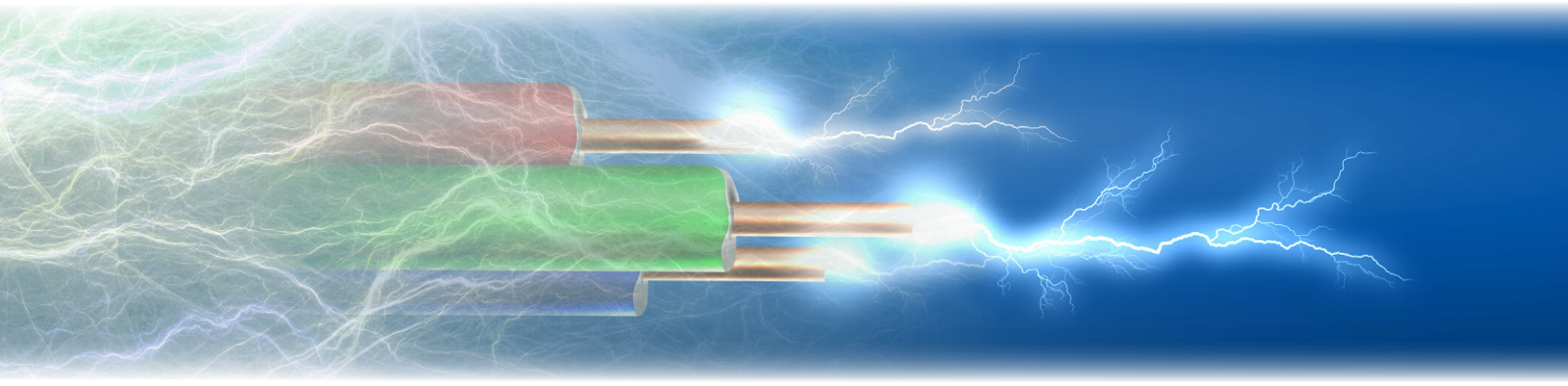
Raycap

Surge Protection for Low Voltage Power Systems



2018
CATALOG

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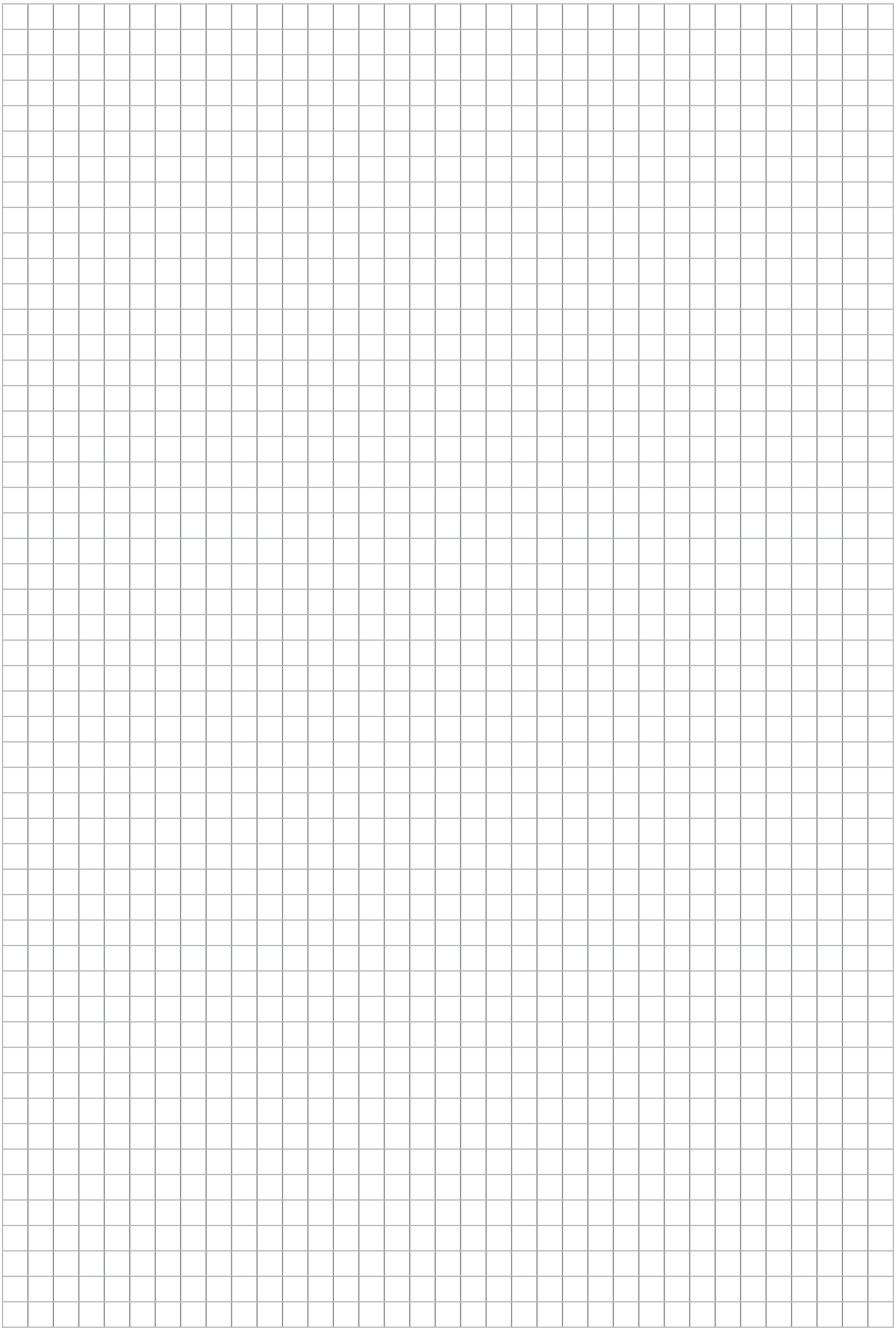
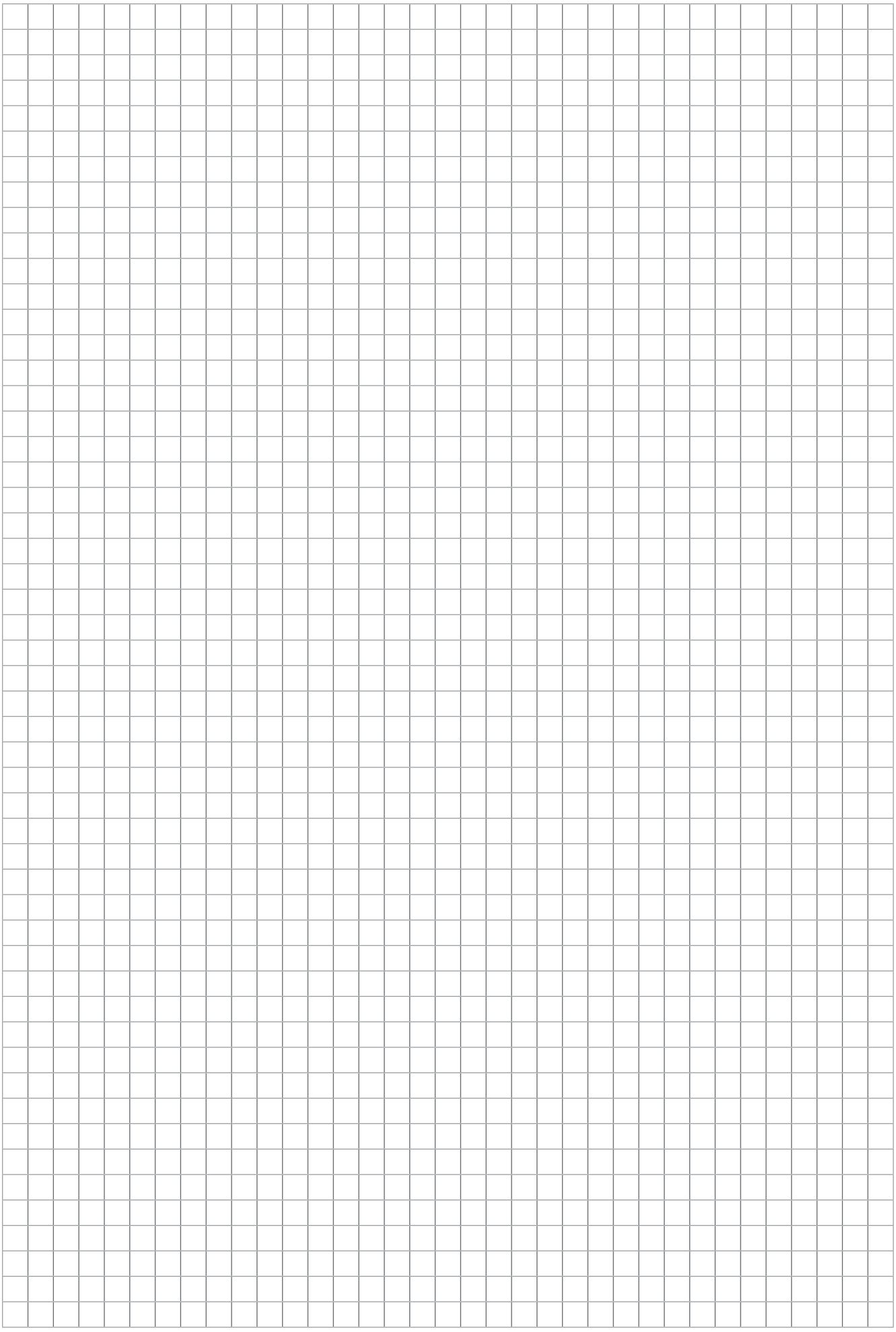


About Raycap

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



Introduction

The electrical environment in which today's sensitive electronic systems are required to operate has become increasingly polluted by electrical disturbances, such as voltage surges and transients. At the same time, the susceptibility of these systems to catastrophic failure due to lightning events continues to exist and increase steadily as the use of micro-controlled 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 & Technology

Typical Components 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.

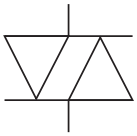
Transient Voltage Suppression (TVS) Diode

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)

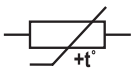
A GDT is an arrangement of electrodes in a gas within an insulating, temperature-resistant ceramic or glass cylinder.



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.

ADV Staged Disconnection

Staged thermal disconnection of failed internal protective devices, allows for a controlled end-of-life of the SPD. Visual indication as sequential stages are disconnected, allows for planned remedial maintenance and replacement of the device before total end-of-life is reached, thereby ensuring continuous protection of the end-user equipment.

Typical SPD Technologies

SPD Based on MOV Technology

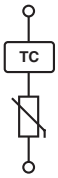
- No problems with follow current I_{fi}
- Quick response time t_A at ≤ 25 ns results in low residual voltage
- Responds well to low overvoltages
- High surge capacity up to 50 kA 10/350 µs

SPD Based on GDT Technology

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

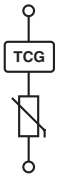
Combination (Hybrid) Type SPD Based on Combined GDT and MOV Technology

- 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
- Intended for applications without Leakage Current



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)

SPD Based on Advanced Protection Technology

- Selective design of Metal Oxide Varistors ensures a staged end-of-life
- Stages are sequentially disconnected
- Residual protection indicated by Green > Yellow > Red flag
- IEC Class II to 50kA (25kA + 25kA) 8/20
- Ideal for critical applications where a level of protection must be retained at all times - e.g. hospitals

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/U_n

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

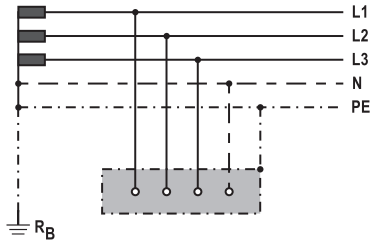
Maximum voltage to be expected at the SPD terminals due to an impulse stress with defined voltage steepness and impulse stress with a discharge current, given amplitude and waveshape.

Low Voltage Power Distribution System Types

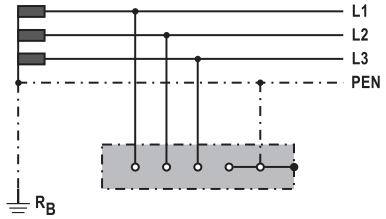
Earthing Systems

System Configuration

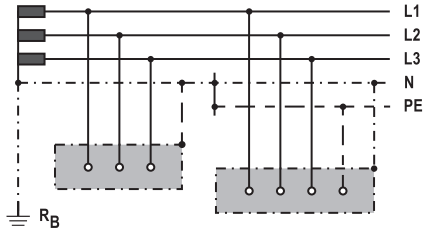
TN-S System



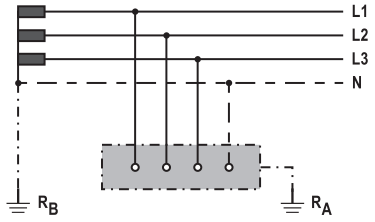
TN-C System



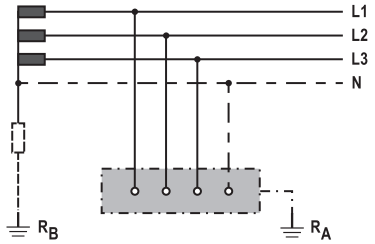
TN-C-S System



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:

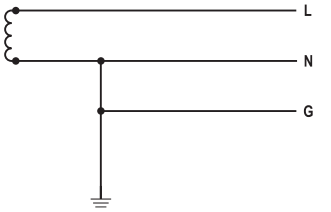
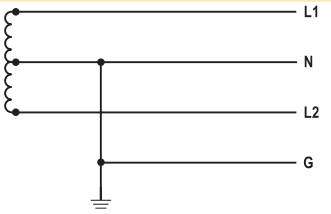
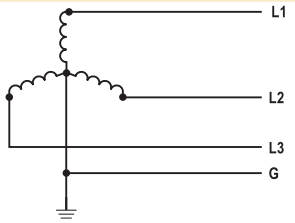
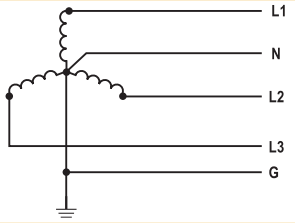
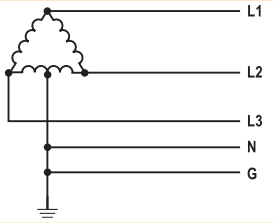
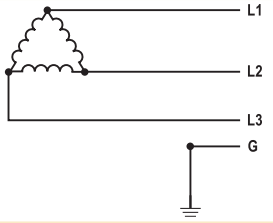
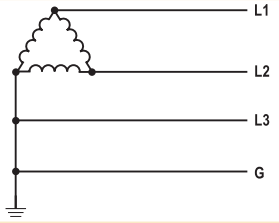
- T Exposed conductive parts are directly grounded independent of the earthing of any point of the power system
- N Exposed conductive parts are directly connected to the earthed point of the power system

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

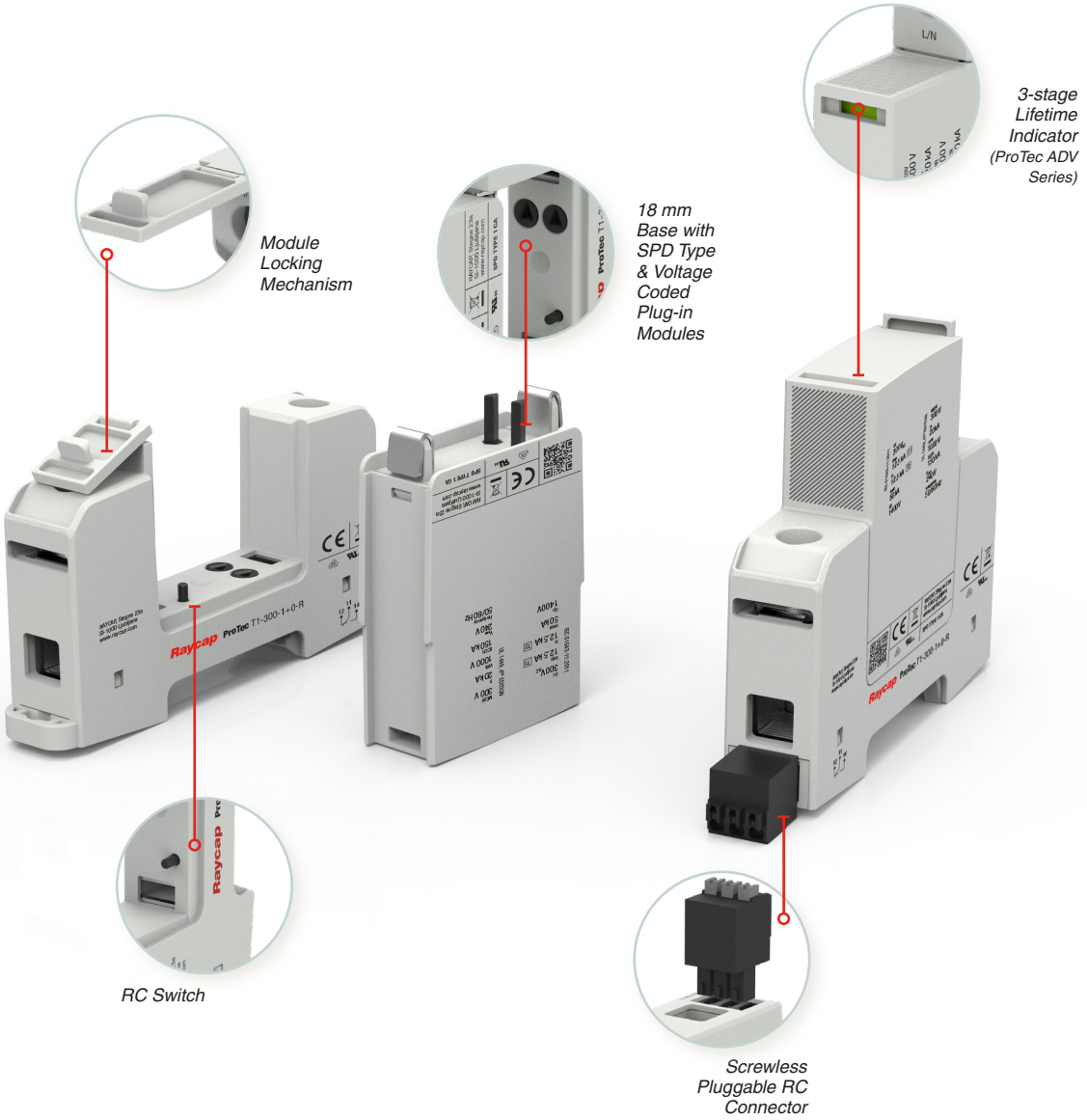
Live Conductor Systems

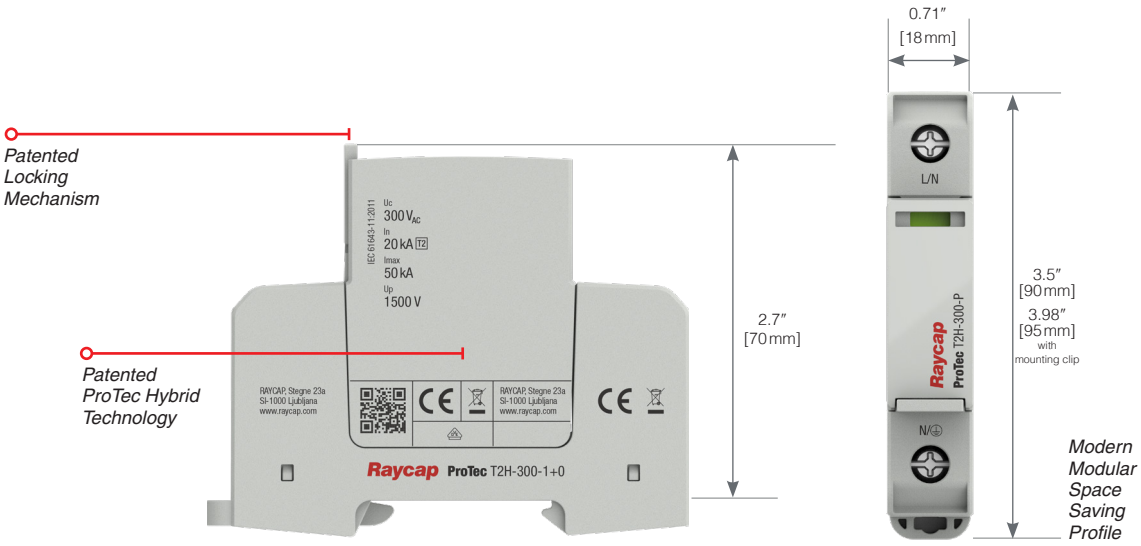
Source Configuration	Description
	**Single Phase** System Voltage: 110V • 120V • 220V • 240V • 277V Circuit Type: 1ϕ, 2W + G Protection Modes: Line-Neutral
	**Single Phase (Split Phase)** System Voltage: 120V/240V • 240V/480V Circuit Type: 1ϕ, 3W + G Protection Modes: Line-Neutral/Line-Line
	**Three 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

New Modular Single Pole & Multi-pole Surge Protective Devices

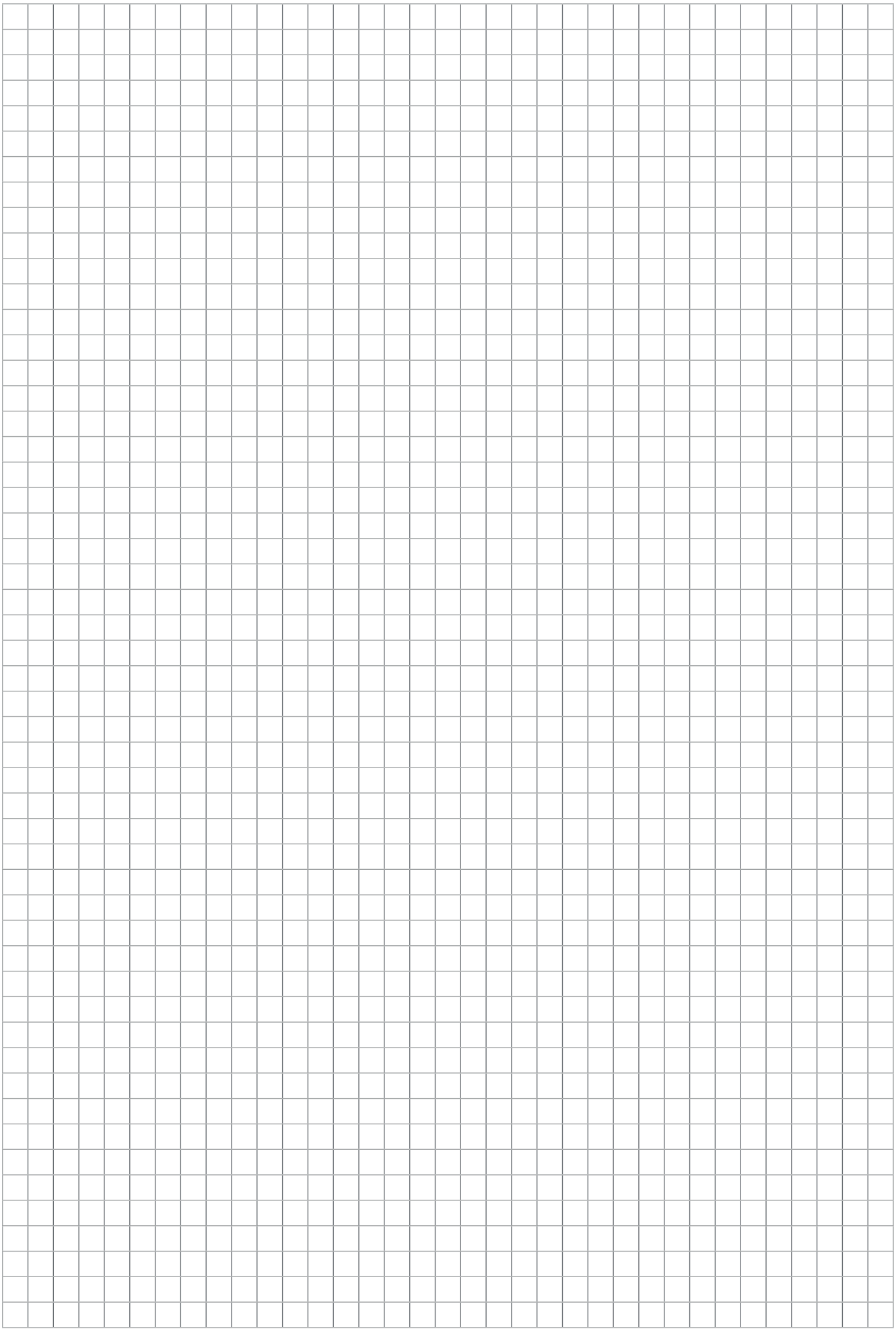
New Housing Design Features

- Contemporary design
- Low residual protection level
- Lifetime indicators
- Redesigned thermal disconnection
- Patented protection technologies
- No external back-up fuse required up to 315 A
- Vibration and shock withstand capability
- Space-saving design
- Easy replacement
- Patented module locking mechanism
- Meets IEC/EN and UL 1449 4th Edition



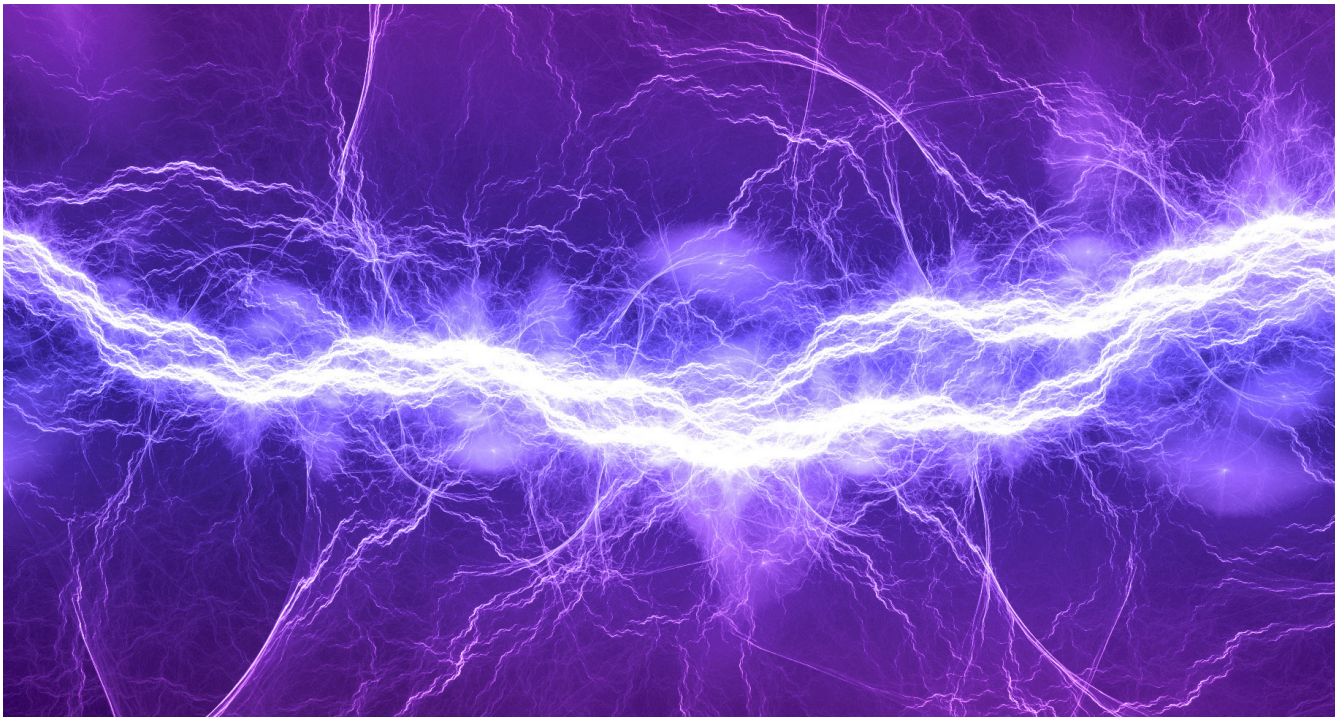


ProTec T1-300-1+0-R *ProTec T2-300-2+0-R* *ProTec T2H-300-3+0-R* *ProTec T2-300-4+0-R*



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

ProTec T1 & ProTec T1-R
ProTube T1
ProTec T1H & ProTec T1H-R
ProTube T1H
ProTec T1HS & ProTec T1HS-R



Compliance	ProTec T1	ProTec T1H	ProTec T1HS
IEC 61643-11:2011	✓	✓	✓
EN 61643-11:2012	✓	✓	✓
UL 1449 4th Edition	✓		

Raycap's Type 1 (Class I) SPDs are developed as the best solution available to protect service entrance at industrial sites, especially those with existing lightning protection system or meshed cage applications. This type of surge protection can protect all electrical installations against lightning strikes by discharging the current created from a lightning surge and keeping it from spreading to the equipment. The Type 1 / Class I SPD has a 10/350 µs current waveform.

RoHS COMPLIANT

Pluggable Single-Pole SPD

ProTec T1 1+0

Class I • Class II • Type 1 • Type 2 • Type 1CA

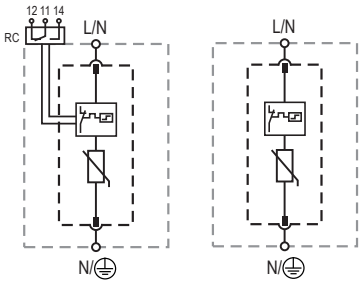
Location of Use: Main Distribution Boards
Network Systems: TN-S, TN-C, TT (only L-N)
Mode of Protection: L-PE, N-PE (only TN-S), L-PEN, L-N
Surge Ratings: I_{imp} = up to 12.5 kA (10/350 µs)
I_n = up to 12.5 kA (8/20 µs)
IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

ProTec T1-xxx-1+0(-R)		75	150	300	350	480	750
IEC Electrical							
Nominal AC Voltage (50/60Hz)	U_o/U_n	60 V	120 V	240 V	277 V	400 V	600 V
Maximum Continuous Operating Voltage (AC)	U_c	75 V	150 V	300 V	350 V	480 V	750 V
Nominal Discharge Current (8/20 µs)	I_n	12.5 kA	12.5 kA	12.5 kA	12.5 kA	10 kA	5 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA	35 kA
Impulse Discharge Current (10/350 µs)	I_{imp}	12.5 kA	12.5 kA	12.5 kA	12.5 kA	10 kA	5 kA
Specific Energy	W/R	39 kJ/Ω	39 kJ/Ω	39 kJ/Ω	39 kJ/Ω	25 kJ/Ω	6.25 kJ/Ω
Charge	Q	6.25 As	6.25 As	6.25 As	6.25 As	5 As	2.5 As
Voltage Protection Level	U_p	700 V	1000 V	1400 V	1500 V	2000 V	2700 V
Response Time	t_A	< 25 ns					
Back-Up Fuse (max)		315 A / 250 A gG					250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA					50 kA
TOV Withstand 5s	U_T	114 V	175 V	337 V	403 V	581 V	871 V
TOV 120min	U_T	114 V	229 V	442 V	529 V	762 V	1143 V
	mode	Withstand	Safe Fail	Safe Fail	Safe Fail	Safe Fail	Safe Fail
Number of Ports		1					
UL Electrical							
Maximum Continuous Operating Voltage (AC)	MCOV	75 V	150 V	300 V	350 V	480 V	750 V
Voltage Protection Rating	VPR	330 V	600 V	900 V	1200 V	1500 V	2500 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	100 kA	200 kA	150 kA	150 kA	200 kA	150 kA
Mechanical & Environmental							
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]					
Permissible Operating Humidity	RH	5%...95%					
Altitude		13123 ft [4000 m]					
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]					
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)					
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)					
Mounting		35 mm DIN Rail, EN 60715					
Degree of Protection		IP 20 (built-in)					
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0					
Thermal Protection		Yes					
Operating State / Fault Indication		Green Flag / Not Green Flag					
Remote Contacts (RC)		Optional					
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A					
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)					
Order Information							
Order Code		**75**	**150**	**300**	**350**	**480**	**750**
ProTec T1-xxx-1+0		59.0007	59.0009	59.0011	59.0013	59.0015	59.0017
ProTec T1-xxx-1+0-R (with remote contacts)		59.0008	59.0010	59.0012	59.0014	59.0016	59.0018
ProTec T1-xxx-P		59.0001	59.0002	59.0003	59.0004	59.0005	59.0006

ProTec T1 1+0

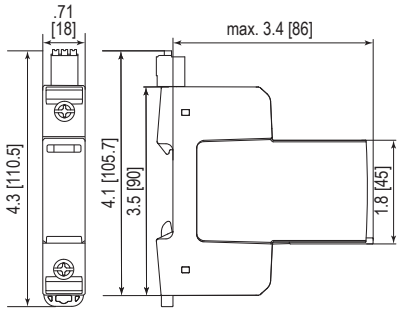
Internal Configuration



Legend

L Line
N Neutral
⏚ Protective Earth
RC Remote Contacts Optional

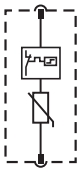
Dimensions & Packaging



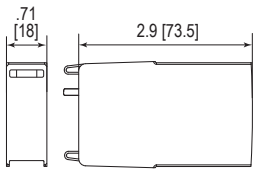
Dimensions & Packaging							
ProTec T1-xxx-1+0		**75**	**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.355	.355	.386	.422	.430	.437
	grams	161	161	175	191	195	198
ProTec T1-xxx-1+0-R		**75**	**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.371	.371	.402	.437	.446	.452
	grams	168	168	182	198	202	205
Single Unit DIN 43880 Dimension		1 TE					
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]					
Minimum Order Quantity		12 Units					

Plug Internal Configuration

ProTec T1-xxx-P



Dimensions & Packaging



Dimensions & Packaging							
ProTec T1-xxx-P		**75**	**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.206	.206	.236	.272	.280	.287
	grams	93	93	107	123	127	130
Single Unit DIN 43880 Dimension		1 TE					
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]					
Minimum Order Quantity		28 Units					

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T1 2+0

Class I • Class II • Type 1 • Type 2 • Type 1CA

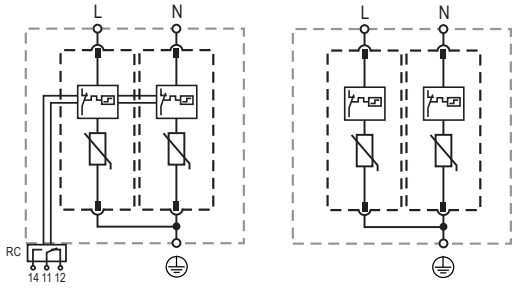
Location of Use: Main Distribution Boards
Network Systems: TN-S
Mode of Protection: L-PE, N-PE
Surge Ratings: I_{imp} = up to 12.5 kA (10/350 µs)
I_n = up to 12.5 kA (8/20 µs)
IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

ProTec T1-xxx-2+0(-R)		75	150	300	350	480	750
IEC Electrical							
Nominal AC Voltage (50/60Hz)	U_o/U_n	60V	120V	240V	277V	400V	600V
Maximum Continuous Operating Voltage (AC)	U_c	75V	150V	300V	350V	480V	750V
Nominal Discharge Current (8/20 µs)	I_n	12.5 kA	12.5 kA	12.5 kA	12.5 kA	10 kA	5 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA	35 kA
Impulse Discharge Current (10/350 µs)	I_{imp}	12.5 kA	12.5 kA	12.5 kA	12.5 kA	10 kA	5 kA
Specific Energy	W/R	39 kJ/Ω	39 kJ/Ω	39 kJ/Ω	39 kJ/Ω	25 kJ/Ω	6.25 kJ/Ω
Charge	Q	6.25 As	6.25 As	6.25 As	6.25 As	5 As	2.5 As
Voltage Protection Level	U_p	700V	1000V	1400V	1500V	2000V	2700V
Response Time	t_A	< 25 ns					
Back-Up Fuse (max)		315 A / 250 A gG					250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA					50 kA
TOV Withstand 5s	U_T	114V	175V	337V	403V	581V	871V
TOV 120min	U_T	114V	229V	442V	529V	762V	1143V
	mode	Withstand	Safe Fail	Safe Fail	Safe Fail	Safe Fail	Safe Fail
Number of Ports		1					
UL Electrical							
Maximum Continuous Operating Voltage (AC)	MCOV	75V	150V	300V	350V	480V	750V
Voltage Protection Rating	VPR	330V	600V	900V	1200V	1500V	2500V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	100 kA	200 kA	150 kA	150 kA	200 kA	150 kA
Mechanical & Environmental							
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]					
Permissible Operating Humidity	RH	5%...95%					
Altitude		13123 ft [4000 m]					
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]					
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)					
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)					
Mounting		35 mm DIN Rail, EN 60715					
Degree of Protection		IP 20 (built-in)					
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0					
Thermal Protection		Yes					
Operating State / Fault Indication		Green Flag / Not Green Flag					
Remote Contacts (RC)		Optional					
RC Switching Capacity		AC: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A					
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)					
Order Information							
Order Code		**75**	**150**	**300**	**350**	**480**	**750**
ProTec T1-xxx-2+0		59.0349	59.0019	59.0021	59.0023	59.0025	59.0027
ProTec T1-xxx-2+0-R (with remote contacts)		59.0350	59.0020	59.0022	59.0024	59.0026	59.0028
ProTec T1-xxx-P		59.0001	59.0002	59.0003	59.0004	59.0005	59.0006

ProTec T1 2+0

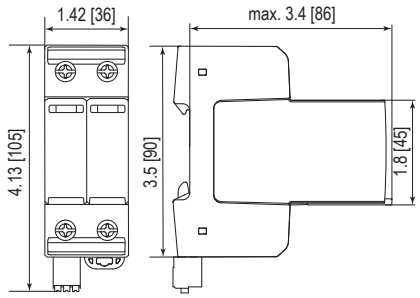
Internal Configuration



Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional

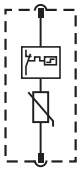
Dimensions & Packaging



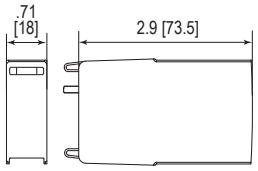
Dimensions & Packaging							
ProTec T1-xxx-2+0		**75**	**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.697	.697	.759	.829	.847	.860
	grams	316	316	344	376	384	390
ProTec T1-xxx-2+0-R		**75**	**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.717	.717	.779	.849	.867	.880
	grams	325	325	353	385	393	399
Single Unit DIN 43880 Dimension		2 TE					
Packaging Dimensions (H x W x L)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]					
Minimum Order Quantity		7 Units					

Plug Internal Configuration

ProTec T1-xxx-P



Dimensions & Packaging



Dimensions & Packaging							
ProTec T1-xxx-P		**75**	**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.206	.206	.236	.272	.280	.287
	grams	93	93	107	123	127	130
Single Unit DIN 43880 Dimension		1 TE					
Packaging Dimensions (H x W x L)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]					
Minimum Order Quantity		28 Units					

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T1 3+0

Class I • Class II • Type 1 • Type 2 • Type 1CA

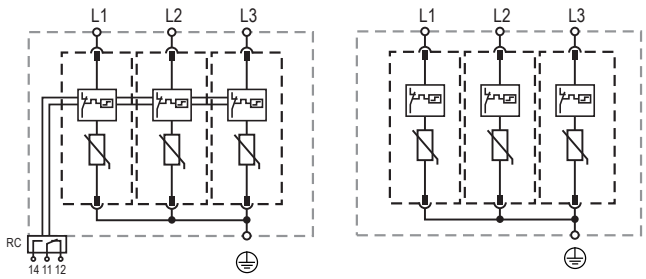
Location of Use: Main Distribution Boards
Network Systems: TN-C
Mode of Protection: L-PEN
Surge Ratings: I_{imp} = up to 12.5 kA (10/350 µs)
I_n = up to 12.5 kA (8/20 µs)
IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

ProTec T1-xxx-3+0(-R)		150	300	350	480	750
IEC Electrical						
Nominal AC Voltage (50/60Hz)	U_o/U_n	120 V	240 V	277 V	400 V	600 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	300 V	350 V	480 V	750 V
Nominal Discharge Current (8/20 µs)	I_n	12.5 kA	12.5 kA	12.5 kA	10 kA	5 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA	35 kA
Impulse Discharge Current (10/350 µs)	I_{imp}	12.5 kA	12.5 kA	12.5 kA	10 kA	5 kA
Specific Energy	W/R	39 kJ/Ω	39 kJ/Ω	39 kJ/Ω	25 kJ/Ω	6.25 kJ/Ω
Charge	Q	6.25 As	6.25 As	6.25 As	5 As	2.5 As
Voltage Protection Level	U_p	1000 V	1400 V	1500 V	2000 V	2700 V
Response Time	t_A			< 25 ns		
Back-Up Fuse (max)			315 A / 250 A gG			250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}		25 kA / 50 kA			50 kA
TOV Withstand 5s	U_T	175 V	337 V	403 V	581 V	871 V
TOV 120min	U_T	229 V	442 V	529 V	762 V	1143 V
	mode	Safe Fail	Safe Fail	Safe Fail	Safe Fail	Safe Fail
Number of Ports				1		
UL Electrical						
Maximum Continuous Operating Voltage (AC)	MCOV	150 V	300 V	350 V	480 V	750 V
Voltage Protection Rating	VPR	600 V	900 V	1200 V	1500 V	2500 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	200 kA	150 kA	150 kA	200 kA	150 kA
Mechanical & Environmental						
Operating Temperature Range	T_a			-40 °F to +185 °F [-40 °C to +85 °C]		
Permissible Operating Humidity	RH			5%...95%		
Altitude				13123 ft [4000 m]		
Terminal Screw Torque	M_{max}			39.9 lbf·in [4.5 Nm]		
Conductor Cross Section (max)				2 AWG (Solid, Stranded) / 4 AWG (Flexible)		
				35 mm² (Solid, Stranded) / 25 mm² (Flexible)		
Mounting				35 mm DIN Rail, EN 60715		
Degree of Protection				IP 20 (built-in)		
Housing Material				Thermoplastic: Extinguishing Degree UL 94 V-0		
Thermal Protection				Yes		
Operating State / Fault Indication				Green Flag / Not Green Flag		
Remote Contacts (RC)				Optional		
RC Switching Capacity				AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A		
RC Conductor Cross Section (max)				16 AWG (Solid) / 1.5 mm² (Solid)		
Order Information						
Order Code		150	300	350	480	750
ProTec T1-xxx-3+0		59.0029	59.0031	59.0033	59.0035	59.0037
ProTec T1-xxx-3+0-R (with remote contacts)		59.0030	59.0032	59.0034	59.0036	59.0038
ProTec T1-xxx-P		59.0002	59.0003	59.0004	59.0005	59.0006

ProTec T1 3+0

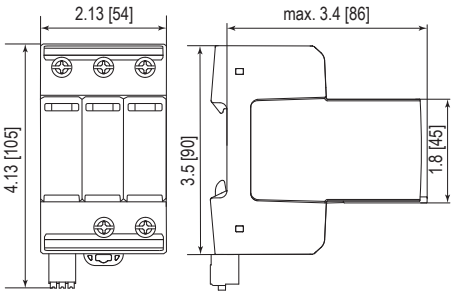
Internal Configuration



Legend

L Line
Protective Earth
RC Remote Contacts Optional

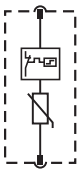
Dimensions & Packaging



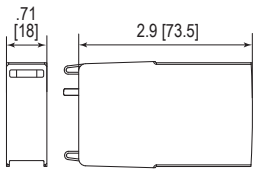
Dimensions & Packaging						
ProTec T1-xxx-3+0		**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	1.021	1.114	1.220	1.246	1.266
	grams	463	505	553	565	574
ProTec T1-xxx-3+0-R		**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	1.041	1.133	1.239	1.266	1.286
	grams	472	514	562	574	583
Single Unit DIN 43880 Dimension		3 TE				
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Minimum Order Quantity		5 Units				

Plug Internal Configuration

ProTec T1-xxx-P



Dimensions & Packaging



Dimensions & Packaging						
ProTec T1-xxx-P		**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.206	.236	.272	.280	.287
	grams	93	107	123	127	130
Single Unit DIN 43880 Dimension		1 TE				
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Minimum Order Quantity		28 Units				

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T1 4+0

Class I • Class II • Type 1 • Type 2 • Type 1CA

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 = 12.5 kA (8/20 µs)
IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

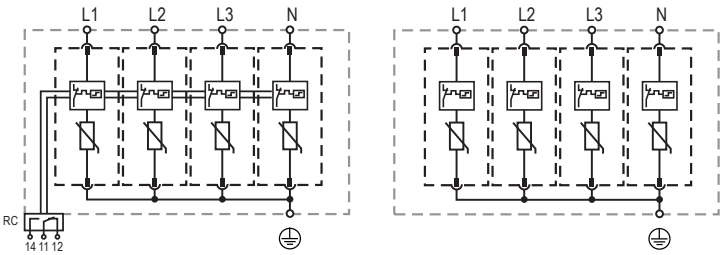
ProTec T1-xxx-4+0(-R)		150	300	350	480
IEC Electrical					
Nominal AC Voltage (50/60Hz)	U_o/U_n	120 V	240 V	277 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	300 V	350 V	480 V
Nominal Discharge Current (8/20 µs)	I_n	12.5 kA	12.5 kA	12.5 kA	10 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA
Impulse Discharge Current (10/350 µs)	I_{imp}	12.5 kA	12.5 kA	12.5 kA	10 kA
Specific Energy	W/R	39 kJ/Ω	39 kJ/Ω	39 kJ/Ω	25 kJ/Ω
Charge	Q	6.25 As	6.25 As	6.25 As	5 As
Voltage Protection Level	U_p	1000 V	1400 V	1500 V	2000 V
Response Time	t_A	< 25 ns			
Back-Up Fuse (max)		315 A / 250 A gG			
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA			
TOV Withstand 5s	U_T	175 V	337 V	403 V	581 V
TOV 120min	U_T	229 V	442 V	529 V	762 V
	mode	Safe Fail	Safe Fail	Safe Fail	Safe Fail
Number of Ports		1			
UL Electrical					
Maximum Continuous Operating Voltage (AC)	MCOV	150 V	300 V	350 V	480 V
Voltage Protection Rating	VPR	600 V	900 V	1200 V	1500 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	200 kA	150 kA	150 kA	200 kA
Mechanical & Environmental					
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]			
Permissible Operating Humidity	RH	5%...95%			
Altitude		13123 ft [4000 m]			
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]			
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)			
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)			
Mounting		35 mm DIN Rail, EN 60715			
Degree of Protection		IP 20 (built-in)			
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0			
Thermal Protection		Yes			
Operating State / Fault Indication		Green Flag / Not Green Flag			
Remote Contacts (RC)		Optional			
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A			
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)			
Order Information					
Order Code		**150**	**300**	**350**	**480**
ProTec T1-xxx-4+0		59.0039	59.0041	59.0351	59.0043
ProTec T1-xxx-4+0-R (with remote contacts)		59.0040	59.0042	59.0352	59.0044
ProTec T1-xxx-P		59.0002	59.0003	59.0004	59.0005

ProTec T1 4+0

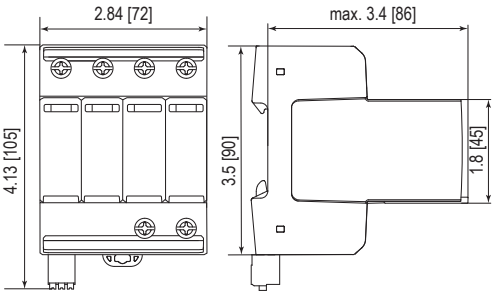
Internal Configuration

Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional



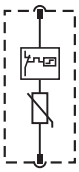
Dimensions & Packaging



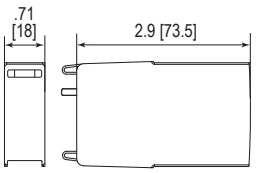
Dimensions & Packaging					
ProTec T1-xxx-4+0		**150**	**300**	**350**	**480**
Single Unit Weight	pounds	1.376	1.500	1.641	1.676
	grams	624	680	744	760
ProTec T1-xxx-4+0-R		**150**	**300**	**350**	**480**
Single Unit Weight	pounds	1.396	1.519	1.661	1.696
	grams	633	689	753	769
Single Unit DIN 43880 Dimension		4 TE			
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Minimum Order Quantity		4 Units			

Plug Internal Configuration

ProTec T1-xxx-P



Dimensions & Packaging



Dimensions & Packaging					
ProTec T1-xxx-P		**150**	**300**	**350**	**480**
Single Unit Weight	pounds	.206	.236	.272	.280
	grams	93	107	123	127
Single Unit DIN 43880 Dimension		1 TE			
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Minimum Order Quantity		28 Units			

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T1 1+1

Class I • Class II • Type 1 • Type 2 • Type 1CA

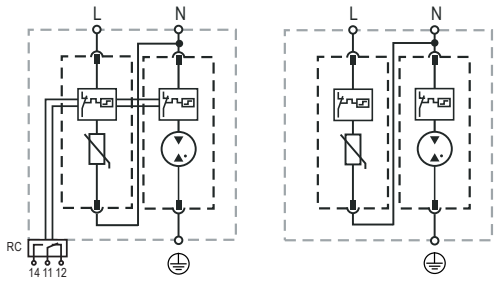
Location of Use: Main Distribution Boards
Network Systems: TT, TN-S
Mode of Protection: L-N, N-PE
Surge Ratings: I_{imp} = 12.5 kA (10/350 µs)
I_n = 12.5 kA (8/20 µs)
IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
Protective Elements: High Energy MOV and GDT
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

ProTec T1-xxx-1+1(-R)			75	150	300	350
IEC Electrical						
Nominal AC Voltage (50/60Hz)			60 V	120 V	240 V	277 V
Maximum Continuous Operating Voltage	(L-N)	U_c	75 V	150 V	300 V	350 V
	(N-PE)	U_c	305 V	305 V	305 V	305 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	12.5 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}	12.5kA / 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	700 V / 1500 V	1000 V / 1500 V	1400 V / 1500 V	1500 V / 1500 V
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 (max)			315 A / 250 A gG			
Short-Circuit Current Rating (AC)	(L-N)	I_{SCCR}	25 kA / 50 kA			
TOV Withstand 5s	(L-N)	U_T	114 V	175 V	337 V	403 V
TOV 120min	(L-N)	U_T	114 V	229 V	442 V	529 V
		mode	Withstand	Safe Fail	Safe Fail	Safe Fail
TOV Withstand 200ms	(N-PE)	U_T	1200 V			
Number of Ports			1			
UL Electrical						
Maximum Continuous Operating Voltage (AC)	(L-N)/(N-PE)	MCOV	75V / 305V	150V / 305V	300V / 305V	350V / 305V
Voltage Protection Rating	(L-N)/(N-PE)	VPR	330V / 1200V	600V / 1200V	900V / 1200V	1200V / 1200V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 20 kA	20 kA / 20 kA	20 kA / 20 kA	20 kA / 20 kA
Short-Circuit Current Rating (AC)	(L-N)	SCCR	100 kA	200 kA	150 kA	150 kA
Mechanical & Environmental						
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]			
Permissible Operating Humidity		RH	5%...95%			
Altitude			13123 ft [4000 m]			
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]			
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)			
			35 mm² (Solid, Stranded) / 25 mm² (Flexible)			
Mounting			35 mm DIN Rail, EN 60715			
Degree of Protection			IP 20 (built-in)			
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0			
Thermal Protection			Yes			
Operating State / Fault Indication			Green Flag / Not Green Flag			
Remote Contacts (RC)			Optional			
RC Switching Capacity			AC: 250 V / 1A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A			
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm² (Solid)			
Order Information						
Order Code			75	150	300	350
ProTec T1-xxx-1+1			59.0047	59.0049	59.0051	59.0053
ProTec T1-xxx-1+1-R (with remote contacts)			59.0048	59.0050	59.0052	59.0054
ProTec T1-xxx-P			59.0001	59.0002	59.0003	59.0004
ProTube T1-50-P			59.0269	59.0269	59.0269	59.0269

ProTec T1 1+1

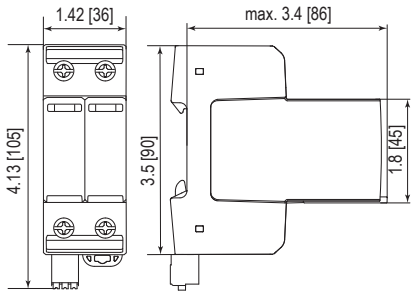
Internal Configuration



Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional

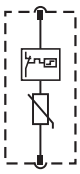
Dimensions & Packaging



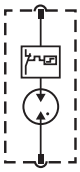
Dimensions & Packaging					
ProTec T1-xxx-1+1		**75**	**150**	**300**	**350**
Single Unit Weight	pounds	.702	.702	.732	.768
	grams	318	318	332	348
ProTec T1-xxx-1+1-R		**75**	**150**	**300**	**350**
Single Unit Weight	pounds	.715	.715	.746	.781
	grams	324	324	338	354
Single Unit DIN 43880 Dimension		2 TE			
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Minimum Order Quantity		7 Units			

Plug Internal Configuration

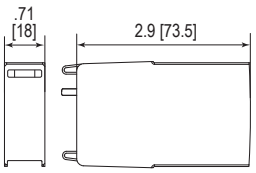
ProTec T1-xxx-P



ProTube T1-50-P



Dimensions & Packaging



Dimensions & Packaging					
ProTec T1-xxx-P		**75**	**150**	**300**	**350**
Single Unit Weight	pounds	.206	.206	.236	.272
	grams	93	93	107	123

ProTube T1-50-P		**50**
Single Unit Weight	pounds [grams]	.208 [94]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		28 Units

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T1 3+1

Class I • Class II • Type 1 • Type 2 • Type 1CA

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 (10/350 µs)
I_n = 12.5 kA (8/20 µs)
IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
Protective Elements: High Energy MOV and GDT
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

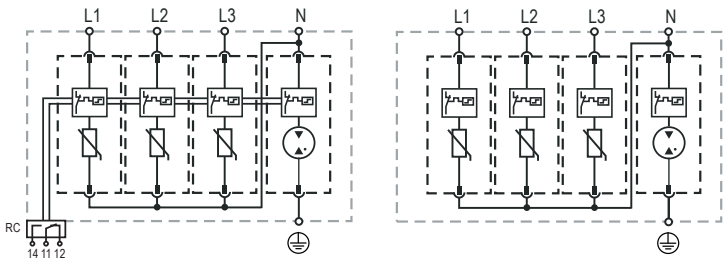
ProTec T1-xxx-3+1(-R)			300	350
IEC Electrical				
Nominal AC Voltage (50/60Hz)		U_o/U_n	240 V	277 V
Maximum Continuous Operating Voltage	(L-N)	U_c	300 V	350 V
	(N-PE)	U_c	305 V	305 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	12.5 kA / 50 kA	
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}	50 kA / 100 kA	
Impulse Discharge Current (10/350 µs)	(L-N)/(N-PE)	I_{imp}	12.5 kA / 50 kA	
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	1400 V / 1500 V	1500 V / 1500 V
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 (max)			315 A / 250 A gG	
Short-Circuit Current Rating (AC)	(L-N)	I_{SCCR}	25 kA / 50 kA	
TOV Withstand 5s	(L-N)	U_T	337 V	403 V
TOV 120min	(L-N)	U_T	442 V	529 V
		mode	Safe Fail	Safe Fail
TOV Withstand 200ms	(N-PE)	U_T	1200 V	
Number of Ports			1	
UL Electrical				
Maximum Continuous Operating Voltage (AC)	(L-N)/(N-PE)	MCOV	300 V / 305 V	350 V / 305 V
Voltage Protection Rating	(L-N)/(N-PE)	VPR	900V / 1200V	1200 V / 1200 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 20 kA	20 kA / 20 kA
Short-Circuit Current Rating (AC)	(L-N)	SCCR	150 kA	150 kA
Mechanical & Environmental				
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Operating Humidity		RH	5%...95%	
Altitude			13123 ft [4000 m]	
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]	
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
			35 mm^2 (Solid, Stranded) / 25 mm^2 (Flexible)	
Mounting			35 mm DIN Rail, EN 60715	
Degree of Protection			IP 20 (built-in)	
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection			Yes	
Operating State / Fault Indication			Green Flag / Not Green Flag	
Remote Contacts (RC)			Optional	
RC Switching Capacity			AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A	
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm^2 (Solid)	
Order Information				
Order Code			300	350
ProTec T1-xxx-3+1			59.0059	59.0061
ProTec T1-xxx-3+1-R (with remote contacts)			59.0060	59.0062
ProTec T1-xxx-P			59.0003	59.0004
ProTube T1-50-P			59.0269	59.0269

ProTec T1 3+1

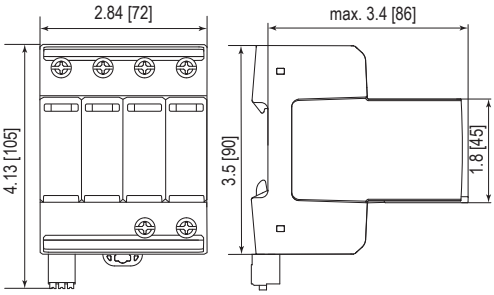
Internal Configuration

Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging

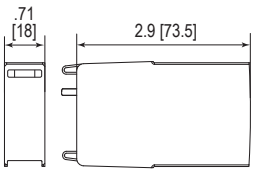


Dimensions & Packaging			
ProTec T1-xxx-3+1		**300**	**350**
Single Unit Weight	pounds [grams]	1.471 [667]	1.577 [715]
ProTec T1-xxx-3+1-R		**300**	**350**
Single Unit Weight	pounds [grams]	1.491 [676]	1.597 [724]
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Minimum Order Quantity		4 Units	

Plug Internal Configuration

ProTec T1-xxx-P **ProTube T1-50-P**

Dimensions & Packaging



Dimensions & Packaging			
ProTec T1-xxx-P		**300**	**350**
Single Unit Weight	pounds [grams]	.236 [107]	.272 [123]
ProTube T1-50-P		**50**	
Single Unit Weight	pounds [grams]	.208 [94]	
Single Unit DIN 43880 Dimension		1 TE	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Minimum Order Quantity		28 Units	

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Single-Pole SPD

ProTube T1 50 0+1

Class I • Class II • Type 1 • Type 2 • Type 1CA

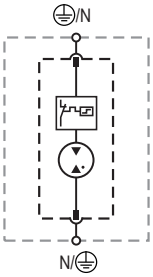
Location of Use: Main Distribution Boards
Network Systems: TT, TN-S
Mode of Protection: N-PE
Surge Ratings: I_{imp} = 50 kA (10/350 µs)
I_n = 50 kA (8/20 µs)
IEC/EN/UL Category: Class I+II / Type 1+2 / Type 1CA
Protective Elements: GDT with Thermal Disconnector
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

ProTube T1-xxx-0+1		50
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	0 V
Maximum Continuous Operating Voltage	U_c	305 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	1500 V
Follow Current Interrupt Rating	I_{fi}	100 A_{RMS}
Response Time	t_A	< 100 ns
TOV Withstand 200ms	U_T	1200 V
Number of Ports		1
UL Electrical		
Maximum Continuous Operating Voltage (AC)	MCOV	305 V
Voltage Protection Rating	VPR	1200 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm^2 (Solid, Stranded) / 25 mm^2 (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Order Information		
Order Code		**50**
ProTube T1-xxx-0+1		59.0276
ProTube T1-50-P		59.0269

