Module Internal Configuration

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



Dimensions & Packaging

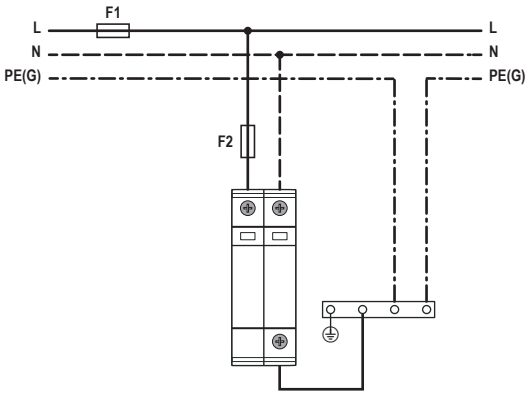


Dimensions & Packaging		
Module SafeTec C(R) xxxx PV (3+0)		**1000**
Single Unit Weight	pounds [grams]	.172 [78]
Packaging Dimensions (H × W × L)		3.86" × 3.03" × 4.33" [98 × 77 × 110 mm]
Minimum Order Quantity		12 Units

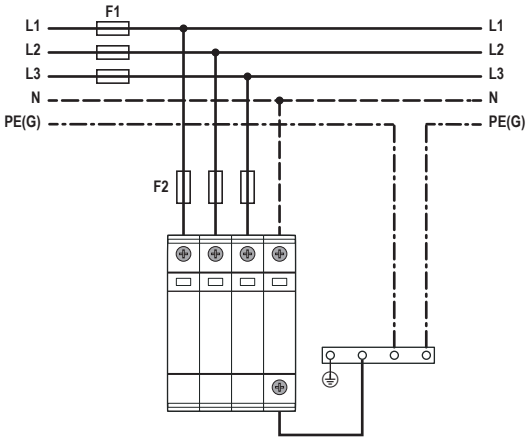
inches
[mm]

Applicable connection configurations can be found on page 155.

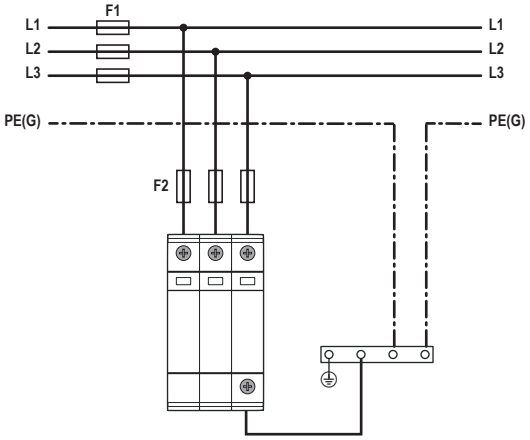
TN-S (Single-phase, 2+0)



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



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



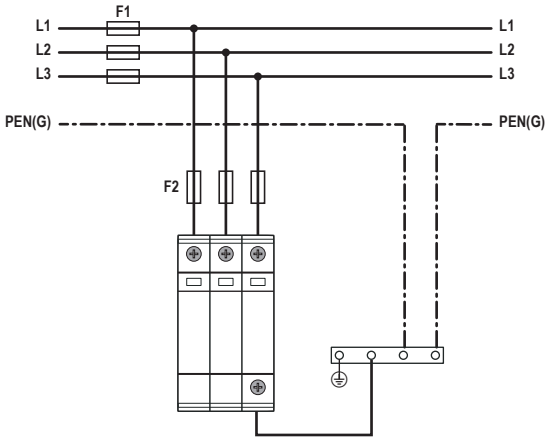
Back-up Fuse

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

WT Modular Multi-pole SPD Connection Configurations **UL Listed**

SafeTec C(R) WT UL Series

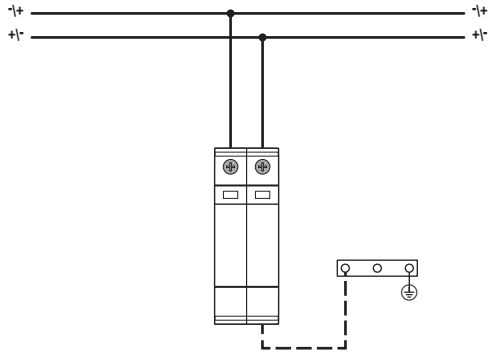
TN-C (Three-phase/3 WYE, 3+0)



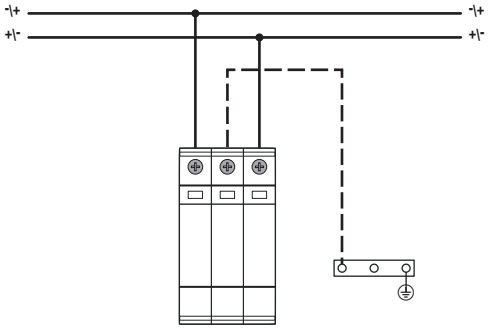
DC Modular Multi-pole SPD Connection Configurations

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_B-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

RoHS COMPLIANT CE

Modular Single Pole SPD

ProTec C(R) 40 (1+0)

Class II•Type 2

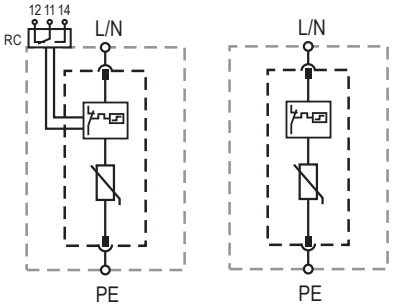
Location of Use: Sub-distribution Boards
Network Systems: TN-S, TN-C, TT (only L-N)
Mode of Protection: L-PE, N-PE, L-PEN, L-N
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 40 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV
Housing: Modular Design
Compliance: IEC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

Technical Data

ProTec C(R) 40/xxx (1+0)		75	150	275	320	385	440
Electrical							
Nominal AC Voltage (50/60 Hz)	U_o	60 V	120 V	230 V	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	75 V	150 V	275 V	320 V	385 V	440 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA					
Maximum Discharge Current (8/20 µs)	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	87 V	174 V	335 V	335 V	438 V	438 V
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 mm² (solid) / 25 mm² (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)		1.5mm²					
RC Terminal Screw Torque	M_{max}	0.25Nm					
Order Information							
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)

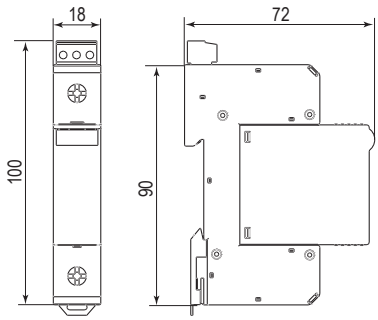
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

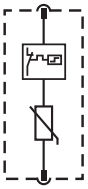
Dimensions & Packaging [mm]



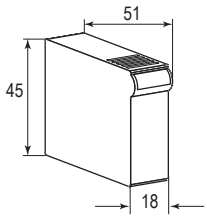
Dimensions & Packaging						
ProTec C 40/xxx (1+0)	**75**	**150**	**275**	**320**	**385**	**440**
Single Unit Weight	112 g	122 g	128 g	128 g	129 g	130 g
Single Unit DIN 43880 Dimension	1 TE					
Packaging Dimensions (H × W × L)	110 × 77 × 24 mm					
Minimum Order Quantity	12 Units					
ProTec CR 40/xxx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

Module Internal Configuration

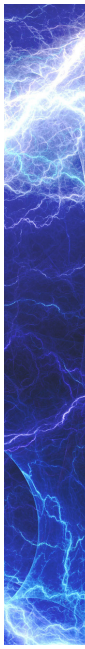
Module ProTec C(R) 40/xxx



Dimensions & Packaging [mm]



Dimensions & Packaging						
Module ProTec C(R) 40/xxx	**75**	**150**	**275**	**320**	**385**	**440**
Weight per Unit	44 g	48 g	52 g	56 g	58 g	60 g
Packaging Dimensions	98 × 77 × 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

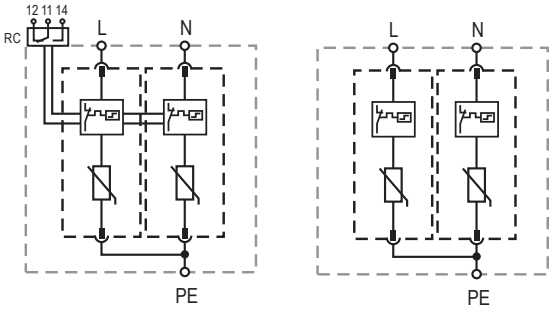
Location of Use: Sub-distribution Boards
Network Systems: TN-S
Mode of Protection: L-PE, N-PE
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 40 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV
Housing: Modular Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec C(R) 80/xxx (2+0)		150	275	320	385	440
Electrical						
Nominal AC Voltage (50/60 Hz)	U_o	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 µs)	I_n			20 kA		
Maximum Discharge Current (8/20 µs)	I_{max}			40 kA		
Voltage Protection Level	U_p	< 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	174 V	335 V	335 V	438 V	438 V
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 mm² (solid) / 25 mm² (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 mm²		
RC Terminal Screw Torque	M_{max}			0.25 Nm		
Order Information						
Order Code		150	275	320	385	440
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)

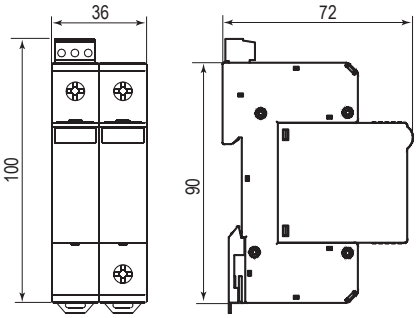
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

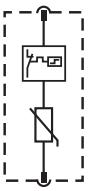
Dimensions & Packaging [mm]



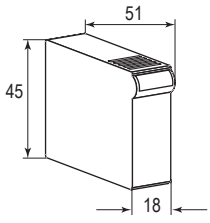
Dimensions & Packaging					
ProTec C 80/xxx (2+0)	**150**	**275**	**320**	**385**	**440**
Single Unit Weight	234 g	244 g	244 g	245 g	247 g
Single Unit DIN 43880 Dimension	2 TE				
Packaging Dimensions (H × W × L)	109 × 77 × 42 mm				
Minimum Order Quantity	7 Units				
ProTec CR 80/xxx (2+0)	**150**	**275**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

Module Internal Configuration

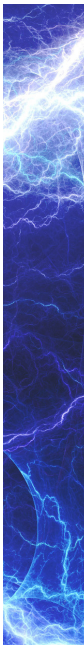
Module ProTec C(R) 40/xxx



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 × W × L)	98 × 77 × 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

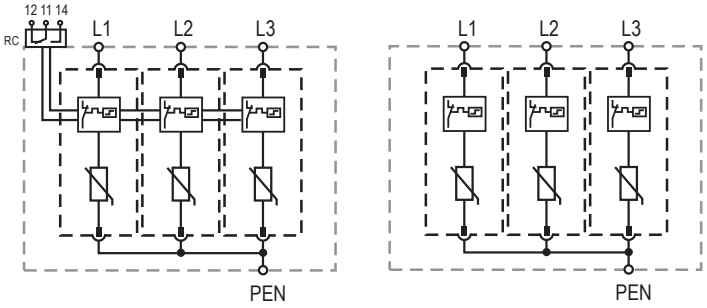
Location of Use: Sub-distribution Boards
Network Systems: TN-C
Mode of Protection: L - PEN
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 40 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV
Housing: Modular Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec C(R) 120/xxx (3+0)		150	275	320	385	440
Electrical						
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 µs)	I_n			20 kA		
Maximum Discharge Current (8/20 µs)	I_{max}			40 kA		
Voltage Protection Level	U_p	< 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	174 V	335 V	335 V	438 V	438 V
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 mm² (solid) / 25 mm² (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 mm²		
RC Terminal Screw Torque	M_{max}			0.25 Nm		
Order Information						
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)

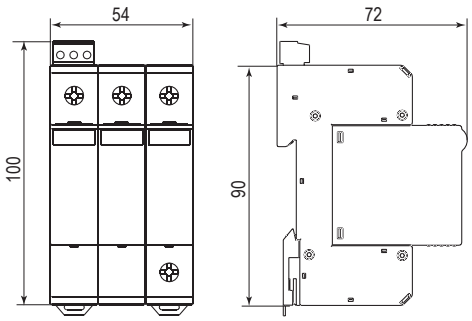
Internal Configuration



Legend

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

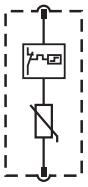
Dimensions & Packaging [mm]



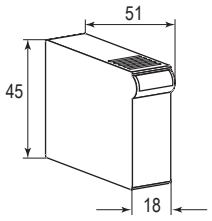
Dimensions & Packaging					
ProTec C 120/xxx (3+0)	**150**	**275**	**320**	**385**	**440**
Single Unit Weight	330 g	352 g	352 g	354 g	356 g
Single Unit DIN 43880 Dimension	3 TE				
Packaging Dimensions (H × W × L)	109 × 77 × 62 mm				
Minimum Order Quantity	5 Units				
ProTec CR 120/xxx (3+0)	**150**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