ProTube T1 50 0+1

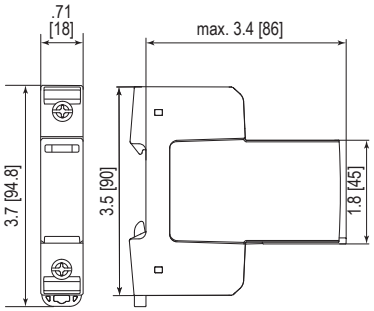
Internal Configuration



Legend

L Line
N Neutral
Protective Earth

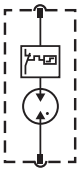
Dimensions & Packaging



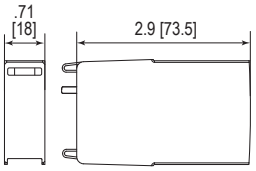
Dimensions & Packaging		
ProTube T1-xxx-0+1		**50**
Single Unit Weight	pounds [grams]	.390 [177]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		12 Units

Plug Internal Configuration

ProTube T1-50-P



Dimensions & Packaging



Dimensions & Packaging		
ProTube T1-50-P		**50**
Single Unit Weight	pounds [grams]	.208 [94]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		28 Units

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTec T1H 1+0

Class I • Class II • Type 1 • Type 2

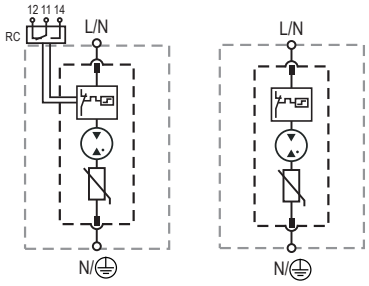
Location of Use: Main Distribution Boards
Network Systems: TN-S, TN-C, TT (only L-N)
Mode of Protection: L-PE, N-PE (only TN-S), L-PEN, L-N
Surge Ratings: I_{imp} = 12.5 kA (10/350 µs)
I_n = 20 kA (8/20 µs)
IEC/EN Category: Class I+II / Type 1+2
Protective Elements: GDT in series with High Energy MOV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

Technical Data

ProTec T1H-xxx-1+0(-R)		300
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	U_c	300 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	65 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	1500 V
Response Time	t_A	< 25 ns
Back-Up Fuse (max)		315 A / 250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)
Order Information		
Order Code		**300**
ProTec T1H-xxx-1+0		59.0310
ProTec T1H-xxx-1+0-R (with remote contacts)		59.0311
ProTec T1H-xxx-P		59.0308

ProTec T1H 1+0

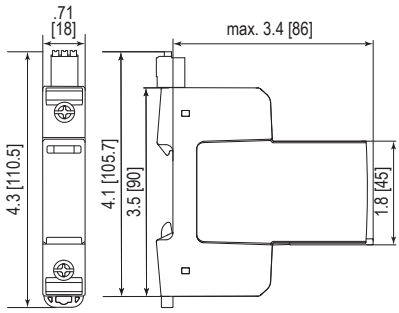
Internal Configuration



Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional

Dimensions & Packaging

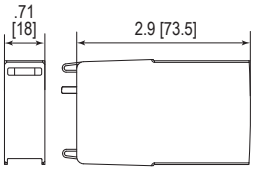


Dimensions & Packaging		
ProTec T1H-xxx-1+0		**300**
Single Unit Weight	pounds [grams]	.437 [198]
ProTec T1H-xxx-1+0-R		**300**
Single Unit Weight	pounds [grams]	.452 [205]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		12 Units

Plug Internal Configuration

ProTec T1H-xxx-P

Dimensions & Packaging



Dimensions & Packaging		
ProTec T1H-xxx-P		**300**
Single Unit Weight	pounds [grams]	.286 [130]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		28 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTec T1H 2+0

Class I • Class II • Type 1 • Type 2

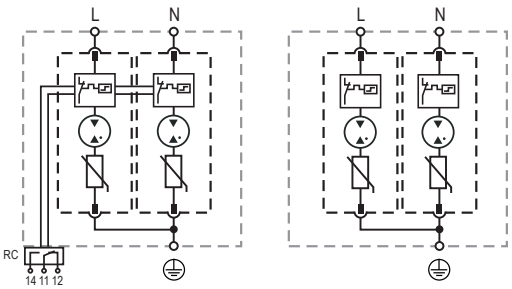
Location of Use: Main Distribution Boards
Network Systems: TN-S
Mode of Protection: L-PE, N-PE
Surge Ratings: I_{imp} = 12.5 kA (10/350 µs)
I_n = 20 kA (8/20 µs)
IEC/EN Category: Class I+II / Type 1+2
Protective Elements: GDT in series with High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011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

Technical Data

ProTec T1H-xxx-2+0(-R)		300
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	U_c	300 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	65 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	1500 V
Response Time	t_A	< 25 ns
Back-Up Fuse (max)		315 A / 250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)
Order Information		
Order Code		**300**
ProTec T1H-xxx-2+0		59.0312
ProTec T1H-xxx-2+0-R (with remote contacts)		59.0313
ProTec T1H-xxx-P		59.0308

ProTec T1H 2+0

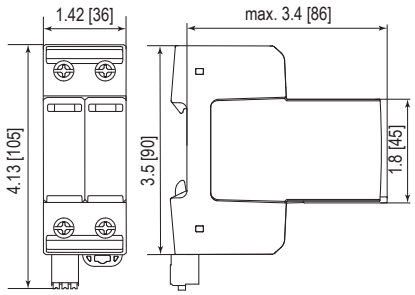
Internal Configuration



Legend

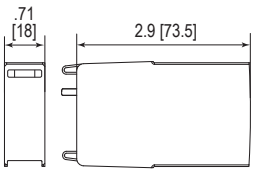
L	*Line*
N	*Neutral*
⏚	*Protective Earth*
RC	*Remote Contacts Optional*

Dimensions & Packaging



Dimensions & Packaging		
ProTec T1H-xxx-2+0		**300**
Single Unit Weight	pounds [grams]	.860 [390]
ProTec T1H-xxx-2+0-R		**300**
Single Unit Weight	pounds [grams]	.880 [399]
Single Unit DIN 43880 Dimension		2 TE
Packaging Dimensions (HxWxL)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		7 Units

Dimensions & Packaging



Dimensions & Packaging		
ProTec T1H-xxx-P		**300**
Single Unit Weight	pounds [grams]	.286 [130]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		28 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTec T1H 3+0

Class I • Class II • Type 1 • Type 2

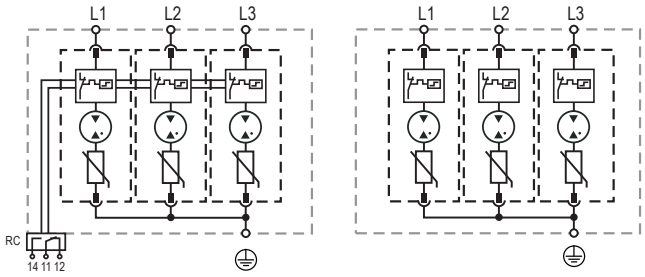
Location of Use: Main Distribution Boards
Network Systems: TN-C
Mode of Protection: L-PEN
Surge Ratings: I_{imp} = 12.5 kA (10/350 µs)
I_n = 20 kA (8/20 µs)
IEC/EN Category: Class I+II / Type 1+2
Protective Elements: GDT in series with High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011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

Technical Data

ProTec T1H-xxx-3+0(-R)		300
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	U_c	300 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	65 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	1500 V
Response Time	t_A	< 25 ns
Back-Up Fuse (max)		315 A / 250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)
Order Information		
Order Code		**300**
ProTec T1H-xxx-3+0		59.0314
ProTec T1H-xxx-3+0-R (with remote contacts)		59.0315
ProTec T1H-xxx-P		59.0308

ProTec T1H 3+0

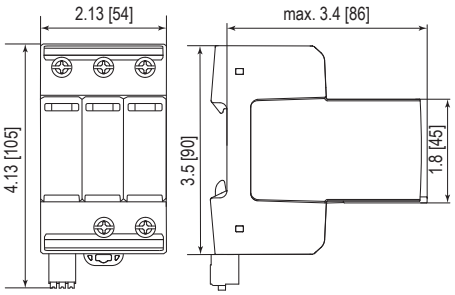
Internal Configuration



Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional

Dimensions & Packaging

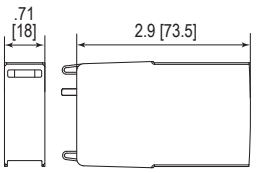


Dimensions & Packaging		
ProTec T1H-xxx-3+0		**300**
Single Unit Weight	pounds [grams]	1.266 [574]
ProTec T1H-xxx-3+0-R		**300**
Single Unit Weight	pounds [grams]	1.286 [583]
Single Unit DIN 43880 Dimension		3 TE
Packaging Dimensions (HxWxL)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		5 Units

Plug Internal Configuration

ProTec T1H-xxx-P

Dimensions & Packaging



Dimensions & Packaging		
ProTec T1H-xxx-P		**300**
Single Unit Weight	pounds [grams]	.286 [130]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		28 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTec T1H 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 = 20 kA (8/20 µs)
IEC/EN Category: Class I+II / Type 1+2
Protective Elements: GDT in series with High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

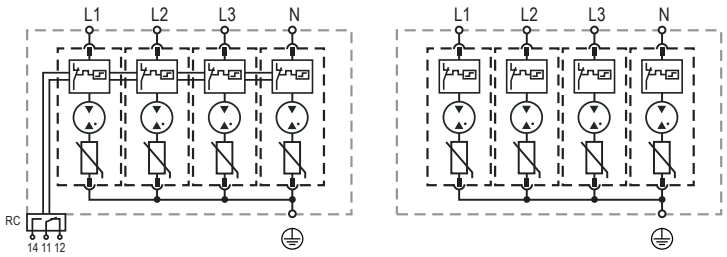
ProTec T1H-xxx-4+0(-R)		300
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	U_c	300 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	65 kA
Impulse Discharge Current (10/350 µs)	I_{imp}	12.5 kA
Specific Energy	W/R	39 kJ/Ω
Charge	Q	6.25 As
Voltage Protection Level	U_p	1500 V
Response Time	t_A	< 25 ns
Back-Up Fuse (max)		315 A / 250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)
Order Information		
Order Code		**300**
ProTec T1H-xxx-4+0		59.0316
ProTec T1H-xxx-4+0-R (with remote contacts)		59.0317
ProTec T1H-xxx-P		59.0308

ProTec T1H 4+0

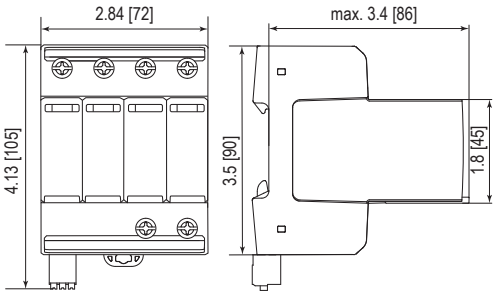
Internal Configuration

Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional



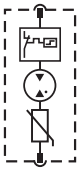
Dimensions & Packaging



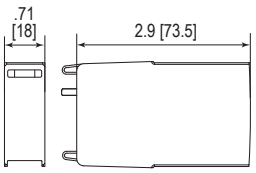
Dimensions & Packaging		
ProTec T1H-xxx-4+0		**300**
Single Unit Weight	pounds [grams]	1.721 [781]
ProTec T1H-xxx-4+0-R		**300**
Single Unit Weight	pounds [grams]	1.737 [788]
Single Unit DIN 43880 Dimension		4 TE
Packaging Dimensions (HxWxL)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		4 Units

Plug Internal Configuration

ProTec T1H-xxx-P



Dimensions & Packaging



Dimensions & Packaging		
ProTec T1H-xxx-P		**300**
Single Unit Weight	pounds [grams]	.286 [130]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		28 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTec T1H 1+1

Class I • Class II • Type 1 • Type 2

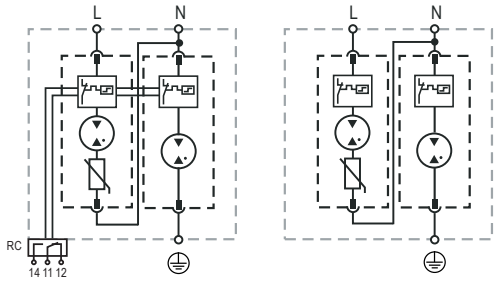
Location of Use: Main Distribution Boards
Network Systems: TT, TN-S
Mode of Protection: L-N, N-PE
Surge Ratings: I_{imp} = 12.5 kA (10/350 µs)
I_n = 20 kA (8/20 µs)
IEC/EN Category: Class I+II / Type 1+2
Protective Elements: GDT in series with High Energy MOV
Housing: Pluggable Design
Compliance: IEC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

Technical Data

ProTec T1H-xxx-1+1(-R)			300
IEC Electrical			
Nominal AC Voltage (50/60Hz)		U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N) / (N-PE)	U_c	300 V / 305 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}	65 kA / 100 kA
Impulse Discharge Current (10/350 µs)	(L-N) / (N-PE)	I_{imp}	12.5 kA / 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	1500 V / 1500 V
Response Time	(L-N) / (N-PE)	t_A	< 25 ns / < 100 ns
Back-Up Fuse (max)			315 A / 250 A gG
Short-Circuit Current Rating (AC)	(L-N)	I_{SCCR}	25 kA / 50 kA
Follow Current Interrupt Rating	(N-PE)	I_{fi}	100 A_{RMS}
TOV Withstand 120min	(L-N)	U_T	442 V
TOV Withstand 200ms	(N-PE)	U_T	1200 V
Number of Ports			1
Mechanical & Environmental			
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity		RH	5%...95%
Altitude			13123 ft [4000 m]
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)
			35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting			35 mm DIN Rail, EN 60715
Degree of Protection			IP 20 (built-in)
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection			Yes
Operating State / Fault Indication			Green Flag / Not Green Flag
Remote Contacts (RC)			Optional
RC Switching Capacity			AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm² (Solid)
Order Information			
Order Code			**300**
ProTec T1H-xxx-1+1			59.0318
ProTec T1H-xxx-1+1-R (with remote contacts)			59.0319
ProTec T1H-xxx-P			59.0308
ProTube T1H-50-P			59.0309

ProTec T1H 1+1

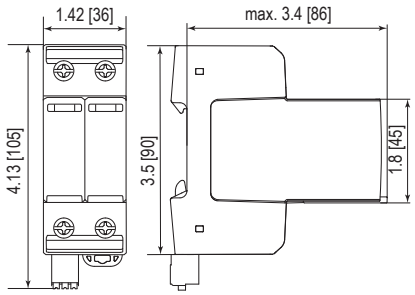
Internal Configuration



Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional

Dimensions & Packaging

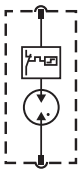


Dimensions & Packaging		
ProTec T1H-xxx-1+1		**300**
Single Unit Weight	pounds [grams]	.795 [361]
ProTec T1H-xxx-1+1-R		**300**
Single Unit Weight	pounds [grams]	.811 [368]
Single Unit DIN 43880 Dimension		2 TE
Packaging Dimensions (H x W x L)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		7 Units

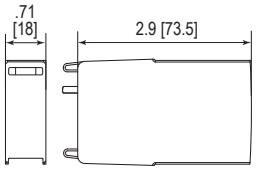
Plug Internal Configuration

ProTec T1H-xxx-P

ProTube T1H-50-P



Dimensions & Packaging



Dimensions & Packaging		
ProTec T1H-xxx-P		**300**
Single Unit Weight	pounds [grams]	.286 [130]
ProTube T1H-50-P		**50**
Single Unit Weight	pounds [grams]	.208 [94]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (H x W x L)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		28 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTec T1H 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 (10/350 µs)
I_n = 20 kA (8/20 µs)
IEC/EN Category: Class I+II / Type 1+2
Protective Elements: GDT in series with High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

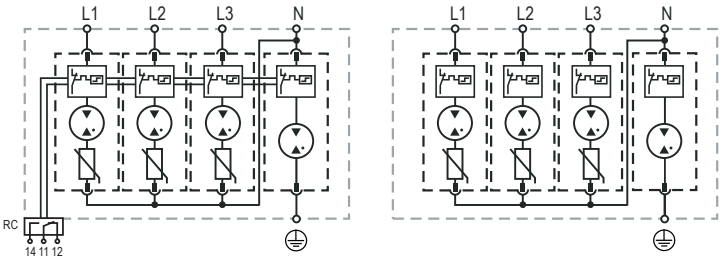
ProTec T1H-xxx-3+1(-R)			300
IEC Electrical			
Nominal AC Voltage (50/60Hz)		U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N) / (N-PE)	U_c	300 V / 305 V
Nominal Discharge Current (8/20 µs)	(L-N) / (N-PE)	I_n	20 kA / 50 kA
Maximum Discharge Current (8/20 µs)	(L-N) / (N-PE)	I_{max}	65 kA / 100 kA
Impulse Discharge Current (10/350 µs)	(L-N) / (N-PE)	I_{imp}	12.5 kA / 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	1500 V / 1500 V
Response Time	(L-N) / (N-PE)	t_A	< 25 ns / < 100 ns
Back-Up Fuse (max)			315 A / 250 A gG
Short-Circuit Current Rating (AC)	(L-N)	I_{SCCR}	25 kA / 50 kA
Follow Current Interrupt Rating	(N-PE)	I_{fi}	100 A_{RMS}
TOV Withstand 120min	(L-N)	U_T	442 V
TOV Withstand 200ms	(N-PE)	U_T	1200 V
Number of Ports			1
Mechanical & Environmental			
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity		RH	5%...95%
Altitude			13123 ft [4000 m]
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)
			35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting			35 mm DIN Rail, EN 60715
Degree of Protection			IP 20 (built-in)
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection			Yes
Operating State / Fault Indication			Green Flag / Not Green Flag
Remote Contacts (RC)			Optional
RC Switching Capacity			AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm² (Solid)
Order Information			
Order Code			**300**
ProTec T1H-xxx-3+1			59.0320
ProTec T1H-xxx-3+1-R (with remote contacts)			59.0321
ProTec T1H-xxx-P			59.0308
ProTube T1H-50-P			59.0309

ProTec T1H 3+1

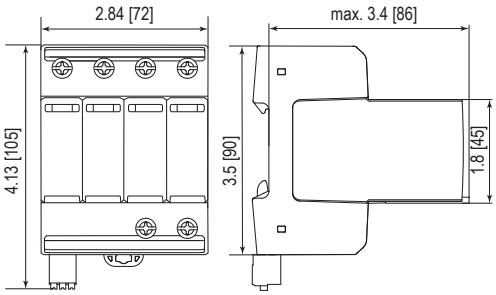
Internal Configuration

Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional



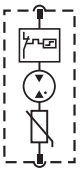
Dimensions & Packaging



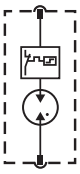
Dimensions & Packaging		
ProTec T1H-xxx-3+1		**300**
Single Unit Weight	pounds [grams]	1.657 [752]
ProTec T1H-xxx-3+1-R		**300**
Single Unit Weight	pounds [grams]	1.642 [745]
Single Unit DIN 43880 Dimension		4 TE
Packaging Dimensions (H x W x L)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		4 Units

Plug Internal Configuration

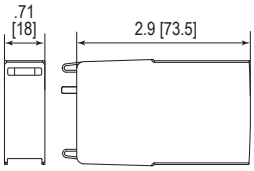
ProTec T1H-xxx-P



ProTube T1H-50-P



Dimensions & Packaging



Dimensions & Packaging		
ProTec T1H-xxx-P		**300**
Single Unit Weight	pounds [grams]	.286 [130]
ProTube T1H-50-P		**50**
Single Unit Weight	pounds [grams]	.208 [94]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (H x W x L)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		28 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTube T1H 50 0+1

Class I • Class II • Type 1 • Type 2

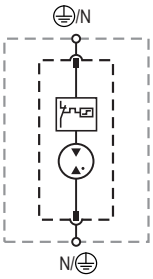
Location of Use: Main Distribution Boards
Network Systems: TT, TN-S
Mode of Protection: N-PE
Surge Ratings: I_{imp} = 50 kA (10/350 µs)
I_n = 50 kA (8/20 µs)
IEC/EN Category: Class I+II / Type 1+2
Protective Elements: High Energy GDT with Thermal Disconnector
Housing: Pluggable Design
Compliance: IEC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

Technical Data

ProTube T1H-xxx-0+1		50
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	0 V
Maximum Continuous Operating Voltage (AC)	U_c	305 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	1500 V
Follow Current Interrupt Rating	I_{fi}	100 A_{RMS}
Response Time	t_A	< 100 ns
TOV Withstand 200ms	U_T	1200 V
Number of Ports		1
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm^2 (Solid, Stranded) / 25 mm^2 (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Order Information		
Order Code		**50**
ProTube T1H-xxx-0+1		59.0340
ProTube T1H-50-P		59.0309

ProTube T1H 50 0+1

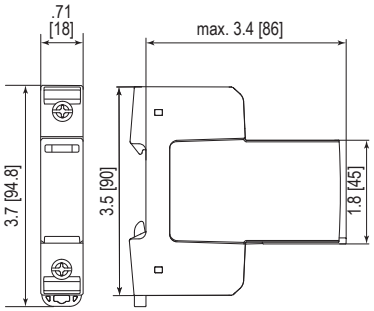
Internal Configuration



Legend

L Line
N Neutral
Protective Earth

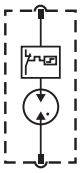
Dimensions & Packaging



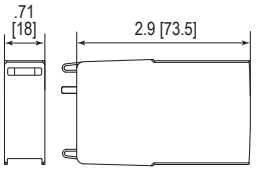
Dimensions & Packaging		
ProTube T1H-50-0+1		**50**
Single Unit Weight	pounds [grams]	.390 [177]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		12 Units

Plug Internal Configuration

ProTube T1H-50-P



Dimensions & Packaging



Dimensions & Packaging		
ProTube T1H-50-P		**50**
Single Unit Weight	pounds [grams]	.208 [94]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		28 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 204.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T1HS 3+0

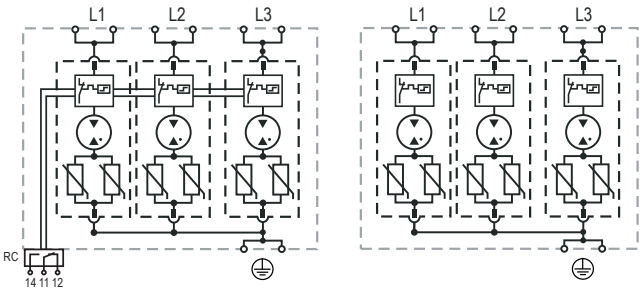
Class I • Class II • Type 1 • Type 2

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

Technical Data

ProTec T1HS-xxx-3+0(-R)		300
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	U_c	300 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA
Maximum Discharge Current (8/20 µs)	I_{max}	65 kA
Impulse Discharge Current (10/350 µs)	I_{imp}	25 kA
Specific Energy	W/R	156.2 kJ/Ω
Charge	Q	12.5 As
Voltage Protection Level	U_p	1500 V
Rated Load Current	I_L	125 A
Response Time	t_A	≤ 100 ns
Back-Up Fuse (max)		315 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)
Order Information		
Order Code		**300**
ProTec T1HS-xxx-3+0		59.0304
ProTec T1HS-xxx-3+0-R (with remote contacts)		59.0305
ProTec T1HS-xxx-P		59.0302

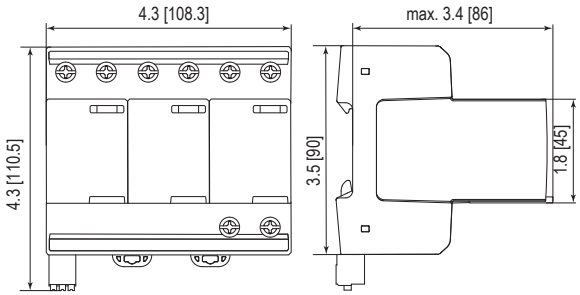
Internal Configuration



Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional

Dimensions & Packaging

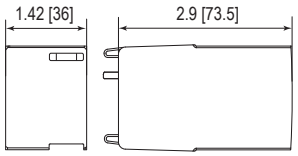


Dimensions & Packaging	
ProTec T1HS-xxx-3+0	**300**
Single Unit Weight pounds [grams]	0.72 [330]
ProTec T1HS-xxx-3+0-R	**300**
Single Unit Weight pounds [grams]	0.74 [337]
Single Unit DIN 43880 Dimension	6 TE
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity	2 Units

Plug Internal Configuration

ProTec T1HS-xxx-P

Dimensions & Packaging



Dimensions & Packaging	
ProTec T1HS-xxx-P	**300**
Single Unit Weight pounds [grams]	0.34 [155]
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity	14 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 206.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T1HS 3+1

Class I • Class II • Type 1 • Type 2

25 kA Series

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

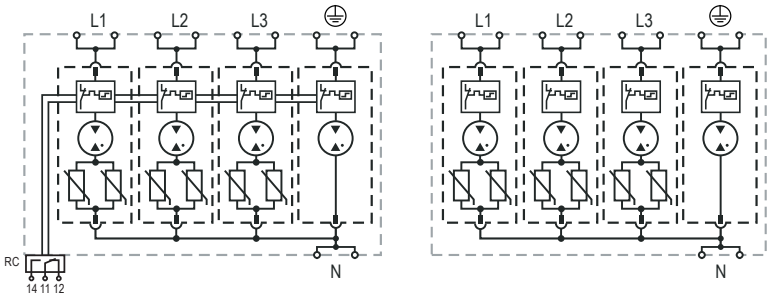
Technical Data

ProTec T1HS-xxx-3+1(-R)			300
IEC Electrical			
Nominal AC Voltage (50/60Hz)		U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N) / (N-PE)	U_c	300 V / 305 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}	65 kA / 130 kA
Impulse Discharge Current (10/350 µs)	(L-N) / (N-PE)	I_{imp}	25 kA / 100 kA
Specific Energy	(L-N) / (N-PE)	W/R	156.2 kJ/Ω / 2500 kJ/Ω
Charge	(L-N) / (N-PE)	Q	12.5 As / 50 As
Voltage Protection Level	(L-N) / (N-PE)	U_p	1500 V / 1500 V
Rated Load Current		I_L	125 A
Response Time	(L-N) / (N-PE)	t_A	≤ 100 ns / ≤ 100 ns
Back-Up Fuse (max)			315 A gG
Short-Circuit Current Rating (AC)		I_{SCCR}	50 kA
TOV Withstand 120min	(L-N)	U_T	442 V
TOV Withstand 200ms	(N-PE)	U_T	1200 V
Number of Ports			1
Mechanical & Environmental			
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity		RH	5%...95%
Altitude			13123 ft [4000 m]
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)
			35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting			35 mm DIN Rail, EN 60715
Degree of Protection			IP 20 (built-in)
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection			Yes
Operating State / Fault Indication			Green Flag / Not Green Flag
Remote Contacts (RC)			Optional
RC Switching Capacity			AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm² (Solid)
Order Information			
Order Code			**300**
ProTec T1HS-xxx-3+1			59.0306
ProTec T1HS-xxx-3+1-R (with remote contacts)			59.0307
ProTec T1HS-xxx-P			59.0302
ProTube T1HS-100-P			59.0303

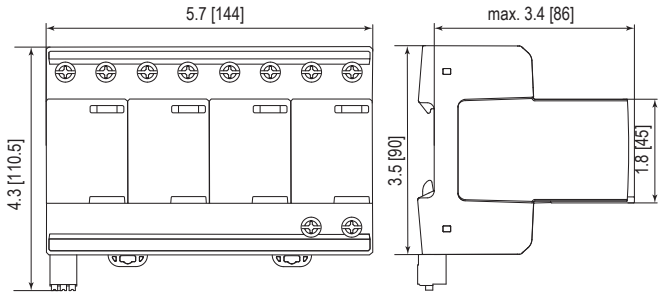
Internal Configuration

Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging

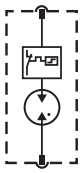


Dimensions & Packaging	
ProTec T1HS-xxx-3+1	**300**
Single Unit Weight pounds [grams]	0.92 [420]
ProTec T1HS-xxx-3+1-R	**300**
Single Unit Weight pounds [grams]	0.94 [427]
Single Unit DIN 43880 Dimension	8 TE
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity	2 Units

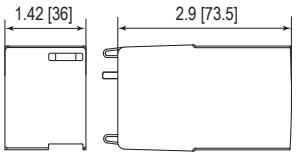
Plug Internal Configuration

ProTec T1HS-xxx-P

ProTube T1HS-100-P



Dimensions & Packaging



Dimensions & Packaging	
ProTec T1HS-xxx-P	**300**
Single Unit Weight pounds [grams]	0.34 [155]
ProTube T1HS-100-P	**100**
Single Unit Weight pounds [grams]	0.26 [120]
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (HxWxL)	4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity	14 Units

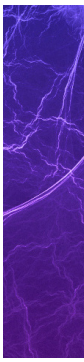
RoHS COMPLIANT CE

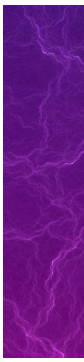
Applicable connection configurations can be found beginning on page 206.

inches
[mm]

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

ProTec ZP T1H-R
ProBloc B & ProBloc BR
ProTube B
SafeBloc B & SafeBloc BR
SafeTube B





RoHS COMPLIANT CE ÖVE

Combined Lightning Current and Surge Arrester

ProTec ZP T1H 3+0

Class I • Class II • Type 1 • Type 2

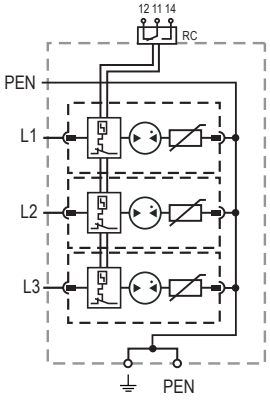
Location of Use: Main Distribution Boards, 40mm Busbar Systems
Network Systems: TN-C
Mode of Protection: L-PEN
Surge Ratings: I_{imp} = 12.5 kA (10/350 µs)
I_n = 20 kA (8/20 µs)
IEC/EN: Class I+II / Type 1+2
Technology: Hybrid
Protective Elements: GDT in series with High Energy MOV
Leakage Current: No
Line Follow Current: No
Housing: Compact design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec ZP T1H-xxx-3+0-R		300
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	230/400 V
Maximum Continuous Operating Voltage (AC)	U_c	300 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
Specific Energy	W/R	39 kJ/Ω
Charge	Q	6.25As
Voltage Protection Level	U_p	1500V
Response Time	t_A	< 100ns
Back-Up Fuse (max)		315 A gG / 250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		35mm² (Solid, Stranded) / 25mm² (Flexible)
		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting		40mm Busbar Systems
Degree Of Protection		IP 30 (in combination with cover)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Function Monitoring		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Yes
RC Switching Capacity		AC: 250V/ 1A, 125V/ 1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		1.5mm² (Solid) / 16 AWG (Solid)
Order Information		
Order Code		**300**
ProTec ZP T1H-xxx-3+0-R		59.0360

ProTec ZP T1H 3+0

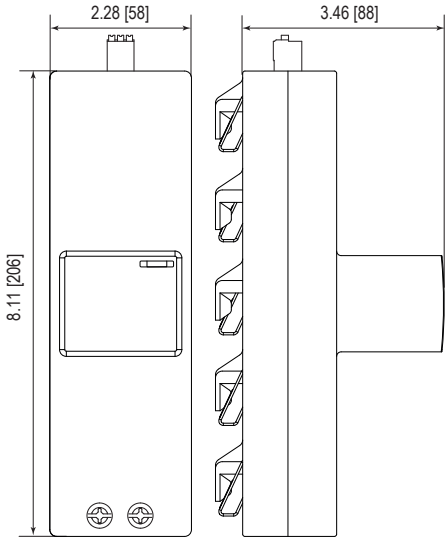
Internal Configuration



Legend

L	*Line*
⏚	*Protective Earth*
PEN	*Combined Protective Ground & Neutral*

Dimensions & Packaging



Dimensions & Packaging		
ProTec ZP T1H-xxx-3+0-R		**300**
Single Unit Weight	pounds [grams]	2.217 [1006]
Single Unit		3 modules
Packaging Dimensions (H x W x L)		2.9 × 4.5 × 8.6" [75 × 116 × 220 mm]
Minimum Order Quantity		1 Unit

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 207.

inches
[mm]

Combined Lightning Current and Surge Arrester

ProTec ZP T1H 3+1

Class I • Class II • Type 1 • Type 2

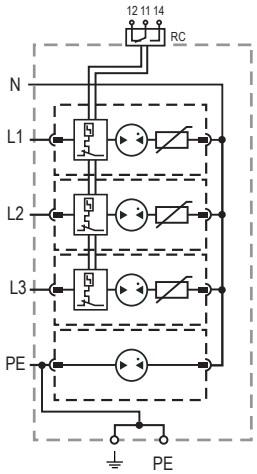
Location of Use: Main Distribution Boards, 40mm Busbar Systems
Network Systems: TN-S, TT
Mode of Protection: L-N,N-PE (L-PE only at TN-S systems)
Surge Ratings: I_{imp} = 12.5 kA (10/350 µs)
I_n = 20 kA (8/20 µs)
IEC/EN: Class I+II / Type 1+2
Technology: Hybrid
Protective Elements: GDT in series with High Energy MOV
Leakage Current: No
Line Follow Current: No
Housing: Compact design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec ZP T1H-xxx-3+1-R			300
IEC Electrical			
Nominal AC Voltage (50/60Hz)		U_o/U_n	230/400 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	300 V
	(N-PE)	U_c	305 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 80 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
Specific Energy	(L-N)/(N-PE)	W/R	39 kJ/Ω / 625 kJ/Ω
Charge	(L-N)/(N-PE)	Q	6.25As / 25As
Voltage Protection Level	(L-N)/(N-PE)	U_p	1500V / 1500V
Follow Current Interrupt Rating	(N-PE)	I_{fi}	$100A_{RMS}$
Response Time	(L-N)/(N-PE)	t_A	< 100ns / < 100ns
Back-Up Fuse (max)			315 A gG / 250 A gG
Short-Circuit Current Rating (AC)		I_{SCCR}	25 kA / 50 kA
TOV Withstand 120min	(L-N)	U_T	442 V
TOV Withstand 200ms	(N-PE)	U_T	1200 V
Number of Ports			1
Mechanical & Environmental			
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity		RH	5%...95%
Altitude			13123 ft [4000 m]
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)			35mm² (Solid, Stranded) / 25mm² (Flexible)
			2 AWG (Solid, Stranded) / 4 AWG (Flexible)
Mounting			40mm Busbar Systems
Degree Of Protection			IP 30 (in combination with cover)
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0
Function Monitoring			Yes
Operating State / Fault Indication			Green Flag / Not Green Flag
Remote Contacts (RC)			Yes
RC Switching Capacity			AC: 250V/ 1A, 125V/ 1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)			1.5mm² (Solid) / 16 AWG (Solid)
Order Information			
Order Code			**300**
ProTec ZP T1H-xxx-3+1-R			59.0361

ProTec ZP T1H 3+1

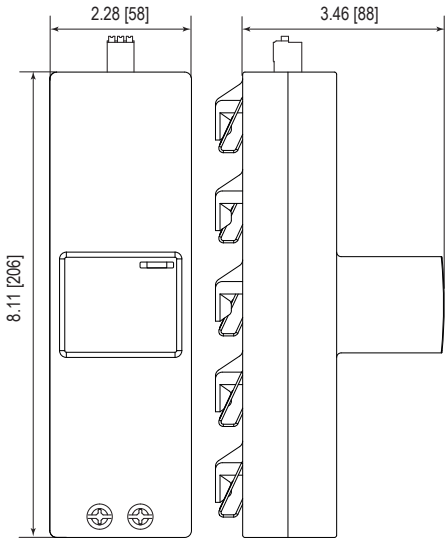
Internal Configuration



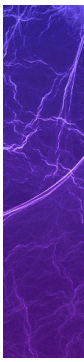
Legend

L Line
⏚ Protective Earth
PE Protective Ground

Dimensions & Packaging



Dimensions & Packaging		
ProTec ZP T1H-xxx-3+1-R		**300**
Single Unit Weight	pounds [grams]	2.239 [1016]
Single Unit		3 modules
Packaging Dimensions (H x W x L)		2.9 × 4.5 × 8.6" [75 × 116 × 220 mm]
Minimum Order Quantity		1 Unit



RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 207.

inches
[mm]

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

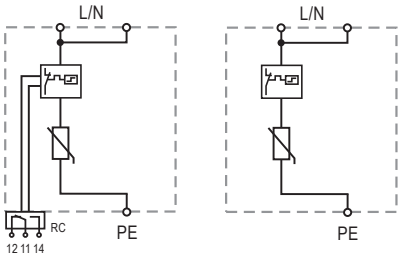
ProBloc B(R) 12.5/xxx (1+0)		150	275*	320*	440
Electrical					
Nominal AC Voltage (50/60Hz)	U_o	120V	230V	230V	400V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V	440V
Nominal Discharge Current (8/20µs)	I_n		20kA		
Maximum Discharge Current (8/20µs)	I_{max}		50kA		
Impulse Discharge Current (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	334V	334V	585V
TOV Safe Fail 120min	U_T	229V	438V	438V	769V
Number of Ports			1		
Mechanical & Environmental					
Temperature Range	T_a		-40 °F to +185 °F [-40 °C to +85 °C]		
Permissible Humidity	RH		5%...95%		
Terminal Screw Torque	M_{max}		26.5 lbf·in [3.0Nm]		
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)		
			35mm² (Solid, Stranded) / 25mm² (Flexible)		
Mounting			35mm DIN Rail, EN 60715		
Degree of Protection			IP 20 (built-in)		
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 (Solid) / 16 AWG (Solid)		
RC Terminal Screw Torque	M_{max}		2.2 lbf·in [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

**OVE Certified*

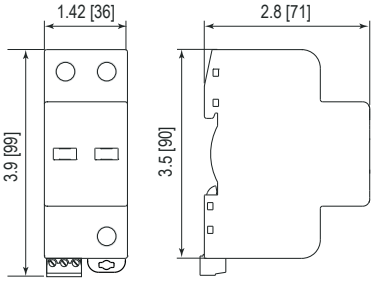
Internal Configuration

Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging



Dimensions & Packaging					
ProBloc B 12.5/xxx (1+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	.330	.440	.440	.661
	grams	150	200	200	300
Single Unit DIN 43880 Dimension		2 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × 1.6" [109 × 77 × 42 mm]			
Minimum Order Quantity		7 Units			
ProBloc BR 12.5/xxx (1+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	.341	.451	.451	.672
	grams	155	205	205	305
Single Unit DIN 43880 Dimension		2 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × 1.6" [109 × 77 × 42 mm]			
Minimum Order Quantity		7 Units			

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 208.

inches
[mm]

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

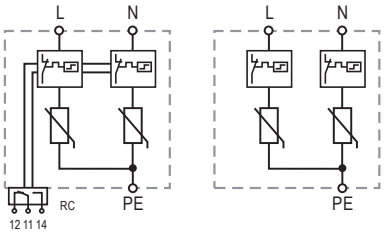
ProBloc B(R) 25/xxx (2+0)		150	275*	320*	440
Electrical					
Nominal AC Voltage (50/60Hz)	U_o	120V	230V	230V	400V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V	440V
Nominal Discharge Current (8/20µs)	I_n		20kA		
Maximum Discharge Current (8/20µs)	I_{max}		50kA		
Impulse Discharge Current (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	334V	334V	585V
TOV Safe Fail 120min	U_T	229V	438V	438V	769V
Number of Ports			1		
Mechanical & Environmental					
Temperature Range	T_a		-40 °F to +185 °F [-40 °C to +85 °C]		
Permissible Humidity	RH		5%...95%		
Terminal Screw Torque	M_{max}		26.5 lbf·in [3.0Nm]		
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)		
			35mm² (Solid, Stranded) / 25mm² (Flexible)		
Mounting			35mm DIN Rail, EN 60715		
Degree of Protection			IP 20 (built-in)		
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 (Solid) / 16 AWG (Solid)		
RC Terminal Screw Torque	M_{max}		2.2 lbf·in [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

**OVE Certified*

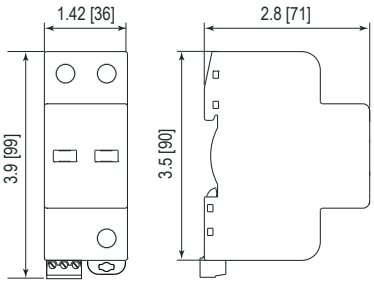
Internal Configuration

Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging



Dimensions & Packaging					
ProBloc B 25/xxx (2+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	.407	.496	.496	.826
	grams	185	225	225	375
Single Unit DIN 43880 Dimension		2 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × 1.6" [109 × 77 × 42 mm]			
Minimum Order Quantity		7 Units			
ProBloc BR 25/xxx (2+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	.418	.507	.507	.837
	grams	190	230	230	380
Packaging Dimensions (H × W × L)		2 TE			
Single Unit DIN 43880 Dimension		4.2 × 3 × 1.6" [109 × 77 × 42 mm]			
Minimum Order Quantity		7 Units			

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 208.

inches
[mm]

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

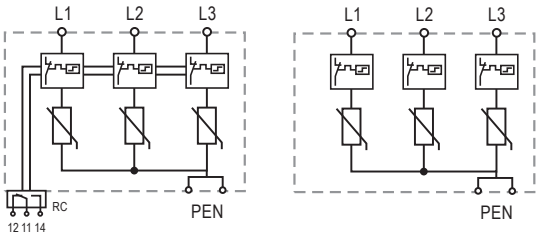
ProBloc B(R) 37.5/xxx (3+0)		150	275*	320*	440
Electrical					
Nominal AC Voltage (50/60Hz)	U_o	120V	230V	230V	400V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V	320V	440V
Nominal Discharge Current (8/20µs)	I_n		20kA		
Maximum Discharge Current (8/20µs)	I_{max}		50kA		
Impulse Discharge Current (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	334V	334V	585V
TOV Safe Fail 120min	U_T	229V	438V	438V	769V
Number of Ports			1		
Mechanical & Environmental					
Temperature Range	T_a		-40 °F to +185 °F [-40 °C to +85 °C]		
Permissible Humidity	RH		5%...95%		
Terminal Screw Torque	M_{max}		26.5 lbf·in [3.0Nm]		
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)		
			35mm² (Solid, Stranded) / 25mm² (Flexible)		
Mounting			35mm DIN Rail, EN 60715		
Degree of Protection			IP 20 (built-in)		
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 (Solid) / 16 AWG (Solid)		
RC Terminal Screw Torque	M_{max}		2.2 lbf·in [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

**OVE Certified*

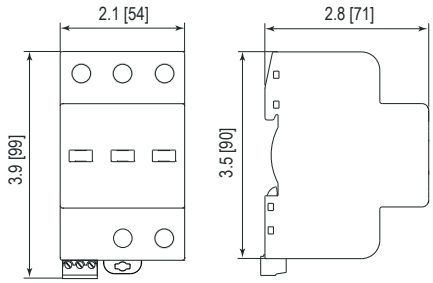
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging					
ProBloc B 37.5/xxx (3+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	.639	.727	.727	1.058
	grams	290	330	330	480
Single Unit DIN 43880 Dimension		3 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × 2.3" [109 × 77 × 60 mm]			
Minimum Order Quantity		5 Units			
ProBloc BR 37.5/xxx (3+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	.661	.727	.727	1.080
	grams	300	330	330	490
Single Unit DIN 43880 Dimension		3 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × 2.3" [109 × 77 × 60 mm]			
Minimum Order Quantity		5 Units			

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 208.

inches
[mm]

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	400V
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	334V	334V	585V
TOV Safe Fail 120min	U_T	229V	438V	438V	769V
Number of Ports		1			
Mechanical & Environmental					
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]			
Permissible Humidity	RH	5%...95%			
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0Nm]			
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)			
		35mm² (Solid, Stranded) / 25mm² (Flexible)			
Mounting		35mm DIN Rail, EN 60715			
Degree of Protection		IP 20 (built-in)			
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 (Solid) / 16 AWG (Solid)			
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [0.25Nm]			

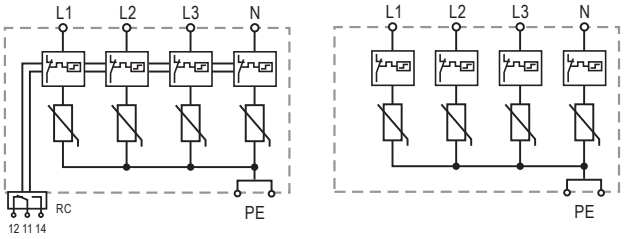
Order Information					
Order Code		**150**	**275**	**320**	**440**
ProBloc B 50/xxx (4+0)		56.0532	56.0534	56.0536	56.0540
ProBloc BR 50/xxx (4+0) (with remote contacts)		56.0533	56.0535	56.0537	56.0541

**OVE Certified*

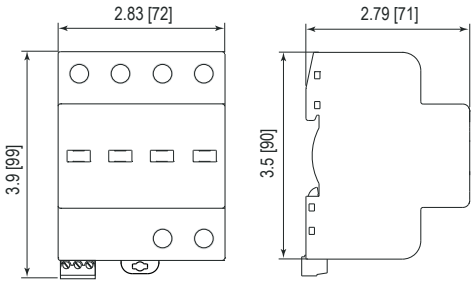
Internal Configuration

Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging



Dimensions & Packaging					
ProBloc B 50/xxx (4+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	1.212	1.521	1.521	1.631
	grams	550	590	590	740
Single Unit DIN 43880 Dimension		4 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]			
Minimum Order Quantity		3 Units			
ProBloc BR 50/xxx (4+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	1.234	1.234	1.322	1.653
	grams	560	560	600	750
Single Unit DIN 43880 Dimension		4 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]			
Minimum Order Quantity		3 Units			

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 208.

inches
[mm]

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: TN-S, 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*
Electrical					
Nominal AC Voltage (50/60Hz)		U_o	120V	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	150V	275V	320V
	(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
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	334V	334V
TOV Safe Fail 120min	(L-N)	U_T	229V	438V	438V
TOV Withstand 200ms	(N-PE)	U_T		1200V/300A	
Number of Ports				1	
Mechanical & Environmental					
Temperature Range		T_a		-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity		RH		5%...95%	
Terminal Screw Torque		M_{max}		26.5 lbf·in [3.0Nm]	
Conductor Cross Section (max)				2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
				35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting				35mm DIN Rail, EN 60715	
Degree of Protection				IP 20 (built-in)	
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 (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque		M_{max}		2.2 lbf·in [0.25Nm]	

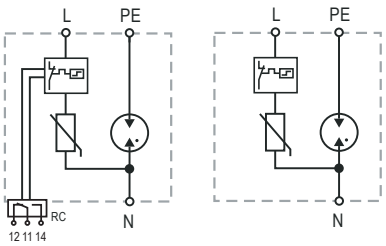
Order Information			
Order Code	**150**	**275**	**320**
ProBloc B 25/xxx (1+1)	56.0542	56.0544	56.0546
ProBloc BR 25/xxx (1+1) (with remote contacts)	56.0543	56.0545	56.0547

**OVE Certified*

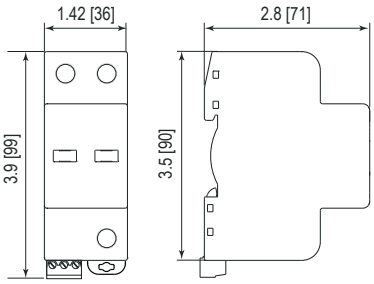
Internal Configuration

Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging



Dimensions & Packaging				
ProBloc B 25/xxx (1+1)		**150**	**275**	**320**
Single Unit Weight	pounds	.242	.330	.330
	grams	110	150	150
Single Unit DIN 43880 Dimension			2 TE	
Packaging Dimensions (H × W × L)			4.2 × 3 × 1.6" [109 × 77 × 42 mm]	
Minimum Order Quantity			7 Units	
ProBloc BR 25/xxx (1+1)		**150**	**275**	**320**
Single Unit Weight	pounds	.253	.341	.341
	grams	115	155	155
Single Unit DIN 43880 Dimension			2 TE	
Packaging Dimensions (H × W × L)			4.2 × 3 × 1.6" [109 × 77 × 42 mm]	
Minimum Order Quantity			7 Units	

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 208.

inches
[mm]

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: TN-S, 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

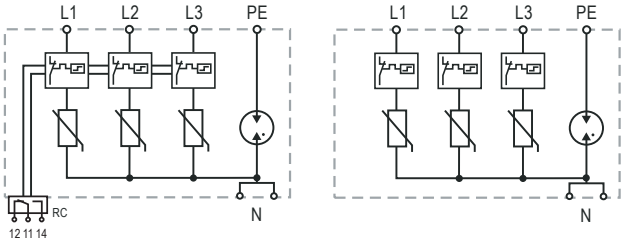
Technical Data

ProBloc B(R) 50/xxx (3+1)			275	320
Electrical				
Nominal AC Voltage (50/60Hz)		U_o	230V	230V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	275V	320V
	(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
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	334V	334V
TOV Safe Fail 120min	(L-N)	U_T	438V	438V
TOV Withstand 200ms	(N-PE)	U_T	1200V/300A	
Number of Ports			1	
Mechanical & Environmental				
Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity		RH	5%...95%	
Terminal Screw Torque		M_{max}	26.5 lbf·in [3.0Nm]	
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
			35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting			35mm DIN Rail, EN 60715	
Degree of Protection			IP 20 (built-in)	
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 (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque		M_{max}	2.2 lbf·in [0.25Nm]	
Order Information				
Order Code			275	320
ProBloc B 50/xxx (3+1)			56.0554	56.0556
ProBloc BR 50/xxx (3+1) (with remote contacts)			56.0555	56.0557

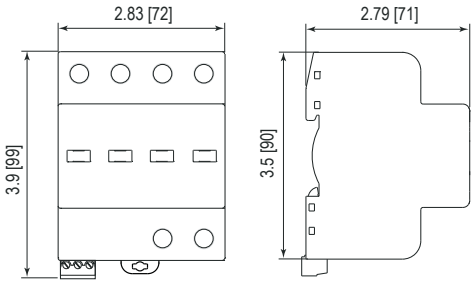
Internal Configuration

Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging



Dimensions & Packaging			
ProBloc B 50/xxx (3+1)		**275**	**320**
Single Unit Weight	pounds	1.311	1.311
	grams	595	595
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]	
Minimum Order Quantity		3 Units	
ProBloc BR 50/xxx (3+1)		**275**	**320**
Single Unit Weight	pounds	1.322	1.322
	grams	600	600
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]	
Minimum Order Quantity		3 Units	

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 208.

inches
[mm]

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

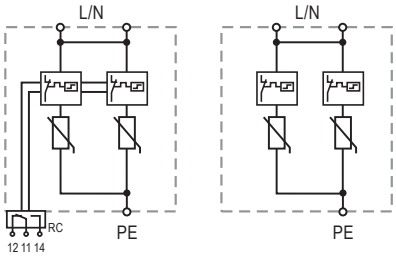
ProBloc B(R) 25/xxx (1+0)		150	275*	320*	440
Electrical					
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V	230 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V	320 V	440 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA			
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA			
Impulse Discharge 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	334 V	334 V	585 V
TOV Safe Fail 120min	U_T	229 V	438 V	438 V	769 V
Number of Ports		1			
Mechanical & Environmental					
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]			
Permissible Humidity	RH	5%...95%			
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0 Nm]			
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)			
		35mm² (Solid, Stranded) / 25mm² (Flexible)			
Mounting		35 mm DIN Rail, EN 60715			
Degree of Protection		IP 20 (built-in)			
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 (Solid) / 16 AWG (Solid)			
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [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

**OVE Certified*

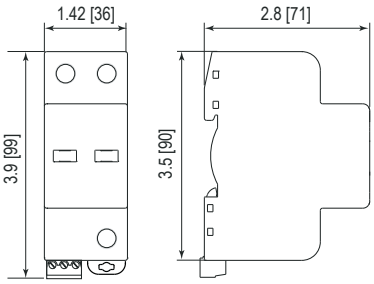
Internal Configuration

Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging



Dimensions & Packaging					
ProBloc B 25/xxx (1+0)		**150**	**275**	**320**	**440V**
Single Unit Weight	pounds	.540	.650	.650	.760
	grams	245	295	295	345
Single Unit DIN 43880 Dimension		2 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × 1.6" [109 × 77 × 42 mm]			
Minimum Order Quantity		7 Units			
ProBloc BR 25/xxx (1+0)		**150**	**275**	**320**	**440V**
Single Unit Weight	pounds	.551	.661	.661	.771
	grams	250	300	300	350
Single Unit DIN 43880 Dimension		2 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × 1.6" [109 × 77 × 42 mm]			
Minimum Order Quantity		7 Units			

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 209.

inches
[mm]

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

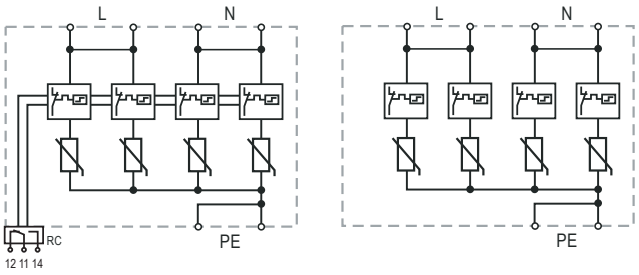
ProBloc B(R) 50/xxx (2+0)		150	275*	320*	440
Electrical					
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V	230 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V	320 V	440 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA			
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA			
Impulse Discharge 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	334 V	334 V	585 V
TOV Safe Fail 120min	U_T	229 V	438 V	438 V	769 V
Number of Ports		1			
Mechanical & Environmental					
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]			
Permissible Humidity	RH	5%...95%			
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0 Nm]			
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)			
		35mm² (Solid, Stranded) / 25mm² (Flexible)			
Mounting		35 mm DIN Rail, EN 60715			
Degree of Protection		IP 20 (built-in)			
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 (Solid) / 16 AWG (Solid)			
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [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

**OVE Certified*

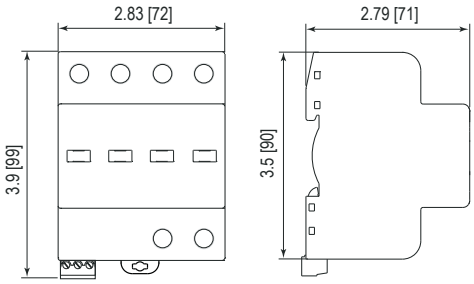
Internal Configuration

Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging



Dimensions & Packaging					
ProBloc B 50/xxx (2+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	1.014	1.234	1.234	1.499
	grams	460	560	560	680
Single Unit DIN 43880 Dimension		4 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]			
Minimum Order Quantity		3 Units			
ProBloc BR 50/xxx (2+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	1.036	1.256	1.256	1.521
	grams	470	570	570	690
Single Unit DIN 43880 Dimension		4 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]			
Minimum Order Quantity		3 Units			

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 209.

inches
[mm]

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

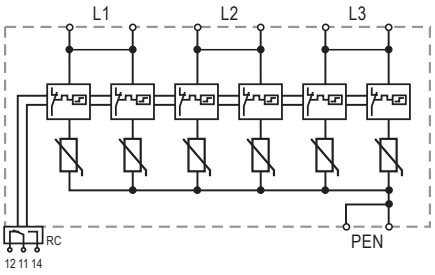
ProBloc B(R) 75/xxx (3+0)		150	275*	320*	440
Electrical					
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V	230 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V	320 V	440 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA			
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA			
Impulse Discharge 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	334 V	334 V	585 V
TOV Safe Fail 120min	U_T	229 V	438 V	438 V	769 V
Number of Ports		1			
Mechanical & Environmental					
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]			
Permissible Humidity	RH	5%...95%			
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0 Nm]			
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)			
		35mm² (Solid, Stranded) / 25mm² (Flexible)			
Mounting		35 mm DIN Rail, EN 60715			
Degree of Protection		IP 20 (built-in)			
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 (Solid) / 16 AWG (Solid)			
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [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

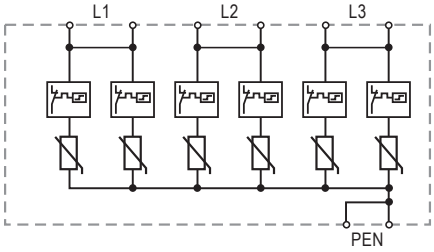
**OVE Certified*

Internal Configuration

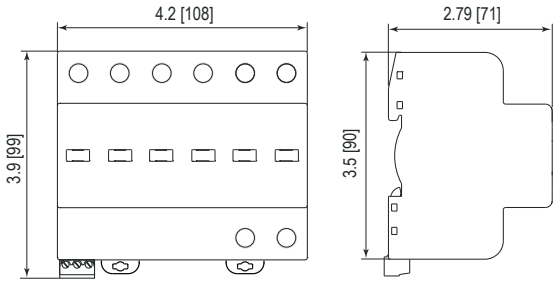
Legend

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





Dimensions & Packaging



Dimensions & Packaging					
ProBloc B 75/xxx (3+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	1.521	1.851	1.851	2.215
	grams	690	840 g	840	1005
Single Unit DIN 43880 Dimension		6 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × 4.4" [109 × 77 × 114 mm]			
Minimum Order Quantity		3 Units			
ProBloc BR 75/xxx (3+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	1.554	1.884	1.884	2.248
	grams	705	855	855	1020
Single Unit DIN 43880 Dimension		6 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × 4.4" [109 × 77 × 114 mm]			
Minimum Order Quantity		3 Units			

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 209.

inches
[mm]

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

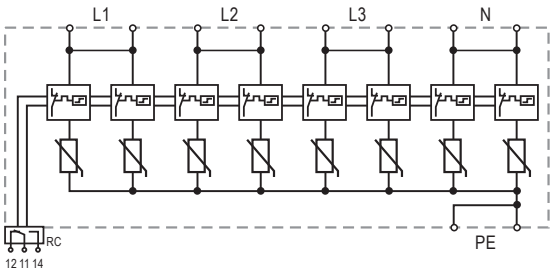
ProBloc B(R) 100/xxx (4+0)		150	275*	320*	440
Electrical					
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V	230 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V	320 V	440 V
Nominal Discharge Current (8/20 µs)	I_n		25 kA		
Maximum Discharge Current (8/20 µs)	I_{max}		100 kA		
Impulse 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	334 V	334 V	585 V
TOV Safe Fail 120min	U_T	229 V	438 V	438 V	769 V
Number of Ports			1		
Mechanical & Environmental					
Temperature Range	T_a		-40 °F to +185 °F [-40 °C to +85 °C]		
Permissible Humidity	RH		5%...95%		
Terminal Screw Torque	M_{max}		26.5 lbf·in [3.0 Nm]		
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)		
			35mm² (Solid, Stranded) / 25mm² (Flexible)		
Mounting			35 mm DIN Rail, EN 60715		
Degree of Protection			IP 20 (built-in)		
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 (Solid) / 16 AWG (Solid)		
RC Terminal Screw Torque	M_{max}		2.2 lbf·in [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

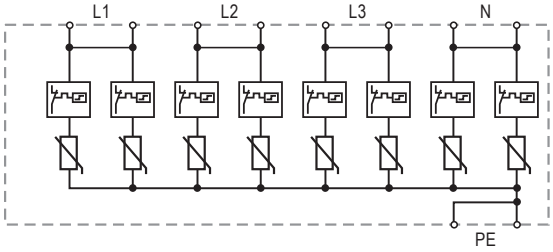
**OVE Certified*

Internal Configuration

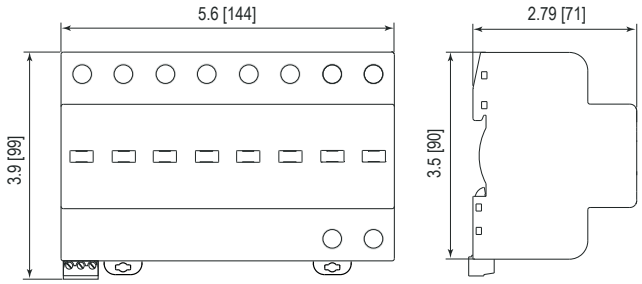
Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional





Dimensions & Packaging



Dimensions & Packaging					
ProBloc B 100/xxx (4+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	2.028	2.469	2.469	2.965
	grams	920	1120	1120	1345
Single Unit DIN 43880 Dimension		8 TE			
Packaging Dimensions (H×W×L)		4.2 × 3 × 5.8" [109 × 77 × 148 mm]			
Minimum Order Quantity		2 Units			
ProBloc BR 100/xxx (4+0)		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	2.182	2.623	2.623	2.998
	grams	990	1190	1190	1360
Single Unit DIN 43880 Dimension		8 TE			
Packaging Dimensions (H×W×L)		4.2 × 3 × 5.8" [109 × 77 × 148 mm]			
Minimum Order Quantity		2 Units			

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 209.

inches
[mm]

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: TN-S, 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

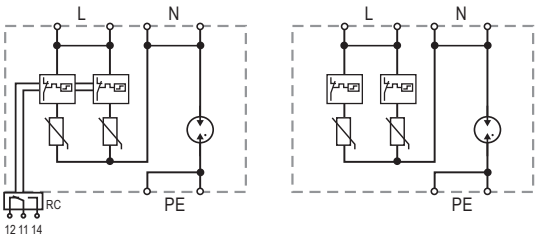
ProBloc B(R) 50/xxx (1+1)			150	275*	320*
Electrical					
Nominal AC Voltage (50/60 Hz)		U_o	120 V	230 V	230 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	150 V	275 V	320 V
	(N-PE)	U_c		255 V	
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n		25 kA / 50 kA	
Maximum Discharge Current (8/20 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
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	334 V	334 V
TOV Safe Fail 120min	(L-N)	U_T	229 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 °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)				2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
				35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting				35 mm DIN Rail, EN 60715	
Degree of Protection				IP 20 (built-in)	
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)				1.5mm² (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque		M_{max}		2.2 lbf·in [0.25 Nm]	
Order Information					
Order Code			**150**	**275**	**320**
ProBloc B 50/xxx (1+1)			56.0602	56.0604	56.0606
ProBloc BR 50/xxx (1+1) (with remote contacts)			56.0603	56.0605	56.0607

**OVE Certified*

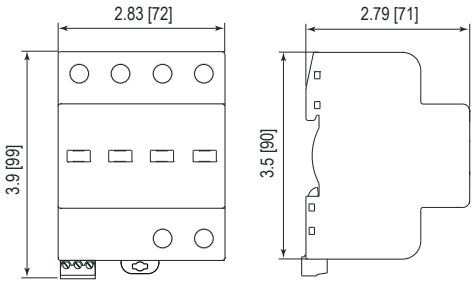
Internal Configuration

Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging



Dimensions & Packaging				
ProBloc B 50/xxx (1+1)		**150**	**275**	**320**
Single Unit Weight	pounds	.98	1.06	1.06
	grams	445	485	485
Single Unit DIN 43880 Dimension			4 TE	
Packaging Dimensions (H × W × L)			4.2 × 3 × 3.1" [109 × 77 × 80 mm]	
Minimum Order Quantity			3 Units	
ProBloc BR 50/xxx (1+1)		**150**	**275**	**320**
Single Unit Weight	pounds	.99	1.06	1.06
	grams	450	490	490
Single Unit DIN 43880 Dimension			4 TE	
Packaging Dimensions (H × W × L)			4.2 × 3 × 3.1" [109 × 77 × 80 mm]	
Minimum Order Quantity			3 Units	

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 209.

inches
[mm]

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: TN-S, 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

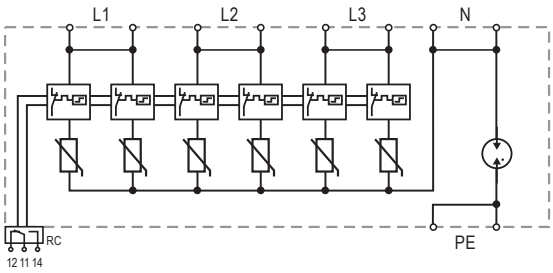
Technical Data

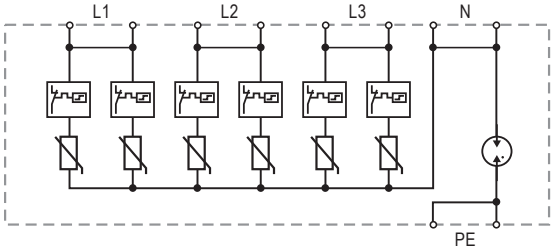
ProBloc B(R) 100/xxx (3+1)			275	320
Electrical				
Nominal AC Voltage (50/60 Hz)		U_o	230 V	230 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	275 V	320 V
	(N-PE)	U_c	255 V	
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	25 kA / 100 kA	
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}	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
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	334 V	334 V
TOV Safe Fail 120min	(L-N)	U_T	438 V	438 V
TOV Withstand 200 ms	(N-PE)	U_T	1200 V / 300 A	
Number of Ports			1	
Mechanical & Environmental				
Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity		RH	5%...95%	
Terminal Screw Torque (max)		M_{max}	26.5 lbf·in [3.0 Nm]	
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
			35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting			35 mm DIN Rail, EN 60715	
Degree of Protection			IP 20 (built-in)	
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)			1.5mm² (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque		M_{max}	2.2 lbf·in [0.25 Nm]	
Order Information				
Order Code			**275**	**320**
ProBloc B 100/xxx (3+1)			56.0614	56.0616
ProBloc BR 100/xxx (3+1) (with remote contacts)			56.0615	56.0617

Internal Configuration

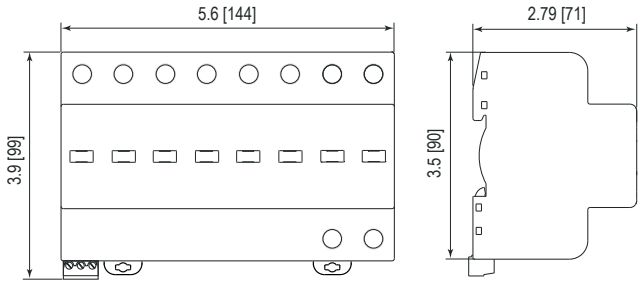
Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional





Dimensions & Packaging



Dimensions & Packaging			
ProBloc B 100/xxx (3+1)		**275**	**320**
Single Unit Weight	pounds	2.50	2.50
	grams	1135	1135
Single Unit DIN 43880 Dimension		8 TE	
Packaging Dimensions (H×W×L)		4.2 × 3 × 5.8" [109 × 77 × 148 mm]	
Minimum Order Quantity		2 Units	
ProBloc BR 100/xxx (3+1)		**275**	**320**
Single Unit Weight	pounds	2.53	2.53
	grams	1150	1150
Single Unit DIN 43880 Dimension		8 TE	
Packaging Dimensions (H×W×L)		4.2 × 3 × 5.8" [109 × 77 × 148 mm]	
Minimum Order Quantity		2 Units	

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 209.

inches
[mm]

Compact Single Pole SPD

ProTube B 50

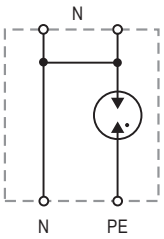
Class I • Class II • Type 1 • Type 2

Location of Use: Main Distribution Boards
Network Systems: TN-S, 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 °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)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35mm² (Solid, Stranded) / 25mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Order Information		
Order Code		**255**
ProTube B 50/xxx		56.0510

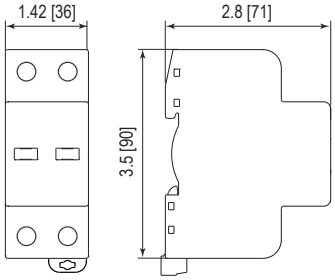
Internal Configuration



Legend

N *Neutral*
PE *Protective Earth*

Dimensions & Packaging



Dimensions & Packaging		
ProTube B 50/xxx		**255**
Single Unit Weight	pounds	.396
	grams	180
Single Unit DIN 43880 Dimension		2 TE
Packaging Dimensions (H × W × L)		4.2 × 3 × 1.6" [109 × 77 × 42 mm]
Minimum Order Quantity		7 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 211.

inches
[mm]

Compact Single Pole SPD

ProTube B 100

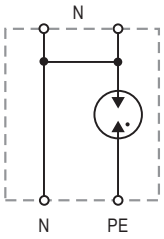
Class I • Class II • Type 1 • Type 2

Location of Use: Main Distribution Boards
Network Systems: TN-S, 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 °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)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35mm² (Solid, Stranded) / 25mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Order Information		
Order Code		**255**
ProTube B 100/xxx		56.0511

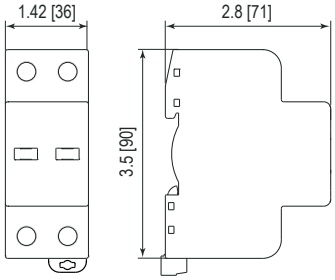
Internal Configuration



Legend

N *Neutral*
PE *Protective Earth*

Dimensions & Packaging



Dimensions & Packaging		
ProTube B 100/xxx		**255**
Single Unit Weight	pounds	.529
	grams	240
Single Unit DIN 43880 Dimension		2 TE
Packaging Dimensions (H × W × L)		4.2 × 3 × 1.6" [109 × 77 × 42 mm]
Minimum Order Quantity		7 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 211.

inches
[mm]

Compact Single Pole SPD

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

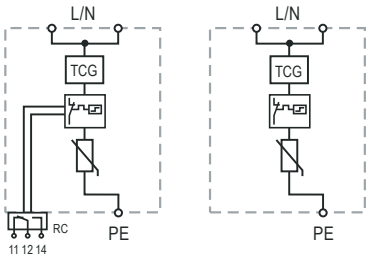
SafeBloc B(R) 12.5/xxx (1+0) TCG		150	275*
Electrical			
Nominal AC Voltage (50/60Hz)	U_o	120V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V
Nominal Discharge Current (8/20µs)	I_n	20kA	
Maximum Discharge Current (8/20µs)	I_{max}	50kA	
Impulse Discharge Current (10/350µs)	I_{imp}	12.5kA	
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 120min	U_T	229V	438V
Number of Ports		1	
Mechanical & Environmental			
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting		35mm DIN Rail, EN 60715	
Degree of Protection		IP 20 (built-in)	
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 (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [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

**OVE Certified*

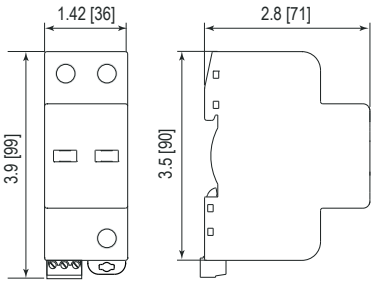
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging		
SafeBloc B 12.5/xxx (1+0) TCG	**150**	**275**
Single Unit Weight pounds [grams]	.385 [175]	.451 [205]
Single Unit DIN 43880 Dimension	2 TE	
Packaging Dimensions (H × W × L)	4.2 × 3 × 1.6" [109 × 77 × 42 mm]	
Minimum Order Quantity	7 Units	
SafeBloc BR 12.5/xxx (1+0) TCG	**150**	**275**
Single Unit Weight pounds [grams]	.396 [180]	.462 [210]
Single Unit DIN 43880 Dimension	2 TE	
Packaging Dimensions (H × W × L)	4.2 × 3 × 1.6" [109 × 77 × 42 mm]	
Minimum Order Quantity	7 Units	

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 213.

inches
[mm]

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

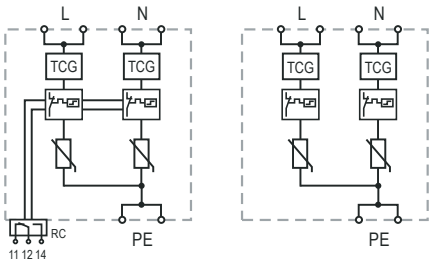
SafeBloc B(R) 25/xxx (2+0) TCG		150	275*
Electrical			
Nominal AC Voltage (50/60Hz)	U_o	120V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V
Nominal Discharge Current (8/20µs)	I_n	20kA	
Maximum Discharge Current (8/20µs)	I_{max}	50kA	
Impulse Discharge Current (10/350µs)	I_{imp}	12.5kA	
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 120min	U_T	229V	438V
Number of Ports		1	
Mechanical & Environmental			
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting		35mm DIN Rail, EN 60715	
Degree of Protection		IP 20 (built-in)	
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 (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [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

**OVE Certified*

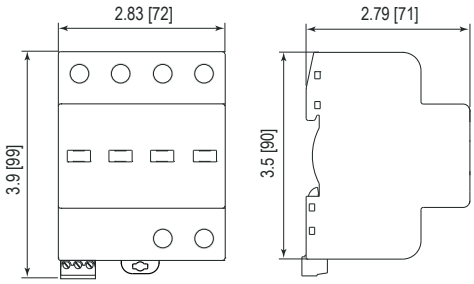
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging			
SafeBloc B 25/xxx (2+0) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	.705 [320]	.925 [420]
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]	
Minimum Order Quantity		3 Units	
SafeBloc BR 25/xxx (2+0) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	.727 [330]	.947 [430]
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]	
Minimum Order Quantity		3 Units	

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 213.

inches
[mm]

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

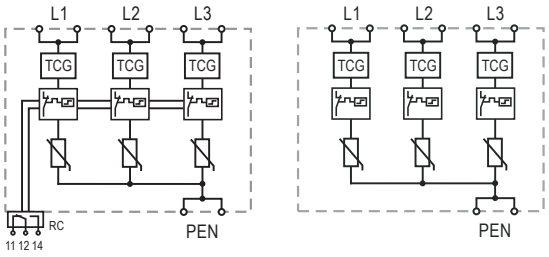
SafeBloc B(R) 37.5/xxx (3+0) TCG		150	275*
Electrical			
Nominal AC Voltage (50/60Hz)	U_o	120V	230V
Maximum Continuous Operating Voltage (AC)	U_c	150V	275V
Nominal Discharge Current (8/20µs)	I_n	20kA	
Maximum Discharge Current (8/20µs)	I_{max}	50kA	
Impulse Discharge Current (10/350µs)	I_{imp}	12.5kA	
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 120min	U_T	229V	438V
Number of Ports		1	
Mechanical & Environmental			
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting		35mm DIN Rail, EN 60715	
Degree of Protection		IP 20 (built-in)	
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 (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [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

**OVE Certified*

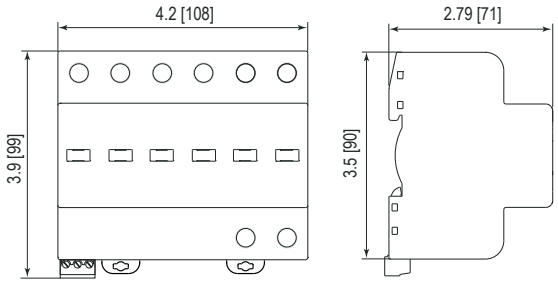
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging			
SafeBloc B 37.5/xxx (3+0) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	.947 [430]	1.168 [530]
Single Unit DIN 43880 Dimension		6 TE	
Packaging Dimensions (H×W×L)		4.2 × 3 × 4.4" [109 × 77 × 114 mm]	
Minimum Order Quantity		2 Units	
SafeBloc BR 37.5/xxx (3+0) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	.970 [440]	1.190 [540 g]
Single Unit DIN 43880 Dimension		6 TE	
Packaging Dimensions (H×W×L)		4.2 × 3 × 4.4" [109 × 77 × 114 mm]	
Minimum Order Quantity		2 Units	

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 213.

inches
[mm]

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

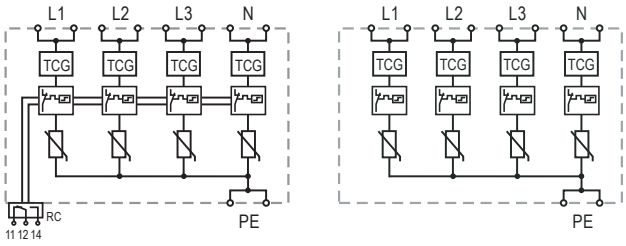
SafeBloc B(R) 50/xxx (4+0) TCG		150	275*
Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	
Impulse Discharge Current (10/350 µs)	I_{imp}	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 120min	U_T	229 V	438 V
Number of Ports		1	
Mechanical & Environmental			
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20 (built-in)	
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 (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [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

**OVE Certified*

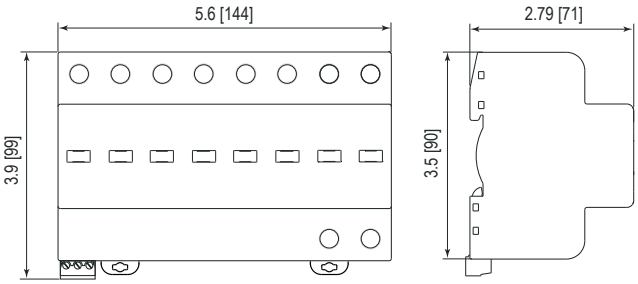
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging		
SafeBloc B 50/xxx (4+0) TCG	**150**	**275**
Single Unit Weight pounds [grams]	1.763 [800]	2.204 [1000]
Single Unit DIN 43880 Dimension	8 TE	
Packaging Dimensions (H × W × L)	4.2 × 3 × 5.8" [109 × 77 × 148 mm]	
Minimum Order Quantity	2 Units	
SafeBloc BR 50/xxx (4+0) TCG	**150**	**275**
Single Unit Weight pounds [grams]	1.796 [815]	2.237 [1015]
Single Unit DIN 43880 Dimension	8 TE	
Packaging Dimensions (H × W × L)	4.2 × 3 × 5.8" [109 × 77 × 148 mm]	
Minimum Order Quantity	2 Units	

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 213.

inches
[mm]

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: TN-S, 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

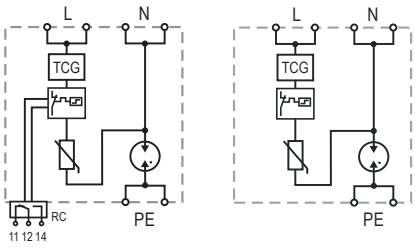
SafeBloc B(R) 25/xxx (1+1) TCG			150	275*
Electrical				
Nominal AC Voltage (50/60 Hz)		U_o	120 V	230 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	150 V	275 V
	(N-PE)	U_c	255 V	
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 50 kA	
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	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 120min	(L-N)	U_T	229 V	438 V
TOV Withstand 200ms	(N-PE)	U_T	1200 V / 300A	
Number of Ports			1	
Mechanical & Environmental				
Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity		RH	5%...95%	
Terminal Screw Torque		M_{max}	26.5 lbf·in [3.0 Nm]	
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
			35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting			35 mm DIN Rail, EN 60715	
Degree of Protection			IP 20 (built-in)	
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)			1.5mm² (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque		M_{max}	2.2 lbf·in [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

**OVE Certified*

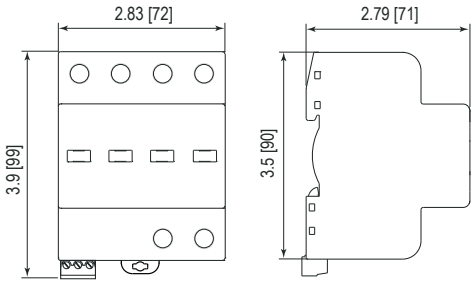
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging			
SafeBloc B 25/xxx (1+1) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	.617 [280]	.694 [315]
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]	
Minimum Order Quantity		3 Units	
SafeBloc BR 25/xxx (1+1) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	.628 [285]	.705 [320]
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]	
Minimum Order Quantity		3 Units	

RoHS COMPLIANT CE ÖVE

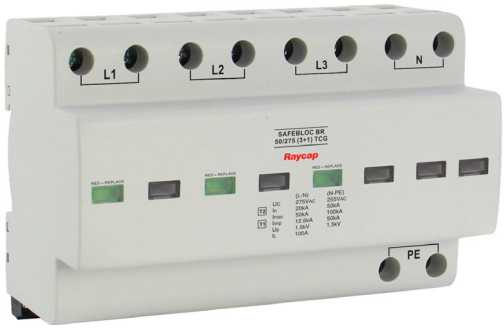
Applicable connection configurations can be found beginning on page 213.

inches
[mm]

Compact Multi-pole SPD

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

Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards
Network Systems: TN-S, 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

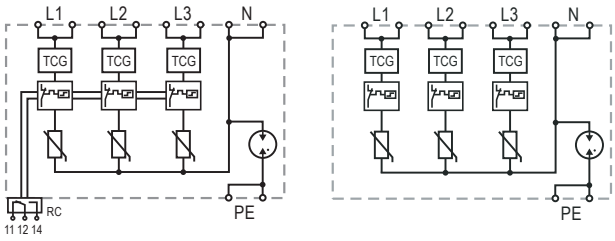
Technical Data

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 120min	(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 °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)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)
			35mm² (Solid, Stranded) / 25mm² (Flexible)
Mounting			35 mm DIN Rail, EN 60715
Degree of Protection			IP 20 (built-in)
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)			1.5mm² (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque		M_{max}	2.2 lbf·in [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

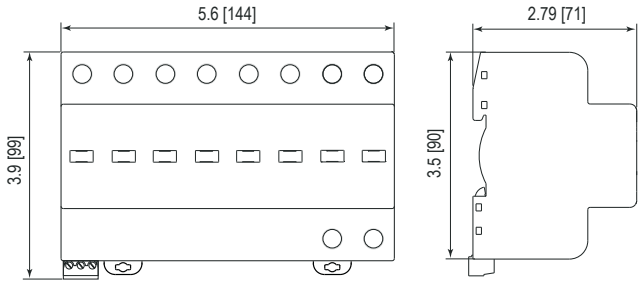
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging		
SafeBloc B 50/xxx (3+1) TCG		**275**
Single Unit Weight	pounds [grams]	1.984 [900]
Single Unit DIN 43880 Dimension		8 TE
Packaging Dimensions (H × W × L)		4.2 × 3 × 5.8" [109 × 77 × 148 mm]
Minimum Order Quantity		2 Units
SafeBloc BR 50/xxx (3+1) TCG		**275**
Single Unit Weight	pounds [grams]	2.006 [910]
Single Unit DIN 43880 Dimension		8 TE
Packaging Dimensions (H × W × L)		4.2 × 3 × 5.8" [109 × 77 × 148 mm]
Minimum Order Quantity		2 Units

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 213.

inches
[mm]

Compact Single Pole SPD

SafeBloc B(R) 25 (1+0) 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

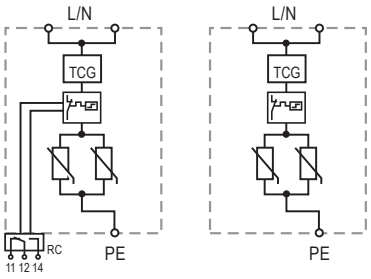
SafeBloc B(R) 25/xxx (1+0) TCG		150	275*
Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA	
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA	
Impulse Discharge Current (10/350 µs)	I_{imp}	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 120min	U_T	229 V	438 V
Number of Ports		1	
Mechanical & Environmental			
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20 (built-in)	
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 (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [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

**OVE Certified*

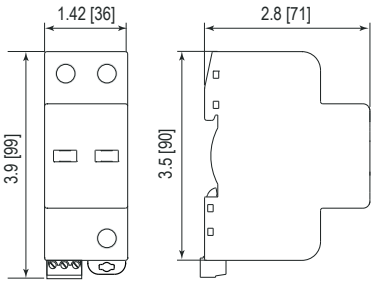
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging			
SafeBloc B 25/xxx (1+0) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	.606 [275]	.716 [325]
Single Unit DIN 43880 Dimension		2 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 1.6" [109 × 77 × 42 mm]	
Minimum Order Quantity		7 Units	
SafeBloc BR 25/xxx (1+0) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	.617 [280]	.727 [330]
Single Unit DIN 43880 Dimension		2 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 1.6" [109 × 77 × 42 mm]	
Minimum Order Quantity		7 Units	

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 213.

inches
[mm]

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

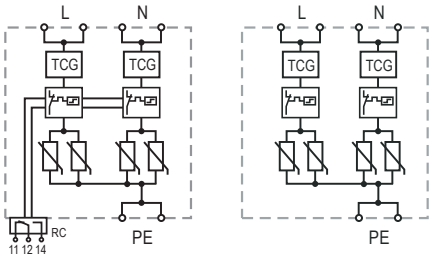
SafeBloc B(R) 50/xxx (2+0) TCG		150	275*
Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA	
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA	
Impulse Discharge Current (10/350 µs)	I_{imp}	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 120min	U_T	229 V	438 V
Number of Ports		1	
Mechanical & Environmental			
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20 (built-in)	
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 (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [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

**OVE Certified*

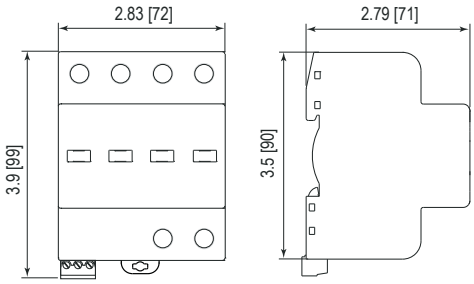
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging			
SafeBloc B 50/xxx (2+0) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	1.146 [520]	1.366 [620]
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]	
Minimum Order Quantity		3 Units	
SafeBloc BR 50/xxx (2+0) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	1.168 [530]	1.388 [630]
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]	
Minimum Order Quantity		3 Units	

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 213.

inches
[mm]

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

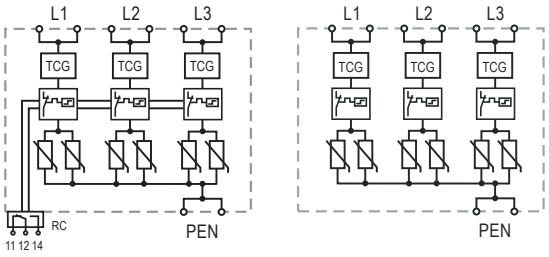
SafeBloc B(R) 75/xxx (3+0) TCG		150	275*
Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA	
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA	
Impulse Discharge Current (10/350 µs)	I_{imp}	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 120min	U_T	229 V	438 V
Number of Ports		1	
Mechanical & Environmental			
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20 (built-in)	
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 (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [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

**OVE Certified*

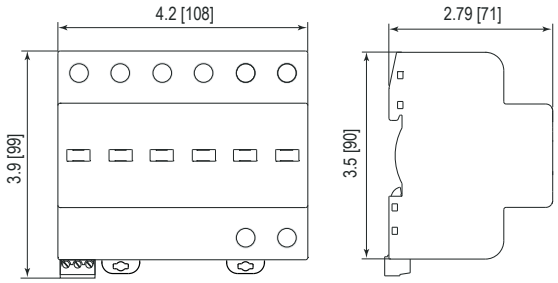
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging			
SafeBloc B 75/xxx (3+0) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	1.719 [780]	2.050 [930]
Single Unit DIN 43880 Dimension		6 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 4.4" [109 × 77 × 114 mm]	
Minimum Order Quantity		2 Units	

SafeBloc BR 75/xxx (3+0) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	1.741 [790]	2.072 [940]
Single Unit DIN 43880 Dimension		6 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 4.4" [109 × 77 × 114 mm]	
Minimum Order Quantity		2 Units	

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 213.

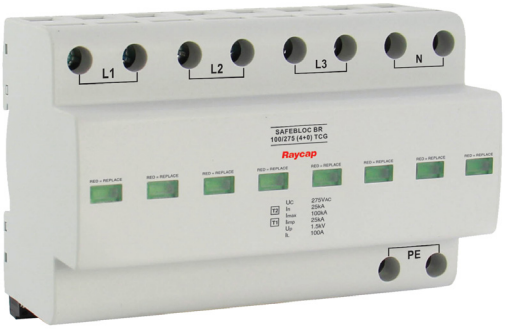
inches
[mm]

Compact Multi-pole SPD

SafeBloc B(R) 100 (4+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

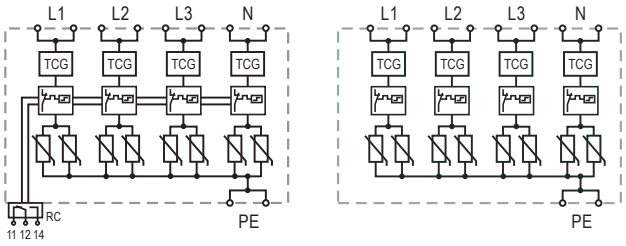
SafeBloc B(R) 100/xxx (4+0) TCG		150	275*
Electrical			
Nominal AC Voltage (50/60 Hz)	U_o	120 V	230 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	275 V
Nominal Discharge Current (8/20 µs)	I_n	25 kA	
Maximum Discharge Current (8/20 µs)	I_{max}	100 kA	
Impulse Discharge Current (10/350 µs)	I_{imp}	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 120min	U_T	229 V	438 V
Number of Ports		1	
Mechanical & Environmental			
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity	RH	5%...95%	
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20 (built-in)	
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 (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [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

**OVE Certified*

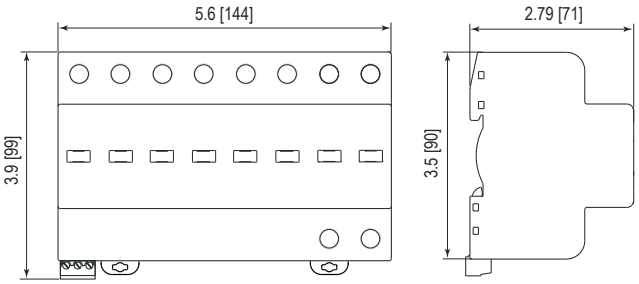
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging			
SafeBloc B 100/xxx (4+0) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	2.292 [1040]	2.733 [1240]
Single Unit DIN 43880 Dimension		8 TE	
Packaging Dimensions (H×W×L)		4.2 × 3 × 5.8" [109 × 77 × 148 mm]	
Minimum Order Quantity		2 Units	

SafeBloc BR 100/xxx (4+0) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	2.325 [1055]	2.766 [1255]
Single Unit DIN 43880 Dimension		8 TE	
Packaging Dimensions (H×W×L)		4.2 × 3 × 5.8" [109 × 77 × 148 mm]	
Minimum Order Quantity		2 Units	

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 213.

inches
[mm]

Compact Multi-pole SPD

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

Class I • Class II • Type 1 • Type 2

Location of Use: Main Distribution Boards
Network Systems: TN-S, 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

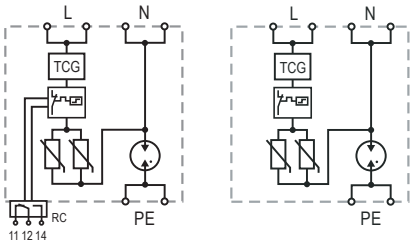
SafeBloc B(R) 50/xxx (1+1) TCG			150	275*
Electrical				
Nominal AC Voltage (50/60Hz)		U_o	120V	230V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	150V	275V
	(N-PE)	U_c	255V	
Nominal Discharge Current (8/20µs)	(L-N)/(N-PE)	I_n	25kA/50kA	
Maximum Discharge Current (8/20µs)	(L-N)/(N-PE)	I_{max}	100kA/100kA	
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}	100 A_{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 120min	(L-N)	U_T	229V	438V
TOV Withstand 200ms	(N-PE)	U_T	1200V/300A	
Number of Ports			1	
Mechanical & Environmental				
Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity		RH	5%...95%	
Terminal Screw Torque		M_{max}	26.5 lbf·in [3.0Nm]	
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
			35mm² (Solid, Stranded) / 25mm² (Flexible)	
Mounting			35mm DIN Rail, EN 60715	
Degree of Protection			IP 20 (built-in)	
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 (Solid) / 16 AWG (Solid)	
RC Terminal Screw Torque		M_{max}	2.2 lbf·in [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

**OVE Certified*

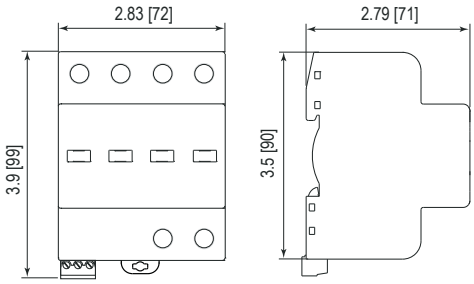
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging			
SafeBloc B 50/xxx (1+1) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	1.047 [475]	1.135 [515]
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]	
Minimum Order Quantity		3 Units	
SafeBloc BR 50/xxx (1+1) TCG		**150**	**275**
Single Unit Weight	pounds [grams]	1.069 [485]	1.157 [525]
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (H × W × L)		4.2 × 3 × 3.1" [109 × 77 × 80 mm]	
Minimum Order Quantity		3 Units	

RoHS COMPLIANT

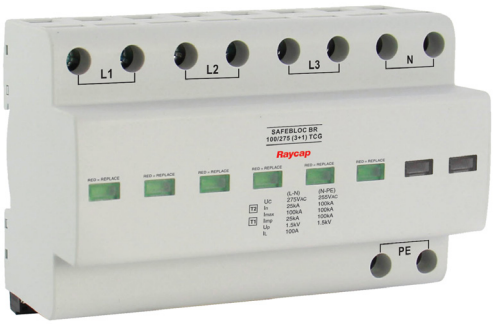
Applicable connection configurations can be found beginning on page 213.

inches
[mm]

Compact Multi-pole SPD

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

Class I • Class II • Type 1 • Type 2



Location of Use: Main Distribution Boards
Network Systems: TN-S, 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

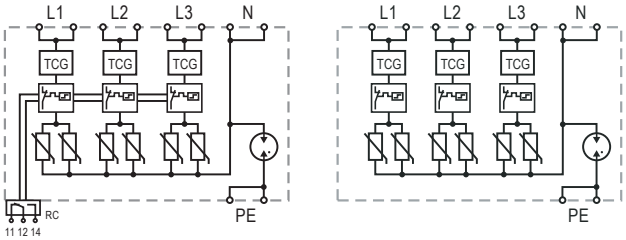
Technical Data

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 120min	(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 °F to +185 °F [-40 °C to +85 °C]
Permissible Humidity		RH	5%...95%
Terminal Screw Torque		M_{max}	26.5 lbf·in [3.0Nm]
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)
			35mm² (Solid, Stranded) / 25mm² (Flexible)
Mounting			35mm DIN Rail, EN 60715
Degree of Protection			IP 20 (built-in)
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 (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque		M_{max}	2.2 lbf·in [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

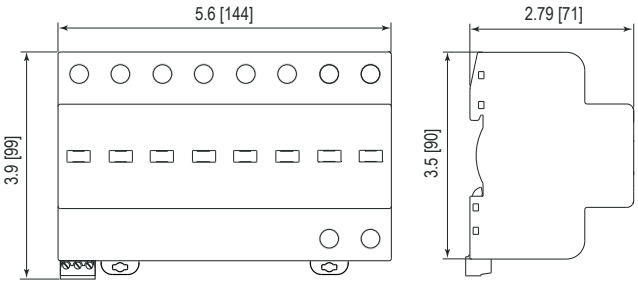
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging	
SafeBloc B 100/xxx (3+1) TCG	**275**
Single Unit Weight pounds [grams]	2.502 [1135]
Single Unit DIN 43880 Dimension	8 TE
Packaging Dimensions (H × W × L)	4.2 × 3 × 5.8" [109 × 77 × 148 mm]
Minimum Order Quantity	2 Units
SafeBloc B(R) 100/xxx (3+1) TCG	**275**
Single Unit Weight pounds [grams]	2.535 [1150]
Single Unit DIN 43880 Dimension	8 TE
Packaging Dimensions (H × W × L)	4.2 × 3 × 5.8" [109 × 77 × 148 mm]
Minimum Order Quantity	2 Units

RoHS COMPLIANT CE ÖVE

Applicable connection configurations can be found beginning on page 213.

inches
[mm]

Compact Single Pole SPD

SafeTube B 50

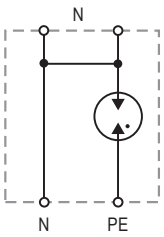
Class I • Class II • Type 1 • Type 2

Location of Use: Main Distribution Boards
Network Systems: TN-S, 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 200ms	U_T	1200 V/300 A
Number of Ports		1
Mechanical & Environmental		
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35mm² (Solid, Stranded) / 25mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Order Information		
Order Code		**255**
SafeTube B 50/xxx		54.0506

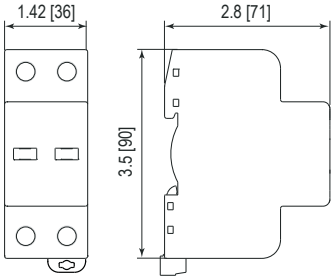
Internal Configuration



Legend

N *Neutral*
PE *Protective Earth*

Dimensions & Packaging



Dimensions & Packaging	
SafeTube B 50/xxx	**255**
Single Unit Weight pounds [grams]	.396 [180]
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (H × W × L)	4.2 × 3 × 1.6" [109 × 77 × 42 mm]
Minimum Order Quantity	7 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 215.

inches
[mm]

Compact Single Pole SPD

SafeTube B 100

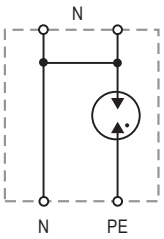
Class I • Class II • Type 1 • Type 2

Location of Use: Main Distribution Boards
Network Systems: TN-S, 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 200ms	U_T	1200 V / 300 A
Number of Ports		1
Mechanical & Environmental		
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35mm² (Solid, Stranded) / 25mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Order Information		
Order Code		**255**
SafeTube B 100/xxx		54.0543

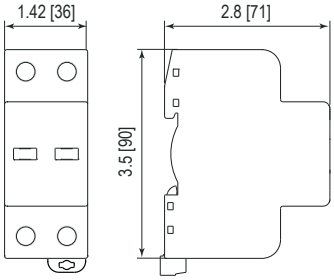
Internal Configuration



Legend

N *Neutral*
PE *Protective Earth*

Dimensions & Packaging



Dimensions & Packaging	
SafeTube B 100/xxx	**255**
Single Unit Weight pounds [grams]	.529 [240]
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (H × W × L)	4.2 × 3 × 1.6" [109 × 77 × 42 mm]
Minimum Order Quantity	7 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 215.

inches
[mm]

Compact Single Pole SPD for Wind Turbine Systems

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

Class I • Class II • Type 1 • Type 2

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

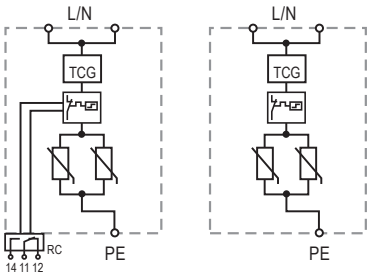
Technical Data

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 120min	U_T	1000V
Number of Ports		1
Mechanical & Environmental		
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35mm² (Solid, Stranded) / 25mm² (Flexible)
Mounting		35mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
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 (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [0.25Nm]
Order Information		
Order Code		**750**
SAFEBLOC B 12.5/xxx (1+0) WT TCG		54.0590
SAFEBLOC BR 12.5/xxx (1+0) WT TCG (with remote contacts)		54.0591

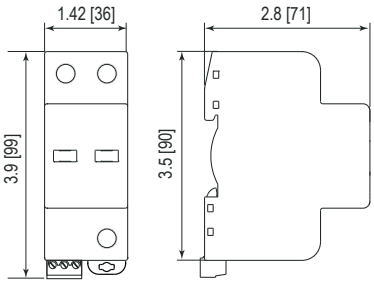
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging	
SafeBloc B 12.5/xxx (1+0) WT TCG	**750**
Single Unit Weight pounds [grams]	.959 [435]
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (H × W × L)	4.2 × 3 × 1.6" [109 × 77 × 42 mm]
Minimum Order Quantity	7 Units
SafeBloc BR 12.5/xxx (1+0) WT TCG	**750**
Single Unit Weight pounds [grams]	.970 [440]
Single Unit DIN 43880 Dimension	2 TE
Packaging Dimensions (H × W × L)	4.2 × 3 × 1.6" [109 × 77 × 42 mm]
Minimum Order Quantity	7 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found on page 217.

inches
[mm]

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

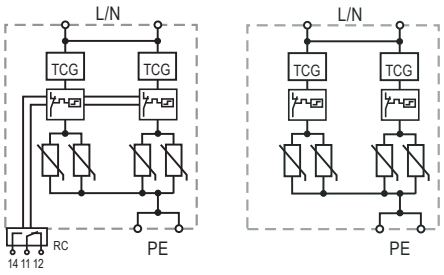
Technical Data

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 120min	U_T	1000 V
Number of Ports		1
Mechanical & Environmental		
Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Humidity	RH	5%...95%
Terminal Screw Torque	M_{max}	26.5 lbf·in [3.0 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35mm² (Solid, Stranded) / 25mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
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 (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque	M_{max}	2.2 lbf·in [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

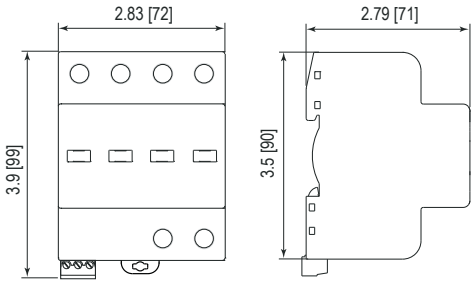
Internal Configuration

Legend

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



Dimensions & Packaging



Dimensions & Packaging	
SafeBloc B 25/xxx (1+0) WT TCG	**750**
Single Unit Weight pounds [grams]	1.763 [800]
Single Unit DIN 43880 Dimension	4 TE
Packaging Dimensions (H × W × L)	4.2 × 3 × 3.1" [109 × 77 × 80 mm]
Minimum Order Quantity	3 Units
SafeBloc BR 25/xxx (1+0) WT TCG	**750**
Single Unit Weight pounds [grams]	1.785 [810]
Single Unit DIN 43880 Dimension	4 TE
Packaging Dimensions (H × W × L)	4.2 × 3 × 3.1" [109 × 77 × 80 mm]
Minimum Order Quantity	3 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found on page 217.

inches
[mm]

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

ProTec T2 & ProTec T2-R
ProTube T2
ProTec T2H & ProTec T2H-R
ProTube T2H
ProTec T2-ADV & ProTec T2-ADV-R
SafeTec T2 & SafeTec T2-R
SafeTube T2

Compliance	ProTec T2	ProTec T2H	ProTec T2-ADV	SafeTec T2
IEC 61643-11:2011	✓	✓	✓	✓
EN 61643-11:2012	✓	✓	✓	✓
UL 1449 4th Edition	✓		✓	✓

Raycap's Type 2 (Class II) SPDs are developed as the main protection system for any low voltage electrical installation. This type of surge protection is installed at the electrical panel or switchboard, and prevents overvoltage current spread through the electrical system of an installation, in order to protect loads and safeguard downstream equipment. The Type 2 / Class II SPD has a 8/20 µs current waveform.

RoHS COMPLIANT

Pluggable Single-Pole SPD

ProTec T2 1+0

Class II • Type 2 • Type 1CA

Location of Use: Sub-Distribution Boards
Network Systems: TN-S, TN-C, TT (only L-N)
Mode of Protection: L-PE, N-PE (only TN-S), L-PEN, L-N
Surge Ratings: I_n = 20 kA (8/20 µs)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

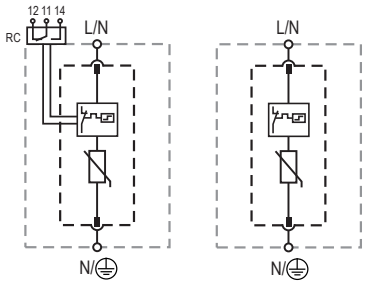
Technical Data

ProTec T2-xxx-1+0(-R)		75	150	300	350	480	750
IEC Electrical							
Nominal AC Voltage (50/60Hz)	U_o/U_n	60V	120V	240V	277V	400V	600V
Maximum Continuous Operating Voltage (AC)	U_c	75V	150V	300V	350V	480V	750V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA	35 kA
Voltage Protection Level	U_p	800V	1250V	1500V	1750V	2300V	3400V
Response Time	t_A	< 25ns					
Back-Up Fuse (max)		315 A / 250 A gG					
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA					
TOV Withstand 5s	U_T	114V	229V	337V	403V	581V	871V
TOV 120min	U_T	114V	229V	442V	529V	762V	1143V
	mode	Withstand	Withstand	Safe Fail	Safe Fail	Safe Fail	Safe Fail
Number of Ports		1					
UL Electrical							
Maximum Continuous Operating Voltage (AC)	MCOV	75V	150V	300V	350V	480V	750V
Voltage Protection Rating	VPR	330V	600V	900V	1000V	1500V	2500V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	100 kA	200 kA	150 kA	200 kA	200 kA	200 kA
Mechanical & Environmental							
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]					
Permissible Operating Humidity	RH	5%...95%					
Altitude		13123 ft [4000 m]					
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]					
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)					
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)					
Mounting		35 mm DIN Rail, EN 60715					
Degree of Protection		IP 20 (built-in)					
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0					
Thermal Protection		Yes					
Operating State / Fault Indication		Green Flag / Not Green Flag					
Remote Contacts (RC)		Optional					
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A					
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)					

Order Information						
Order Code	75	150	300	350	480	750
ProTec T2-xxx-1+0	59.0069	59.0071	59.0073	59.0075	59.0077	59.0079
ProTec T2-xxx-1+0-R (with remote contacts)	59.0070	59.0072	59.0074	59.0076	59.0078	59.0080
ProTec T2-xxx-P	59.0063	59.0064	59.0065	59.0066	59.0067	59.0068

ProTec T2 1+0

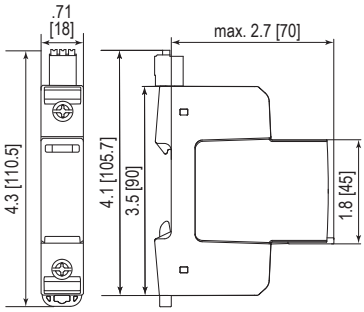
Internal Configuration



Legend

L Line
N Neutral
⏚ Protective Earth
RC Remote Contacts Optional

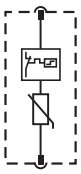
Dimensions & Packaging



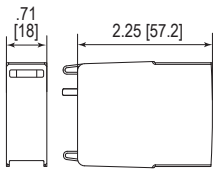
Dimensions & Packaging							
ProTec T2-xxx-1+0		**75**	**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.258	.267	.283	.294	.305	.340
	grams	117	121	128	133	138	154
ProTec T2-xxx-1+0-R		**75**	**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.274	.283	.298	.309	.320	.355
	grams	124	128	135	140	145	161
Single Unit DIN 43880 Dimension		1 TE					
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]					
Minimum Order Quantity		12 Units					

Plug Internal Configuration

ProTec T2-xxx-P



Dimensions & Packaging



Dimensions & Packaging							
ProTec T2-xxx-P		**75**	**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.111	.120	.135	.146	.157	.192
	grams	50	54	61	66	71	87
Single Unit DIN 43880 Dimension		1 TE					
Packaging Dimensions (H x W x L)		3.3 x 4.6 x 12" [83 x 116 x 305 mm]					
Minimum Order Quantity		24 Units					

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T2 2+0

Class II • Type 2 • Type 1CA

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)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

ProTec T2-xxx-2+0(-R)		75	150	300	350	480	750
IEC Electrical							
Nominal AC Voltage (50/60Hz)	U_o/U_n	60V	120V	240V	277V	400V	600V
Maximum Continuous Operating Voltage (AC)	U_c	75V	150V	300V	350V	480V	750V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA	35 kA
Voltage Protection Level	U_p	800V	1250V	1500V	1750V	2300V	3400V
Response Time	t_A	< 25ns					
Back-Up Fuse (max)		315 A / 250 A gG					
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA					
TOV Withstand 5s	U_T	114V	229V	337V	403V	581V	871V
TOV 120min	U_T	114V	229V	442V	529V	762V	1143V
	mode	Withstand	Withstand	Safe Fail	Safe Fail	Safe Fail	Safe Fail
Number of Ports		1					
UL Electrical							
Maximum Continuous Operating Voltage (AC)	MCOV	75V	150V	300V	350V	480V	750V
Voltage Protection Rating	VPR	330V	600V	900V	1000V	1500V	2500V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	100 kA	200 kA	150 kA	200 kA	200 kA	200 kA
Mechanical & Environmental							
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]					
Permissible Operating Humidity	RH	5%...95%					
Altitude		13123 ft [4000 m]					
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]					
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)					
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)					
Mounting		35 mm DIN Rail, EN 60715					
Degree of Protection		IP 20 (built-in)					
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0					
Thermal Protection		Yes					
Operating State / Fault Indication		Green Flag / Not Green Flag					
Remote Contacts (RC)		Optional					
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A					
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)					

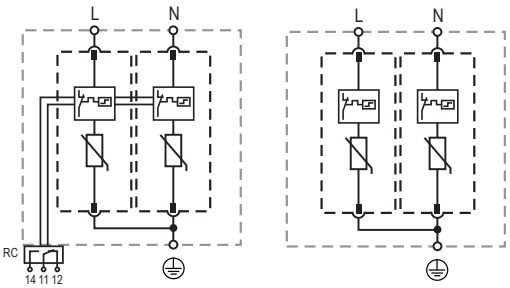
Order Information						
Order Code	75	150	300	350	480	750
ProTec T2-xxx-2+0	59.0343	59.0081	59.0083	59.0085	59.0087	59.0089
ProTec T2-xxx-2+0-R (with remote contacts)	59.0344	59.0082	59.0084	59.0086	59.0088	59.0090
ProTec T2-xxx-P	59.0063	59.0064	59.0065	59.0066	59.0067	59.0068

ProTec T2 2+0

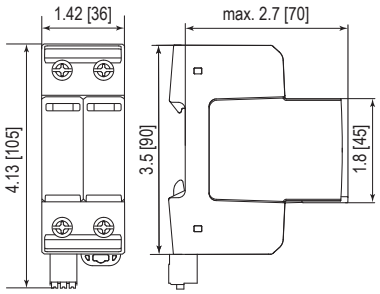
Internal Configuration

Legend

L Line
N Neutral
⏚ Protective Earth
RC Remote Contacts Optional



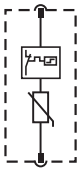
Dimensions & Packaging



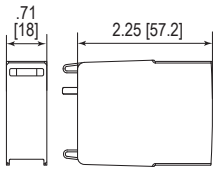
Dimensions & Packaging							
ProTec T2-xxx-2+0		**75**	**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.508	.525	.556	.578	.600	.671
	grams	230	238	252	262	272	304
ProTec T2-xxx-2+0-R		**75**	**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.538	.556	.587	.609	.631	.702
	grams	244	252	266	276	286	318
Single Unit DIN 43880 Dimension		2 TE					
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]					
Minimum Order Quantity		7 Units					

Plug Internal Configuration

ProTec T2-xxx-P



Dimensions & Packaging



Dimensions & Packaging							
ProTec T2-xxx-P		**75**	**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.111	.120	.135	.146	.157	.192
	grams	50	54	61	66	71	87
Single Unit DIN 43880 Dimension		1 TE					
Packaging Dimensions (H x W x L)		3.3 x 4.6 x 12" [83 x 116 x 305 mm]					
Minimum Order Quantity		24 Units					

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T2 3+0

Class II • Type 2 • Type 1CA

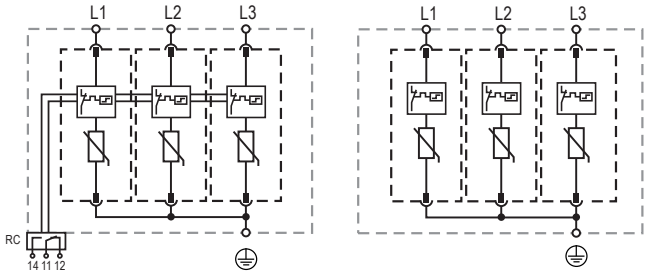
Location of Use: Sub-Distribution Boards
Network Systems: TN-C
Mode of Protection: L-PEN
Surge Ratings: I_n = 20 kA (8/20 µs)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

ProTec T2-xxx-3+0(-R)		150	300	350	480	750
IEC Electrical						
Nominal AC Voltage (50/60Hz)	U_o/U_n	120 V	240 V	277 V	400 V	600 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	300 V	350 V	480 V	750 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA	35 kA
Voltage Protection Level	U_p	1250 V	1500 V	1750 V	2300 V	3400 V
Response Time	t_A	< 25 ns				
Back-Up Fuse (max)		315 A / 250 A gG				
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA				
TOV Withstand 5s	U_T	229 V	337 V	403 V	581 V	871 V
TOV 120min	U_T	229 V	442 V	529 V	762 V	1143 V
	mode	Withstand	Safe Fail	Safe Fail	Safe Fail	Safe Fail
Number of Ports		1				
UL Electrical						
Maximum Continuous Operating Voltage (AC)	MCOV	150 V	300 V	350 V	480 V	750 V
Voltage Protection Rating	VPR	600 V	900 V	1000 V	1500 V	2500 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	200 kA	150 kA	200 kA	200 kA	200 kA
Mechanical & Environmental						
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]				
Permissible Operating Humidity	RH	5%...95%				
Altitude		13123 ft [4000 m]				
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]				
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)				
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)				
Mounting		35 mm DIN Rail, EN 60715				
Degree of Protection		IP 20 (built-in)				
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0				
Thermal Protection		Yes				
Operating State / Fault Indication		Green Flag / Not Green Flag				
Remote Contacts (RC)		Optional				
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A				
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)				
Order Information						
Order Code		150	300	350	480	750
ProTec T2-xxx-3+0		59.0091	59.0093	59.0095	59.0097	59.0099
ProTec T2-xxx-3+0-R (with remote contacts)		59.0092	59.0094	59.0096	59.0098	59.0100
ProTec T2-xxx-P		59.0064	59.0065	59.0066	59.0067	59.0068

ProTec T2 3+0

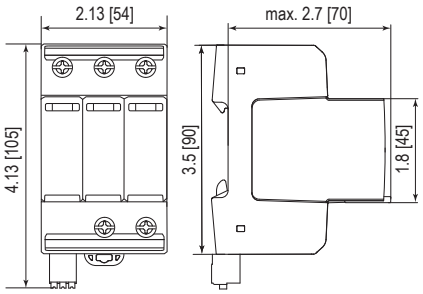
Internal Configuration



Legend

L Line
⏚ Protective Earth
RC Remote Contacts Optional

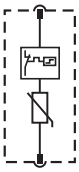
Dimensions & Packaging



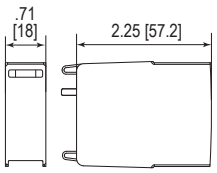
Dimensions & Packaging						
ProTec T2-xxx-3+0		**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.761	.807	.840	.874	.979
	grams	345	366	381	396	444
ProTec T2-xxx-3+0-R		**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.783	.829	.862	.896	1.001
	grams	355	376	391	406	454
Single Unit DIN 43880 Dimension		3 TE				
Packaging Dimensions (H x W x L)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]				
Minimum Order Quantity		5 Units				

Plug Internal Configuration

ProTec T2-xxx-P



Dimensions & Packaging



Dimensions & Packaging						
ProTec T2-xxx-P		**150**	**300**	**350**	**480**	**750**
Single Unit Weight	pounds	.120	.135	.146	.157	.192
	grams	54	61	66	71	87
Single Unit DIN 43880 Dimension		1 TE				
Packaging Dimensions (H x W x L)		3.3 × 4.6 × 12" [83 × 116 × 305 mm]				
Minimum Order Quantity		24 Units				

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T2 4+0

Class II • Type 2 • Type 1CA

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)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

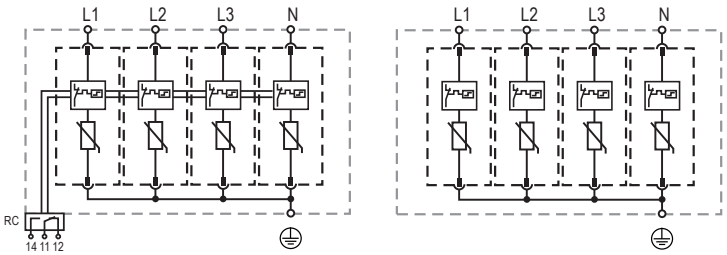
ProTec T2-xxx-4+0(-R)		150	300	350	480
IEC Electrical					
Nominal AC Voltage (50/60Hz)	U_o/U_n	120 V	240 V	277 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	300 V	350 V	480 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA
Voltage Protection Level	U_p	1250 V	1500 V	1750 V	2300 V
Response Time	t_A	< 25 ns			
Back-Up Fuse (max)		315 A / 250 A gG			
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA			
TOV Withstand 5s	U_T	229 V	337 V	403 V	581 V
TOV 120min	U_T	229 V	442 V	529 V	762 V
	mode	Withstand	Safe Fail	Safe Fail	Safe Fail
Number of Ports		1			
UL Electrical					
Maximum Continuous Operating Voltage (AC)	MCOV	150 V	300 V	350 V	480 V
Voltage Protection Rating	VPR	600 V	900 V	1000 V	1500 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	200 kA	150 kA	200 kA	200 kA
Mechanical & Environmental					
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]			
Permissible Operating Humidity	RH	5%...95%			
Altitude		13123 ft [4000 m]			
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]			
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)			
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)			
Mounting		35 mm DIN Rail, EN 60715			
Degree of Protection		IP 20 (built-in)			
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0			
Thermal Protection		Yes			
Operating State / Fault Indication		Green Flag / Not Green Flag			
Remote Contacts (RC)		Optional			
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A			
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)			
Order Information					
Order Code		150	300	350	480
ProTec T2-xxx-4+0		59.0101	59.0103	59.0300	59.0105
ProTec T2-xxx-4+0-R (with remote contacts)		59.0102	59.0104	59.0301	59.0106
ProTec T2-xxx-P		59.0064	59.0065	59.0066	59.0067