Module Internal Configuration

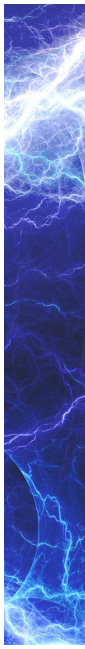
Module ProTec C(R) 40/xxx



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 × W × L)	98 × 77 × 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

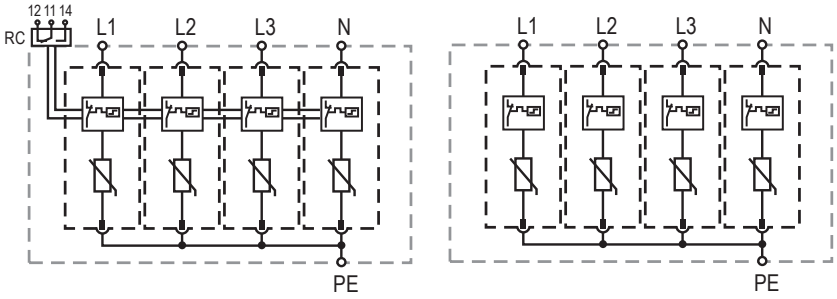
Location of Use: Sub-distribution Boards
Network Systems: TN-S
Mode of Protection: L-PE, N-PE
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 40 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV
Housing: Modular Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec C(R) 160/xxx (4+0)		150	275	320	385	440
Electrical						
Nominal AC Voltage (50/6Hz)	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 µs)	I_n			20 kA		
Maximum Discharge Current (8/20 µs)	I_{max}			40 kA		
Voltage Protection Level	U_p	< 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 > 12 A)				125 A gG		
Short-Circuit Current Rating (AC)	I_{SCCR}			25 kA		
TOV Withstand 5s	U_T	174 V	335 V	335 V	438 V	438 V
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 mm² (solid) / 25 mm² (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 mm²		
RC Terminal Screw Torque	M_{max}			0.25 Nm		
Order Information						
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)

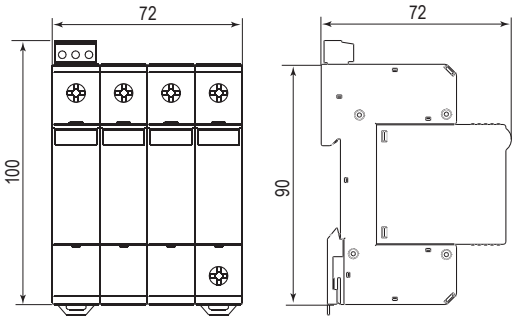
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

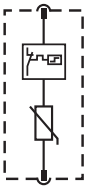
Dimensions & Packaging [mm]



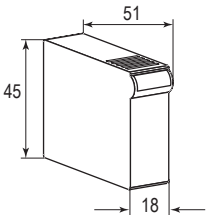
Dimensions & Packaging					
ProTec C 160/xxx (4+0)	**150**	**275**	**320**	**385**	**440**
Single Unit Weight	432 g	456 g	456 g	460g	466 g
Single Unit DIN 43880 Dimension	4 TE				
Packaging Dimensions (H × W × L)	109 × 77 × 80 mm				
Minimum Order Quantity	3 Units				
ProTec CR 160/xxx (4+0)	**150**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

Module Internal Configuration

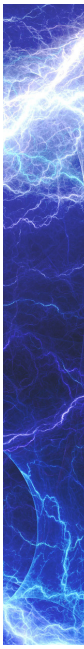
Module ProTec C(R) 40/xxx



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 × W × L)	98 × 77 × 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

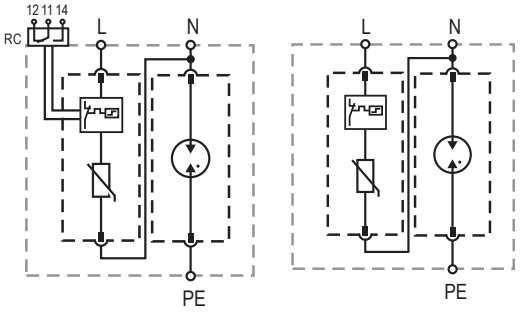
Location of Use: Sub-distribution Boards
Network Systems: TT, TN-S
Mode of Protection: L-N, N-PE
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 40 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV and GDT
Housing: Modular Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec C(R) 80/xxx (1+1)			150	275	320	385	440
Electrical							
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 µs)	(L-N)/(N-PE)	I_n			20 kA / 20 kA		
Maximum Discharge Current (8/20 µs)	(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_{RMS}		
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	174 V	335 V	335 V	438 V	438 V
TOV Withstand 200ms	(N-PE)	U_T			1200 V / 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^2 (solid) / 25 mm^2 (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^2		
RC Terminal Screw Torque		M_{max}			0.25 Nm		
Order Information							
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)

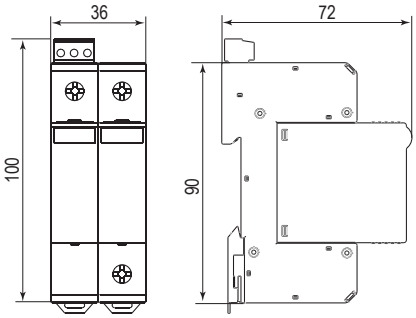
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

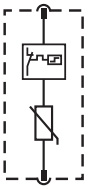
Dimensions & Packaging [mm]



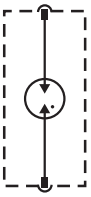
Dimensions & Packaging					
ProTec C 80/xxx (1+1)	**150**	**275**	**320**	**385**	**440**
Single Unit Weight	221 g	225 g	225 g	226 g	227 g
Single Unit DIN 43880 Dimension	2 TE				
Packaging Dimensions (H × W × L)	109 × 77 × 42 mm				
Minimum Order Quantity	7 Units				
ProTec CR 80/xxx (1+1)	**150**	**275**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

Module Internal Configuration

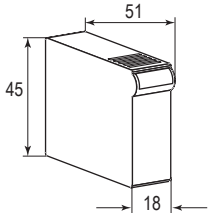
Module ProTec C(R) 40/xxx



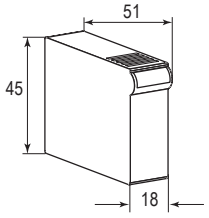
Module ProTube C 40/xxx



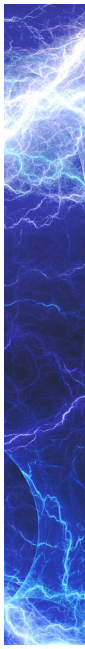
Dimensions & Packaging [mm]



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 × W × L)	98 × 77 × 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 × W × L)	98 × 77 × 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

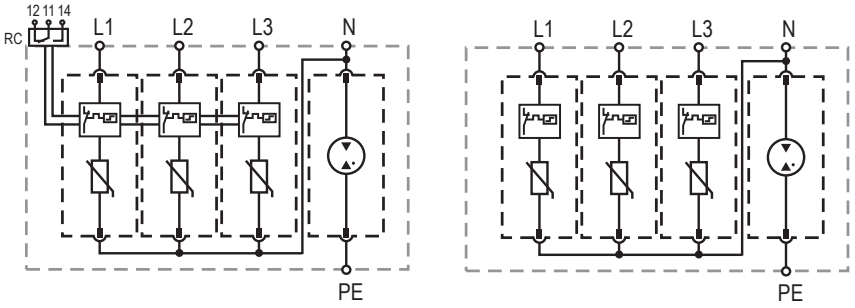
Location of Use: Sub-distribution Boards
Network Systems: TT, TN-S
Mode of Protection: L-N, N-PE
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 40 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV and GDT
Housing: Modular Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec C(R) 160/xxx (3+1)			275	320	385	440
Electrical						
Nominal AC Voltage (50/60 Hz)		U_o	230 V	230 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	275 V	320 V	385 V	440 V
	(N-PE)	U_c		255 V		
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n		20 kA / 20 kA		
Maximum Discharge Current (8/20 µs)	(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_{RMS}		
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	335 V	335 V	438 V	438 V
TOV Withstand 200ms	(N-PE)	U_T		1200 V / 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 mm² (solid) / 25 mm² (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 mm²		
RC Terminal Screw Torque		M_{max}		0.25 Nm		
Order Information						
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)

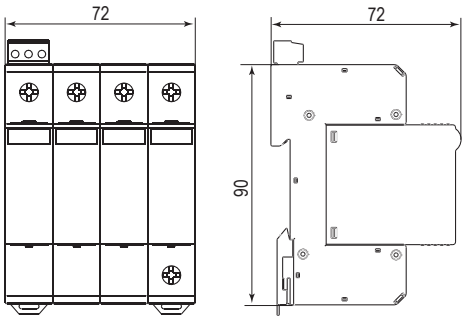
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

Dimensions & Packaging [mm]

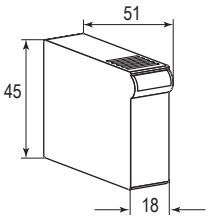


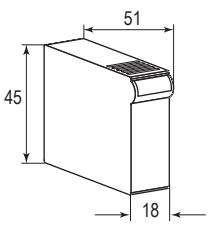
Dimensions & Packaging				
ProTec C 160/xxx (3+1)	**275**	**320**	**385**	**440**
Single Unit Weight	441 g	441 g	445 g	447 g
Single Unit DIN 43880 Dimension	4 TE			
Packaging Dimensions (H × W × L)	109 × 77 × 80 mm			
Minimum Order Quantity	3 Units			
ProTec CR 160/xxx (3+1)	**275**	**385**	**385**	**440**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

Module Internal Configuration

Module ProTec C(R) 40/xxx **Module ProTube C 40/xxx**

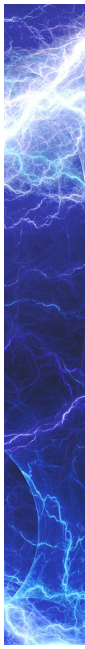
Dimensions & Packaging [mm]





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 × W × L)	98 × 77 × 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 × W × L)	98 × 77 × 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

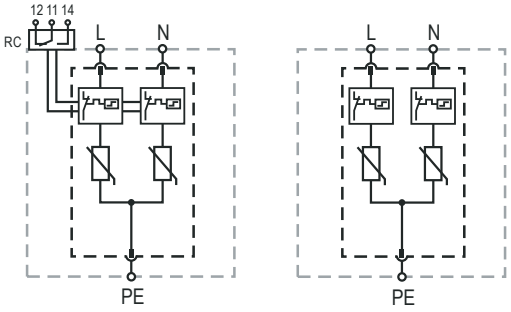
Location of Use: Sub-distribution Boards
Network Systems: TN-S
Mode of Protection: L-PE, N-PE
Surge Ratings: I_n = 15 kA (8/20 µs)
I_{max} = 40 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV
Housing: Modular Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec CM(R) 80/xxx (2+0)		275	320
Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	230 V	230 V
Maximum Continuous Operating Voltage (AC/DC)	U_c	275 V	320 V
Nominal Discharge Current (8/20 µs)	I_n	15 kA	
Maximum Discharge Current (8/20 µs)	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 > 125 A)		63 A gG	
Short-Circuit Current Rating	I_{SCCR}	25 kA / 50 Hz	
TOV Withstand 5s	U_T	335 V	335 V
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	
	PE M_{max}	3.0 Nm	
Conductor Cross Section	L, N	6 mm² (solid) / 4 mm² (stranded)	
	PE	35 mm² (solid) / 25 mm² (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: 250 V / 0.5 A; 125 V / 3 A	
RC Terminal Cross Section (max)		1.5 mm²	
RC Terminal Screw Torque		0.25 Nm	
Order Information			
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)

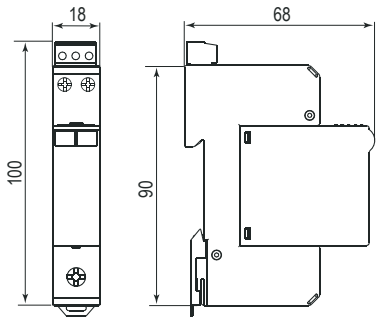
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

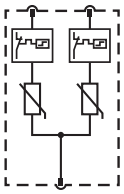
Dimensions & Packaging [mm]



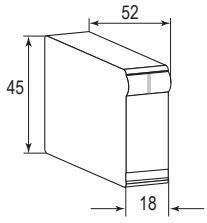
Dimensions & Packaging		
ProTec CM 80/xxx (2+0)	**275**	**320**
Single Unit Weight	144 g	144 g
Single Unit DIN 43880 Dimension	1 TE	
Packaging Dimensions (H × W × L)	109 × 77 × 24 mm	
Minimum Order Quantity	12 Units	
ProTec CMR 80/xxx (2+0)	**275**	**320**
Single Unit Weight	149 g	149 g
Single Unit DIN 43880 Dimension	1 TE	
Packaging Dimensions (H × W × L)	109 × 77 × 24 mm	
Minimum Order Quantity	12 Units	

Module Internal Configuration

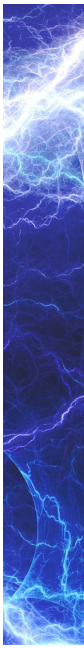
Module ProTec CM(R) 80/xxx (2+0)



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 × W × L)	98 × 77 × 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

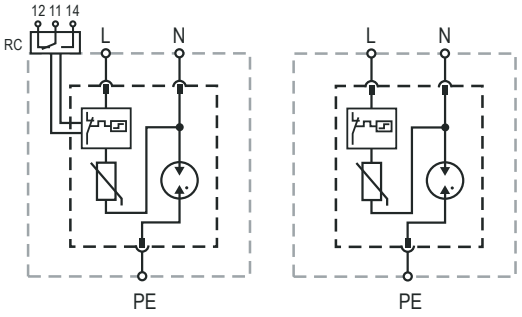
Location of Use: Sub-distribution Boards
Network Systems: TT, TN-S
Mode of Protection: L-N, N-PE
Surge Ratings: I_n = 15 kA/20 kA (8/20 µs)
I_{max} = 40 kA/40 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV and GDT
Housing: Modular Design
Compliance: IEC 61643-11:2011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

Technical Data

ProTec CM(R) 80/xxx (1+1)			275	320
Electrical				
Nominal AC Voltage (50/60 Hz)		U_o	230 V	230 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	275 V	320 V
	(N-PE)	U_c	255 V	
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	15 kA/20 kA	
Maximum Discharge Current (8/20 µs)	(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_{RMS}	
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	335 V	335 V
TOV Withstand 200 ms	(N-PE)	U_T	1200 V/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	L, N	M_{max}	0.5 Nm	
	PE	M_{max}	3.0 Nm	
Conductor Cross Section	L, N		6 mm² (solid) / 4 mm² (stranded)	
	PE		35 mm² (solid) / 25 mm² (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 mm²	
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)

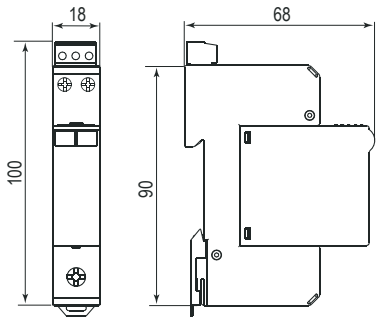
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

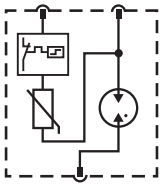
Dimensions & Packaging [mm]



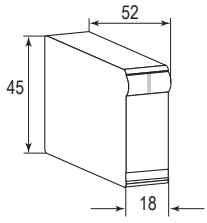
Dimensions & Packaging		
ProTec CM 80/xxx (1+1)	**275**	**320**
Single Unit Weight	126 g	126 g
Single Unit DIN 43880 Dimension	1 TE	
Packaging Dimensions (H × W × L)	109 × 77 × 24 mm	
Minimum Order Quantity	12 Units	
ProTec CMR 80/xxx (1+1)	**275**	**320**
Single Unit Weight	131 g	131 g
Single Unit DIN 43880 Dimension	1 TE	
Packaging Dimensions (H × W × L)	109 × 77 × 24 mm	
Minimum Order Quantity	12 Units	

Module Internal Configuration

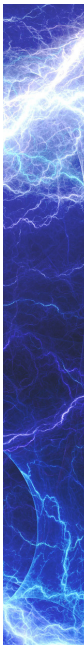
Module ProTec CM(R) 80/xxx (1+1)



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 × W × L)	98 × 77 × 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

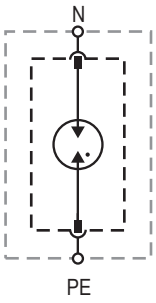
Location of Use: Sub-distribution Boards
Network Systems: TT
Mode of Protection: N-PE
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 40 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy GDT
Housing: Modular Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTube C 40/255		255
Electrical		
Nominal AC Voltage (50/60 Hz)	U_o	230 V
Maximum Continuous Operating Voltage (AC)	U_c	255 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	40 kA
Voltage Protection Level	U_p	< 1.5 kV
Follow Current Interrupt Rating	I_{fi}	100 A_{RMS}
Response Time	t_A	100 ns
TOV Withstand 200 ms	U_T	1200 V / 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 mm² (solid) / 25 mm² (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
PROTUBE C 40/xxx		50.A093
Module PROTUBE C 40/xxx		50.A050

ProTube C 40/255

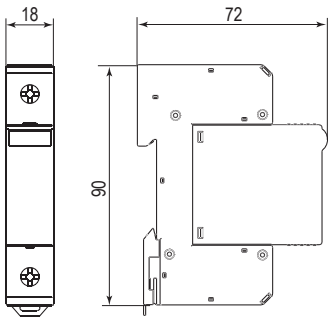
Internal Configuration



Legend

N Neutral
PE Protective Earth

Dimensions & Packaging [mm]

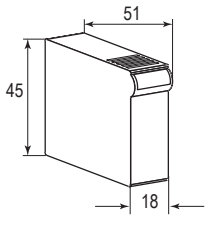


Dimensions & Packaging	
ProTube C 40/255	**255**
Single Unit Weight	118 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H × W × L)	110 × 77 × 24 mm
Minimum Order Quantity	12 Units

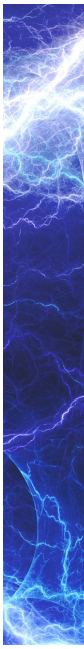
Module Internal Configuration

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 × W × L)	98 × 77 × 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

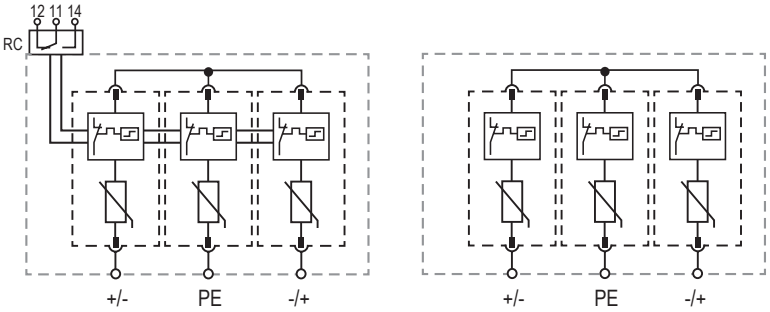
Location of Use: Photovoltaic Systems – PV Module Side
Mode of Protection: (+)-PE, (-)-PE, (+)-(-)
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 40 kA (8/20 µs)
EN Category: Type 2
Protective Elements: High Energy MOV
Housing: Modular Design
Compliance: EN 50539-11:2013 + A1:2014

Technical Data

PV ProTec C(R) 40/xxxx Y TD			1000
Electrical			
Open Circuit Voltage		$U_{OC\ STC}$	830 V
Maximum Continuous Operating Voltage (DC)		U_{CPV}	1000 V
Nominal Discharge Current (8/20 µs)		I_n	20 kA
Total Discharge Current (8/20 µs)		I_{total}	40 kA
Maximum Discharge Current (8/20 µs)		I_{max}	40 kA
Voltage Protection Level	(+)-(-)	U_p	< 4.0 kV
	(+)/(-)-PE	U_p	< 4.0 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 mm² (solid) / 25 mm² (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 mm²
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

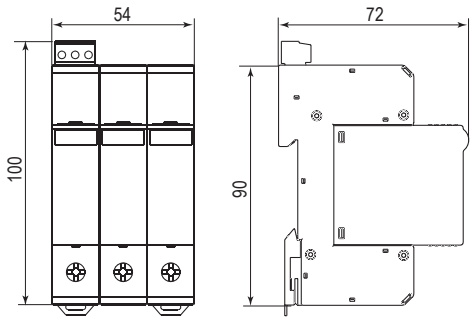
Internal Configuration



Legend

PE Protective Earth
RC Remote Contacts Optional

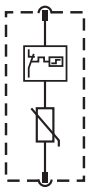
Dimensions & Packaging [mm]



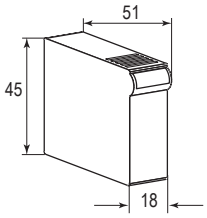
Dimensions & Packaging	
PV Protec C 40/xxxx Y TD	**1000**
Single Unit Weight	398 g
Single Unit DIN 43880 Dimension	3 TE
Packaging Dimensions (H × W × L)	109 × 77 × 62 mm
Minimum Package Quantity	5 Units
PV Protec CR 40/xxxx Y TD	**1000**
Single Unit Weight	403 g
Single Unit DIN 43880 Dimension	3 TE
Packaging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

Module Internal Configuration

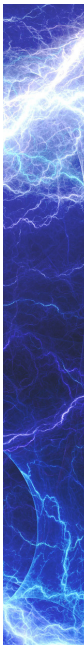
Module ProTec C(R) 40/xxxx Y TD



Dimensions & Packaging [mm]

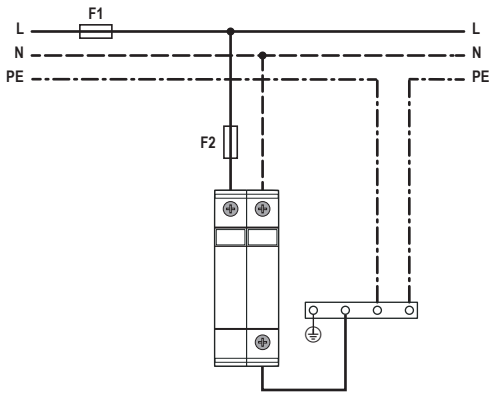


Dimensions & Packaging	
Module ProTec B(R) 5/xxxx Y	**1000**
Single Unit Weight	58 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H × W × L)	98 × 77 × 110 mm
Minimum Order Quantity	12 Units

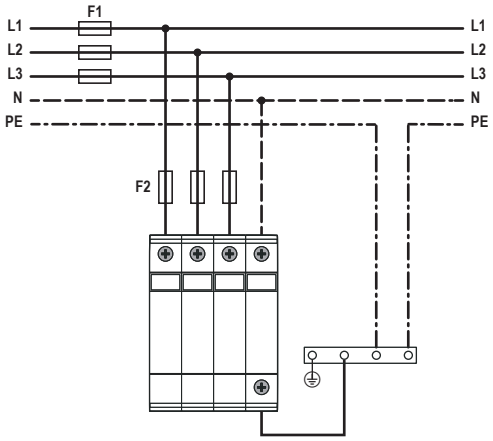


Applicable connection configurations can be found on page 179.

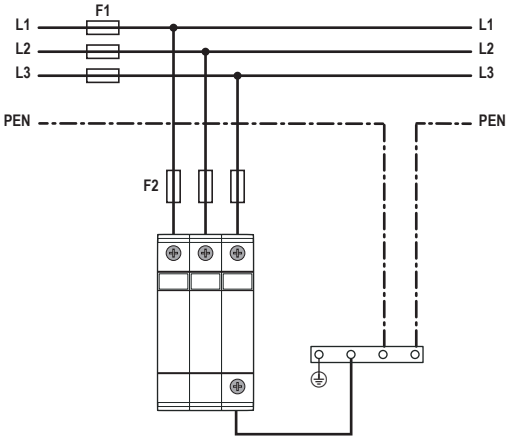
TN-S (Single-phase, 2+0)



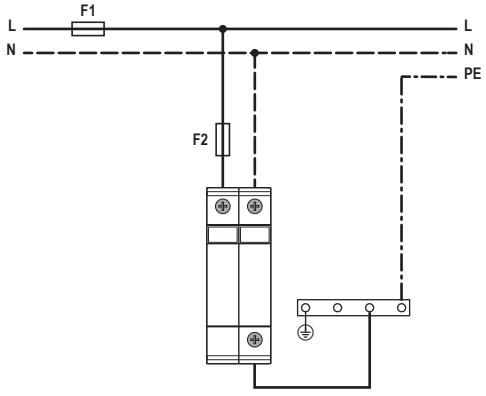
TN-S (Three-phase, 4+0)



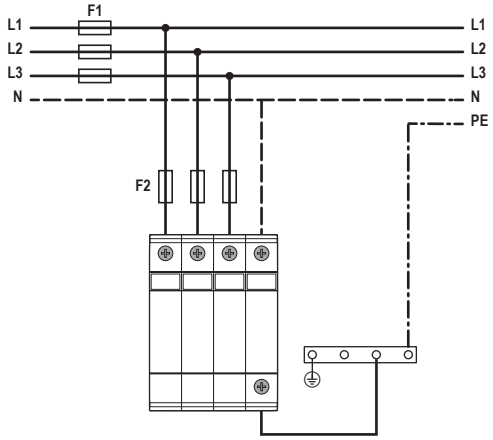
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



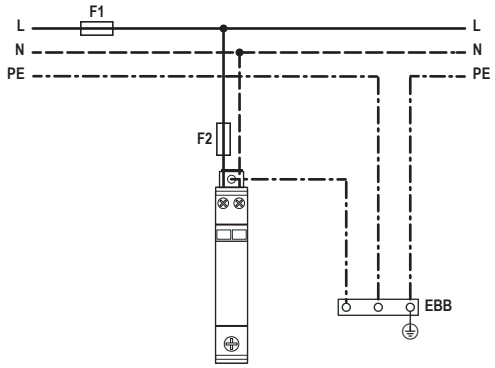
Back-up Fuse

F1 > 125 A gG → F2 = 125 A gG

F1 ≤ 125 A gG → ~~F2~~

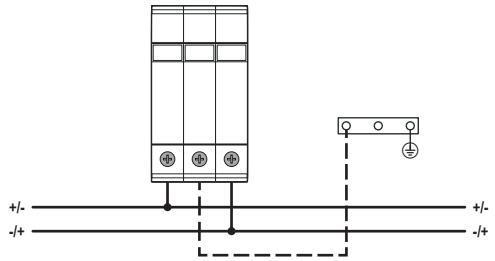
Modular Multi-pole SPD Connection Configurations
ProTec CM(R) Series

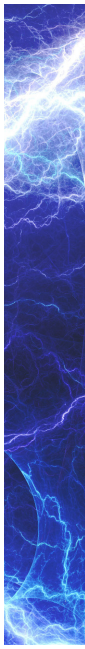
TN-S (Single-phase, 2+0)



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, reoccuring 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 16 A / 230 VAC 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.