ProTec T2 4+0

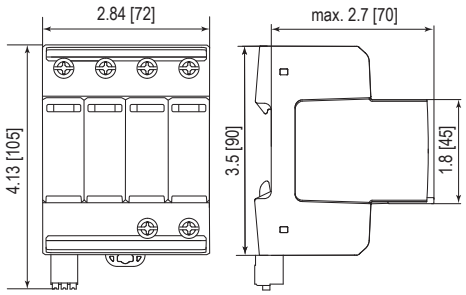
Internal Configuration

Legend

L Line
N Neutral
⏚ Protective Earth
RC Remote Contacts Optional



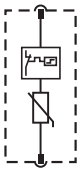
Dimensions & Packaging



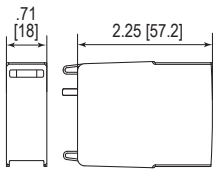
Dimensions & Packaging					
ProTec T2-xxx-4+0		**150**	**300**	**350**	**480**
Single Unit Weight	pounds	1.032	1.094	1.138	1.182
	grams	468	496	516	536
ProTec T2-xxx-4+0-R		**150**	**300**	**350**	**480**
Single Unit Weight	pounds	1.052	1.114	1.158	1.202
	grams	477	505	525	545
Single Unit DIN 43880 Dimension		4 TE			
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Minimum Order Quantity		4 Units			

Plug Internal Configuration

ProTec T2-xxx-P



Dimensions & Packaging



Dimensions & Packaging					
ProTec T2-xxx-P		**150**	**300**	**350**	**480**
Single Unit Weight	pounds	.120	.135	.146	.157
	grams	54	61	66	71
Single Unit DIN 43880 Dimension		1 TE			
Packaging Dimensions (H x W x L)		3.3 x 4.6 x 12" [83 x 116 x 305 mm]			
Minimum Order Quantity		24 Units			

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T2 1+1

Class II • Type 2 • Type 1CA

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)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV and GDT
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

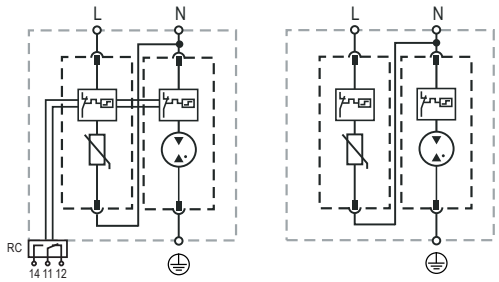
ProTec T2-xxx-1+1(-R)			75	150	300	350
IEC Electrical						
Nominal AC Voltage (50/60Hz)		U_o/U_n	60 V	120 V	240 V	277 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	75 V	150 V	300 V	350 V
	(N-PE)	U_c	305 V	305 V	305 V	305 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 40 kA	20 kA / 40 kA	20 kA / 40 kA	20 kA / 40 kA
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}	50 kA / 65 kA	50 kA / 65 kA	50 kA / 65 kA	50 kA / 65 kA
Voltage Protection Level	(L-N)/(N-PE)	$U_{p.}$	800 V / 1500 V	1250 V / 1500 V	1500 V / 1500 V	1750 V / 1500 V
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 (max)			315 A / 250 A gG			
Short-Circuit Current Rating (AC)	(L-N)	I_{SCCR}	25 kA / 50 kA			
TOV Withstand 5s	(L-N)	U_T	114 V	229 V	337 V	403 V
TOV 120min	(L-N)	U_T	114 V	229 V	442 VI	529 V
		mode	Withstand	Withstand	Safe Fail	Safe Fail
TOV Withstand 200ms	(N-PE)	U_T	1200V			
Number of Ports			1			
UL Electrical						
Maximum Continuous Operating Voltage (AC)	(L-N)/(N-PE)	MCOV	75 V / 305 V	150 V / 305 V	300 V / 305 V	350 V / 305 V
Voltage Protection Rating	(L-N)/(N-PE)	VPR	330 V / 1000 V	600 V / 1000 V	900 V / 1000 V	1000 V / 1000 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 20 kA			
Short-Circuit Current Rating (AC)	(L-N)	SCCR	100 kA	200 kA	150 kA	200 kA
Mechanical & Environmental						
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]			
Permissible Operating Humidity		RH	5%...95%			
Altitude			13123 ft [4000 m]			
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]			
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)			
			35 mm^2 (Solid, Stranded) / 25 mm^2 (Flexible)			
Mounting			35 mm DIN Rail, EN 60715			
Degree of Protection			IP 20 (built-in)			
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0			
Thermal Protection			Yes			
Operating State / Fault Indication			Green Flag / Not Green Flag			
Remote Contacts (RC)			Optional			
RC Switching Capacity			AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A			
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm^2 (Solid)			
Order Information						
Order Code			75	150	300	350
ProTec T2-xxx-1+1			59.0109	59.0111	59.0113	59.0115
ProTec T2-xxx-1+1-R (with remote contacts)			59.0110	59.0112	59.0114	59.0116
ProTec T2-xxx-P			59.0063	59.0064	59.0065	59.0066
ProTube T2-40-P			59.0273	59.0273	59.0273	59.0273

ProTec T2 1+1

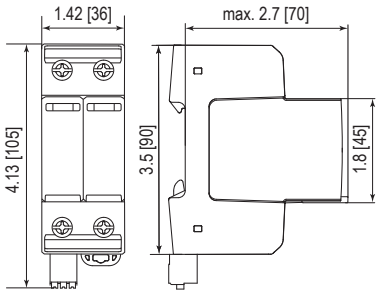
Internal Configuration

Legend

L Line
N Neutral
⏚ Protective Earth
RC Remote Contacts Optional



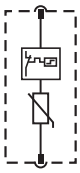
Dimensions & Packaging



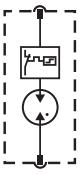
Dimensions & Packaging					
ProTec T2-xxx-1+1		**75**	**150**	**300**	**350**
Single Unit Weight	pounds	.492	.501	.516	.527
	grams	223	227	234	239
ProTec T2-xxx-1+1-R		**75**	**150**	**300**	**350**
Single Unit Weight	pounds	.505	.514	.530	.541
	grams	229	233	240	245
Single Unit DIN 43880 Dimension		2 TE			
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Minimum Order Quantity		7 Units			

Plug Internal Configuration

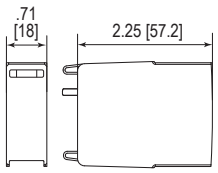
ProTec T2-xxx-P



ProTube T2-40-P



Dimensions & Packaging



Dimensions & Packaging					
ProTec T2-xxx-P		**75**	**150**	**300**	**350**
Single Unit Weight	pounds	.120	.135	.146	.157
	grams	54	61	66	71
ProTube T2-40-P			**40**		
Single Unit Weight	pounds		.093		
	grams		42		
Single Unit DIN 43880 Dimension			1 TE		
Packaging Dimensions (HxWxL)			3.3 x 4.6 x 12" [83 x 116 x 305 mm]		
Minimum Order Quantity			24 Units		

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T2 3+1

Class II • Type 2 • Type 1CA

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)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV and GDT
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

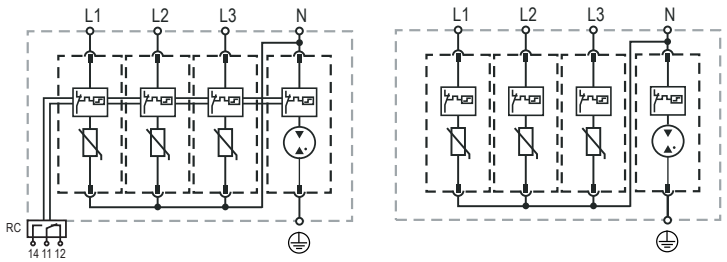
ProTec T2-xxx-3+1(-R)			300	350
IEC Electrical				
Nominal AC Voltage (50/60Hz)		U_o/U_n	240 V	277 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	300 V	350 V
	(N-PE)	U_c	305 V	305 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 40 kA	20 kA / 40 kA
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}	50 kA / 65 kA	50 kA / 65 kA
Voltage Protection Level	(L-N)/(N-PE)	$U_{p.}$	1500 V / 1500 V	1750 V / 1500 V
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 (max)			315 A / 250 A gG	
Short-Circuit Current Rating (AC)	(L-N)	I_{SCCR}	25 kA / 50 kA	
TOV Withstand 5s	(L-N)	U_T	337 V	403 V
TOV 120min	(L-N)	U_T	442 V	529
		mode	Safe Fail	Safe Fail
TOV Withstand 200ms	(N-PE)	U_T	1200V	
Number of Ports			1	
UL Electrical				
Maximum Continuous Operating Voltage (AC)	(L-N)/(N-PE)	MCOV	300 V / 305 V	350 V / 305 V
Voltage Protection Rating	(L-N)/(N-PE)	VPR	900 V / 1000 V	1000 V / 1000 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 20 kA	
Short-Circuit Current Rating (AC)	(L-N)	SCCR	150 kA	200 kA
Mechanical & Environmental				
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Operating Humidity		RH	5%...95%	
Altitude			13123 ft [4000 m]	
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]	
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
			35 mm^2 (Solid, Stranded) / 25 mm^2 (Flexible)	
Mounting			35 mm DIN Rail, EN 60715	
Degree of Protection			IP 20 (built-in)	
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection			Yes	
Operating State / Fault Indication			Green Flag / Not Green Flag	
Remote Contacts (RC)			Optional	
RC Switching Capacity			AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A	
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm^2 (Solid)	
Order Information				
Order Code			**300**	**350**
ProTec T2-xxx-3+1			59.0121	59.0123
ProTec T2-xxx-3+1-R (with remote contacts)			59.0122	59.0124
ProTec T2-xxx-P			59.0065	59.0066
ProTube T2-40-P			59.0273	59.0273

ProTec T2 3+1

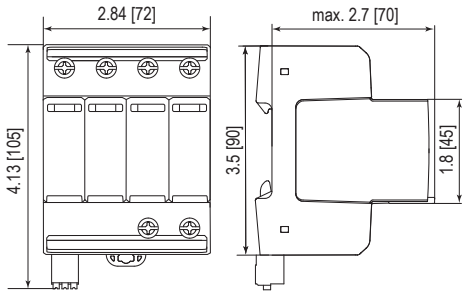
Internal Configuration

Legend

L Line
N Neutral
⏚ Protective Earth
RC Remote Contacts Optional



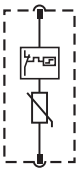
Dimensions & Packaging



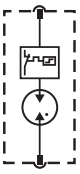
Dimensions & Packaging			
ProTec T2-xxx-3+1		**300**	**350**
Single Unit Weight	pounds	1.052	1.085
	grams	477	492
ProTec T2-xxx-3+1-R		**300**	**350**
Single Unit Weight	pounds	1.072	1.105
	grams	486	501
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (HxWxL)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]	
Minimum Order Quantity		4 Units	

Plug Internal Configuration

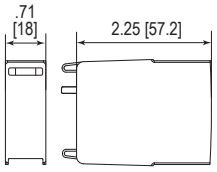
ProTec T2-xxx-P



ProTube T2-40-P



Dimensions & Packaging



Dimensions & Packaging			
ProTec T2-xxx-P		**300**	**350**
Single Unit Weight	pounds	.135	.146
	grams	61	66
ProTube T2-40-P		**40**	
Single Unit Weight	pounds	.093	
	grams	42	
Single Unit DIN 43880 Dimension		1 TE	
Packaging Dimensions (HxWxL)		3.3 × 4.6 × 12" [83 × 116 × 305 mm]	
Minimum Order Quantity		24 Units	

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Multi-Pole SPD

ProTube T2 40 0+1

Class II • Type 2 • Type 1CA

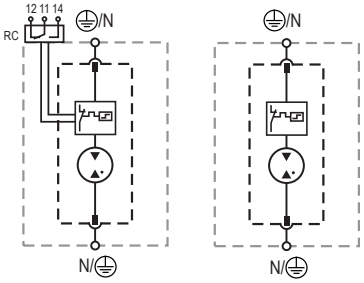
Location of Use:	Sub-Distribution Boards
Network Systems:	TT, TN-S
Mode of Protection:	N-PE
Surge Ratings:	I_n = 20 kA (8/20 µs)
IEC/EN/UL Category:	Class II / Type 2 / Type 1CA
Protective Elements:	GDT with Thermal Disconnector
Housing:	Pluggable Design
Compliance:	IEC 61643-11:2011 EN 61643-11:2012 UL 1449 4th Edition

Technical Data

ProTube T2-xxx-0+1(-R)		40
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	0 V
Maximum Continuous Operating Voltage	U_c	305V
Nominal Discharge Current (8/20 µs)	I_n	40 kA
Maximum Discharge Current (8/20 µs)	I_{max}	65 kA
Voltage Protection Level	U_p	1500 V
Follow Current Interrupt Rating	I_{fi}	100 A_{RMS}
Response Time	t_A	< 100 ns
TOV Withstand 200ms	U_T	1200 V
Number of Ports		1
UL Electrical		
Maximum Continuous Operating Voltage (AC)	MCOV	305 V
Voltage Protection Rating	VPR	1000 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm^2 (Solid, Stranded) / 25 mm^2 (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm^2 (Solid)
Order Information		
Order Code		40
ProTube T2-xxx-0+1		59.0280
ProTube T2-xxx-0+1-R (with remote contacts)		59.0336
ProTube T2-40-P		59.0273

ProTube T2 40 0+1

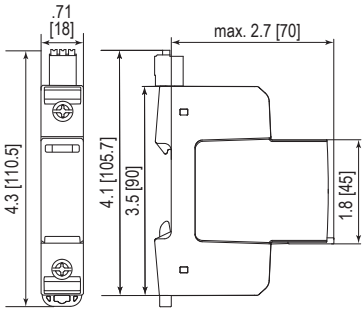
Internal Configuration



Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional

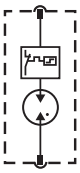
Dimensions & Packaging



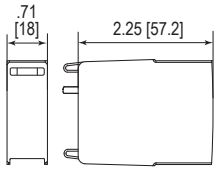
Dimensions & Packaging		
ProTube T2-xxx-0+1		**40**
Single Unit Weight	pounds	.255
	grams	116
ProTube T2-xxx-0+1-R		**40**
Single Unit Weight	pounds	.271
	grams	123
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		12 Units

Plug Internal Configuration

ProTube T2-40-P



Dimensions & Packaging



Dimensions & Packaging		
ProTube T2-40-P		**40**
Single Unit Weight	pounds	.093
	grams	42
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		3.3 × 4.6 × 12" [83 × 116 × 305 mm]
Minimum Order Quantity		24 Units

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTec T2H 1+0

Class II•Type 2

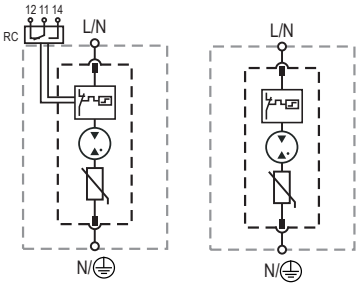
Location of Use: Sub-Distribution Boards
Network Systems: TN-S, TN-C, TT (only L-N)
Mode of Protection: L-PE, N-PE (only TN-S), L-PEN, L-N
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 50 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV in series with GDT
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec T2H-xxx-1+0(-R)		300
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	U_c	300 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA
Voltage Protection Level	U_p	1500 V
Response Time	t_A	< 25 ns
Back-Up Fuse (max)		315 A / 250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)
Order Information		
Order Code		300
ProTec T2H-xxx-1+0		59.0324
ProTec T2H-xxx-1+0-R (with remote contacts)		59.0325
ProTec T2H-xxx-P		59.0322

ProTec T2H 1+0

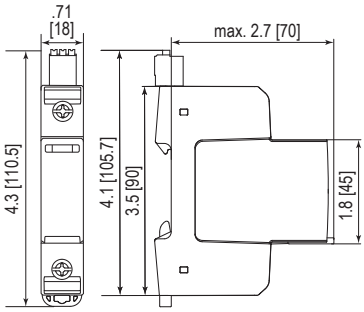
Internal Configuration



Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional

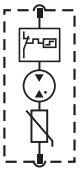
Dimensions & Packaging



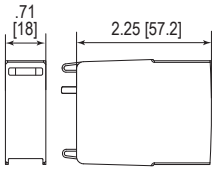
Dimensions & Packaging		
ProTec T2H-xxx-1+0		**300**
Single Unit Weight	pounds [grams]	.292 [132]
ProTec T2H-xxx-1+0-R		**300**
Single Unit Weight	pounds [grams]	.307 [139]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		12 Units

Plug Internal Configuration

ProTec T2H-xxx-P



Dimensions & Packaging



Dimensions & Packaging		
ProTec T2H-xxx-P		**300**
Single Unit Weight	pounds [grams]	.144 [65]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		24 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTec T2H 2+0

Class II•Type 2

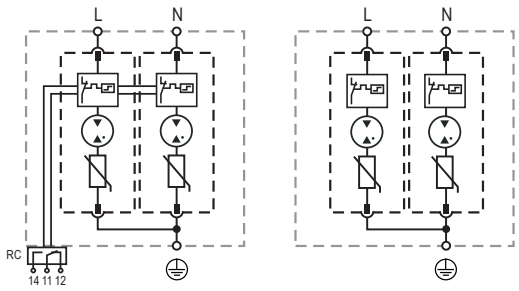
Location of Use: Sub-Distribution Boards
Network Systems: TN-S
Mode of Protection: L-PE, N-PE
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 50 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV in series with GDT
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec T2H-xxx-2+0(-R)		300
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	U_c	300 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA
Voltage Protection Level	U_p	1500 V
Response Time	t_A	< 25 ns
Back-Up Fuse (max)		315 A / 250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)
Order Information		
Order Code		300
ProTec T2H-xxx-2+0		59.0326
ProTec T2H-xxx-2+0-R (with remote contacts)		59.0327
ProTec T2H-xxx-P		59.0322

ProTec T2H 2+0

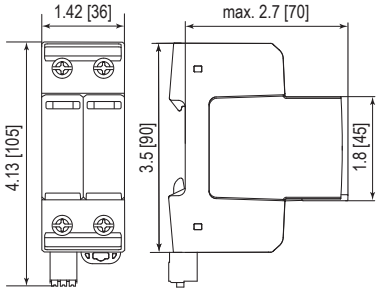
Internal Configuration



Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional

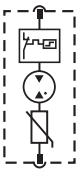
Dimensions & Packaging



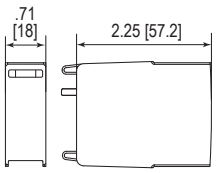
Dimensions & Packaging		
ProTec T2H-xxx-2+0		**300**
Single Unit Weight	pounds [grams]	.574 [260]
ProTec T2H-xxx-2+0-R		**300**
Single Unit Weight	pounds [grams]	.605 [274]
Single Unit DIN 43880 Dimension		2 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		7 Units

Plug Internal Configuration

ProTec T2H-xxx-P



Dimensions & Packaging



Dimensions & Packaging		
ProTec T2H-xxx-P		**300**
Single Unit Weight	pounds [grams]	.144 [65]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		24 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTec T2H 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} = 50 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV in series with GDT
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

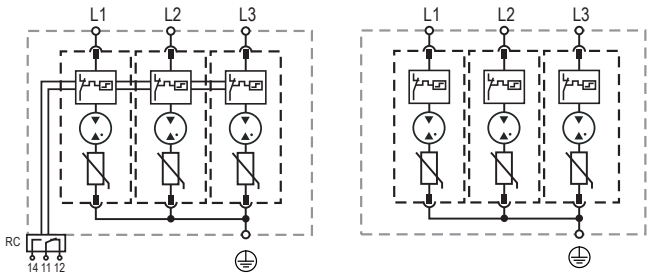
ProTec T2H-xxx-3+0(-R)		300
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	U_c	300 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA
Voltage Protection Level	U_p	1500 V
Response Time	t_A	< 25 ns
Back-Up Fuse (max)		315 A / 250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)
Order Information		
Order Code		300
ProTec T2H-xxx-3+0		59.0328
ProTec T2H-xxx-3+0-R (with remote contacts)		59.0329
ProTec T2H-xxx-P		59.0322

ProTec T2H 3+0

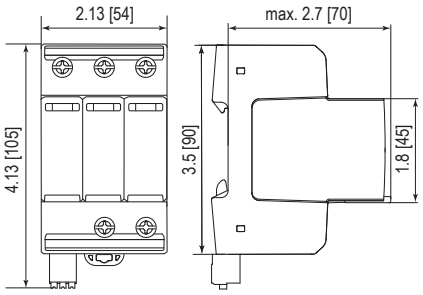
Internal Configuration

Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging

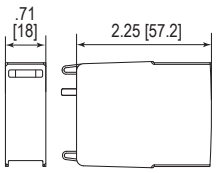


Dimensions & Packaging		
ProTec T2H-xxx-3+0		**300**
Single Unit Weight	pounds [grams]	.834 [378]
ProTec T2H-xxx-3+0-R		**300**
Single Unit Weight	pounds [grams]	.856 [388]
Single Unit DIN 43880 Dimension		3 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		5 Units

Plug Internal Configuration

ProTec T2H-xxx-P

Dimensions & Packaging



Dimensions & Packaging		
ProTec T2H-xxx-P		**300**
Single Unit Weight	pounds [grams]	.144 [65]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		24 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTec T2H 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} = 50 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV in series with GDT
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

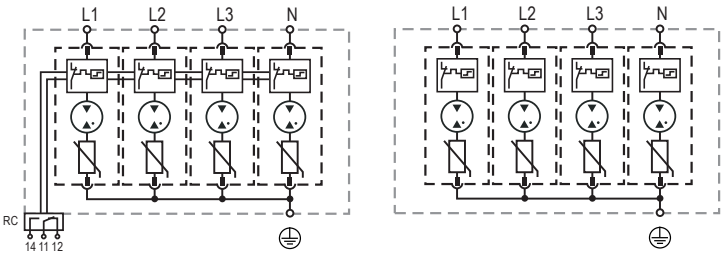
ProTec T2H-xxx-4+0(-R)		300
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	U_c	300 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA
Voltage Protection Level	U_p	1500 V
Response Time	t_A	< 25 ns
Back-Up Fuse (max)		315 A / 250 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA
TOV Withstand 120min	U_T	442 V
Number of Ports		1
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)
Order Information		
Order Code		300
ProTec T2H-xxx-4+0		59.0330
ProTec T2H-xxx-4+0-R (with remote contacts)		59.0331
ProTec T2H-xxx-P		59.0322

ProTec T2H 4+0

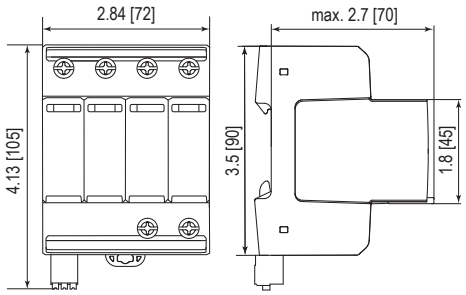
Internal Configuration

Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional



Dimensions & Packaging

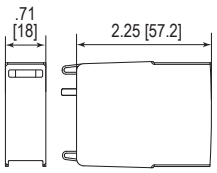


Dimensions & Packaging		
ProTec T2H-xxx-4+0		**300**
Single Unit Weight	pounds [grams]	1.129 [512]
ProTec T2H-xxx-4+0-R		**300**
Single Unit Weight	pounds [grams]	1.149 [521]
Single Unit DIN 43880 Dimension		4 TE
Packaging Dimensions (HxWxL)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		4 Units

Plug Internal Configuration

ProTec T2H-xxx-P

Dimensions & Packaging



Dimensions & Packaging		
ProTec T2H-xxx-P		**300**
Single Unit Weight	pounds [grams]	.144 [65]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 × 4.5 × 13.8" [109 × 115 × 352 mm]
Minimum Order Quantity		24 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTec T2H 1+1

Class II•Type 2

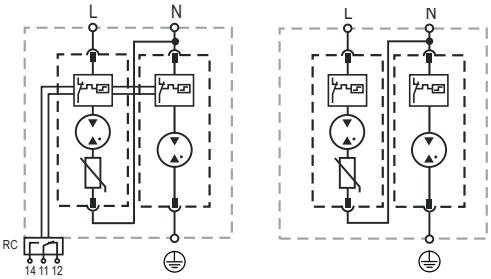
Location of Use: Sub-Distribution Boards
Network Systems: TT, TN-S
Mode of Protection: L-N, N-PE
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 50 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV in series with GDT
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTec T2H-xxx-1+1(-R)			300
IEC Electrical			
Nominal AC Voltage (50/60Hz)		U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N) / (N-PE)	U_c	300 V / 305 V
Nominal Discharge Current (8/20 µs)	(L-N) / (N-PE)	I_n	20 kA / 40 kA
Maximum Discharge Current (8/20 µs)	(L-N) / (N-PE)	I_{max}	50 kA / 65 kA
Voltage Protection Level	(L-N) / (N-PE)	U_p	1500 V / 1500 V
Response Time	(L-N) / (N-PE)	t_A	< 25 ns / < 100 ns
Back-Up Fuse (max)			315 A / 250 A gG
Short-Circuit Current Rating (AC)	(L-N)	I_{SCCR}	25 kA / 50 kA
Follow Current Interrupt Rating	(N-PE)	I_{fi}	100 A_{RMS}
TOV Withstand 120min	(L-N)	U_T	442 V
TOV Withstand 200ms	(N-PE)	U_T	1200 V
Number of Ports			1
Mechanical & Environmental			
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity		RH	5%...95%
Altitude			13123 ft [4000 m]
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)
			35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting			35 mm DIN Rail, EN 60715
Degree of Protection			IP 20 (built-in)
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection			Yes
Operating State / Fault Indication			Green Flag / Not Green Flag
Remote Contacts (RC)			Optional
RC Switching Capacity			AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm² (Solid)
Order Information			
Order Code			**300**
ProTec T2H-xxx-1+1			59.0332
ProTec T2H-xxx-1+1-R (with remote contacts)			59.0333
ProTec T2H-xxx-P			59.0322
ProTube T2H-40-P			59.0323

ProTec T2H 1+1

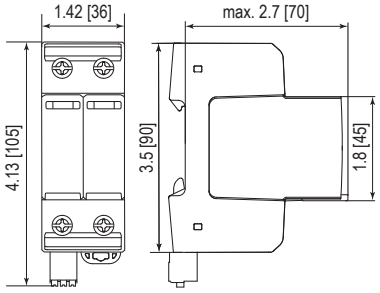
Internal Configuration



Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional

Dimensions & Packaging

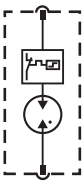


Dimensions & Packaging		
ProTec T2H-xxx-1+1		**300**
Single Unit Weight	pounds [grams]	.525 [238]
ProTec T2H-xxx-1+1-R		**300**
Single Unit Weight	pounds [grams]	.538 [244]
Single Unit DIN 43880 Dimension		2 TE
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		7 Units

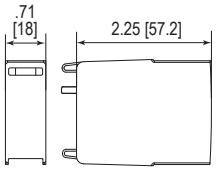
Plug Internal Configuration

ProTec T2H-xxx-P

ProTube T2H-40-P



Dimensions & Packaging



Dimensions & Packaging		
ProTec T2H-xxx-P		**300**
Single Unit Weight	pounds [grams]	.144 [65]
ProTube T2H-40-P		**40**
Single Unit Weight	pounds [grams]	.093 [42]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		24 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTec T2H 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} = 50 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy MOV in series with GDT
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

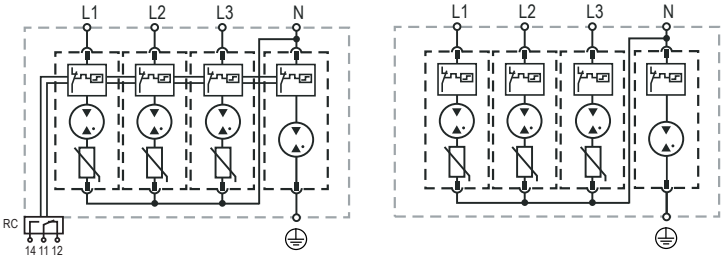
ProTec T2H-xxx-3+1(-R)			300
IEC Electrical			
Nominal AC Voltage (50/60Hz)		U_o/U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N) / (N-PE)	U_c	300 V / 305 V
Nominal Discharge Current (8/20 µs)	(L-N) / (N-PE)	I_n	20 kA / 40kA
Maximum Discharge Current (8/20 µs)	(L-N) / (N-PE)	I_{max}	50 kA / 65 kA
Voltage Protection Level	(L-N) / (N-PE)	U_p	1500 V / 1500 V
Response Time	(L-N) / (N-PE)	t_A	< 25 ns / < 100 ns
Back-Up Fuse (max)			315 A / 250 A gG
Short-Circuit Current Rating (AC)	(L-N)	I_{SCCR}	25 kA / 50 kA
Follow Current Interrupt Rating	(N-PE)	I_{fi}	100 A_{RMS}
TOV Withstand 120min	(L-N)	U_T	442 V
TOV Withstand 200ms	(N-PE)	U_T	1200 V
Number of Ports			1
Mechanical & Environmental			
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity		RH	5%...95%
Altitude			13123 ft [4000 m]
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)
			35 mm^2 (Solid, Stranded) / 25 mm^2 (Flexible)
Mounting			35 mm DIN Rail, EN 60715
Degree of Protection			IP 20 (built-in)
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection			Yes
Operating State / Fault Indication			Green Flag / Not Green Flag
Remote Contacts (RC)			Optional
RC Switching Capacity			AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm^2 (Solid)
Order Information			
Order Code			300
ProTec T2H-xxx-3+1			59.0334
ProTec T2H-xxx-3+1-R (with remote contacts)			59.0335
ProTec T2H-xxx-P			59.0322
ProTube T2H-40-P			59.0323

ProTec T2H 3+1

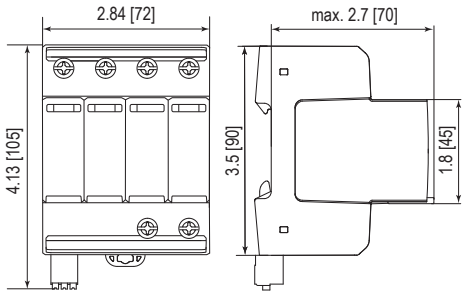
Internal Configuration

Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional



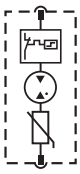
Dimensions & Packaging



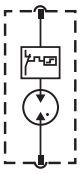
Dimensions & Packaging		
ProTec T2H-xxx-3+1		**300**
Single Unit Weight	pounds [grams]	.810 [367]
ProTec T2H-xxx-3+1-R		**300**
Single Unit Weight	pounds [grams]	.829 [376]
Single Unit DIN 43880 Dimension		4 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		4 Units

Plug Internal Configuration

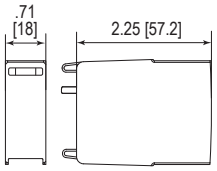
ProTec T2H-xxx-P



ProTube T2H-40-P



Dimensions & Packaging



Dimensions & Packaging		
ProTec T2H-xxx-P		**300**
Single Unit Weight	pounds [grams]	.144 [65]
ProTube T2H-40-P		**40**
Single Unit Weight	pounds [grams]	.093 [42]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		24 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Single and Multi-Pole SPD

ProTube T2H 40 0+1

Class II•Type 2

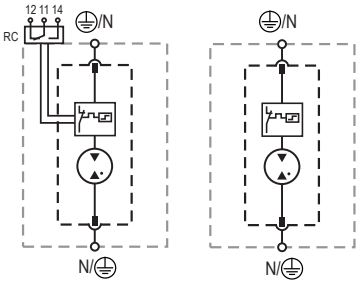
Location of Use: Sub-Distribution Boards
Network Systems: TT, TN-S
Mode of Protection: N-PE
Surge Ratings: I_n = 40 kA (8/20 µs)
I_{max} = 65 kA (8/20 µs)
IEC/EN Category: Class II / Type 2
Protective Elements: High Energy GDT with Thermal Disconnector
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

ProTube T2H-xxx-0+1(-R)		40
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	0 V
Maximum Continuous Operating Voltage (AC)	U_c	305 V
Nominal Discharge Current (8/20 µs)	I_n	40kA
Maximum Discharge Current (8/20 µs)	I_{max}	65 kA
Voltage Protection Level	U_p	1500 V
Follow Current Interrupt Rating	I_{fi}	100 A_{RMS}
Response Time	t_A	< 100 ns
TOV Withstand 120min	U_T	1200 V
Number of Ports		1
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)
Order Information		
Order Code		40
ProTube T2H-xxx-0+1		59.0341
ProTube T2H-xxx-0+1-R (with remote contacts)		59.0342
ProTube T2H-40-P		59.0323

ProTube T2H 40 0+1

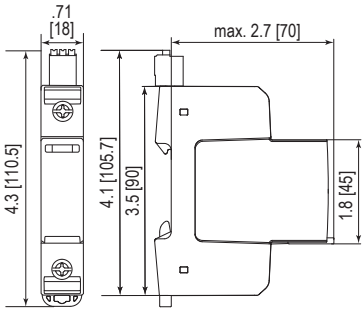
Internal Configuration



Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional

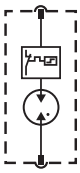
Dimensions & Packaging



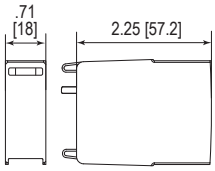
Dimensions & Packaging		
ProTube T2H-xxx-0+1		**40**
Single Unit Weight	pounds [grams]	.255 [116]
ProTube T2H-xxx-0+1-R		**40**
Single Unit Weight	pounds [grams]	.275 [125]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		12 Units

Plug Internal Configuration

ProTube T2H-40-P



Dimensions & Packaging



Dimensions & Packaging		
ProTube T2H-40-P		**40**
Single Unit Weight	pounds [grams]	.093 [42]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		24 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Single-Pole SPD

ProTec T2-ADV 1+0

Class II • Type 2 • Type 1CA

Location of Use: Sub-Distribution Boards
Network Systems: TN-S, TN-C, TT (only L-N)
Mode of Protection: L-PE, N-PE (only TN-S), L-PEN, L-N
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 50 kA (8/20 µs)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

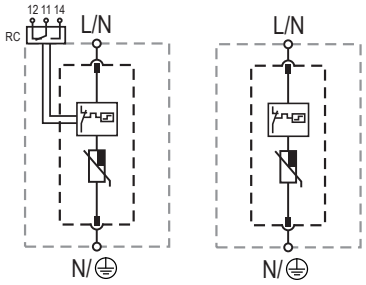
Technical Data

ProTec T2-ADV-xxx-1+0(-R)		75	150	300	350	480
IEC Electrical						
Nominal AC Voltage (50/60Hz)	U_o/U_n	60 V	120 V	240 V	277 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	75 V	150 V	300 V	350 V	480 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA
Voltage Protection Level	U_p	600 V	1000 V	1300 V	1700 V	2000 V
Response Time	t_A			< 25ns		
Back-Up Fuse (max)				160A gG		
Short-Circuit Current Rating (AC)	I_{SCCR}			50 kA		
TOV Withstand 5s	U_T	114 V	229 V	337 V	403 V	581 V
TOV 120min	U_T	114 V	229 V	442 V	528 V	762 V
	mode	Withstand	Withstand	Safe Fail	Safe Fail	Safe Fail
Number of Ports				1		
UL Electrical						
Maximum Continuous Operating Voltage (AC)	MCOV	75 V	150 V	300 V	350 V	480 V
Voltage Protection Rating	VPR	400 V	600 V	900 V	1200 V	1500 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	100 kA	200 kA	150 kA	200 kA	200 kA
Mechanical & Environmental						
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]				
Permissible Operating Humidity	RH	5%...95%				
Altitude		13123 ft [4000 m]				
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]				
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)				
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)				
Mounting		35 mm DIN Rail, EN 60715				
Degree of Protection		IP 20 (built-in)				
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0				
Thermal Protection		Yes				
Operating State / Fault Indication		Green Flag / Not Green Flag				
Remote Contacts (RC)		Optional				
RC Switching Capacity		AC: 250 V / 1A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A				
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)				

Order Information						
Order Code	**75**	**150**	**300**	**350**	**480**
ProTec T2-ADV-xxx-1+0	59.0208	59.0210	59.0212	59.0214	59.0216
ProTec T2-ADV-xxx-1+0-R (with remote contacts)	59.0209	59.0211	59.0213	59.0215	59.0217
ProTec T2-ADV-xxx-P	59.0202	59.0203	59.0204	59.0205	59.0206

ProTec T2-ADV 1+0

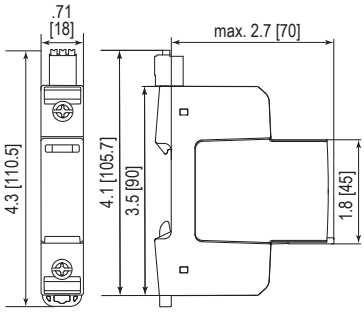
Internal Configuration



Legend

L Line
N Neutral
⏚ Protective Earth
RC Remote Contacts Optional

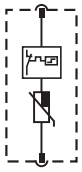
Dimensions & Packaging



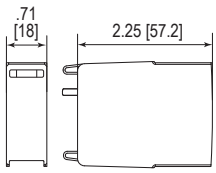
Dimensions & Packaging						
ProTec T2-ADV-xxx-1+0		**75**	**150**	**300**	**350**	**480**
Single Unit Weight	pounds	.266	.275	.291	.302	.304
	grams	121	125	132	137	144
ProTec T2-ADV-xxx-1+0-R		**75**	**150**	**300**	**350**	**480**
Single Unit Weight	pounds	.283	.291	.306	.317	.328
	grams	128	132	139	144	149
Single Unit DIN 43880 Dimension		1 TE				
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Minimum Order Quantity		12 Units				

Plug Internal Configuration

ProTec T2-ADV-xxx-P



Dimensions & Packaging



Dimensions & Packaging						
ProTec T2-ADV-xxx-P		**75**	**150**	**300**	**350**	**480**
Single Unit Weight	pounds	.120	.127	.143	.154	.165
	grams	54	58	65	70	75
Single Unit DIN 43880 Dimension		1 TE				
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Minimum Order Quantity		24 Units				

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T2-ADV 2+0

Class II • Type 2 • Type 1CA

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} = 50 kA (8/20 µs)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

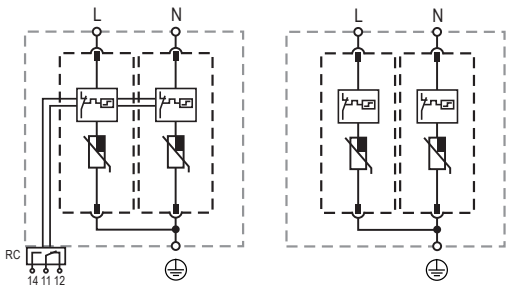
Technical Data

ProTec T2-ADV-xxx-2+0(-R)		75	150	300	350	480
IEC Electrical						
Nominal AC Voltage (50/60Hz)	U_o/U_n	60 V	120 V	240 V	277 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	75 V	150 V	300 V	350 V	480 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA
Voltage Protection Level	U_p	600 V	1000 V	1300 V	1700 V	2000 V
Response Time	t_A			< 25ns		
Back-Up Fuse (max)				160A gG		
Short-Circuit Current Rating (AC)	I_{SCCR}			50 kA		
TOV Withstand 5s	U_T	114 V	229 V	337 V	403 V	581 V
TOV 120min	U_T	114 V	229 V	442 V	528 V	762 V
	mode	Withstand	Withstand	Safe Fail	Safe Fail	Safe Fail
Number of Ports				1		
UL Electrical						
Maximum Continuous Operating Voltage (AC)	MCOV	75 V	150 V	300 V	350 V	480 V
Voltage Protection Rating	VPR	400 V	600 V	900 V	1200 V	1500 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	100 kA	200 kA	150 kA	200 kA	200 kA
Mechanical & Environmental						
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]				
Permissible Operating Humidity	RH	5%...95%				
Altitude		13123 ft [4000 m]				
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]				
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)				
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)				
Mounting		35 mm DIN Rail, EN 60715				
Degree of Protection		IP 20 (built-in)				
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0				
Thermal Protection		Yes				
Operating State / Fault Indication		Green Flag / Not Green Flag				
Remote Contacts (RC)		Optional				
RC Switching Capacity		AC: 250 V / 1A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A				
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)				

Order Information						
Order Code	75	150	300	350	480
ProTec T2-ADV-xxx-2+0	59.0347	59.0220	59.0222	59.0224	59.0226
ProTec T2-ADV-xxx-2+0-R (with remote contacts)	59.0348	59.0221	59.0223	59.0225	59.0227
ProTec T2-ADV-xxx-P	59.0202	59.0203	59.0204	59.0205	59.0206

ProTec T2-ADV 2+0

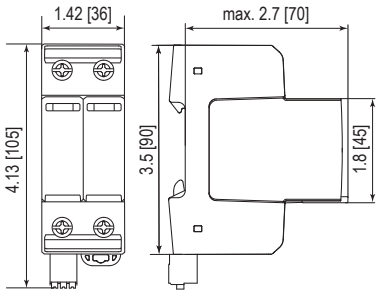
Internal Configuration



Legend

L Line
N Neutral
⏚ Protective Earth
RC Remote Contacts Optional

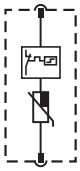
Dimensions & Packaging



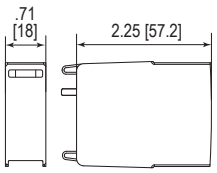
Dimensions & Packaging						
ProTec T2-ADV-xxx-2+0		**75**	**150**	**300**	**350**	**480**
Single Unit Weight	pounds	.524	.542	.573	.595	.617
	grams	238	246	260	270	280
ProTec T2-ADV-xxx-2+0-R		**75**	**150**	**300**	**350**	**480**
Single Unit Weight	pounds	.555	.573	.590	.626	.648
	grams	252	260	268	284	294
Single Unit DIN 43880 Dimension		2 TE				
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Minimum Order Quantity		7 Units				

Plug Internal Configuration

ProTec T2-ADV-xxx-P



Dimensions & Packaging



Dimensions & Packaging						
ProTec T2-ADV-xxx-P		**75**	**150**	**300**	**350**	**480**
Single Unit Weight	pounds	.120	.127	.143	.154	.165
	grams	54	58	65	70	75
Single Unit DIN 43880 Dimension		1 TE				
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Minimum Order Quantity		24 Units				

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T2-ADV 3+0

Class II • Type 2 • Type 1CA

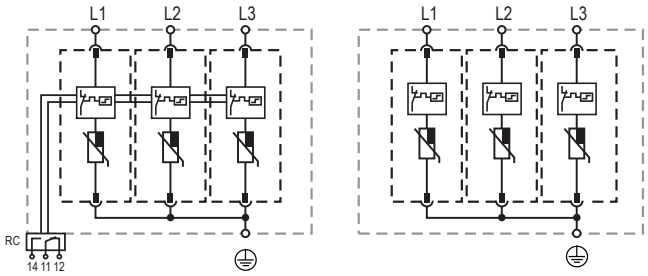
Location of Use: Sub-Distribution Boards
Network Systems: TN-C
Mode of Protection: L-PEN
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 50 kA (8/20 µs)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

ProTec T2-ADV-xxx-3+0(-R)		150	300	350	480
IEC Electrical					
Nominal AC Voltage (50/60Hz)	U_o/U_n	120V	240V	277V	400V
Maximum Continuous Operating Voltage (AC)	U_c	150V	300V	350V	480V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA
Voltage Protection Level	U_p	1000V	1300V	1700V	2000V
Response Time	t_A	< 25 ns			
Back-Up Fuse (max)		160A gG			
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA			
TOV Withstand 5s	U_T	229V	337V	403V	581V
TOV 120min	U_T	229V	442V	528V	762V
	mode	Withstand	Safe Fail	Safe Fail	Safe Fail
Number of Ports		1			
UL Electrical					
Maximum Continuous Operating Voltage (AC)	MCOV	150V	300V	350V	480V
Voltage Protection Rating	VPR	600V	900V	1200V	1500V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	200 kA	150 kA	200 kA	200 kA
Mechanical & Environmental					
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]			
Permissible Operating Humidity	RH	5%...95%			
Altitude		13123 ft [4000 m]			
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]			
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)			
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)			
Mounting		35 mm DIN Rail, EN 60715			
Degree of Protection		IP 20 (built-in)			
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0			
Thermal Protection		Yes			
Operating State / Fault Indication		Green Flag / Not Green Flag			
Remote Contacts (RC)		Optional			
RC Switching Capacity		AC: 250V/1A, 125V/1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A			
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)			
Order Information					
Order Code		150	300	350	480
ProTec T2-ADV-xxx-3+0		59.0228	59.0230	59.0232	59.0234
ProTec T2-ADV-xxx-3+0-R (with remote contacts)		59.0229	59.0231	59.0233	59.0235
ProTec T2-ADV-xxx-P		59.0203	59.0204	59.0205	59.0206

ProTec T2-ADV 3+0

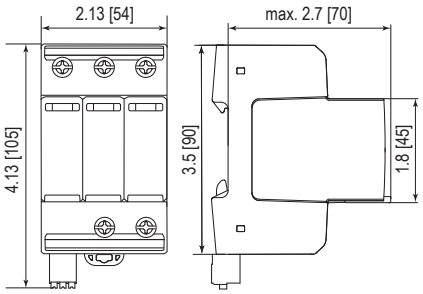
Internal Configuration



Legend

L Line
⏚ Protective Earth
RC Remote Contacts Optional

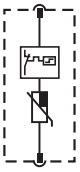
Dimensions & Packaging



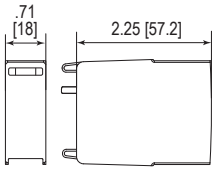
Dimensions & Packaging					
ProTec T2-ADV-xxx-3+0		**150**	**300**	**350**	**480**
Single Unit Weight	pounds	.787	.833	.866	.899
	grams	357	378	393	408
ProTec T2-ADV-xxx-3+0-R		**150**	**300**	**350**	**480**
Single Unit Weight	pounds	.809	.855	.888	.921
	grams	367	388	403	418
Single Unit DIN 43880 Dimension		3 TE			
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Minimum Order Quantity		5 Units			

Plug Internal Configuration

ProTec T2-ADV-xxx-P



Dimensions & Packaging



Dimensions & Packaging					
ProTec T2-ADV-xxx-P		**150**	**300**	**350**	**480**
Single Unit Weight	pounds	.127	.143	.154	.165
	grams	58	65	70	75
Single Unit DIN 43880 Dimension		1 TE			
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Minimum Order Quantity		24 Units			

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T2-ADV 4+0

Class II • Type 2 • Type 1CA

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} = 50 kA (8/20 µs)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

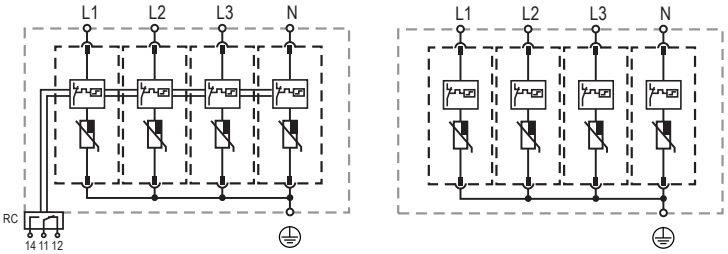
ProTec T2-ADV-xxx-4+0(-R)		150	300	350	480
IEC Electrical					
Nominal AC Voltage (50/60Hz)	U_o/U_n	120V	240V	277V	400V
Maximum Continuous Operating Voltage (AC)	U_c	150V	300V	350V	480V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA
Voltage Protection Level	U_p	1000V	1300V	1700V	2000V
Response Time	t_A	< 25 ns			
Back-Up Fuse (max)		160A gG			
Short-Circuit Current Rating (AC)	I_{SCCR}	50 kA			
TOV Withstand 5s	U_T	229V	337V	403V	581V
TOV 120min	U_T	229V	442V	528V	762V
	mode	Withstand	Safe Fail	Safe Fail	Safe Fail
Number of Ports		1			
UL Electrical					
Maximum Continuous Operating Voltage (AC)	MCOV	150V	300V	350V	480V
Voltage Protection Rating	VPR	600V	900V	1200V	1500V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	200 kA	150 kA	200 kA	200 kA
Mechanical & Environmental					
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]			
Permissible Operating Humidity	RH	5%...95%			
Altitude		13123 ft [4000 m]			
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]			
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)			
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)			
Mounting		35 mm DIN Rail, EN 60715			
Degree of Protection		IP 20 (built-in)			
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0			
Thermal Protection		Yes			
Operating State / Fault Indication		Green Flag / Not Green Flag			
Remote Contacts (RC)		Optional			
RC Switching Capacity		AC: 250V / 1A, 125V / 1 A; DC: 48V / 0.5 A, 24V / 0.5 A, 12V / 0.5 A			
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)			
Order Information					
Order Code		150	300	350	480
ProTec T2-ADV-xxx-4+0		59.0236	59.0238	59.0240	59.0242
ProTec T2-ADV-xxx-4+0-R (with remote contacts)		59.0237	59.0239	59.0241	59.0243
ProTec T2-ADV-xxx-P		59.0203	59.0204	59.0205	59.0206

ProTec T2-ADV 4+0

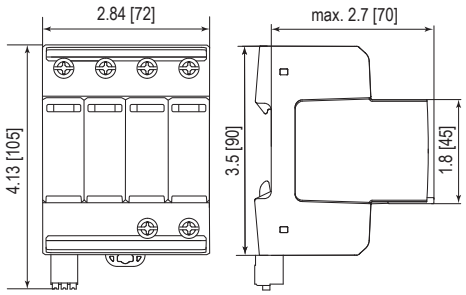
Internal Configuration

Legend

L Line
N Neutral
Protective Earth
RC Remote Contacts Optional



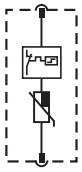
Dimensions & Packaging



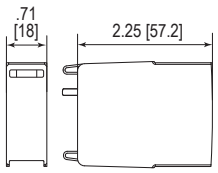
Dimensions & Packaging					
ProTec T2-ADV-xxx-4+0		**150**	**300**	**350**	**480**
Single Unit Weight	pounds	1.067	1.128	1.172	1.216
	grams	484	512	532	552
ProTec T2-ADV-xxx-4+0-R		**150**	**300**	**350**	**480**
Single Unit Weight	pounds	1.086	1.148	1.192	1.236
	grams	493	521	541	561
Single Unit DIN 43880 Dimension		4 TE			
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Minimum Order Quantity		4 Units			

Plug Internal Configuration

ProTec T2-ADV-xxx-P



Dimensions & Packaging



Dimensions & Packaging					
ProTec T2-ADV-xxx-P		**150**	**300**	**350**	**480**
Single Unit Weight	pounds	.127	.143	.154	.165
	grams	58	65	70	75
Single Unit DIN 43880 Dimension		1 TE			
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Minimum Order Quantity		24 Units			

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T2-ADV 1+1

Class II • Type 2 • Type 1CA

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} = 50 kA (8/20 µs)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV and GDT
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

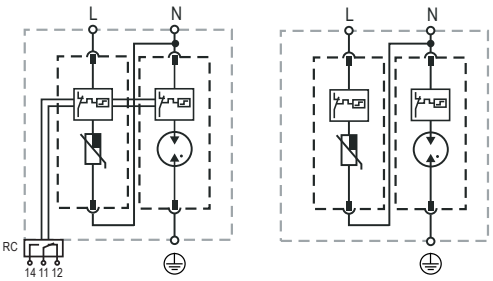
Technical Data

ProTec T2-ADV-xxx-1+1(-R)			75	150	300	350
IEC Electrical						
Nominal AC Voltage (50/60Hz)		U_o/U_n	60V	120V	240V	277V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	75V	150V	300V	350V
	(N-PE)	U_c	305V	305V	305V	305V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 40 kA	20 kA / 40 kA	20 kA / 40 kA	20 kA / 40 kA
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}	50 kA / 65 kA	50 kA / 65 kA	50 kA / 65 kA	50 kA / 65 kA
Voltage Protection Level	(L-N)/(N-PE)	U_p	600 V / 1500 V	1000 V / 1500 V	1300 V / 1500 V	1700 V / 1500 V
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 (max)			160A gG			
Short-Circuit Current Rating (AC)		I_{SCCR}	50 kA			
TOV Withstand 5s	(L-N)	U_T	114V	229V	337V	403V
TOV 120min	(L-N)	U_T	114V	229V	442V	528V
		mode	Withstand	Withstand	Safe Fail	Safe Fail
TOV Withstand 200ms	(N-PE)	U_T	1200 V			
Number of Ports			1			
UL Electrical						
Maximum Continuous Operating Voltage (AC)	(L-N)/(N-PE)	MCOV	75 V / 305 V	150 V / 305 V	300 V / 305 V	350 V / 305 V
Voltage Protection Rating	(L-N)/(N-PE)	VPR	400 V / 1000 V	600 V / 1000 V	900 V / 1000 V	1200 V / 1000 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 20 kA			
Short-Circuit Current Rating (AC)	(L-N)	SCCR	100 kA	200 kA	150 kA	200 kA
Mechanical & Environmental						
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]			
Permissible Operating Humidity		RH	5%...95%			
Altitude			13123 ft [4000 m]			
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]			
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)			
			35 mm^2 (Solid, Stranded) / 25 mm^2 (Flexible)			
Mounting			35 mm DIN Rail, EN 60715			
Degree of Protection			IP 20 (built-in)			
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0			
Thermal Protection			Yes			
Operating State / Fault Indication			Green Flag / Not Green Flag			
Remote Contacts (RC)			Optional			
RC Switching Capacity			AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A			
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm^2 (Solid)			

Order Information						
Order Code			75	150	300	350
ProTec T2-ADV-xxx-1+1			59.0244	59.0246	59.0248	59.0250
ProTec T2-ADV-xxx-1+1-R (with remote contacts)			59.0245	59.0247	59.0249	59.0251
ProTec T2-ADV-xxx-P			59.0203	59.0204	59.0205	59.0206
ProTube T2-ADV-40-P			59.0275	59.0275	59.0275	59.0275

ProTec T2-ADV 1+1

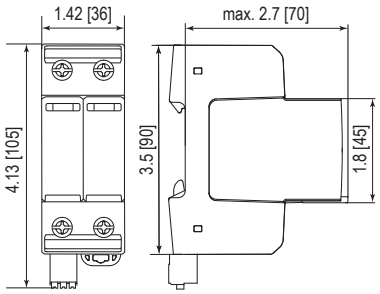
Internal Configuration



Legend

L Line
N Neutral
⏚ Protective Earth
RC Remote Contacts Optional

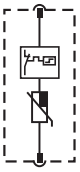
Dimensions & Packaging



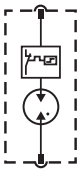
Dimensions & Packaging					
ProTec T2-ADV-xxx-1+1		**75**	**150**	**300**	**350**
Single Unit Weight	pounds	.500	.509	.524	.535
	grams	227	231	238	243
ProTec T2-ADV-xxx-1+1-R		**75**	**150**	**300**	**350**
Single Unit Weight	pounds	.513	.522	.537	.548
	grams	233	237	244	249
Single Unit DIN 43880 Dimension		2 TE			
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Minimum Order Quantity		7 Units			

Plug Internal Configuration

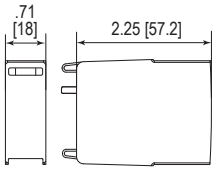
ProTec T2-ADV-xxx-P



ProTube T2-ADV-40-P



Dimensions & Packaging



Dimensions & Packaging					
ProTec T2-ADV-xxx-P		**75**	**150**	**300**	**350**
Single Unit Weight	pounds	.120	.127	.143	.154
	grams	54	58	65	70
ProTube T2-ADV-40-P		**40**			
Single Unit Weight	pounds	.093			
	grams	42			
Single Unit DIN 43880 Dimension		1 TE			
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Minimum Order Quantity		24 Units			

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Multi-Pole SPD

ProTec T2-ADV 3+1

Class II • Type 2 • Type 1CA

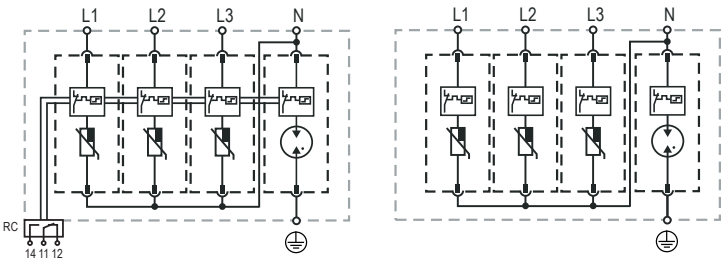
Location of Use: Sub-Distribution Boards
Network Systems: TT, TN-S
Mode of Protection: L-N, N-PE
Surge Ratings: I_n = 20 kA (8/20 µs)
I_{max} = 50 kA (8/20 µs)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV and GDT
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

ProTec T2-ADV-xxx-3+1(-R)			300	350
IEC Electrical				
Nominal AC Voltage (50/60Hz)		U_o/U_n	240V	277V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	300V	350V
	(N-PE)	U_c	305V	305V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 40 kA	20 kA / 40 kA
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}	50 kA / 65 kA	50 kA / 65 kA
Voltage Protection Level	(L-N)/(N-PE)	U_p	1300 V / 1500 V	1700 V / 1500 V
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 (max)			160 A gG	
Short-Circuit Current Rating (AC)		I_{SCCR}	50 kA	
TOV Withstand 5s	(L-N)	U_T	337V	403V
TOV 120min	(L-N)	U_T	442V	528V
		mode	Safe Fail	Safe Fail
TOV Withstand 200ms	(N-PE)	U_T	1200 V	
Number of Ports			1	
UL Electrical				
Maximum Continuous Operating Voltage (AC)	(L-N)/(N-PE)	MCOV	300 V / 305 V	350 V / 305 V
Voltage Protection Rating	(L-N)/(N-PE)	VPR	900 V / 1000 V	1200 V / 1000 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 20 kA	
Short-Circuit Current Rating (AC)	(L-N)	SCCR	150 kA	200 kA
Mechanical & Environmental				
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Operating Humidity		RH	5%...95%	
Altitude			13123 ft [4000 m]	
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]	
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
			35 mm² (Solid, Stranded) / 25 mm² (Flexible)	
Mounting			35 mm DIN Rail, EN 60715	
Degree of Protection			IP 20 (built-in)	
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection			Yes	
Operating State / Fault Indication			Green Flag / Not Green Flag	
Remote Contacts (RC)			Optional	
RC Switching Capacity			AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A	
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm² (Solid)	
Order Information				
Order Code			**300**	**350**
ProTec T2-ADV-xxx-3+1			59.0256	59.0258
ProTec T2-ADV-xxx-3+1-R (with remote contacts)			59.0257	59.0259
ProTec T2-ADV-xxx-P			59.0204	59.0204
ProTube T2-ADV-40-P			59.0275	59.0275

ProTec T2-ADV 3+1

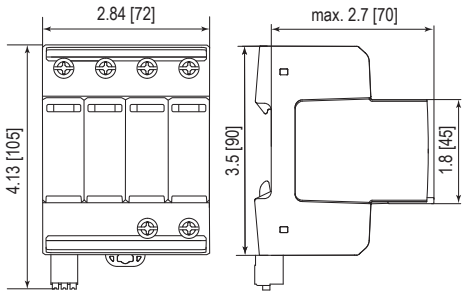
Internal Configuration



Legend

L Line
N Neutral
⏚ Protective Earth
RC Remote Contacts Optional

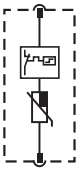
Dimensions & Packaging



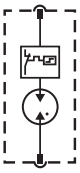
Dimensions & Packaging			
ProTec T2-ADV-xxx-3+1		**300**	**350**
Single Unit Weight	pounds	1.060	1.093]
	grams	481	496
ProTec T2-ADV-xxx-3+1-R		**300**	**350**
Single Unit Weight	pounds	1.080	1.113
	grams	490	505
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Minimum Order Quantity		4 Units	