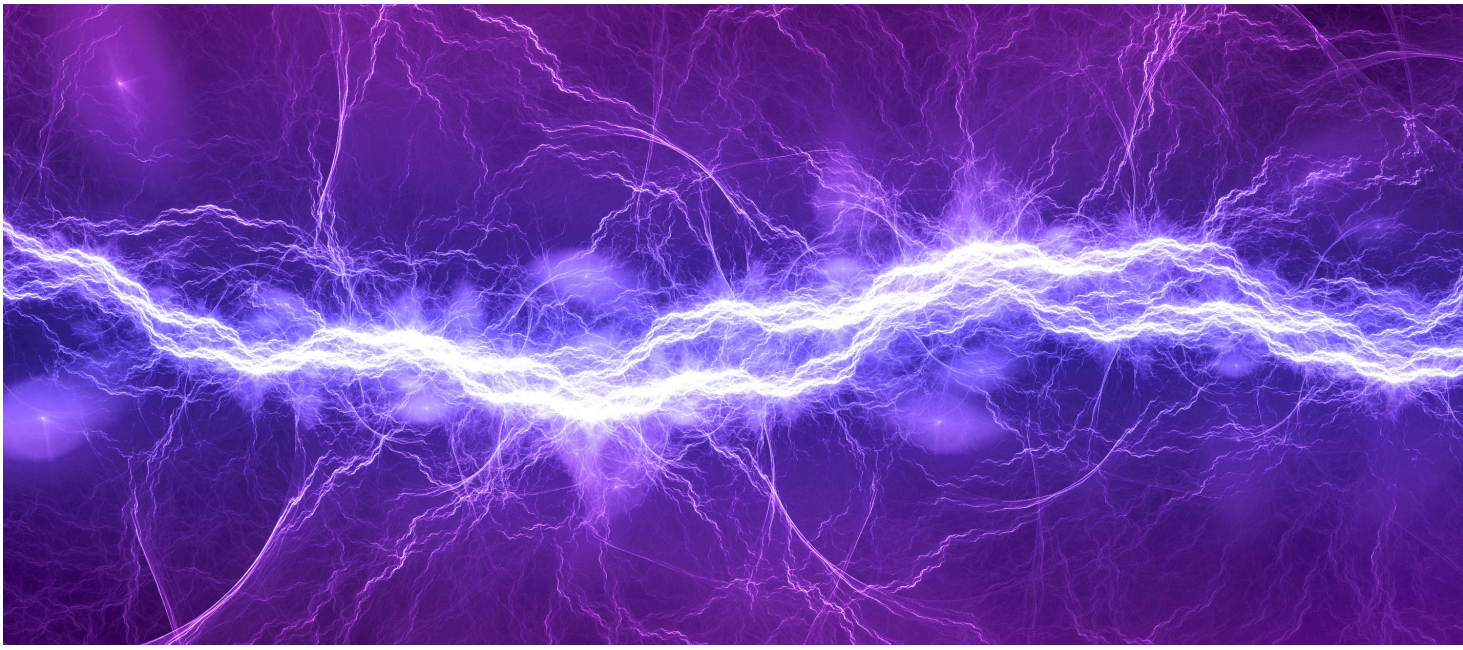
ProTec DMDR

ProTec DMG & DMGR 20 (2+0)

ProLed 275 (3+1)

MPE-Mini
MPE-Mini LED

ZE 200-PS



RoHS COMPLIANT CE

DC Modular Multi-pole SPD

ProTec DMDR 20 Series

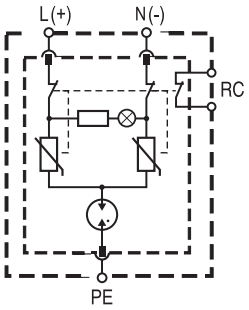
Class III•Type 3

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 (8/20µs)
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
Electrical						
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 (1.2/50µs)		U_{oc}	2.4kV	2.4kV	6kV	6kV
Short Circuit Current of the Combination Wave Generator (8/20µs)		I_{cw}	1.2kA	1.2kA	3kA	3kA
Maximum Discharge Current (8/20µs)		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	< 25ns			
	(L-PE)/(N-PE)		< 100ns			
Back-Up Fuse (if mains > 32A)			32A gG			
Short-Circuit Current Rating (AC)		I_{SCCR}	2kA			
TOV Withstand 5s (AC)		U_T	115V	148V	163V	225V
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}	0.5Nm			
Conductor Cross Section			Multi-strand to 6mm²			
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			
Order Information						
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

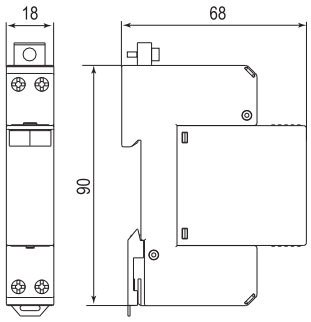
Internal Configuration



Legend

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

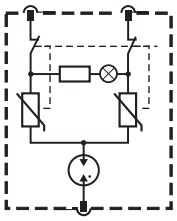
Dimensions & Packaging [mm]



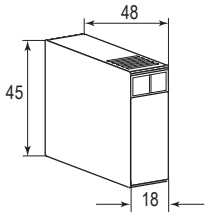
Dimensions & Packaging				
ProTec DMDR 20/xxx	**24**	**48**	**60**	**120**
Single Unit Weight	96 g	96 g	96 g	96 g
Single Unit DIN 43880 Dimension	1 TE			
Packaging Dimensions (H × W × L)	110 × 77 × 24 mm			
Minimum Order Quantity	12 Units			

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 × W × L)	98 × 77 × 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

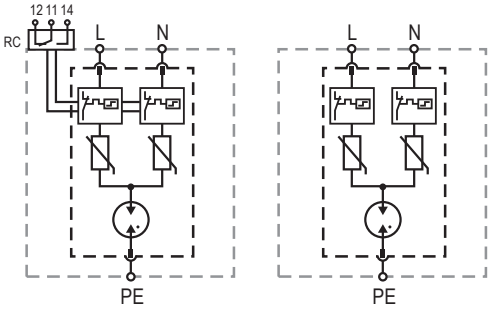
Location of Use: Sub-distribution Boards
Network Systems: TN-S
Mode of Protection: L-PE, N-PE
Surge Ratings: U_{oc}/I_{cw}= 10kV/5kA
I_{max}= 10kA (8/20µs)
IEC/EN Category: Class III/Type 3
Protective Elements: MOV and GDT
Housing: Modular Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec DMG(R) 20/xxx (2+0)		320
Electrical		
Nominal AC Voltage (50/60Hz)	U_o	230V
Maximum Continuous Operating Voltage (AC)	U_c	320V
Open Circuit Voltage of the Combination Wave Generator (1.2/50µs)	U_{oc}	10kV
Short Circuit Current of Combination Wave Generator (8/20µs)	I_{cw}	5kA
Maximum Discharge Current (8/20µs)	I_{max}	10kA
Voltage Protection Level	U_p	< 1.6kV
Response Time	t_A	< 100ns
Back-Up Fuse (if mains > 63A)		63A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	10kA
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}	0.5Nm
Terminal Screw Torque	PE M_{max}	3.0Nm
Conductor Cross Section	L, N	6mm² (solid) / 4mm² (stranded)
Conductor Cross Section	PE	35mm² (solid) / 25mm² (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)		1.5mm²
RC Terminal Screw Torque		0.25Nm
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)

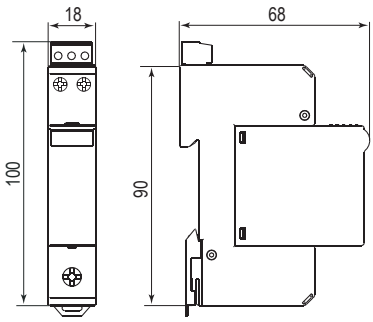
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

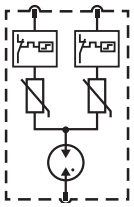
Dimensions & Packaging [mm]



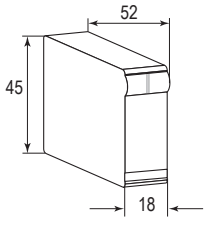
Dimensions & Packaging	
ProTec DMG 20/xxx (2+0)	**320**
Single Unit Weight	118 g
Single Unit DIN 43880 Dimension	1 TE
Packaging Dimensions (H × W × L)	110 × 77 × 24 mm
Minimum Order Quantity	12 Units
ProTec DMGR 20/xxx (2+0)	**320**
Single Unit Weight	123 g
Single Unit DIN 43880 Dimension	1 TE
Packaging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

Module Internal Configuration

Module ProTec DMG(R) 20/xxx



Dimensions & Packaging [mm]



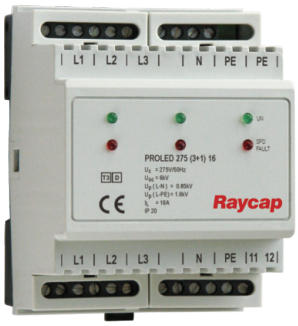
Dimensions & Packaging	
Module ProTec DMG(R) 20/xxx	**320**
Single Unit Weight	51 g
Packaging Dimensions (H × W × L)	98 × 77 × 110 mm
Minimum Order Quantity	12 Units

Applicable connection configurations can be found on page 192.