Plug Internal Configuration

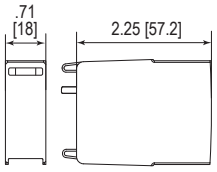
ProTec T2-ADV-xxx-P



ProTube T2-ADV-40-P



Dimensions & Packaging



Dimensions & Packaging			
ProTec T2-ADV-xxx-P		**300**	**350**
Single Unit Weight	pounds	.143	.154
	grams	65	70
ProTube T2-ADV-40-P		**40**	
Single Unit Weight	pounds	.093	
	grams	42	
Single Unit DIN 43880 Dimension		1 TE	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Minimum Order Quantity		24 Units	

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 218.

inches
[mm]

Pluggable Single-Pole SPD

SafeTec T2 1+0

Class II • Type 2 • Type 1CA

Location of Use: Sub-distribution Boards
Network Systems: TN-S, TN-C, TT (only L-N)
Mode of Protection: L-PE, N-PE (only TN-S), 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/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV and GDT
Safety: Patented Current Limiting
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

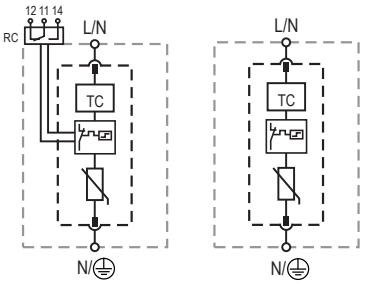
Technical Data

SafeTec T2-xxx-1+0(-R)		75	150	300	350	480	550	750	880
IEC Electrical									
Nominal AC Voltage (50/60Hz)	U_o/U_n	60 V	120 V	240 V	277 V	400 V	400 V	600 V	600 V
Maximum Continuous Operating Voltage (AC)	U_c	75 V	150 V	300 V	350 V	480 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	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	35 kA	35 kA
Voltage Protection Level	U_p	800 V	1250 V	1650 V	1750 V	2300 V	2500 V	3500 V	3600 V
Response Time	t_A	< 25 ns							
Back-Up Fuse (max)		315 A / 250 A gG							
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA							
TOV Withstand 120min	U_T	150 V	255 V	442 V	529 V	762 V	918 V	1200 V	1250 V
Number of Ports		1							
UL Electrical									
Maximum Continuous Operating Voltage (AC)	MCOV	75 V	150 V	300 V	350 V	480 V	550 V	750 V	880 V
Voltage Protection Rating	VPR	600 V	700 V	1200 V	1200 V	1500 V	1800 V	2500 V	2500 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	85kA	200 kA	150 kA	200 kA	200 kA	200 kA	200 kA	200 kA
Mechanical & Environmental									
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]							
Permissible Operating Humidity	RH	5%...95%							
Altitude (max)		13123 ft [4000 m]							
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]							
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)							
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)							
Mounting		35 mm DIN Rail, EN 60715							
Degree of Protection		IP 20 (built-in)							
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0							
Thermal Protection		Yes							
Operating State / Fault Indication		Green Flag / Not Green Flag							
Remote Contacts (RC)		Optional							
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A							
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)							

Order Information								
Order Code	75	150	300	350	480	550	750	880
SafeTec T2-xxx-1+0	59.0132	59.0134	59.0136	59.0138	59.0140	59.0142	59.0144	59.0146
SafeTec T2-xxx-1+0-R (with remote contacts)	59.0133	59.0135	59.0137	59.0139	59.0141	59.0143	59.0145	59.0147
SafeTec T2-xxx-P	59.0125	59.0126	59.0127	59.0128	59.0129	59.0299	59.0130	59.0131

SafeTec T2 1+0

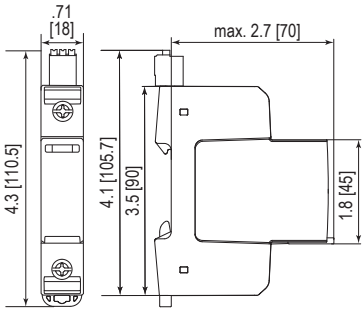
Internal Configuration



Legend

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

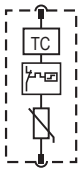
Dimensions & Packaging



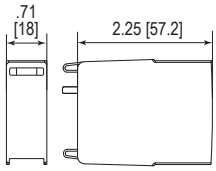
Dimensions & Packaging									
SafeTec T2-xxx-1+0		**75**	**150**	**300**	**350**	**480**	**550**	**750**	**880**
Single Unit Weight	pounds	.272	.280	.292	.309	.316	.327	.349	.349
	grams	123	127	132	140	143	148	158	158
SafeTecT2-xxx-1+0-R		**75**	**150**	**300**	**350**	**480**	**550**	**750**	**880**
Single Unit Weight	pounds	.287	.296	.307	.325	.331	.342	.364	.364
	grams	130	134	139	147	150	155	165	165
Single Unit DIN 43880 Dimension		1 TE							
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]							
Minimum Order Quantity		12 Units							

Plug Internal Configuration

SafeTec T2-xxx-P



Dimensions & Packaging



Dimensions & Packaging									
SafeTec T2-xxx-P		**75**	**150**	**300**	**350**	**480**	**550**	**750**	**880**
Single Unit Weight	pounds	.124	.133	.144	.161	.168	.179	.201	.201
	grams	56	60	65	73	76	81	91	91
Single Unit DIN 43880 Dimension		1 TE							
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]							
Minimum Order Quantity		24 Units							

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 220.

inches
[mm]

Pluggable Multi-Pole SPD

SafeTec T2 2+0

Class II • Type 2 • Type 1CA

Location of Use: Sub-distribution Boards
Network Systems: 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/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV and GDT
Safety: Patented Current Limiting
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

SafeTec T2-xxx-2+0(-R)		75	150	300	350	480	550	750	880
IEC Electrical									
Nominal AC Voltage (50/60Hz)	U_o/U_n	60 V	120 V	240 V	277 V	400 V	400 V	600 V	600 V
Maximum Continuous Operating Voltage (AC)	U_c	75 V	150 V	300 V	350 V	480 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	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	35 kA	35 kA
Voltage Protection Level	U_p	800 V	1250 V	1650 V	1750 V	2300 V	2500 V	3500 V	3600 V
Response Time	t_A	< 25 ns							
Back-Up Fuse (max)		315 A / 250 A gG							
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA							
TOV Withstand 120min	U_T	150 V	255 V	442 V	529 V	762 V	918 V	1200 V	1250 V
Number of Ports		1							
UL Electrical									
Maximum Continuous Operating Voltage (AC)	MCOV	75 V	150 V	300 V	350 V	480 V	550 V	750 V	880 V
Voltage Protection Rating	VPR	600 V	700 V	1200 V	1200 V	1500 V	1800 V	2500 V	2500 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	85kA	200 kA	150 kA	200 kA	200 kA	200 kA	200 kA	200 kA
Mechanical & Environmental									
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]							
Permissible Operating Humidity	RH	5%...95%							
Altitude (max)		13123 ft [4000 m]							
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]							
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)							
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)							
Mounting		35 mm DIN Rail, EN 60715							
Degree of Protection		IP 20 (built-in)							
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0							
Thermal Protection		Yes							
Operating State / Fault Indication		Green Flag / Not Green Flag							
Remote Contacts (RC)		Optional							
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A							
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)							

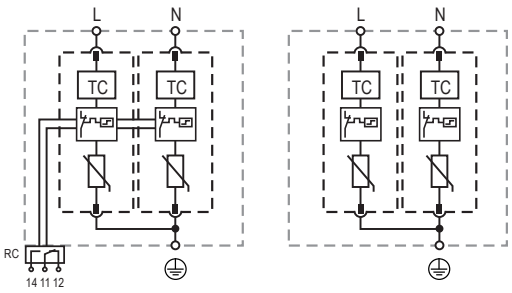
Order Information								
Order Code	75	150	300	350	480	550	750	880
SafeTec T2-xxx-2+0	59.0345	59.0148	59.0150	59.0152	59.0154	59.0156	59.0158	59.0160
SafeTec T2-xxx-2+0-R (with remote contacts)	59.0346	59.0149	59.0151	59.0153	59.0155	59.0157	59.0159	59.0161
SafeTec T2-xxx-P	59.0125	59.0126	59.0127	59.0128	59.0129	59.0299	59.0130	59.0131

SafeTec T2 2+0

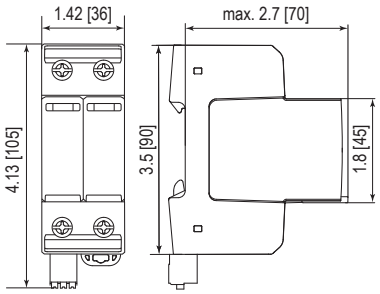
Internal Configuration

Legend

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



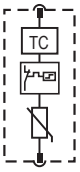
Dimensions & Packaging



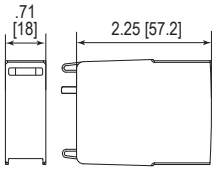
Dimensions & Packaging									
SafeTec T2-xxx-2+0		**75**	**150**	**300**	**350**	**480**	**550**	**750**	**880**
Single Unit Weight	pounds	.534	.552	.574	.609	.622	.644	.688	.688
	grams	242	250	260	276	282	292	312	312
SafeTecT2-xxx-2+0-R		**75**	**150**	**300**	**350**	**480**	**550**	**750**	**880**
Single Unit Weight	pounds	.565	.583	.605	.640	.653	.675	.719	.719
	grams	256	264	274	290	296	306	326	326
Single Unit DIN 43880 Dimension		2 TE							
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]							
Minimum Order Quantity		7 Units							

Plug Internal Configuration

SafeTec T2-xxx-P



Dimensions & Packaging



Dimensions & Packaging									
SafeTec T2-xxx-P		**75**	**150**	**300**	**350**	**480**	**550**	**750**	**880**
Single Unit Weight	pounds	.124	.133	.144	.161	.168	.179	.201	.201
	grams	56	60	65	73	76	81	91	91
Single Unit DIN 43880 Dimension		1 TE							
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]							
Minimum Order Quantity		24 Units							

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 220.

inches
[mm]

Pluggable Multi-Pole SPD

SafeTec T2 3+0

Class II • Type 2 • Type 1CA

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} = up to 50 kA (8/20 µs)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV and GDT
Safety: Patented Current Limiting
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

SafeTec T2-xxx-3+0(-R)		150	300	350	480	550	750	880
IEC Electrical								
Nominal AC Voltage (50/60Hz)	U_o/U_n	120 V	240 V	277 V	400 V	400 V	600 V	600 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	300 V	350 V	480 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	20 kA	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA	35 kA	35 kA
Voltage Protection Level	U_p	1250 V	1650 V	1750 V	2300 V	2500 V	3500 V	3600 V
Response Time	t_A	< 25 ns						
Back-Up Fuse (max)		315 A / 250 A gG						
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA						
TOV Withstand 120min	U_T	255 V	442 V	529 V	762 V	918 V	1200 V	1250 V
Number of Ports		1						
UL Electrical								
Maximum Continuous Operating Voltage (AC)	MCOV	150 V	300 V	350 V	480 V	550 V	750 V	880 V
Voltage Protection Rating	VPR	700 V	1200 V	1200 V	1500 V	1800 V	2500 V	2500 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	200 kA	150 kA	200 kA	200 kA	200 kA	200 kA	200 kA
Mechanical & Environmental								
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]						
Permissible Operating Humidity	RH	5%...95%						
Altitude (max)		13123 ft [4000 m]						
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]						
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)						
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)						
Mounting		35 mm DIN Rail, EN 60715						
Degree of Protection		IP 20 (built-in)						
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0						
Thermal Protection		Yes						
Operating State / Fault Indication		Green Flag / Not Green Flag						
Remote Contacts (RC)		Optional						
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A						
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)						

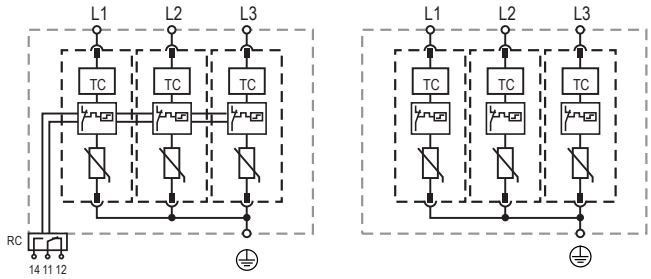
Order Information							
Order Code	150	300	350	480	550	750	880
SafeTec T2-xxx-3+0	59.0162	59.0164	59.0166	59.0168	59.0170	59.0172	59.0174
SafeTec T2-xxx-3+0-R (with remote contacts)	59.0163	59.0165	59.0167	59.0169	59.0171	59.0173	59.0175
SafeTec T2-xxx-P	59.0126	59.0127	59.0128	59.0129	59.0299	59.0130	59.0131

SafeTec T2 3+0

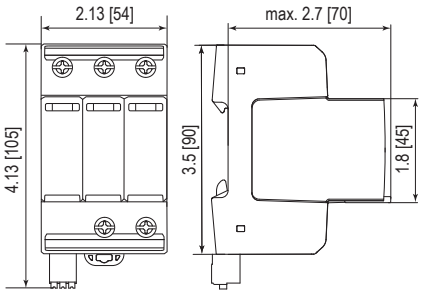
Internal Configuration

Legend

L Line
⏚ Protective Earth
RC Remote Contacts Optional
TC Thermal Control Function



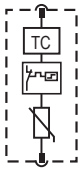
Dimensions & Packaging



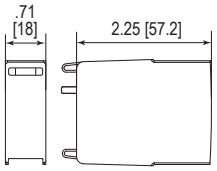
Dimensions & Packaging								
SafeTec T2-xxx-3+0		**150**	**300**	**350**	**480**	**550**	**750**	**880**
Single Unit Weight	pounds	.801	.834	.887	.907	.940	1.006	1.006
	grams	363	378	402	411	426	456	456
SafeTecT2-xxx-3+0-R		**150**	**300**	**350**	**480**	**550**	**750**	**880**
Single Unit Weight	pounds	.823	.856	.909	.929	.962	1.028	1.028
	grams	373	388	412	421	436	466	466
Single Unit DIN 43880 Dimension		3 TE						
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]						
Minimum Order Quantity		5 Units						

Plug Internal Configuration

SafeTec T2-xxx-P



Dimensions & Packaging



Dimensions & Packaging								
SafeTec T2-xxx-P		**150**	**300**	**350**	**480**	**550**	**750**	**880**
Single Unit Weight	pounds	.133	.144	.161	.168	.179	.201	.201
	grams	60	65	73	76	81	91	91
Single Unit DIN 43880 Dimension		1 TE						
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]						
Minimum Order Quantity		24 Units						

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 220.

inches
[mm]

Pluggable Multi-Pole SPD

SafeTec T2 4+0

Class II • Type 2 • Type 1CA

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} = 50 kA (8/20 µs)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV and GDT
Safety: Patented Current Limiting
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

SafeTec T2-xxx-4+0(-R)		150	300	350	480	550
IEC Electrical						
Nominal AC Voltage (50/60Hz)	U_o/U_n	120 V	240 V	277 V	400 V	400 V
Maximum Continuous Operating Voltage (AC)	U_c	150 V	300 V	350 V	480 V	550 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA
Maximum Discharge Current (8/20 µs)	I_{max}	50 kA	50 kA	50 kA	50 kA	50 kA
Voltage Protection Level	U_p	1250 V	1650 V	1750 V	2300 V	2500 V
Response Time	t_A	< 25 ns				
Back-Up Fuse (max)		315 A / 250 A gG				
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA / 50 kA				
TOV Withstand 120min	U_T	255 V	442 V	529 V	762 V	918 V
Number of Ports		1				
UL Electrical						
Maximum Continuous Operating Voltage (AC)	MCOV	150 V	300 V	350 V	480 V	550 V
Voltage Protection Rating	VPR	700 V	1200 V	1200 V	1500 V	1800 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	20 kA	20 kA	20 kA	20 kA
Short-Circuit Current Rating (AC)	SCCR	200 kA	150 kA	200 kA	200 kA	200 kA
Mechanical & Environmental						
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]				
Permissible Operating Humidity	RH	5%...95%				
Altitude (max)		13123 ft [4000 m]				
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]				
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)				
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)				
Mounting		35 mm DIN Rail, EN 60715				
Degree of Protection		IP 20 (built-in)				
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0				
Thermal Protection		Yes				
Operating State / Fault Indication		Green Flag / Not Green Flag				
Remote Contacts (RC)		Optional				
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A				
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)				

Order Information

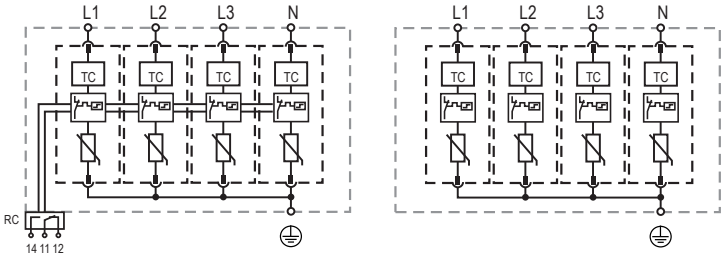
Order Code	150	300	350	480	550
SafeTec T2-xxx-4+0	59.0176	59.0178	59.0180	59.0182	59.0184
SafeTec T2-xxx-4+0-R (with remote contacts)	59.0177	59.0179	59.0181	59.0183	59.0185
SafeTec T2-xxx-P	59.0126	59.0127	59.0128	59.0129	59.0299

SafeTec T2 4+0

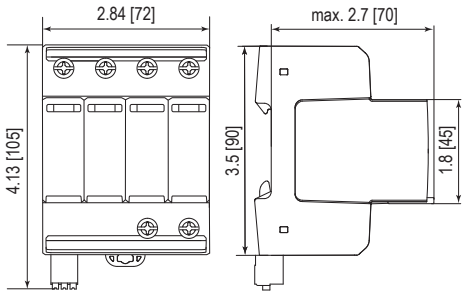
Internal Configuration

Legend

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



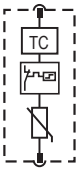
Dimensions & Packaging



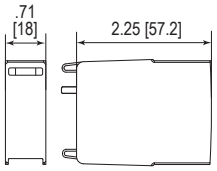
Dimensions & Packaging						
SafeTec T2-xxx-4+0		**150**	**300**	**350**	**480**	**550**
Single Unit Weight	pounds	1.085	1.129	1.200	1.226	1.270
	grams	492	512	544	556	576
SafeTec T2-xxx-4+0-R		**150**	**300**	**350**	**480**	**550**
Single Unit Weight	pounds	1.105	1.149	1.220	1.246	1.290
	grams	501	521	553	565	585
Single Unit DIN 43880 Dimension		4 TE				
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Minimum Order Quantity		4 Units				

Plug Internal Configuration

SafeTec T2-xxx-P



Dimensions & Packaging



Dimensions & Packaging						
SafeTec T2-xxx-P		**150**	**300**	**350**	**480**	**550**
Single Unit Weight	pounds	.133	.144	.161	.168	.179
	grams	60	65	73	76	81
Single Unit DIN 43880 Dimension		1 TE				
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]				
Minimum Order Quantity		24 Units				

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 220.

inches
[mm]

Pluggable Multi-Pole SPD

SafeTec T2 1+1

Class II • Type 2 • Type 1CA

Location of Use: Sub-distribution Boards
Network Systems: TT, TN-S
Mode of Protection: L-N, N-PE
Surge Ratings: I_n = 20 kA / 40 kA (8/20 µs)
I_{max} = 50 kA / 65 kA (8/20 µs)
IEC/EN/UL Category: Class II / Type 2 / Type 1CA
Protective Elements: High Energy MOV and GDT
Safety: Patented Current Limiting
Housing: Pluggable Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012
UL 1449 4th Edition

Technical Data

SafeTec T2-xxx-1+1(-R)			75	150	300	350
IEC Electrical						
Nominal AC Voltage (50/60Hz)		U_o/U_n	60 V	120 V	240 V	277 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	75 V	150 V	300 V	350 V
	(N-PE)	U_c	305 V	305 V	305 V	305 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA/40 kA	20 kA/40 kA	20 kA/40 kA	20 kA/40 kA
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}	50 kA/65kA	50 kA/65 kA	50 kA/65 kA	50 kA/65kA
Voltage Protection Level	(L-N)/(N-PE)	U_p	800 V/1500 V	1250 V/1500 V	1650 V/1500 V	1750 V/1500 V
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 (max)			315 A/250 A gG			
Short-Circuit Current Rating (AC)	(L-N)	I_{SCCR}	25 kA/50 kA			
TOV Withstand 120min	(L-N)	U_T	150 V	255 V	442 V	529 V
TOV Withstand 200ms	(N-PE)	U_T	1200 V			
Number of Ports			1			
UL Electrical						
Maximum Continuous Operating Voltage (AC)	(L-N)/(N-PE)	MCOV	75 V/305 V	150 V/305 V	300 V/305 V	350 V/305 V
Voltage Protection Rating	(L-N)/(N-PE)	VPR	600 V/1000 V	700 V/1000 V	1200 V/1000 V	1200 V/1000 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA/20 kA			
Short-Circuit Current Rating (AC)	(L-N)	SCCR	85kA	200 kA	150 kA	200 kA
Mechanical & Environmental						
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]			
Permissible Operating Humidity		RH	5%...95%			
Altitude (max)			13123 ft [4000 m]			
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]			
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)			
			35 mm^2 (Solid, Stranded) / 25 mm^2 (Flexible)			
Mounting			35 mm DIN Rail, EN 60715			
Degree of Protection			IP 20 (built-in)			
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0			
Thermal Protection			Yes			
Operating State / Fault Indication			Green Flag / Not Green Flag			
Remote Contacts (RC)			Optional			
RC Switching Capacity			AC: 250 V/1A, 125 V/1 A; DC: 48 V/0.5 A, 24 V/0.5 A, 12 V/0.5 A			
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm^2 (Solid)			

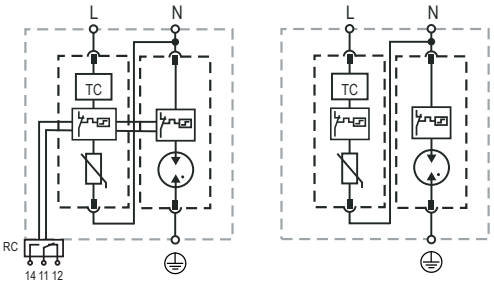
Order Information					
Order Code	75	150	300	350
SafeTec T2-xxx-1+1	59.0186	59.0188	59.0190	59.0192
SafeTec T2-xxx-1+1-R (with remote contacts)	59.0187	59.0189	59.0191	59.0193
SafeTec T2-xxx-P	59.0125	59.0126	59.0127	59.0128
SafeTube T2-40-P	59.0274	59.0274	59.0274	59.0274

SafeTec T2 1+1

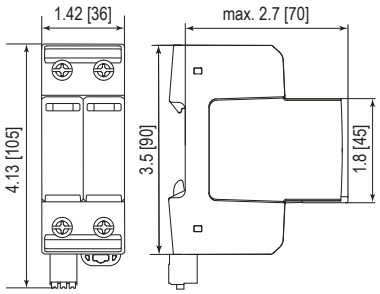
Internal Configuration

Legend

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



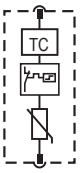
Dimensions & Packaging



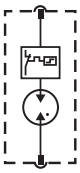
Dimensions & Packaging					
SafeTec T2-xxx-1+1		**75**	**150**	**300**	**350**
Single Unit Weight	pounds	.505	.514	.525	.543
	grams	229	233	238	246
SafeTec T2-xxx-1+1-R		**75**	**150**	**300**	**350**
Single Unit Weight	pounds	.519	.527	.538	.556
	grams	235	239	244	252
Single Unit DIN 43880 Dimension		2 TE			
Packaging Dimensions (H x W x L)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]			
Minimum Order Quantity		7 Units			

Plug Internal Configuration

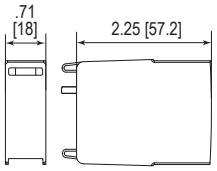
SafeTec T2-xxx-P



SafeTube T2-40-P



Dimensions & Packaging



Dimensions & Packaging					
SafeTec T2-xxx-P		**75**	**150**	**300**	**350**
Single Unit Weight	pounds	.124	.133	.144	.161
	grams	56	60	65	73
SafeTube T2-40-P			**40**		
Single Unit Weight	pounds		.093		
	grams		42		
Single Unit DIN 43880 Dimension			1 TE		
Packaging Dimensions (H x W x L)			4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]		
Minimum Order Quantity			24 Units		

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 220.

inches
[mm]

Pluggable Multi-Pole SPD

SafeTec T2 3+1

Class II • Type 2 • Type 1CA

Location of Use:	Sub-distribution Boards
Network Systems:	TT, TN-S
Mode of Protection:	L-N, N-PE
Surge Ratings:	I_n = 20 kA / 40 kA (8/20 µs)
	I_{max} = 50 kA / 65 kA (8/20 µs)
IEC/EN/UL Category:	Class II / Type 2 / Type 1CA
Protective Elements:	High Energy MOV and GDT
Safety:	Patented Current Limiting
Housing:	Pluggable Design
Compliance:	IEC 61643-11:2011
	EN 61643-11:2012
	UL 1449 4th Edition

Technical Data

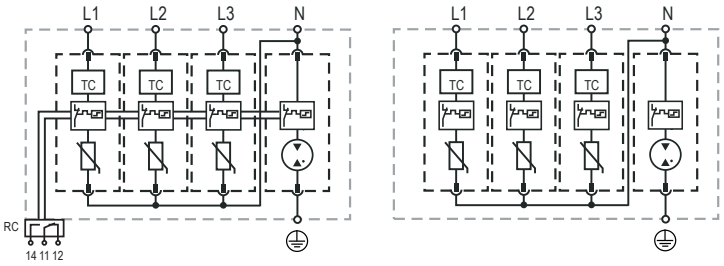
SafeTec T2-xxx-3+1(-R)			300	350
IEC Electrical				
Nominal AC Voltage (50/60Hz)		U_o/U_n	240 V	277 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	300 V	350 V
	(N-PE)	U_c	305 V	305 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 40 kA	20 kA / 40 kA
Maximum Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_{max}	50 kA / 65kA	50 kA / 65kA
Voltage Protection Level	(L-N)/(N-PE)	$U_{p.}$	1650 V / 1500 V	1750 V / 1500 V
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 (max)			315 A / 250 A gG	
Short-Circuit Current Rating (AC)	(L-N)	I_{SCCR}	25 kA / 50 kA	
TOV Withstand 120min	(L-N)	U_T	442 V	529 V
TOV Withstand 200ms	(N-PE)	U_T	1200 V	
Number of Ports			1	
UL Electrical				
Maximum Continuous Operating Voltage (AC)	(L-N)/(N-PE)	MCOV	300 V / 305 V	350 V / 305 V
Voltage Protection Rating	(L-N)/(N-PE)	VPR	1200 V / 1000 V	1200 V / 1000 V
Nominal Discharge Current (8/20 µs)	(L-N)/(N-PE)	I_n	20 kA / 20 kA	
Short-Circuit Current Rating (AC)	(L-N)	SCCR	150 kA	200 kA
Mechanical				
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Operating Humidity		RH	5%...95%	
Altitude			13123 ft [4000 m]	
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]	
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
			35 mm^2 (Solid, Stranded) / 25 mm^2 (Flexible)	
Mounting			35 mm DIN Rail, EN 60715	
Degree of Protection			IP 20 (built-in)	
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection			Yes	
Operating State / Fault Indication			Green Flag / Not Green Flag	
Remote Contacts (RC)			Optional	
RC Switching Capacity			AC: 250 V / 1A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A	
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm^2 (Solid)	
Order Information				
Order Code			300	350
SafeTec T2-xxx-3+1			59.0198	59.0200
SafeTec T2-xxx-3+1-R (with remote contacts)			59.0199	59.0201
SafeTec T2-xxx-P			59.0127	59.0128
SafeTube T2-40-P			59.0274	59.0274

SafeTec T2 3+1

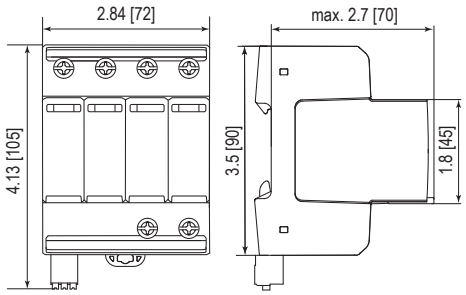
Internal Configuration

Legend

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



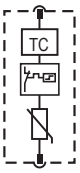
Dimensions & Packaging



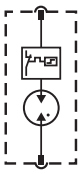
Dimensions & Packaging			
SafeTec T2-xxx-3+1		**300**	**350**
Single Unit Weight	pounds	.792	.810
	grams	359	367
SafeTec T2-xxx-3+1-R		**300**	**350**
Single Unit Weight	pounds	.812	.829
	grams	368	376
Single Unit DIN 43880 Dimension		4 TE	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Minimum Order Quantity		4 Units	

Plug Internal Configuration

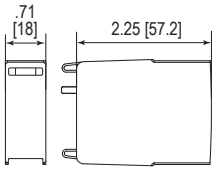
SafeTec T2-xxx-P



SafeTube T2-40-P



Dimensions & Packaging



Dimensions & Packaging			
SafeTec T2-xxx-P		**300**	**350**
Single Unit Weight	pounds	.144	.161
	grams	65	73
SafeTube T2-40-P		**40**	
Single Unit Weight	pounds	.093	
	grams	42	
Single Unit DIN 43880 Dimension		1 TE	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Minimum Order Quantity		24 Units	

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 220.

inches
[mm]

Pluggable Single-Pole SPD

SafeTube T2 40 0+1

Class II • Type 2 • Type 1CA

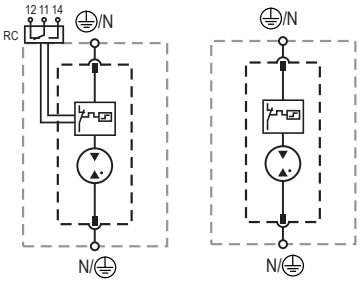
Location of Use:	Sub-Distribution Boards
Network Systems:	TT, TN-S
Mode of Protection:	N-PE
Surge Ratings:	I_n = 20 kA (8/20 µs)
IEC/EN/UL Category:	Class II / Type 2 / Type 1CA
Protective Elements:	GDT with Thermal Disconnector
Housing:	Pluggable Design
Compliance:	IEC 61643-11:2011 EN 61643-11:2012 UL 1449 4th Edition

Technical Data

SafeTube T2-xx 0+1(-R)		40
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o/U_n	0 V
Maximum Continuous Operating Voltage	U_c	305V
Nominal Discharge Current (8/20 µs)	I_n	40 kA
Maximum Discharge Current (8/20 µs)	I_{max}	65 kA
Voltage Protection Level	U_p	1500 V
Follow Current Interrupt Rating	I_{fi}	100 A_{RMS}
Response Time	t_A	< 100 ns
TOV Withstand 200ms	U_T	1200 V
Number of Ports		1
UL Electrical		
Maximum Continuous Operating Voltage (AC)	MCOV	305V
Voltage Protection RatingN)	VPR	1000 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA
Mechanical		
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Operating Humidity	RH	5%...95%
Altitude		13123 ft [4000 m]
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)
Mounting		35 mm DIN Rail, EN 60715
Degree of Protection		IP 20 (built-in)
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection		Yes
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)
Order Information		
Order Code		**40**
SafeTube T2-xxx-0+1		59.0281
SafeTube T2-xxx-0+1-R (with remote contacts)		59.0337
SafeTube T2-40-P		59.0274

SafeTube T2 0+1

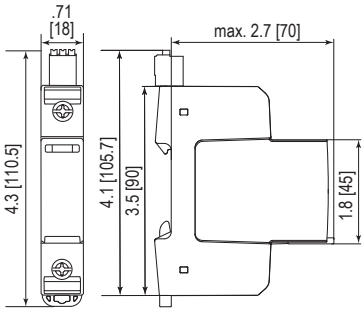
Internal Configuration



Legend

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

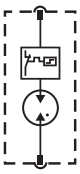
Dimensions & Packaging



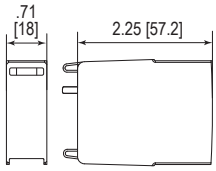
Dimensions & Packaging		
SafeTube T2-xxx-0+1		**40**
Single Unit Weight	pounds	.255-
	grams	116
SafeTube T2-xxx-0+1-R		**40**
Single Unit Weight	pounds	.275
	grams	125
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		12 Units

Plug Internal Configuration

SafeTube T2-xxx-P



Dimensions & Packaging

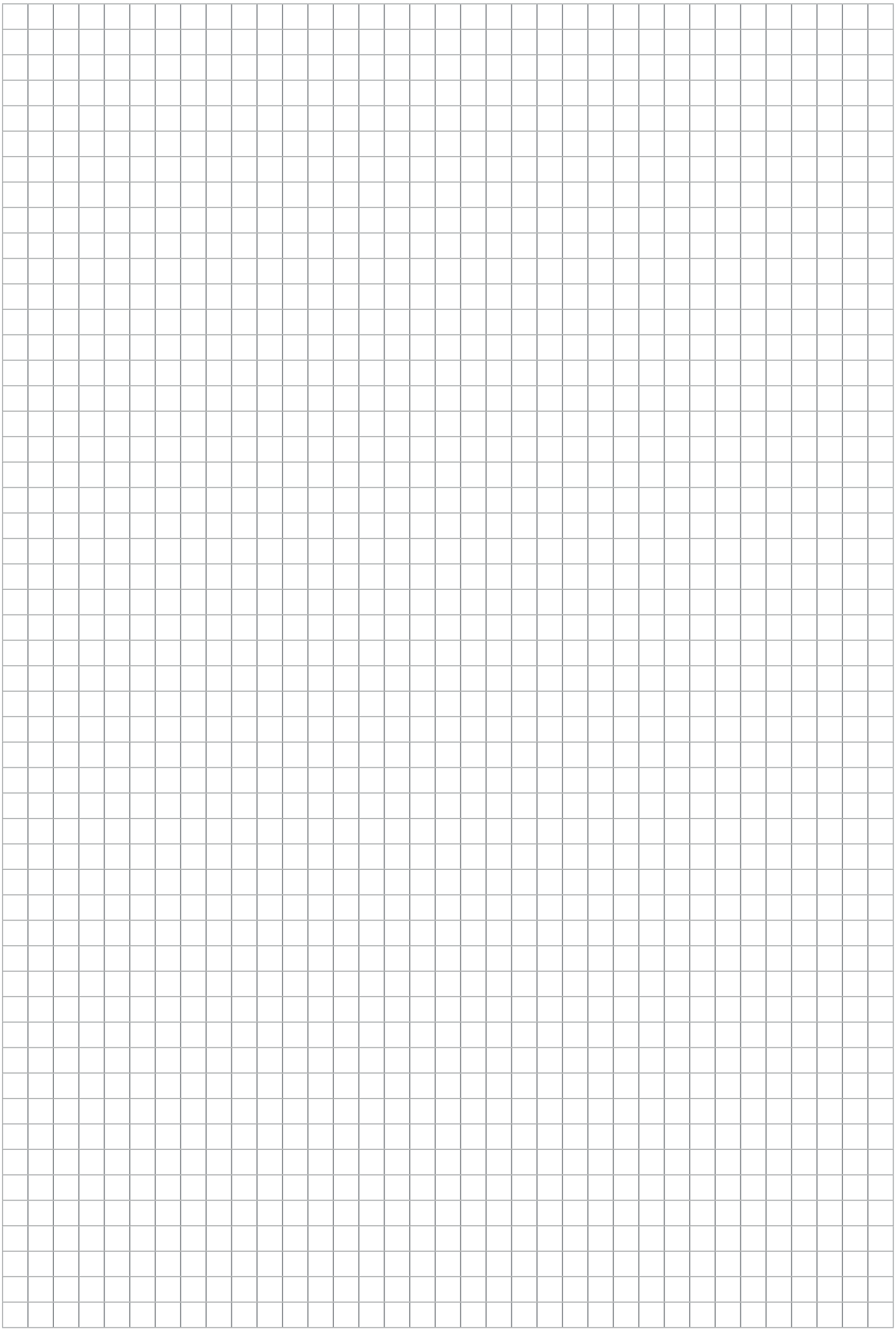


Dimensions & Packaging		
SafeTube T2-40-P		**40**
Single Unit Weight	pounds	.093
	grams	42
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]
Minimum Order Quantity		24 Units

RoHS COMPLIANT

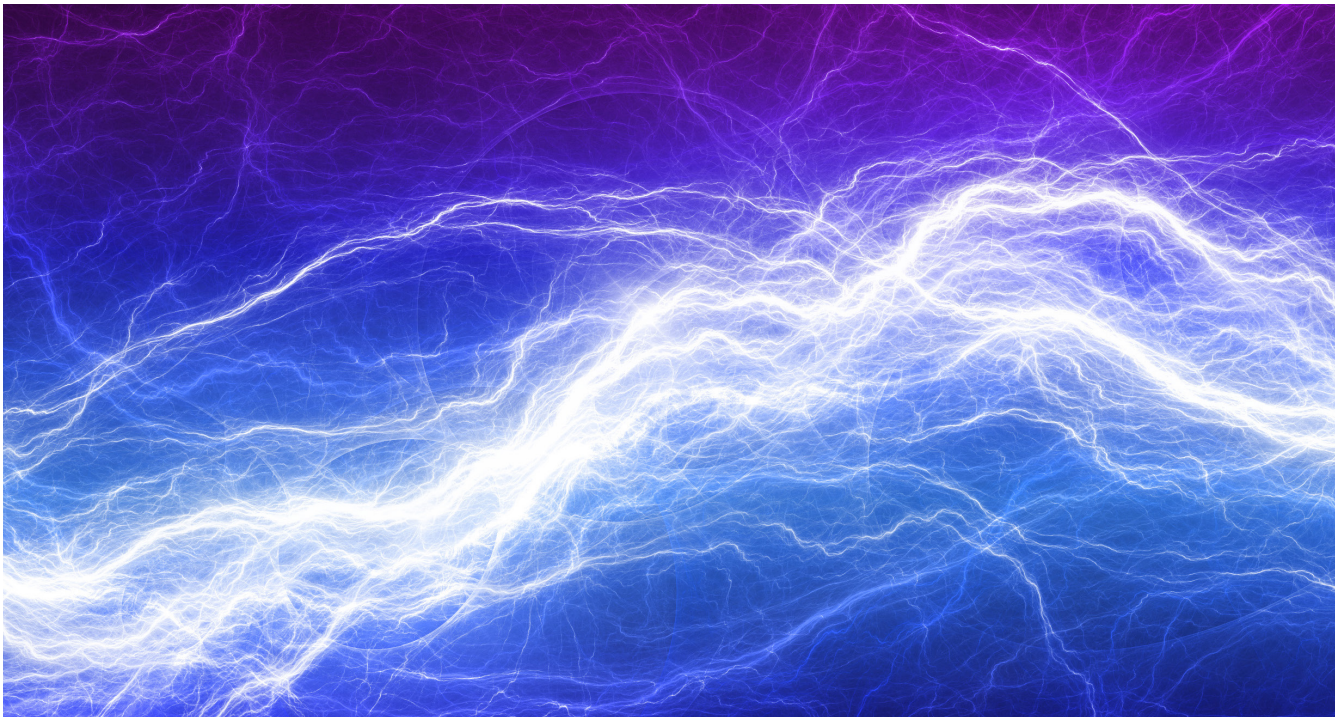
Applicable connection configurations can be found beginning on page 220.

inches
[mm]



Pluggable Multi-pole Surge Protective Devices (SPDs) for Photovoltaic Systems (DC)

ProTec T1-PV
ProTec T2-PV



Raycap provides Type 1 (Class I) and Type 2 (Class II) surge protection products for Photovoltaic (PV) applications. AC surge protection should be installed to prevent damage to the PV modules during electrical surge events. Additionally protection is required at the junction box to protect the string monitoring units from the DC power supply. In addition, Raycap's RayDat signal protection modules are used to protect the sensitive electronics equipment from surges on the data lines and lightning monitoring solutions to alert PV park operators in the event of a lightning strike on or near the facility. See our Signal Protection catalog and ProGRID brochure for more information on these products.

RoHS COMPLIANT

Pluggable Multi-Pole SPD for Photovoltaic Systems

ProTec T1-PV 3+0

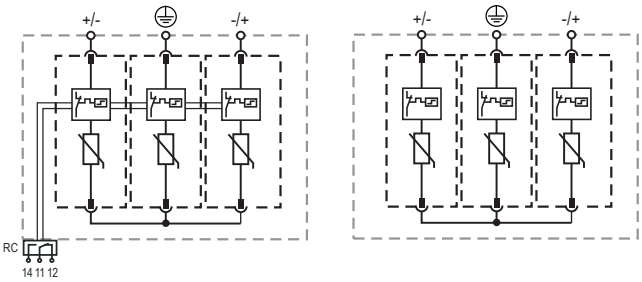
Type 1 • Type 2 • Type 1CA

Location of Use: String box, Inverter
Mode of Protection: (+)-PE, (-)-PE, (+)-(-)
Surge Ratings: I_{Total} =up to 12.5 kA (10/350 µs)
I_{Total} =up to 50 kA (8/20 µs)
EN/UL Category: Type 1+2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: EN 50539-11:2013+A1:2014
UL 1449 4th Edition

ProTec T1-xxxxPV-3+0(-R)			1100	1500
IEC Electrical				
Maximum Continuous Operating DC Voltage		U_{CPV}	1100 V	1500 V
Nominal Discharge Current (8/20 µs)		I_n	20 kA	20 kA
Impulse Discharge Current (10/350 µs)		I_{imp}	6.25 kA	5 kA
Specific Energy		W/R	9.77 kJ/Ω	6.25 kJ/Ω
Charge		Q	3.125 As	2.5 As
Total Discharge Current (10/350 µs)		I_{Total}	12.5 kA	10 kA
Total Discharge Current (8/20 µs)		I_{Total}	50 kA	40 kA
Maximum Discharge Current (8/20 µs)		I_{max}	40 kA	30 kA
Voltage Protection Level	(+)-PE, (-)-PE	U_p	3800 V	5000 V
	(+)-(-)	U_p	3800 V	5000 V
Response Time		t_A	< 25 ns	
Short-Circuit Current Rating		I_{SCPV}	11 kA	
Number of Ports			1	
UL Electrical				
Maximum Permitted DC Voltage		V_{pvdc}	1100 V	1500 V
Voltage Protection Rating	(+)-PE, (-)-PE	VPR	2500 V	4000 V
	(+)-(-)	VPR	2500 V	4000 V
Nominal Discharge Current (8/20 µs)		I_n	20 kA	
Short-Circuit Current Rating		SCCR	50 kA	65 kA
Mechanical & Environmental				
Operating Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Operating Humidity		RH	5%...95%	
Altitude (max)			13123 ft [4000 m]	
Terminal Screw Torque		M_{max}	39.9 lbf·in [4.5 Nm]	
Conductor Cross Section (max)			2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
			35 mm² (Solid, Stranded) / 25 mm² (Flexible)	
Mounting			35 mm DIN Rail, EN 60715	
Degree Of Protection			IP 20 (built-in)	
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection			Yes	
Operating State / Fault Indication			Green Flag / Not Green Flag	
Remote Contacts (RC)			Optional	
RC Switching Capacity			AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A	
RC Conductor Cross Section (max)			16 AWG (Solid) / 1.5 mm² (Solid)	
Order Information				
Order Code			**1100**	**1500**
ProTec T1-xxxxPV-3+0			59.0285	59.0289
ProTec T1-xxxxPV-3+0-R (with remote contacts)			59.0286	59.0290
ProTec T1-550PV-P			59.0283	-
ProTec T1-550PV-M-P			59.0284	-
ProTec T1-750PV-P			-	59.0287
ProTec T1-750PV-M-P			-	59.0288

ProTec T1-PV-3+0

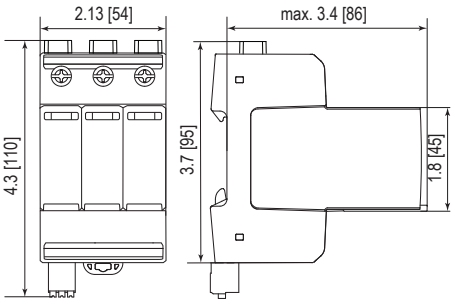
Internal Configuration



Legend

⏚ *Ground*
RC Remote Contacts Optional

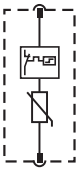
Dimensions & Packaging



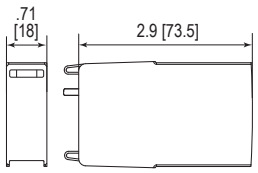
Dimensions & Packaging			
ProTec T1-xxxxPV-3+0		**1100**	**1500**
Single Unit Weight	pounds	.999	1.076
	grams	453	488
ProTec T1-xxxxPV-3+0-R		**1100**	**1500**
Single Unit Weight	pounds	1.019	1.096
	grams	462	497
Single Unit DIN 43880 Dimension		3 TE	
Packaging Dimensions (H × W × L)		4.30 × 3.03 × 4.48" [109 × 77 × 114 mm]	
Minimum Order Quantity		5 Units	

Plug Internal Configuration

ProTec T1-xxxPV-P
ProTec T1-xxxPV-M-P



Dimensions & Packaging



Dimensions & Packaging			
ProTec T1-xxxPV-P		**550**	**750**
Single Unit Weight	pounds	.280	.287
	grams	127	130
ProTec T1-xxxPV-M-P		**550**	**750**
Single Unit Weight	pounds	.157	.192
	grams	71	87
Single Unit DIN 43880 Dimension		1 TE	
Packaging Dimensions (H × W × L)		4.30 × 3.03 × 4.48" [109 × 77 × 114 mm]	
Minimum Order Quantity		28 Units	

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 222.

inches
[mm]

Pluggable Multi-Pole SPD for Photovoltaic Systems

ProTec T2-PV 3+0

Type 2 • Type 1CA

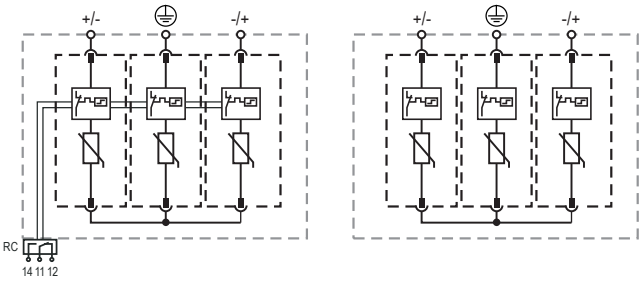
Location of Use: String box, Inverter
Mode of Protection: (+)-PE, (-)-PE, (+)-(-)
Surge Ratings: I_n =20 kA (8/20 µs)
I_{Total} =up to 50 kA (8/20 µs)
EN/UL Category: Type 2 / Type 1CA
Protective Elements: High Energy MOV
Housing: Pluggable Design
Compliance: EN 50539-11:2013+A1:2014
UL 1449 4th Edition

Technical Data

ProTec T2-xxxxPV-3+0(-R)		1100	1500
IEC Electrical			
Maximum Continuous Operating DC Voltage	U_{CPV}	1100 V	1500 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	
Maximum Discharge Current (8/20 µs)	I_{max}	40 kA	30 kA
Total Discharge Current	I_{Total}	50 kA	40 kA
Voltage Protection Level	U_p	3800 V	5000 V
Response Time	t_A	< 25 ns	
Short-Circuit Current Rating	I_{SCPV}	11 kA	
Number of Ports		1	
UL Electrical			
Maximum Permitted DC Voltage	V_{pvdc}	1100 V	1500 V
Voltage Protection Rating	VPR	2500 V	4000 V
Nominal Discharge Current (8/20 µs)	I_n	20 kA	
Short-Circuit Current Rating	SCCR	50 kA	65 kA
Mechanical & Environmental			
Operating Temperature Range	T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Operating Humidity	RH	5%...95%	
Altitude (max)		13123 ft [4000 m]	
Terminal Screw Torque	M_{max}	39.9 lbf·in [4.5 Nm]	
Conductor Cross Section (max)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)	
		35 mm² (Solid, Stranded) / 25 mm² (Flexible)	
Mounting		35 mm DIN Rail, EN 60715	
Degree of Protection		IP 20 (built-in)	
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0	
Thermal Protection		Yes	
Operating State / Fault Indication		Green Flag / Not Green Flag	
Remote Contacts (RC)		Optional	
RC Switching Capacity		AC: 250 V / 1 A, 125 V / 1 A; DC: 48 V / 0.5 A, 24 V / 0.5 A, 12 V / 0.5 A	
RC Conductor Cross Section (max)		16 AWG (Solid) / 1.5 mm² (Solid)	
Order Information			
Order Code		**1100**	**1500**
ProTec T2-xxxxPV-3+0		59.0292	59.0295
ProTec T2-xxxxPV-3+0-R (with remote contacts)		59.0293	59.0296
ProTec T2-550PV-P		59.0291	-
ProTec T2-750PV-P		-	59.0294

ProTec T2-PV-3+0

Internal Configuration

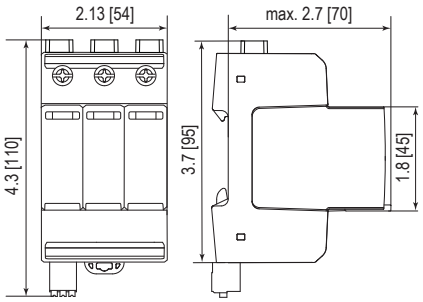


Legend

⏚ *Ground*

RC Remote Contacts Optional

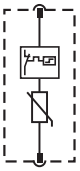
Dimensions & Packaging



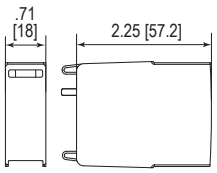
Dimensions & Packaging			
ProTec T2-xxxxPV-3+0		**1100**	**1500**
Single Unit Weight	pounds	.874	.979
	grams	396	444
ProTec T2-xxxxPV-3+0-R		**1100**	**1500**
Single Unit Weight	pounds	.896	1.001
	grams	406	454
Single Unit DIN 43880 Dimension		3 TE	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Minimum Order Quantity		5 Units	

Plug Internal Configuration

ProTec T2-XXXPV-P



Dimensions & Packaging



Dimensions & Packaging			
ProTec T2-xxxPV-P		**550**	**750**
Single Unit Weight	pounds	.157	.192
	grams	71	87
Single Unit DIN 43880 Dimension		1 TE	
Packaging Dimensions (HxWxL)		4.3 x 4.5 x 13.8" [109 x 115 x 352 mm]	
Minimum Order Quantity		24 Units	

RoHS COMPLIANT

Applicable connection configurations can be found beginning on page 222.

inches
[mm]

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

ProTec DMDR, ProTec DMG & DMGR
ProLed 275
MPE Mini & MPE Mini LED

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.

RoHS COMPLIANT CE

DC Modular Multi-pole SPD

ProTec DMDR 20 Series

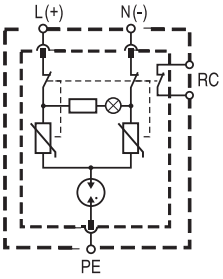
Class III•Type 3

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 °F to +185 °F [-40 °C to +85 °C]			
Permissible Humidity	RH	5%...95%			
Terminal Screw Torque	M_{max}	4.5 lbf·in [0.5 Nm]			
Conductor Cross Section		10 AWG (Solid, Stranded) / 12 AWG (Flexible)			
		6mm² (Solid, Stranded) / 4mm² (Flexible)			
Mounting		35mm DIN Rail, EN 60715			
Degree Of Protection		IP 20 (built-in)			
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

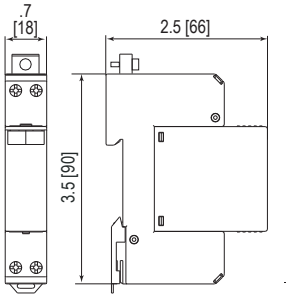
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

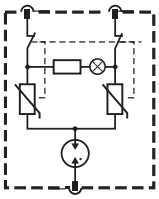
Dimensions & Packaging



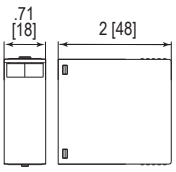
Dimensions & Packaging					
ProTec DMDR 20/xxx		**24**	**48**	**60**	**120**
Single Unit Weight	pounds [grams]	.211 [96]			
Single Unit DIN 43880 Dimension		1 TE			
Packaging Dimensions (H × W × L)		4.2 × 3 × .9" [109 × 77 × 24 mm]			
Minimum Order Quantity		12 Units			

Module Internal Configuration

Module ProTec DMDR 20/xxx



Dimensions & Packaging



Dimensions & Packaging					
Module ProTec DMDR 20/xxx		**24**	**48**	**60**	**120**
Single Unit Weight	pounds [grams]	.070 [32]			
Single Unit DIN 43880 Dimension		1 TE			
Packaging Dimensions (H × W × L)		3.8 × 3 × 4.3" [98 × 77 × 110 mm]			
Minimum Order Quantity		12 Units			

RoHS COMPLIANT CE

Applicable connection configurations can be found on page 223.

inches
[mm]

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

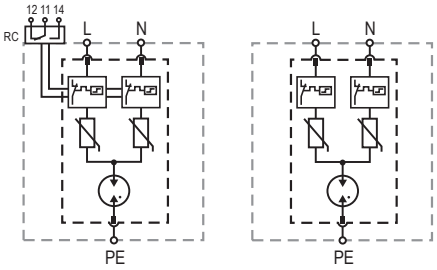
Technical Data

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 °F to +185 °F [-40 °C to +85 °C]
Permissible Humidity		RH	5%...95%
Terminal Screw Torque	(L, N)	M_{max}	4.4 lbf·in [0.5Nm]
Terminal Screw Torque	(PE)	M_{max}	26.5 lbf·in [3.0Nm]
Conductor Cross Section	(L, N)		10 AWG (Solid, Stranded) / 12 AWG (Flexible)
			6mm² (Solid, Stranded) / 4mm² (Flexible)
Conductor Cross Section	(PE)		2 AWG (Solid, Stranded) / 4 AWG (Flexible)
			35mm² (Solid, Stranded) / 25mm² (Flexible)
Mounting			35mm DIN Rail, EN 60715
Degree of Protection			IP 20 (built-in)
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 (Solid) / 16 AWG (Solid)
RC Terminal Screw Torque			2.2 lbf·in [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)

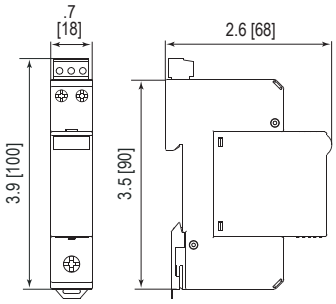
Internal Configuration



Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts Optional

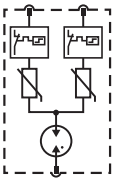
Dimensions & Packaging



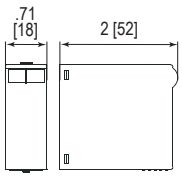
Dimensions & Packaging		
ProTec DMG 20/xxx (2+0)		**320**
Single Unit Weight	pounds [grams]	0.260 [118]
ProTec DMGR 20/xxx (2+0)		**320**
Single Unit Weight	pounds [grams]	0.271 [123]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (H × W × L)		4.2 × 3 × .9" [109 × 77 × 24 mm]
Minimum Order Quantity		12 Units

Module Internal Configuration

Module ProTec DMG(R) 20/xxx



Dimensions & Packaging



Dimensions & Packaging		
Module ProTec DMG(R) 20/xxx		**320**
Single Unit Weight	pounds [grams]	0.112 [51]
Single Unit DIN 43880 Dimension		1 TE
Packaging Dimensions (H × W × L)		3.8 × 3 × 4.3" [98 × 77 × 110 mm]
Minimum Order Quantity		12 Units

RoHS COMPLIANT CE

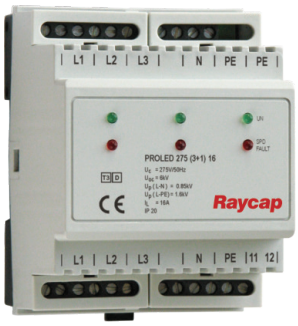
Applicable connection configurations can be found on page 223.

inches
[mm]

Compact SPD

ProLed 275 (3+1) 16 A

Class III • Type 3



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

Technical Data

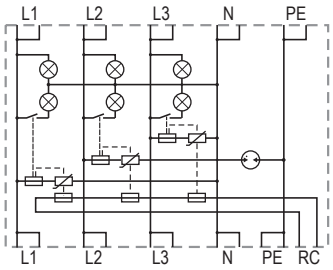
ProLed 275 (3+1) 16 A			275
Electrical			
Nominal AC Voltage (50/60 Hz)		U_o	230 V
Maximum Continuous Operating Voltage (AC)		U_c	275 V
Maximum Rated Load Current		I_L	16 A
Open Circuit Voltage of the Combination Wave Generator (1.2/50 µs)		U_{oc}	6 kV
Short-Circuit Current of the Combination Wave Generator (8/20 µs)		I_{cw}	3 kA
Voltage Protection Level	(L-N)	U_p	1.2 kV
	(N-PE)	U_p	1.8 kV
Response Time	(L-N)/(N-PE)	t_A	< 25 ns / < 100 ns
Back-Up Fuse (if mains > 16 A)			MCB/B 16 A
Short-Circuit Current Rating (50 Hz)		I_{SCCR}	1.5 kA
TOV Withstand 5s		U_T	337 V
Number of Ports			2
Mechanical & Environmental			
Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]
Permissible Humidity		RH	5%...95%
Conductor Cross Section			14 AWG (Stranded) / 2.5 mm² (Stranded)
Mounting			35 mm DIN Rail, EN 60715
Degree of Protection			IP 20 (built-in)
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0
Thermal Protection			Yes
Operation Status Fault Indication			Green / Red LED
Remote Contacts (RC)			Yes
RC Switching Capacity			10 A/230 V AC
RC Terminal Cross Section (max)			14 AWG (Stranded) / 2.5 mm² (Stranded)
RC Terminal Screw Torque			4.4 lbf·in [0.5 Nm]
Order Information			
Order Code			**275**
ProLed 275 (3+1) 16 A			130 304

ProLed 275 (3+1) 16 A

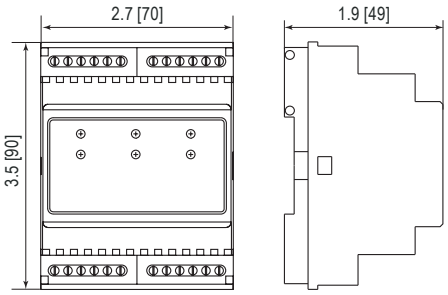
Internal Configuration

Legend

L Line
N Neutral
PE Protective Earth
RC Remote Contacts



Dimensions & Packaging



Dimensions & Packaging	
ProLed 275 (3+1) 16 A	**275**
Single Unit Weight pounds [grams]	0.361 [164]
Single Unit DIN 43880 Dimension	4 TE
Packaging Dimensions (H × W × L)	4.2 × 3 × 3.1" [109 × 77 × 80 mm]
Minimum Order Quantity	3 Units

RoHS COMPLIANT CE

Applicable connection configurations can be found on page 224.

inches
[mm]

Compact Multi-pole SPD

MPE Mini & MPE Mini LED

Class III • Type 3

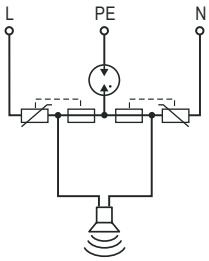
Location of Use: Cable Ducts & Wiring Outlets
Network Systems: TN-S
Mode of Protection: L-PE, L-N, N-PE
Surge Ratings: U_{oc}/I_{cw}= 6kV/3kA
IEC/EN Category: Class III / Type 3
Protective Elements: MOV and GDT
Safety: Buzzer; LED
Housing: Compact Design
Compliance: IEC 61643-11:2011
EN 61643-11:2012

Technical Data

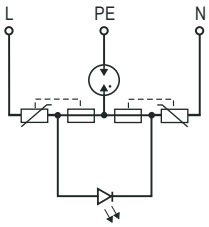
			MPE-Mini	MPE-Mini LED
Electrical				
Nominal AC Voltage (50/60Hz)		U_o	230V	
Maximum Continuous Operating Voltage (AC)		U_c	275V	
Open Circuit Voltage of the Combination Wave Generator (1.2/50µs)		U_{oc}	6kV	
	(L+N-PE)	$U_{oc\ total}$	10kV	
Short-Circuit Current of the Combination Wave Generator (8/20µs)		I_{cw}	3kA	
Voltage Protection Level	(L-N)	U_p	1.5kV	
	(L-PE)/(N-PE)	U_p	1.7kV	
Response Time		t_A	< 100ns	
Back-Up Fuse (if mains > 16A)			MCB/B16A	
Short-Circuit Current Rating		I_{SCCR}	1kA	
TOV withstand 5s		U_T	337V	
Number of Ports			1	
Mechanical & Environmental				
Temperature Range		T_a	-40 °F to +185 °F [-40 °C to +85 °C]	
Permissible Humidity		RH	5%...95%	
Conductor Cross Section			17 AWG (Stranded) / 1.0mm² (Stranded)	
Mounting			Cable Ducts	
Degree of Protection			IP 20 (built-in)	
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

Internal Configuration

MPE-Mini



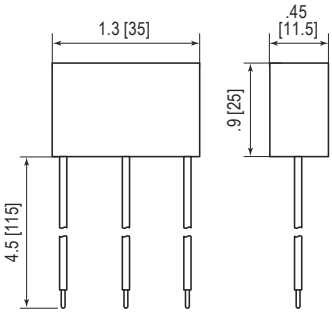
MPE-Mini LED



Legend

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

Dimensions & Packaging



Dimensions & Packaging		
MPE-Mini & MPE-Mini LED		
Single Unit Weight	pounds [grams]	0.114 [52]
Packaging Dimensions (H × W × L)		12 × 4.5 × 3.2" [305 × 116 × 83 mm]
Minimum Order Quantity		30 Units

RoHS COMPLIANT CE

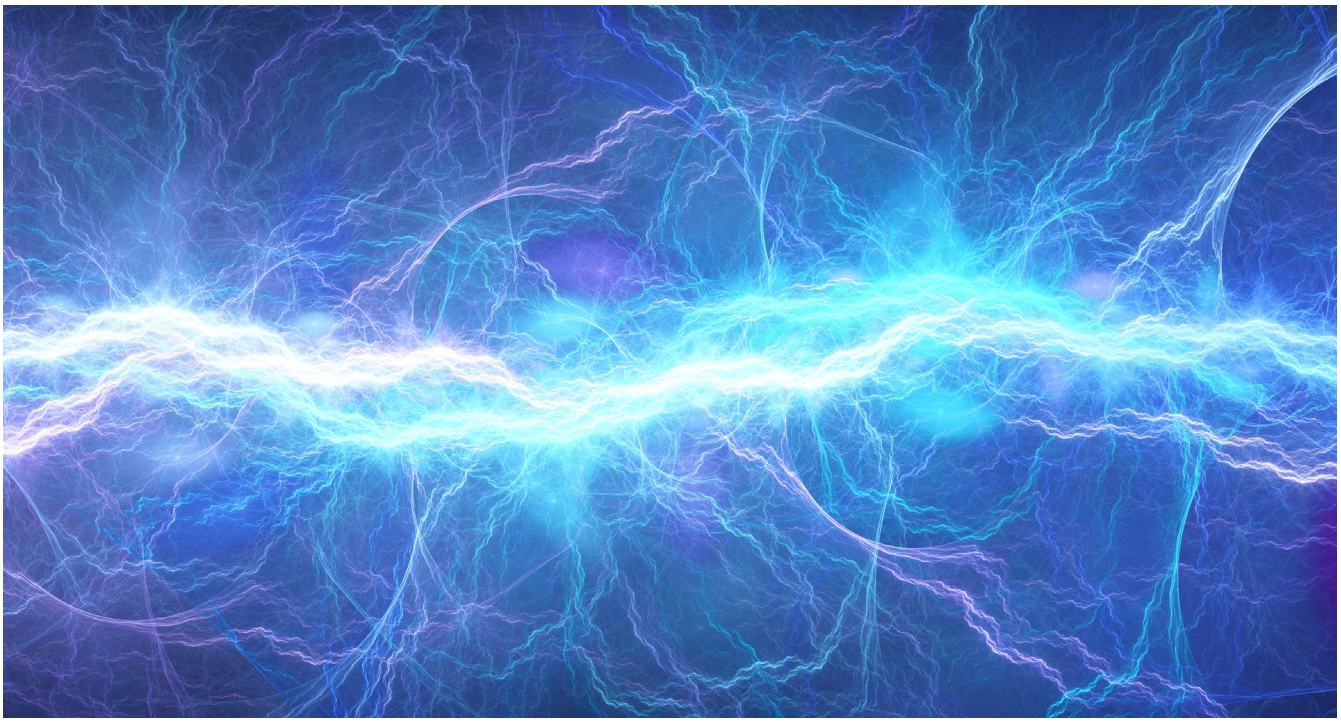
inches
[mm]

Overhead Power Lines
Surge Protective Devices SPDs

ProTec AQS

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

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



RoHS COMPLIANT CE

Compact Single Pole SPD

ProTec AQS 40 Series

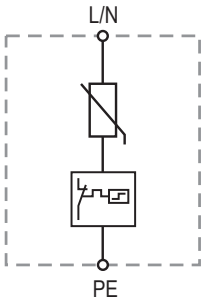
Class II•Type 2

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	< 1.3 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 °F to +185 °F [-40 °C to +85 °C]			
Permissible Humidity	RH	5%...95%			
Connection Screw Torque	M_{max}	30.9 lbf·in [3.5 Nm]			
Connection Thread	(L/N)	M8			
Conductor Cross Section (max)	(PE)	6 mm² (Solid, Stranded) / 10 AWG (Solid, Stranded)			
Mounting		Connection Accessories			
Degree of Protection		up to IP 67 (built-in)			
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

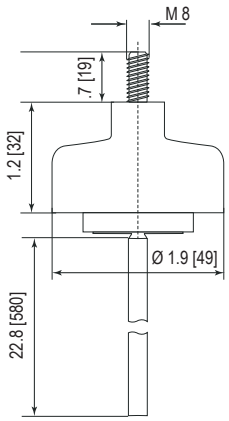
Internal Configuration



Legend

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

Dimensions & Packaging



Dimensions & Packaging					
ProTec AQS 40/xxx		**150**	**275**	**320**	**440**
Single Unit Weight	pounds	.246	.277	.286	.295
	grams	122	126	130	134
Packaging Dimensions (H × W × L)		15.3 × 14.9 × 11" [390 × 380 × 280 mm]			
Minimum Order Quantity		100 Units			

RoHS COMPLIANT CE

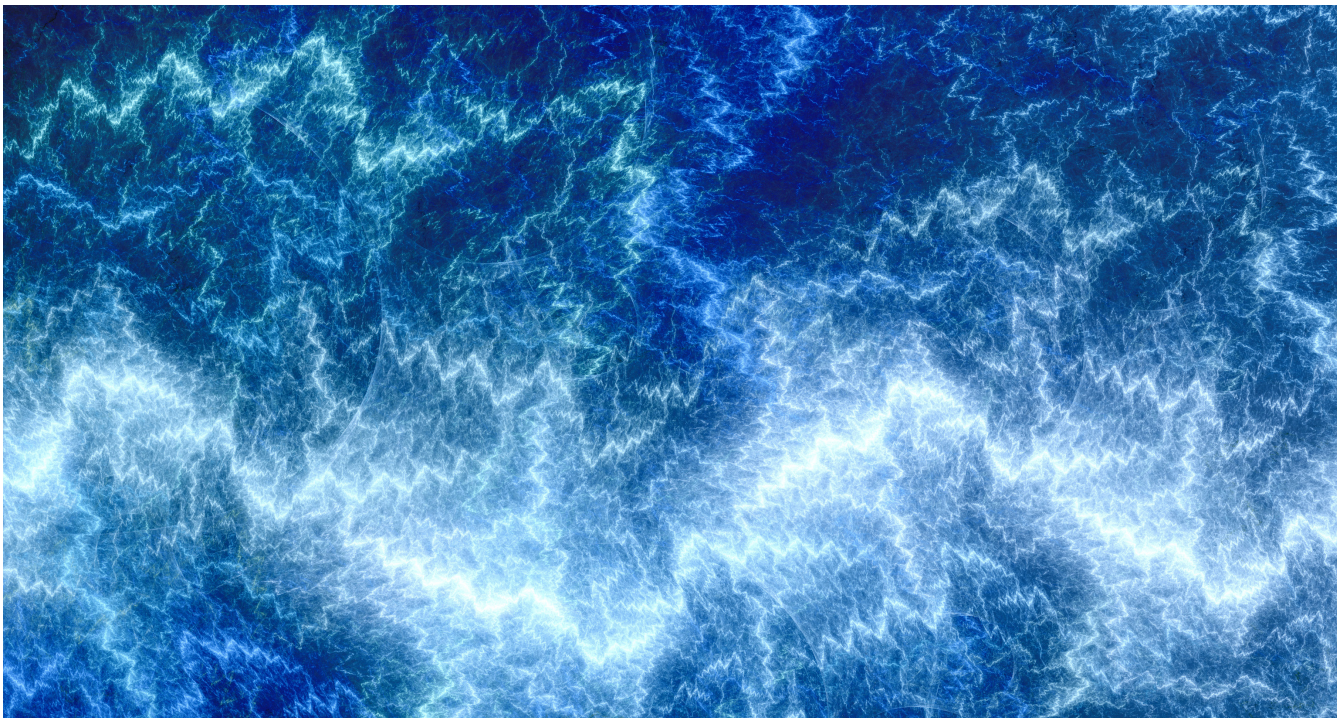
inches
[mm]

Isolating Spark Gap (ISG)
Surge Protective Devices SPDs

EPZ 100

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

The EPZ is recommended for use in applications such as lightning protection grounding, where circumstances may dictate that a "clean" signal ground can not be directly connected to a "dirty" power system ground. It has wide application in the petrochemical industry for the protection of oil and gas pipeline insulating flanges from flash-overs during direct or nearby lightning discharges or when ground faults of nearby power transmission lines can cause large potential gradients across these flanges.



The EPZ is available in a hermetically sealed enclosure for direct burial applications.

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

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	-40 °F to +158 °F [-40 °C to +70 °C]
Nominal Outer Diameter		1.102" [28 mm]
Nominal Length		5.511" [140 mm]
Length With Cables (approx)		39.370" [1 m]
Length (approx)		17.716" [450 mm]
Cross Sectional Area		6 AWG [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 (built-in)
Housing Material		Plastic Sheath
Location		Indoor/Outdoor

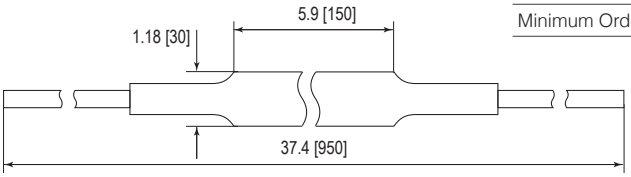
Specifications for Use		
	Environmental	Local heating by pipelines and other hot surfaces in vicinity of the installation of the product must be considered by the installer to ensure that specified maximum ambient temperature is not exceeded.
	Wiring	Connection of the interal cables must be in accordance 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

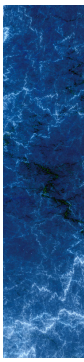
EPZ 100

Internal Configuration

Dimensions & Packaging



Dimensions & Packaging		
EPZ 100/xxx		**350**
Single Unit Weight	pounds [grams]	1.103 [500]
Packaging Dimensions (H × W × L)		13.7 × 4.9 × 2.1" [350 × 125 × 55 mm]
Minimum Order Quantity		27 Units



RoHS COMPLIANT CE

inches
[mm]

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.

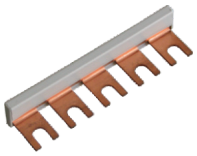
Fixing cable and fixing hooks are used as fastening devices for ProTec AQS overhead power lines.

RoHS COMPLIANT CE

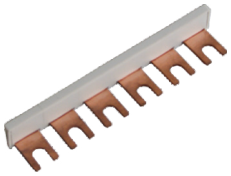
ProBar	1-2
Mechanical	
Number of Poles	2
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 338

ProBar	1-3
Mechanical	
Number of Poles	3
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 339

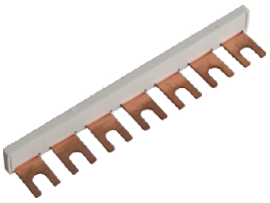
ProBar	1-4
Mechanical	
Number of Poles	4
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 340



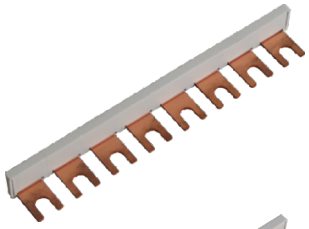
ProBar	1-5
Mechanical	
Number of Poles	5
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 341



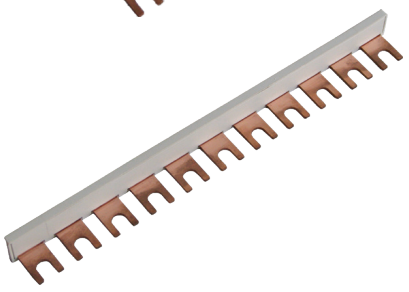
ProBar	1-6
Mechanical	
Number of Poles	6
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 342



ProBar	1-7
Mechanical	
Number of Poles	7
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 343



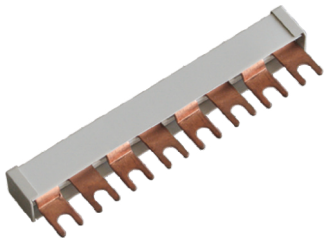
ProBar	1-8
Mechanical	
Number of Poles	8
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 344



ProBar	1-11
Mechanical	
Number of Poles	11
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 345

Modular Wiring Systems
ProBar Busbar

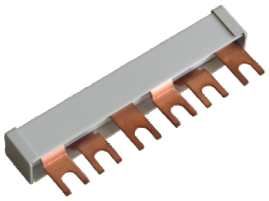
Two Phase Series



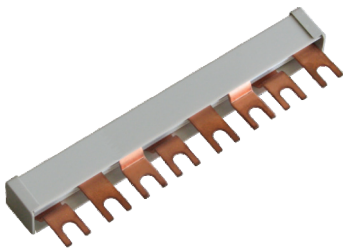
ProBar	2-8
Mechanical	
Number of Poles	8
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 346

Modular Wiring Systems
ProBar Busbars

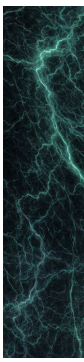
Three Phase Series



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



ProBar	3-8
Mechanical	
Number of Poles	8
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 348



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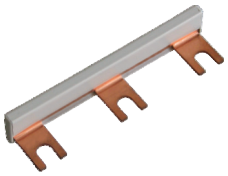
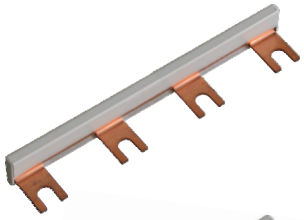
PB 1 (2+0)	**1 (2+0)**
Mechanical	
Number of Poles	2
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 349

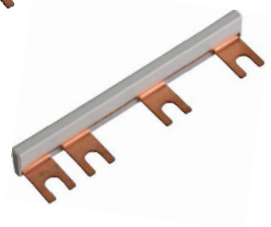


PB 1 (3+0)	**1 (3+0)**
Mechanical	
Number of Poles	3
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 350

PB 1 (2+1)	**1 (2+1)**
Mechanical	
Number of Poles	2
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 351



PB 1 (4+0)	**1 (4+0)**
Mechanical	
Number of Poles	4
Busbar Cross Section	6 AWG / 16 mm²
Order Information	
Ordering Code	501 352



PB 1 (3+1)	**1 (3+1)**
Mechanical	
Number of Poles	4
Busbar Cross Section	6 AWG / 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

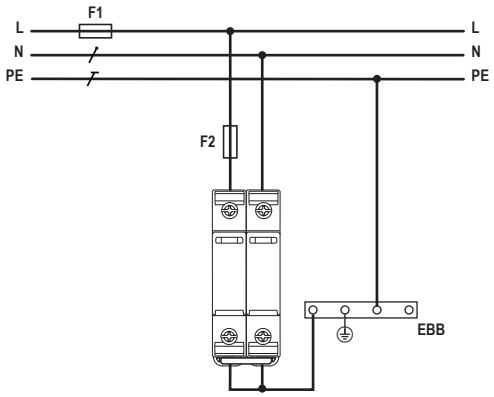
RoHS COMPLIANT CE

Connection Configurations

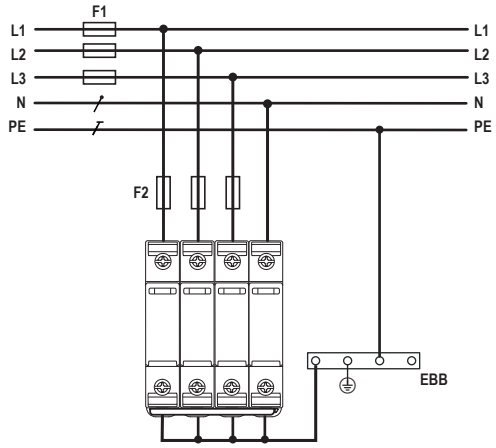
ProTec T1 & ProTec T1-R
ProTube T1
ProTec T1H & ProTec T1H-R
ProTube T1H
ProTec T1HS & ProTec T1HS-R
ProTec ZP T1H-R
ProBloc B & ProBloc BR
ProBloc B
SafeBloc B & SafeBloc BR
SafeTube B
ProTec T2 & ProTec T2-R
ProTube T2
ProTec T2H & ProTec T2H-R
ProTube T2H
ProTec T2-ADV & ProTec T2-ADV-R
SafeTec T2 & SafeTec T2-R
SafeTube T2
ProTec T1-PV
ProTec T2-PV
ProTec DMDR
ProTec DMG & DMGR
ProLed 275

RoHS COMPLIANT CE

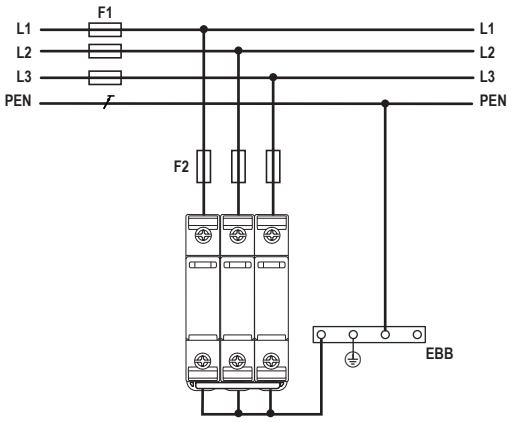
TN-S (Single-phase, 2+0, 1+1)



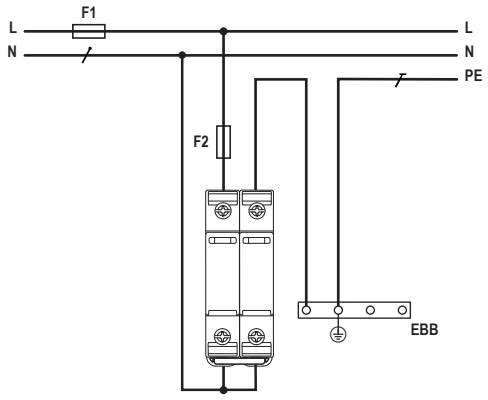
TN-S (Three-phase, 4+0, 3+1)



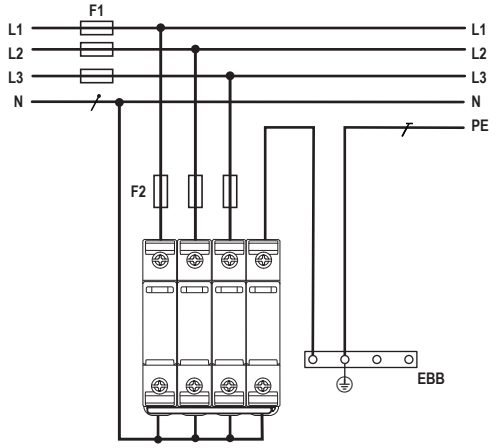
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



/ N Neutral
/ PE Protective Earth
/ PEN Protective Earth & Neutral

Back-up Fuse Isccr = 50 kA

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

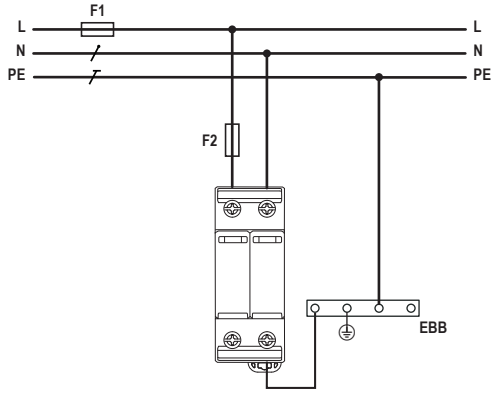
Back-up Fuse Isccr = 25 kA

F1 > 315 A gG → F2 = 315 A gG
F1 ≤ 315 A gG → ~~F2~~

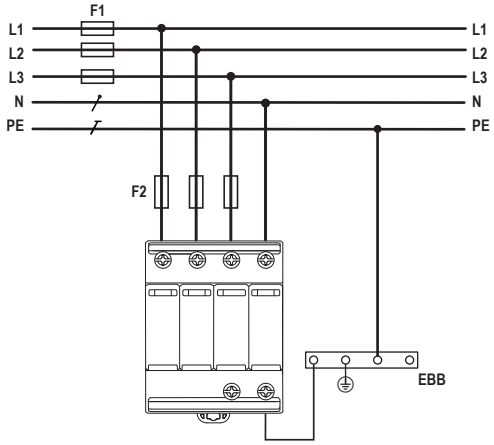
Pluggable Multi-pole SPD Connection Configurations

ProTec T1 & ProTec T1H Series

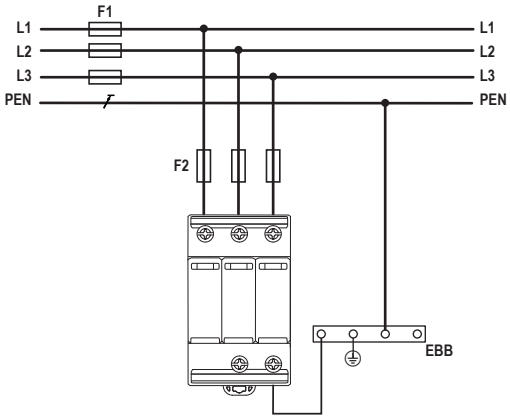
TN-S (Single-phase, 2+0, 1+1)



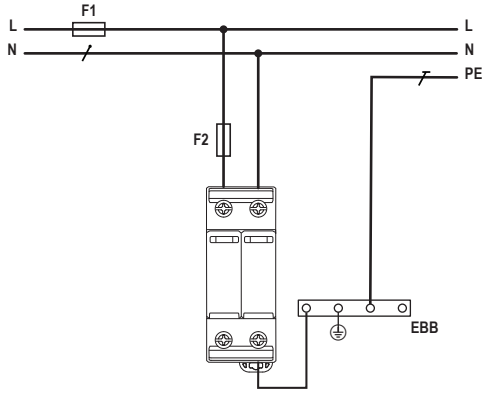
TN-S (Three-phase, 4+0, 3+1)



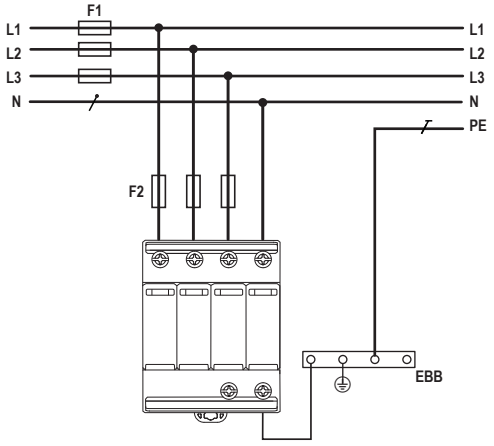
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

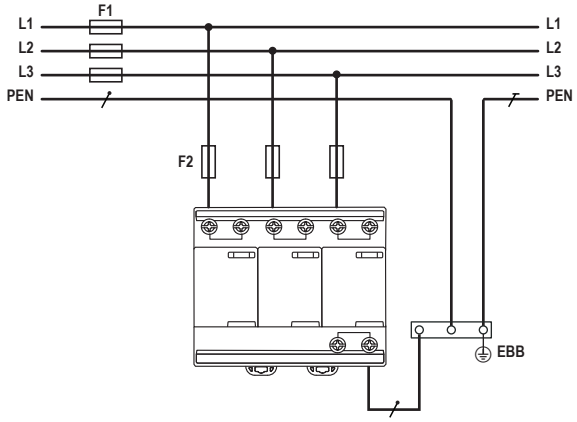
Back-up Fuse Isccr = 50 kA

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

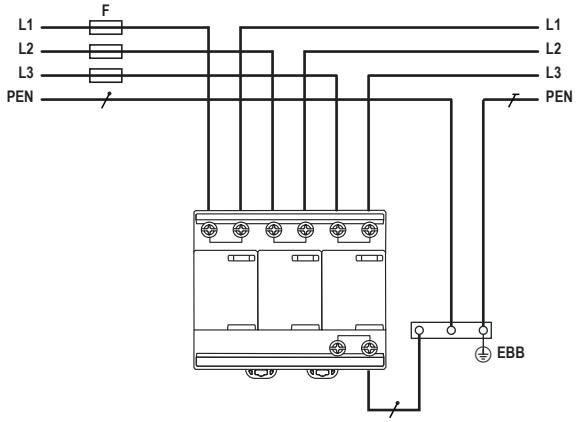
Back-up Fuse Isccr = 25 kA

F1 > 315 A gG → F2 = 315 A gG
F1 ≤ 315 A gG → ~~F2~~

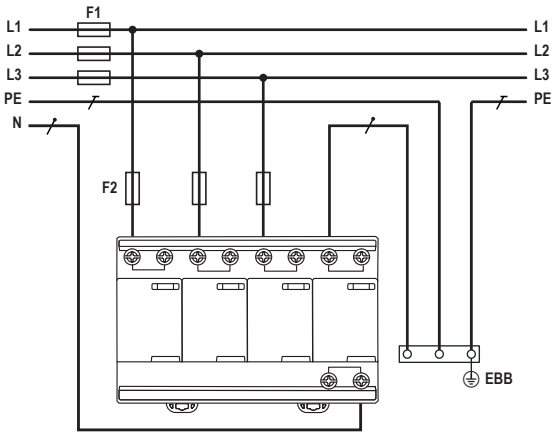
TN-C (Three-phase, 3+0)
T Connection



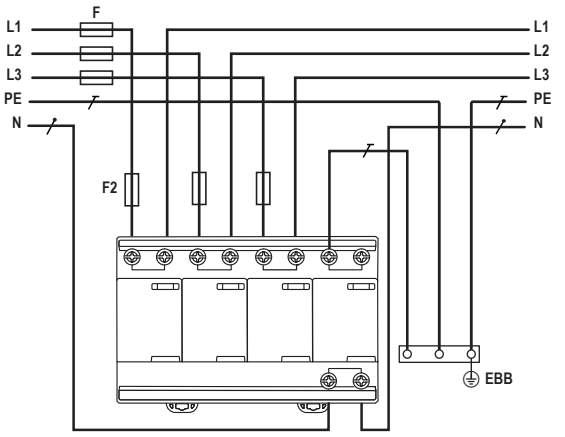
TN-C (Three-phase, 3+0)
V Connection



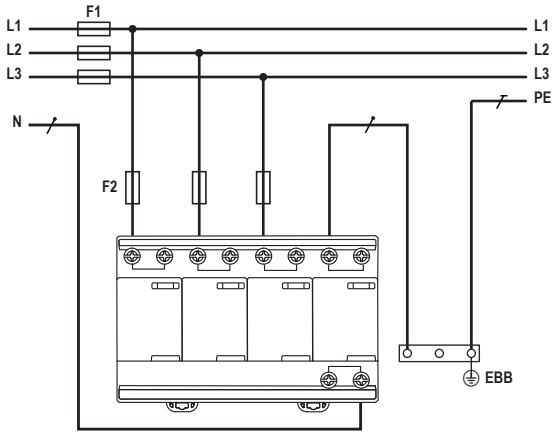
TN-S (Three-phase, 3+1)
T Connection



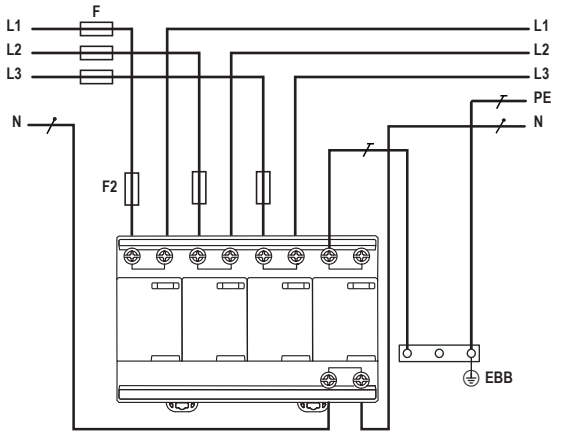
TN-S (Three-phase, 3+1)
V Connection



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



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



N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

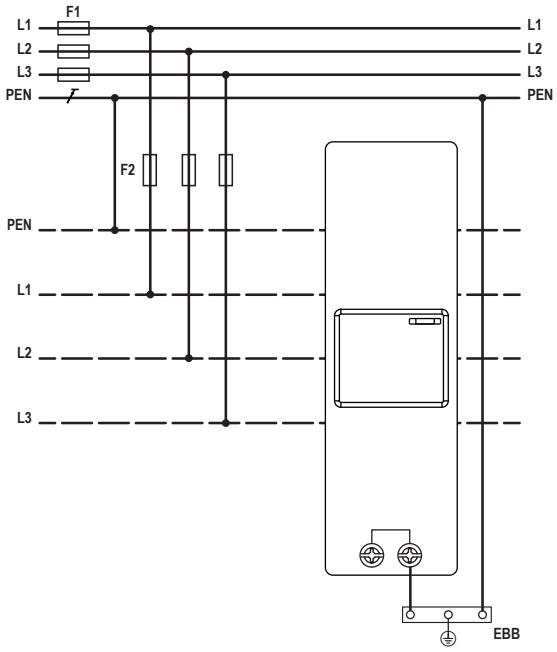
Back-up Fuse

F1 > 315 A gG → F2 = 315 A gG
F1 ≤ 315 A gG → ~~F2~~

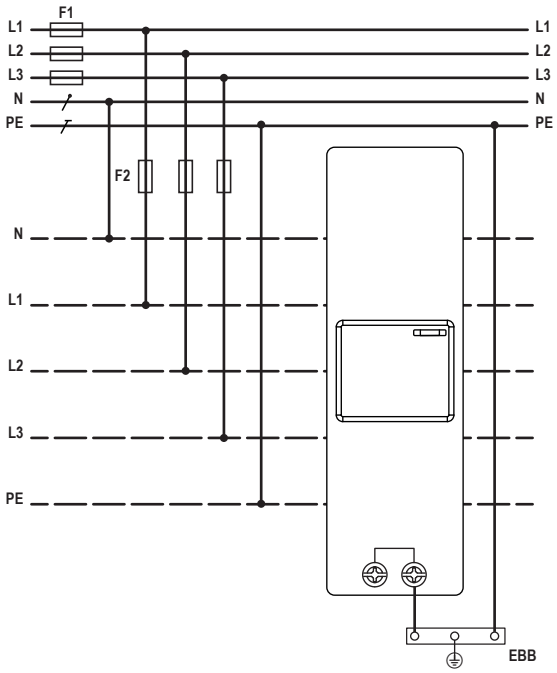
Combined Lightning Current and Surge Arrester

ProTec ZP T1H

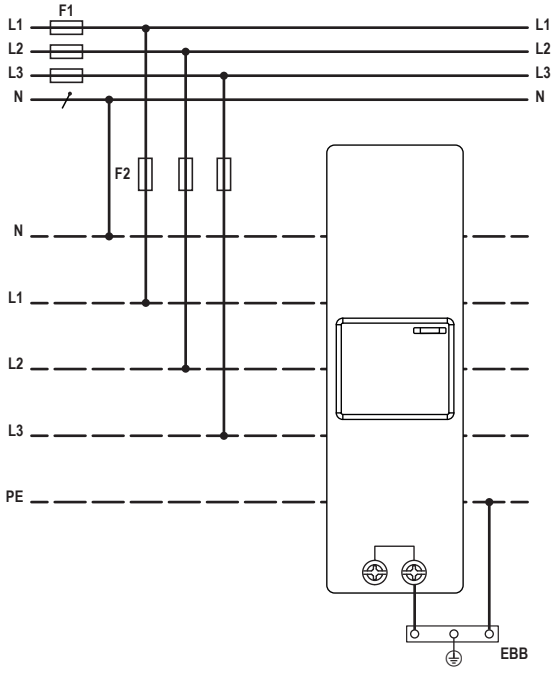
TN-C Connection



TN-S Connection



TT Connection



N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

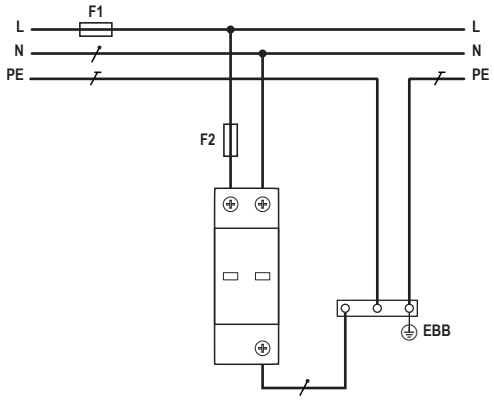
Back-up Fuse Isccr = 50 kA

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

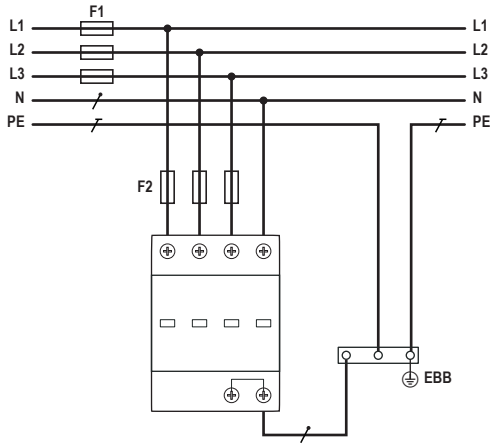
Back-up Fuse Isccr = 25 kA

F1 > 315 A gG → F2 = 315 A gG
F1 ≤ 315 A gG → F2

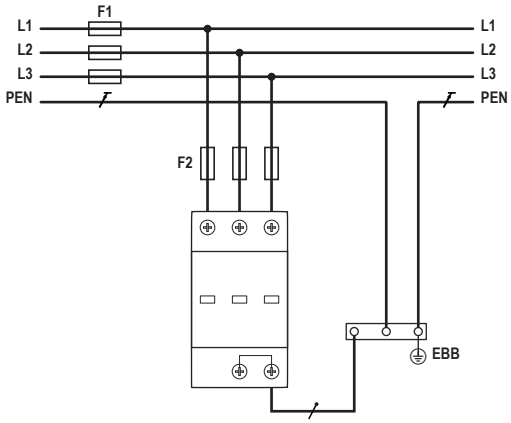
TN-S (Single-phase, 2+0, 1+1)



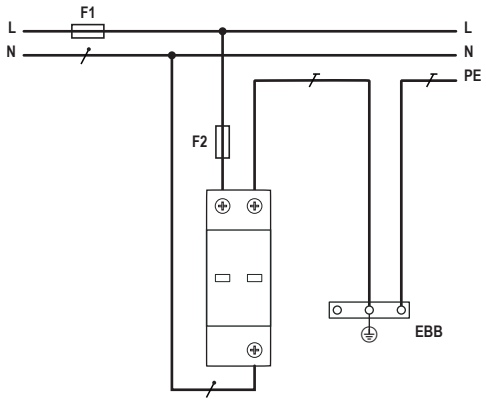
TN-S (Three-phase, 4+0, 3+1)



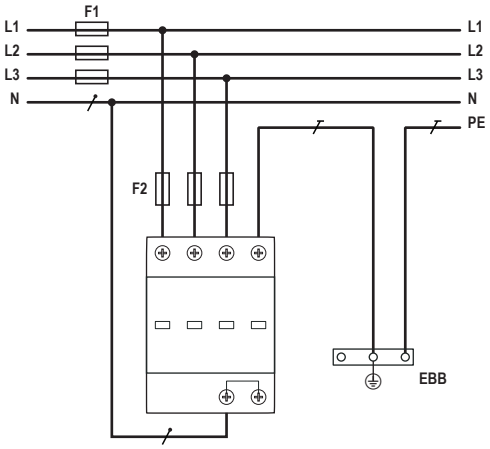
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)

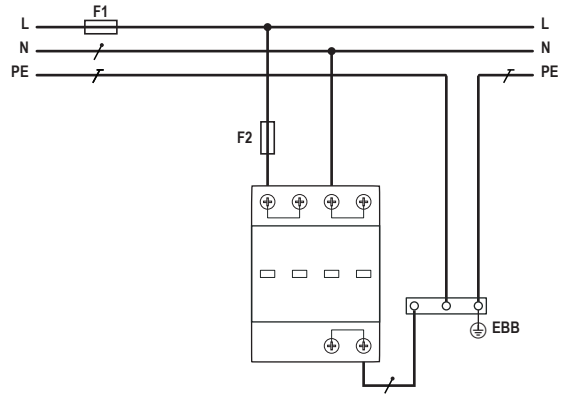


Back-up Fuse

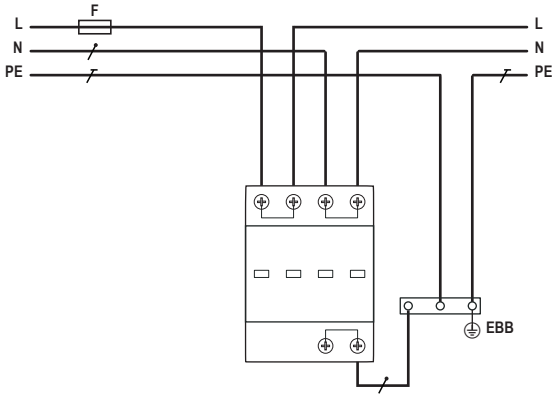
F1 > 250 A gG → F2 = 250 A gG
F1 ≤ 250 A gG → F2
F ≤ 100 A gG

N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

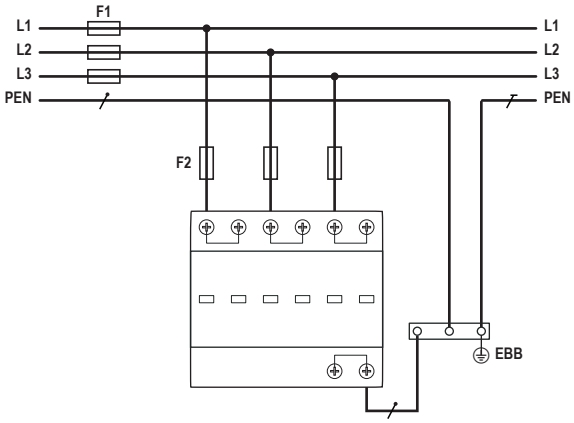
TN-S (Single-phase, 2+0, 1+1)
T Connection



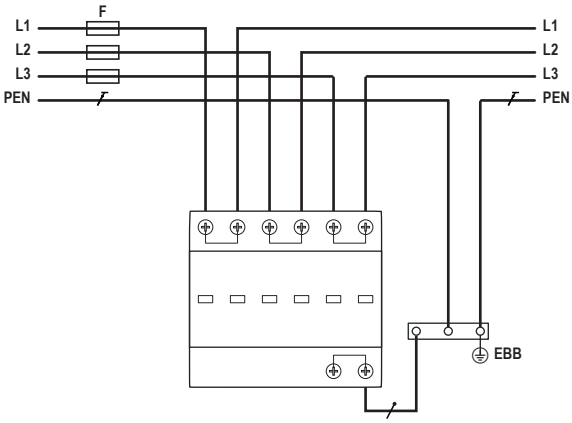
TN-S (Single-phase, 2+0, 1+1)
V Connection



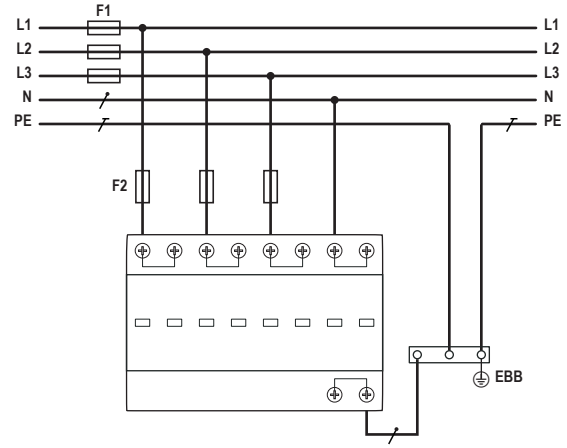
TN-C (Three-phase, 3+0)
T Connection



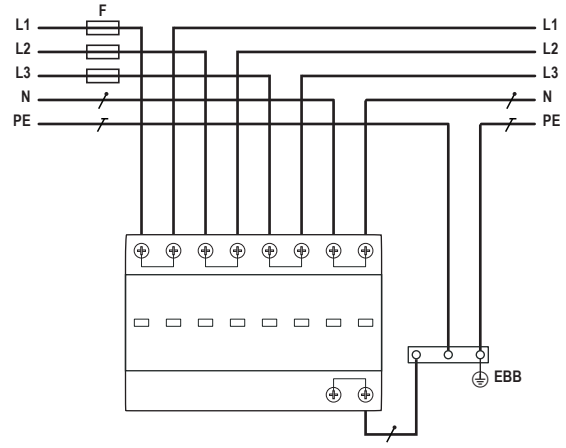
TN-C (Three-phase, 3+0)
V Connection



TN-S (Three-phase, 4+0, 3+1)
T Connection



TN-S (Three-phase, 4+0, 3+1)
V Connection

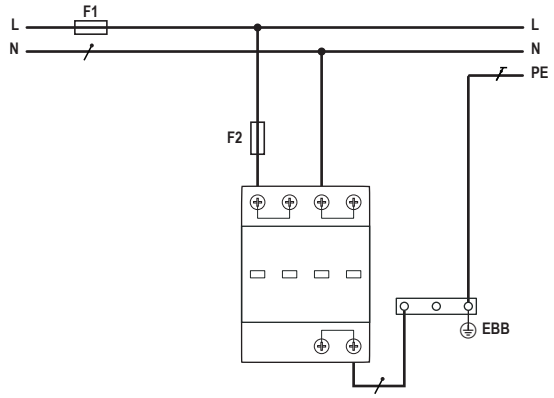


N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

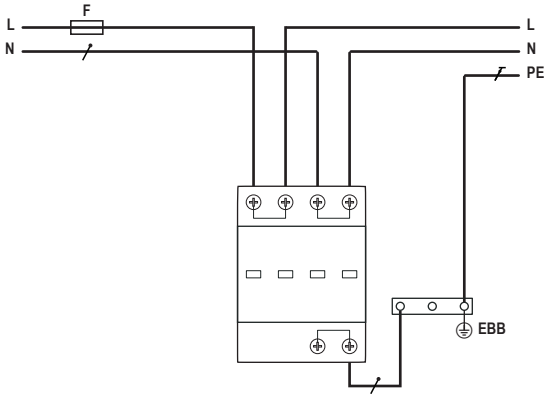
Back-up Fuse

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

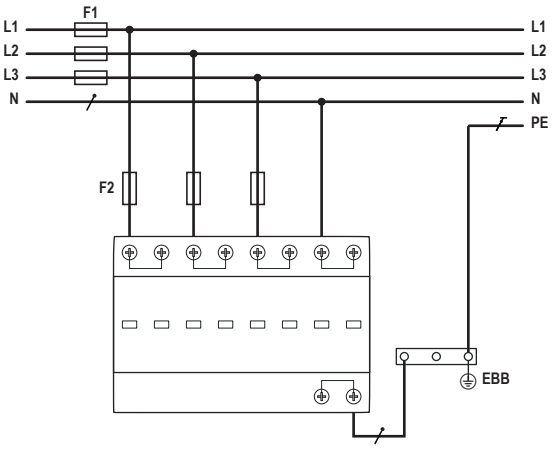
TT (Single-phase, 1+1)
T Connection



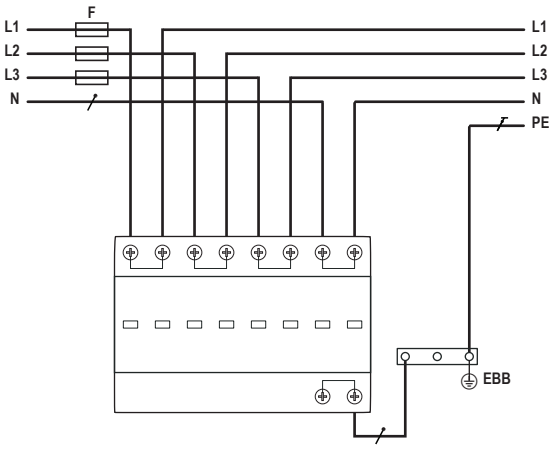
TT (Single-phase, 1+1)
V Connection



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



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

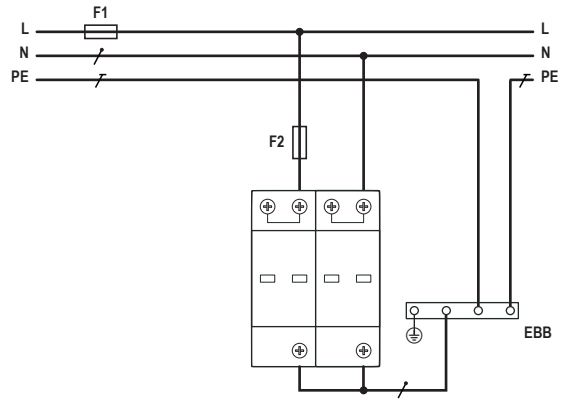


Back-up Fuse

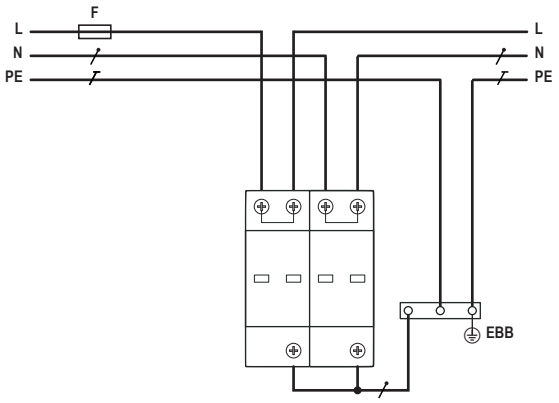
F1 > 250 A gG → F2 = 250 A gG
F1 ≤ 250 A gG → F2
F ≤ 100 A gG

N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

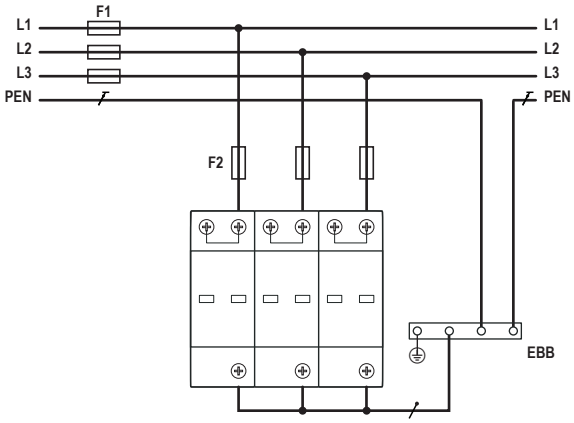
TN-S (Single-phase, 2+0, 1+1)
T Connection



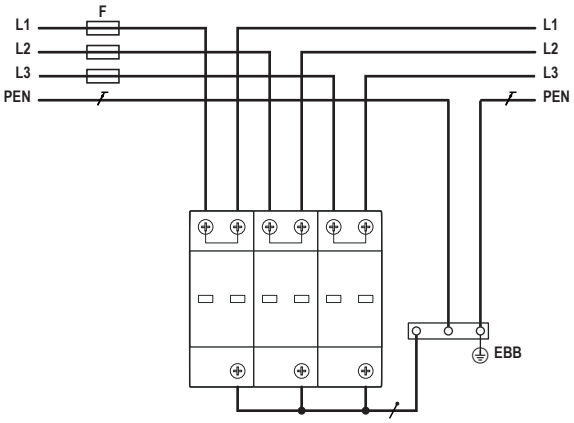
TN-S (Single-phase, 2+0, 1+1)
V Connection



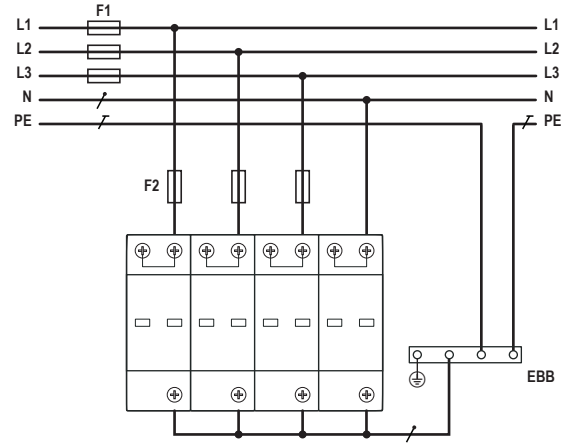
TN-C (Three-phase, 3+0)
T Connection



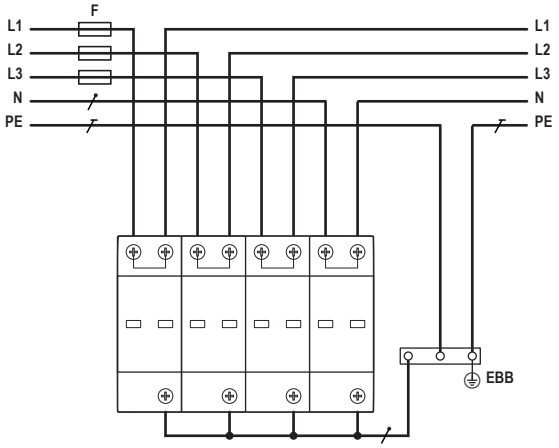
TN-C (Three-phase, 3+0)
V Connection



TN-S (Three-phase, 4+0, 3+1)
T Connection



TN-S (Three-phase, 4+0, 3+1)
V Connection

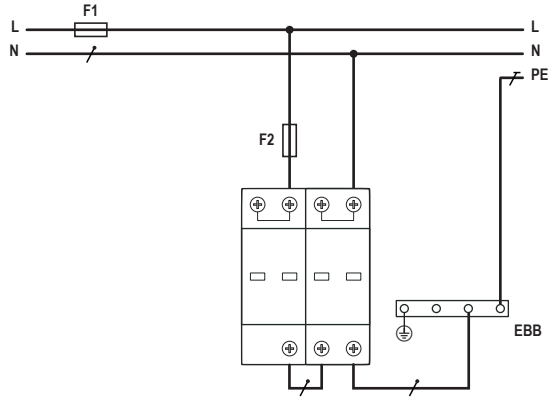


N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

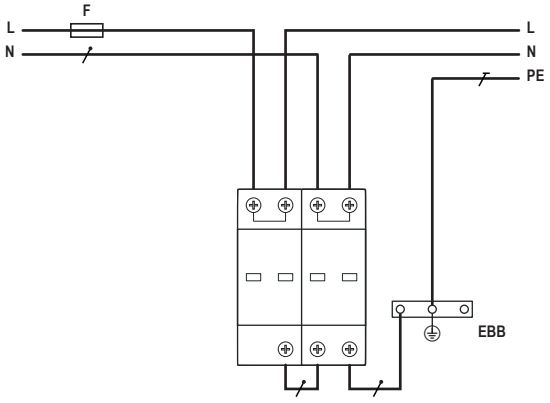
Back-up Fuse

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

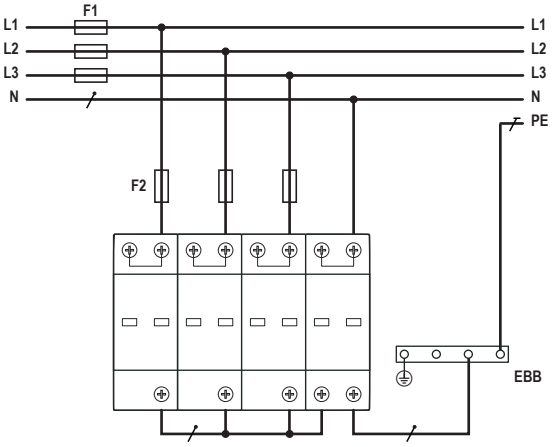
TT (Single-phase, 1+1)
T Connection



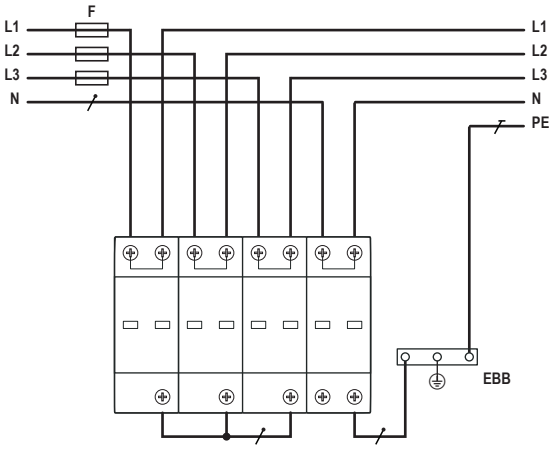
TT (Single-phase, 1+1)
V Connection



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



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

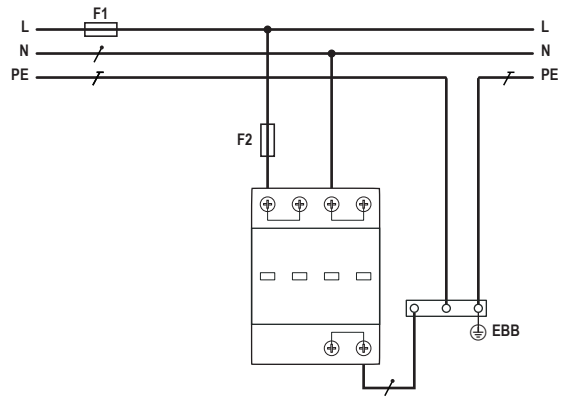


Back-up Fuse

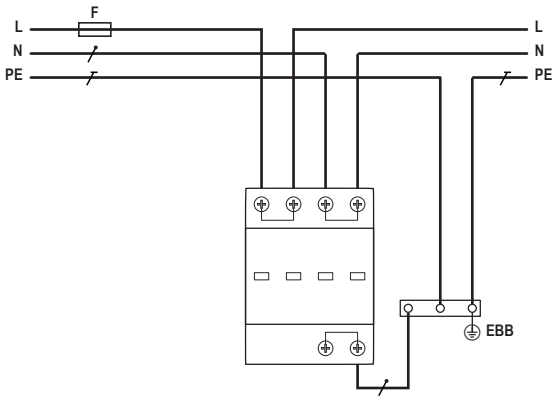
F1 > 250 A gG → F2 = 250 A gG
F1 ≤ 250 A gG → F2
F ≤ 100 A gG

N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

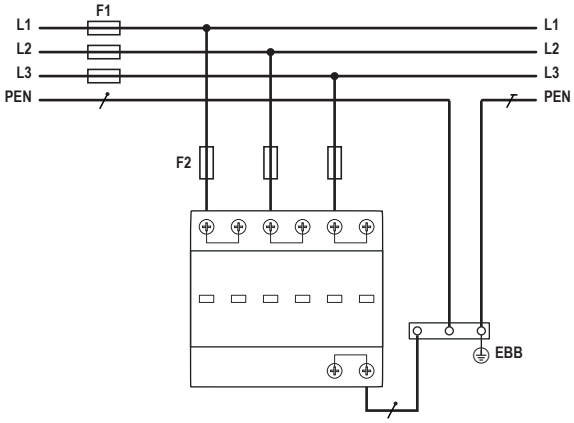
TN-S (Single-phase, 2+0, 1+1)
T Connection



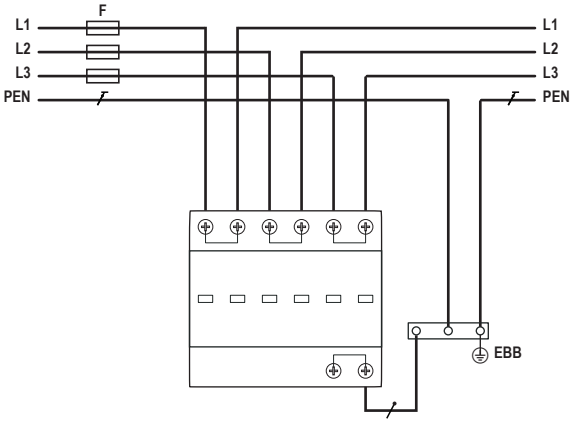
TN-S (Single-phase, 2+0, 1+1)
V Connection