Compact SPD

ProLed 275 (3+1) 16A

Class III•Type 3



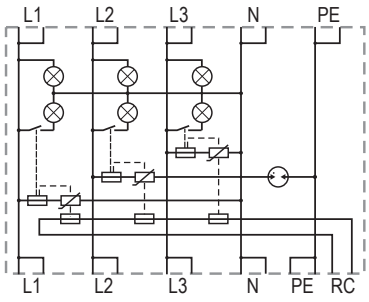
Location of Use: Sub-distribution Boards
Network Systems: TN-S
Mode of Protection: L-N,N-PE
Surge Ratings: U_{oc}/I_{cw}= 6kV/3kA
IEC/EN Category: Class III / Type 3
Protective Elements: MOV and GDT
Housing: Compact Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProLed 275 (3+1) 16A			275
Electrical			
Nominal AC Voltage (50/60Hz)		U_o	230V
Maximum Continuous Operating Voltage (AC)		U_c	275V
Maximum Rated Load Current		I_L	16A
Open Circuit Voltage of the Combination Wave Generator (1.2/50µs)		U_{oc}	6kV
Short-Circuit Current of the Combination Wave Generator (8/20µs)		I_{cw}	3kA
Voltage Protection Level	(L-N)	U_p	1.2kV
	(N-PE)	U_p	1.8kV
Response Time	(L-N)/(N-PE)	t_A	< 25ns / < 100ns
Back-Up Fuse (if mains > 16A)			MCB/B16A
Short-Circuit Current Rating (50Hz)		I_{SCCR}	1.5kA
TOV Withstand 5s		U_T	337V
Number of Ports			2
Mechanical & Environmental			
Temperature Range		T_a	-40 °C to +85 °C
Permissible Humidity		RH	5%...95%
Conductor Cross Section			2.5mm² (stranded)
Mounting			35mm 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			10A/230V AC
RC Terminal Cross Section (max)			2.5mm²
RC Terminal Screw Torque			0.5Nm
Order Information			
Order Code			**275**
ProLed 275 (3+1) 16A			130 304

ProLed 275 (3+1) 16 A

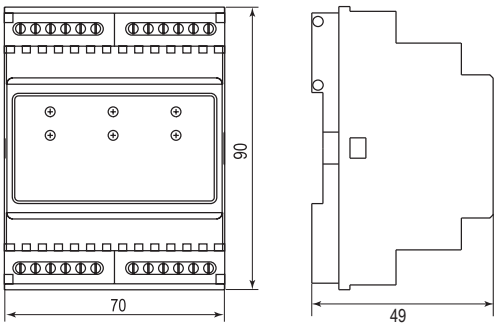
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts

Dimensions & Packaging [mm]



Dimensions & Packaging	
ProLed 275 (3+1) 16 A	**275**
Single Unit Weight	164 g
Single Unit DIN 43880 Dimension	4 TE
Packaging Dimensions (H × W × L)	109 × 77 × 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 kV/3 kA
I_{max} = 3 kA (8/20 µs)
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

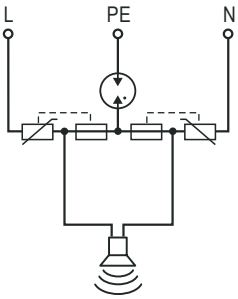
Technical Data

			MPE-Mini	MPE-Mini LED
Electrical				
Nominal AC Voltage (50/60 Hz)		U_o	230 V	
Maximum Continuous Operating Voltage (AC)		U_c	275 V	
Open Circuit Voltage of the Combination Wave Generator (1.2/50 µs)		U_{oc}	6 kV	
Short-Circuit Current of the Combination Wave Generator (8/20 µs)		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	
Mechanical & Environmental				
Temperature Range		T_a	-40 °C to +85 °C	
Permissible Humidity		RH	5%...95%	
Conductor Cross Section			1.0 mm² (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
Order Information				
Order Code			**MPE-Mini**	**MPE-Mini LED**
MPE-MINI			121 280	
MPE-MINI LED				121 282

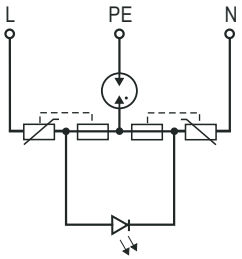
MPE Mini & MPE Mini LED

Internal Configuration

MPE-Mini



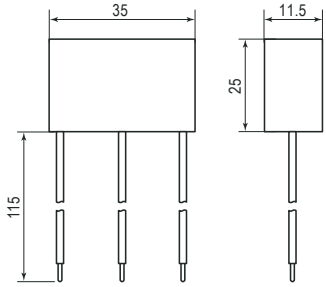
MPE-Mini LED



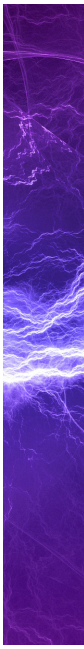
Legend

L *Line*
N *Neutral*
PE *Protective Earth*

Dimensions & Packaging [mm]



Dimensions & Packaging	
MPE-Mini & MPE-Mini LED	
Single Unit Weight	52 g
Packaging Dimensions (H × W × L)	305 × 116 × 83 mm
Minimum Order Quantity	30 Units



Compact Multi-pole SPD

ZE 200-PS

Class III•Type 3

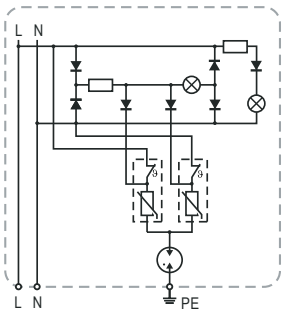
Location of Use: Power Outlets
Network Systems: TN-S
Mode of Protection: L-PE, L-N, N-PE
Surge Ratings: U_{oc}/I_{cw}= 10kV/5kA
IEC/EN Category: Class III / Type 3
Protective Elements: MOV and GDT
Safety: Green and Red Light
Housing: Compact Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ZE 200-PS			275
Electrical			
Nominal AC Voltage (50/60Hz)		U_o	230V
Maximum Continuous Operating AC Voltage		U_c	275V
Open Circuit Voltage of the Combination Wave Generator (1.2/50µs)		U_{oc}	10kV
Short-Circuit Current of the Combination Wave Generator (8/20µs)		I_{cw}	5kA
Voltage Protection Level	(L-N)	U_p	< 1.2kV
	(L-PE), (N-PE)	U_p	< 1.75kV
Response Time	(L-N)	t_A	< 25ns
	(N-PE)	t_A	< 100ns
Back-Up Fuse (if mains > 16A)			MCB/B 16A
Short-Circuit Current Rating		I_{SCCR}	1kA
TOV withstand 5s		U_T	334V
Number of Ports			1
Mechanical & Environmental			
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
Order Information			
Order Code			**275**
ZE 200-PS			121 601

ZE 200-PS

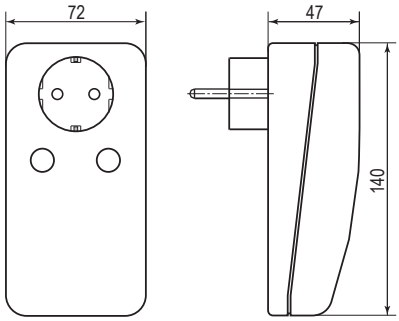
Internal Configuration



Legend

L Line/Inductor
N Neutral
PE Protective Earth

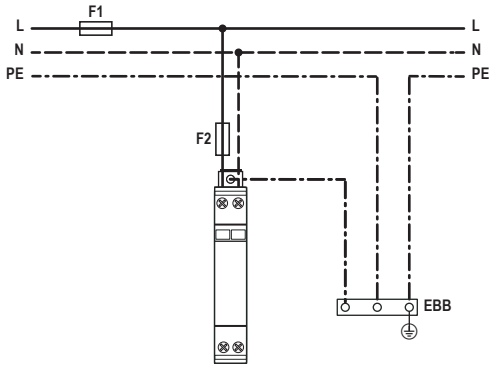
Dimensions & Packaging [mm]



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

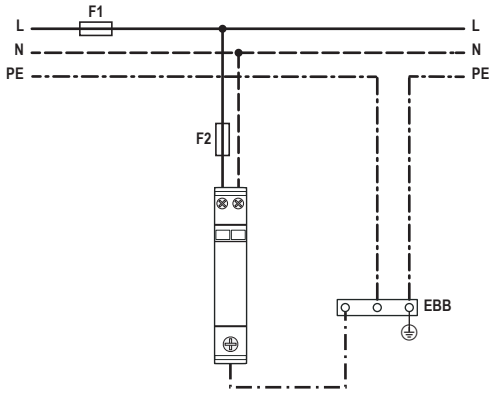
Modular Multi-pole SPD Connection Configuration
ProTec DMDR(R) 20 Series

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



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

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



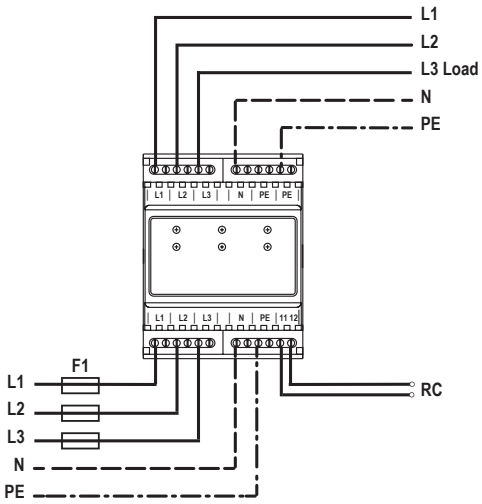
Back-up Fuse

F1 > 63 A gG → F2 = 63 A gG
F1 ≤ 63 A gG → F2

Compact Multi-pole SPD Connection Configuration

ProLed 275

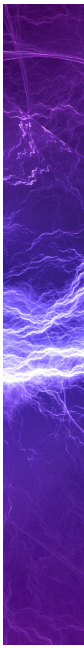
TN-S (Three-phase, 3+1)



Back-up Fuse

F1 > 16A gG → F2 = 16A gG

F1 ≤ 16A gG → F2



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

RoHS COMPLIANT CE

AC Indoor/Outdoor Combination SPD Enclosures

ProFilt PSF Series

Single Phase

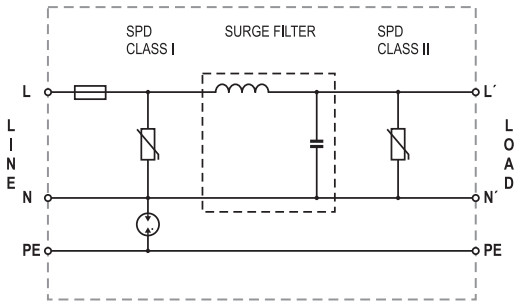
Class I • Class II • Type 1 • Type 2

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 µs)
I_L = up to 63 A
I_{max} = 100 kA (8/20 µs)
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				
Nominal AC Voltage (50/60 Hz)		U_o	230 V	230 V
Maximum Continuous Operating AC Voltage		U_c	320 V	320 V
Maximum Load Current		I_L	40 A	63 A
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}	100 kA / 100 kA	100 kA / 100 kA
Impulse Current (10/350 µs)	(L-N)/(N-PE)	I_{imp}	25 kA / 50 kA	25 kA / 50 kA
Voltage Protection Level at 20 kA (8/20 µs)		U_p	< 670 V	< 670 V
Voltage Protection Level at 25 kA (8/20 µs)		U_p	< 780 V	< 780 V
Maximum Voltage Drop		ΔU	< 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				
Single Phase			**40**	**63**
PROFILT PSF 1/xx/320/25 kA			130 490	130 491

Internal Configuration

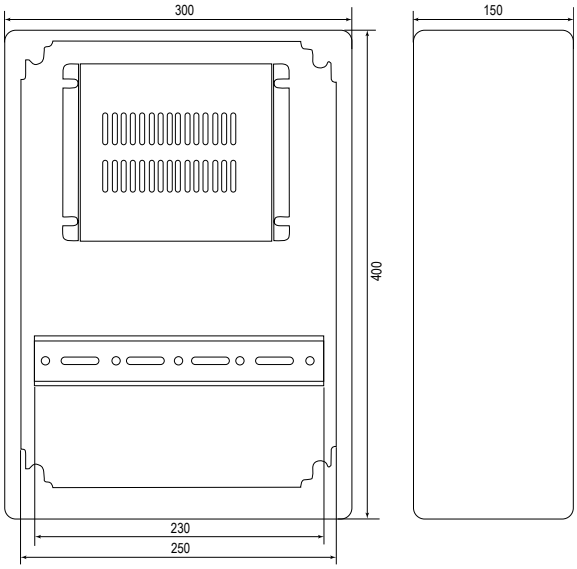


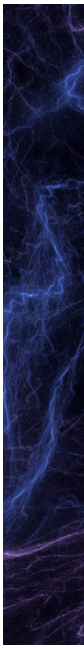
Legend

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 × W × L)	400 × 150 × 300 mm	
Minimum Order Quantity	1 Units	





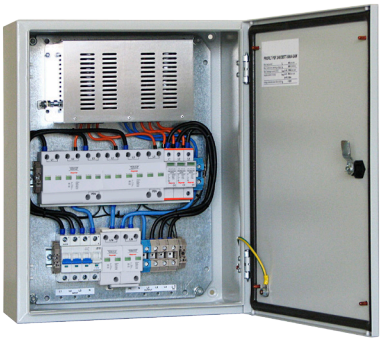
Additional solution configurations available upon request.

AC Indoor/Outdoor Combination SPD Enclosures

ProFilt PSF Series

Three Phase

Class I • Class II • Type 1 • Type 2

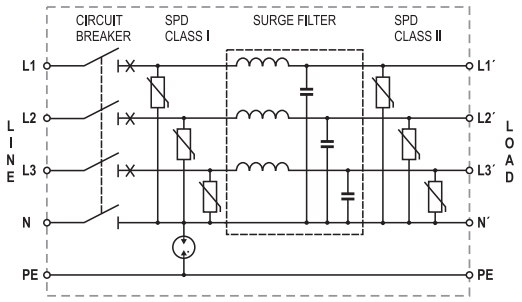


Location of Use: Close Proximity to Protected Equipment
Network Systems: TT
Mode of Protection: L-PE, N-PE
Surge Ratings: I_{imp} = up to 100 kA (10/350 µs)
I_L = up to 63 A
I_{max} = 100 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV, GDT and Surge Filter
Housing: 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				
Nominal AC Voltage (50/60 Hz)		U_o	230 V	230 V
Maximum Continuous Operating AC Voltage		U_c	320 V	320 V
Maximum Load Current		I_L	40 A	63 A
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}	100 kA / 100 kA	100 kA / 100 kA
Impulse Current (10/350 µs)	(L-N)/(N-PE)	I_{imp}	25 kA / 100 kA	25 kA / 100 kA
Voltage Protection Level at 20 kA (8/20 µs)		U_p	< 670 V	< 670 V
Voltage Protection Level at 25 kA (8/20 µs)		U_p	< 780 V	< 780 V
Maximum Voltage Drop		ΔU	< 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				
Three Phase			**40**	**63**
PROFILT PSF 3/xx/320/25 kA			130 492	130 493

Internal Configuration

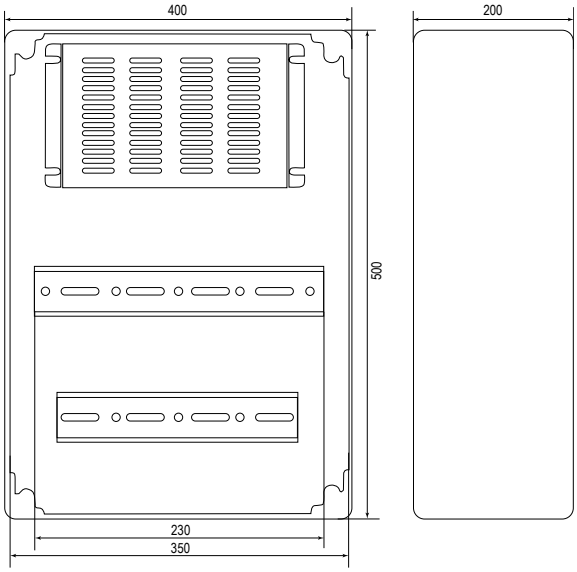


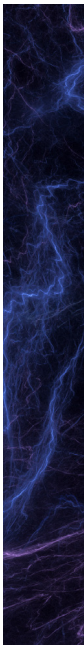
Legend

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 × W × L)	500 × 200 × 400 mm	
Minimum Order Quantity	1 Units	





Additional solution configurations available upon request.

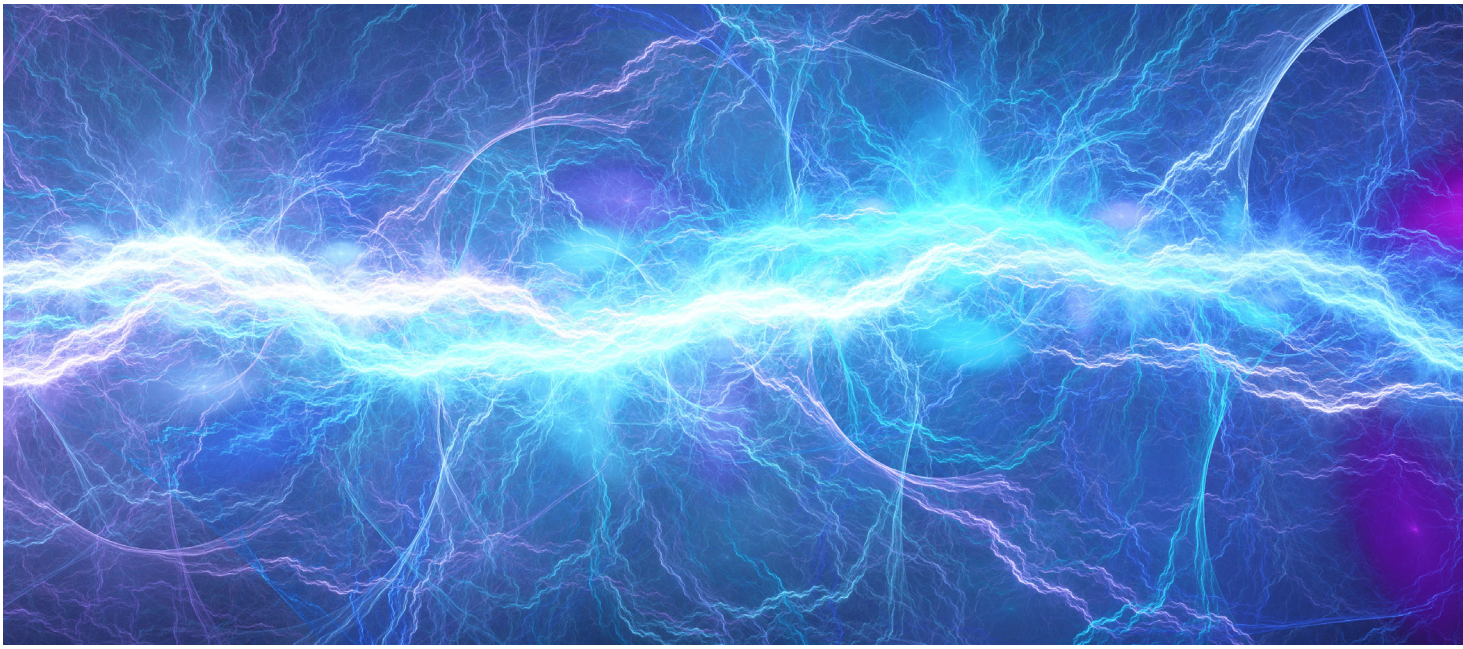
Overhead Power Lines
Surge Protective Devices SPDs

ProTec AQS

The ProTec AQS series of overvoltage surge protective devices has been developed to protect against indirect lightning discharges on overhead powere lines. The Class II SPD consists of a high performanced 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



RoHS COMPLIANT CE

Compact Single Pole SPD

ProTec AQS 40 Series

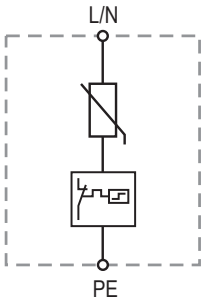
Class II•Type 2

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 kA (8/20 µs)
I_{max} = 40 kA (8/20 µs)
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
Electrical						
Nominal AC Voltage (50/60 Hz)		U_o	120 V	230 V	230 V	440 V
Maximum Continuous Operating Voltage (AC)		U_c	150 V	275 V	320 V	440 V
Nominal Discharge Current (8/20 µs)		I_n	20 kA			
Maximum Discharge Current (8/20 µs)		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	< 25ns			
TOV Withstand 5s		U_T	216 V	393 V	393 V	682 V
Number of Ports			1			
Mechanical & Environmental						
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 mm² (stranded)			
Mounting			Connection Accessories			
Degree of Protection			up to IP 67			
Housing Material			Silicon			
Thermal Protection			Yes			
Fault Indication			Disconnected Cable			
Order Information						
Order Code			150	275	320	440
PROTEC AQS 40/xxx			509.210	509.211	509.212	509.213

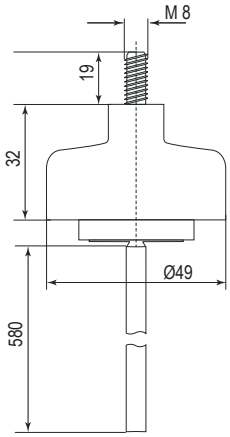
Internal Configuration



Legend

L *Line*
N *Neutral*
PE *Protective Earth*

Dimensions & Packaging [mm]



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

Isolating Spark Gap (ISG)
Surge Protective Devices SPDs

EPZ 100

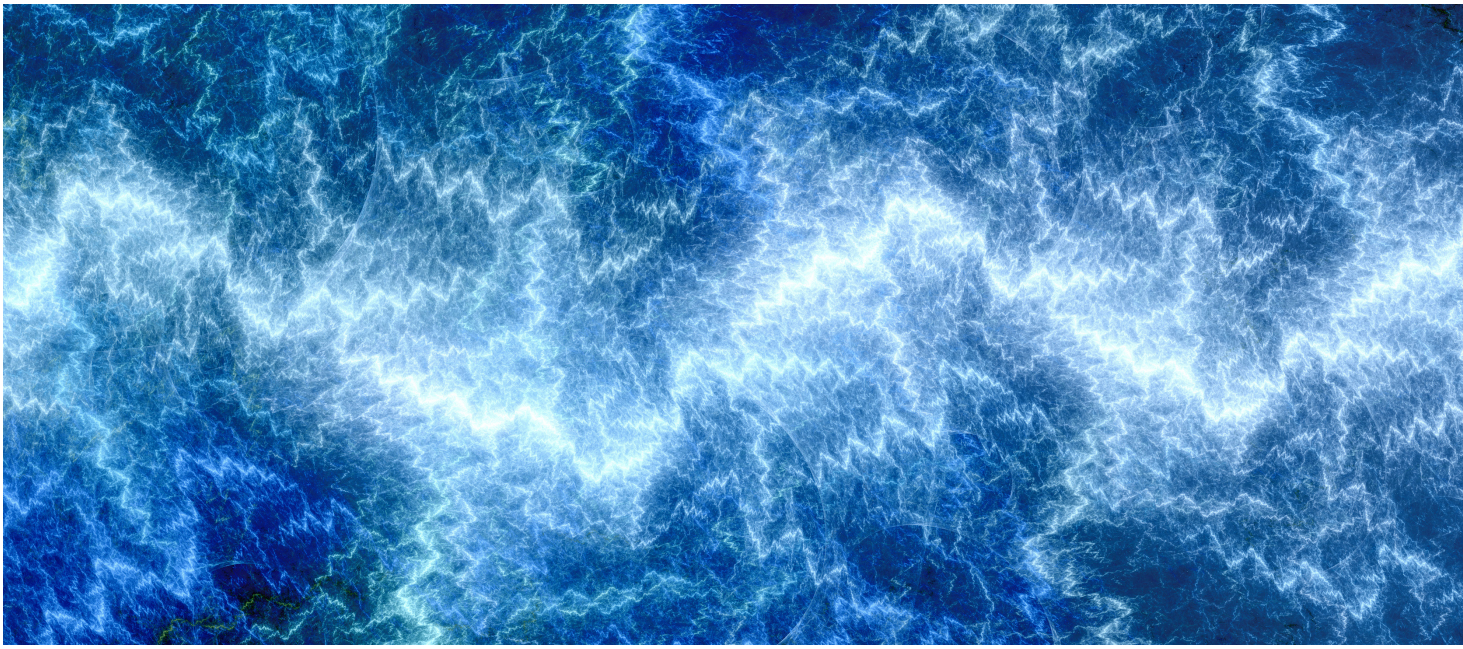
EPZ 100

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.



RoHS COMPLIANT CE

Isolating Spark Gaps (ISG) SPD

EPZ 100

Location of Use: Exposed Environments and Direct Burial
Surge Ratings: I_{imp} = 25 kA
I_{max} = 100 kA (8/20 µs)
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

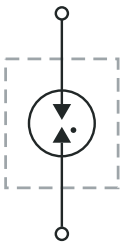
EPZ 100/xxx		350
Electrical		
Rated DC Withstand Voltage	U_{WDC}	350 V
Rated Impulse Sparkover Voltage	$U_{r\ imp}$	1000 V
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA
Impulse Discharge Current	I_{imp}	25 kA
Residual Voltage at 5 kA (8/20 µs)	U_{res}	1.6 kV
Class Lightning Current Curryng Capability		1 L
Capacitance at 1 MHz	C	< 10 pf
Mechanical & Environmental		
Temperature Range	Ta	-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 mm²
Number of Conductors		≥ 465/0.21
Insulation		Double Insulated
Enviromental 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 interal 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.