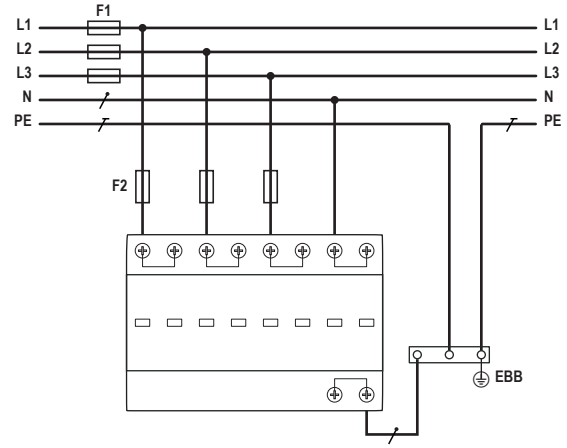
TN-C (Three-phase, 3+0)
T Connection



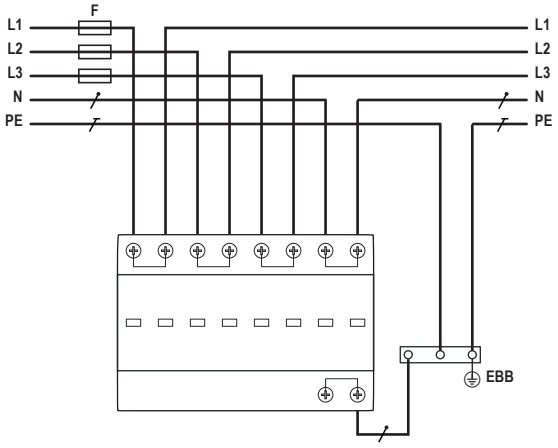
TN-C (Three-phase, 3+0)
V Connection



TN-S (Three-phase, 4+0, 3+1)
T Connection



TN-S (Three-phase, 4+0, 3+1)
V Connection

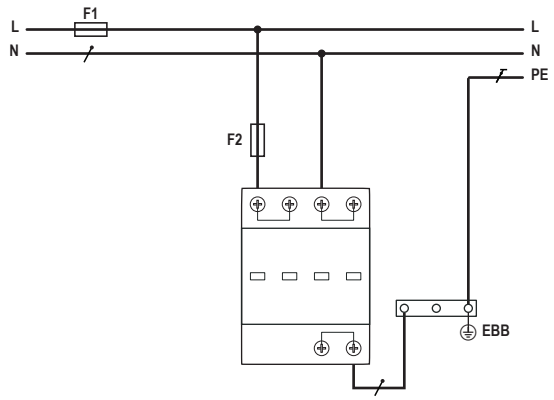


N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

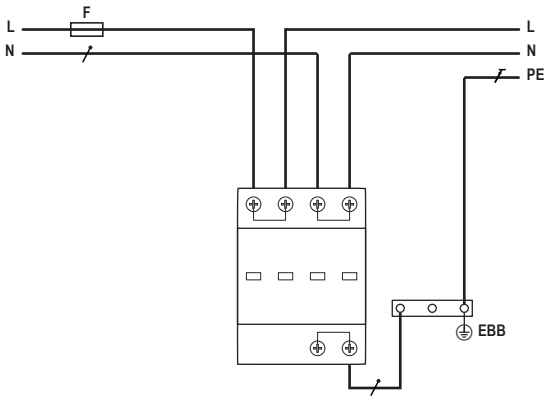
Back-up Fuse

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

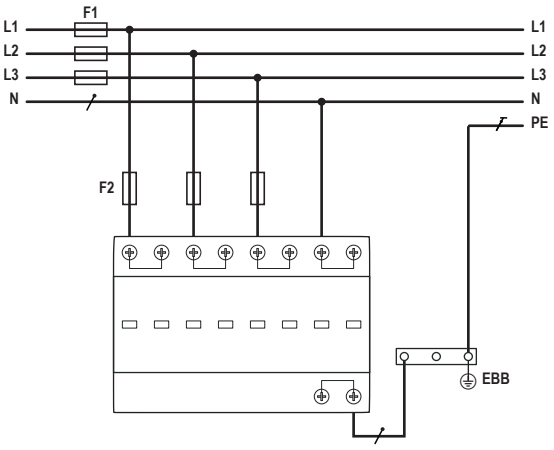
TT (Single-phase, 1+1)
T Connection



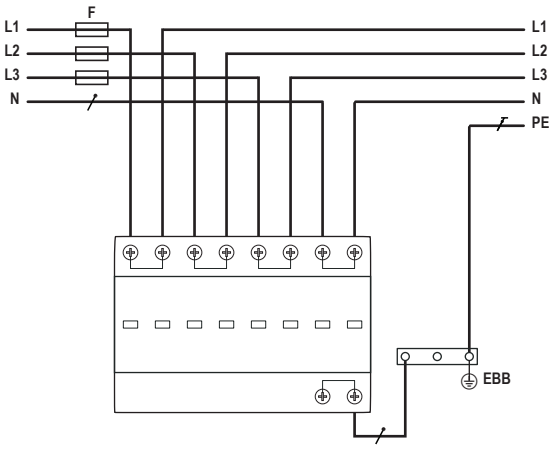
TT (Single-phase, 1+1)
V Connection



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



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

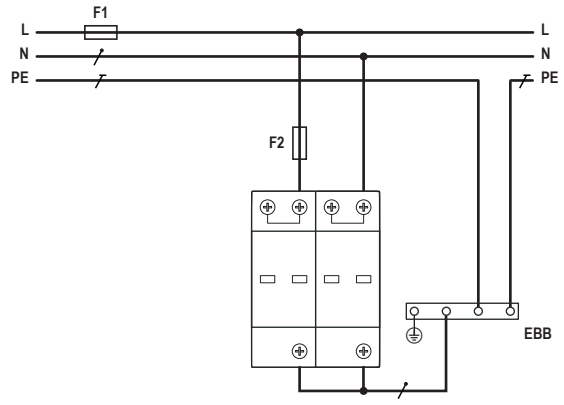


Back-up Fuse

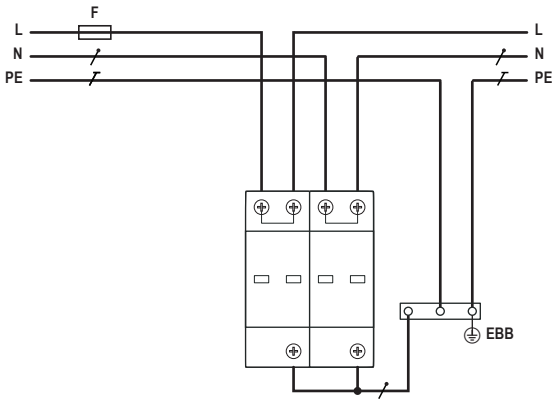
F1 > 250 A gG → F2 = 250 A gG
F1 ≤ 250 A gG → ~~F2~~
F ≤ 100 A gG

N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

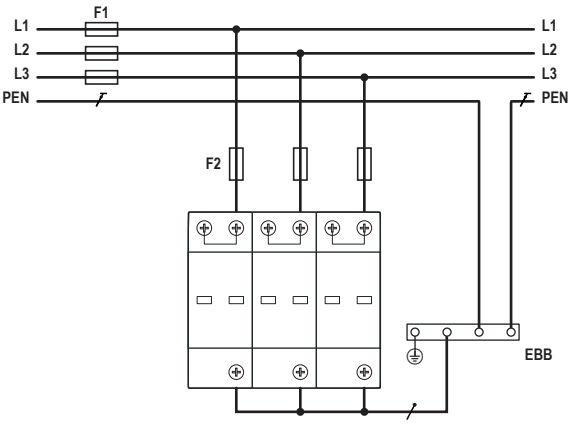
TN-S (Single-phase, 2+0, 1+1)
T Connection



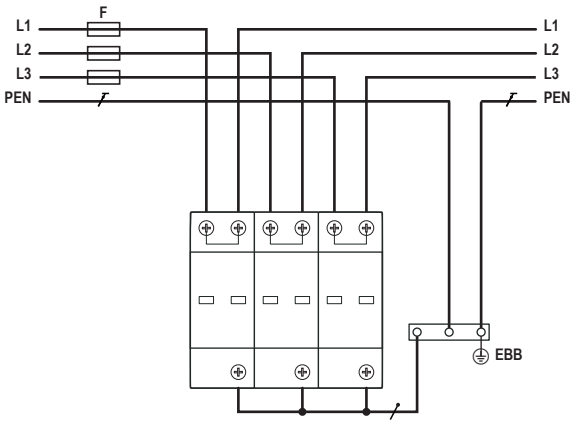
TN-S (Single-phase, 2+0, 1+1)
V Connection



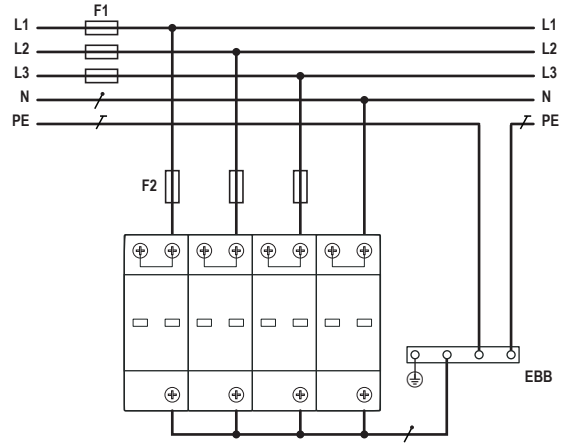
TN-C (Three-phase, 3+0)
T Connection



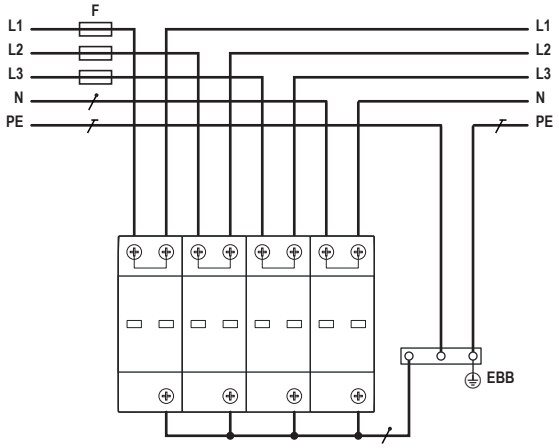
TN-C (Three-phase, 3+0)
V Connection



TN-S (Three-phase, 4+0, 3+1)
T Connection



TN-S (Three-phase, 4+0, 3+1)
V Connection

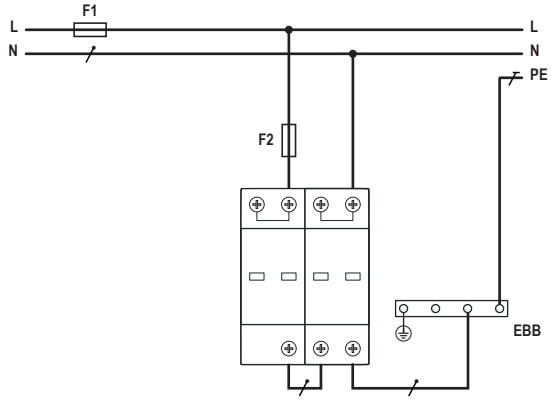


N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

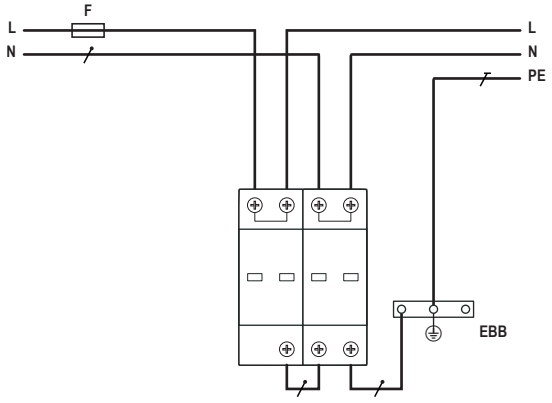
Back-up Fuse

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

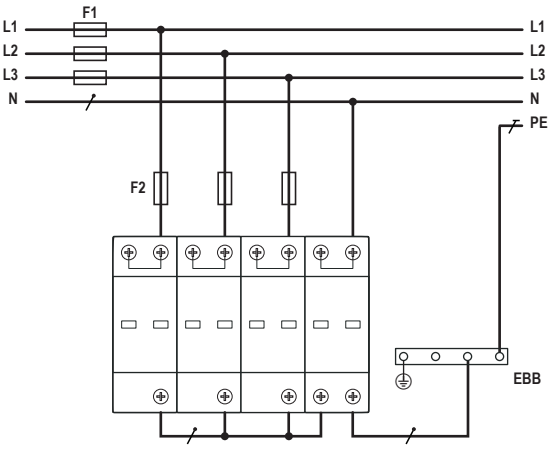
TT (Single-phase, 1+1)
T Connection



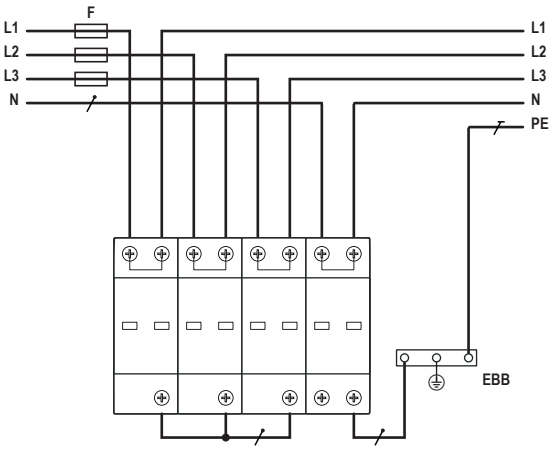
TT (Single-phase, 1+1)
V Connection



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



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



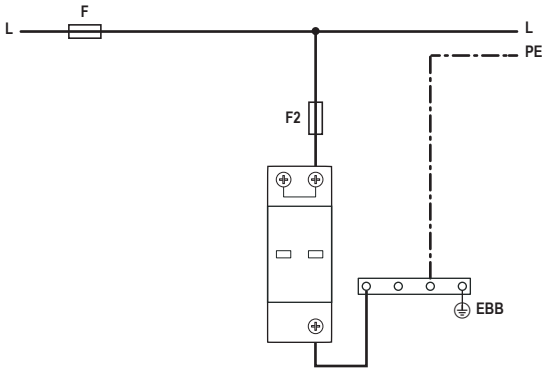
Back-up Fuse

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

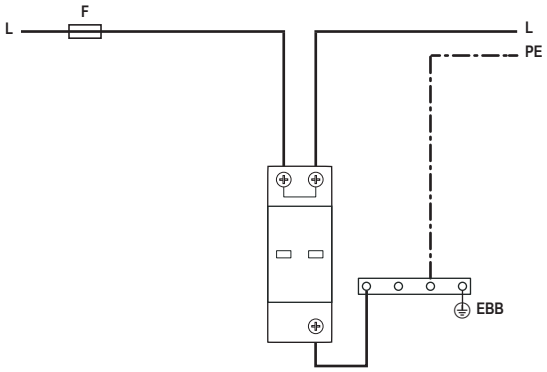
N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

SafeBloc B(R) 12.5 WT TCG

T Connection

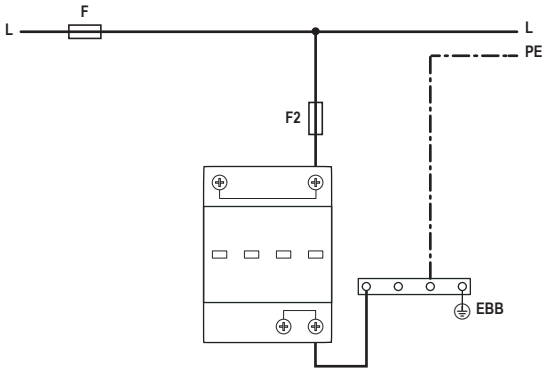


V Connection

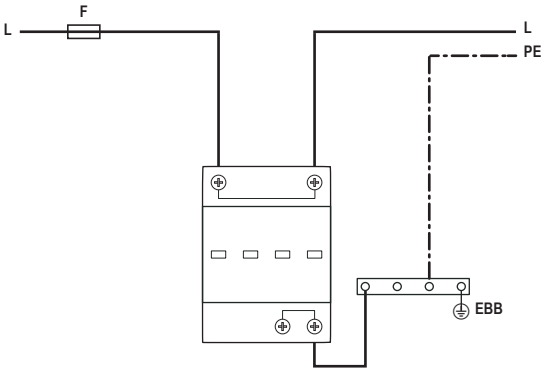


SafeBloc B(R) 25 WT TCG

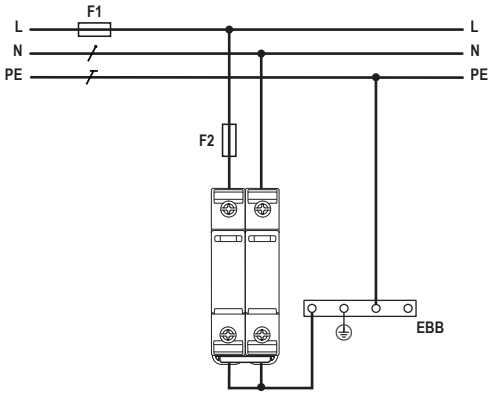
T Connection



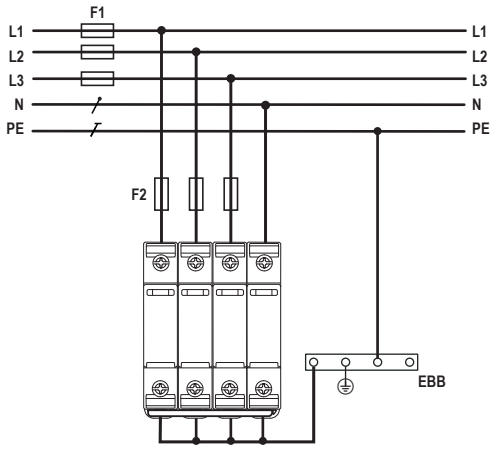
V Connection



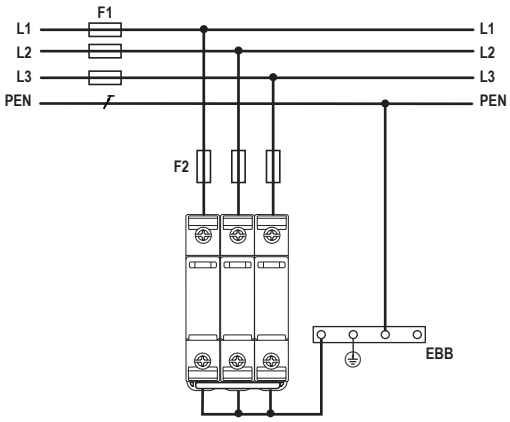
TN-S (Single-phase, 2+0, 1+1)



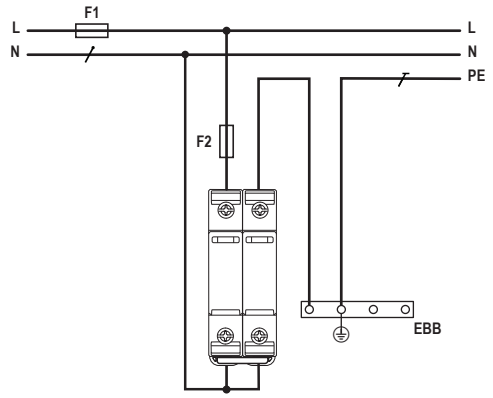
TN-S (Three-phase, 4+0, 3+1)



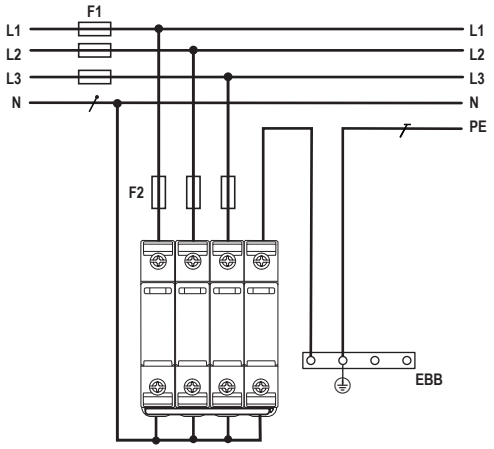
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



Back-up Fuse - ProTec T2-ADV

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

Back-up Fuse Isccr = 50 kA

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

Back-up Fuse Isccr = 25 kA

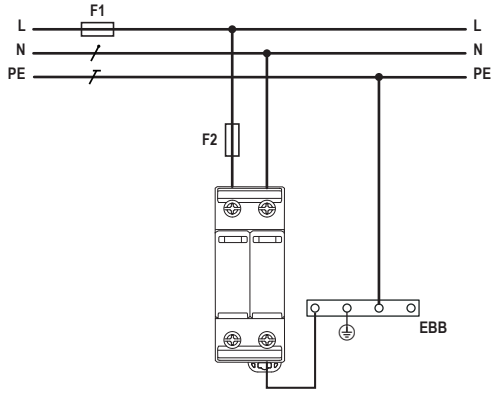
F1 > 315 A gG → F2 = 315 A gG
F1 ≤ 315 A gG → ~~F2~~

N Neutral
PE Protective Earth
PEN Protective Earth & Neutral

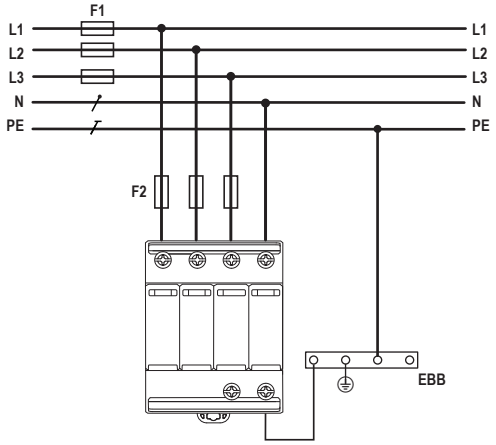
Pluggable Multi-pole SPD Connection Configurations

ProTec T2 & ProTec T2H & ProTec T2-ADV Series

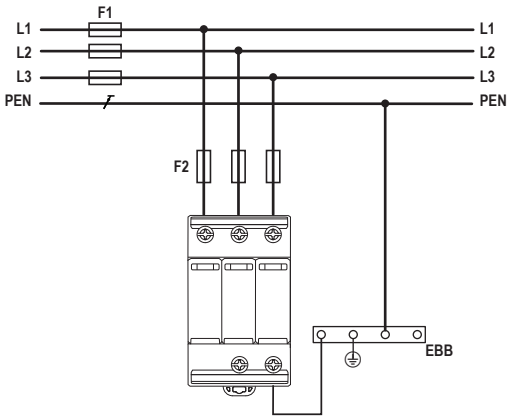
TN-S (Single-phase, 2+0, 1+1)



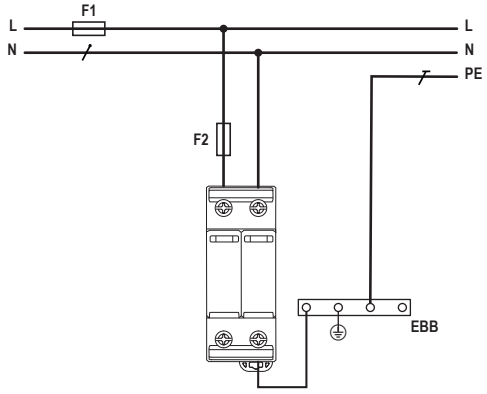
TN-S (Three-phase, 4+0, 3+1)



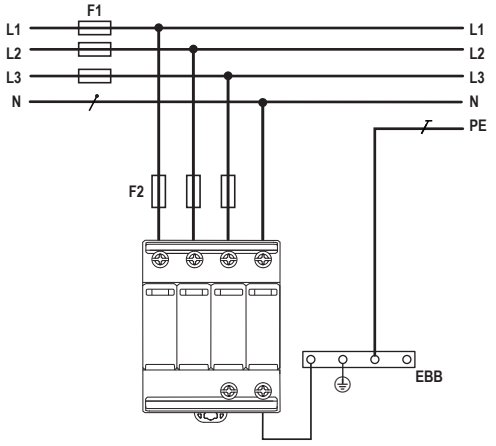
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



Back-up Fuse - ProTec T2-ADV

F1 > 160 A gG → F2 = 160 A gG

F1 ≤ 160 A gG → ~~F2~~

Back-up Fuse Isccr = 50 kA

F1 > 250 A gG → F2 = 250 A gG

F1 ≤ 250 A gG → ~~F2~~

Back-up Fuse Isccr = 25 kA

F1 > 315 A gG → F2 = 315 A gG

F1 ≤ 315 A gG → ~~F2~~

N Neutral

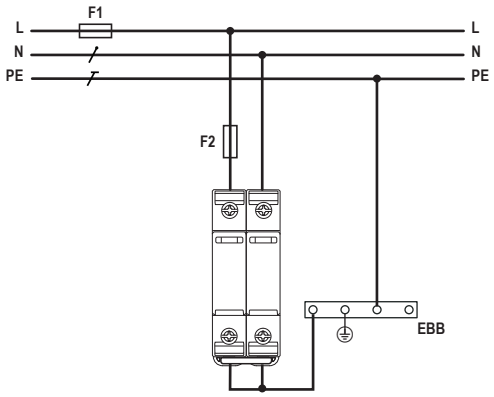
PE Protective Earth

PEN Protective Earth & Neutral

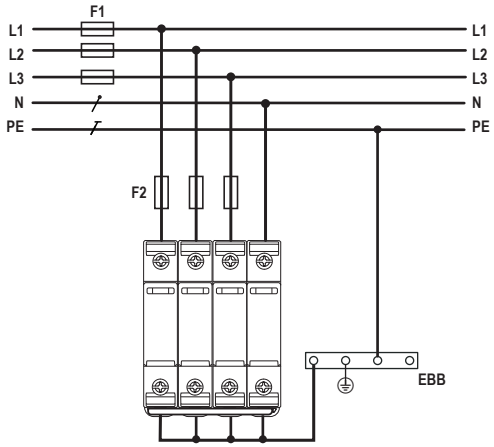
Pluggable Multi-pole SPD Connection Configurations

SafeTec T2 & SafeTube T2 Series

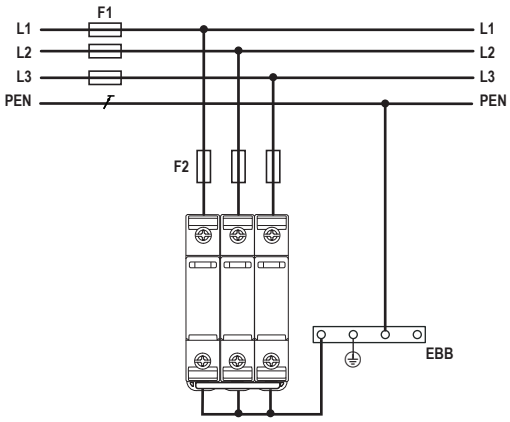
TN-S (Single-phase, 2+0, 1+1)



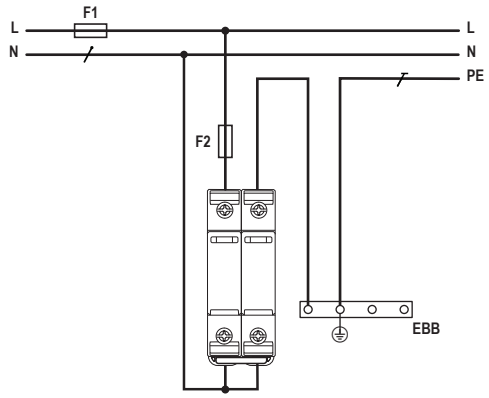
TN-S (Three-phase, 4+0, 3+1)



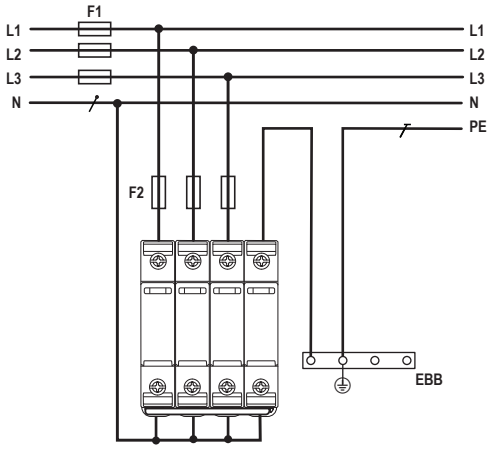
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



/ N Neutral
/ PE Protective Earth
/ PEN Protective Earth & Neutral

Back-up Fuse Isccr = 50 kA

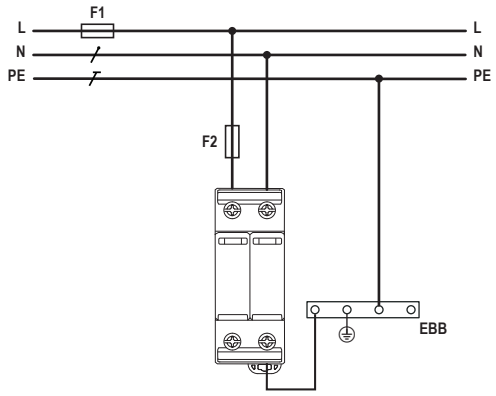
F1 > 250 A gG → F2 = 250 A gG
F1 ≤ 250 A gG → ~~F2~~

Back-up Fuse Isccr = 25 kA

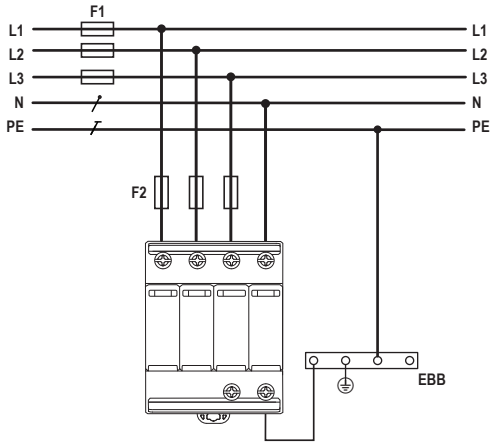
F1 > 315 A gG → F2 = 315 A gG
F1 ≤ 315 A gG → ~~F2~~

Pluggable Multi-pole SPD Connection Configurations
SafeTec T2 Series

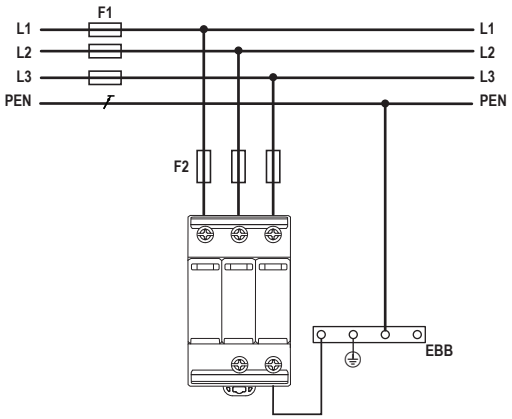
TN-S (Single-phase, 2+0, 1+1)



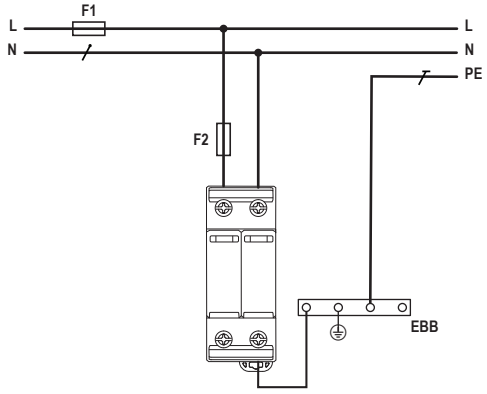
TN-S (Three-phase, 4+0, 3+1)



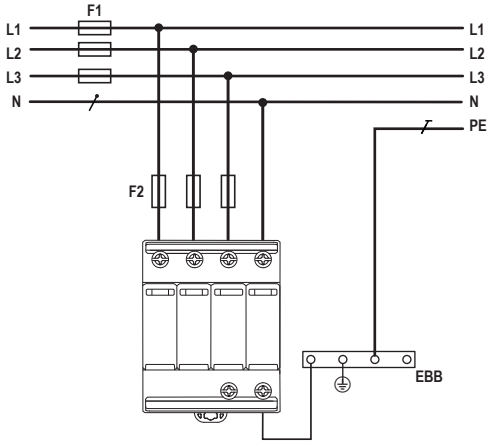
TN-C (Three-phase, 3+0)



TT (Single-phase, 1+1)



TT (Three-phase, 3+1)



/ N Neutral
/ PE Protective Earth
/ PEN Protective Earth & Neutral

Back-up Fuse Isccr = 50 kA

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

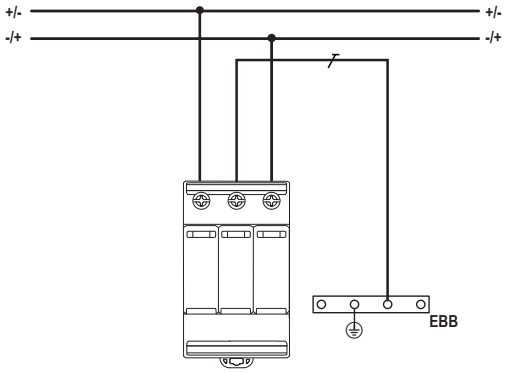
Back-up Fuse Isccr = 25 kA

F1 > 315 A gG → F2 = 315 A gG
F1 ≤ 315 A gG → ~~F2~~

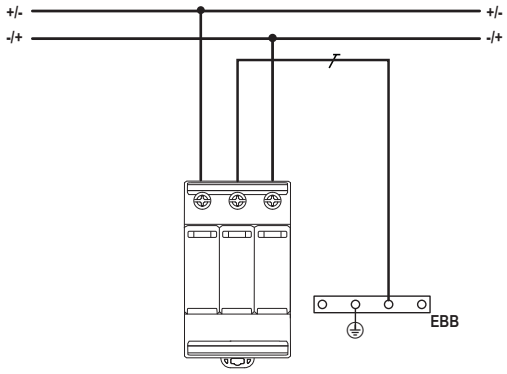
DC Pluggable Multi-pole SPD Connection Configurations

ProTec T1-PV & ProTec T2-PV Series

ProTec T1-PV-3+0



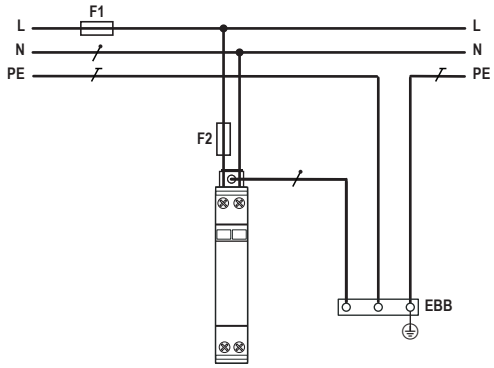
ProTec T2-PV-3+0



*/ **N** Neutral*
*⏚ **PE** Protective Earth*
*⏚ **PEN** Protective Earth & Neutral*

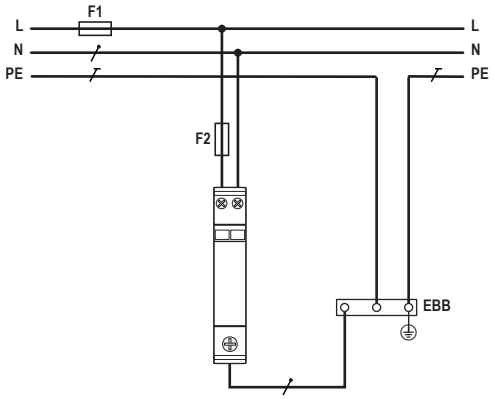
Modular Multi-pole SPD Connection Configuration
ProTec DMDR(R) 20 Series

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~~

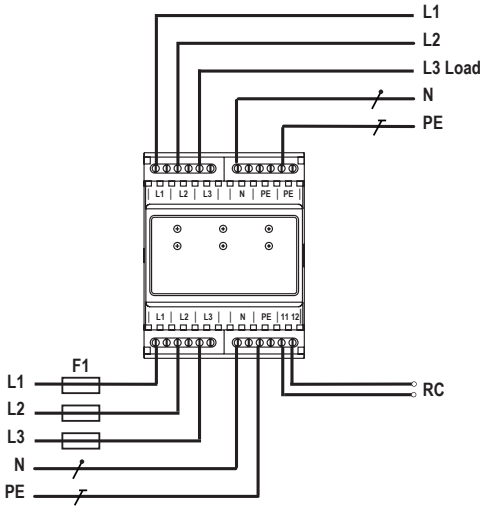
N Neutral

PE Protective Earth

PEN Protective Earth & Neutral

ProLed 275

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



Back-up Fuse

F1 > 16 A gG → F2 = 16 A gG

F1 ≤ 16 A gG → F2

N Neutral

PE Protective Earth

PEN Protective Earth & Neutral

Product Index

Class I • Class II • Type 1 • Type 2

Compact Single Pole & Multi-pole Surge Protective Devices

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProBloc B(R) 12.5 (1+0) 	ProBloc B 12.5/150 (1+0)	56.0500	2 TE	56
	ProBloc BR 12.5/150 (1+0)	56.0501	2 TE	56
	ProBloc B 12.5/275 (1+0)	56.0502	2 TE	56
	ProBloc BR 12.5/275 (1+0)	56.0503	2 TE	56
	ProBloc B 12.5/320 (1+0)	56.0504	2 TE	56
	ProBloc BR 12.5/320 (1+0)	56.0505	2 TE	56
	ProBloc B 12.5/440 (1+0)	56.0508	2 TE	56
	ProBloc BR 12.5/440 (1+0)	56.0509	2 TE	56
ProBloc B(R) 25 (2+0) 	ProBloc B 25/150 (2+0)	56.0512	2 TE	58
	ProBloc BR 25/150 (2+0)	56.0513	2 TE	58
	ProBloc B 25/275 (2+0)	56.0514	2 TE	58
	ProBloc BR 25/275 (2+0)	56.0515	2 TE	58
	ProBloc B 25/320 (2+0)	56.0516	2 TE	58
	ProBloc BR 25/320 (2+0)	56.0517	2 TE	58
	ProBloc B 12.5/440 (1+0)	56.0520	2 TE	58
	ProBloc BR 12.5/440 (1+0)	56.0521	2 TE	58
ProBloc B(R) 37.5 (3+0) 	ProBloc B 37.5/150 (3+0)	56.0522	3 TE	60
	ProBloc BR 37.5/150 (3+0)	56.0523	3 TE	60
	ProBloc B 37.5/275 (3+0)	56.0524	3 TE	60
	ProBloc BR 37.5/275 (3+0)	56.0525	3 TE	60
	ProBloc B 37.5/320 (3+0)	56.0526	3 TE	60
	ProBloc BR 37.5/320 (3+0)	56.0527	3 TE	60
	ProBloc B 37.5/440 (3+0)	56.0530	3 TE	60
	ProBloc BR 37.5/440 (3+0)	56.0531	3 TE	60
ProBloc B(R) 50 (4+0) 	ProBloc B 50/150 (4+0)	56.0532	4 TE	62
	ProBloc BR 50/150 (4+0)	56.0533	4 TE	62
	ProBloc B 50/275 (4+0)	56.0534	4 TE	62
	ProBloc BR 50/275 (4+0)	56.0535	4 TE	62
	ProBloc B 50/320 (4+0)	56.0536	4 TE	62
	ProBloc BR 50/320 (4+0)	56.0537	4 TE	62
	ProBloc B 50/440 (4+0)	56.0540	4 TE	62
	ProBloc BR 50/440 (4+0)	56.0541	4 TE	62
ProBloc B(R) 25 (1+1) 	ProBloc B 25/150 (1+1)	56.0542	2 TE	64
	ProBloc BR 25/150 (1+1)	56.0543	2 TE	64
	ProBloc B 25/275 (1+1)	56.0544	2 TE	64
	ProBloc BR 25/275 (1+1)	56.0545	2 TE	64
	ProBloc B 25/320 (1+1)	56.0546	2 TE	64
	ProBloc BR 25/320 (1+1)	56.0547	2 TE	64
ProBloc B(R) 50 (3+1) 	ProBloc B 50/275 (3+1)	56.0554	4 TE	66
	ProBloc BR 50/275 (3+1)	56.0555	4 TE	66
	ProBloc B 50/320 (3+1)	56.0556	4 TE	66
	ProBloc BR 50/320 (3+1)	56.0557	4 TE	66
ProBloc B(R) 25 (1+0) 	ProBloc B 25/150 (1+0)	56.0562	2 TE	68
	ProBloc BR 25/150 (1+0)	56.0563	2 TE	68
	ProBloc B 25/275 (1+0)	56.0564	2 TE	68
	ProBloc BR 25/275 (1+0)	56.0565	2 TE	68
	ProBloc B 25/320 (1+0)	56.0566	2 TE	68
	ProBloc BR 25/320 (1+0)	56.0567	2 TE	68
	ProBloc B 25/440 (1+0)	56.0570	2 TE	68
	ProBloc BR 25/440 (1+0)	56.0571	2 TE	68

Compact Single Pole & Multi-pole Surge Protective Devices *(continued)*

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProBloc B(R) 50 (2+0) 	ProBloc B 50/150 (2+0)	56.0572	4 TE	70
	ProBloc BR 50/150 (2+0)	56.0573	4 TE	70
	ProBloc B 50/275 (2+0)	56.0574	4 TE	70
	ProBloc BR 50/275 (2+0)	56.0575	4 TE	70
	ProBloc B 50/320 (2+0)	56.0576	4 TE	70
	ProBloc BR 50/320 (2+0)	56.0577	4 TE	70
	ProBloc B 50/440 (2+0)	56.0580	4 TE	70
	ProBloc BR 50/440 (2+0)	56.0581	4 TE	70
ProBloc B(R) 75 (3+0) 	ProBloc B 75/150 (3+0)	56.0582	6 TE	72
	ProBloc BR 75/150 (3+0)	56.0583	6 TE	72
	ProBloc B 75/275 (3+0)	56.0584	6 TE	72
	ProBloc BR 75/275 (3+0)	56.0585	6 TE	72
	ProBloc B 75/320 (3+0)	56.0586	6 TE	72
	ProBloc BR 75/320 (3+0)	56.0587	6 TE	72
	ProBloc B 75/440 (3+0)	56.0590	6 TE	72
	ProBloc BR 75/440 (3+0)	56.0591	6 TE	72
ProBloc B(R) 100 (4+0) 	ProBloc B 100/150 (4+0)	56.0592	8 TE	74
	ProBloc BR 100/150 (4+0)	56.0593	8 TE	74
	ProBloc B 100/275 (4+0)	56.0594	8 TE	74
	ProBloc BR 100/275 (4+0)	56.0595	8 TE	74
	ProBloc B 100/320 (4+0)	56.0596	8 TE	74
	ProBloc BR 100/320 (4+0)	56.0597	8 TE	74
	ProBloc B 100/440 (4+0)	56.0600	8 TE	74
	ProBloc BR 100/440 (4+0)	56.0601	8 TE	74
ProBloc B(R) 50 (1+1) 	ProBloc B 50/150 (1+1)	56.0602	4 TE	76
	ProBloc BR 50/150 (1+1)	56.0603	4 TE	76
	ProBloc B 50/275 (1+1)	56.0604	4 TE	76
	ProBloc BR 50/275 (1+1)	56.0605	4 TE	76
	ProBloc B 50/320 (1+1)	56.0606	4 TE	76
	ProBloc BR 50/320 (1+1)	56.0607	4 TE	76
ProBloc B(R) 100 (3+1) 	ProBloc B 100/275 (3+1)	56.0614	8 TE	78
	ProBloc BR 100/275 (3+1)	56.0615	8 TE	78
	ProBloc B 100/320 (3+1)	56.0616	8 TE	78
	ProBloc BR 100/320 (3+1)	56.0617	8 TE	78
ProTec ZP T1H-R 	ProTec ZP T1H-255-3+0-R	59.0360	3 TE	52
	ProTec ZP T1H-255-3+1-R	59.0361	3 TE	54
ProTube B 50 	ProTube B 50/255	56.0510	2 TE	80
ProTube B 100 	ProTube B 100/255	56.0511	2 TE	82

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Compact Single Pole & Multi-pole Surge Protective Devices				*(continued)*
SafeBloc B(R) 12.5 (1+0) TCG 	SafeBloc B 12.5/150 (1+0) TCG	54.0500	2 TE	84
	SafeBloc BR 12.5/150 (1+0) TCG	54.0501	2 TE	84
	SafeBloc B 12.5/275 (1+0) TCG	54.0502	2 TE	84
	SafeBloc BR 12.5/275 (1+0) TCG	54.0503	2 TE	84
SafeBloc B(R) 25 (2+0) TCG 	SafeBloc B 25/150 (2+0) TCG	54.0507	4 TE	86
	SafeBloc BR 25/150 (2+0) TCG	54.0508	4 TE	86
	SafeBloc B 25/275 (2+0) TCG	54.0509	4 TE	86
	SafeBloc BR 25/275 (2+0) TCG	54.0510	4 TE	86
SafeBloc B(R) 37.5 (3+0) TCG 	SafeBloc B 37.5/150 (3+0) TCG	54.0513	6 TE	88
	SafeBloc BR 37.5/150 (3+0) TCG	54.0514	6 TE	88
	SafeBloc B 37.5/275 (3+0) TCG	54.0515	6 TE	88
	SafeBloc BR 37.5/275 (3+0) TCG	54.0516	6 TE	88
SafeBloc B(R) 50 (4+0) TCG 	SafeBloc B 50/150 (4+0) TCG	54.0519	8 TE	90
	SafeBloc BR 50/150 (4+0) TCG	54.0520	8 TE	90
	SafeBloc B 50/275 (4+0) TCG	54.0521	8 TE	90
	SafeBloc BR 50/275 (4+0) TCG	54.0522	8 TE	90
SafeBloc B(R) 25 (1+1) TCG 	SafeBloc B 25/150 (1+1) TCG	54.0525	4 TE	92
	SafeBloc BR 25/150 (1+1) TCG	54.0526	4 TE	92
	SafeBloc B 25/275 (1+1) TCG	54.0527	4 TE	92
	SafeBloc BR 25/275 (1+1) TCG	54.0528	4 TE	92
SafeBloc B(R) 50 (3+1) TCG 	SafeBloc B 50/275 (3+1) TCG	54.0533	8 TE	94
	SafeBloc BR 50/275 (3+1) TCG	54.0534	8 TE	94
SafeBloc B(R) 25 (1+0) TCG 	SafeBloc B 25/150 (1+0) TCG	54.0537	2 TE	96
	SafeBloc BR 25/150 (1+0) TCG	54.0538	2 TE	96
	SafeBloc B 25/275 (1+0) TCG	54.0539	2 TE	96
	SafeBloc BR 25/275 (1+0) TCG	54.0540	2 TE	96
SafeBloc B(R) 50 (2+0) TCG 	SafeBloc B 50/150 (2+0) TCG	54.0544	4 TE	98
	SafeBloc BR 50/150 (2+0) TCG	54.0545	4 TE	98
	SafeBloc B 50/275 (2+0) TCG	54.0546	4 TE	98
	SafeBloc BR 50/275 (2+0) TCG	54.0547	4 TE	98
SafeBloc B(R) 75 (3+0) TCG 	SafeBloc B 75/150 (3+0) TCG	54.0550	6 TE	100
	SafeBloc BR 75/150 (3+0) TCG	54.0551	6 TE	100
	SafeBloc B 75/275 (3+0) TCG	54.0552	6 TE	100
	SafeBloc BR 75/275 (3+0) TCG	54.0553	6 TE	100
SafeBloc B(R) 100 (4+0) TCG 	SafeBloc B 100/150 (4+0) TCG	54.0556	8 TE	102
	SafeBloc BR 100/150 (4+0) TCG	54.0557	8 TE	102
	SafeBloc B 100/275 (4+0) TCG	54.0558	8 TE	102
	SafeBloc BR 100/275 (4+0) TCG	54.0559	8 TE	102

Class I • Class II • Type 1 • Type 2

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Compact Single Pole & Multi-pole Surge Protective Devices				*(continued)*
SafeBloc B(R) 50 (1+1) TCG	SafeBloc B 50/150 (1+1) TCG	54.0562	4 TE	104
	SafeBloc BR 50/150 (1+1) TCG	54.0563	4 TE	104
	SafeBloc B 50/275 (1+1) TCG	54.0564	4 TE	104
	SafeBloc BR 50/275 (1+1) TCG	54.0565	4 TE	104
SafeBloc B(R) 100 (3+1) TCG	SafeBloc B 100/275 (3+1) TCG	54.0570	8 TE	106
	SafeBloc BR 100/275 (3+1) TCG	54.0571	8 TE	106
SafeTube B 50	SafeTube B 50/255	54.0506	2 TE	108
				
SafeTube B 100	SafeTube B 100/255	54.0543	2 TE	110
				
SafeBloc B(R) 12.5 (1+0) WT TCG	SafeBloc B 12.5/750 (1+0) WT TCG	54.0590	2 TE	112
	SafeBloc BR 12.5/750 (1+0) WT TCG	54.0591	2 TE	112
SafeBloc B(R) 25 (1+0) WT TCG	SafeBloc B 25/750 (1+0) WT TCG	54.0594	4 TE	114
	SafeBloc BR 25/750 (1+0) WT TCG	54.0595	4 TE	114

Class I • Class II • Type 1 • Type 2 • Type 1 CA

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Pluggable Single Pole & Multi-pole Surge Protective Devices				
ProTec T1 1+0 (R)	ProTec T1-75-1+0	59.0007	1 TE	18
	ProTec T1-75-1+0-R	59.0008	1 TE	18
	ProTec T1-150-1+0	59.0009	1 TE	18
	ProTec T1-150-1+0-R	59.0010	1 TE	18
	ProTec T1-300-1+0	59.0011	1 TE	18
	ProTec T1-300-1+0-R	59.0012	1 TE	18
	ProTec T1-350-1+0	59.0013	1 TE	18
	ProTec T1-350-1+0-R	59.0014	1 TE	18
	ProTec T1-480-1+0	59.0015	1 TE	18
	ProTec T1-480-1+0-R	59.0016	1 TE	18
	ProTec T1-750-1+0	59.0017	1 TE	18
	ProTec T1-750-1+0-R	59.0018	1 TE	18

Pluggable Single Pole & Multi-pole Surge Protective Devices *(continued)*

		Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProTec T1 2+0 (R)		ProTec T1-75-2+0	59.0349	2 TE	20
		ProTec T1-75-2+0-R	59.0350	2 TE	20
		ProTec T1-150-2+0	59.0019	2 TE	20
		ProTec T1-150-2+0-R	59.0020	2 TE	20
		ProTec T1-300-2+0	59.0021	2 TE	20
		ProTec T1-300-2+0-R	59.0022	2 TE	20
		ProTec T1-350-2+0	59.0023	2 TE	20
		ProTec T1-350-2+0-R	59.0024	2 TE	20
		ProTec T1-480-2+0	59.0025	2 TE	20
		ProTec T1-480-2+0-R	59.0026	2 TE	20
		ProTec T1-750-2+0	59.0027	2 TE	20
		ProTec T1-750-2 +0-R	59.0028	2 TE	20
ProTec T1 3+0 (R)		ProTec T1-150-3+0	59.0029	3 TE	22
		ProTec T1-150-3+0-R	59.0030	3 TE	22
		ProTec T1-300-3+0	59.0031	3 TE	22
		ProTec T1-300-3+0-R	59.0032	3 TE	22
		ProTec T1-350-3+0	59.0033	3 TE	22
		ProTec T1-350-3+0-R	59.0034	3 TE	22
		ProTec T1-480-3+0	59.0035	3 TE	22
		ProTec T1-480-3+0-R	59.0036	3 TE	22
		ProTec T1-750-3+0	59.0037	3 TE	22
		ProTec T1-750-3 +0-R	59.0038	3 TE	22
ProTec T1 4+0 (R)		ProTec T1-150-4+0	59.0039	4 TE	24
		ProTec T1-150-4+0-R	59.0040	4 TE	24
		ProTec T1-300-4+0	59.0041	4 TE	24
		ProTec T1-300-4+0-R	59.0042	4 TE	24
		ProTec T1-350-4+0	59.0351	4 TE	24
		ProTec T1-350-4+0-R	59.0352	4 TE	24
		ProTec T1-480-4+0	59.0043	4 TE	24
		ProTec T1-480-4+0-R	59.0044	4 TE	24
ProTec T1 1+1 (R)		ProTec T1-75-1+1	59.0047	2 TE	26
		ProTec T1-75-1+1-R	59.0048	2 TE	26
		ProTec T1-150-1+1	59.0049	2 TE	26
		ProTec T1-150-1+1-R	59.0050	2 TE	26
		ProTec T1-300-1+1	59.0051	2 TE	26
		ProTec T1-300-1+1-R	59.0052	2 TE	26
		ProTec T1-350-1+1	59.0053	2 TE	26
		ProTec T1-350-1+1-R	59.0054	2 TE	26
ProTec T1 3+1 (R)		ProTec T1-300-3+1	59.0059	4 TE	28
		ProTec T1-300-3+1-R	59.0060	4 TE	28
		ProTec T1-350-3+1	59.0061	4 TE	28
		ProTec T1-350-3+1-R	59.0062	4 TE	28
ProTec T1-xxx-P		ProTec T1-75-P	59.0001	1 TE plug	18-26
		ProTec T1-150-P	59.0002	1 TE plug	18-26
		ProTec T1-300-P	59.0003	1 TE plug	18-28
		ProTec T1-350-P	59.0004	1 TE plug	18-28
		ProTec T1-480-P	59.0005	1 TE plug	18-24
		ProTec T1-750-P	59.0006	1 TE plug	18-22
ProTec T1H 1+0 (R)		ProTec T1H-300-1+0	59.0310	1 TE	32
		ProTec T1H-300-1+0-R	59.0311	1 TE	32
ProTec T1H 2+0 (R)		ProTec T1H-300-2+0	59.0312	2 TE	34
		ProTec T1H-300-2+0-R	59.0313	2 TE	34

Pluggable Single Pole & Multi-pole Surge Protective Devices *(continued)*

		Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProTec T1H 3+0 (R)		ProTec T1H-300-3+0	59.0314	3 TE	36
		ProTec T1H-300-3+0-R	59.0315	3 TE	36
ProTec T1H 4+0 (R)		ProTec T1H-300-4+0	59.0316	4 TE	38
		ProTec T1H-300-4+0-R	59.0317	4 TE	38
ProTec T1H 1+1 (R)		ProTec T1H-300-1+1	59.0318	2 TE	40
		ProTec T1H-300-1+1-R	59.0319	2 TE	40
ProTec T1H 3+1 (R)		ProTec T1H-300-3+1	59.0320	4 TE	42
		ProTec T1H-300-3+1-R	59.0321	4 TE	42
ProTec T1H-300-P		ProTec T1H-300-P	59.0308	1 TE plug	32-42
ProTec T1HS 3+0 (R)		ProTec T1HS-300-3+0	59.0304	6 TE	46
		ProTec T1H-300-3+0-R	59.0305	6 TE	46
ProTec T1HS 3+1 (R)		ProTec T1HS-300-3+1	59.0306	8 TE	48
		ProTec T1HS-300-3+1-R	59.0307	8 TE	48
ProTec T1HS-300-P		ProTec T1HS-300-P	59.0302	1 TE plug	46-48
ProTube T1 0+1		ProTube T1-50-0+1	59.0276	1 TE	30
ProTube T1H 0+1		ProTube T1H-50-0+1	59.0340	1 TE	44
ProTube T1-50-P		ProTube T1-50-P	59.0269	1 TE plug	26-30
ProTube T1H-50-P		ProTube T1H-50-P	59.0309	1 TE plug	40-44
ProTube T1HS-100-P		ProTube T1HS-100-P	59.0303	1 TE plug	48

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Pluggable Single Pole & Multi-pole Surge Protective Devices

		Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProTec T2 1+0 (R)		ProTec T2-75-1+0	59.0069	1 TE	118
		ProTec T2-75-1+0-R	59.0070	1 TE	118
		ProTec T2-150-1+0	59.0071	1 TE	118
		ProTec T2-150-1+0-R	59.0072	1 TE	118
		ProTec T2-300-1+0	59.0073	1 TE	118
		ProTec T2-300-1+0-R	59.0074	1 TE	118
		ProTec T2-350-1+0	59.0075	1 TE	118
		ProTec T2-350-1+0-R	59.0076	1 TE	118
		ProTec T2-480-1+0	59.0077	1 TE	118
		ProTec T2-480-1+0-R	59.0078	1 TE	118
		ProTec T2-750-1+0	59.0079	1 TE	118
		ProTec T2-750-1+0-R	59.0080	1 TE	118
ProTec T2 2+0 (R)		ProTec T2-75-2+0	59.0343	2 TE	120
		ProTec T2-75-2+0-R	59.0344	2 TE	120
		ProTec T2-150-2+0	59.0081	2 TE	120
		ProTec T2-150-2+0-R	59.0082	2 TE	120
		ProTec T2-300-2+0	59.0083	2 TE	120
		ProTec T2-300-2+0-R	59.0084	2 TE	120
		ProTec T2-350-2+0	59.0085	2 TE	120
		ProTec T2-350-2+0-R	59.0086	2 TE	120
		ProTec T2-480-2+0	59.0087	2 TE	120
		ProTec T2-480-2+0-R	59.0088	2 TE	120
		ProTec T2-750-2+0	59.0089	2 TE	120
		ProTec T2-750-2 +0-R	59.0090	2 TE	120
ProTec T2 3+0 (R)		ProTec T2-150-3+0	59.0091	3 TE	122
		ProTec T2-150-3+0-R	59.0092	3 TE	122
		ProTec T2-300-3+0	59.0093	3 TE	122
		ProTec T2-300-3+0-R	59.0094	3 TE	122
		ProTec T2-350-3+0	59.0095	3 TE	122
		ProTec T2-350-3+0-R	59.0096	3 TE	122
		ProTec T2-480-3+0	59.0097	3 TE	122
		ProTec T2-480-3+0-R	59.0098	3 TE	122
		ProTec T2-750-3+0	59.0099	3 TE	122
		ProTec T2-750-3+0-R	59.0100	3 TE	122
ProTec T2 4+0 (R)		ProTec T2-150-4+0	59.0101	4 TE	124
		ProTec T2-150-4+0-R	59.0102	4 TE	124
		ProTec T2-300-4+0	59.0103	4 TE	124
		ProTec T2-300-4+0-R	59.0104	4 TE	124
		ProTec T2-350-4+0	59.0300	4 TE	124
		ProTec T2-350-4+0-R	59.0301	4 TE	124
		ProTec T2-480-4+0	59.0105	4 TE	124
		ProTec T2-480-4+0-R	59.0106	4 TE	124
ProTec T2 1+1 (R)		ProTec T2-75-1+1	59.0109	2 TE	126
		ProTec T2-75-1+1-R	59.0110	2 TE	126
		ProTec T2-150-1+1	59.0111	2 TE	126
		ProTec T2-150-1+1-R	59.0112	2 TE	126
		ProTec T2-300-1+1	59.0113	2 TE	126
		ProTec T2-300-1+1-R	59.0114	2 TE	126
		ProTec T2-350-1+1	59.0115	2 TE	126
		ProTec T2-350-1+1-R	59.0116	2 TE	126
ProTec T2 3+1 (R)		ProTec T2-300-3+1	59.0121	4 TE	128
		ProTec T2-300-3+1-R	59.0122	4 TE	128
		ProTec T2-350-3+1	59.0123	4 TE	128
		ProTec T2-350-3+1-R	59.0124	4 TE	128
ProTec T2-xxx-P		ProTec T2-75-P	59.0063	1 TE plug	118-126
		ProTec T2-150-P	59.0064	1 TE plug	118-126
		ProTec T2-300-P	59.0065	1 TE plug	118-128
		ProTec T2-350-P	59.0066	1 TE plug	118-128
		ProTec T2-480-P	59.0067	1 TE plug	118-124
		ProTec T2-750-P	59.0068	1 TE plug	118-124