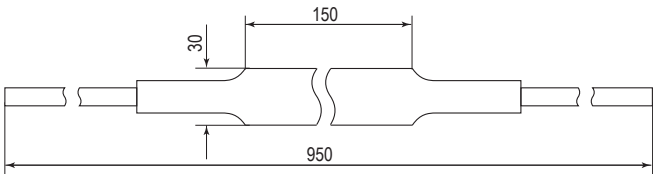
Order Information	
Order Code	**350**
EPZ 100/xxx	509 520

EPZ 100

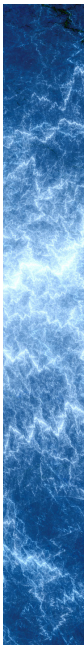
Internal Configuration



Dimensions & Packaging [mm]



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



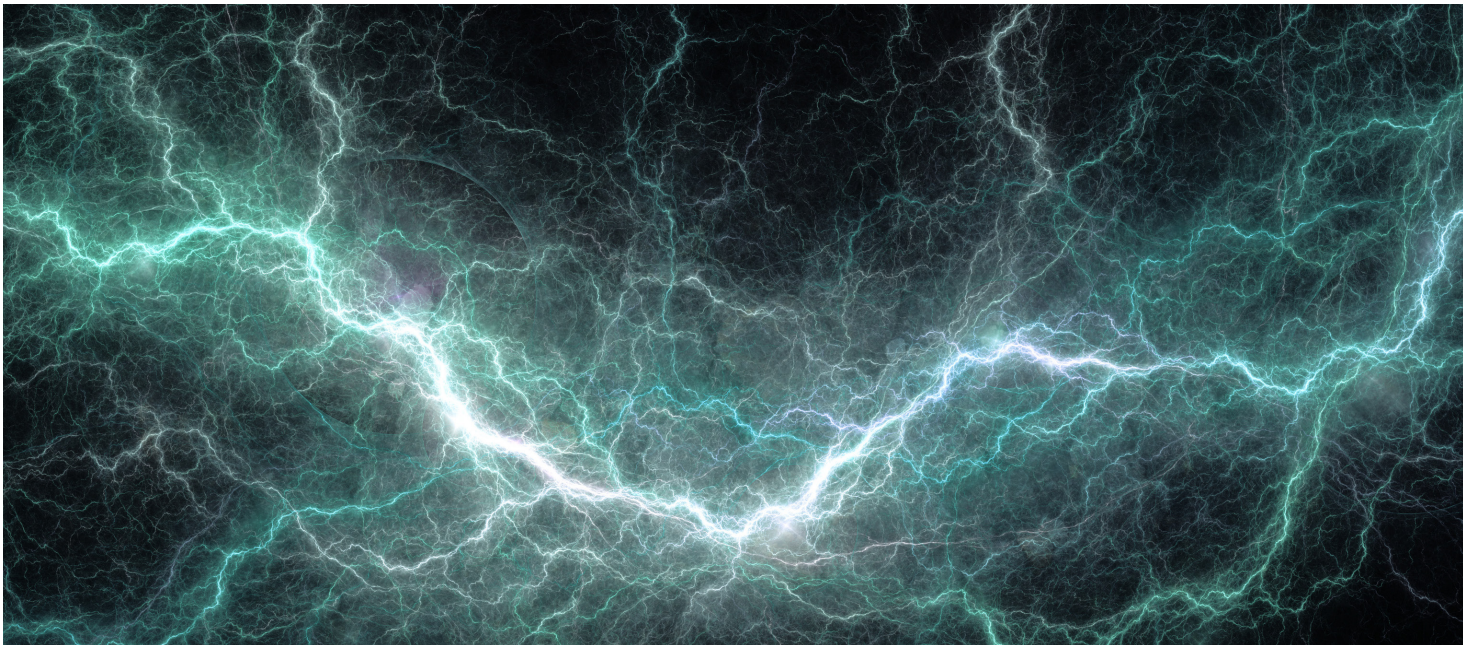
Surge Protective Devices
Connection Accessories

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

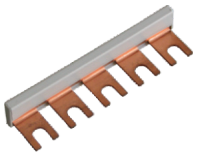


RoHS COMPLIANT CE

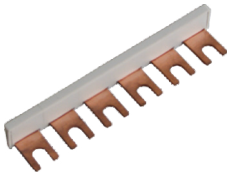
ProBar	1-2
Mechanical	
Number of Poles	2
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 338

ProBar	1-3
Mechanical	
Number of Poles	3
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 339

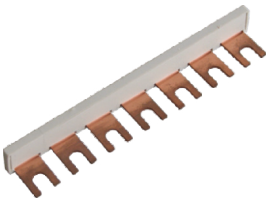
ProBar	1-4
Mechanical	
Number of Poles	4
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 340



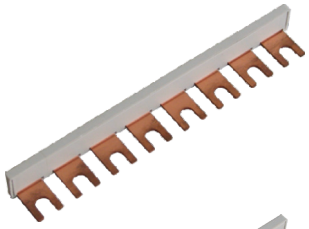
ProBar	1-5
Mechanical	
Number of Poles	5
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 341



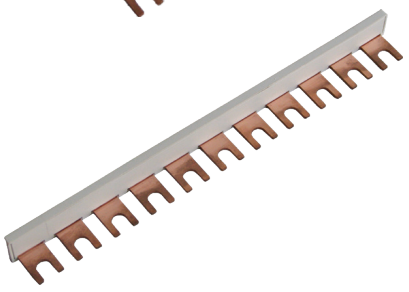
ProBar	1-6
Mechanical	
Number of Poles	6
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 342



ProBar	1-7
Mechanical	
Number of Poles	7
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 343



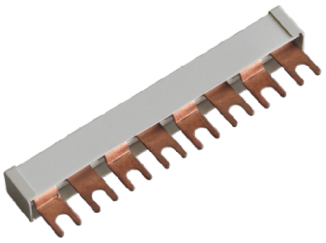
ProBar	1-8
Mechanical	
Number of Poles	8
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 344



ProBar	1-11
Mechanical	
Number of Poles	11
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 345

Modular Wiring Systems
ProBar Busbar

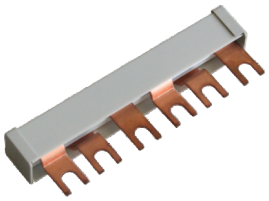
Two Phase Series



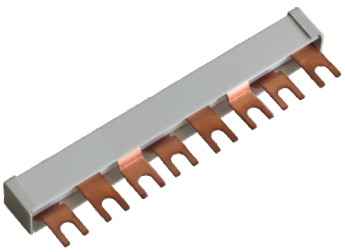
ProBar	2-8
Mechanical	
Number of Poles	8
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 346

Modular Wiring Systems
ProBar Busbars

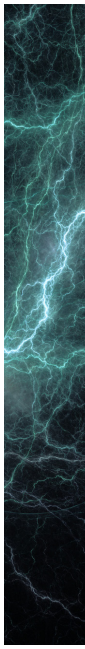
Three Phase Series



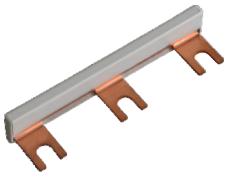
ProBar	3-6
Mechanical	
Number of Poles	6
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 347



ProBar	3-8
Mechanical	
Number of Poles	8
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 348

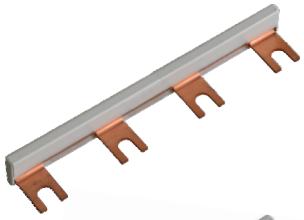


PB 1 (2+0)	**1 (2+0)**
Mechanical	
Number of Poles	2
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 349

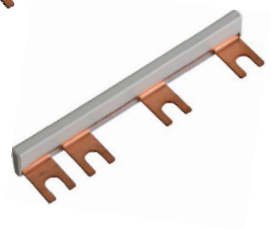


PB 1 (3+0)	**1 (3+0)**
Mechanical	
Number of Poles	3
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 350

PB 1 (2+1)	**1 (2+1)**
Mechanical	
Number of Poles	2
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 351



PB 1 (4+0)	**1 (4+0)**
Mechanical	
Number of Poles	4
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 352



PB 1 (3+1)	**1 (3+1)**
Mechanical	
Number of Poles	4
Busbar Cross Section	16 mm²
Order Information	
Ordering Code	501 353

Compact Single Pole Overhead Power Lines

Connection Acccessories

ProTec AQS Series

Fixing Cable

Order Information	
Ordering Code	509 522

Fixing Hook

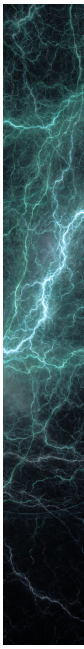
Order Information	
Ordering Code	509 523

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

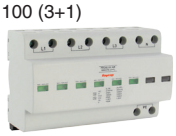


Product Index

	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				
SafeBloc B(R) 12.5 (1+0) TCG 	SafeBloc B 12.5/150 (1+0) TCG	54.0500	2 TE	18
	SafeBloc BR 12.5/150 (1+0) TCG	54.0501	2 TE	18
	SafeBloc B 12.5/275 (1+0) TCG	54.0502	2 TE	18
	SafeBloc BR 12.5/275 (1+0) TCG	54.0503	2 TE	18
SafeBloc B(R) 25 (2+0) TCG 	SafeBloc B 25/150 (2+0) TCG	54.0507	4 TE	20
	SafeBloc BR 25/150 (2+0) TCG	54.0508	4 TE	20
	SafeBloc B 25/275 (2+0) TCG	54.0509	4 TE	20
	SafeBloc BR 25/275 (2+0) TCG	54.0510	4 TE	20
SafeBloc B(R) 37.5 (3+0) TCG 	SafeBloc B 37.5/150 (3+0) TCG	54.0513	6 TE	22
	SafeBloc BR 37.5/150 (3+0) TCG	54.0514	6 TE	22
	SafeBloc B 37.5/275 (3+0) TCG	54.0515	6 TE	22
	SafeBloc BR 37.5/275 (3+0) TCG	54.0516	6 TE	22
SafeBloc B(R) 50 (4+0) TCG 	SafeBloc B 50/150 (4+0) TCG	54.0519	8 TE	24
	SafeBloc BR 50/150 (4+0) TCG	54.0520	8 TE	24
	SafeBloc B 50/275 (4+0) TCG	54.0521	8 TE	24
	SafeBloc BR 50/275 (4+0) TCG	54.0522	8 TE	24
SafeBloc B(R) 25 (1+1) TCG 	SafeBloc B 25/150 (1+1) TCG	54.0525	4 TE	26
	SafeBloc BR 25/150 (1+1) TCG	54.0526	4 TE	26
	SafeBloc B 25/275 (1+1) TCG	54.0527	4 TE	26
	SafeBloc BR 25/275 (1+1) TCG	54.0528	4 TE	26
SafeBloc B(R) 50 (3+1) TCG 	SafeBloc B 50/275 (3+1) TCG	54.0533	8 TE	28
	SafeBloc BR 50/275 (3+1) TCG	54.0534	8 TE	28
SafeBloc B(R) 25 (1+0) TCG 	SafeBloc B 25/150 (1+0) TCG	54.0537	2 TE	30
	SafeBloc BR 25/150 (1+0) TCG	54.0538	2 TE	30
	SafeBloc B 25/275 (1+0) TCG	54.0539	2 TE	30
	SafeBloc BR 25/275 (1+0) TCG	54.0540	2 TE	30
SafeBloc B(R) 50 (2+0) TCG 	SafeBloc B 50/150 (2+0) TCG	54.0544	4 TE	32
	SafeBloc BR 50/150 (2+0) TCG	54.0545	4 TE	32
	SafeBloc B 50/275 (2+0) TCG	54.0546	4 TE	32
	SafeBloc BR 50/275 (2+0) TCG	54.0547	4 TE	32
SafeBloc B(R) 75 (3+0) TCG 	SafeBloc B 75/150 (3+0) TCG	54.0550	6 TE	34
	SafeBloc BR 75/150 (3+0) TCG	54.0551	6 TE	34
	SafeBloc B 75/275 (3+0) TCG	54.0552	6 TE	34
	SafeBloc BR 75/275 (3+0) TCG	54.0553	6 TE	34
SafeBloc B(R) 100 (4+0) TCG 	SafeBloc B 100/150 (4+0) TCG	54.0556	8 TE	36
	SafeBloc BR 100/150 (4+0) TCG	54.0557	8 TE	36
	SafeBloc B 100/275 (4+0) TCG	54.0558	8 TE	36
	SafeBloc BR 100/275 (4+0) TCG	54.0559	8 TE	36
SafeBloc B(R) 50 (1+1) TCG 	SafeBloc B 50/150 (1+1) TCG	54.0562	4 TE	38
	SafeBloc BR 50/150 (1+1) TCG	54.0563	4 TE	38
	SafeBloc B 50/275 (1+1) TCG	54.0564	4 TE	38
	SafeBloc BR 50/275 (1+1) TCG	54.0565	4 TE	38

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
SafeBloc B(R) 100 (3+1) TCG	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	SafeTube B 50/255	54.0506	2 TE	42
				
SafeTube B 100	SafeTube B 100/255	54.0543	2 TE	44
				
SafeBloc B(R) 12.5 (1+0) WT TCG	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(R) 25 (1+0) WT TCG	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(R) 12.5 TCG	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(R) 12.5 YTCG	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
Class I • Class II • Type 1 • Type 2 Compact Single Pole & Multi-pole Surge Protective Devices				
ProBloc B(R) 12.5 (1+0)	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(R) 25 (2+0)	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(R) 37.5 (3+0)	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)
ProBloc B(R) 50 (4+0) 	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
ProBloc B(R) 25 (1+1) 	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
ProBloc B(R) 50 (3+1) 	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
ProBloc B(R) 25 (1+0) 	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
ProBloc B(R) 50 (2+0) 	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
ProBloc B(R) 75 (3+0) 	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
ProBloc B(R) 100 (4+0) 	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
ProBloc B(R) 50 (1+1) 	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(R) 100 (3+1) 	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	86
ProTube B(R) 100 	ProTube B 100/255	56.0511	2 TE	88

Class I • Class II • Type 1 • Type 2
Modular Single Pole & Multi-pole Surge Protective Devices

ProTec B2S(R) 12.5 (1+0) 	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(R) 25 (2+0) 	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(R) 37.5 (3+0) 	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(R) 50 (4+0) 	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)
ProTec B2S(R) 25 (1+1) 	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
ProTec B2S(R) 50 (3+1) 	ProTec B2S 50/275 (3+1)	506.462	4 TE	108
	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
	ProTec B2SR 50/440 (3+1)	506.470	4 TE	108
Module ProTec B2S 12.5/xxx	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
Module ProTube B2S 50/xxx	Module ProTube B2S 50/255	506.476	1 TE	106-108
PV ProTec B(R) 5/1000 Y TD 	PV ProTec B 5/1000 Y TD	501.795	3 TE	110
	PV ProTec BR 5/1000 Y TD	501.796	3 TE	110
Module ProTec B 5/1000 Y	Module ProTec B 5/1000 Y	501.797	1 TE	110

Class II • Type 2
Modular Single Pole & Multi-pole Surge Protective Devices

SafeTec C(R) (1+0) 	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
SafeTec C(R) (2+0) 	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)
SafeTec C(R) (3+0)		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
SafeTec C(R) (4+0)		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
SafeTec C(R) (1+1)		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)	516916	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
SafeTec C(R) (3+1)		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
Module SafeTec C(R) xx/yyy		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
SafeTube C(R) 40		SafeTube C40/255	516.871	1 TE	128
Module SafeTube C 40/xxx		Module SafeTube C 40/255	516.872	1 TE	124-128
SafeTec C(R) (3+0) WT		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
Module SafeTec C(R) xxx WT		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	516.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)
SafeTec C(R) (4+0) UL	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
Module SafeTec C(R) xx/yyy UL	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
SafeTec C(R) (3+0) WT UL	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
Module SafeTec C(R) xxx WT UL	Module SafeTec C(R) 750 WT	516.A63	1 TE	148
	Module SafeTec C(R) 880 WT	516.A90	1 TE	148
SafeTec C(R) 1000 PV (2+0) UL	SafeTec C 1000 PV (2+0)	516.A24	2 TE	150
	SafeTec CR 1000 PV (2+0)	516.A27	2 TE	150
Module SafeTec C(R) 1000 PV	Module SafeTec C(R) 1000 PV	516.A30	1 TE	150
SafeTec C(R) 1000 PV (3+0) UL	SafeTec C 1000 PV (3+0)	516.A33	3 TE	152
	SafeTec CR 1000 PV (3+0)	516.A38	3 TE	152
Module SafeTec C(R) 1000 PV	Module SafeTec C(R) 1000 PV	516.A43	1 TE	152

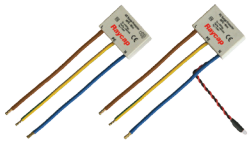
Class II • Type 2
Modular Single Pole & Multi-pole Surge Protective Devices

ProTec C(R) 40 (1+0)	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

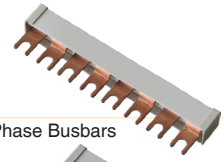
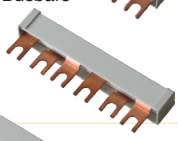
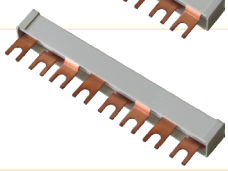
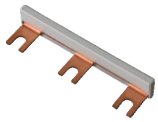
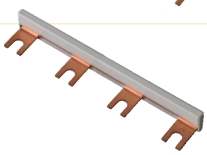
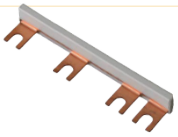
		Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProTec C(R) 80 (2+0)		ProTec C 80/150 (2+0)	50.A094	2 TE	160
		ProTec C 80/275 (2+0)	50.A051	2 TE	160
		ProTec C 80/320 (2+0)	50.A095	2 TE	160
		ProTec C 80/385 (2+0)	50.A058	2 TE	160
		ProTec C 80/440 (2+0)	50.A096	2 TE	160
		ProTec CR 80/150 (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
ProTec C(R) 120 (3+0)		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
ProTec C(R) 160 (4+0)		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
ProTec C(R) 80 (1+1)		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
ProTec C(R) 160 (3+1)		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
Module ProTec C(R) 40/xxx		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
ProTec CM(R) 80 (2+0)		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
Module ProTec CM(R) 80 (2+0)		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

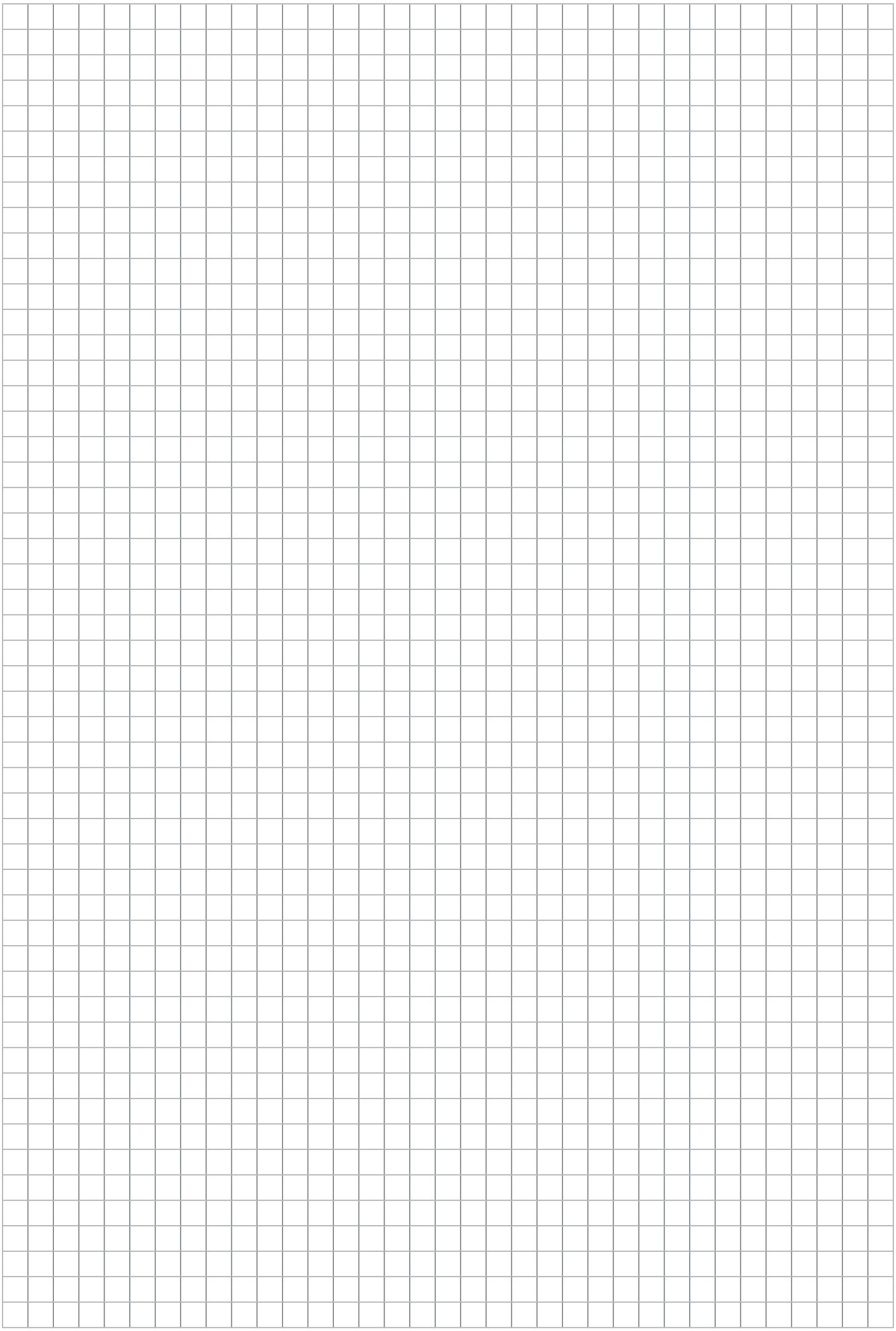
		Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProTec CM(R) 80 (1+1)		ProTec CM 80/275 (1+1)	508.330	1 TE	172
		ProTec CM 80/320 (1+1)	508.331	1 TE	172
		ProTec CMR 80/275 (1+1)	508.335	1 TE	172
		ProTec CMR 80/320 (1+1)	508.336	1 TE	172
Module ProTec CM(R) 80 (1+1)		Module ProTec CM(R) 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	130 440		196
	ProFilt PSF - 1/63/320/TT 25 kA	130 441		196
ProFilt PSF Three Phase	ProFilt PSF - 3/40/320/TT 25 kA	130 492		198
	ProFilt PSF -3/63/320/TT 25 kA	130 493		198
Class II • Type 2 Overhead Power Lines Surge Protective Devices				
ProTec AQS 40	ProTec AQS 40/150	509.210		202
	ProTec AQS 40/275	509.211		202
	ProTec AQS 40/320	509.212		202
	ProTec AQS 40/440	509.213		202
Isolating Spark Gap Surge Protective Devices				
EPZ 100	EPZ 100/350	509 520		206
Surge Protective Devices Connection Accessories				
ProBar Single Phase Busbars	ProBar 1-2	501 338		210
	ProBar 1-3	501 339		210
	ProBar 1-4	501 340		210
	ProBar 1-5	501 341		210
	ProBar 1-6	501 342		210
	ProBar 1-7	501 343		210
	ProBar 1-8	501 344		210
	ProBar 1-11	501 345		210

	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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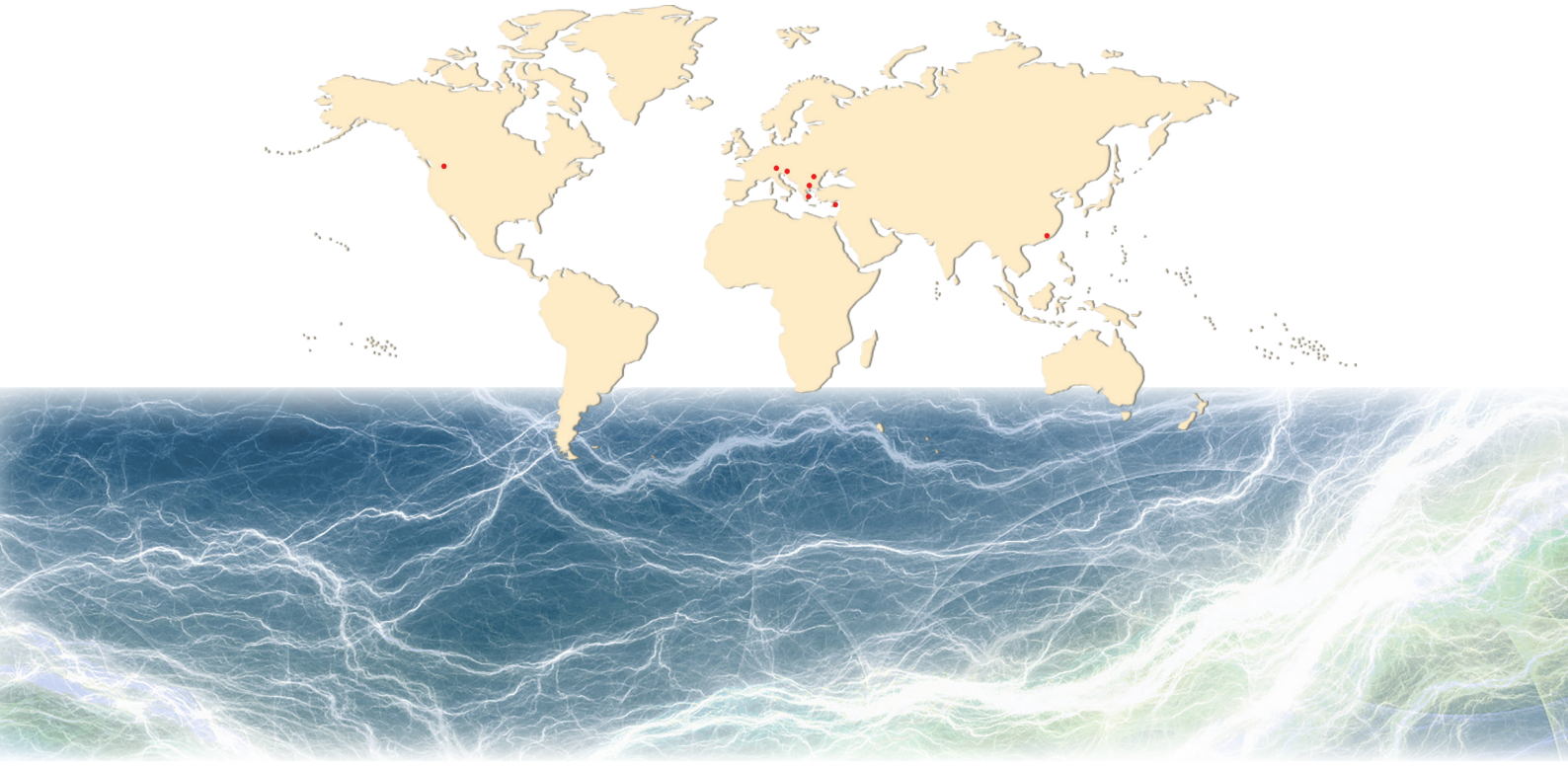

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