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Pluggable Single Pole & Multi-pole Surge Protective Devices *(continued)*

		Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProTube T2 0+1 (R)		ProTube T2-40-0+1	59.0280	1 TE	130
		ProTube T2-40-0+1-R	59.0336		130
ProTube T2-40-P		ProTube T2-40-P	59.0273	1 TE plug	126-130
ProTec T2-ADV 1+0 (R)		ProTec T2-ADV-75-1+0	59.0208	1 TE	146
		ProTec T2-ADV-75-1+0-R	59.0209	1 TE	146
		ProTec T2-ADV-150-1+0	59.0210	1 TE	146
		ProTec T2-ADV-150-1+0-R	59.0211	1 TE	146
		ProTec T2-ADV-300-1+0	59.0212	1 TE	146
		ProTec T2-ADV-300-1+0-R	59.0213	1 TE	146
		ProTec T2-ADV-350-1+0	59.0214	1 TE	146
		ProTec T2-ADV-350-1+0-R	59.0215	1 TE	146
		ProTec T2-ADV-480-1+0	59.0216	1 TE	146
		ProTec T2-ADV-480-1+0-R	59.0217	1 TE	146
ProTec T2-ADV 2+0 (R)		ProTec T2-ADV-75-2+0	59.0347	2 TE	148
		ProTec T2-ADV-75-2+0-R	59.0348	2 TE	148
		ProTec T2-ADV-150-2+0	59.0220	2 TE	148
		ProTec T2-ADV-150-2+0-R	59.0221	2 TE	148
		ProTec T2-ADV-300-2+0	59.0222	2 TE	148
		ProTec T2-ADV-300-2+0-R	59.0223	2 TE	148
		ProTec T2-ADV-350-2+0	59.0224	2 TE	148
		ProTec T2-ADV-350-2+0-R	59.0225	2 TE	148
		ProTec T2-ADV-480-2+0	59.0226	2 TE	148
		ProTec T2-ADV-480-2+0-R	59.0227	2 TE	148
ProTec T2-ADV 3+0 (R)		ProTec T2-ADV-150-3+0	59.0228	3 TE	150
		ProTec T2-ADV-150-3+0-R	59.0229	3 TE	150
		ProTec T2-ADV-300-3+0	59.0230	3 TE	150
		ProTec T2-ADV-300-3+0-R	59.0231	3 TE	150
		ProTec T2-ADV-350-3+0	59.0232	3 TE	150
		ProTec T2-ADV-350-3+0-R	59.0233	3 TE	150
		ProTec T2-ADV-480-3+0	59.0234	3 TE	150
		ProTec T2-ADV-480-3+0-R	59.0235	3 TE	150
ProTec T2-ADV 4+0 (R)		ProTec T2-ADV-150-4+0	59.0236	4 TE	152
		ProTec T2-ADV-150-4+0-R	59.0237	4 TE	152
		ProTec T2-ADV-300-4+0	59.0238	4 TE	152
		ProTec T2-ADV-300-4+0-R	59.0239	4 TE	152
		ProTec T2-ADV-350-4+0	59.0240	4 TE	152
		ProTec T2-ADV-350-4+0-R	59.0241	4 TE	152
		ProTec T2-ADV-480-4+0	59.0242	4 TE	152
		ProTec T2-ADV-480-4+0-R	59.0243	4 TE	152
ProTec T2-ADV 1+1 (R)		ProTec T2-ADV-75-1+1	59.0244	2 TE	154
		ProTec T2-ADV-75-1+1-R	59.0245	2 TE	154
		ProTec T2-ADV-150-1+1	59.0246	2 TE	154
		ProTec T2-ADV-150-1+1-R	59.0247	2 TE	154
		ProTec T2-ADV-300-1+1	59.0248	2 TE	154
		ProTec T2-ADV-300-1+1-R	59.0249	2 TE	154
		ProTec T2-ADV-480-1+1	59.0250	2 TE	154
		ProTec T2-ADV-480-1+1-R	59.0251	2 TE	154
ProTec T2-ADV 3+1 (R)		ProTec T2-ADV-300-3+1	59.0256	4 TE	156
		ProTec T2-ADV-300-3+1-R	59.0257	4 TE	156
		ProTec T2-ADV-350-3+1	59.0258	4 TE	156
		ProTec T2-ADV-350-3+1-R	59.0259	4 TE	156

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Pluggable Single Pole & Multi-pole Surge Protective Devices *(continued)*

		Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProTec T2-ADV-xxx-P		ProTec T2-ADV-75-P	59.0202	1 TE plug	146-154
		ProTec T2-ADV-150-P	59.0203	1 TE plug	146-154
		ProTec T2-ADV-300-P	59.0204	1 TE plug	146-156
		ProTec T2-ADV-350-P	59.0205	1 TE plug	146-156
		ProTec T2-ADV-480-P	59.0206	1 TE plug	146-152
ProTube T2-ADV-40-P		ProTube T2-ADV-40-P	59.0275	1 TE plug	154-156
ProTec T2H 1+0 (R)		ProTec T2H-300-1+0	59.0324	1 TE	132
		ProTec T2H-300-1+0-R	59.0325	1 TE	132
ProTec T2H 2+0 (R)		ProTec T2H-300-2+0	59.0326	2 TE	134
		ProTec T2H-300-2+0-R	59.0327	2 TE	134
ProTec T2H 3+0 (R)		ProTec T2H-300-3+0	59.0328	3 TE	136
		ProTec T2H-300-3+0-R	59.0329	3 TE	136
ProTec T2H 4+0 (R)		ProTec T2H-300-4+0	59.0330	4 TE	138
		ProTec T2H-300-4+0-R	59.0331	4 E	138
ProTec T2H 1+1 (R)		ProTec T2H-300-1+1	59.0332	2 TE	140
		ProTec T2H-300-1+1-R	59.0333	2 TE	140
ProTec T2H 3+1 (R)		ProTec T2H-300-3+1	59.0334	4 TE	142
		ProTec T2H-300-3+1-R	59.0335	4 TE	142
ProTec T2H-300-P		ProTec T2H-300-P	59.0322	1 TE plug	134-144
ProTube T2H-40 0+1 (R)		ProTube T2H-40-0+1	59.0341	1 TE	144
		ProTube T2H-40-0+1-R	59.0342	1 TE	144
ProTube T2H-40-P		ProTube T2H-40-P	59.0323	1 TE plug	140-144

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Pluggable Single Pole & Multi-pole Surge Protective Devices *(continued)*

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
SafeTec T2 1+0 (R) 	SafeTec T2-75-1+0	59.0132	1 TE	158
	SafeTec T2-75-1+0-R	59.0133	1 TE	158
	SafeTec T2-150-1+0	59.0134	1 TE	158
	SafeTec T2-150-1+0-R	59.0135	1 TE	158
	SafeTec T2-300-1+0	59.0136	1 TE	158
	SafeTec T2-300-1+0-R	59.0137	1 TE	158
	SafeTec T2-350-1+0	59.0138	1 TE	158
	SafeTec T2-350-1+0-R	59.0139	1 TE	158
	SafeTec T2-480-1+0	59.0140	1 TE	158
	SafeTec T2-480-1+0-R	59.0141	1 TE	158
	SafeTec T2-550-1+0	59.0142	1 TE	158
	SafeTec T2-550-1+0-R	59.0143	1 TE	158
	SafeTec T2-750-1+0	59.0144	1 TE	158
	SafeTec T2-750-1+0-R	59.0145	1 TE	158
	SafeTec T2-880-1+0	59.0146	1 TE	158
	SafeTec T2-880-1+0-R	59.0147	1 TE	158
SafeTec T2 2+0 (R) 	SafeTec T2-75-2+0	59.0345	2 TE	160
	SafeTec T2-75-2+0-R	59.0346	2 TE	160
	SafeTec T2-150-2+0	59.0148	2 TE	160
	SafeTec T2-150-2+0-R	59.0149	2 TE	160
	SafeTec T2-300-2+0	59.0150	2 TE	160
	SafeTec T2-300-2+0-R	59.0151	2 TE	160
	SafeTec T2-350-2+0	59.0152	2 TE	160
	SafeTec T2-350-2+0-R	59.0153	2 TE	160
	SafeTec T2-480-2+0	59.0154	2 TE	160
	SafeTec T2-480-2+0-R	59.0155	2 TE	160
	SafeTec T2-550-2+0	59.0156	2 TE	160
	SafeTec T2-550-2+0-R	59.0157	2 TE	160
	SafeTec T2-750-2+0	59.0158	2 TE	160
	SafeTec T2-750-2+0-R	59.0159	2 TE	160
	SafeTec T2-880-2+0	59.0160	2 TE	160
	SafeTec T2-880-2+0-R	59.0161	2 TE	160
SafeTec T2 3+0 (R) 	SafeTec T2-150-3+0	59.0162	3 TE	162
	SafeTec T2-150-3+0-R	59.0163	3 TE	162
	SafeTec T2-300-3+0	59.0164	3 TE	162
	SafeTec T2-300-3+0-R	59.0165	3 TE	162
	SafeTec T2-350-3+0	59.0166	3 TE	162
	SafeTec T2-350-3+0-R	59.0167	3 TE	162
	SafeTec T2-480-3+0	59.0168	3 TE	162
	SafeTec T2-480-3+0-R	59.0169	3 TE	162
	SafeTec T2-550-3+0	59.0170	3 TE	162
	SafeTec T2-550-3+0-R	59.0171	3 TE	162
	SafeTec T2-750-3+0	59.0172	3 TE	162
	SafeTec T2-750-3+0-R	59.0173	3 TE	162
	SafeTec T2-880-3+0	59.0174	3 TE	162
	SafeTec T2-880-3+0-R	59.0175	3 TE	162
SafeTec T2 4+0 (R) 	SafeTec T2-150-4+0	59.0176	4 TE	164
	SafeTec T2-150-4+0-R	59.0177	4 TE	164
	SafeTec T2-300-4+0	59.0178	4 TE	164
	SafeTec T2-300-4+0-R	59.0179	4 TE	164
	SafeTec T2-350-4+0	59.0180	4 TE	164
	SafeTec T2-350-4+0-R	59.0181	4 TE	164
	SafeTec T2-480-4+0	59.0182	4 TE	164
	SafeTec T2-480-4+0-R	59.0183	4 TE	164
	SafeTec T2-550-4+0	59.0184	4 TE	164
	SafeTec T2-550-4+0-R	59.0185	4 TE	164

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	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Pluggable Single Pole & Multi-pole Surge Protective Devices				*(continued)*
SafeTec T2 1+1 (R) 	SafeTec T2-75-1+1	59.0186	2 TE	166
	SafeTec T2-75-1+1-R	59.0187	2 TE	166
	SafeTec T2-150-1+1	59.0188	2 TE	166
	SafeTec T2-150-1+1-R	59.0189	2 TE	166
	SafeTec T2-300-1+1	59.0190	2 TE	166
	SafeTec T2-300-1+1-R	59.0191	2 TE	166
	SafeTec T2-350-1+1	59.0192	2 TE	166
	SafeTec T2-350-1+1-R	59.0193	2 TE	166
SafeTec T2 3+1 (R) 	SafeTec T2-300-3+1	59.0198	4 TE	168
	SafeTec T2-300-3+1-R	59.0199	4 TE	168
	SafeTec T2-350-3+1	59.0200	4 TE	168
	SafeTec T2-350-3+1-R	59.0201	4 TE	168
SafeTec T2-xxx-P	SafeTec T2-75-P	59.0125	1 TE plug	158-160, 166
	SafeTec T2-150-P	59.0126	1 TE plug	158-166
	SafeTec T2-300-P	59.0127	1 TE plug	158-168
	SafeTec T2-350-P	59.0128	1 TE plug	158-168
	SafeTec T2-480-P	59.0129	1 TE plug	158-164
	SafeTec T2-550-P	59.0299	1 TE plug	158-164
	SafeTec T2-750-P	59.0130	1 TE plug	158-162
	SafeTec T2-880-P	59.0131	1 TE plug	158-162
SafeTube T2 40 0+1 (R) 	SafeTube T2-40-0+1	59.0281	1 TE	170
	SafeTube T2-40-0+1-R	59.0337	1 TE	170
SafeTube T2 40-P	SafeTube T2-40-P	59.0274	1 TE plug	166-170

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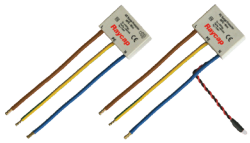
	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
DC Pluggable Multi-pole Surge Protective Devices for PV				
ProTec T1-PV-3+0 (R) 	ProTec T1-1100PV-3+0	59.0285	3 TE	174
	ProTec T1-1100PV-3+0-R	59.0286	3 TE	174
	ProTec T1-1500PV-3+0	59.0289	3 TE	174
	ProTec T1-1500PV-3+0-R	59.0290	3 TE	174
	ProTec T1-550PV-P	59.0283	1 TE plug	174
	ProTec T1-550PV-M-P	59.0284	1 TE plug	174
	ProTec T1-750PV-P	59.0287	1 TE plug	174
	ProTec T1-750PV-M-P	59.0288	1 TE plug	174
ProTec T2-PV-3+0 (R) 	ProTec T2-1100PV-3+0	59.0292	3 TE	176
	ProTec T2-1100PV-3+0-R	59.0293	3 TE	176
	ProTec T2-1500PV-3+0	59.0295	3 TE	176
	ProTec T2-1500PV-3+0-R	59.0296	3 TE	176
	ProTec T2-550PV-P	59.0291	1 TE plug	176
	ProTec T2-750PV-P	59.0294	1 TE plug	176

Class III • Type 3

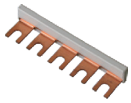
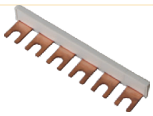
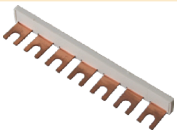
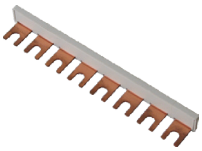
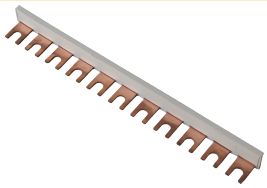
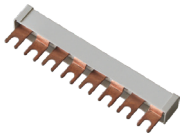
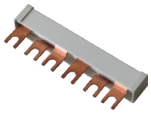
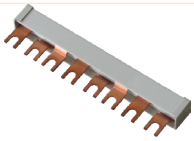
	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
DC Modular Multi-pole Surge Protective Devices				
ProTec DMDR 20 	ProTec DMDR 20/24	510 783	1 TE	180
	ProTec DMDR 20/48	510 833	1 TE	180
	ProTec DMDR 20/60	510 834	1 TE	180
	ProTec DMDR 20/120	510 835	1 TE	180
Module ProTec DMDR 20	Module ProTec DMDR 20/24	510 784	1 TE module	180
	Module ProTec DMDR 20/48	510 836	1 TE module	180
	Module ProTec DMDR 20/60	510 837	1 TE module	180
	Module ProTec DMDR 20/120	510 838	1 TE module	180
Modular Multi-pole Surge Protective Devices				
ProTec DMG(R) 20 (2+0) 	ProTec DMG 20/320 (2+0)	508.369	1 TE	182
	ProTec DMGR 20/320 (2+0)	508.370	1 TE	182
Module ProTec DMG(R) 20	Module ProTec DMG(R) 20/320	508.371	1 TE module	182
Compact Surge Protective Device				
ProLed 275 (3+1) 	ProLed 275 (3+1) 16 A	130 304	4 TE	184
Compact Multi-pole Surge Protective Devices				
MPE-Mini & MPE-Mini LED 	MPE-Mini	121 280		186
	MPE-Mini LED	121 282		186

Class II • Type 2

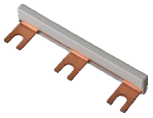
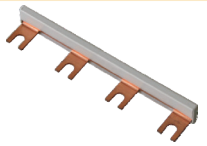
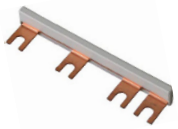
	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Compact Single Pole Surge Protective Device				
ProTec AQS 40 	ProTec AQS 40/150	509.210		190
	ProTec AQS 40/275	509.211		190
	ProTec AQS 40/320	509.212		190
	ProTec AQS 40/440	509.213		190
Isolating Spark Gap				
EPZ 100 	EPZ 100/350	509 520		194

Surge Protection Connection Accessories

Modular Wiring Systems

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProBar Single Phase Busbars	ProBar 1-2	501 338		198
				
	ProBar 1-3	501 339		198
				
	ProBar 1-4	501 340		198
				
	ProBar 1-5	501 341		198
				
	ProBar 1-6	501 342		198
				
	ProBar 1-7	501 343		198
				
	ProBar 1-8	501 344		198
				
	ProBar 1-11	501 345		198
				
ProBar Two Phase Busbars	ProBar 2-8	501 346		199
				
ProBar Three Phase Busbars	ProBar 3-6	501 347		199
				
	ProBar 3-8	501 348		199
				

Surge Protection Connection Accessories

	Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
Modular Wiring Systems				*(continued)*
PB Single Phase Busbars	PB 1-(2+0)	501 349		200
	PB 1-(3+0)	501 350		200
	PB 1-(2+1)	501 351		200
	PB 1-(4+0)	501 352		200
	PB 1-(3+1)	501 353		200
				
Compact Overhead Line Accessories				
ProTec AQS Accessories	Fixing cable	509 522		201
	Fixing hook	509 523		201
	PSN	509 524		201
	PSI	509 525		201
				

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Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
EPZ 100/350	509 520		194
Fixing Cable	509 522		201
Fixing Hook	509 523		201
Module ProTec DMDR 20/120	510 838	1 TE module	180
Module ProTec DMDR 20/24	510 784	1 TE module	180
Module ProTec DMDR 20/48	510 836	1 TE module	180
Module ProTec DMDR 20/60	510 837	1 TE module	180
Module ProTec DMG(R) 20/320	508.371	1 TE module	182
MPE-Mini	121 280		186
MPE-Mini LED	121 282		186
PB 1-(2+0)	501 349		200
PB 1-(2+1)	501 351		200
PB 1-(3+0)	501 350		200
PB 1-(3+1)	501 353		200
PB 1-(4+0)	501 352		200
ProBar 1-11	501 345		198
ProBar 1-2	501 338		198
ProBar 1-3	501 339		198
ProBar 1-4	501 340		198
ProBar 1-5	501 341		198
ProBar 1-6	501 342		198
ProBar 1-7	501 343		198
ProBar 1-8	501 344		198
ProBar 2-8	501 346		199
ProBar 3-6	501 347		199
ProBar 3-8	501 348		199
ProBloc B 100/150 (4+0)	56.0592	8 TE	74
ProBloc B 100/275 (3+1)	56.0614	8 TE	78
ProBloc B 100/275 (4+0)	56.0594	8 TE	74
ProBloc B 100/320 (3+1)	56.0616	8 TE	78
ProBloc B 100/320 (4+0)	56.0596	8 TE	74
ProBloc B 100/440 (4+0)	56.0600	8 TE	74
ProBloc B 12.5/150 (1+0)	56.0500	2 TE	56
ProBloc B 12.5/275 (1+0)	56.0502	2 TE	56
ProBloc B 12.5/320 (1+0)	56.0504	2 TE	56
ProBloc B 12.5/440 (1+0)	56.0508	2 TE	56
ProBloc B 12.5/440 (1+0)	56.0520	2 TE	58
ProBloc B 25/150 (1+0)	56.0562	2 TE	68
ProBloc B 25/150 (1+1)	56.0542	2 TE	64
ProBloc B 25/150 (2+0)	56.0512	2 TE	58
ProBloc B 25/275 (1+0)	56.0564	2 TE	68
ProBloc B 25/275 (1+1)	56.0544	2 TE	64
ProBloc B 25/275 (2+0)	56.0514	2 TE	58
ProBloc B 25/320 (1+0)	56.0566	2 TE	68
ProBloc B 25/320 (1+1)	56.0546	2 TE	64
ProBloc B 25/320 (2+0)	56.0516	2 TE	58
ProBloc B 25/440 (1+0)	56.0570	2 TE	68
ProBloc B 37.5/150 (3+0)	56.0522	3 TE	60
ProBloc B 37.5/275 (3+0)	56.0524	3 TE	60
ProBloc B 37.5/320 (3+0)	56.0526	3 TE	60
ProBloc B 37.5/440 (3+0)	56.0530	3 TE	60
ProBloc B 50/150 (1+1)	56.0602	4 TE	76
ProBloc B 50/150 (2+0)	56.0572	4 TE	70
ProBloc B 50/150 (4+0)	56.0532	4 TE	62
ProBloc B 50/275 (1+1)	56.0604	4 TE	76
ProBloc B 50/275 (2+0)	56.0574	4 TE	70
ProBloc B 50/275 (3+1)	56.0554	4 TE	66
ProBloc B 50/275 (4+0)	56.0534	4 TE	62
ProBloc B 50/320 (1+1)	56.0606	4 TE	76
ProBloc B 50/320 (2+0)	56.0576	4 TE	70
ProBloc B 50/320 (3+1)	56.0556	4 TE	66
ProBloc B 50/320 (4+0)	56.0536	4 TE	62
ProBloc B 50/440 (2+0)	56.0580	4 TE	70
ProBloc B 50/440 (4+0)	56.0540	4 TE	62
ProBloc B 75/150 (3+0)	56.0582	6 TE	72
ProBloc B 75/275 (3+0)	56.0584	6 TE	72
ProBloc B 75/320 (3+0)	56.0586	6 TE	72
ProBloc B 75/440 (3+0)	56.0590	6 TE	72
ProBloc BR 100/150 (4+0)	56.0593	8 TE	74
ProBloc BR 100/275 (3+1)	56.0615	8 TE	78
ProBloc BR 100/275 (4+0)	56.0595	8 TE	74
ProBloc BR 100/320 (3+1)	56.0617	8 TE	78
ProBloc BR 100/320 (4+0)	56.0597	8 TE	74
ProBloc BR 100/440 (4+0)	56.0601	8 TE	74
ProBloc BR 12.5/150 (1+0)	56.0501	2 TE	56
ProBloc BR 12.5/275 (1+0)	56.0503	2 TE	56
ProBloc BR 12.5/320 (1+0)	56.0505	2 TE	56
ProBloc BR 12.5/440 (1+0)	56.0509	2 TE	56
ProBloc BR 12.5/440 (1+0)	56.0521	2 TE	58
ProBloc BR 25/150 (1+0)	56.0563	2 TE	68
ProBloc BR 25/150 (1+1)	56.0543	2 TE	64
ProBloc BR 25/150 (2+0)	56.0513	2 TE	58
ProBloc BR 25/275 (1+0)	56.0565	2 TE	68
ProBloc BR 25/275 (1+1)	56.0545	2 TE	64
ProBloc BR 25/275 (2+0)	56.0515	2 TE	58
ProBloc BR 25/320 (1+0)	56.0567	2 TE	68
ProBloc BR 25/320 (1+1)	56.0547	2 TE	64
ProBloc BR 25/320 (2+0)	56.0517	2 TE	58
ProBloc BR 25/440 (1+0)	56.0571	2 TE	68
ProBloc BR 37.5/150 (3+0)	56.0523	3 TE	60
ProBloc BR 37.5/275 (3+0)	56.0525	3 TE	60
ProBloc BR 37.5/320 (3+0)	56.0527	3 TE	60
ProBloc BR 37.5/440 (3+0)	56.0531	3 TE	60
ProBloc BR 50/150 (1+1)	56.0603	4 TE	76
ProBloc BR 50/150 (2+0)	56.0573	4 TE	70
ProBloc BR 50/150 (4+0)	56.0533	4 TE	62
ProBloc BR 50/275 (1+1)	56.0605	4 TE	76
ProBloc BR 50/275 (2+0)	56.0575	4 TE	70
ProBloc BR 50/275 (3+1)	56.0555	4 TE	66
ProBloc BR 50/275 (4+0)	56.0535	4 TE	62
ProBloc BR 50/320 (1+1)	56.0607	4 TE	76
ProBloc BR 50/320 (2+0)	56.0577	4 TE	70
ProBloc BR 50/320 (3+1)	56.0557	4 TE	66
ProBloc BR 50/320 (4+0)	56.0537	4 TE	62
ProBloc BR 50/440 (2+0)	56.0581	4 TE	70
ProBloc BR 50/440 (4+0)	56.0541	4 TE	62
ProBloc BR 75/150 (3+0)	56.0583	6 TE	72
ProBloc BR 75/275 (3+0)	56.0585	6 TE	72
ProBloc BR 75/320 (3+0)	56.0587	6 TE	72
ProBloc BR 75/440 (3+0)	56.0591	6 TE	72
ProLed 275 (3+1) 16 A	130 304	4 TE	184
ProTec AQS 40/150	509.210		190
ProTec AQS 40/275	509.211		190
ProTec AQS 40/320	509.212		190
ProTec AQS 40/440	509.213		190
ProTec DMDR 20/120	510 835	1 TE	180
ProTec DMDR 20/24	510 783	1 TE	180
ProTec DMDR 20/48	510 833	1 TE	180
ProTec DMDR 20/60	510 834	1 TE	180
ProTec DMG 20/320 (2+0)	508.369	1 TE	182
ProTec DMGR 20/320 (2+0)	508.370	1 TE	182
ProTec T1-1100PV-3+0	59.0285	3 TE	174
ProTec T1-1100PV-3+0-R	59.0286	3 TE	174
ProTec T1-150-1+0	59.0009	1 TE	18
ProTec T1-150-1+0-R	59.0010	1 TE	18
ProTec T1-150-1+1	59.0049	2 TE	26
ProTec T1-150-1+1-R	59.0050	2 TE	26
ProTec T1-150-2+0	59.0019	2 TE	20
ProTec T1-150-2+0-R	59.0020	2 TE	20
ProTec T1-150-3+0	59.0029	3 TE	22
ProTec T1-150-3+0-R	59.0030	3 TE	22
ProTec T1-150-4+0	59.0039	4 TE	24

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Product Name	Order Code	Dimensions DIN 43880	Catalog Page(s)
ProTec T1-150-4+0-R	59.0040	4 TE	24
ProTec T1-150-P	59.0002	1 TE plug	18-26
ProTec T1-1500PV-3+0	59.0289	3 TE	174
ProTec T1-1500PV-3+0-R	59.0290	3 TE	174
ProTec T1-300-1+0	59.0011	1 TE	18
ProTec T1-300-1+0-R	59.0012	1 TE	18
ProTec T1-300-1+1	59.0051	2 TE	26
ProTec T1-300-1+1-R	59.0052	2 TE	26
ProTec T1-300-2+0	59.0021	2 TE	20
ProTec T1-300-2+0-R	59.0022	2 TE	20
ProTec T1-300-3+0	59.0031	3 TE	22
ProTec T1-300-3+0-R	59.0032	3 TE	22
ProTec T1-300-3+1	59.0059	4 TE	28
ProTec T1-300-3+1-R	59.0060	4 TE	28
ProTec T1-300-4+0	59.0041	4 TE	24
ProTec T1-300-4+0-R	59.0042	4 TE	24
ProTec T1-300-P	59.0003	1 TE plug	18-28
ProTec T1-350-1+0	59.0013	1 TE	18
ProTec T1-350-1+0-R	59.0014	1 TE	18
ProTec T1-350-1+1	59.0053	2 TE	26
ProTec T1-350-1+1-R	59.0054	2 TE	26
ProTec T1-350-2+0	59.0023	2 TE	20
ProTec T1-350-2+0-R	59.0024	2 TE	20
ProTec T1-350-3+0	59.0033	3 TE	22
ProTec T1-350-3+0-R	59.0034	3 TE	22
ProTec T1-350-3+1	59.0061	4 TE	28
ProTec T1-350-3+1-R	59.0062	4 TE	28
ProTec T1-350-4+0	59.0351	4 TE	24
ProTec T1-350-4+0-R	59.0352	4 TE	24
ProTec T1-350-P	59.0004	1 TE plug	18-28
ProTec T1-480-1+0	59.0015	1 TE	18
ProTec T1-480-1+0-R	59.0016	1 TE	18
ProTec T1-480-2+0	59.0025	2 TE	20
ProTec T1-480-2+0-R	59.0026	2 TE	20
ProTec T1-480-3+0	59.0035	3 TE	22
ProTec T1-480-3+0-R	59.0036	3 TE	22
ProTec T1-480-4+0	59.0043	4 TE	24
ProTec T1-480-4+0-R	59.0044	4 TE	24
ProTec T1-480-P	59.0005	1 TE plug	18-24
ProTec T1-550PV-M-P	59.0284	1 TE plug	174
ProTec T1-550PV-P	59.0283	1 TE plug	174
ProTec T1-75-1+0	59.0007	1 TE	18
ProTec T1-75-1+0-R	59.0008	1 TE	18
ProTec T1-75-1+1	59.0047	2 TE	26
ProTec T1-75-1+1-R	59.0048	2 TE	26
ProTec T1-75-2+0	59.0349	2 TE	20
ProTec T1-75-2+0-R	59.0350	2 TE	20
ProTec T1-75-P	59.0001	1 TE plug	18-26
ProTec T1-750-1+0	59.0017	1 TE	18
ProTec T1-750-1+0-R	59.0018	1 TE	18
ProTec T1-750-2 +0-R	59.0028	2 TE	20
ProTec T1-750-2+0	59.0027	2 TE	20
ProTec T1-750-3 +0-R	59.0038	3 TE	22
ProTec T1-750-3+0	59.0037	3 TE	22
ProTec T1-750-P	59.0006	1 TE plug	18-22
ProTec T1-750PV-M-P	59.0288	1 TE plug	174
ProTec T1-750PV-P	59.0287	1 TE plug	174
ProTec T1H-300-1+0	59.0310	1 TE	32
ProTec T1H-300-1+0	59.0310	1 TE	32
ProTec T1H-300-1+0-R	59.0311	1 TE	32
ProTec T1H-300-1+0-R	59.0311	1 TE	32
ProTec T1H-300-1+1	59.0318	2 TE	40
ProTec T1H-300-1+1-R	59.0319	2 TE	40
ProTec T1H-300-2+0	59.0312	2 TE	34
ProTec T1H-300-3+0	59.0314	3 TE	36
ProTec T1H-300-3+0-R	59.0315	3 TE	36
ProTec T1H-300-2+0-R	59.0313	2 TE	34
ProTec T1H-300-3+0-R	59.0305	6 TE	46
ProTec T1H-300-3+1	59.0320	4 TE	42
ProTec T1H-300-3+1-R	59.0321	4 TE	42
ProTec T1H-300-4+0	59.0316	4 TE	38
ProTec T1H-300-4+0-R	59.0317	4 TE	38
ProTec T1H-300-P	59.0308	1 TE plug	32-42
ProTec T1HS-300-3+0	59.0304	6 TE	46
ProTec T1HS-300-3+1	59.0306	8 TE	48
ProTec T1HS-300-3+1-R	59.0307	8 TE	48
ProTec T1HS-300-P	59.0302	1 TE plug	46-48
ProTec T2-1100PV-3+0	59.0292	3 TE	176
ProTec T2-1100PV-3+0-R	59.0293	3 TE	176
ProTec T2-150-1+0	59.0071	1 TE	118
ProTec T2-150-1+0-R	59.0072	1 TE	118
ProTec T2-150-1+1	59.0111	2 TE	126
ProTec T2-150-1+1-R	59.0112	2 TE	126
ProTec T2-150-2+0	59.0081	2 TE	120
ProTec T2-150-2+0-R	59.0082	2 TE	120
ProTec T2-150-3+0	59.0091	3 TE	122
ProTec T2-150-3+0-R	59.0092	3 TE	122
ProTec T2-150-4+0	59.0101	4 TE	124
ProTec T2-150-4+0-R	59.0102	4 TE	124
ProTec T2-150-P	59.0064	1 TE plug	118-126
ProTec T2-1500PV-3+0	59.0295	3 TE	176
ProTec T2-1500PV-3+0-R	59.0296	3 TE	176
ProTec T2-300-1+0	59.0073	1 TE	118
ProTec T2-300-1+0-R	59.0074	1 TE	118
ProTec T2-300-1+1	59.0113	2 TE	126
ProTec T2-300-1+1-R	59.0114	2 TE	126
ProTec T2-300-2+0	59.0083	2 TE	120
ProTec T2-300-2+0-R	59.0084	2 TE	120
ProTec T2-300-3+0	59.0093	3 TE	122
ProTec T2-300-3+0-R	59.0094	3 TE	122
ProTec T2-300-3+1	59.0121	4 TE	128
ProTec T2-300-3+1-R	59.0122	4 TE	128
ProTec T2-300-4+0	59.0103	4 TE	124
ProTec T2-300-4+0-R	59.0104	4 TE	124
ProTec T2-300-P	59.0065	1 TE plug	118-128
ProTec T2-350-1+0	59.0075	1 TE	118
ProTec T2-350-1+0-R	59.0076	1 TE	118
ProTec T2-350-1+1	59.0115	2 TE	126
ProTec T2-350-1+1-R	59.0116	2 TE	126
ProTec T2-350-2+0	59.0085	2 TE	120
ProTec T2-350-2+0-R	59.0086	2 TE	120
ProTec T2-350-3+0	59.0095	3 TE	122
ProTec T2-350-3+0-R	59.0096	3 TE	122
ProTec T2-350-3+1	59.0123	4 TE	128
ProTec T2-350-3+1-R	59.0124	4 TE	128
ProTec T2-350-4+0	59.0300	4 TE	124
ProTec T2-350-4+0-R	59.0301	4 TE	124
ProTec T2-350-P	59.0066	1 TE plug	118-128
ProTec T2-480-1+0	59.0077	1 TE	118
ProTec T2-480-1+0-R	59.0078	1 TE	118
ProTec T2-480-2+0	59.0087	2 TE	120
ProTec T2-480-2+0-R	59.0088	2 TE	120
ProTec T2-480-3+0	59.0097	3 TE	122
ProTec T2-480-3+0-R	59.0098	3 TE	122
ProTec T2-480-4+0	59.0105	4 TE	124
ProTec T2-480-4+0-R	59.0106	4 TE	124
ProTec T2-480-P	59.0067	1 TE plug	118-124
ProTec T2-550PV-P	59.0291	1 TE plug	176
ProTec T2-75-1+0	59.0069	1 TE	118
ProTec T2-75-1+0-R	59.0070	1 TE	118
ProTec T2-75-1+1	59.0109	2 TE	126
ProTec T2-75-1+1-R	59.0110	2 TE	126

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ProTec T2-75-2+0-R	59.0344	2 TE	120
ProTec T2-75-P	59.0063	1 TE plug	118-126
ProTec T2-750-1+0	59.0079	1 TE	118
ProTec T2-750-1+0-R	59.0080	1 TE	118
ProTec T2-750-2 +0-R	59.0090	2 TE	120
ProTec T2-750-2+0	59.0089	2 TE	120
ProTec T2-750-3+0	59.0099	3 TE	122
ProTec T2-750-3+0-R	59.0100	3 TE	122
ProTec T2-750-P	59.0068	1 TE plug	118-124
ProTec T2-750PV-P	59.0294	1 TE plug	176
ProTec T2-ADV-150-1+0	59.0210	1 TE	146
ProTec T2-ADV-150-1+0-R	59.0211	1 TE	146
ProTec T2-ADV-150-1+1	59.0246	2 TE	154
ProTec T2-ADV-150-1+1-R	59.0247	2 TE	154
ProTec T2-ADV-150-2+0	59.0220	2 TE	148
ProTec T2-ADV-150-2+0-R	59.0221	2 TE	148
ProTec T2-ADV-150-3+0	59.0228	3 TE	150
ProTec T2-ADV-150-3+0-R	59.0229	3 TE	150
ProTec T2-ADV-150-4+0	59.0236	4 TE	152
ProTec T2-ADV-150-4+0-R	59.0237	4 TE	152
ProTec T2-ADV-150-P	59.0203	1 TE plug	146-154
ProTec T2-ADV-300-1+0	59.0212	1 TE	146
ProTec T2-ADV-300-1+0-R	59.0213	1 TE	146
ProTec T2-ADV-300-1+1	59.0248	2 TE	154
ProTec T2-ADV-300-1+1-R	59.0249	2 TE	154
ProTec T2-ADV-300-2+0	59.0222	2 TE	148
ProTec T2-ADV-300-2+0-R	59.0223	2 TE	148
ProTec T2-ADV-300-3+0	59.0230	3 TE	150
ProTec T2-ADV-300-3+0-R	59.0231	3 TE	150
ProTec T2-ADV-300-3+1	59.0256	4 TE	156
ProTec T2-ADV-300-3+1-R	59.0257	4 TE	156
ProTec T2-ADV-300-4+0	59.0238	4 TE	152
ProTec T2-ADV-300-4+0-R	59.0239	4 TE	152
ProTec T2-ADV-300-P	59.0204	1 TE plug	146-156
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ProTec T2-ADV-350-1+0-R	59.0215	1 TE	146
ProTec T2-ADV-350-2+0	59.0224	2 TE	148
ProTec T2-ADV-350-2+0-R	59.0225	2 TE	148
ProTec T2-ADV-350-3+0	59.0232	3 TE	150
ProTec T2-ADV-350-3+0-R	59.0233	3 TE	150
ProTec T2-ADV-350-3+1	59.0258	4 TE	156
ProTec T2-ADV-350-3+1-R	59.0259	4 TE	156
ProTec T2-ADV-350-4+0	59.0240	4 TE	152
ProTec T2-ADV-350-4+0-R	59.0241	4 TE	152
ProTec T2-ADV-350-P	59.0205	1 TE plug	146-156
ProTec T2-ADV-480-1+0	59.0216	1 TE	146
ProTec T2-ADV-480-1+0-R	59.0217	1 TE	146
ProTec T2-ADV-480-1+1	59.0250	2 TE	154
ProTec T2-ADV-480-1+1-R	59.0251	2 TE	154
ProTec T2-ADV-480-2+0	59.0226	2 TE	148
ProTec T2-ADV-480-2+0-R	59.0227	2 TE	148
ProTec T2-ADV-480-3+0	59.0234	3 TE	150
ProTec T2-ADV-480-3+0-R	59.0235	3 TE	150
ProTec T2-ADV-480-4+0	59.0242	4 TE	152
ProTec T2-ADV-480-4+0-R	59.0243	4 TE	152
ProTec T2-ADV-480-P	59.0206	1 TE plug	146-152
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ProTec T2-ADV-75-1+0-R	59.0209	1 TE	146
ProTec T2-ADV-75-1+1	59.0244	2 TE	154
ProTec T2-ADV-75-1+1-R	59.0245	2 TE	154
ProTec T2-ADV-75-2+0	59.0347	2 TE	148
ProTec T2-ADV-75-2+0-R	59.0348	2 TE	148
ProTec T2-ADV-75-P	59.0202	1 TE plug	146-154
ProTec T2H-300-1+0	59.0324	1 TE	132
ProTec T2H-300-1+0-R	59.0325	1 TE	132
ProTec T2H-300-1+1	59.0332	2 TE	140
ProTec T2H-300-1+1-R	59.0333	2 TE	140
ProTec T2H-300-2+0	59.0326	2 TE	134
ProTec T2H-300-2+0-R	59.0327	2 TE	134
ProTec T2H-300-3+0	59.0328	3 TE	136
ProTec T2H-300-3+0-R	59.0329	3 TE	136
ProTec T2H-300-3+1	59.0334	4 TE	142
ProTec T2H-300-3+1-R	59.0335	4 TE	142
ProTec T2H-300-4+0	59.0330	4 TE	138
ProTec T2H-300-4+0-R	59.0331	4 TE	138
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ProTube B 50/255	56.0510	2 TE	80
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ProTube T1-50-P	59.0269	1 TE plug	30
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ProTube T1H-50-P	59.0309	1 TE plug	40-44
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ProTube T2-40-0+1	59.0280	1 TE	130
ProTube T2-40-0+1-R	59.0336	1 TE	130
ProTube T2-40-P	59.0273	1 TE plug	126-130
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ProTube T2H-40-0+1	59.0341	1 TE	144
ProTube T2H-40-0+1-R	59.0342	1 TE	144
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PSN	509 524		201
SafeBloc B 100/150 (4+0) TCG	54.0556	8 TE	102
SafeBloc B 100/275 (3+1) TCG	54.0570	8 TE	106
SafeBloc B 100/275 (4+0) TCG	54.0558	8 TE	102
SafeBloc B 12.5/150 (1+0) TCG	54.0500	2 TE	84
SafeBloc B 12.5/275 (1+0) TCG	54.0502	2 TE	84
SafeBloc B 12.5/750 (1+0) WT TCG	54.0590	2 TE	112
SafeBloc B 25/150 (1+0) TCG	54.0537	2 TE	96
SafeBloc B 25/150 (1+1) TCG	54.0525	4 TE	92
SafeBloc B 25/150 (2+0) TCG	54.0507	4 TE	86
SafeBloc B 25/275 (1+0) TCG	54.0539	2 TE	96
SafeBloc B 25/275 (1+1) TCG	54.0527	4 TE	92
SafeBloc B 25/275 (2+0) TCG	54.0509	4 TE	86
SafeBloc B 25/750 (1+0) WT TCG	54.0594	4 TE	114
SafeBloc B 37.5/150 (3+0) TCG	54.0513	6 TE	88
SafeBloc B 37.5/275 (3+0) TCG	54.0515	6 TE	88
SafeBloc B 50/150 (1+1) TCG	54.0562	4 TE	104
SafeBloc B 50/150 (2+0) TCG	54.0544	4 TE	98
SafeBloc B 50/150 (4+0) TCG	54.0519	8 TE	90
SafeBloc B 50/275 (1+1) TCG	54.0564	4 TE	104
SafeBloc B 50/275 (2+0) TCG	54.0546	4 TE	98
SafeBloc B 50/275 (3+1) TCG	54.0533	8 TE	94
SafeBloc B 50/275 (4+0) TCG	54.0521	8 TE	90
SafeBloc B 75/150 (3+0) TCG	54.0550	6 TE	100
SafeBloc B 75/275 (3+0) TCG	54.0552	6 TE	100
SafeBloc BR 100/150 (4+0) TCG	54.0557	8 TE	102
SafeBloc BR 100/275 (3+1) TCG	54.0571	8 TE	106
SafeBloc BR 100/275 (4+0) TCG	54.0559	8 TE	102
SafeBloc BR 12.5/150 (1+0) TCG	54.0501	2 TE	84
SafeBloc BR 12.5/275 (1+0) TCG	54.0503	2 TE	84
SafeBloc BR 12.5/750 (1+0) WT TCG	54.0591	2 TE	112
SafeBloc BR 25/150 (1+0) TCG	54.0538	2 TE	96
SafeBloc BR 25/150 (1+1) TCG	54.0526	4 TE	92
SafeBloc BR 25/150 (2+0) TCG	54.0508	4 TE	86
SafeBloc BR 25/275 (1+0) TCG	54.0540	2 TE	96
SafeBloc BR 25/275 (1+1) TCG	54.0528	4 TE	92
SafeBloc BR 25/275 (2+0) TCG	54.0510	4 TE	86
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SafeBloc BR 50/150 (2+0) TCG	54.0545	4 TE	98
SafeBloc BR 50/150 (4+0) TCG	54.0520	8 TE	90
SafeBloc BR 50/275 (1+1) TCG	54.0565	4 TE	104
SafeBloc BR 50/275 (2+0) TCG	54.0547	4 TE	98
SafeBloc BR 50/275 (3+1) TCG	54.0534	8 TE	94
SafeBloc BR 50/275 (4+0) TCG	54.0522	8 TE	90
SafeBloc BR 75/150 (3+0) TCG	54.0551	6 TE	100
SafeBloc BR 75/275 (3+0) TCG	54.0553	6 TE	100
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SafeTec T2-150-1+1	59.0188	2 TE	166
SafeTec T2-150-1+1-R	59.0189	2 TE	166
SafeTec T2-150-2+0	59.0148	2 TE	160
SafeTec T2-150-2+0-R	59.0149	2 TE	160
SafeTec T2-150-3+0	59.0162	3 TE	162
SafeTec T2-150-3+0-R	59.0163	3 TE	162
SafeTec T2-150-4+0	59.0176	4 TE	164
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SafeTec T2-300-1+0	59.0136	1 TE	158
SafeTec T2-300-1+0-R	59.0137	1 TE	158
SafeTec T2-300-1+1	59.0190	2 TE	166
SafeTec T2-300-1+1-R	59.0191	2 TE	166
SafeTec T2-300-2+0	59.0150	2 TE	160
SafeTec T2-300-2+0-R	59.0151	2 TE	160
SafeTec T2-300-3+0	59.0164	3 TE	162
SafeTec T2-300-3+0-R	59.0165	3 TE	162
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SafeTec T2-300-4+0	59.0178	4 TE	164
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SafeTec T2-350-2+0	59.0152	2 TE	160
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SafeTec T2-350-3+0	59.0166	3 TE	162
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SafeTec T2-480-3+0	59.0168	3 TE	162
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SafeTec T2-750-2+0	59.0158	2 TE	160
SafeTec T2-750-2+0-R	59.0159	2 TE	160
SafeTec T2-750-3+0	59.0172	3 TE	162
SafeTec T2-750-3+0-R	59.0173	3 TE	162
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SafeTec T2-880-2+0	59.0160	2 TE	160
SafeTec T2-880-2+0-R	59.0161	2 TE	160
SafeTec T2-880-3+0	59.0174	3 TE	162
SafeTec T2-880-3+0-R	59.0175	3 TE	162
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54.0520	SafeBloc BR 50/150 (4+0) TCG	8 TE	90
54.0521	SafeBloc B 50/275 (4+0) TCG	8 TE	90
54.0522	SafeBloc BR 50/275 (4+0) TCG	8 TE	90
54.0525	SafeBloc B 25/150 (1+1) TCG	4 TE	92
54.0526	SafeBloc BR 25/150 (1+1) TCG	4 TE	92
54.0527	SafeBloc B 25/275 (1+1) TCG	4 TE	92
54.0528	SafeBloc BR 25/275 (1+1) TCG	4 TE	92
54.0533	SafeBloc B 50/275 (3+1) TCG	8 TE	94
54.0534	SafeBloc BR 50/275 (3+1) TCG	8 TE	94
54.0537	SafeBloc B 25/150 (1+0) TCG	2 TE	96
54.0538	SafeBloc BR 25/150 (1+0) TCG	2 TE	96
54.0539	SafeBloc B 25/275 (1+0) TCG	2 TE	96
54.0540	SafeBloc BR 25/275 (1+0) TCG	2 TE	96
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54.0545	SafeBloc BR 50/150 (2+0) TCG	4 TE	98
54.0546	SafeBloc B 50/275 (2+0) TCG	4 TE	98
54.0547	SafeBloc BR 50/275 (2+0) TCG	4 TE	98
54.0550	SafeBloc B 75/150 (3+0) TCG	6 TE	100
54.0551	SafeBloc BR 75/150 (3+0) TCG	6 TE	100
54.0552	SafeBloc B 75/275 (3+0) TCG	6 TE	100
54.0553	SafeBloc BR 75/275 (3+0) TCG	6 TE	100
54.0556	SafeBloc B 100/150 (4+0) TCG	8 TE	102
54.0557	SafeBloc BR 100/150 (4+0) TCG	8 TE	102
54.0558	SafeBloc B 100/275 (4+0) TCG	8 TE	102
54.0559	SafeBloc BR 100/275 (4+0) TCG	8 TE	102
54.0562	SafeBloc B 50/150 (1+1) TCG	4 TE	104
54.0563	SafeBloc BR 50/150 (1+1) TCG	4 TE	104
54.0564	SafeBloc B 50/275 (1+1) TCG	4 TE	104
54.0565	SafeBloc BR 50/275 (1+1) TCG	4 TE	104
54.0570	SafeBloc B 100/275 (3+1) TCG	8 TE	106
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54.0590	SafeBloc B 12.5/750 (1+0) WT TCG	2 TE	112
54.0591	SafeBloc BR 12.5/750 (1+0) WT TCG	2 TE	112
54.0594	SafeBloc B 25/750 (1+0) WT TCG	4 TE	114
54.0595	SafeBloc BR 25/750 (1+0) WT TCG	4 TE	114
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56.0514	ProBloc B 25/275 (2+0)	2 TE	58
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56.0517	ProBloc BR 25/320 (2+0)	2 TE	58
56.0520	ProBloc B 12.5/440 (1+0)	2 TE	58
56.0521	ProBloc BR 12.5/440 (1+0)	2 TE	58
56.0522	ProBloc B 37.5/150 (3+0)	3 TE	60
56.0523	ProBloc BR 37.5/150 (3+0)	3 TE	60
56.0524	ProBloc B 37.5/275 (3+0)	3 TE	60
56.0525	ProBloc BR 37.5/275 (3+0)	3 TE	60
56.0526	ProBloc B 37.5/320 (3+0)	3 TE	60
56.0527	ProBloc BR 37.5/320 (3+0)	3 TE	60
56.0530	ProBloc B 37.5/440 (3+0)	3 TE	60
56.0531	ProBloc BR 37.5/440 (3+0)	3 TE	60
56.0532	ProBloc B 50/150 (4+0)	4 TE	62
56.0533	ProBloc BR 50/150 (4+0)	4 TE	62
56.0534	ProBloc B 50/275 (4+0)	4 TE	62
56.0535	ProBloc BR 50/275 (4+0)	4 TE	62
56.0536	ProBloc B 50/320 (4+0)	4 TE	62
56.0537	ProBloc BR 50/320 (4+0)	4 TE	62
56.0540	ProBloc B 50/440 (4+0)	4 TE	62
56.0541	ProBloc BR 50/440 (4+0)	4 TE	62
56.0542	ProBloc B 25/150 (1+1)	2 TE	64
56.0543	ProBloc BR 25/150 (1+1)	2 TE	64
56.0544	ProBloc B 25/275 (1+1)	2 TE	64
56.0545	ProBloc BR 25/275 (1+1)	2 TE	64
56.0546	ProBloc B 25/320 (1+1)	2 TE	64
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56.0564	ProBloc B 25/275 (1+0)	2 TE	68
56.0565	ProBloc BR 25/275 (1+0)	2 TE	68
56.0566	ProBloc B 25/320 (1+0)	2 TE	68
56.0567	ProBloc BR 25/320 (1+0)	2 TE	68
56.0570	ProBloc B 25/440 (1+0)	2 TE	68
56.0571	ProBloc BR 25/440 (1+0)	2 TE	68
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56.0573	ProBloc BR 50/150 (2+0)	4 TE	70
56.0574	ProBloc B 50/275 (2+0)	4 TE	70
56.0575	ProBloc BR 50/275 (2+0)	4 TE	70
56.0576	ProBloc B 50/320 (2+0)	4 TE	70
56.0577	ProBloc BR 50/320 (2+0)	4 TE	70
56.0580	ProBloc B 50/440 (2+0)	4 TE	70
56.0581	ProBloc BR 50/440 (2+0)	4 TE	70
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56.0583	ProBloc BR 75/150 (3+0)	6 TE	72
56.0584	ProBloc B 75/275 (3+0)	6 TE	72
56.0585	ProBloc BR 75/275 (3+0)	6 TE	72
56.0586	ProBloc B 75/320 (3+0)	6 TE	72
56.0587	ProBloc BR 75/320 (3+0)	6 TE	72
56.0590	ProBloc B 75/440 (3+0)	6 TE	72
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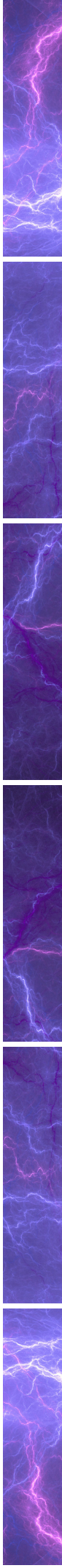
59.0300	ProTec T2-350-4+0	4 TE	124
59.0301	ProTec T2-350-4+0-R	4 TE	124
59.0302	ProTec T1HS-300-P	1 TE plug	46-48
59.0303	ProTube T1HS-100-P	1 TE plug	48
59.0304	ProTec T1HS-300-3+0	6 TE	46
59.0305	ProTec T1H-300-3+0-R	6 TE	46
59.0306	ProTec T1HS-300-3+1	8 TE	48
59.0307	ProTec T1HS-300-3+1-R	8 TE	48
59.0308	ProTec T1H-300-P	1 TE plug	32-42
59.0309	ProTube T1H-50-P	1 TE plug	40-44
59.0310	ProTec T1H-300-1+0	1 TE	32
59.0310	ProTec T1H-300-1+0	1 TE	32
59.0311	ProTec T1H-300-1+0-R	1 TE	32
59.0311	ProTec T1H-300-1+0-R	1 TE	32
59.0312	ProTec T1H-300-2+0	2 TE	34
59.0313	ProTec T1H-300-2+0-R	2 TE	34
59.0314	ProTec T1H-300-3+0	3 TE	36
59.0315	ProTec T1H-300-3+0-R	3 TE	36
59.0316	ProTec T1H-300-4+0	4 TE	38
59.0317	ProTec T1H-300-4+0-R	4 TE	38
59.0318	ProTec T1H-300-1+1	2 TE	40
59.0319	ProTec T1H-300-1+1-R	2 TE	40
59.0320	ProTec T1H-300-3+1	4 TE	42
59.0321	ProTec T1H-300-3+1-R	4 TE	42
59.0322	ProTec T2H-300-P	1 TE plug	134-144
59.0323	ProTube T2H-40-P	1 TE plug	140-144
59.0324	ProTec T2H-300-1+0	1 TE	132
59.0325	ProTec T2H-300-1+0-R	1 TE	132
59.0326	ProTec T2H-300-2+0	2 TE	134
59.0327	ProTec T2H-300-2+0-R	2 TE	134
59.0328	ProTec T2H-300-3+0	3 TE	136
59.0329	ProTec T2H-300-3+0-R	3 TE	136
59.0330	ProTec T2H-300-4+0	4 TE	138
59.0331	ProTec T2H-300-4+0-R	4 TE	138
59.0332	ProTec T2H-300-1+1	2 TE	140
59.0333	ProTec T2H-300-1+1-R	2 TE	140
59.0334	ProTec T2H-300-3+1	4 TE	142
59.0335	ProTec T2H-300-3+1-R	4 TE	142
59.0336	ProTube T2-40-0+1-R	1 TE	130
59.0337	SafeTube T2-40-0+1-R	1 TE	170
59.0340	ProTube T1H-50-0+1	1 TE	44
59.0341	ProTube T2H-40-0+1	1 TE	144
59.0342	ProTube T2H-40-0+1-R	1 TE	144
59.0343	ProTec T2-75-2+0	2 TE	120
59.0344	ProTec T2-75-2+0-R	2 TE	120
59.0345	SafeTec T2-75-2+0	2 TE	160
59.0346	SafeTec T2-75-2+0-R	2 TE	160
59.0347	ProTec T2-ADV-75-2+0	2 TE	148
59.0348	ProTec T2-ADV-75-2+0-R	2 TE	148
59.0349	ProTec T1-75-2+0	2 TE	20
59.0350	ProTec T1-75-2+0-R	2 TE	20
59.0351	ProTec T1-350-4+0	4 TE	24
59.0352	ProTec T1-350-4+0-R	4 TE	24
59.0360	ProTec ZP T1H-255-3+0-R	3 TE	52
59.0361	ProTec ZP T1H-255-3+1-R	3 TE	54



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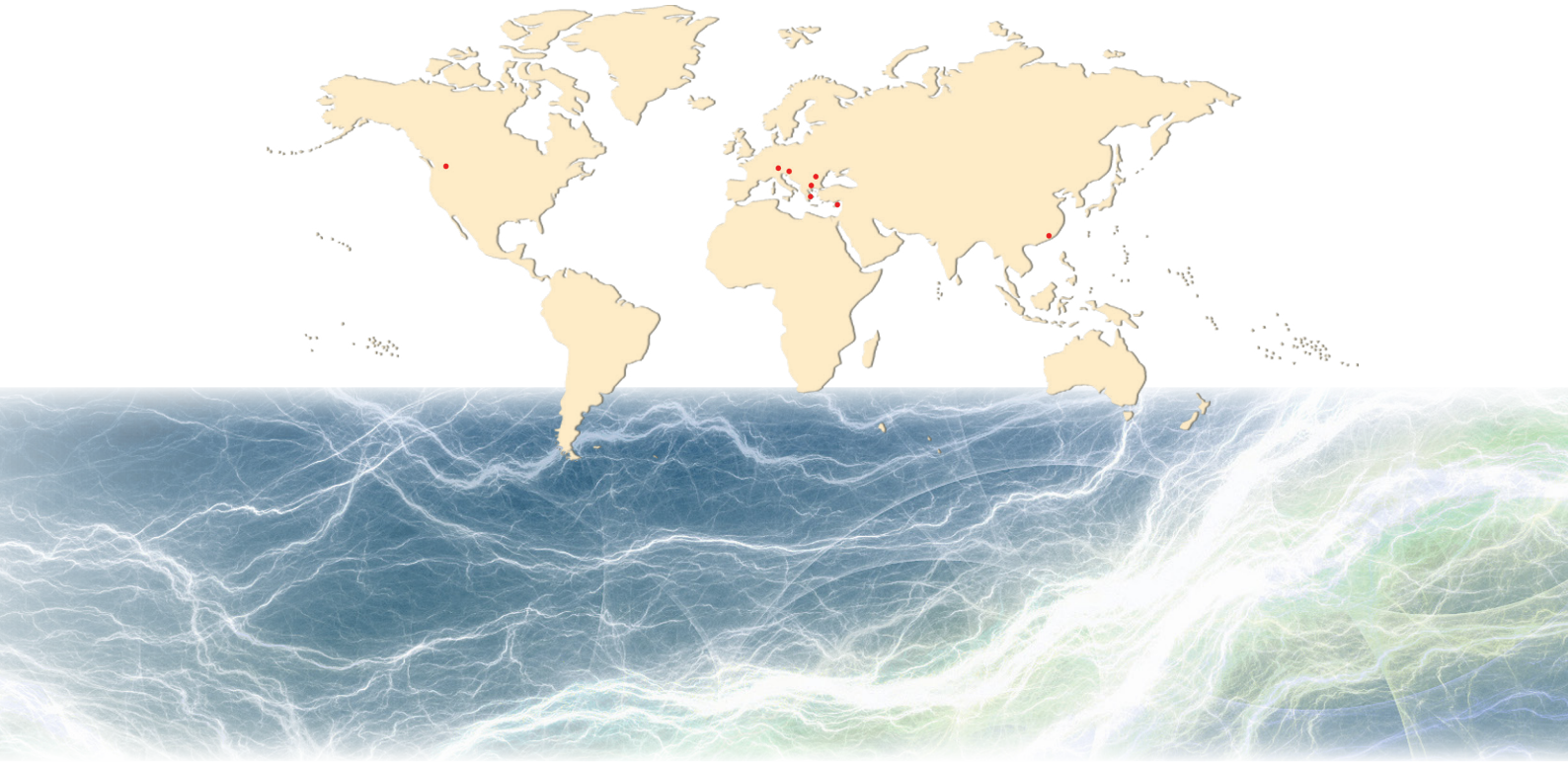

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